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TRIVARIATE RESEARCH

APRIL 2022

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PURPOSE

This document is meant for those who want to sit down for 60-90 minutes, once a month, and take full stock of major issues impacting US equities. It includes:

- 4 Charts You Can't Miss
- A View of US Equities And Why Multiples Will Remain Elevated
- Impact of S&P Index Changes
- Growth Stocks – What to Do After a Sell-off
- Notes on Melting Ice Cubes, and Performance after CEO Changes
- Capital Use and Its Consequences
- Interest Rate Perceptions
- Mega Caps
- Sizing and Risk Management
- Sector Bets

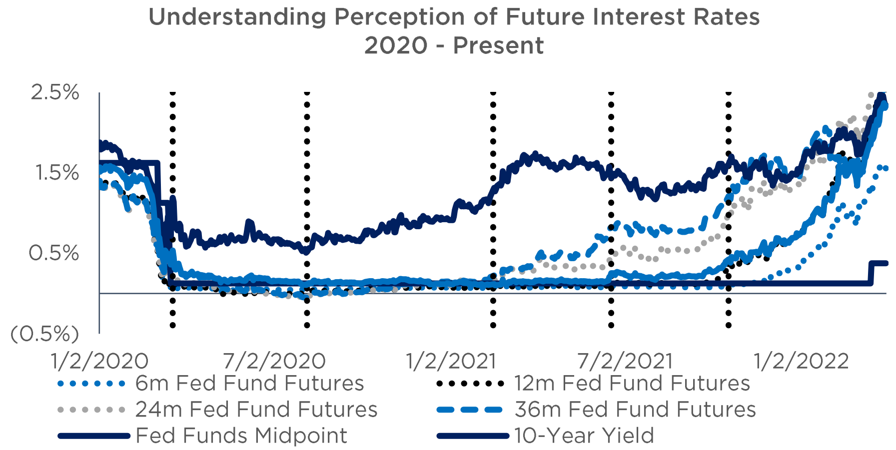
Please contact us or log into our website www.trivariateresearch.com for access. To trade our baskets – like long compounders and short melting ice cubes, or long SP additions and short potential deletions, please contact us.

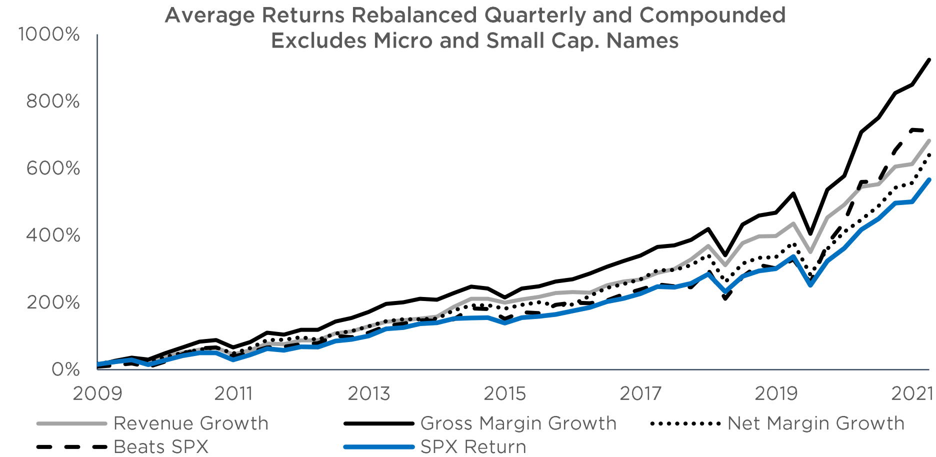
TABLE OF CONTENTS

For further information on our Quantitative Framework, or our notes on the challenges of alpha generation, FAANGM, BATJ (Baidu, Alibaba, Tencent, JD.com) or ESG ETFs please contact us or log into our website www.trivariateresearch.com for access.

FOUR CHARTS YOU SHOULD NOT MISS

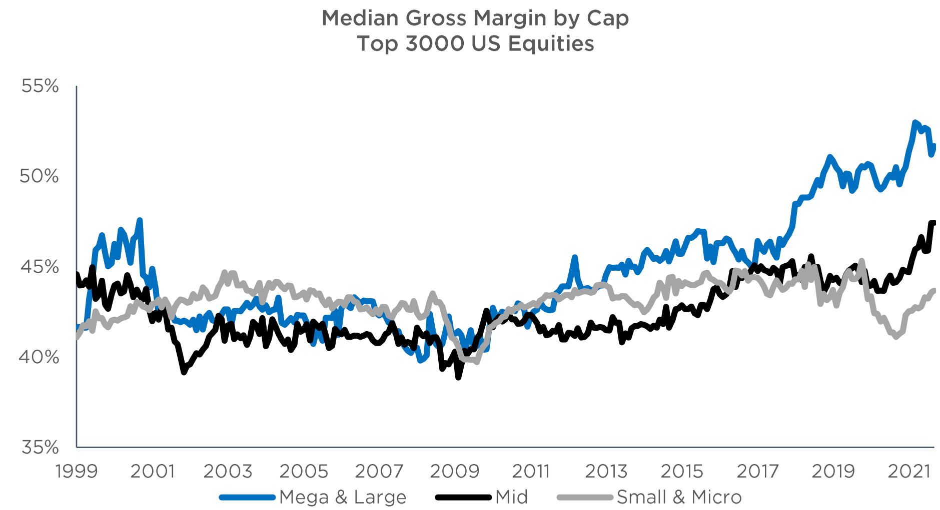
Tracking the perception of changes in rates has become crucial over the last six months (upper left). The best way to find compounders is to focus on gross margin expansion (upper right). Energy / materials remain are our preferred bets (bottom left) despite the massive outperformance over the last year. Gross margins this cycle remain elevated, likely owing to superior business models and explaining above-average multiples (bottom right).





Trivariate Sector Recommendations

Sector	Recommendation	Comments
Materials	Overweight	Buy the cheap stocks with upward revisions
Energy	Overweight	Supply won't catch up for awhile and we do not see demand destruction yet
Health Care	Overweight	Healthcare services have cheap growth, and the biotechnology sell-off appears over-done
Utilities	Equal-Weight	Some idiosyncratic investments are sensible
Communication Services	Equal-Weight	Makes sense to keep market-weight FAANGM
Real Estate	Equal-Weight	Metrics for stock selection are becoming more effective, commercial remains challenged
Information Technology	Equal-Weight	Focus on positive FCF, pricing power – avoid profitless software
Financials	Equal-Weight	Prefer large cap banks to small
Consumer Discretionary	Equal-Weight	Margins are at risk with rising input costs
Consumer Staples	Underweight	Plenty of short ideas in idiosyncratic staples, and valuation of large-caps is stretched
Industrials	Underweight	Industrial activity is rolling over, but earnings expectation are very high



INVESTMENT CONCLUSIONS

Our outlook for US equities generally assumes mid-single digit annual returns, and that is still our base case for 2022. While the massive change to the perception of interest rates morphed into a full-on growth scare in Q1, we see earnings growth for 2022 over 2021 as likely. Perhaps the probability that 2023 earnings are not above 2022 earnings is now higher, as a result of a more hawkish Fed and a softening economy, but we see limited build-up in inventory, capital spending, and hiring, so the main profit controversies are around pricing power and mix on the revenue side, and the rate at which inflationary pressures related to commodities, wages, and logistics abate on the cost side. Our longer-term algorithm for US equities is we expect a 2% total yield, nearly a 2% mix shift from new companies added to the SP500, and 3-5% "organic" EPS growth, totaling to a 7-9% total return, which is attractive vs. all other major asset classes in our judgment.

Valuation: Pushback from investors is usually around the elevated profits and / or the elevated market multiple. On the multiple, while the market is expensive relative to its own history on forward earnings, the constitution of the market has changed. Nearly 20% of the top 3000 US stocks market cap is FAANGM, and 20% of the market is pharma & biotech or software companies, where belief in sustained growth matters. The key is whether wage and commodity inflation and supply chain disruption will cause broad based margin contraction, and the recent Russian / Ukraine war certainly exacerbates the energy-related challenges. At present, the market trades around 20x the consensus 2022 earnings, which we think is reasonable, as premium to the long-term average of 17x forward seems merited given the constitution of companies, their margins, the bank balance sheets, etc. We do not see margins collapsing for the SP500, and hence, they will remain quite elevated vs. long-term history.

BUY IDEAS

Our themes are as follows:

1) **Buy oil-sensitive energy stocks:** The risk-reward skewed to the upside for oil. XOM, CVX, SM, and CPE are statistically significantly sensitive to oil prices.
2) **Buy metals:** We continue to like aluminum and copper and think these stocks are discounting massive negative earnings revisions that are unlikely to materialize.
3) **Buy "old technology":** We recommend DELL. It is extremely cheap and likely is not over-earning the way other work-from-home stocks are – plus we like Michael Dell's stake.
4) **Buy mid-cap biotechnology:** Innovation has been overly discounted, and the terminal value argument does not really make sense with 85% of biotechnology companies never generating positive cumulative free cash flow. We like mid-cap biotechnology.
5) **Buy healthcare services:** They have above average revenue growth, lower volatility of growth, yet lower valuation. We like UNH – pricing power, inflation beneficiary, value, and growth.
6) **Buy value consumer discretionary and short expensive consumer staples:** Investors are paying too much for growth staples, and value discretionary have never been cheaper on price-to-forward earnings.

STOCKS TO SELL

We think that investors should short individual stocks more aggressively. Given the efficacy of the short interest signal lately, we think this is true even of names with higher short interest.

1) **Short low-quality work-from-home stocks:** High quality reopening has lagged low quality work-from-home since the beginning of COVID. While this has sharply corrected in the last few months, we think this trend will continue. DOCU is a good example.
2) **Short profitless software:** Following growth stock sell-offs, outperformers have positive free cash flow and gross margin expansion. We recommend investors short those with contracting or stagnating margins and negative free cash flow. BILL is one we highlighted as negative FCF, decelerating revenue growth, and high valuation.
3) **Short select industrials:** Industrials with high incremental gross margin expectations will continue to underperform because industrial economic activity has moderated. We would avoid capital goods / machinery stocks with incremental gross margin expectations.
4) **Short expensive staples:** Some staples are over-earning due to COVID behavioral shifts, and now embed continued high growth and elevated valuation, creating potential downside as growth eventually disappoints. CLX, SMPL, SKIN are examples of expensive staples.
5) **Short regional banks:** Some rate-sensitive banks have seen strong price-to-tangible book expansion on a changed perception of rates that may ultimately prove to be overly optimistic. SBNY is the most loved bank, so we will take the other side of that.

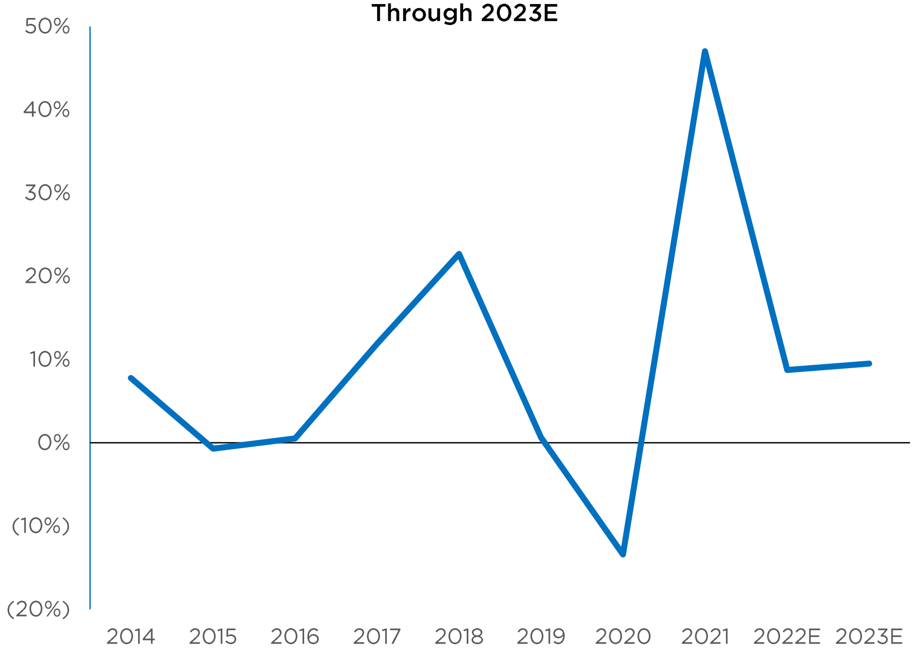
INVESTMENT CONCLUSIONS

- **Gross exposure advice:** We ingest over 150 macro variables and conclude that economic activity has increased again after leveling off the previous two months. Industrial activity is improving but transportation activity has slowed. Corporate profitability has plateaued at high levels. The consumer remains relatively robust. Financial conditions have tightened and Russia has exacerbated oil / commodities imbalances. Investors should be grossing up consumer, energy, and industrials, and should be more confident now in taking larger positions in durables after the massive underperformance in Q1.
- **If risks did not change, anyone could do risk management.** The importance of measuring "work from home" vs. "reopening" exposure crossed with quality and junk, inflation exposure, and the unprecedented correlation of signals in certain segments like industrials are all huge risks that grew after COVID-19 roiled markets in Q1 2020. When considering risk, investors should consider correlation convexity and negative asymmetric beta. We also wrote about crypto as a new risk to monitor.
- **Growth managers should avoid expensive stocks with new CEOs**, as 65% of these stocks underperform over the next 4 to 8 months. They also should question whether buybacks are prudent, as in aggregate this has destroyed value since the financial crisis. The initial reaction to deals is prescient, as acquirers buying more than 20% of their market capitalization that lag the market for the first week of trading post the announcement tend to lag for nearly two years. Buybacks have recently failed, where as dividend growth is a sustainably good strategy as interest rates rise.

WE THINK EARNINGS ARE LIKELY TO GROW FOR THE SP500

Our base case is still that 2022 earnings are above 2021, and that 2023 earnings are above 2022. Mark-to-market, the probability that 2023 earnings are below 2022 is slightly higher now than it was three months ago, as a result of a slowing economy and war. Today, the consensus bottom-up analyst earnings estimates are for $227.81 in earnings, about 8% earnings growth (left chart) above the $209.49 virtually complete 2021 earnings. In our judgment, 5% growth for 2022 is a reasonable base-case. In that scenario, earnings would be $220, and with the SP500 is currently trading around 20x forward earnings. A range of 2022 earnings growth outcomes and price-to-forward earnings is shown on the right table. Paying 22x about 10% earnings growth (with a belief 2023 earnings are above 2022 earnings) would drive 10% upside (right table).

SP500 Consensus Earnings Growth Through 2023E

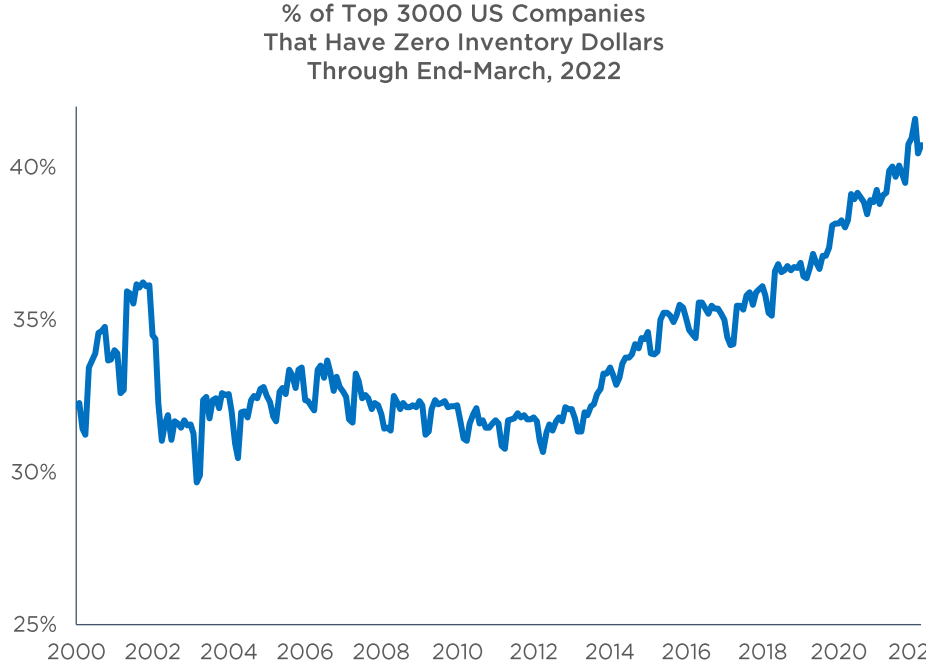


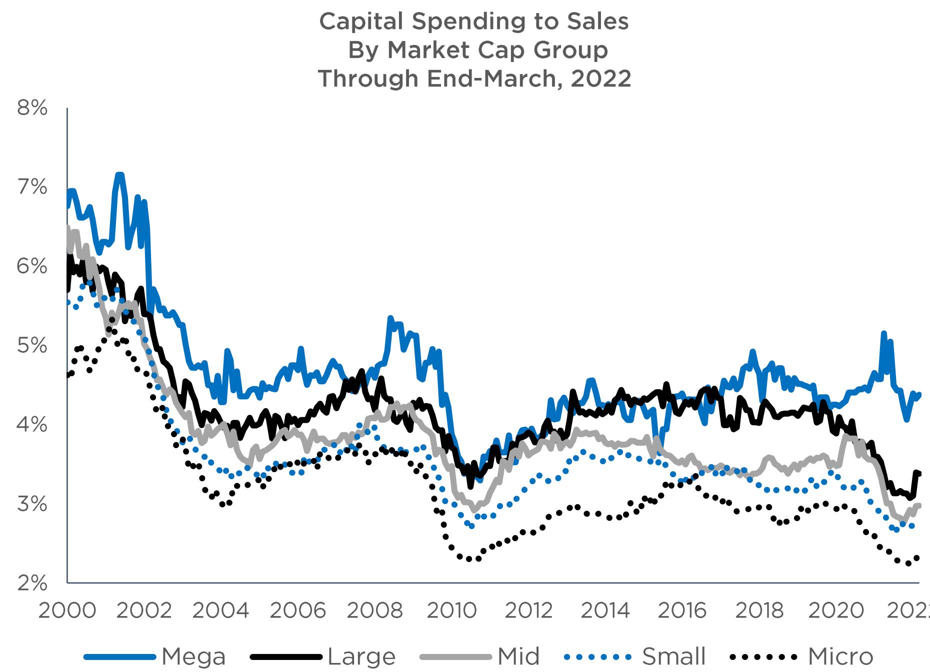
Implied Upside/Downside of SP500

Price-to-Forward Earnings	2022E Earnings Growth					
	(10.0%)	(5.0%)	0.0%	5.0%	10.0%	15.0%
17x	(21.2%)	(16.8%)	(12.4%)	(8.0%)	(3.7%)	0.7%
18x	(17.0%)	(12.4%)	(7.8%)	(3.2%)	1.4%	6.0%
19x	(12.9%)	(8.0%)	(3.2%)	1.6%	6.5%	11.3%
20x	(8.7%)	(3.7%)	1.4%	6.5%	11.5%	16.6%
21x	(4.6%)	0.7%	6.0%	11.3%	16.6%	21.9%
22x	(0.4%)	5.1%	10.6%	16.2%	21.7%	27.2%
23x	3.7%	9.5%	15.2%	21.0%	26.8%	32.5%

INVENTORY AND CAPITAL SPENDING ARE NOT BURDENS TO PROFITS

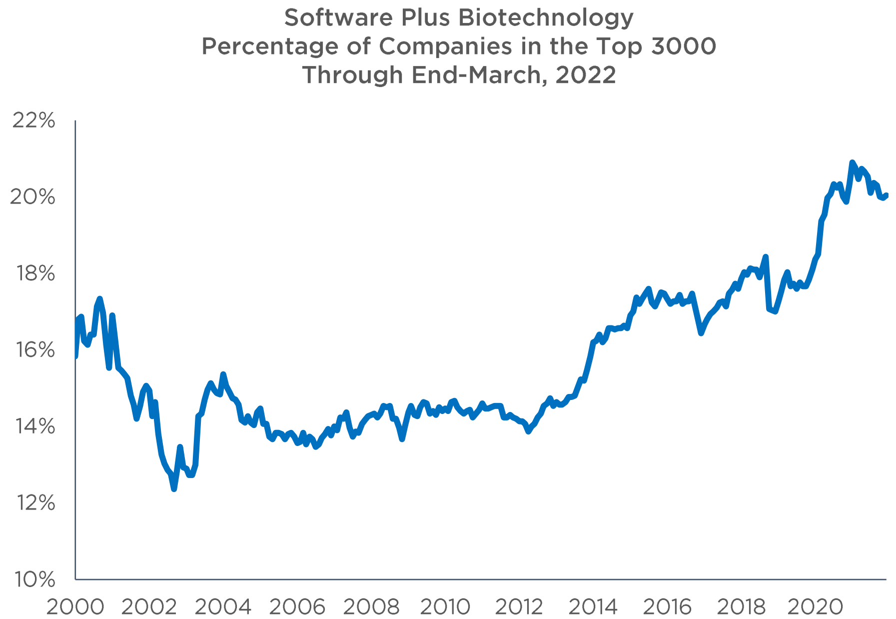
We do not believe that margins for US companies will mean-revert to a long-term average. Overall inventory is less of a risk than it was in the past, because over 40% of the top 3000 US equities now do not even *have* inventory (left chart). That is roughly 300 more stocks than 20 years ago. Moreover, we are still more likely to hear about shortages (semiconductor supply chain) than excesses in many areas of manufacturing today. Therefore, an inventory burn off or backlog cancellation seems highly unlikely to impede margin expectations resulting from higher factory absorption for the coming couple of quarters. Instead, 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), with large cap capital intensity near 20-year lows.

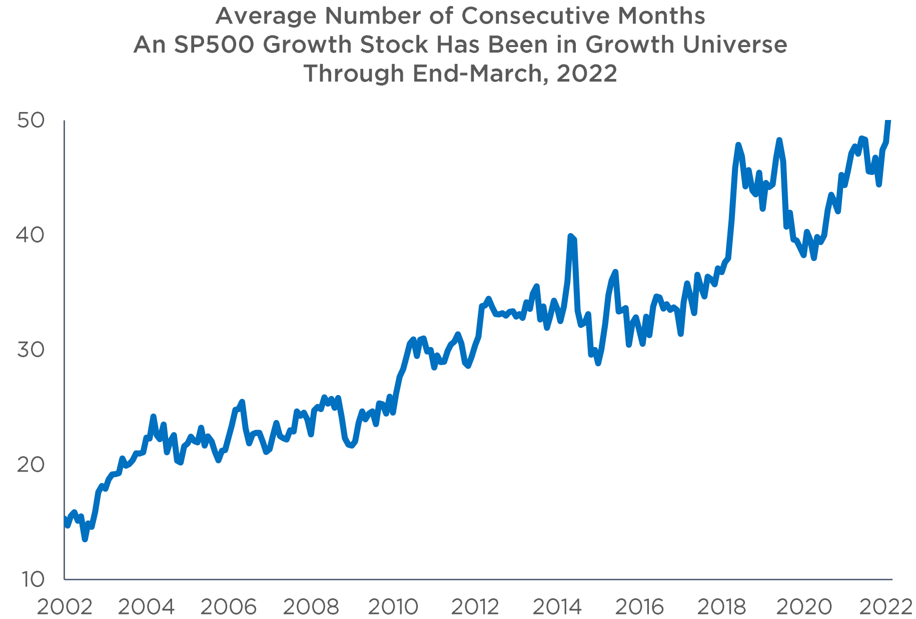




IS VALUATION DEFENSIBLE? CONSTITUENTS HAVE SHIFTED

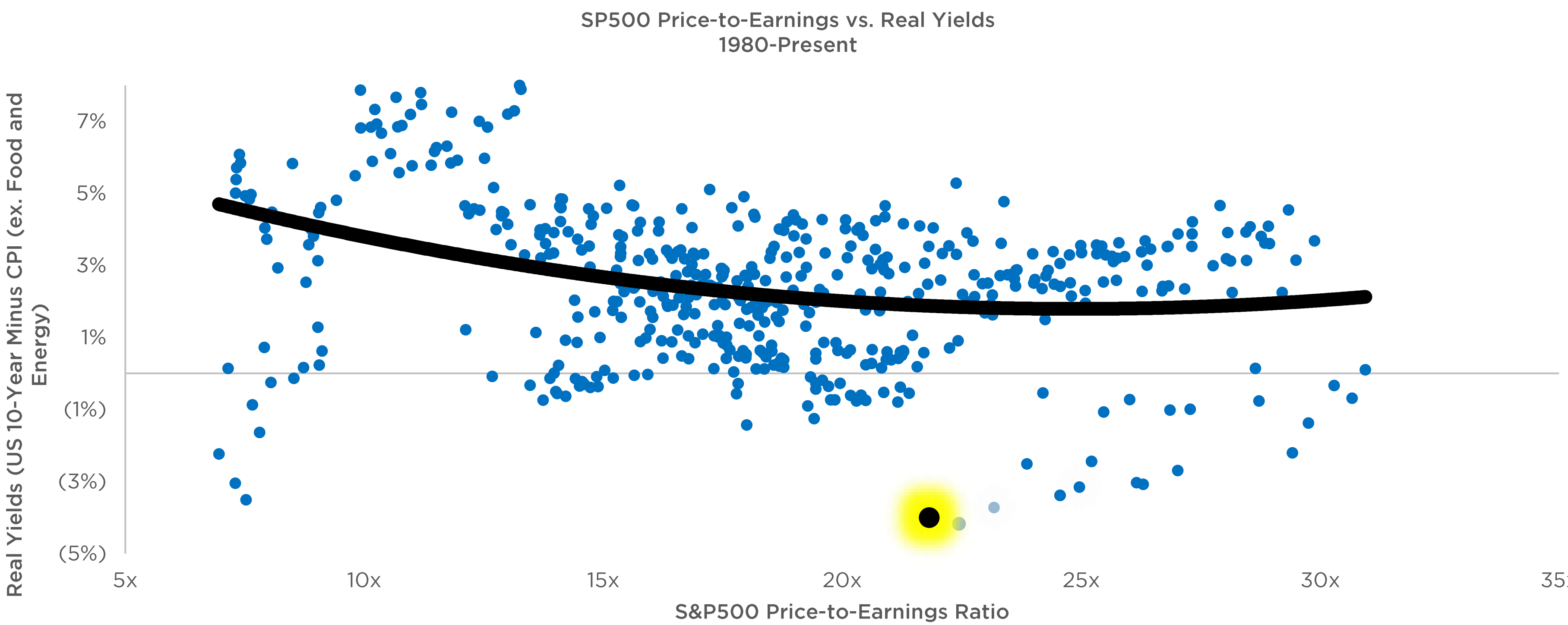
Roughly 20%, or 600 of the biggest 3000 public US equities are currently in the Software & Services or Pharmaceuticals, Biotechnology, and Life Sciences industries. That is nearly twice the number we had 20 years ago! Investors are buying long-dated potential growth, not current profitability (left chart). 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.





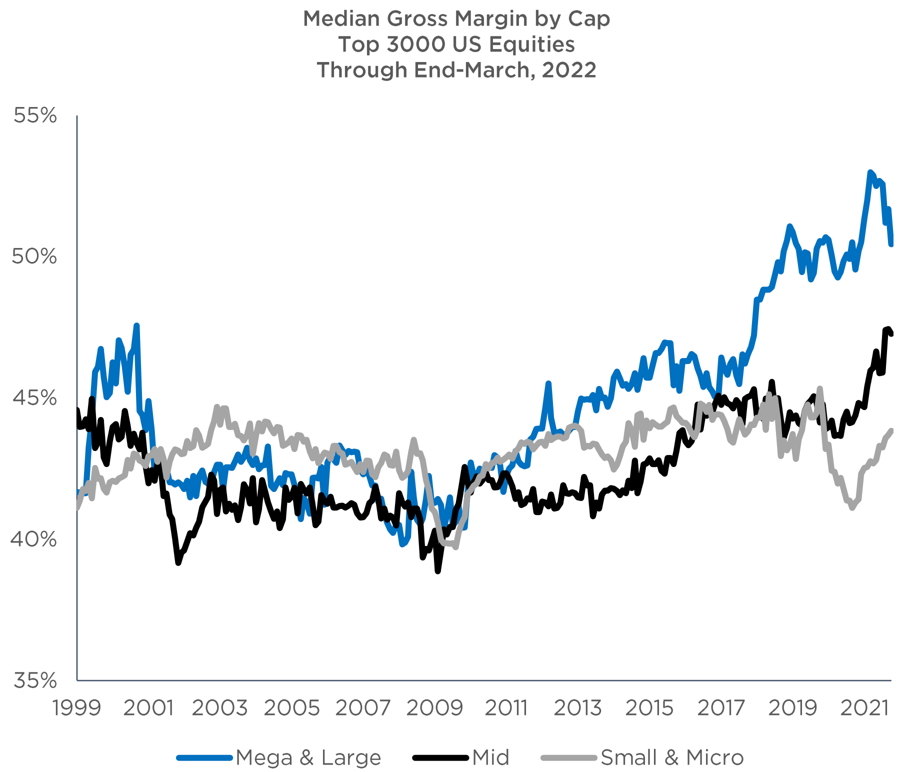
THE RELATIONSHIP BETWEEN REAL YIELDS AND MULTIPLES IS BROKEN

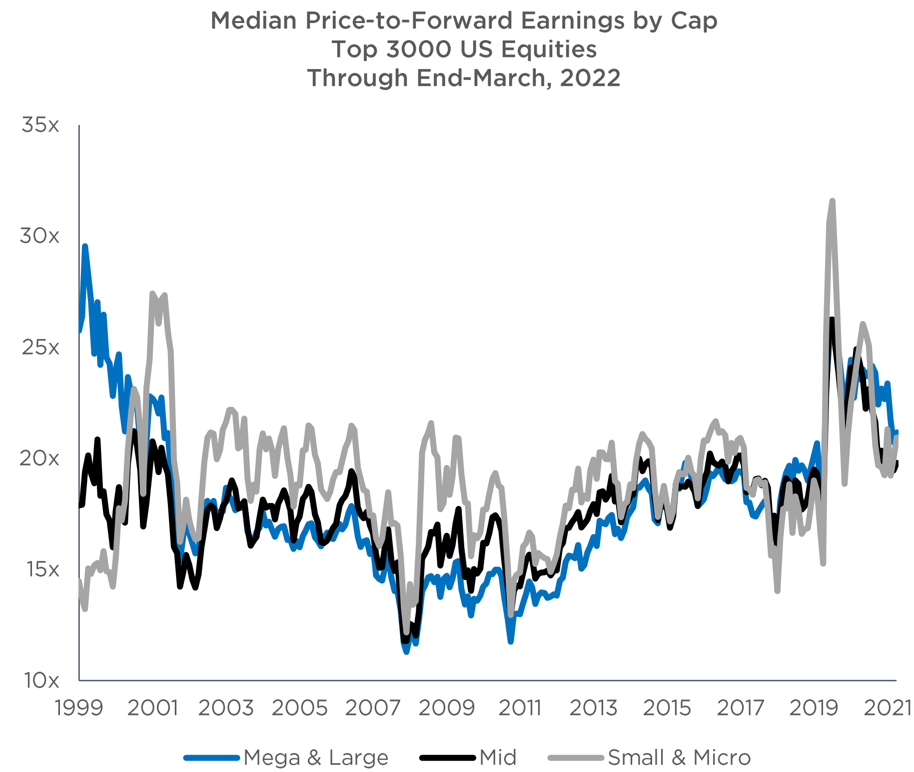
The interest rate environment is an important metric for assessing an appropriate price-to-earnings ratio for the overall market and individual stocks within it. Historically extreme real yields were accompanied by lower multiples because they were considered risk regimes. But when real-yields are negative, that are two clusters, as the market has determined that 10% minus 12% (an example of the 10-year yield minus CPI from the early 1980s) is different than 2.4% minus 6.5% (roughly today's figures). The US equity market offers 2% total yield (net buyback plus dividend), 2% growth from enhancement, and 3-5% organic growth, meaning the total return algorithm is 7-9%, which is far more attractive than other asset classes.



LARGE CAP PROFITABILITY JUSTIFIES HIGHER MULTIPLES

The median gross margin of large caps didn't dip during COVID but has started to rollover recently (left chart), potentially at least partially justifying above average price-to-forward earnings multiples for the median large cap stocks (right side). Small and micro-cap profitability still has more room for expansion, thought multiples remain elevated for the median smaller stock.





Q1 EXPECTATIONS ARE DOWN BUT 2022 FULL YEAR NUMBERS ARE UP

Earnings expectations declined for the SP500 for Q1, but rose for the remaining quarters for the year, such that 2022 estimates are now 1.8% higher than they were on January 1st. Energy numbers have come up the most, now 34% higher than three months ago, with materials and REITS also higher. Industrials stocks saw the most downward revisions during the quarter, now 12.9% lower for Q1 and 4.6% lower for the full 2022 year than they were than at the end of last year.

Q1 2022 EPS Revisions: March 31, 2022 vs. December 31, 2021

Sector	1Q22E	2Q22E	3Q22E	4Q22E	2022E
S&P 500	(1.3%)	1.4%	2.8%	4.1%	1.8%
Energy	25.7%	40.9%	36.3%	33.2%	34.1%
Financials	(3.2%)	(0.5%)	0.2%	0.7%	(0.7%)
Health Care	(1.2%)	0.4%	2.7%	2.2%	1.0%
Materials	(0.6%)	7.3%	10.2%	12.9%	7.2%
Info Tech	1.9%	1.6%	2.3%	5.3%	2.9%
REITS	5.1%	2.9%	5.2%	2.9%	4.0%
Utilities	2.0%	0.2%	(1.8%)	(5.3%)	(1.1%)
Communication Services	(5.5%)	(3.6%)	(2.4%)	(1.0%)	(3.0%)
Consumer Staples	(3.9%)	(1.8%)	(1.6%)	2.6%	(1.1%)
Consumer Discretionary	(12.3%)	(4.5%)	0.7%	4.2%	(2.3%)
Industrials	(12.9%)	(6.3%)	(1.8%)	0.6%	(4.6%)

EARNINGS EXPECTATIONS TROUGH IN Q2 AND ACCELERATE AFTER

Current bottom-up earnings expectations are for 8% growth for the SP500 for 2022. While Q1 numbers were modestly downwardly revised the remaining quarters have seen upward revisions so far this year. Expectations generally rise through the year, except for in financials and REITS. Despite the industrials sector seeing the most negative earnings revisions of any sector in the market during Q1, we still see estimates as too optimistic in the second half of the year.

Bottom-Up Analyst Earnings Growth Expectations
April 1, 2022

Sector	3Q21	4Q21	2021	1Q22E	2Q22E	3Q22E	4Q22E
S&P 500	36.7%	27.5%	47.0%	5.4%	6.2%	10.3%	12.7%
S&P ex-Financials	38.0%	31.9%	42.3%	13.5%	12.6%	13.8%	15.7%
Consumer Discretionary	12.1%	9.6%	70.3%	(13.8%)	15.2%	37.7%	47.5%
Consumer Staples	(1.8%)	4.9%	6.5%	0.6%	2.5%	11.3%	8.2%
Energy	(1977.7%)	N/A	N/A	245.9%	125.5%	44.5%	8.4%
Financials	30.9%	9.7%	71.9%	(23.6%)	(20.1%)	(6.4%)	(2.0%)
Health Care	25.5%	23.0%	22.6%	10.1%	9.6%	4.9%	7.3%
Industrials	66.6%	85.3%	78.6%	30.0%	21.3%	33.4%	51.5%
Info Tech	34.6%	19.9%	32.2%	9.2%	7.4%	8.9%	13.4%
Materials	82.2%	45.5%	75.3%	37.4%	10.4%	5.9%	9.3%
Communication Services	36.6%	12.4%	38.7%	(5.8%)	(3.6%)	3.0%	12.3%
Utilities	5.9%	1.2%	5.0%	10.0%	(11.2%)	(2.5%)	13.2%
REITS	22.8%	46.3%	24.7%	14.8%	6.9%	12.9%	(9.3%)

SP500 INDEX CHANGES HAVE A BIG IMPACT ON ITS PERFORMANCE

We analyzed the additions and drops to the SP500 over the last 20+ years. We found that on average 5.5% of the stocks change each year and the cumulative impact is substantial. Few investors focus on the importance of their key benchmark being a constantly enhanced moving target.

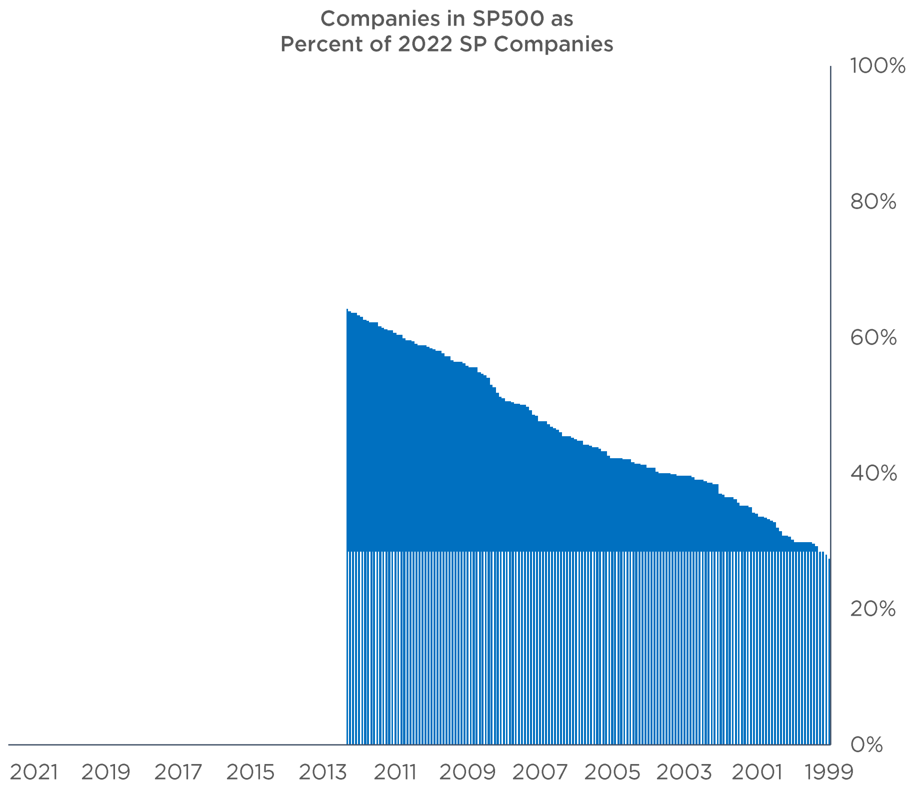
Valuation boost: The overall impact of constantly adding companies that grow faster and have higher profitability ultimately impacts the valuation of the market. Over the last 20 years, the average price-to-sales for a stock added to the SP500 is 3.2x at the time of inclusion vs. only 1.5x sales for the average stock at the time of being dropped, with much of that enormous differential created in the last decade.

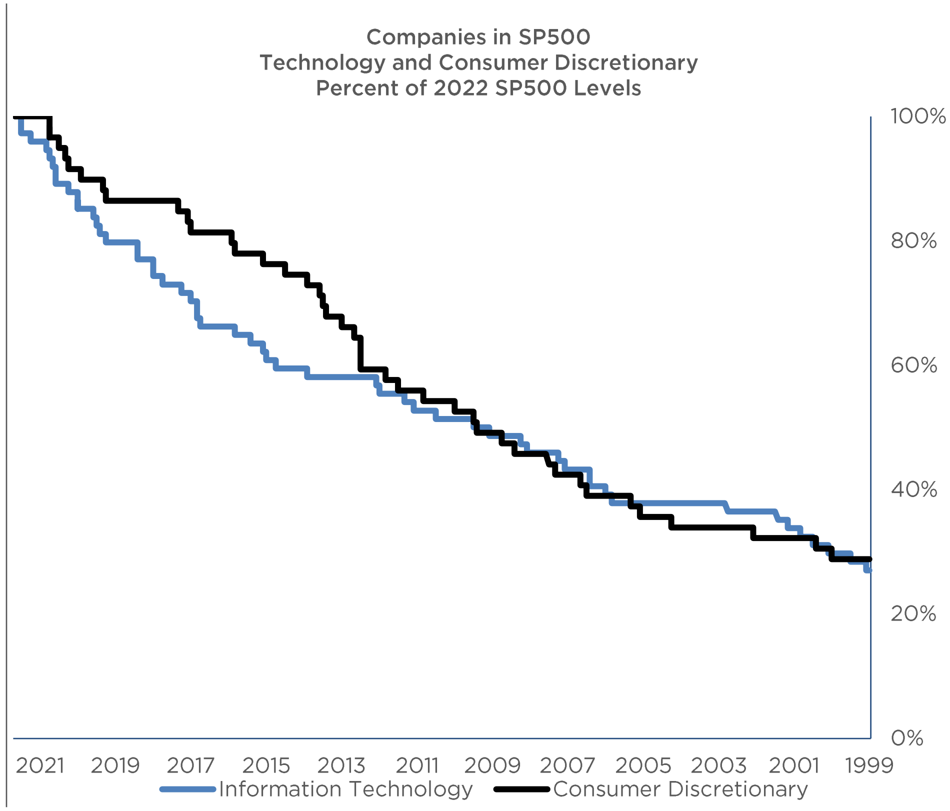
Aggregate impact: Over the last decade, the impact of the of these add / drops alone has boosted earnings growth by 2.2% annually, and the market multiple by 0.18x. This partially explains higher market valuations today than history, and the challenges of beating the SP500, which is really a constantly enhanced moving target.

Investment conclusion: In order to capture some of the performance of the additions and avoid that of the deletions, we created two proprietary "potential add and potential drop" baskets to the SP500. This is not a predictive model where we back-test whether names were ultimately included, and names in both baskets could already be in the official index. The point is to capture names that are just smaller than the SP500 cut-off on market capitalization that are not melting ice cubes as longs, and short those that are melting ice cubes. Our "potential add" basket strongly outperforms the SP500, whereas our "potential drops" basket underperforms. We think adding these basket is a good structural alpha- generative hedge. Please let us know if you are interested.

75% OF THE SP500'S CONSTITUENTS WERE NOT THERE 20 YEARS AGO

The impact of this constant replacement of existing / poorer companies with new / stronger companies has a massive impact on the market constituents over time. In fact, only 25% of the companies in the SP500 today were in the SP500 in 1999, and about half are new since 2013 (left chart). In certain more idiosyncratic sectors where many managers purposely go to generate alpha, like technology and consumer discretionary, nearly 80% of the companies in the index today were not there 20 years ago (right chart). We have heard some more experienced portfolio managers bemoan how experience sometimes seems anti-correlated with success in recent years, and perhaps this is partially merited by the massive turnover in companies since these investors originally formulated their investment heuristics.





THE IMPACT OF CONSTANTLY IMPROVING THE INDEX IS MASSIVE

The impact of constantly improving the index might seem small on a short-term basis but over time the constant upward bias of adding faster growing and more profitable names makes a big difference. Over the last 20 years, the SP500 has grown revenue 6.6% and earnings 11.5% per annum ex-Financials. Stocks being added to the index grow earnings 31.4%, vs. those being deleted having declining earnings of 15% (left chart). Additions / deletions alone add 2% per year to the SP50) earnings growth.   Since 2012 (right chart), the average addition traded at 4.13x sales vs. the average deletion at 1.26x and a market at 2.2x sales.

Avg Annual Contribution of Adds/Drops to SP500 Attributes, Last 20 Years

Attribute	SP500	Adds	Drops	Net Contribution of Adds/Drops
YoY Revenue Growth	6.6%	13.7%	1.2%	0.6%
Gross Margin	47.8%	42.7%	42.6%	0.1%
Net Margin	11.5%	9.3%	5.0%	0.2%
YoY Earnings Growth	10.6%	31.4%	(15.0%)	2.2%
Price-to-Forward-Sales	2.04x	3.20x	1.50x	0.16x
Price-to-Forward-Earnings	17.96x	22.05x	18.78x	0.18x

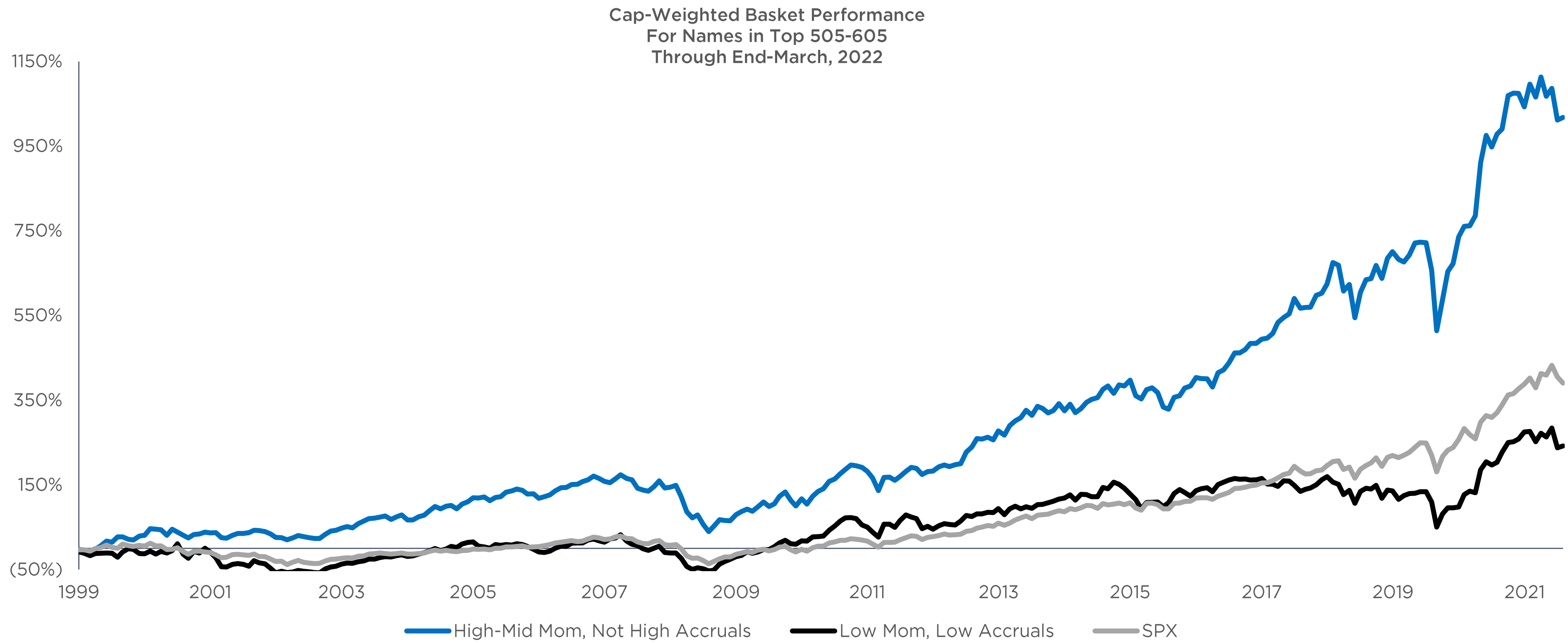
Avg Annual Contribution of Adds/Drops to SP500 Attributes, Last 10 Years

Attribute	SP500	Adds	Drops	Net Contribution of Adds/Drops
YoY Revenue Growth	5.3%	11.3%	(1.4%)	0.6%
Gross Margin	49.2%	46.6%	42.7%	0.2%
Net Margin	13.2%	9.7%	5.7%	0.2%
YoY Earnings Growth	11.2%	29.3%	(12.5%)	2.0%
Price-to-Forward-Sales	2.20x	4.13x	1.26x	0.21x
Price-to-Forward-Earnings	18.42x	26.78x	17.64x	0.44x

Note: Metrics ex-financials

WE CREATED PROPRIETARY "POTENTIAL ADD / DROP" BASKETS

In order to capture some of the performance of the additions and avoid that of the deletions, we created two proprietary "potential add and potential drop" baskets to the SP500. This is not a predictive model where we back-test whether names were ultimately included, and names in both baskets could already be in the official index. The point is to capture names that are just smaller than the SP500 cut-off on market capitalization that are not melting ice cubes as longs, and short those that are melting ice cubes. Recall our prior work shows that avoiding stocks with high accruals and poor relative price momentum is prudent. Below notice our inclusion basket in blue, vs. the SP500 and the melting ice cubes among the 100 stocks just below the top 500 by market-capitalization.



WHEN CAN YOU OWN SMALL CAPS?

Conclusion: The risk-reward favors increasing exposure toward small caps.

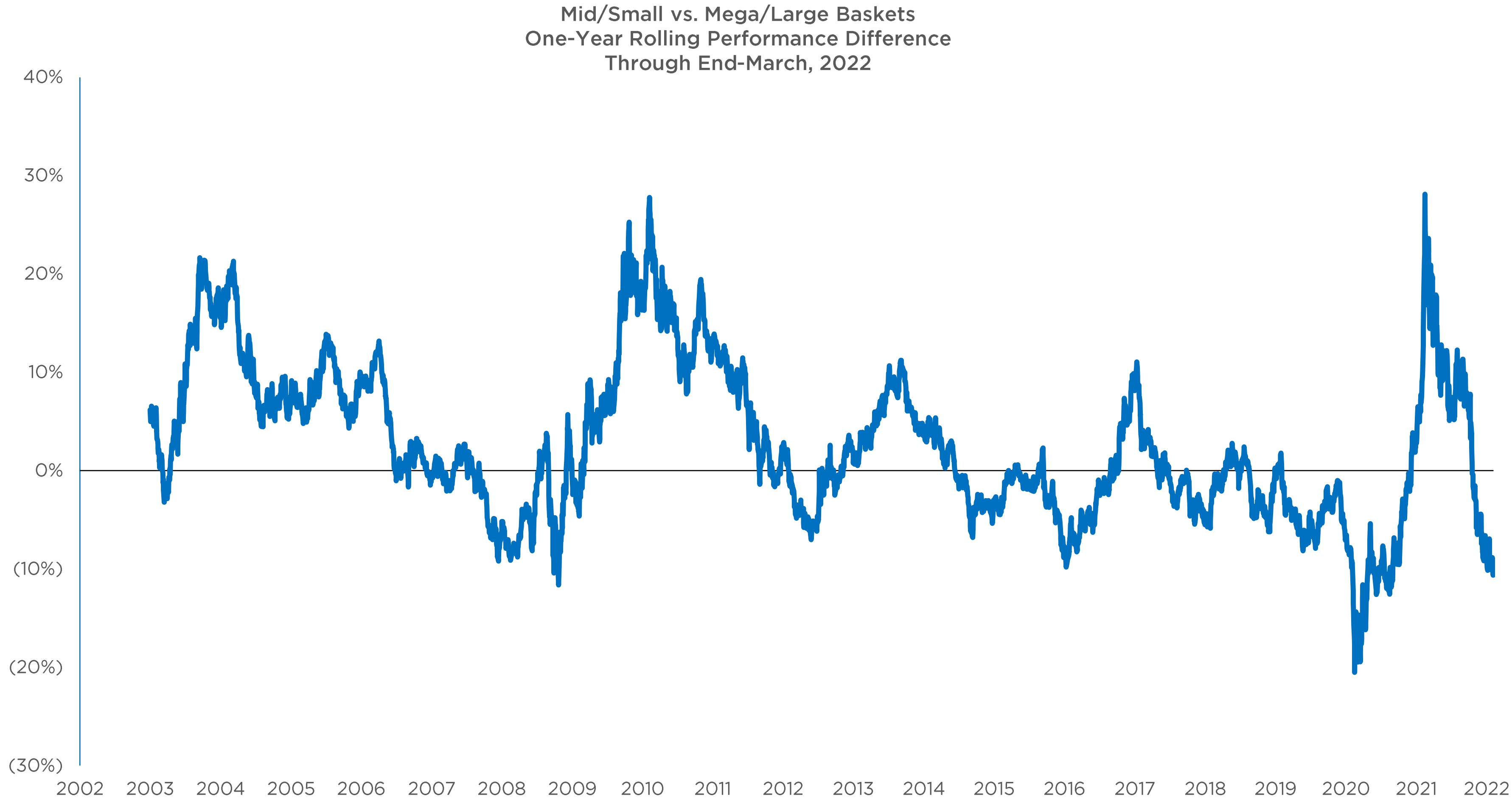
1) **Small caps have lagged:** The relative weakness has been pronounced.
2) **Macro conditions favor small caps:** Activity, currency, and corporate profitability from Trivariate's macro gauges indicates today's environment favors small caps
3) **Valuation vs. profit paradigm:** Adjusting for historical differences, the price for today's profits is more

Why would now be the inflection? This cycle has been different because large caps on average can raise pricing and absorb inflationary pressures more than small caps. Investors didn't reward small caps, fearful that conditions could rollover. However, a strong dollar hurts relative estimate achievability of large caps, with recent margin trends favoring small caps but not being discounted. Obviously, there are meaningful sectoral differences, like more banks and utilities in the small cap universe, but today's relative multiple appears to more than adjust for these differences. A big criticism of owning small caps we worry about is wage pressure is a more US-centric phenomena.

Our judgment is to look for small compounders - i.e. stocks with consistent gross margin expansion that are forecasted to have further expansion this next quarter - as that basket has outperformed over the long-term and seems particularly relevant in an environment where gross margins are a paramount concern.

SMALL CAPS HAVE HAD ONE OF THEIR WORST PERIODS IN 20 YEARS

Small caps have lagged over the last 18-months, the worst relative period other than COVID and the Financial Crisis in over 20 years. Many US-focused equity managers rightfully and intentionally seek for differentiation in smaller cap names, but have been fishing from an inferior asset class, both in the up tape in 2021 and the down tape year-to-date.



SMALL CAP BEATS LARGE WHEN OUR INDICATORS ARE INCREASING

We evaluated the performance of small vs. large cap US equities in the various regimes of our macro gauges. For the past 20 years we show how often each gauge indicates conditions are increasing, decreasing, positive, or negative, or whether it is in a "no trend" in between stage. We also show the count and percentage of how often small caps beat large caps under each macro condition. The left side shows industrial activity, consumer activity, and economic activity, the right oil, currencies, corporate profitability, and financial conditions. Our primary observation is that in general, change matters more than level: small outperforms large **especially in times when are indicators are increasing,** with this slope having a large impact than solely looking at whether conditions are favorable moment-in-time. This effect is most pronounced when looking at industrial and consumer activity. Today's conditions are shaded in gray.

Small/Large Regime Counts by Trivariate Indicator Since 2002

Indicator	Regime	Negative/ Decreasing	Negative/ Increasing	Positive/ Decreasing	Positive/ Increasing	No Trend
Industrial Activity	Small Beating Large	12	10	20	22	67
	Small Lagging Large	13	2	19	19	57
	% Small Beating Large	48%	83%	51%	54%	54%
Consumer Activity	Small Beating Large	8	13	25	40	45
	Small Lagging Large	10	5	26	31	38
	% Small Beating Large	44%	72%	49%	56%	54%
Economic Activity	Small Beating Large	2	0	38	32	59
	Small Lagging Large	2	2	30	25	51
	% Small Beating Large	50%	0%	56%	56%	54%

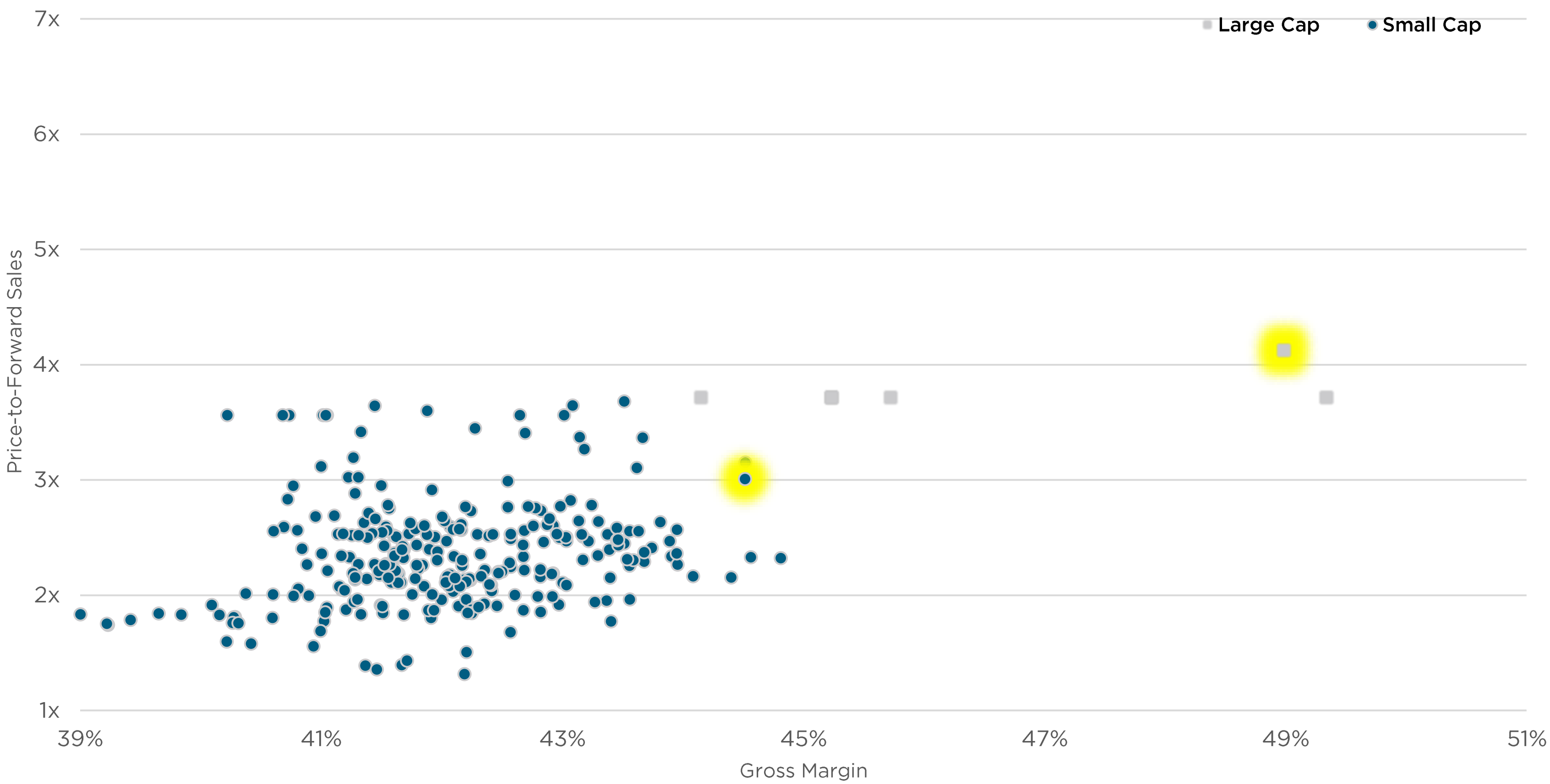
Small/Large Regime Counts by Trivariate Indicator Since 2002

Indicator	Regime	Decreasing	Increasing	No Trend
Oil	Small Beating Large	59	58	14
	Small Lagging Large	50	50	10
	% Small Beating Large	54%	54%	58%
Currencies	Small Beating Large	64	54	13
	Small Lagging Large	60	41	9
	% Small Beating Large	52%	57%	59%
Corporate Profitability	Small Beating Large	33	44	54
	Small Lagging Large	30	33	47
	% Small Beating Large	52%	57%	53%
Financial Conditions	Small Beating Large	56	55	20
	Small Lagging Large	38	55	17
	% Small Beating Large	60%	50%	54%

SMALL CAPS APPEAR CHEAPER RELATIVE TO THEIR PROFIT PROFILE

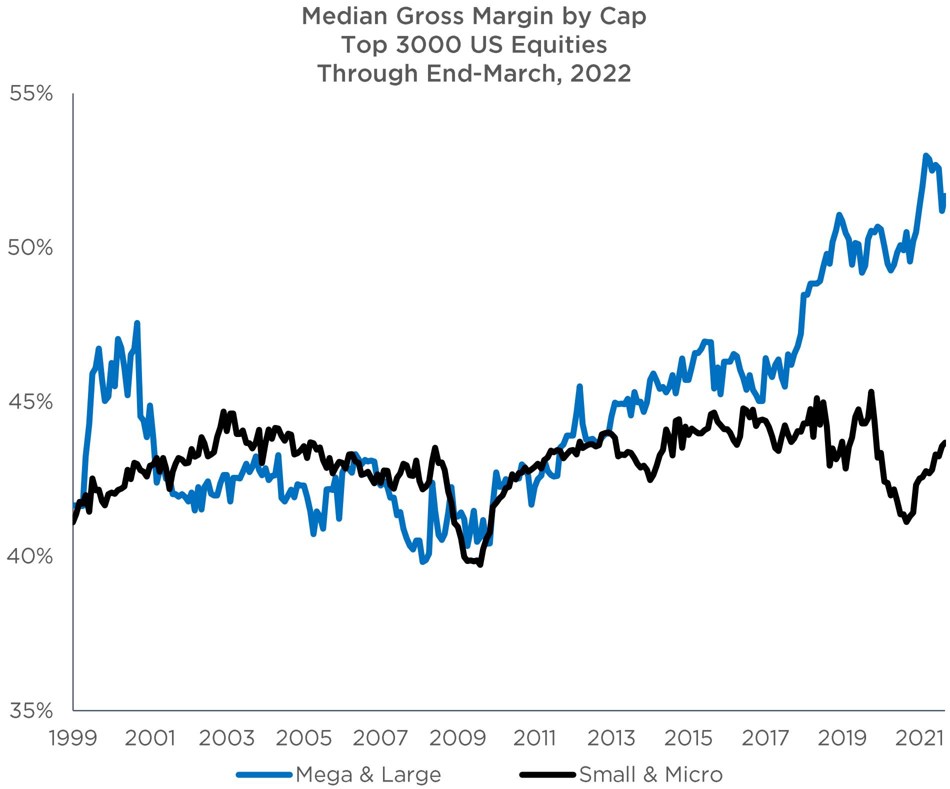
We evaluated the gross margins and price-to-sales on a monthly basis of the large and small cap. universes. It appears the market is paying more today for the large cap profits than small, adjusted for the difference, meaning either multiple contraction is a greater risk for large caps if profits fall, or expansion is more likely for small caps if margins expand. Said differently, small cap margins are relatively high vs. history but the multiple is not.

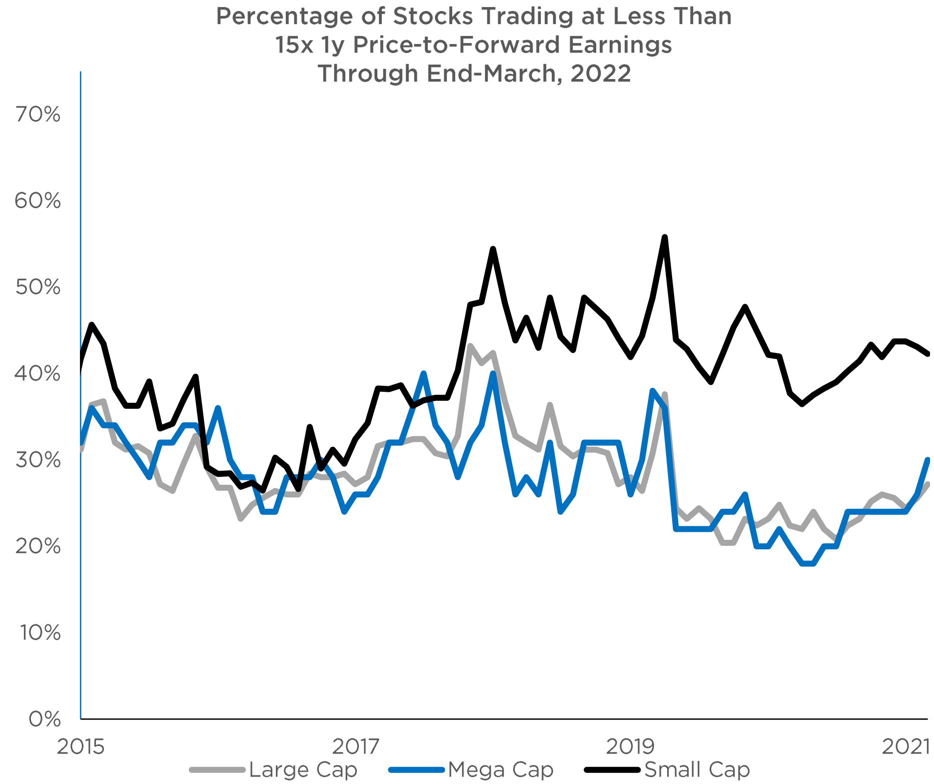
Large vs. Small Cap Gross Margins vs. Price-to-Forward Sales
Monthly, Last 20 Years



SMALL CAP MARGINS HAVE STARTED TO RELATIVELY IMPROVE

A potential reason for poor small cap performance the last 18 months is the strength of large cap profits on a relative basis (left). However, recently large cap margins have modestly receded while small caps have expanded as currency, wage pressures, and limits to price increases started to take hold. Meantime, small cap margins have now started to inflect higher and are still well below the trailing 10-year average, signaling some potential for expansion is possible if the economy continues to grow. There also appears to be ample small-cap single stock opportunity, as nearly 50% of small cap stocks trade below 15x forward earnings (right).





SMALL CAP COMPOUNDERS COULD BE GOOD LONG IDEAS

Long ideas in small cap with consistent gross margin expansion are shown below.

Small Cap Compounders, As of End-March, 2022

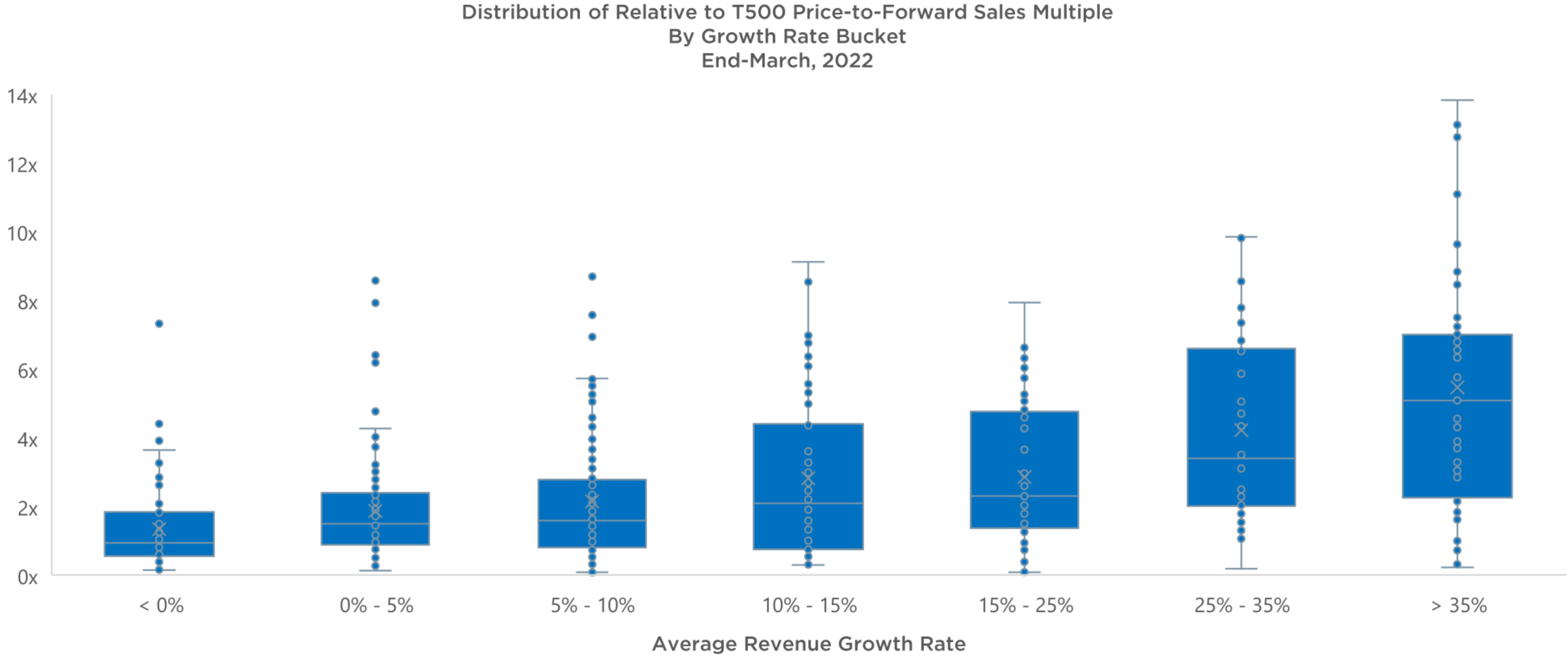
Ticker	Company Name	Industry Group	Market Cap ($ US. Bil)
DBX	Dropbox, Inc.	Software & Services	8.87
LSCC	Lattice Semiconductor Corporation	Semiconductors & Semiconductor Equipment	8.38
SYNA	Synaptics Incorporated	Semiconductors & Semiconductor Equipment	7.88
LITE	Lumentum Holdings Inc.	Technology Hardware & Equipment	7.05
AZTA	Azenta, Inc.	Semiconductors & Semiconductor Equipment	6.15
AN	AutoNation, Inc.	Retailing	6.11
IRDM	Iridium Communications Inc.	Telecommunication Services	5.18
ALTR	Altair Engineering Inc.	Software & Services	5.13
PRFT	Perficient, Inc.	Software & Services	3.81
VRNT	Verint Systems Inc.	Software & Services	3.35
CCOI	Cogent Communications Holdings, Inc.	Telecommunication Services	3.10
MTH	Meritage Homes Corporation	Consumer Durables & Apparel	2.91
EPAY	Bottomline Technologies, Inc.	Software & Services	2.55
AIMC	Altra Industrial Motion Corp.	Capital Goods	2.53
AVID	Avid Technology, Inc.	Technology Hardware & Equipment	1.56
SPNS	Sapiens International Corporation N.V.	Software & Services	1.40

SUMMARY OF VIEWS ON GROWTH STOCKS

- 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.
- 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 over 40% faster than its average over the next year, but its relative sales multiple is less than half of its long-term average, as oil prices recover. Software is expected to grow 9% slower than average but is 35% more relatively expensive than average.
- We analyzed attributes associated with compounding and found that sustained gross margin growth produces the highest level of subsequent stock performance, more than sustained revenue growth, net margin growth, earning per share growth, and stock performance. Attributes associated with identifying "melting ice cubes" are different – what matters is accruals and prior weak stock performance relative to peers.
- New CEOS for expensive growth stocks can underperform.

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!**



LONG / SHORT GROWTH STOCK IDEAS

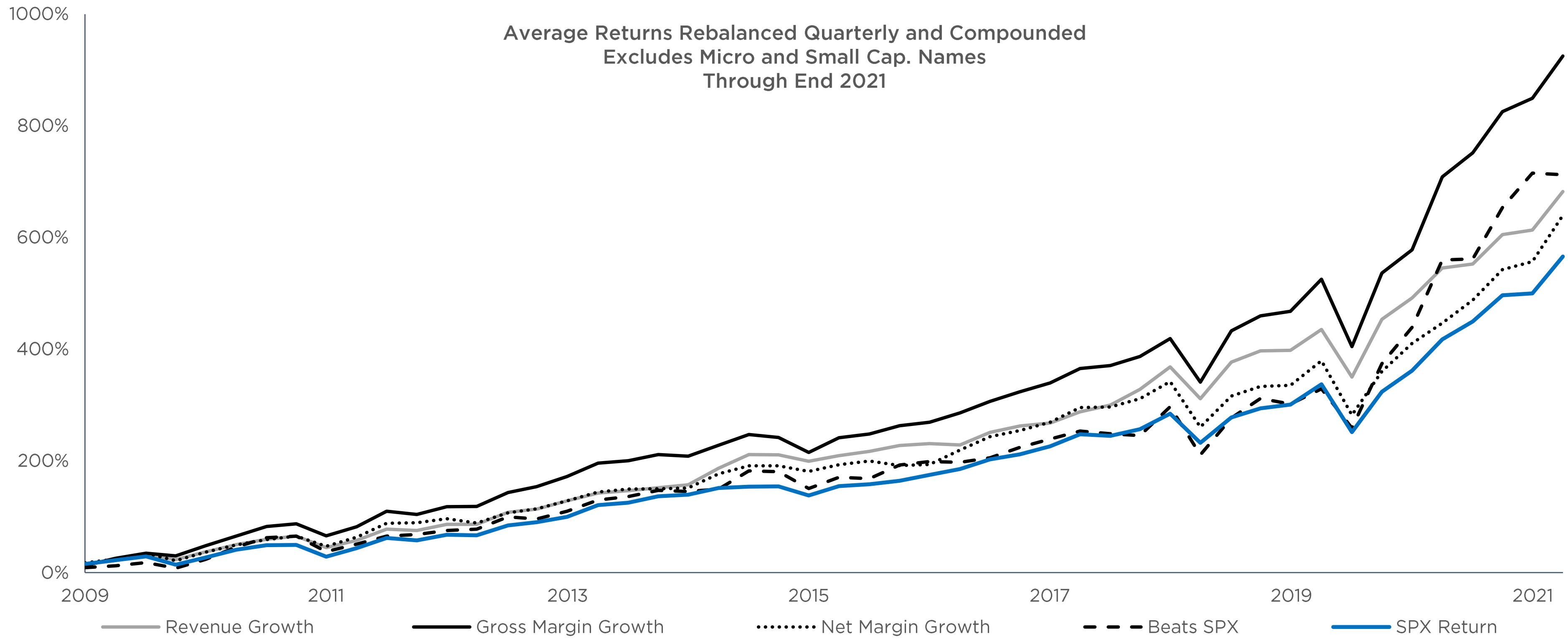
Current ideas where revenue growth is forecasted to accelerate but relative multiples are low (left) and where growth is forecasted to slow but multiples are high (right).

Buy Cheap Relative to Bucket or Moving to Higher Revenue Bucket, Short Expensive Relative to Bucket or Moving to Lower Revenue Bucket
End-March, 2022

Long				Short			
Ticker	Company Name	Industry Group	Market Cap ($ US. Bil)	Ticker	Company Name	Industry Group	Market Cap ($ US. Bil)
GM	General Motors Company	Automobiles & Components	63.56	NVDA	NVIDIA Corporation	Semiconductors & Semiconductor Equipment	683.79
MAR	Marriott International, Inc.	Consumer Services	57.51	V	Visa Inc.	Software & Services	465.27
CNC	Centene Corporation	Health Care Equipment & Services	49.07	MA	Mastercard Incorporated	Software & Services	349.33
ABC	AmerisourceBergen Corporation	Health Care Equipment & Services	32.36	ABT	Abbott Laboratories	Health Care Equipment & Services	208.73
DHI	D.R. Horton, Inc.	Consumer Durables & Apparel	26.40	UPS	United Parcel Service, Inc.	Transportation	186.82
DAL	Delta Air Lines, Inc.	Transportation	25.21	NFLX	Netflix, Inc.	Media & Entertainment	166.30
CCL	Carnival Corporation & plc	Consumer Services	23.32	LOW	Lowe's Companies, Inc.	Retailing	133.76
WAB	Westinghouse Air Brake Technologies Corporation	Capital Goods	17.82	ISRG	Intuitive Surgical, Inc.	Health Care Equipment & Services	108.36
CHWY	Chewy, Inc.	Retailing	17.15	PSA	Public Storage	Real Estate	68.44
CZR	Caesars Entertainment, Inc.	Consumer Services	16.56	DXCM	DexCom, Inc.	Health Care Equipment & Services	49.66
CAH	Cardinal Health, Inc.	Health Care Equipment & Services	15.71	WELL	Welltower Inc.	Real Estate	43.01
UAL	United Airlines Holdings, Inc.	Transportation	15.05	NET	Cloudflare, Inc.	Software & Services	38.79
AMC	AMC Entertainment Holdings, Inc.	Media & Entertainment	12.73	SBAC	SBA Communications Corporation	Real Estate	37.17
Z	Zillow Group, Inc.	Real Estate	12.28	ZS	Zscaler, Inc.	Software & Services	34.04
AAL	American Airlines Group Inc.	Transportation	11.85	MTCH	Match Group, Inc.	Media & Entertainment	31.01
W	Wayfair Inc.	Retailing	11.64	VRSN	VeriSign, Inc.	Software & Services	24.51
CVNA	Carvana Co.	Retailing	10.75	MAA	Mid-America Apartment Communities, Inc.	Real Estate	24.16
H	Hyatt Hotels Corporation	Consumer Services	10.50				

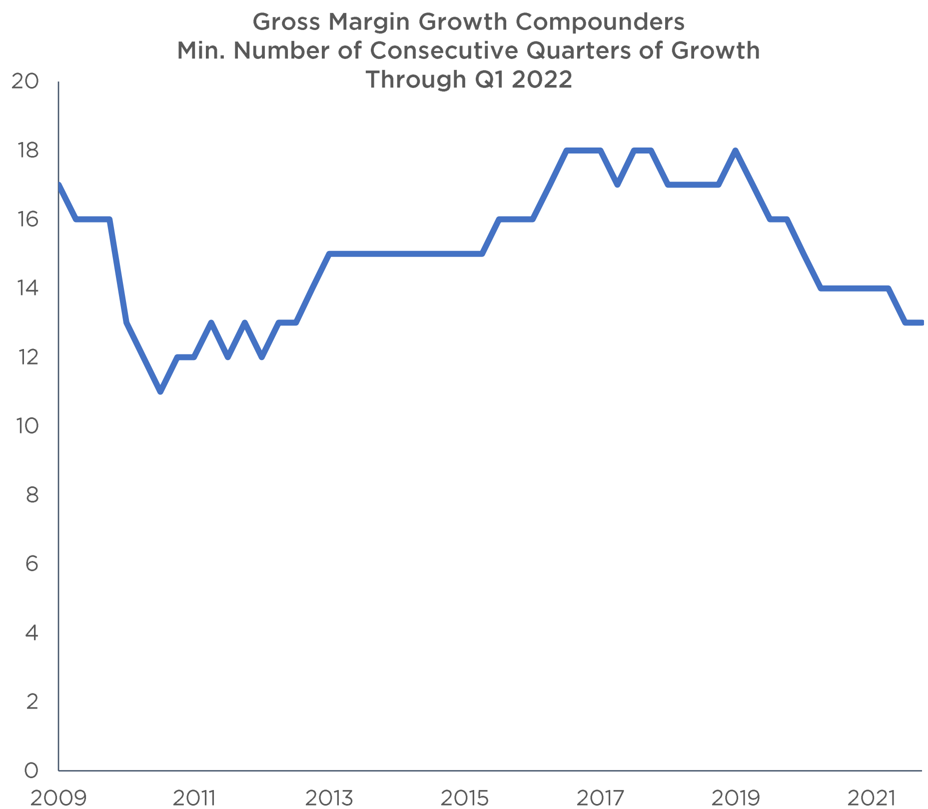
BUY CONSISTENT GROSS MARGIN EXPANDERS

Of the four signals we studied (prior relative stock performance, revenue growth, gross margin expansion, and net margin expansion) buying stocks in the top 10% of consistent previous gross margin expansion resulted in the best subsequent stock performance.   While all four approaches beat the SP500, the consistency and total performance of the gross margin approach far bested the others. Net margin growth was clearly the weakest. Prior stock performance was strong, but much of this was generated since COVID.



GROSS MARGIN GROWTH CAN LAST FOR YEARS

Of the ~400 companies with at least two consecutive quarters of gross margin growth this last quarter, 35 companies (top decile) had quarterly year-over-year gross margin expansion for at least 13 straight quarters (left chart). This universe of stocks has typically resulted in strong, above market performance. The stocks among this list with forecasted further gross margin expansion include AVGO, AMD and TEAM (right chart) among others.



Gross Margin Growth Compounders
And Forecasted Gross Margin Growth
Q1 2022

Ticker	Company	Industry Group	Market Cap. (US$ Bil.)
AVGO	Broadcom Inc.	Semis & Semi. Equip.	257.09
AMD	Advanced Micro Devices, Inc.	Semis & Semi. Equip.	177.15
MO	Altria Group, Inc.	Tobacco	94.95
TEAM	Atlassian Corporation Plc	Software	74.48
SNAP	Snap Inc.	Interactive Media & Services	58.46
SNPS	Synopsys, Inc.	Software	51.02
ROP	Roper Technologies, Inc.	Industrial Conglomerates	49.87
IDXX	IDEXX Laboratories, Inc.	Health Care Equip. & Supplies	46.09
KEYS	Keysight Technologies, Inc.	Electronic Equip, Inst & Comp.	28.75
HZNP	Horizon Therapeutics	Biotechnology	24.11
GPC	Genuine Parts Company	Distributors	17.89
QRVO	Qorvo, Inc.	Semis & Semi. Equip.	13.46
OTEX	Open Text Corp.	Software	11.44
DBX	Dropbox, Inc.	Software	8.87
CABO	Cable One, Inc.	Media	8.87
LSCC	Lattice Semiconductor Corp.	Semis & Semi. Equip.	8.38
RL	Ralph Lauren Corp.	Textiles, App. & Luxury Goods	8.07
SYNA	Synaptics Incorporated	Semis & Semi. Equip.	7.88
LITE	Lumentum Holdings Inc.	Communications Equip.	7.05
RH	RH	Specialty Retail	7.00
AZTA	Azenta, Inc.	Semis & Semi. Equip.	6.15

WHAT IS A MELTING ICE CUBE?

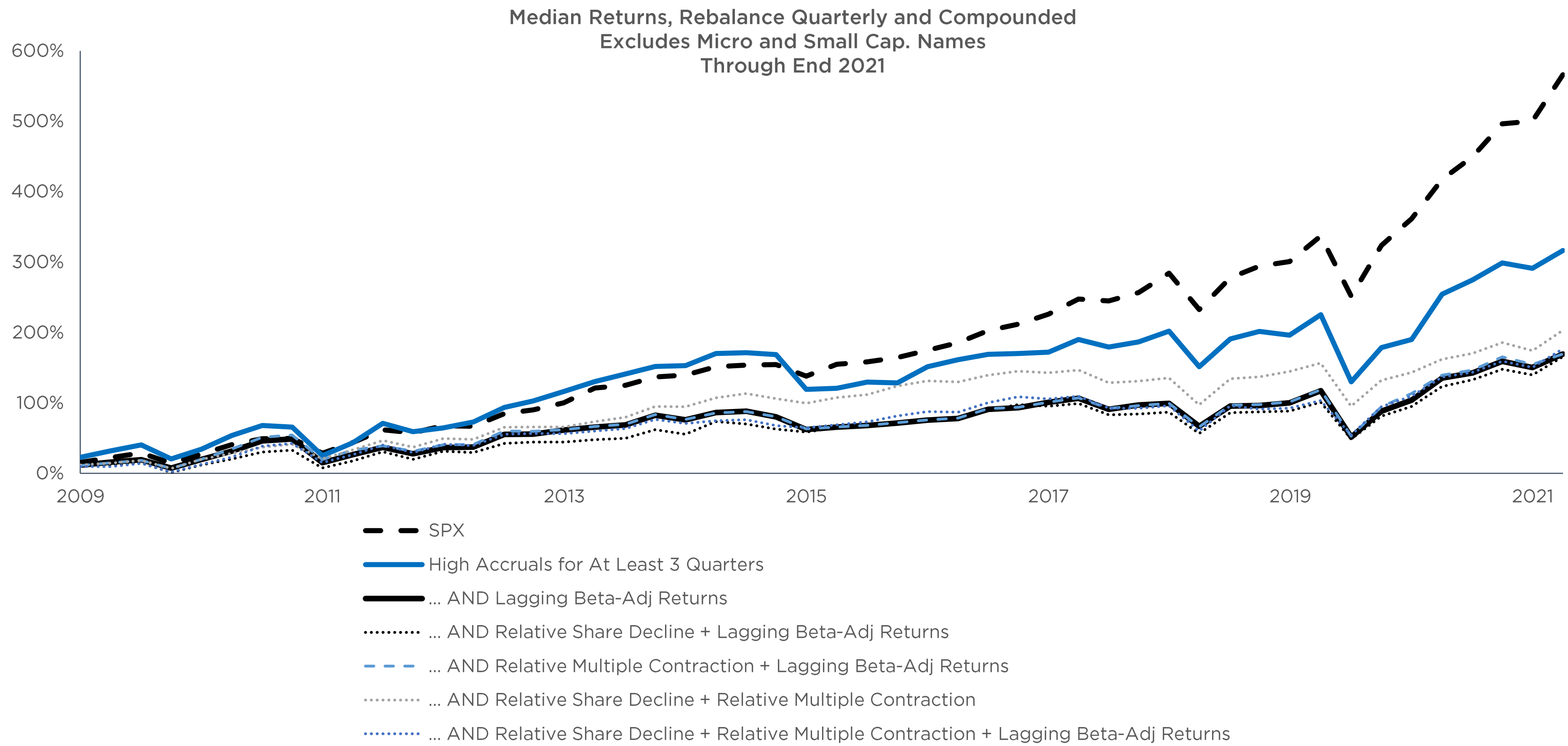
Accruals and price momentum are best: Our analysis clearly shows that these two variables identify relative underperformers far better than the others. This works confirms some work we had done years ago on short-selling, and while the result is not surprising to us, we found many in the past who were philosophically resistant to the conclusion. Analysts should focus on disconnects between earnings and free cash flow and should not try to short stocks at highs.

Other metrics do not incrementally help: No other major fundamental attribute comes close to achieving the level of success at predicting subsequent underperformers as either accruals or momentum. We are not saying that resource allocators should not hire shorting experts, we are only saying that if you focus on bigger companies that repeatedly exhibit negative attributes, i.e., steady melting ice-cubes, then accruals and momentum are far better signals than the common fundamental ones most bottom-up stock pickers focus on. Moreover, if you do not have a dedicated short seller, but industry experts, they should start with stocks with high relative accruals that have lagged and size those stocks larger than those with other negative attributes. Downward analyst earnings revisions, often an investor focus, is not fruitful, as these stocks go on to beat the market on average over the next quarter.

Conclusion and short ideas: Stocks repeatedly in the top quintile of the market on accruals are an inferior asset class. These “high accrual” stocks that have also underperformed their peer group (market cap and industry medians) form a cohort that substantially lags the S&P500 over time. Finding revenue share losers, prior multiple contractors, or gross margin contractors, does not lead to subsequent incremental underperformance. Our list of short ideas (i.e., the melting ice cubes) are shown below.

HIGH ACCRUALS WITH BAD MOMENTUM ARE GOOD SHORTS

The combination of high accruals and relative prior underperformance is compelling. By selecting only those names with high accruals for the previous three quarters that also have returns lagging their industry group and similarly-sized peers, performance can be cut nearly in half (solid blue line to solid black line compared to the SP500 returns that are the dotted black line). Further sub-setting, using changes in valuation or share, for example, have proven detrimental (in the case of forecasted share decline and prior relative contraction) or not accretive.



TODAY'S MELTING ICE CUBES OR CANDIDATE SHORT IDEAS

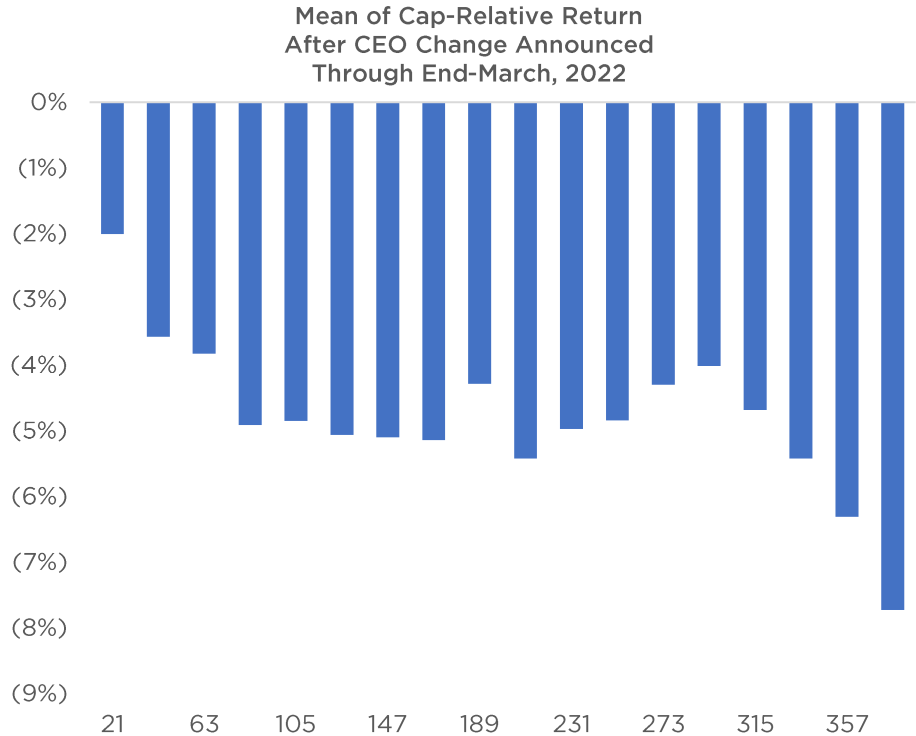
Below are companies with high accruals for the past three quarters that have had relatively poor stock performance in the last quarter.

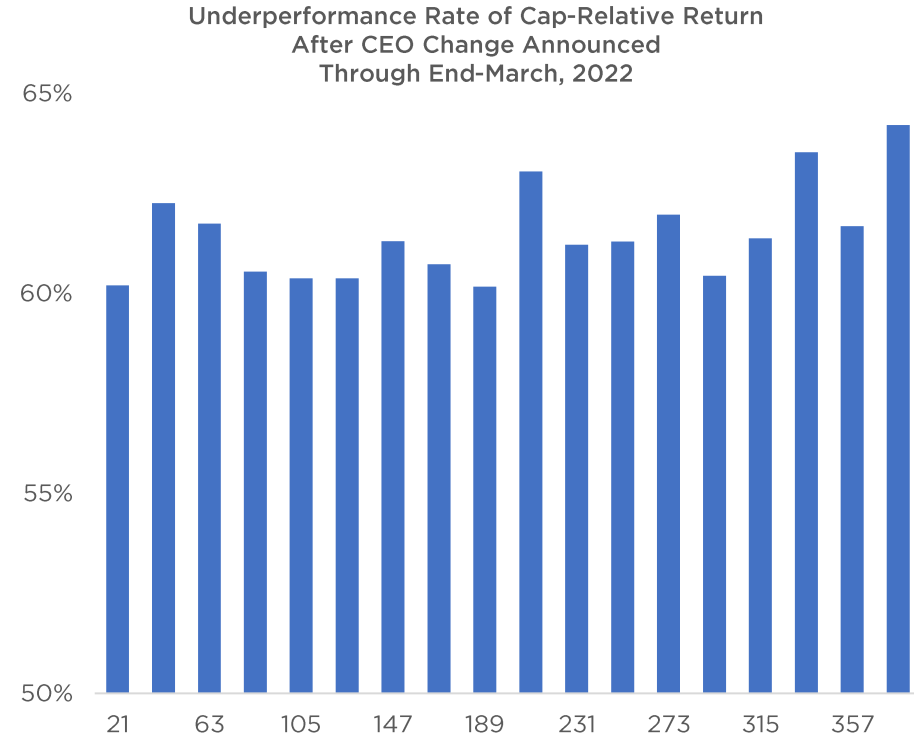
Select Names with High Accruals
At Least 3 Consecutive Quarters & Lagged Peers this past Quarter

Ticker	Company	Industry Group	Market Cap. (US$ Bil.)
EXPD	Expeditors International of Washington, Inc.	Transportation	22.75
CVNA	Carvana Co.	Retailing	19.84
TXG	10x Genomics, Inc.	Pharmaceuticals, Biotechnology & Life Sciences	16.64
TREX	Trex Company, Inc.	Capital Goods	15.54
FND	Floor & Decor Holdings, Inc.	Retailing	13.73
BWA	BorgWarner Inc.	Automobiles & Components	10.81
PEN	Penumbra, Inc.	Health Care Equipment & Services	10.73
GH	Guardant Health, Inc.	Health Care Equipment & Services	10.17
STOR	STORE Capital Corporation	Real Estate	9.36
NTRA	Natera, Inc.	Pharmaceuticals, Biotechnology & Life Sciences	8.83
AZEK	The AZEK Company Inc.	Capital Goods	7.16
IIPR	Innovative Industrial Properties, Inc.	Real Estate	6.29
BYND	Beyond Meat, Inc.	Food, Beverage & Tobacco	4.13
ABCL	AbCellera Biologics Inc.	Pharmaceuticals, Biotechnology & Life Sciences	4.03
ADPT	Adaptive Biotechnologies Corporation	Pharmaceuticals, Biotechnology & Life Sciences	3.96
LCII	LCI Industries	Automobiles & Components	3.94

EXPENSIVE GROWTH STOCKS LAG WHEN THE CEO CHANGES

We analyzed the performance of the expensive growth universe that have new CEOs. Expensive growth stocks underperform the most dramatically of any sub-group and should on average be sold / shorted following the announcement for three-to for months (left chart). This strategy has a hit rate well over 60% for the first year (right chart).





EXPENSIVE GROWTH STOCKS WITH NEW CEOS IN THE LAST YEAR

Below we show expensive growth stocks with CEO changes. Since the announcement, absolute performance, and performance of each stock relative to the average stock in their market cap cohort, shows this underperformance trend has continued this year.

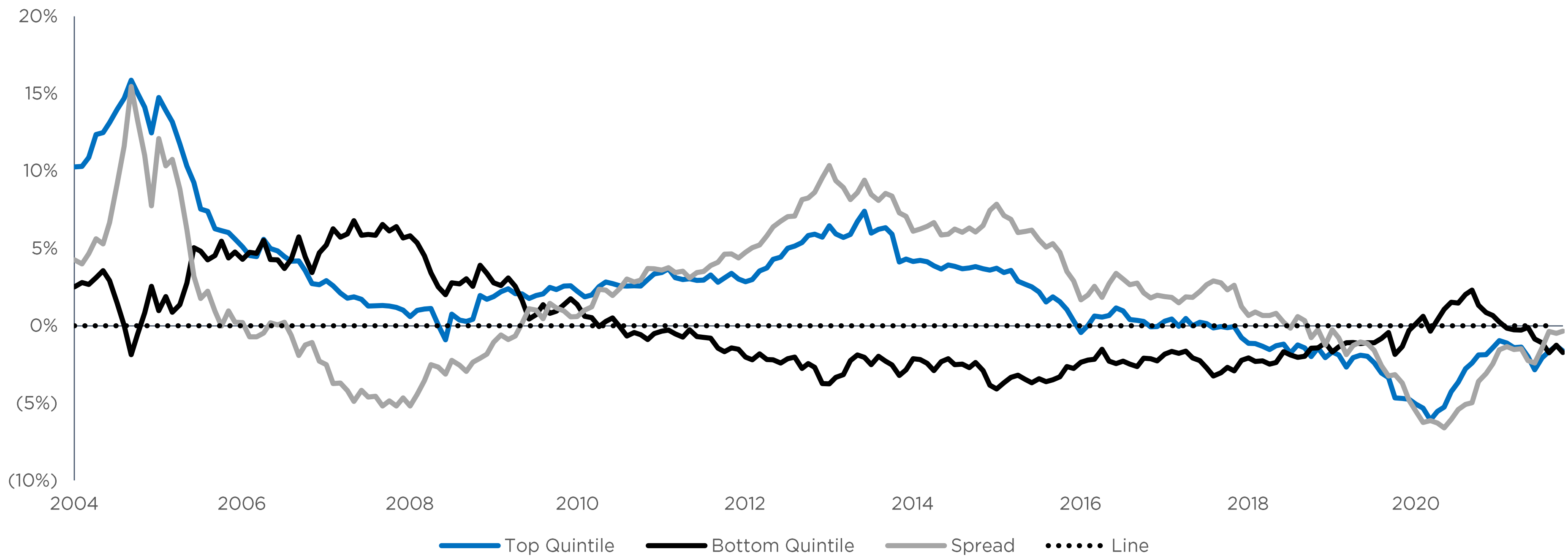
Performance After CEO Change Announced
Expensive Growth Stocks
Through End-March, 2022

Ticker	Company Name	Industry	Date Announced	Return	Cap-Relative Return	Market Cap ($ US. Bil)
SNPS	Synopsys., inc.	Software	9/14/2021	(5.4%)	(2.4%)	51.02
TWTR	Twitter, Inc.	Interactive Media & Services	11/30/2021	(28.7%)	(25.3%)	30.91
SPLK	Splunk Inc.	Software	11/15/2021	(22.9%)	(14.3%)	23.88
GH	Guardant Health, Inc.	Health Care Providers & Services	8/6/2021	(54.1%)	(51.1%)	8.76
PTON	Peloton Interactive, Inc.	Leisure Products	2/8/2022	(41.7%)	(40.6%)	6.75
ANGI	Angi Inc.	Interactive Media & Services	2/25/2021	(81.4%)	(82.9%)	2.84
LMND	Lemonade, Inc.	Insurance	7/26/2021	(93.0%)	(92.1%)	1.63

DO STOCK BUYBACKS DRIVE SHAREHOLDER VALUE? ANSWER: NO

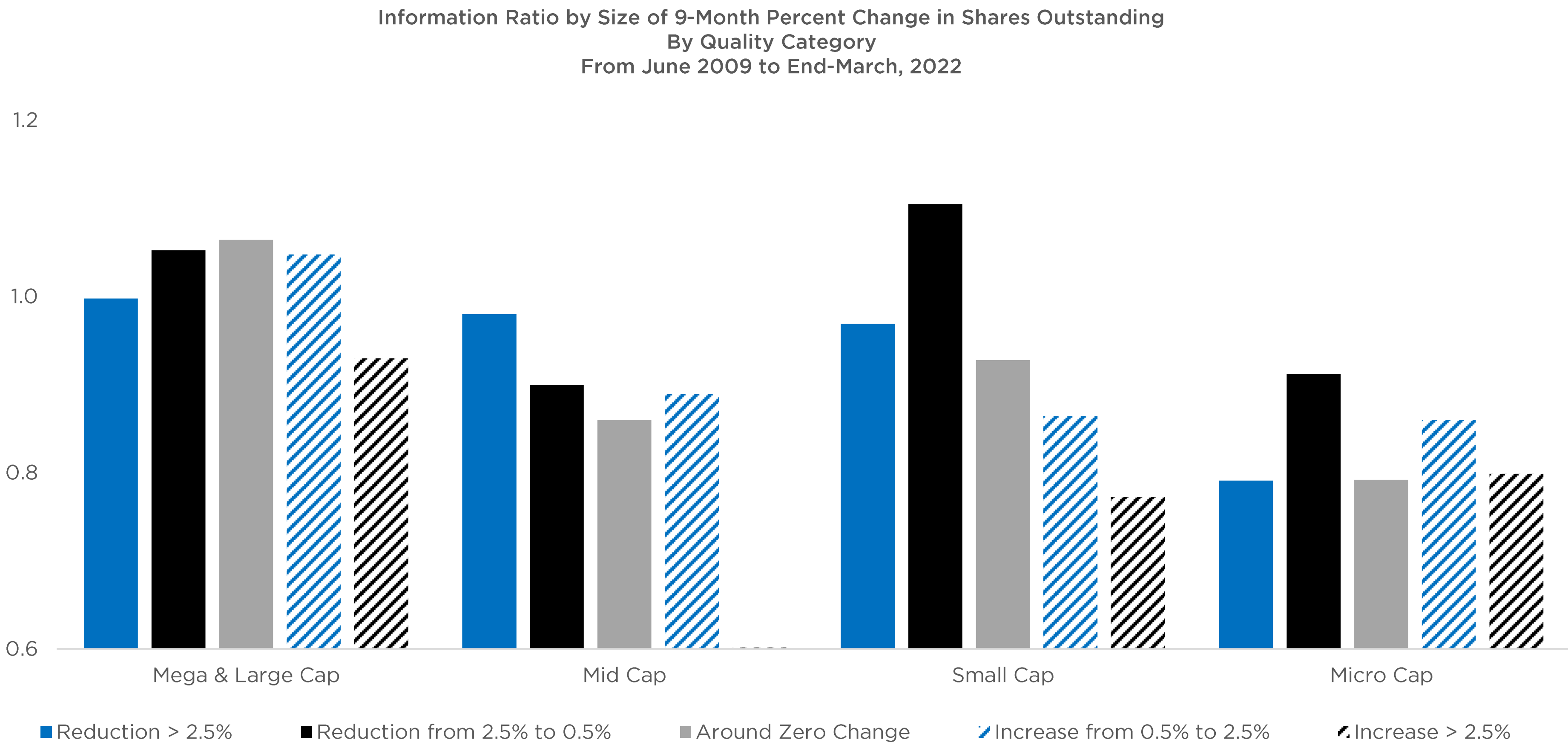
We evaluated the relative performance of SP500 companies in the top quintile of buyback yield (blue line) and bottom quintile of buyback yield (net diluters, black line) over the past 20 years. Buybacks had been an effective use of capital prior the Financial Crisis. However, since then, the performance of the top (Q1) and bottom (Q5) quintile "spread" is roughly zero, with Q5 generally performing better than the Q1 over the past decade. The strong performance of Q5 is in part because growth companies issue stock options and require additional stock offerings to grow. This happened in a successful growth style regime fueling the bottom quintile's strength. However, this does not explain the relative weakness of Q1.

Rolling 5-Year CAGR of Monthly Beta-Adjusted Returns
Net Buyback Yield for Top 500 US Equities by Market Cap.
Through End-March, 2022



LARGE CAP STOCKS DOING BUYBACKS HAVE WASTED THE MONEY

Management teams of mega / large cap companies should be questioning whether large buybacks are prudent. On average, they were not rewarded, as big share reductions over a 9-month period resulted in similar subsequent performance to those companies doing substantial dilution over the same period (left set of bars). Diluters in mid-cap and micro-cap seem to lag companies doing buybacks, but that relationship did not hold for small-caps.



MANAGEMENT TEAMS THAT SHOULD PIVOT TO DIVIDENDS?

Below are stocks that have done large buybacks and have not performed well.

Short Mega or Large Cap High Quality Value Names That Bought Back 1% or More Shares

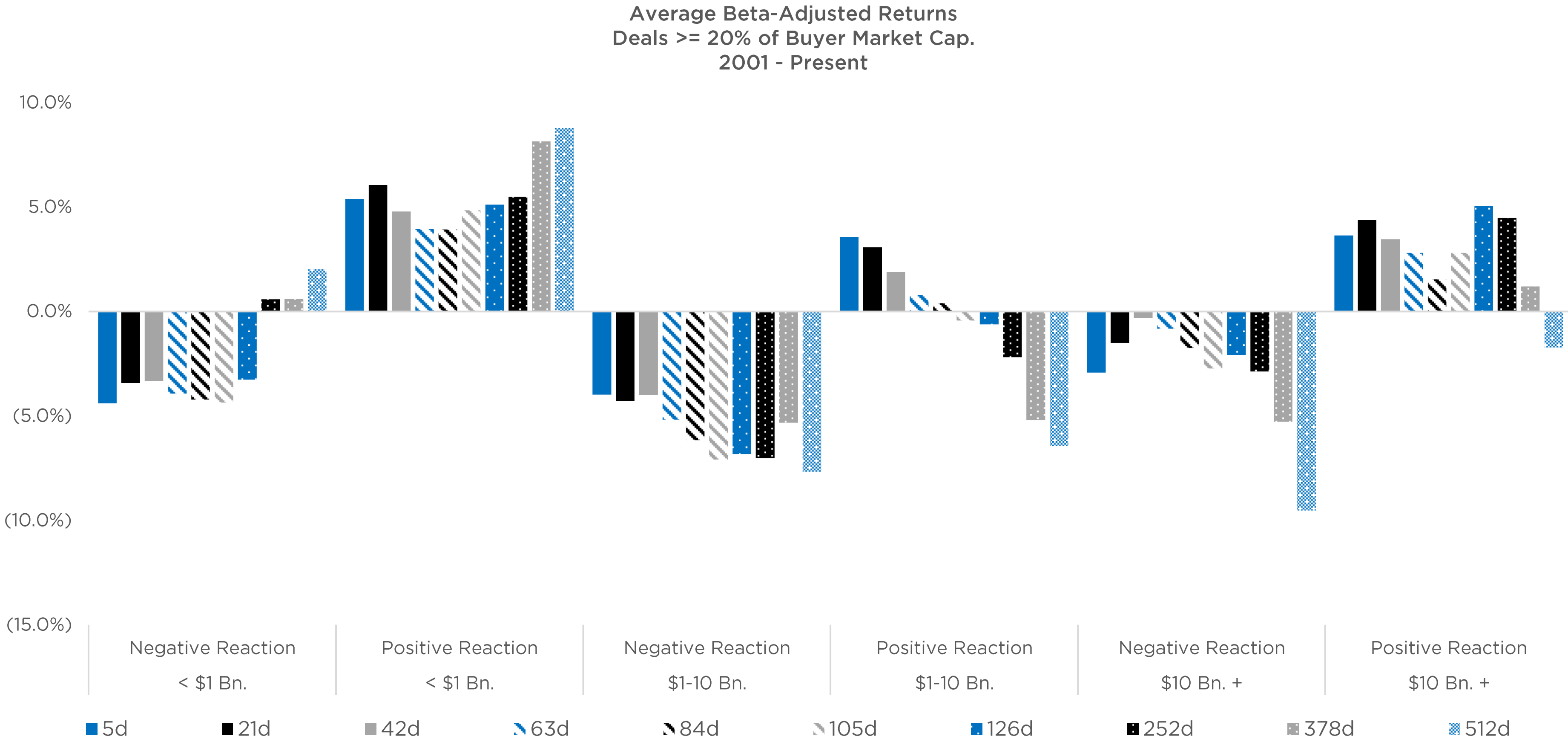
Ticker	Company	Industry Group	Market Cap. (US$ Bil.)
MDLZ	Mondelez International, Inc.	Food, Beverage & Tobacco	87.16
ALL	The Allstate Corporation	Insurance	38.55
YUM	Yum! Brands, Inc.	Consumer Services	34.25
EBAY	eBay Inc.	Retailing	33.64

Short Names that Bought Back 10% or More of Shares & Underperformed From 2019 to End-March, 2022

Ticker	Company	Industry Group	Market Cap. (US$ Bil.)
DD	DuPont de Nemours, Inc.	Materials	37.74
BIIB	Biogen Inc.	Pharmaceuticals, Biotechnology & Life Sciences	30.95
DXC	DXC Technology Company	Software & Services	7.98
ATUS	Altice USA, Inc.	Media & Entertainment	5.67
PVH	PVH Corp.	Consumer Durables & Apparel	5.21
ALSN	Allison Transmission Holdings, Inc.	Capital Goods	3.81
HLF	Herbalife Nutrition Ltd.	Household & Personal Products	3.03
FL	Foot Locker, Inc.	Retailing	2.85
YELP	Yelp Inc.	Media & Entertainment	2.43
URBN	Urban Outfitters, Inc.	Retailing	2.42
NUS	Nu Skin Enterprises, Inc.	Household & Personal Products	2.39
SATS	EchoStar Corporation	Telecommunication Services	2.08
LGND	Ligand Pharmaceuticals Incorporated	Pharmaceuticals, Biotechnology & Life Sciences	1.90
WWW	Wolverine World Wide, Inc.	Consumer Durables & Apparel	1.84
QRTEA	Qurate Retail, Inc.	Retailing	1.81
AMCX	AMC Networks Inc.	Media & Entertainment	1.72
CMPR	Cimpress plc	Commercial & Professional Services	1.66

FIRST IMPRESSIONS MATTER

We evaluated the subsequent performance over multiple horizons (one week, and each months 1-6, as well as 12, 18, and 24 months) to see if the initial market reaction to a deal announcement matters. It does. The middle shows deals for companies $1 to $10 billion market capitalization. Here we can see particularly weak subsequent performance for stocks where the initial reaction is negative. Moreover, unlike for other sized companies doing deals, even positive initial reactions fade after 5 months for the acquirers. On the right side of the chart below we show deals for companies bigger than $10 billion. The initial reaction carries the day for nearly 18 months if it is positive.



RECENT DEAL STOCKS WITH INITIAL / SUSTAINED POSITIVE REACTION

Select Recent Deals with Initial Positive Reaction
Buyer Market Cap. >= $1 bn.
End-March, 2022

Ticker	Company	Industry Group	Target Company	Announcement Date	Beta-Adjusted Return	Market Cap. (US$ Bil.)
AMD	Advanced Micro Devices, Inc.	Semis & Semi Equipment	Xilinx, Inc.	10/27/2020	2%	177.15
DVN	Devon Energy Corporation	Energy	WPX Energy, Inc.	9/28/2020	518%	39.28
ABC	AmerisourceBergen Corporation	Health Care Equip & Serv	Alliance Healthcare	1/6/2021	25%	32.36
AEM	Agnico Eagle Mines Limited	Materials	Kirkland Lake Gold Ltd.	9/28/2021	20%	27.87
KIM	Kimco Realty Corporation	Real Estate	Weingarten Realty Investors	4/15/2021	18%	15.26
ZEN	Zendesk, Inc.	Software & Services	Momentive Global Inc.	10/28/2021	2%	14.66
ALLY	Ally Financial Inc.	Diversified Financials	CardWorks, Inc.	2/18/2020	4%	14.41
EQT	EQT Corporation	Energy	Alta Resources, LLC	5/6/2021	79%	12.96
SWN	Southwestern Energy Company	Energy	Indigo Natural Resources, LLC	6/2/2021	20%	7.99
GPI	Group 1 Automotive, Inc.	Retailing	Prime Automotive Group, Inc.	9/13/2021	1%	2.77
LBRT	Liberty Oilfield Services Inc.	Energy	OneStim	9/1/2020	38%	2.72
NPO	EnPro Industries, Inc.	Capital Goods	NxEdge Inc.	11/5/2021	1%	2.03
ARCB	ArcBest Corporation	Transportation	MoLo Solutions, LLC	9/29/2021	0%	1.98
JACK	Jack in the Box Inc.	Consumer Services	Del Taco Restaurants, Inc.	12/6/2021	18%	1.97
MGPI	MGP Ingredients, Inc.	Food, Beverage & Tobacco	Luxco, Inc.	1/25/2021	39%	1.88
PFS	Provident Financial Services, Inc.	Banks	SB One Bancorp	3/12/2020	3%	1.78
SUPN	Supernus Pharmaceuticals, Inc.	Pharma, Biotech & Life Sciences	USWM Enterprises, LLC	4/28/2020	3%	1.72
CODI	Compass Diversified	Diversified Financials	Marucci Sports, LLC	3/9/2020	0%	1.65

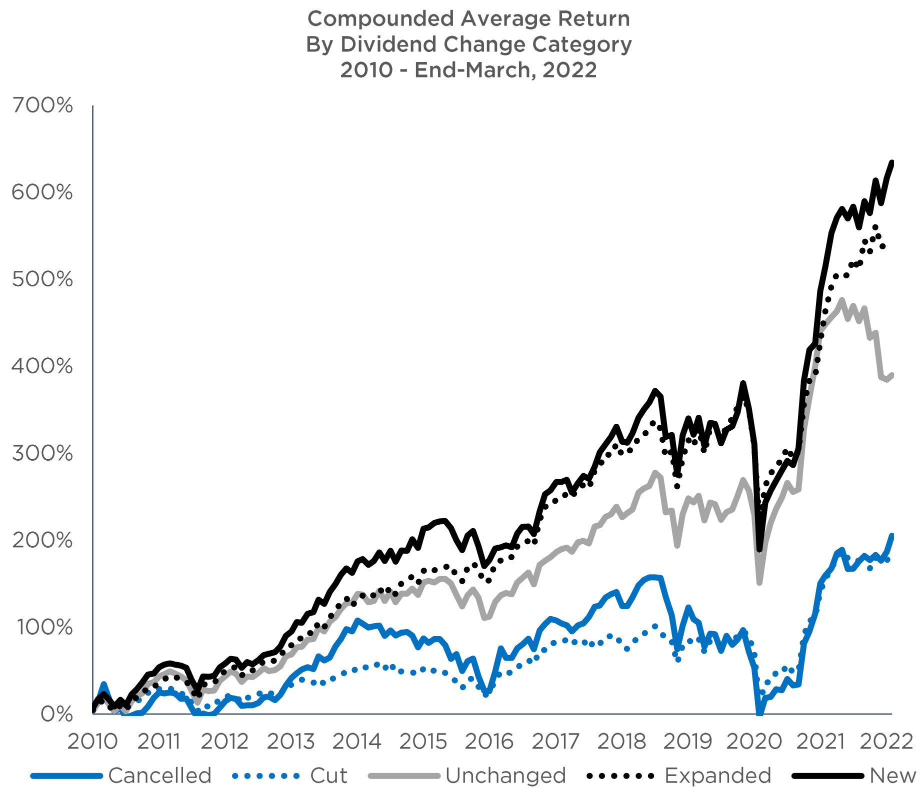
RECENT DEAL STOCKS WITH INITIAL / SUSTAINED NEGATIVE REACTION

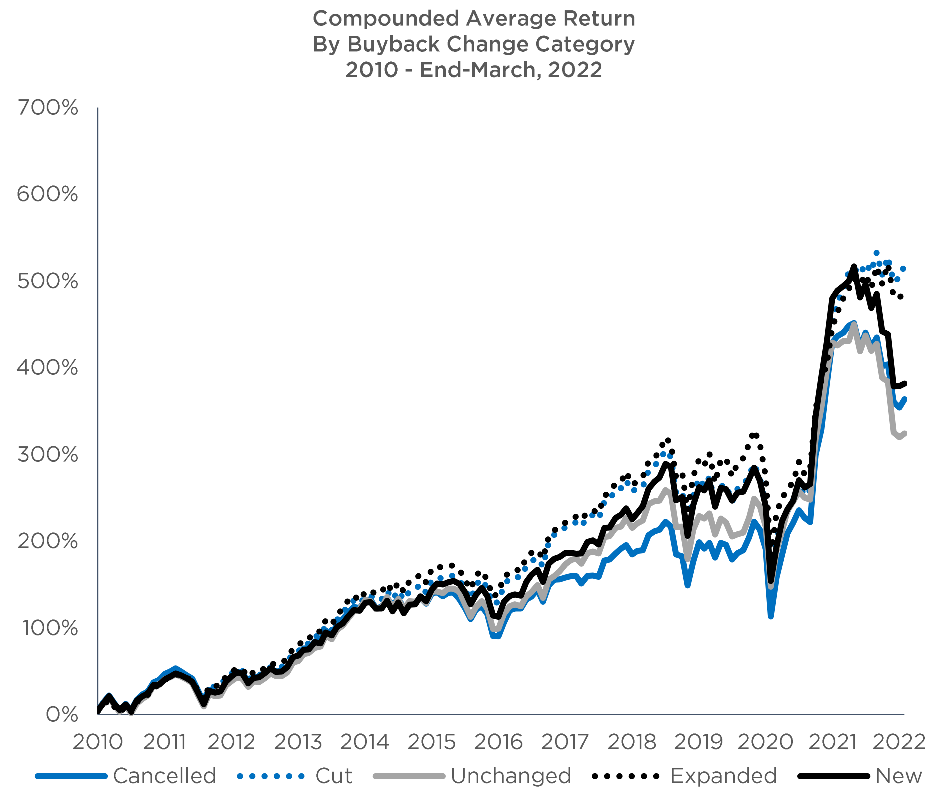
Select Recent Deals with Initial Negative Reaction
Buyer Market Cap. Between $0.5-10 bn. (at time of announcement)
End-March, 2022

Ticker	Company	Industry Group	Target Company	Announcement Date	Beta-Adjusted Return	Market Cap. (US$ Bil.)
PKI	PerkinElmer, Inc.	Pharma & Biotech	BioLegend, Inc.	7/26/2021	(2%)	22.01
SNX	TD SYNNEX Corporation	Tech Hardware & Equip	Tech Data Corporation	3/22/2021	(22%)	9.85
NFE	New Fortress Energy Inc.	Energy	Hygo Energy Transition Ltd	1/13/2021	(45%)	8.81
PFGC	Performance Food Group Company	Food & Staples Retailing	Core-Mark Holding Company, Inc.	5/18/2021	(6%)	7.88
RUN	Sunrun Inc.	Capital Goods	Vivint Solar, Inc.	7/6/2020	(4%)	6.33
SSB	SouthState Corporation	Banks	CenterState Bank Corporation	1/27/2020	(36%)	6.21
ATUS	Altice USA, Inc.	Media & Entertainment	Cogeco Inc.	9/2/2020	(86%)	5.67
SAIC	Science Applications Int'l Corp	Software & Services	Unisys Federal	2/6/2020	(41%)	5.17
ONB	Old National Bancorp	Banks	First Midwest Bancorp, Inc.	6/1/2021	(19%)	4.84
GT	Goodyear Tire & Rubber Company	Auto & Components	Cooper Tire & Rubber Company	2/22/2021	(34%)	4.03
INDB	Independent Bank Corp.	Banks	Meridian Bancorp, Inc.	4/22/2021	(5%)	3.87
ETRN	Equitrans Midstream Corporation	Energy	EQM Midstream Partners, LP	2/27/2020	(25%)	3.65
WSFS	WSFS Financial Corporation	Banks	Bryn Mawr Bank Corporation	3/10/2021	(31%)	2.95
MSGE	MSG Entertainment Corp.	Media & Entertainment	MSG Networks Inc.	3/26/2021	(17%)	2.85
CNNE	Cannae Holdings, Inc.	Diversified Financials	CoreLogic, Inc.	6/26/2020	(94%)	2.59
FTAI	Fortress Transportation and Infra	Capital Goods	Transtar LLC.	6/8/2021	(21%)	2.55
CENTA	Central Garden & Pet Company	Household & Personal	Green Garden Products LLC	12/31/2020	(11%)	2.29
AHCO	AdaptHealth Corp.	Health Care Equip & Serv	AeroCare Holdings, Inc.	12/1/2020	(81%)	2.15
FBK	FB Financial Corporation	Banks	Franklin Financial Network, Inc.	1/21/2020	(22%)	2.11
GTN	Gray Television, Inc.	Media & Entertainment	Meredith Corporation	5/3/2021	(8%)	2.09
STEP	StepStone Group Inc.	Diversified Financials	Greenspring Associates, Inc	7/7/2021	(17%)	2.01
VCTR	Victory Capital Holdings, Inc.	Diversified Financials	WestEnd Advisors, LLC	11/4/2021	(20%)	1.98
STEM	Stem, Inc.	Capital Goods	AlsoEnergy, Inc.	12/16/2021	(37%)	1.69
KALU	Kaiser Aluminum Corporation	Materials	Alcoa Warrick LLC	11/30/2020	(2%)	1.49

YIELD AND BUYBACK RETURNS – BUYBACKS DON'T SEPARATE

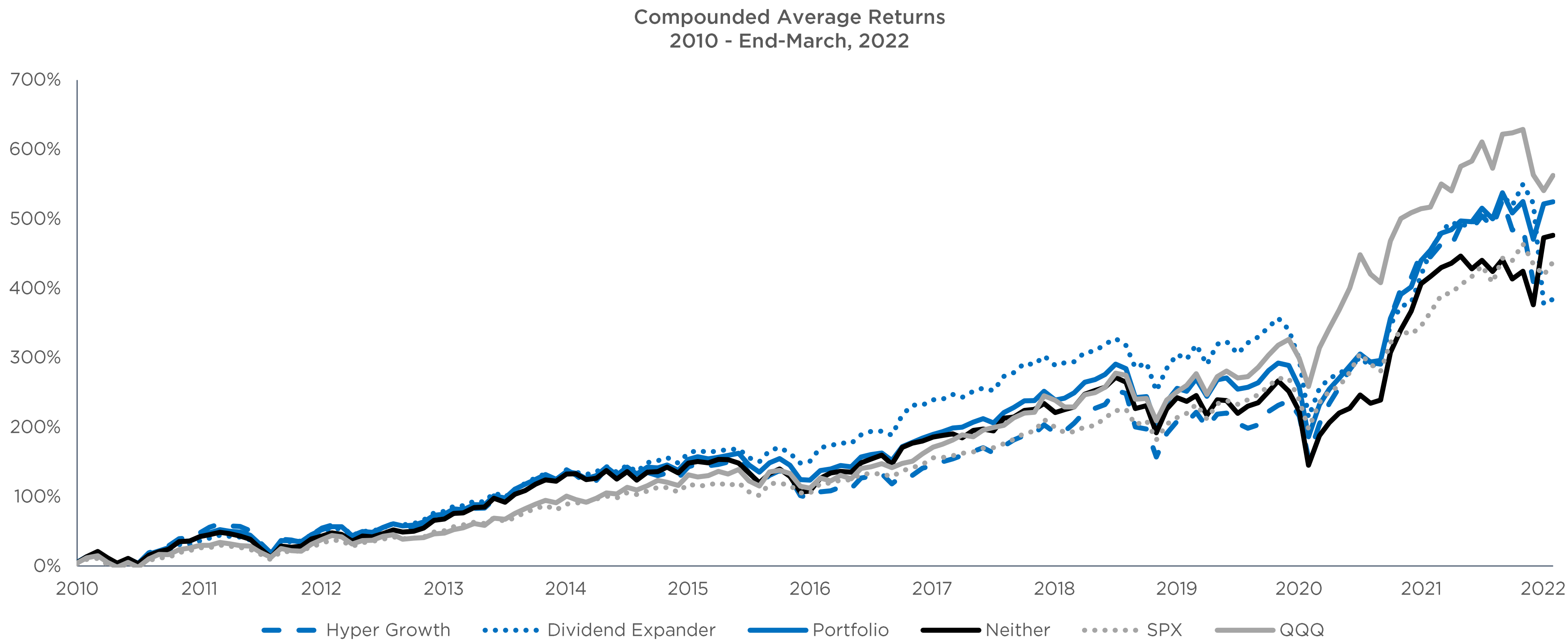
The market rewards initiating or expanding a dividend more than those cutting or cancelling (left). However, as we observed in our prior work on buybacks (right) the market does not materially reward or penalize companies for their buyback behavior in the aggregate. Companies that reduce their buyback or even stop it do not have cumulative performance that is substantially different than those that expand their buyback. Hence, while buybacks might be a great strategy for a company with truly cheap shares or an inflecting business, in aggregate the market seems to differentiate between companies much more on dividend than on buybacks.





IS A COMBO OF GROWTH STOCKS AND DIVIDEND EXPANDERS GOOD?

Given that growth stocks have worked so well since the Financial Crisis as rates rose, we wondered how a basket of dividend expanders performed. It is interesting to note (blue dotted line) that dividend expanders have outperformed the hyper growth basket since the beginning of 2010, with a portfolio (50%-50% hyper growth / dividend growers) beating the SP500 but lagging the Nasdaq over that same time frame. Stocks that were not either hyper growth or a dividend expander, as a basket, lagged the most.



YOU MUST EXPAND YOUR DIVIDEND WHILE THE FED'S HIKING

It is challenging to provide the perfect historical analog to evaluate. Nonetheless, many investors ask us what happened in and around the previous set of lift-off and hikes, so we evaluated the various strategies one-month before and 3-months after each Fed hike since the Financial crisis. Growing the dividend through the hiking cycle seems by far the best strategy. Having your yield above your peer-group (level) did not generally help. If you have no dividend now, initiating one is not a bad idea. Cutting, or even leaving the dividend unchanged was generally penalized. As history dictated, dividend yielding stocks outperformed during Q1.

Beta-Adjusted Returns
Select Signals

Signal	11/13/2015 to 3/17/2016	11/15/2016 to 3/20/2017	2/10/2017 to 6/13/2017	5/12/2017 to 9/12/2017	11/13/2017 to 3/16/2018	2/16/2018 to 6/19/2018	5/11/2018 to 9/11/2018	8/24/2018 to 12/26/2018	11/27/2018 to 4/1/2019	Mean	Median
Group-Relative Indicated Annual Dividend Yield	2.1%	(0.7%)	(2.1%)	(3.5%)	(1.2%)	1.9%	3.2%	0.5%	(1.1%)	(0.1%)	(0.7%)
Dividend Cancelled	(3.6%)	(5.3%)	(9.1%)	(1.1%)	(2.8%)	2.9%	(5.9%)	(24.7%)	(11.0%)	(2.3%)	(1.9%)
Dividend Cut	0.4%	(3.5%)	(6.5%)	(6.4%)	(7.7%)	4.4%	0.0%	(16.4%)	(7.0%)	(6.3%)	(4.9%)
Dividend Expanded	0.4%	0.2%	(0.9%)	(0.8%)	2.0%	5.2%	(0.4%)	(9.0%)	(1.0%)	4.0%	4.0%
Dividend Initiated	(3.1%)	3.6%	(8.1%)	(0.5%)	0.5%	6.7%	3.5%	(11.0%)	1.3%	1.4%	(0.1%)
Dividend Unchanged	(4.4%)	(4.4%)	(4.3%)	(1.4%)	1.7%	9.9%	1.3%	(12.0%)	(0.5%)	(3.6%)	(4.0%)
Hyper Growth & Dividend Expander Portfolio	(6.3%)	(2.4%)	(0.9%)	(2.8%)	1.3%	8.4%	0.5%	(11.5%)	(1.0%)	(0.5%)	(0.4%)

QUANTITATIVELY-DERIVED HIGH DIVIDEND YIELD STOCK IDEAS

Buy ideas below are in the top 20% of our high yield or high yield junk models and are dividend expanders. Short ideas are in the bottom quintile of the models and are not growing their dividends (or cut / cancelled).

Buy Dividend Expanders in Top 20% of High Yield Models
Short non-Dividend Expanders in Bottom 20% of High Yield Models or Non-Growth Cutters/Cancellers in Bottom 20% of Overall Model
March 31, 2022

Longs

Ticker	Company Name	Industry Group	Market Cap ($ US. Bil)
HD	The Home Depot, Inc.	Retailing	309.31
BX	Blackstone Inc.	Diversified Financials	88.91
EOG	EOG Resources, Inc.	Energy	69.80
BBY	Best Buy Co., Inc.	Retailing	20.47
ALLY	Ally Financial Inc.	Diversified Financials	14.41
SNA	Snap-on Incorporated	Capital Goods	10.98
M	Macy's Inc.	Retailing	7.12
OMF	OneMain Holdings, Inc.	Diversified Financials	6.04
TROX	Tronox Holdings plc	Materials	3.09
SBLK	Star Bulk Carriers Corp.	Transportation	3.04
MDC	M.D.C. Holdings, Inc.	Consumer Durables & Apparel	2.69
APAM	Artisan Partners Asset Management Inc.	Diversified Financials	2.62
GOGL	Golden Ocean Group Limited	Transportation	2.48
BLMN	Bloomin' Brands, Inc.	Consumer Services	1.96
VRTS	Virtus Investment Partners, Inc.	Diversified Financials	1.80
GES	Guess', Inc.	Retailing	1.31
HESM	Hess Midstream LP	Energy	1.01
EGLE	Eagle Bulk Shipping Inc.	Transportation	0.93
ETD	Ethan Allen Interiors Inc.	Consumer Durables & Apparel	0.66
RM	Regional Management Corp.	Diversified Financials	0.48

Shorts

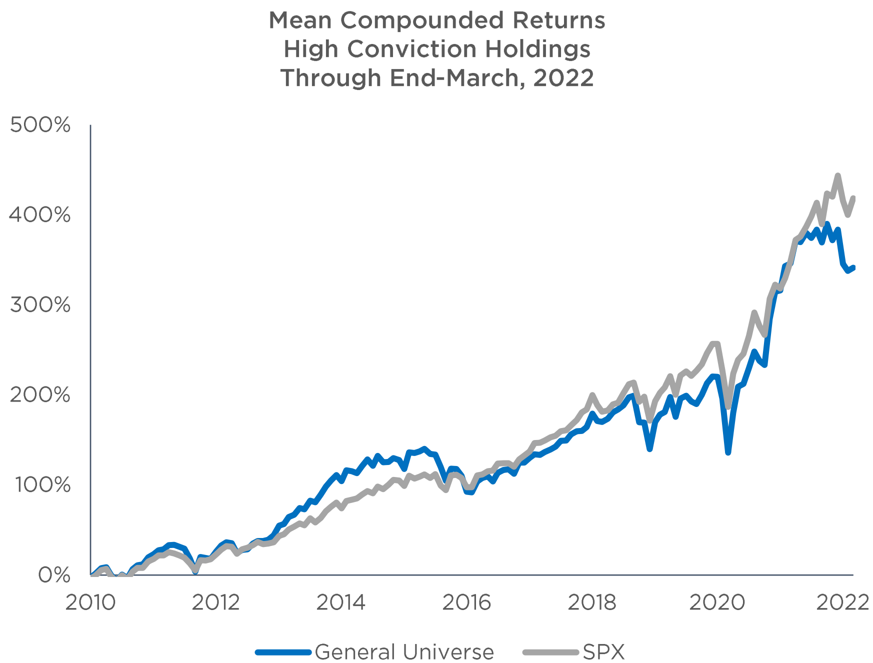
Ticker	Company Name	Industry Group	Market Cap ($ US. Bil)
SO	The Southern Company	Utilities	76.88
KHC	The Kraft Heinz Company	Food, Beverage & Tobacco	48.25
APO	Apollo Global Management, Inc.	Diversified Financials	35.39
CMI	Cummins Inc.	Capital Goods	29.14
AGR	Avangrid, Inc.	Utilities	18.07
IEP	Icahn Enterprises L.P.	Capital Goods	15.24
SJM	The J. M. Smucker Company	Food, Beverage & Tobacco	14.69
NWL	Newell Brands Inc.	Consumer Durables & Apparel	8.90
OGE	OGE Energy Corp.	Utilities	8.16
JHG	Janus Henderson Group plc	Diversified Financials	5.87
IDA	IDACORP, Inc.	Utilities	5.83
FLO	Flowers Foods, Inc.	Food, Beverage & Tobacco	5.44
EVA	Enviva Inc.	Energy	5.27
VIRT	Virtu Financial, Inc.	Diversified Financials	4.05
ATCO	Atlas Corp.	Transportation	3.66
PDCO	Patterson Companies, Inc.	Health Care Equip. & Services	3.16
XRX	Xerox Holdings Corporation	Technology Hardware & Equip.	3.15
FHI	Federated Hermes, Inc.	Diversified Financials	3.12
TRN	Trinity Industries, Inc.	Capital Goods	2.86
NHI	National Health Investors, Inc.	Real Estate	2.71
NUS	Nu Skin Enterprises, Inc.	Household & Personal Products	2.39
WRE	Washington Real Estate Investment Trust	Real Estate	2.23
BGS	B&G Foods, Inc.	Food, Beverage & Tobacco	1.86
GPRE	Green Plains Inc.	Energy	1.66

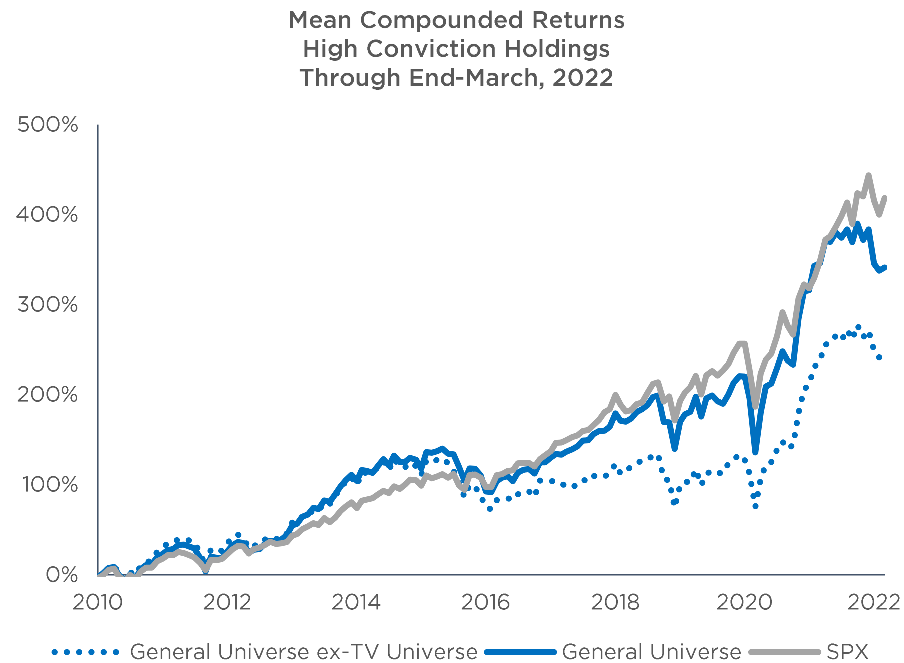
GOOD AND BAD CROWDING

- We defined a subset of managers, the Trivariate universe (TV managers) of 60 fundamental hedge fund managers that we believe do deep fundamental research, run relatively concentrated portfolios, and do not trade quarterly results as the core part of their strategy. We then systematically accessed the high conviction long ideas from this group of TV managers and evaluated whether adding information about high conviction from this subset could help when used in conjunction with high conviction from the broader universe. We found that there is information in the high conviction positions of our subset. **Contrary to outcomes observed from a general universe of 500 managers, when *none* of our 60 TV managers have high conviction, this is bad crowding - the returns on these stocks are inferior. On the other hand, when the TV managers do have high conviction in a stock, the performance is superior to the market and to basket of high conviction stocks from the general universe.** Therefore, there is not only information when none of the TV managers have conviction ("bad" crowding), but also when these managers do have high conviction ("good" crowding).
- Our quantitative framework ranks stocks on common attributes like valuation, sentiment, accounting, balance sheet, income statement, cash flow statement and other key metrics. We evaluated whether these models added incremental information to the fundamental high conviction ideas from our TV universe of fund managers - again, the answer is yes. **Our models, when combined with high conviction names from the TV universe, add incremental value.** When our models disagree with the TV managers, our models are on average correct.

WHEN EVERYONE LOVES A STOCK THAT CAN BE BAD

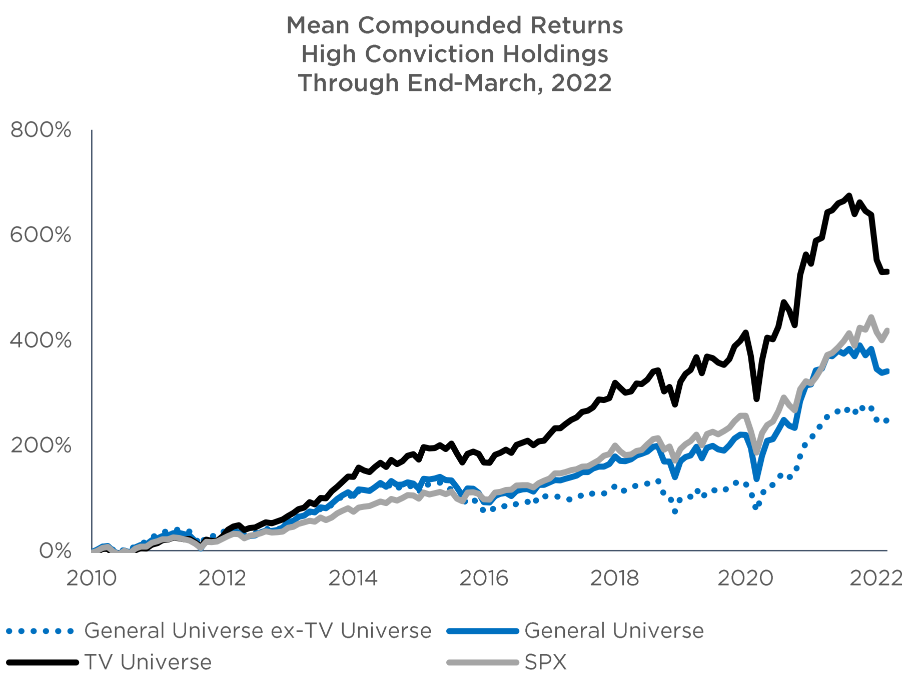
We analyzed the high conviction (3% or more of long AuM) of a broad universe of 500+ hedge fund managers. **Over time, these crowded names are an inferior asset class, underperforming the SP500 and the QQQ since the Financial crisis (left chart).** We have a separate proprietary Trivariate universe (TV) of 60 fundamental hedge fund managers that we believe do deep fundamental research. In essence, we are systematically accessing the high conviction long ideas from this group of TV managers. We evaluated whether adding information about high conviction from the TV universe could help when used in conjunction with high conviction from the broader universe. **When *none* of our Trivariate managers have high conviction, this is "bad" crowding - the returns are materially lower.** This is a risk that managers can systematically track.

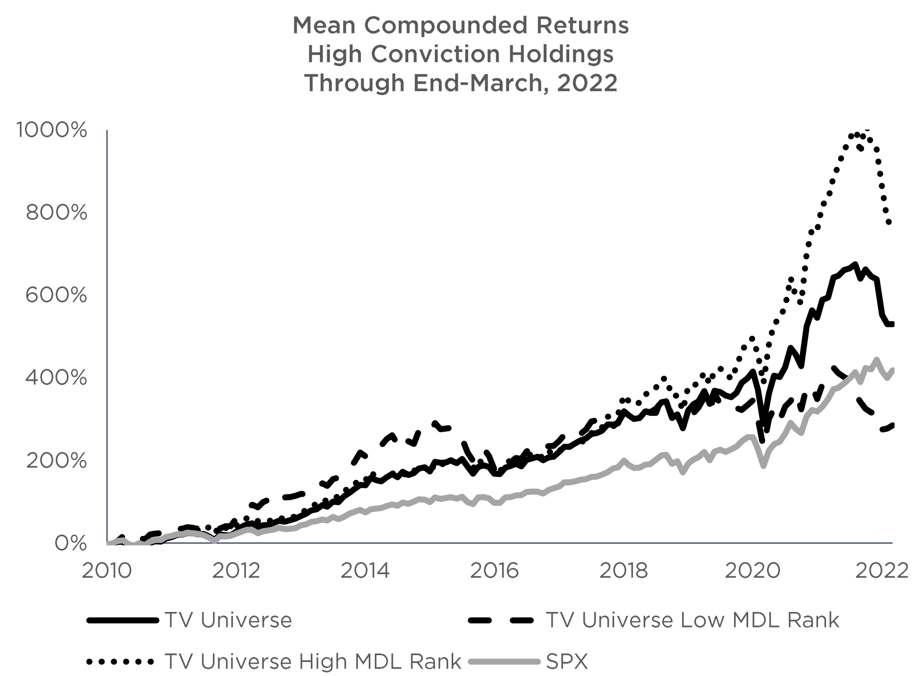




BUT WHEN OUR UNIVERSE LIKES IT THAT IS OK

When our universe of managers *does* have high conviction in a stock, the performance is superior to the market. Therefore, there is not only information when *none* of our managers have conviction (bad crowding), but also when these managers *do* have high conviction (good crowding). Our quantitative framework ranks stocks and we evaluated whether these models added incremental information to the fundamental high conviction ideas from our Trivariate universe of fund managers. **Our models, when combined with high conviction names from 13F filings, add incremental value.** When our models disagree with our universe of managers, our models provide substantial additional information. "Good" crowding happens when the TV universe has high conviction in a stock and our quant models rank that stock in the top quintile.





BUY / SHORT IDEAS BASED ON GOOD / BAD CROWDING FRAMEWORK

Our buy list of "good crowded" names are one that funds in our proprietary universe own in high conviction and screen well in our quantitative model. Short ideas are owned in high conviction and screen poorly in our quantitative models

Buy High Conviction by Trivariate Universe with High Model Rank
Short High Conviction and Have a Low Model Rank
March 31, 2022

Longs

Ticker	Company Name	Industry Group	Market Cap ($ US. Bil)
MSFT	Microsoft Corporation	Software & Services	2311.36
GOOGL	Alphabet Inc.	Media & Entertainment	1842.07
UNH	UnitedHealth Group Incorporated	Health Care Equip & Serv	479.83
V	Visa Inc.	Software & Services	465.27
MA	Mastercard Incorporated	Software & Services	349.33
PANW	Palo Alto Networks, Inc.	Software & Services	61.31
WDAY	Workday, Inc.	Software & Services	60.10
CRWD	CrowdStrike Holdings, Inc.	Software & Services	52.40
NYT	The New York Times Company	Media & Entertainment	7.64
FIVN	Five9, Inc.	Software & Services	7.63
RH	RH	Retailing	7.00

Shorts

Ticker	Company Name	Industry Group	Market Cap ($ US. Bil)
AAPL	Apple Inc.	Tech Hardware & Equip	2849.54
BMY	Bristol-Myers Squibb Company	Pharma & Biotech	155.20
LRCX	Lam Research Corporation	Semis & Semi Equipment	75.00
TEAM	Atlassian Corporation Plc	Software & Services	74.48
NET	Cloudflare, Inc.	Software & Services	38.79
KKR	KKR & Co. Inc.	Diversified Financials	34.56
CPNG	Coupang, Inc.	Retailing	31.04
TWLO	Twilio Inc.	Software & Services	29.92
ON	ON Semiconductor Corporation	Semis & Semi Equipment	27.08
FANG	Diamondback Energy, Inc.	Energy	24.32
WAB	Westinghouse Air Brake Tech Corp	Capital Goods	17.82
EQT	EQT Corporation	Energy	12.96
VST	Vistra Corp.	Utilities	10.43
PTON	Peloton Interactive, Inc.	Cons Durables & Apparel	8.76
USFD	US Foods Holding Corp.	Food & Staples Retailing	8.39
BERY	Berry Global Group, Inc.	Materials	7.84
NXST	Nexstar Media Group, Inc.	Media & Entertainment	7.73
HGV	Hilton Grand Vacations Inc.	Consumer Services	6.25
ATUS	Altice USA, Inc.	Media & Entertainment	5.67
VRT	Vertiv Holdings Co	Capital Goods	5.26
DEN	Denbury Inc.	Energy	3.94

ANY RELATIVE DOVISHNESS WILL CHANGE THE MARKET STRUCTURE

The anticipation of rate hikes leads actual rate hikes. There is not a statistically significant relationship between changes in the level and slope of interest rates (2-year yield, 10-year yield, 10-year minus 2-year yield) and beta-adjusted growth stock returns. However, there is a strong relationship between changes in perceptions about interest rates (the Fed Fund Futures Curve) and growth stock investing, and the current relationship is the most negative it has been since COVID. Therefore, the key to growth stocks working appears to be a moderation in the perception about Fed hawkishness. This modestly moderated following the Russian invasion of Ukraine.

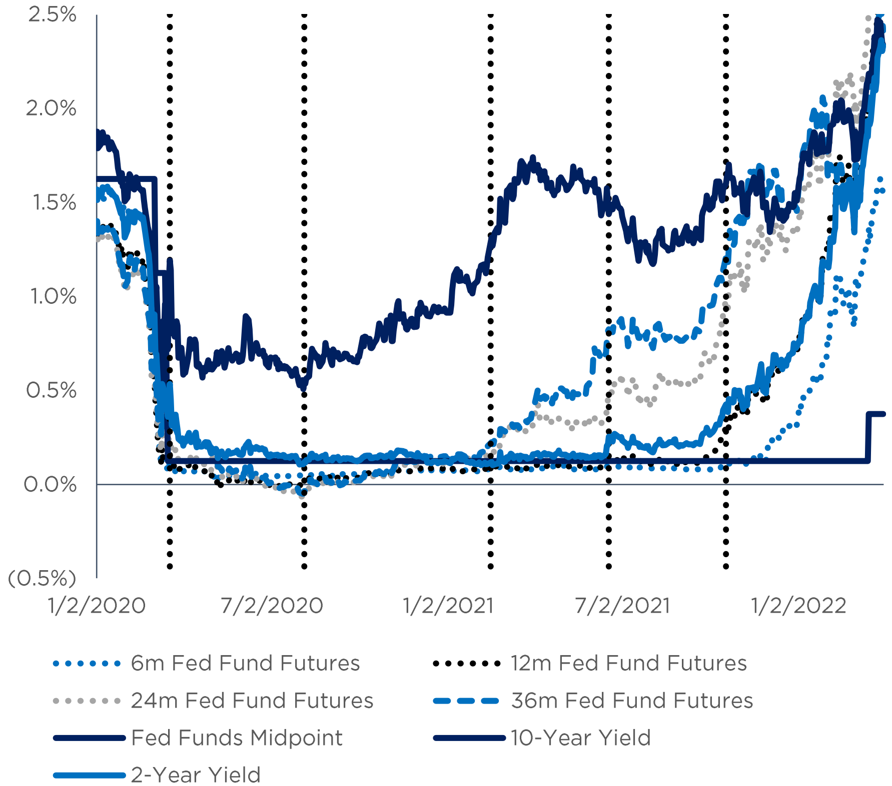
Within the growth universe, performance of the software, biotechnology, IT services, and healthcare technology industries all have a statistically significant and negative relationship to changes in perceptions about the Fed Funds rate. While semiconductors have also recently lagged, their performance is not statistically significantly associated with perception about rate changes. Perhaps semis are a good place to look for long ideas.

Among the stocks with a high and significant negative relationship to perceptions about inflation, we think the biotechnology sell-off is overdone, with mid-cap. biotechnology at a ten-year low on relative price-to-sales. Only 15% of all biotechnology companies EVER generate cumulative positive free cash flow and most biotechnology companies that do eventually generate cash take on average five years to do so. Perceptions about Fed Fund futures likely will dramatically change several times in the interim. For stocks with high and positive relationships to the perception of rising Fed Fund rates, we prefer materials to select staples.

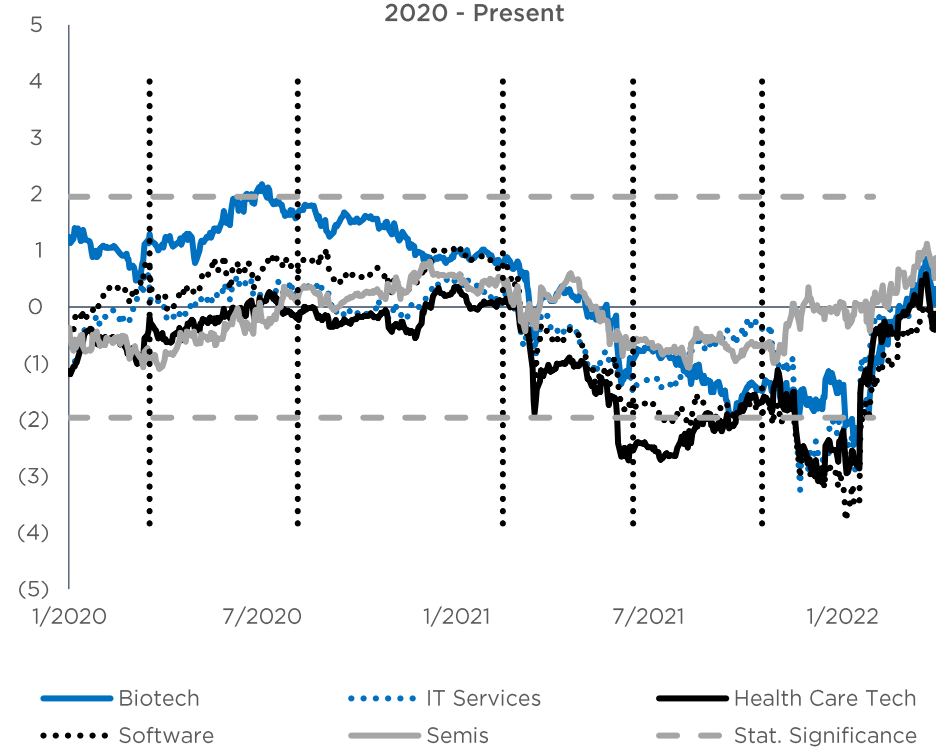
PERCEPTIONS OF INTEREST RATES LED ACTUAL INTEREST RATES

We show the Fed Fund futures moves for 6-,12-,24-, and 36-months over the last two years (left chart). The five vertical lines are 3/18/2020 (Initial COVID crash), 8/5/2020 (10-year yield bottoms), 2/15/2021 (longer-term Fed Fund Futures start to rise), 6/18/2021 (longer-term Fed funds slow), and 10/18/21 (an anticipation of the Fed pivot). Perception about Future Fed Funds Rates is clearly distinct from the actual rates (particularly the 24-and 36-month horizons). Additionally, (right chart) we observed that biotech, software, and healthcare tech's returns were statistically significantly correlated to the Fed Fund Futures, though today there is zero correlation.

Understanding Perception of Future Interest Rates
2020 - Present

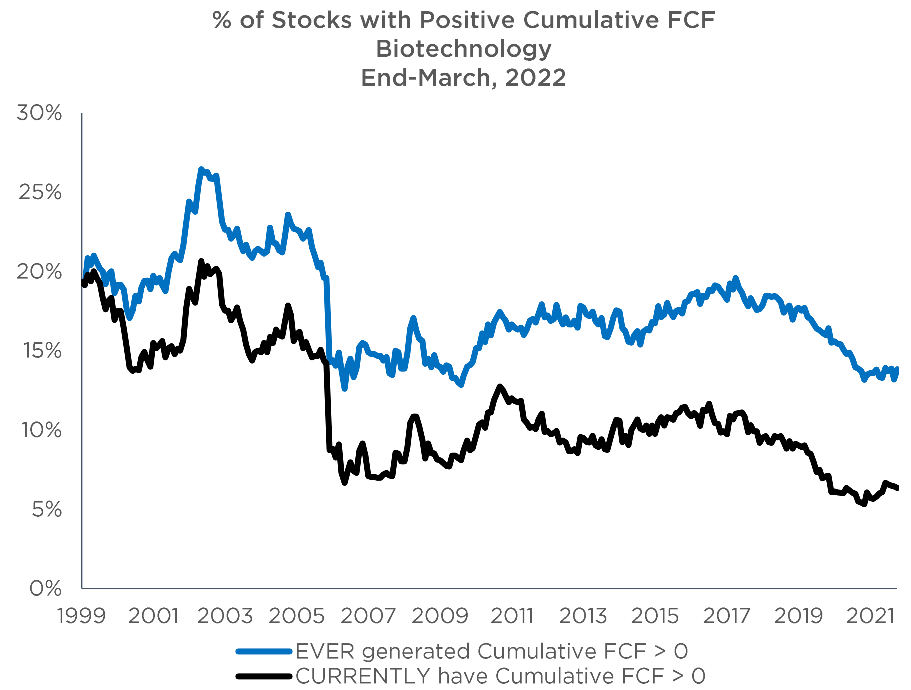


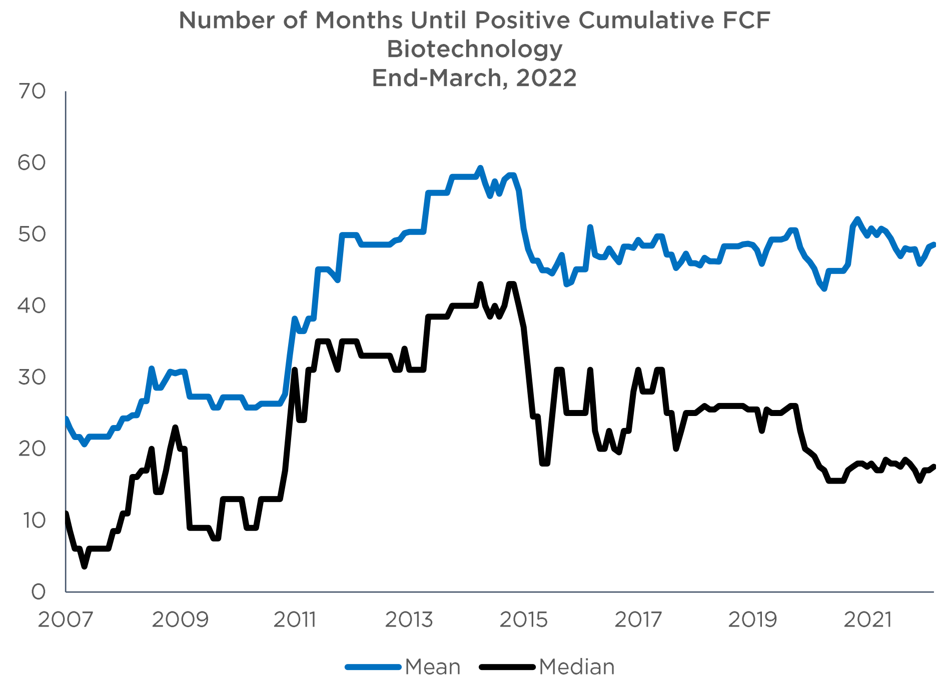
252d T-Stat of 42d Trend
6-Month Fed Funds Future
2020 - Present



IS THE BIOTECH SELL-OFF OVERDONE?

We suspect that any perception of dovishness will cause a rebound in the most negatively impacted areas. We think the biotech sell-off is overdone (as we pointed out in our December healthcare note, mid-cap. biotechnology is at a ten-year low on relative price-to-sale after a ~50% correction). First, only 15% of all biotechnology companies EVER generate cumulative positive free cash flow (left chart). So what terminal value is even impaired? The best argument is that these companies will have a higher cost of capital, but that merits a correction of 5-15% at most, not ~50%! If most of the value is in the terminal value, then rising short-term rates shouldn't impair something more than ten years out, as at that point, we will probably be onto the next rate cycle. Secondly, most companies that do eventually generate cash take on average five years to do so – and perceptions about Fed Fund futures likely dramatically change several times in the interim.





BUY MATERIALS & BIOTECH, SHORT STAPLES & SELECT SOFTWARE

The left side of this chart shows ideas with a highly positive (materials) and highly negative (biotechnology) relationship to changes in perceptions about rates. We think these are good areas to look for buy ideas. Select food, beverages, and tobacco (high positive) and profitless software (high negative) would make for a good “perception of rates” barbell.

Buy Interest Rate Perception Sensitive
Materials and Biotechnology

Materials

Ticker	Company Name	Industry	T-Stat	Market Cap ($ US. Bil)
SCCO	Southern Copper Corporation	Metals & Mining	1.87	58.68
DOW	Dow Inc.	Chemicals	2.07	46.84
CTVA	Corteva, Inc.	Chemicals	1.90	41.77
FMC	FMC Corporation	Chemicals	2.53	16.56
PKG	Packaging Corp of America	Cont. & Pkg.	2.15	14.53
RS	Reliance Steel & Aluminum Co.	Metals & Mining	2.44	11.31
X	United States Steel Corporation	Metals & Mining	1.73	9.83
RGLD	Royal Gold, Inc.	Metals & Mining	2.46	9.27
IOSP	Innospec Inc.	Chemicals	1.77	2.29

Biotechnology

Ticker	Company Name	Industry	T-Stat	Market Cap ($ US. Bil)
MRTX	Mirati Therapeutics, Inc.	Biotechnology	(1.52)	4.56
BPMC	Blueprint Medicines Corporation	Biotechnology	(1.94)	3.78
ZNTL	Zentalis Pharmaceuticals, Inc.	Biotechnology	(2.13)	2.10
PRTA	Prothena Corporation plc	Biotechnology	(2.09)	1.71
DVAX	Dynavax Tech Corp	Biotechnology	(1.74)	1.35
CHRS	Coherus BioSciences, Inc.	Biotechnology	(2.09)	1.00

Short Interest Rate Perception Sensitive
Food, Beverage & Tobacco and Profitless Software & Services

Food, Beverage & Tobacco

Ticker	Company Name	Industry	T-Stat	Market Cap ($ US. Bil)
ADM	Archer-Daniels-Midland Corp	Food Products	2.10	50.77
CALM	Cal-Maine Foods, Inc.	Food Products	1.91	2.7

Profitless Software & Services

Ticker	Company Name	Industry	T-Stat	Market Cap ($ US. Bil)
U	Unity Software Inc.	Software	(1.62)	29.18
GWRE	Guidewire Software, Inc.	Software	(2.35)	7.91
FSLY	Fastly, Inc.	IT Services	(1.85)	2.09
LPSN	LivePerson, Inc.	Software	(1.59)	1.77
GTYH	GTY Technology Holdings Inc.	Software	(1.81)	0.19

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

MACRO IS MATTERING MORE, AND PEAKING IN MANY AREAS

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 consumer remains very strong. Economic and industrial activity have both plateaued this month after rising the previous year. The 6-month and 12-month curves are bear flattening. Financial conditions are tightening. The dollar is strengthening. Commodities and oil are generally rising and company-specific risk is falling.

Current Regime for Each Macro Signal

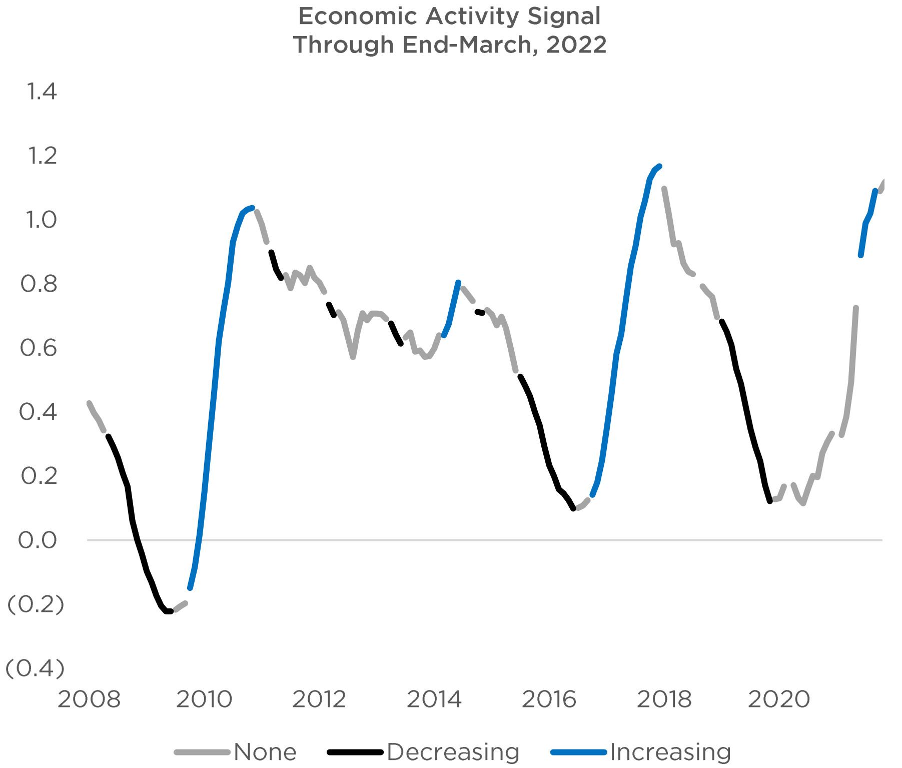
Macro Signal	Current Regime	Examples of Components
China	Decreasing	Fiscal Expenditures, New Auto Registrations, Electricity Consumption, Exports, Consumer Confidence, Financial Conditions, Residential Property Sales, 10-Year Yield
Commodities	Increasing	Aluminum, Corn, Cotton, Copper, Lumber, Natural Gas, Soybeans, Sugar, Silver
Consumer Activity	Increasing	Credit Card Delinquency, Retail Sales, Consumer Confidence, Wage Growth, Unemployment
Corporate Profitability	None	Operating Margin, 1-Year FWD Earnings Expectations, 2-Year FWD Earnings Expectations
Company-Specific Risk	None	The amount unexplained by our 7-factor model
Currency	Dollar Strengthening	AUD, CAD, CHF, DXY, EUR, GBP, INR, JPY, SEK
Economic Activity	None	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	None	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	Bear Flattening	US 2-Year Yield, US 10-Year Yield
Yield Curve 126d	Bear Flattening	US 2-Year Yield, US 10-Year Yield
Yield Curve 252d	Bear Flattening	US 2-Year Yield, US 10-Year Yield

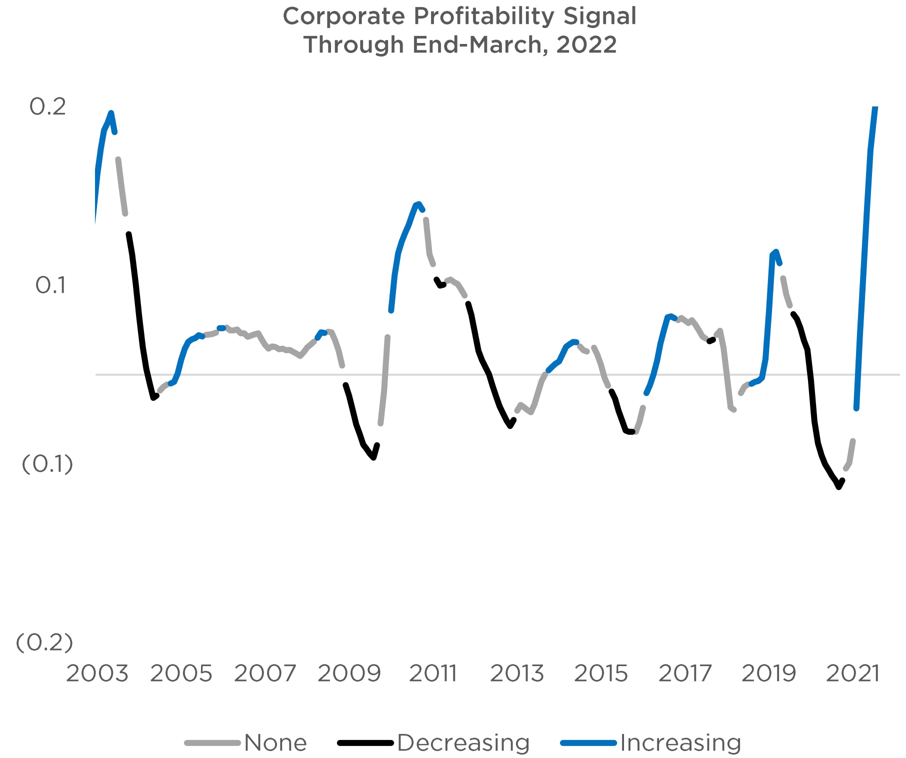
WHAT SHOULD WE DO ABOUT IT?

1. We recommend that investors **gross up their consumer discretionary exposure.** Our consumer discretionary model performs better when our consumer activity gauge is positive and increasing and when company-specific risk is rising in the consumer sector
2. Previously we had been recommending that investors gross down their durables exposure, as our model fails when corporate profitability is increasing. Profitability is not leveling off at a high level, meaning taking larger positions (or at least normal size) in air conditioners, durable apparel, homebuilders, etc. is now prudent.
3. **Gross up exposure to energy and industrials:** Typically, when oil rises this enables our models to pick winners from losers well.

ECONOMIC ACTIVITY INCREASED AGAIN, PROFITS FINALLY LEVELING

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. This month the gauge moderated (left chart). 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. Our corporate profitability signal overall is at a high (right chart).





OTHER PROCESS FOR GROSS EXPOSURE RECOMMENDATIONS

Our durables model performs 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 2.2% on average when corporate profitability is increasing but outperforms the bottom quintile by 8.4% when it is not increasing (left chart). Another illustration is our economic activity gauge. It recently stopped increasing, causing us to change our gross exposure recommendation for TMT, but the power of our quantitative model for TMT stocks when economic activity is increasing is substantial (right chart).

Durables Model Performance Through End-March, 2022

Stat (Beta-Adjusted)	Corporate Profitability Increasing	Corporate Profitability Not Increasing	Difference
Weighted Mean	(2.2%)	7.6%	(9.8%)
Weighted Median	(2.6%)	10.6%	(13.1%)
Weighted Information Ratio	(0.21)	0.64	(0.85)
Hit Rate	42.9%	63.4%	(20.5%)

TMT Model Performance Through End-March, 2022

Stat (Beta-Adjusted)	Economic Activity Increasing	Economic Activity Not Increasing	Difference
Weighted Mean	14.7%	6.7%	8.0%
Weighted Median	16.8%	5.7%	11.1%
Weighted Information Ratio	1.66	0.72	0.95
Hit Rate	65.7%	54.8%	10.9%

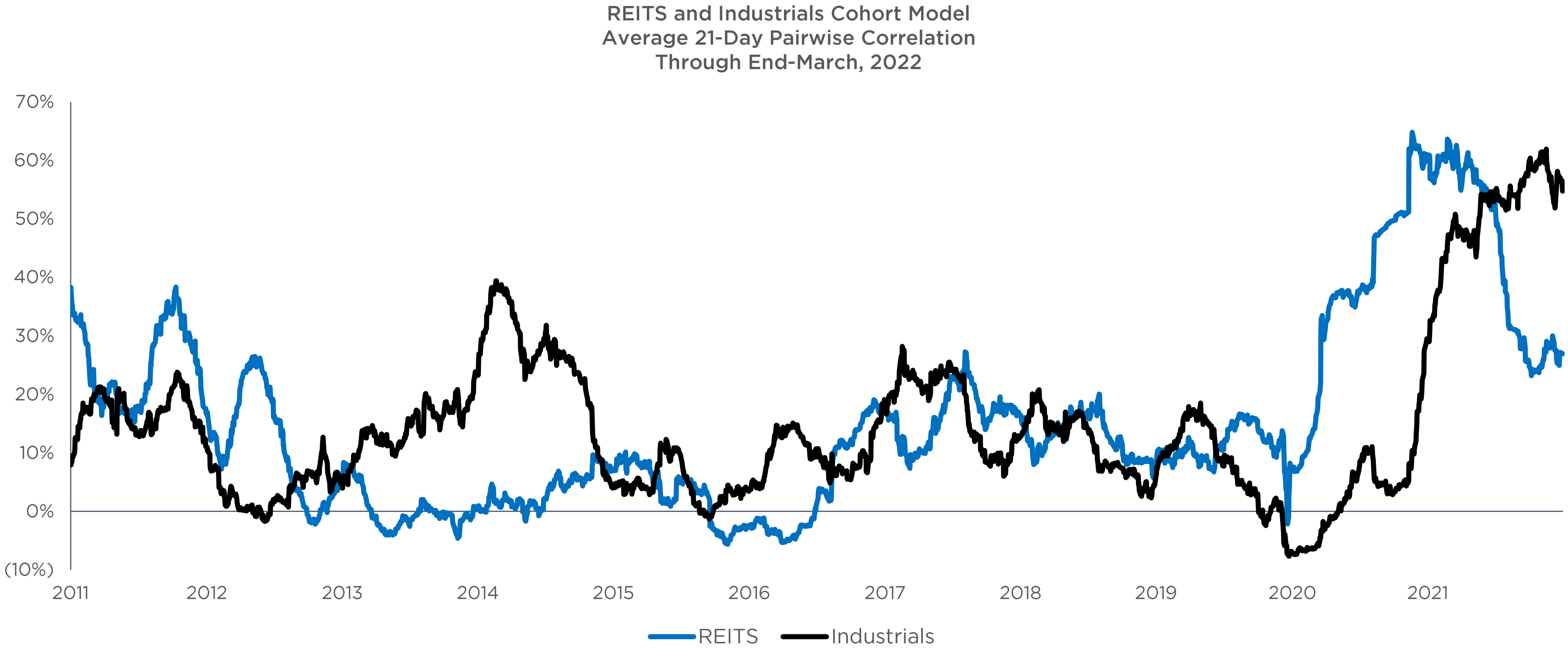
IF RISKS DID NOT CHANGE, ANYONE COULD DO RISK MANAGEMENT

Four key risks worth monitoring:

1. **High signal correlation:** Variables both fundamental managers and quants use to pick winners from losers are highly correlated in industrials – REITS were but this has moderated
2. **COVID:** Quality "reopening" stocks have still massively underperformed "junk" "work from home" stocks – monitor exposure of "substance" and "work from home" / "reopening".
3. **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.
4. **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.

RISK ONE: HIGHLY CORRELATED SIGNALS IN INDUSTRIALS

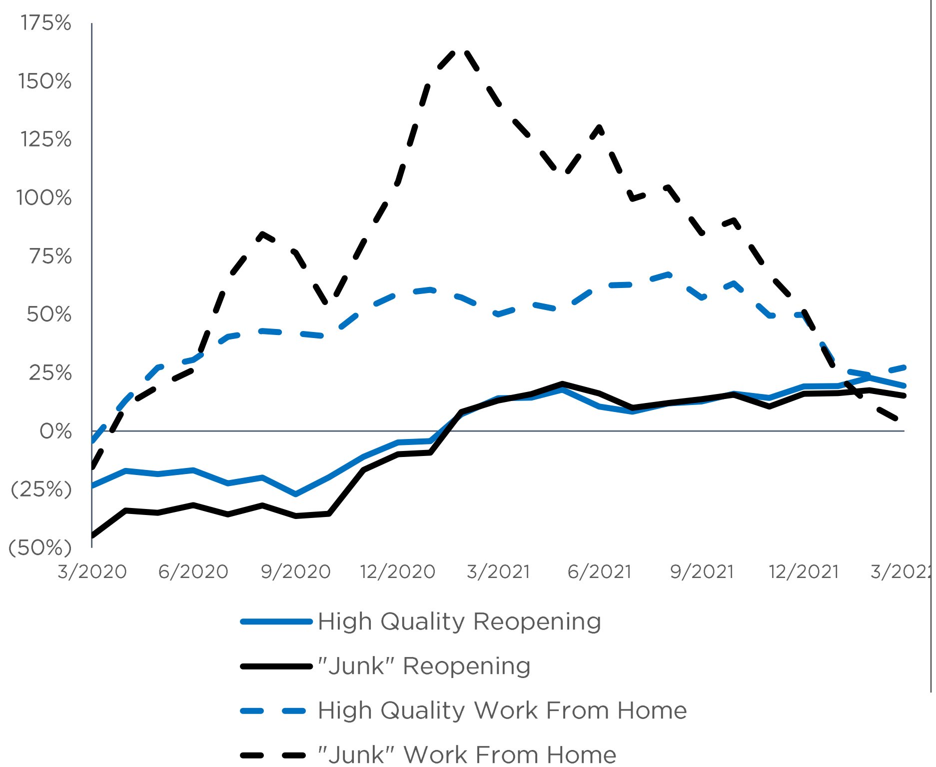
We analyzed all 21 of our quantitative models to see if signals have become increasingly correlated recently. The two biggest risks we see are the increased correlation in REITS and industrials. For both, we have a model comprised of eight signals to predict subsequent 18-month returns for stocks in 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). While REITS signals have now reverted closer to average, industrials signals have not.



RISK TWO: 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 have finally begun to underperform reopening since the beginning of COVID (right exhibit for ideas).

Compounded Median Return
Reopening vs. Work-from-Home, High Quality vs. Junk
Through End-March, 2022



Buy High Quality Reopening, Sell "Junk" Work-from-Home
Names in Top/Bottom Model Quartile with Market Cap. of at least $1 Bil.
End-March, 2022

Long

Ticker	Company Name	Industry Group	Market Cap ($ US. Bil)
SNA	Snap-on Incorporated	Machinery	10.98
PB	Prosperity Bancshares, Inc.	Banks	6.39
FTI	TechnipFMC plc	Energy Equipment & Services	3.5

Short

Ticker	Company Name	Industry Group	Market Cap ($ US. Bil)
PTON	Peloton Interactive, Inc.	Leisure Products	8.76
SAM	The Boston Beer Company, Inc.	Beverages	4.74
BYND	Beyond Meat, Inc.	Food Products	3.07
SHLS	Shoals Technologies Group, Inc.	Electrical Equipment	1.91
ARRY	Array Technologies, Inc.	Electrical Equipment	1.69
STEM	Stem, Inc.	Electrical Equipment	1.69
CANO	Cano Health, Inc.	Health Care Providers & Services	1.27
TTCF	Tattooed Chef, Inc.	Food Products	1.03

RISK THREE: 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-March, 2022

Ticker	Company	Industry Group	Market Cap. (US$ Bil.)
WMT	Walmart Inc.	Food & Staples Retailing	409.80
PFE	Pfizer Inc.	Pharmaceuticals	291.12
COST	Costco Wholesale Corporation	Food & Staples Retailing	255.23
ORCL	Oracle Corporation	Software	220.74
VZ	Verizon Communications Inc.	Diversified Telecommunication Services	213.84
TGT	Target Corporation	Multiline Retail	98.13
EW	Edwards Lifesciences Corporation	Health Care Equipment & Supplies	73.14
PSA	Public Storage	Equity Real Estate Investment Trusts (REITs)	68.44
CTSH	Cognizant Technology Solutions Corporation	IT Services	47.04
ORLY	O'Reilly Automotive, Inc.	Specialty Retail	45.41
AZO	AutoZone, Inc.	Specialty Retail	40.58
DLR	Digital Realty Trust, Inc.	Equity Real Estate Investment Trusts (REITs)	40.34
AVB	AvalonBay Communities, Inc.	Equity Real Estate Investment Trusts (REITs)	34.65
EQR	Equity Residential	Equity Real Estate Investment Trusts (REITs)	33.80
EFX	Equifax Inc.	Professional Services	29.14
PCG	PG&E Corporation	Electric Utilities	23.73
K	Kellogg Company	Food Products	21.89
CTRA	Coterra Energy Inc.	Oil, Gas & Consumable Fuels	21.87
CPT	Camden Property Trust	Equity Real Estate Investment Trusts (REITs)	17.54
CLX	The Clorox Company	Household Products	17.11
EVRG	Evergy, Inc.	Electric Utilities	15.67
ELS	Equity LifeStyle Properties, Inc.	Equity Real Estate Investment Trusts (REITs)	14.23
LSI	Life Storage, Inc.	Equity Real Estate Investment Trusts (REITs)	11.73
ERIE	Erie Indemnity Company	Insurance	8.14
SWN	Southwestern Energy Company	Oil, Gas & Consumable Fuels	7.99
DNB	Dun & Bradstreet Holdings, Inc.	Professional Services	7.55

RISK FOUR: NEGATIVE ASYMMETRIC BETA

We analyzed the beta of stocks during periods where the market is down 10% or more. Many of thee 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-March, 2022

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	68.44	ABBV	AbbVie Inc.	Biotechnology	286.33
SPG	Simon Property Group, Inc.	REITs	43.2	VZ	Verizon Communications Inc.	Diversified Telecom Services	213.84
O	Realty Income Corporation	REITs	41.43	CME	CME Group Inc.	Capital Markets	85.49
DLR	Digital Realty Trust, Inc.	REITs	40.34	ICE	Intercontinental Exchange, Inc.	Capital Markets	74.23
SBAC	SBA Communications Corporation	REITs	37.17	TWLO	Twilio Inc.	IT Services	29.92
AVB	AvalonBay Communities, Inc.	REITs	34.65	NDAQ	Nasdaq, Inc.	Capital Markets	29.30
EQR	Equity Residential	REITs	33.8	LYV	Live Nation Entertainment, Inc.	Entertainment	26.33
ARE	Alexandria Real Estate Equities, Inc.	REITs	32.19	LEN	Lennar Corporation	Household Durables	23.41
EXR	Extra Space Storage Inc.	REITs	27.58	CMS	CMS Energy Corporation	Multi-Utilities	20.29
MAA	Mid-America Apartment Comm, Inc.	REITs	24.16	YUMC	Yum China Holdings, Inc.	Hotels, Rest. & Leisure	17.68
ESS	Essex Property Trust, Inc.	REITs	22.55	MKTX	MarketAxess Holdings Inc.	Capital Markets	12.87
BXP	Boston Properties, Inc.	REITs	20.18	TDOC	Teladoc Health, Inc.	Health Care Technology	11.62
PEAK	Healthpeak Properties, Inc.	REITs	18.52	DECK	Deckers Outdoor Corporation	Textiles, App. & Luxury Gds.	7.46
UDR	UDR, Inc.	REITs	18.27	GPK	Graphic Packaging Holding Company	Containers & Packaging	6.15
CPT	Camden Property Trust	REITs	17.54	QLYS	Qualys, Inc.	Software	5.56
KIM	Kimco Realty Corporation	REITs	15.26	CIVI	Civitas Resources, Inc.	Oil, Gas & Consumable Fuels	5.07
ELS	Equity LifeStyle Properties, Inc.	REITs	14.23	AYX	Alteryx, Inc.	Software	4.84
LSI	Life Storage, Inc.	REITs	11.73	EXLS	ExlService Holdings, Inc.	IT Services	4.76
NNN	National Retail Properties, Inc.	REITs	7.9	SNDR	Schneider National, Inc.	Road & Rail	4.53
CUZ	Cousins Properties Incorporated	REITs	5.99	ALKS	Alkermes plc	Biotechnology	4.26
HIW	Highwoods Properties, Inc.	REITs	4.8				
ADC	Agree Realty Corporation	REITs	4.73				
HR	Healthcare Realty Trust Incorporated	REITs	4.15				
EQC	Equity Commonwealth	REITs	3.19				
STAR	iStar Inc.	REITs	1.62				

TRIVARIATE SECTOR OVERVIEW: SUMMARY RECOMMENDATIONS

Our sector recommendations are shown here- there are nuances to the recommendations, but high level we like energy / materials over industrials, discretionary over staples, utilities over real estate, and healthcare over technology. Within technology, we prefer margin expansion and positive FCF to the "go-go" profitless but high growth group.

Trivariate Sector Recommendations

Sector	Total S&P 500 Market Cap. (US$ Bil.)	Current S&P 500 Weight	Trivariate-Recommended Weight	Trivariate-Relative Weight	Trivariate Recommendation	Comments
Materials	1,048.66	2.6%	7.0%	4.4%	Overweight	Buy the cheap stocks with upward revisions
Energy	1,548.97	3.9%	8.0%	4.1%	Overweight	Supply won't catch up for awhile and we do not see demand destruction yet
Health Care	5,447.40	13.6%	17.0%	3.4%	Overweight	Healthcare services have cheap growth, and the biotechnology sell-off appears over-done
Utilities	1,096.69	2.7%	4.0%	1.3%	Equal-Weight	Some idiosyncratic investments are sensible
Communication Services	3,746.34	9.4%	10.0%	0.6%	Equal-Weight	Makes sense to keep market-weight FAANGM
Real Estate	1,088.68	2.7%	2.0%	(0.7%)	Equal-Weight	Metrics for stock selection are becoming more effective, commercial remains challenged
Information Technology	11,215.01	28.0%	27.0%	(1.0%)	Equal-Weight	Focus on positive FCF, pricing power – avoid profitless software
Financials	4,446.78	11.1%	10.0%	(1.1%)	Equal-Weight	Prefer large cap banks to small
Consumer Discretionary	4,811.01	12.0%	10.0%	(2.0%)	Equal-Weight	Margins are at risk with rising input costs
Consumer Staples	2,433.52	6.1%	2.0%	(4.1%)	Underweight	Plenty of short ideas in idiosyncratic staples, and valuation of large-caps is stretched
Industrials	3,145.97	7.9%	3.0%	(4.9%)	Underweight	Transportation is rolling over, but earnings expectation are very high despite recent downward revisions

CAN YOU STILL OWN ENERGY AND MATERIALS?

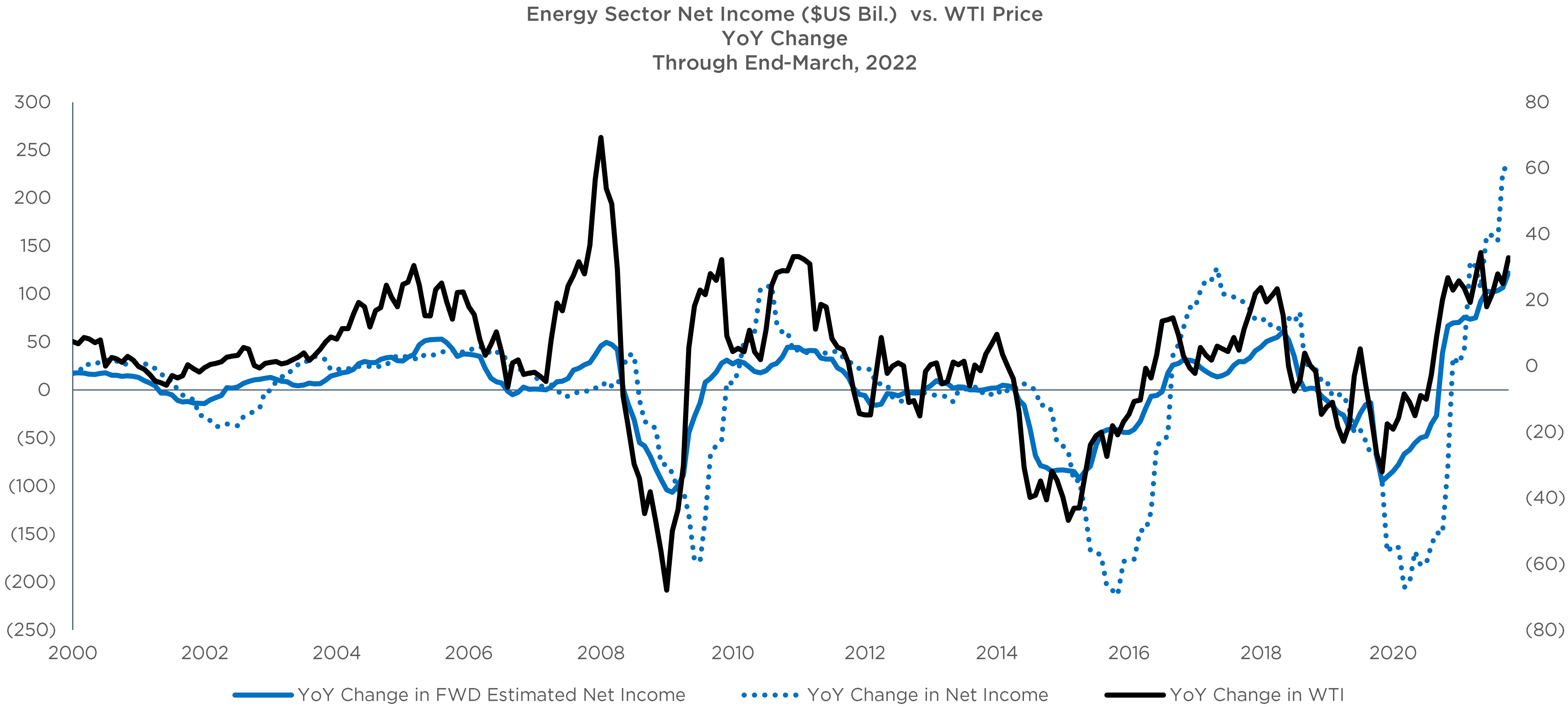
Brent oil was up 39% in Q1, natural gas 51%, aluminum 24% and wheat 30.5%, to name just a few of the huge moves in oil and commodities in Q1.

For energy, rising oil means higher earnings revisions and higher net income for the group, and even with the recent sharp correction the longer-term trajectory has been higher for oil. 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 (energy was the best performing sector last year), the sector remains attractively valued 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 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 oil-sensitive equities have incredibly attractive risk-reward.

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 as people assume earnings will collapse.** 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.

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

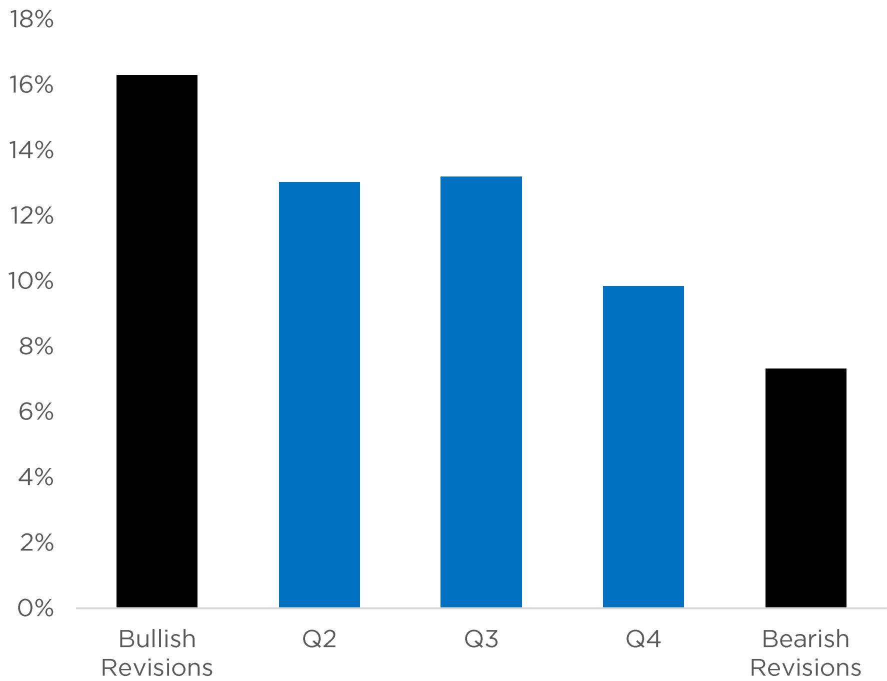
For energy, oil prices are a leading indicator for net income of the energy sector. The black line below shows the change in WTI , which is typically a 3-to-6-month leading indicator for the dashed blue line, which is reported net income. The analysts typically wait until after oil lags (solid blue line),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



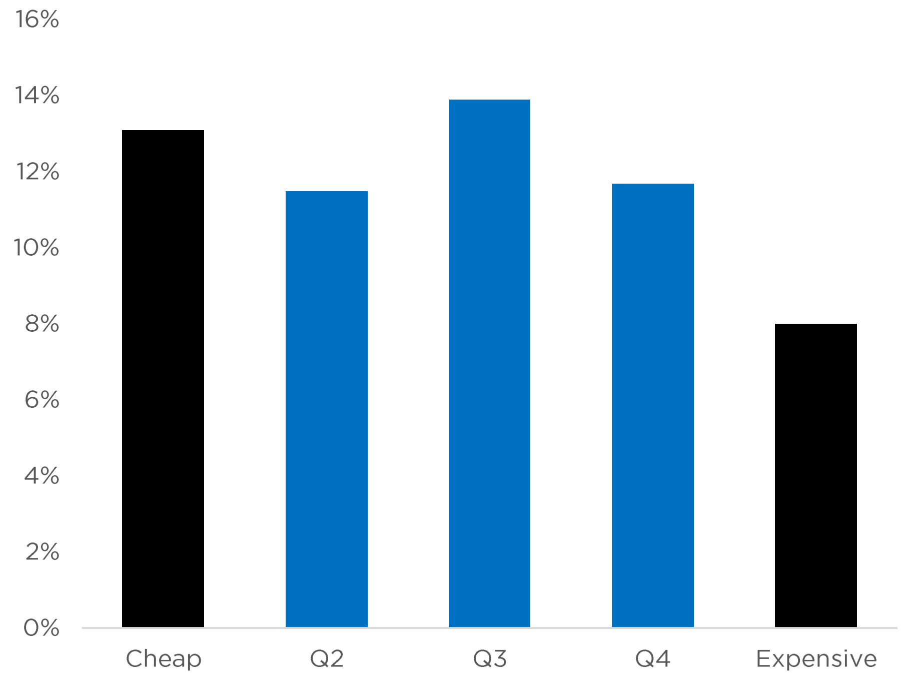
USE ENERGY EARNINGS REVISIONS & VALUATION WHEN OIL IS RISING

We analyzed whether earnings revisions were efficacious at predicting subsequent energy sector returns when oil is rising. Given that stock 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 a highly effective signal, with the top quintile on revisions beating the bottom by ~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 Q on price-to-book outperforms the most expensive by ~5%.

Energy Sector: Earnings Revisions Efficacy
When Oil Is Trending Upward over the Previous 6 Months
Through End-March, 2022



Energy Sector: Price-to-Book Efficacy
When Oil Is Trending Upward over the Previous 6 Months
Through End-March, 2022



THERE IS SKEPTICISM OF THE SUSTAINABILITY OF MATERIALS PROFITS

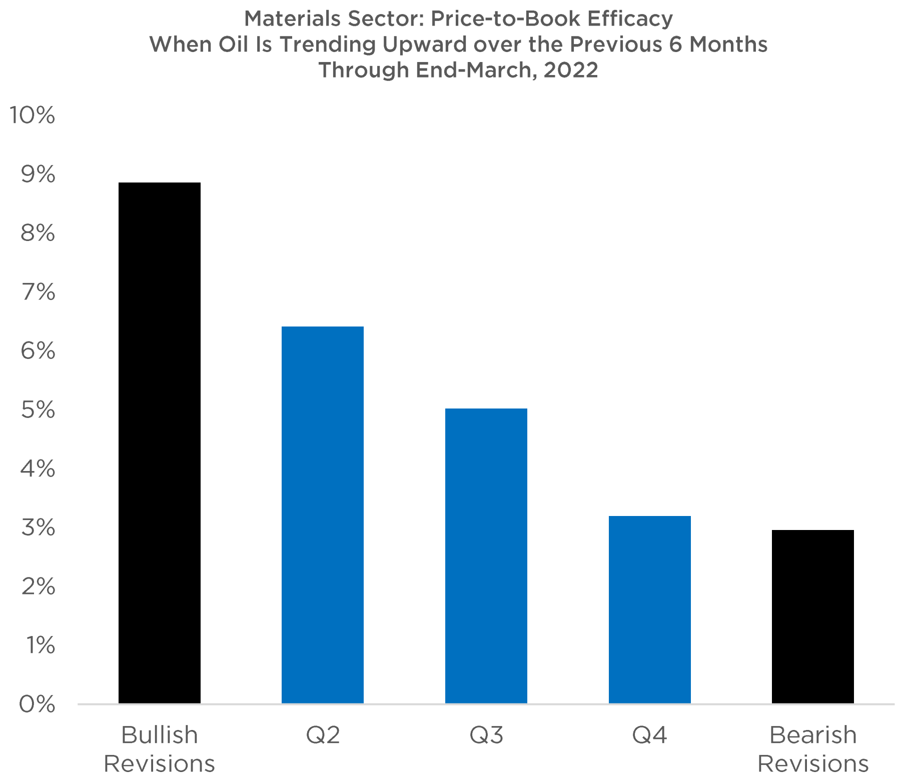
The consensus expectations are that net margins for the materials sector will achieve record highs, and then dramatically roll-over, yet the valuation on a relative to the market basis has barely moved above 18-year lows. Our belief is that many of the companies structurally improved cycle to cycle, so while they clearly are over-earning today, there has been substantive balance sheet repair. We like the risk-reward of a sector with high but likely achievable near-term estimates and attractive relative valuation.

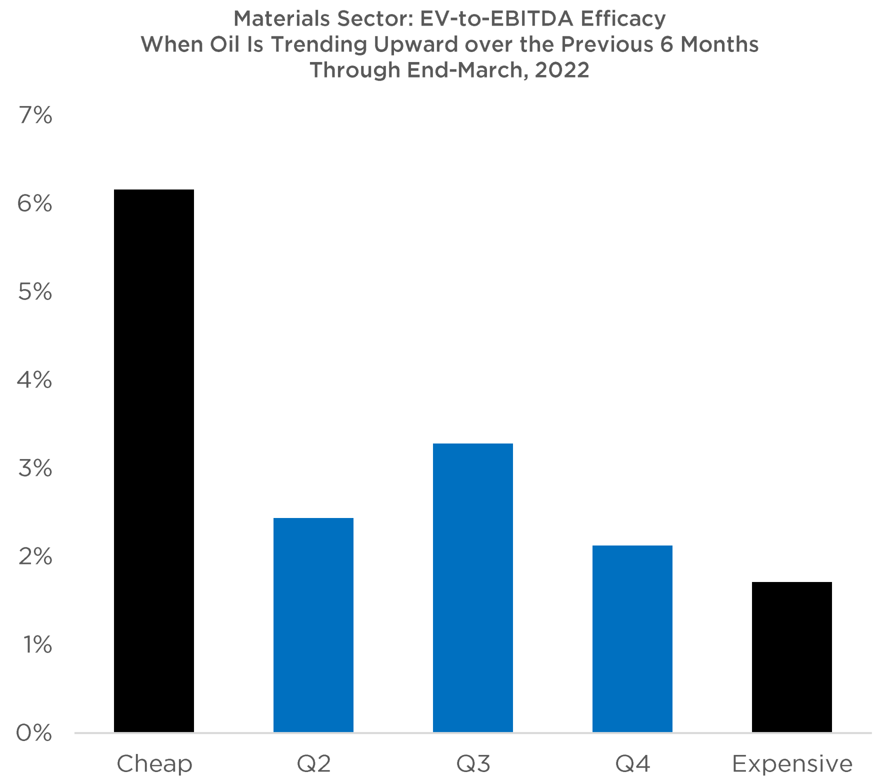
Materials Sector
Forecasted Net Margins
Through End-March, 2022

Materials Relative to T3000 ex-Materials
Median Price-to-Forward Earnings
Through End-March, 2022

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.





ENERGY AND MATERIALS STOCKS WE THINK OUTPERFORM

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
End-March, 2022

Ticker	Company	Industry Group	Market Cap. (US$ Bil.)
NUE	Nucor Corporation	Metals & Mining	39.95
CLF	Cleveland-Cliffs Inc.	Metals & Mining	16.89
AA	Alcoa Corporation	Metals & Mining	16.6
STLD	Steel Dynamics, Inc.	Metals & Mining	15.81
WLK	Westlake Corporation	Chemicals	15.79
EQT	EQT Corporation	Oil, Gas & Consumable Fuels	12.96
RS	Reliance Steel & Aluminum Co.	Metals & Mining	11.31
X	United States Steel Corporation	Metals & Mining	9.83
OLN	Olin Corporation	Chemicals	8.06
MUR	Murphy Oil Corporation	Oil, Gas & Consumable Fuels	6.28
LPX	Louisiana-Pacific Corporation	Paper & Forest Products	5.34
CIVI	Civitas Resources, Inc.	Oil, Gas & Consumable Fuels	5.07
CMC	Commercial Metals Company	Metals & Mining	5.06
CNX	CNX Resources Corporation	Oil, Gas & Consumable Fuels	4.11
FTI	TechnipFMC plc	Energy Equipment & Services	3.5
TROX	Tronox Holdings plc	Chemicals	3.09
AMR	Alpha Metallurgical Resources, Inc.	Metals & Mining	2.45
CDEV	Centennial Resource Development, Inc.	Oil, Gas & Consumable Fuels	2.22
HCC	Warrior Met Coal, Inc.	Metals & Mining	1.92
SCHN	Schnitzer Steel Industries, Inc.	Metals & Mining	1.45
ASIX	AdvanSix Inc.	Chemicals	1.44

OPPORTUNITIES IN THE HEALTHCARE SECTOR

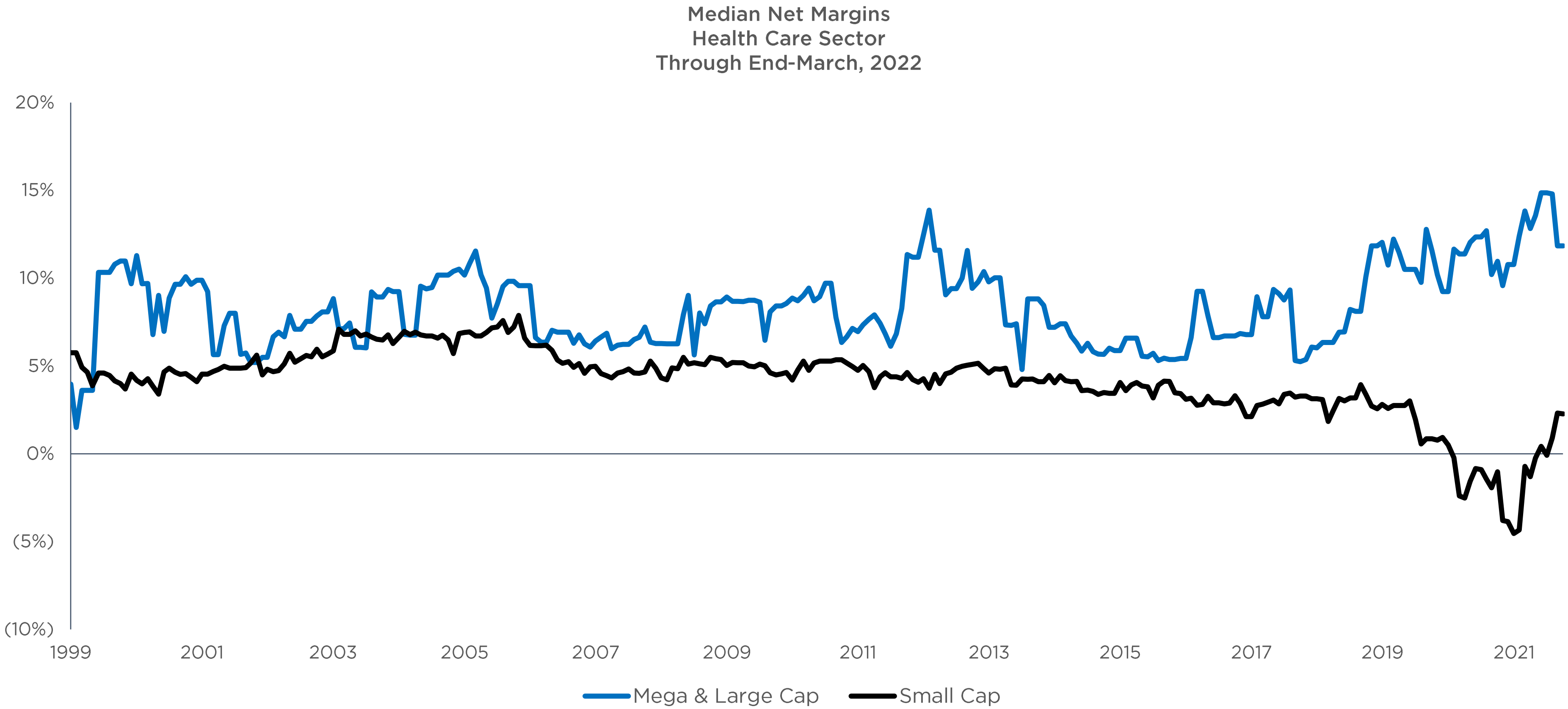
1. The biotechnology sell-off now appears too extreme, with forecasted sales growth relatively strong and relative price-to-sales multiples now at multi-year lows. Adding exposure to biotechnology appears to be good risk-reward. Even if rising interest rates hurt terminal value assumptions, multi-year lows on sales seem overly punitive in our judgment.

2. Healthcare providers and services companies remain the cheapest industry within healthcare, with relative multiple contraction over the last five years, while all the other healthcare industry groups experienced relative multiple expansion on price-to-forward earnings. Interestingly, this contraction happened despite higher revenue growth and lower volatility of the revenue growth. Our prior work shows these stocks can be interest rate sensitive, so investors looking for businesses with pricing power, good revenue growth, low volatility of growth, and compelling relative valuation should look at healthcare providers and services for opportunities.

3. The relationship between classic defensive sectors like mega / large cap. pharma / biotechnology and consumer staples has consistently evolved. The relative valuation of the group is now at all time lows, with staples ripping in December and leaving mega /large biotech / pharma at 59% of the relative multiples when they used to trade at premiums, despite relatively good performance this year. The shareholder return is about constant (dividend plus repurchase yield), a potential sign of the attractiveness of pharma as a defensive play.

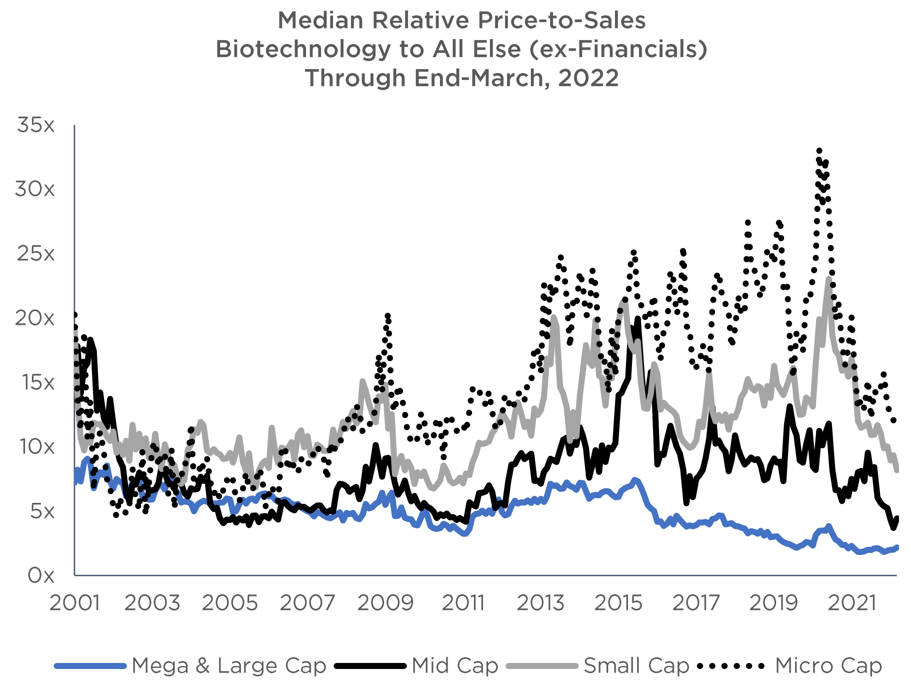
BIG HEALTHCARE COMPANIES ARE INCREASINGLY PROFITABLE

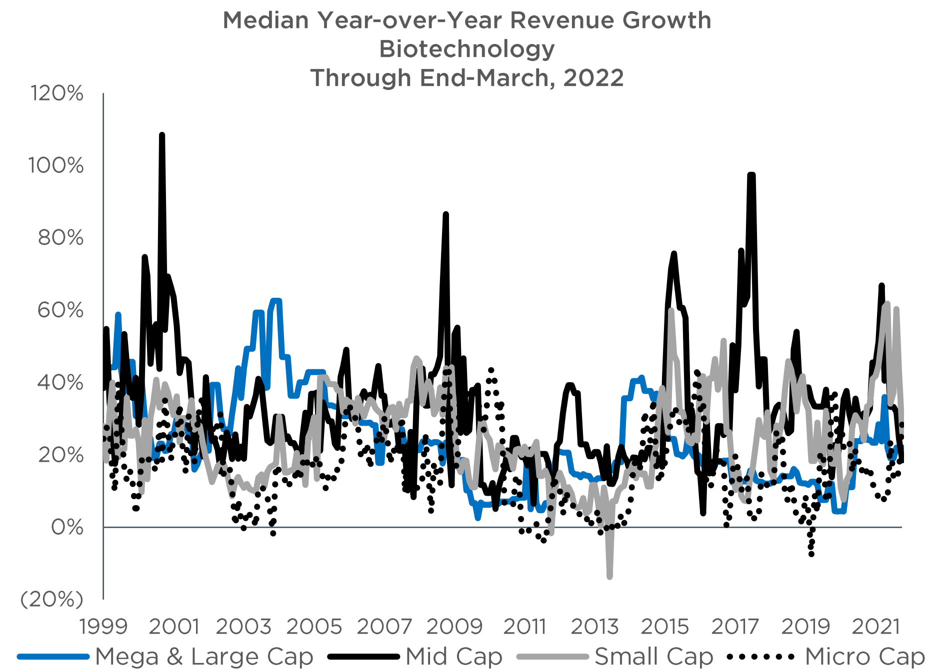
A potential explanation for this huge stock performance differential based on size might be profit margins. While mega / cap companies always were more profitable than small caps, that gap was consistent and flat for nearly 20 years. Now, there has been a modest collapsing after a major widening, where the median small cap company is just above break-even today, and the median mega / large cap healthcare company has record net margins.



BIOTECHNOLOGY VALUATION VS. GROWTH OUTLOOK HAS CHANGED

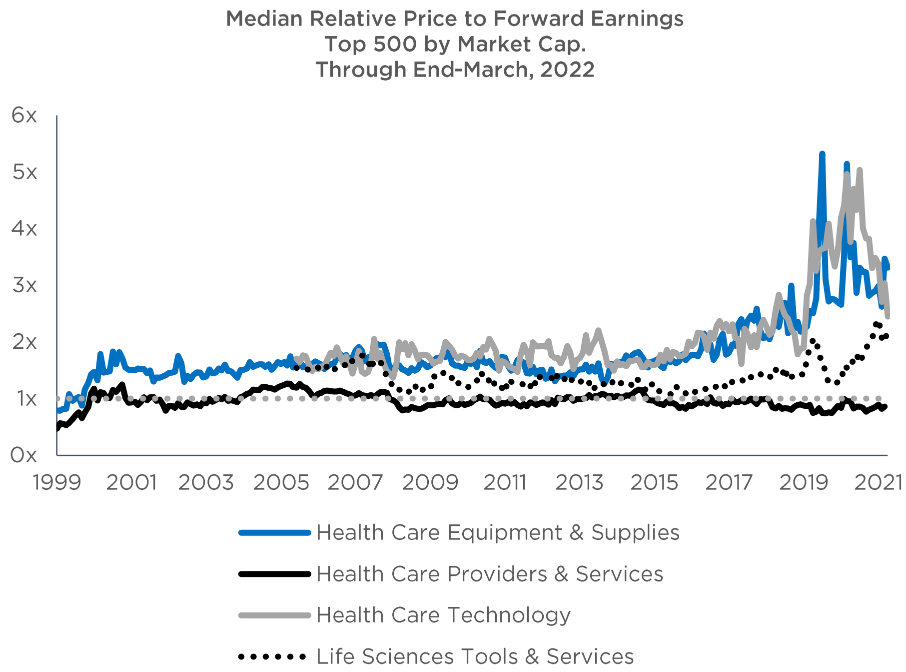
The biotechnology sell-off now appears too extreme (left chart). Mega / large cap biotechnology stocks have never been cheaper, and mid-cap biotechnology stocks are at ten-year relative lows. Meanwhile, the revenue growth rates for companies remain robust (right chart) implying that this valuation reset has been material. Our judgment is the risk-reward looks positive for biotechnology today.

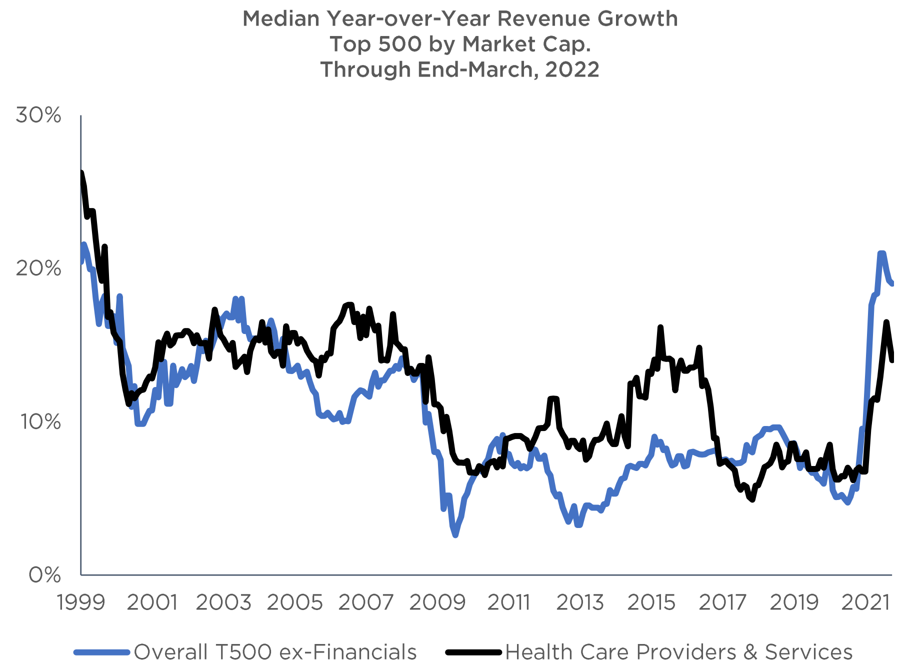




HEALTHCARE PROVIDERS AND SERVICES LOOK ATTRACTIVE

Healthcare providers and services companies remain the cheapest industry within healthcare, having seen relative multiple contraction over the last five years, while all the other healthcare industry groups experienced relative multiple expansion on price-to-forward earnings (left chart). Interestingly, this contraction happened despite higher revenue growth (right chart), and lower volatility of the revenue growth. Gross margins contracted for the group this year, and cost pressures are an obvious concern. However, our prior work shows these stocks can be interest rate sensitive, so investors looking for businesses with pricing power, good revenue growth, low volatility of growth, and compelling relative valuation should look at healthcare providers and services for opportunities.



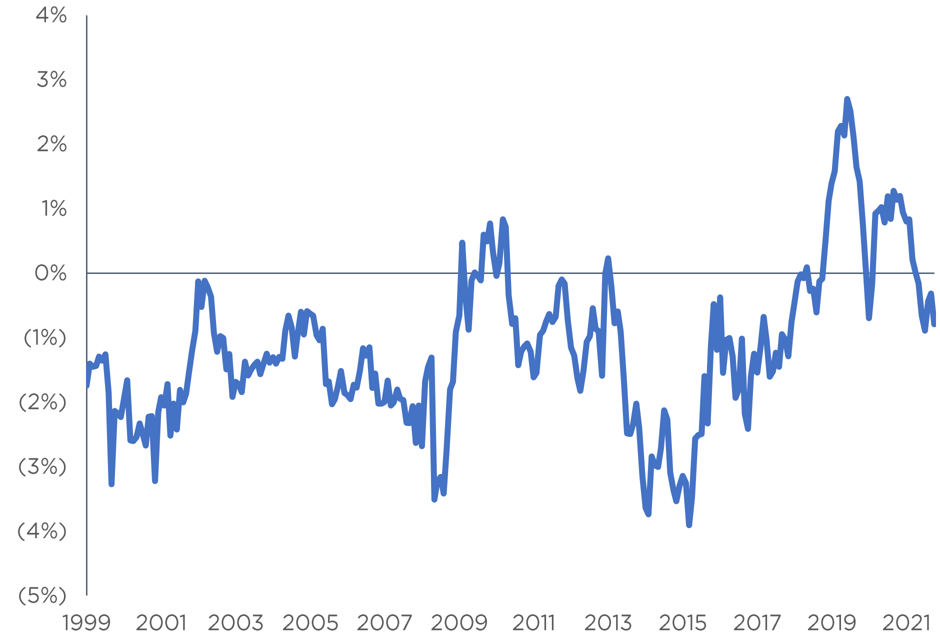


PHARMA SEEMS TOO CHEAP VS. CONSUMER STAPLES

The relationship between classic defensive sectors like mega / large cap. pharma / biotechnology and consumer staples has consistently evolved. The relative valuation of the group is now at all time lows (left chart), with staples ripping December of 2021 and leaving biotech / pharma at 59% of the relative multiples when they used to trade at premiums. The shareholder return is about constant (dividend plus repurchase yield), a potential sign of the attractiveness of pharma as a defensive play (right chart).

Median Relative Price to Forward Earnings
Mega & Large Cap. Pharma Biotech to Consumer Staples
Through End-March, 2022

Median Relative Total Indicated Yield
Mega & Large Cap. Pharma Biotech to Consumer Staples
Through End-March, 2022

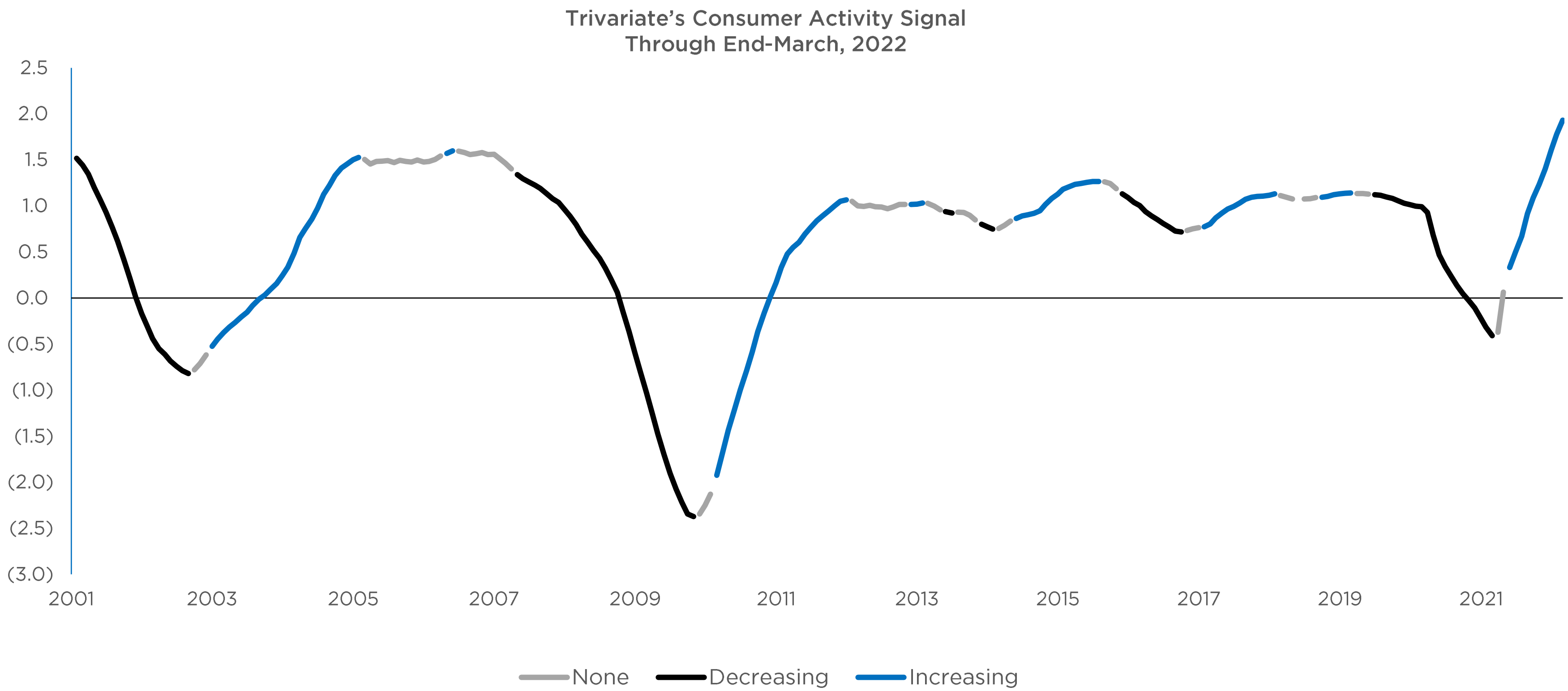


CONSUMER RESEARCH AND CONCLUSIONS

- **Last hiking cycle:** We analyzed the consumer sub-industries returns following the last initial rate hike in December of 2015. Household and personal products and food, beverages and tobacco performed well, whereas autos and retailers were weak. Interestingly, that is the identical industry performance scorecard to what typically works when our consumer activity gauge is strong. So, what's in the price now?
- **Consumer discretionary:** Growth stocks look expensive, as there are more profitless discretionary stocks now than anytime in the last 20 years. Value stocks are trading near all-time lows on price-to-forward earnings. Junk stocks have seen some margin recovery but valuation multiples remain low, signaling relative opportunity in our judgment.
- **Consumer staples:** Growth stocks remain incredibly expensive, and value stocks are average vs. history on price-to-forward earnings. The profitability gap has widened between high quality and junk, but the multiples have not – indicating junk stocks could be good candidate for relative multiple contraction. Small / micro caps look particularly expensive relative to mega / large given current margin levels.
- **Consumer long ideas:** Longs include junk and value discretionary that are cheap on price-to-forward earnings and are forecasted to have margin expansion and revenue growth. Value staples with above 3% forecasted revenue growth are also attractive.
- **Consumer short ideas :** Expensive junk staples with low forecasted growth, expensive growth staples where multiple have not been reset, and growth discretionary where forecasted sales is less than 10 YoY.

THE KEY APPEARS TO BE THAT OVERALL ACTIVITY REMAINS STRONG

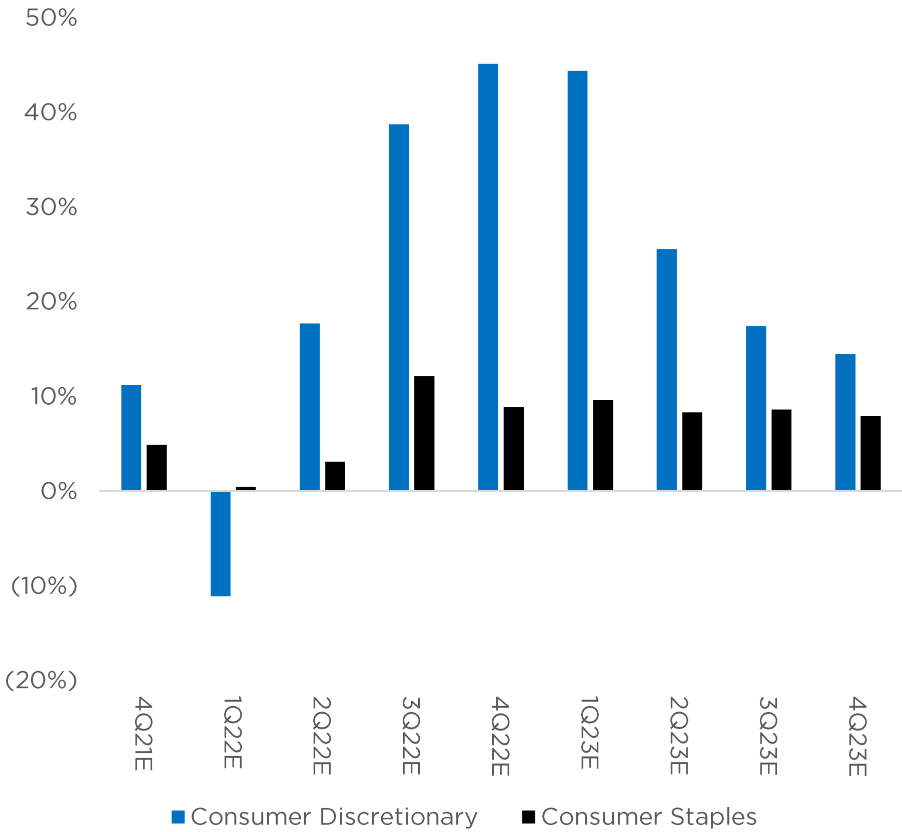
We combined the labor, spending, expenses, and other consumer macro variables into our proprietary US consumer gauge. Below shows the consumer activity as quite robust now, with the key debate being whether it is near peaking. Our gauge would require materially softer labor and wage trends and weaker retail sales for this to be likely, and most corporates are facing the opposite challenge - labor shortages in the US. Analysts should focus on companies with a higher percentage of ex-US wages, as they are likely better positioned to handle this aspect of expenses. Overall, we think an increasing consumer activity gauge is likely for the next several months at a minimum.



HIGH 2H EXPECTATIONS AND MIXED RECENT RESULTS

The median analyst estimate is for negative earnings for the consumer discretionary sector (left chart) in Q1, followed by a strong hockey stick in expectations in the second half of the year. Staples expectations also accelerate in the 2H and are predictably steady through 2023. We think there are likely risks to both sectors in the 2H. Recent results (right) show more upside than downside surprise, but prior momentum was key to the T+3 market reaction.

Analyst 12-Month Forward Earnings Growth Estimates
Consumer Discretionary and Consumer Staples Sectors
As of End-March, 2022



Recent Consumer Earnings Reports and Reaction

Ticker	Company Name	US $ Bil	Report	EPS Est.	EPS Actual	Surprise	T+3 Perf.
DRI	Darden Restaurants Inc.	16.58	24-Mar	$ 2.08	$ 1.93	(7.2%)	(0.9%)
MCW	Mister Car Wash	4.76	24-Mar	$ 0.07	$ 0.11	62.6%	0.6%
COOK	Traeger Inc.	0.85	23-Mar	$ (0.26)	$ (0.29)	(10.1%)	(18.1%)
GIS	General Mills	40.58	23-Mar	$ 0.79	$ 1.08	37.4%	8.0%
DG	Dollar General	50.69	17-Mar	$ 2.57	$ 2.57	0.0%	1.9%
DBI	Designer Brands, Inc.	1.00	17-Mar	$ 0.16	$ 0.15	(6.3%)	6.7%
SIG	Signet Jewelers	3.87	17-Mar	$ 5.01	$ 5.01	0.0%	5.6%
WRBY	Warby Parker, Inc.	3.86	17-Mar	$ (0.09)	$ (0.41)	(555.6%)	10.1%
WSM	Williams-Sonoma	10.48	16-Mar	$ 4.82	$ 5.42	12.4%	4.1%
ARCO	Arcos Dorados Holdings	1.73	16-Mar	$ 0.16	$ 0.22	37.5%	4.7%
LE	Lands' End	0.58	16-Mar	$ 0.31	$ 0.21	(32.3%)	4.2%
MCG	Membership Collective	1.58	16-Mar	$ (0.16)	$ (0.21)	(31.3%)	(3.3%)
SCVL	Shoe Carnival	0.87	16-Mar	$ 0.44	$ 0.72	63.6%	6.1%
BRLT	Brilliant Earth Group	0.96	16-Mar	$ 0.05	$ 0.11	120.0%	26.2%
GES	Guess?, Inc	1.32	16-Mar	$ 1.15	$ 1.14	(0.9%)	12.4%
DOLE	Dole*	1.25	15-Mar	$ 0.10	$ 0.14	40.0%	7.3%
BKE	Buckle, Inc.	1.77	11-Mar	$ 1.39	$ 1.69	21.6%	4.7%
ULTA	Ulta Beauty, Inc.	20.67	10-Mar	$ 4.58	$ 5.41	18.1%	(4.3%)

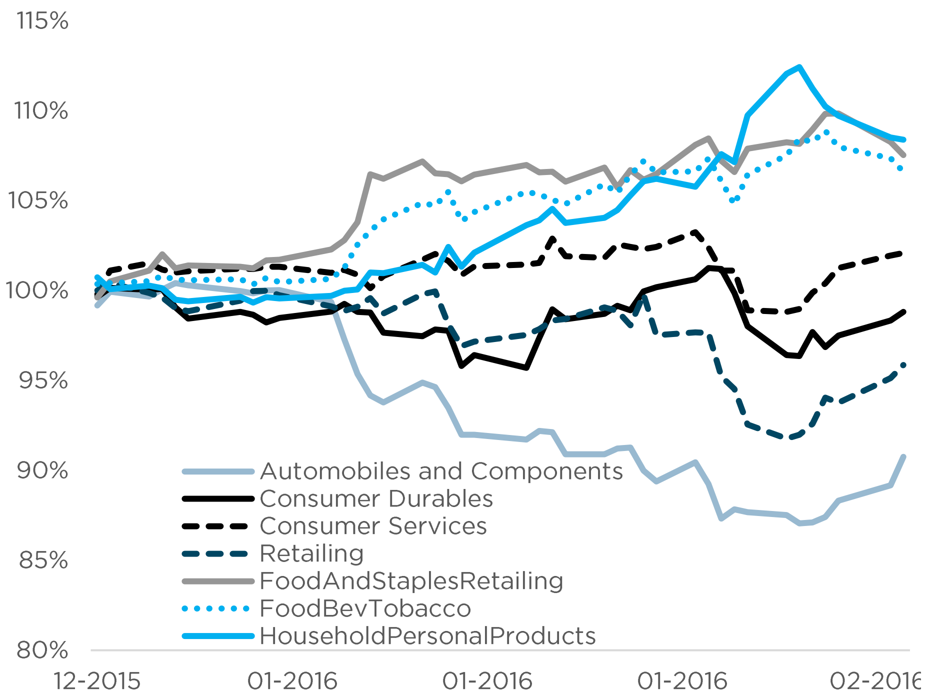
Note: * Mrs. Parker finds Titos, Club Soda and Pineapple juice to be delicious

TRIVARIATE RESEARCH

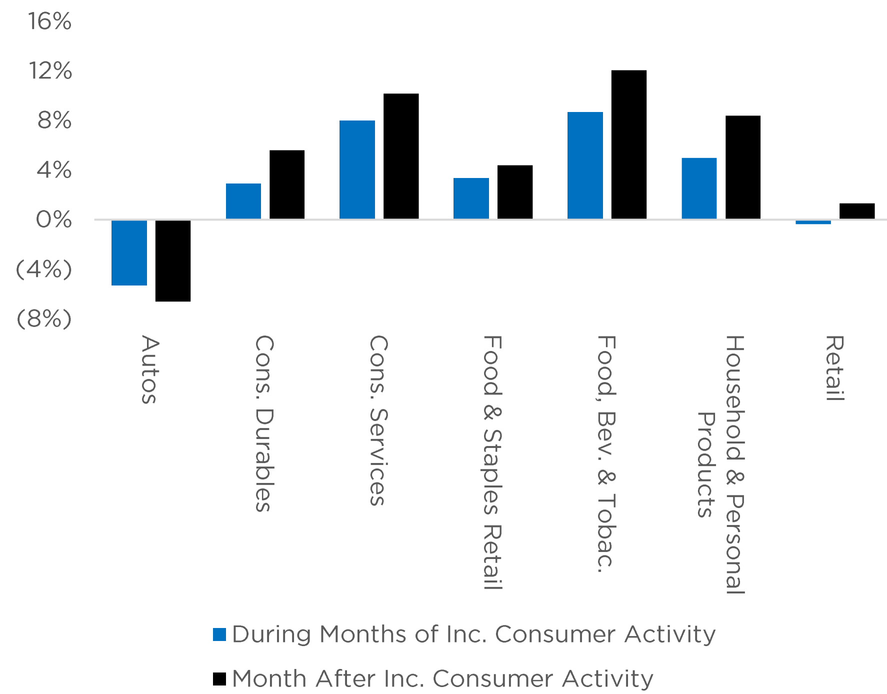
PRIOR CYCLES AND STRONG ACTIVITY YIELD THE SAME PLAYBOOK

The recent hiking cycle changes the perception of about all stocks. We looked at the consumer sub-industries cumulative two-month returns following the December 2015 cycle and found autos and retailers lagged, while staples outperformed (left chart). That is a very similar playbook to what works when our consumer activity gauge is strong (right chart) with autos and retail lagging, and staples and services typically performing well. A debate therefore is whether this is all in the price in terms of margin recovery and valuation or whether more is to come.

Consumer Industry Cumulative Performance Two Months After The Beginning of the Last Rate Hiking Cycle in December 2015

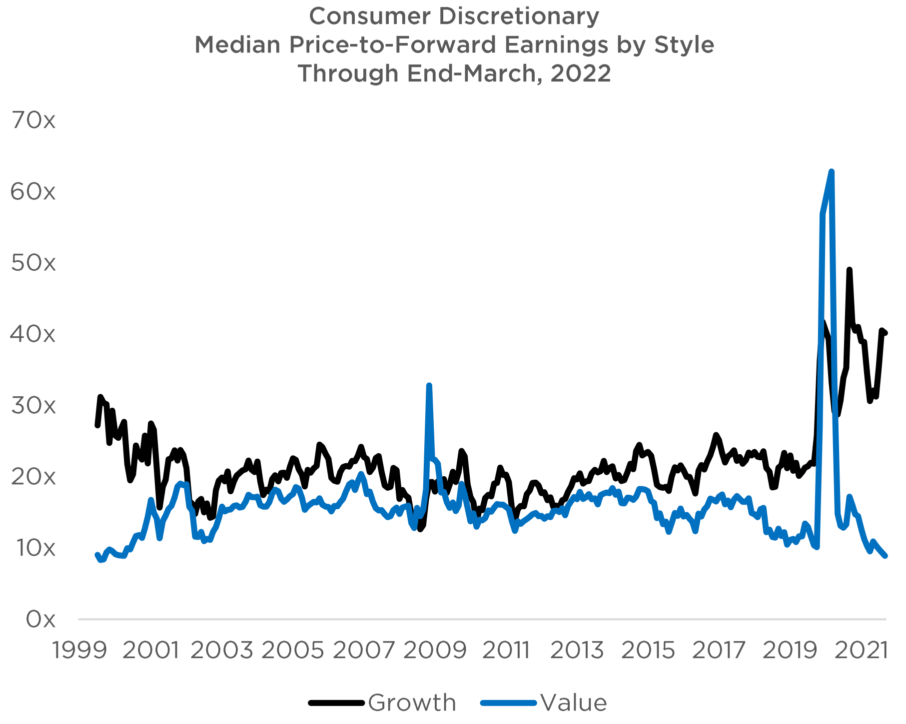


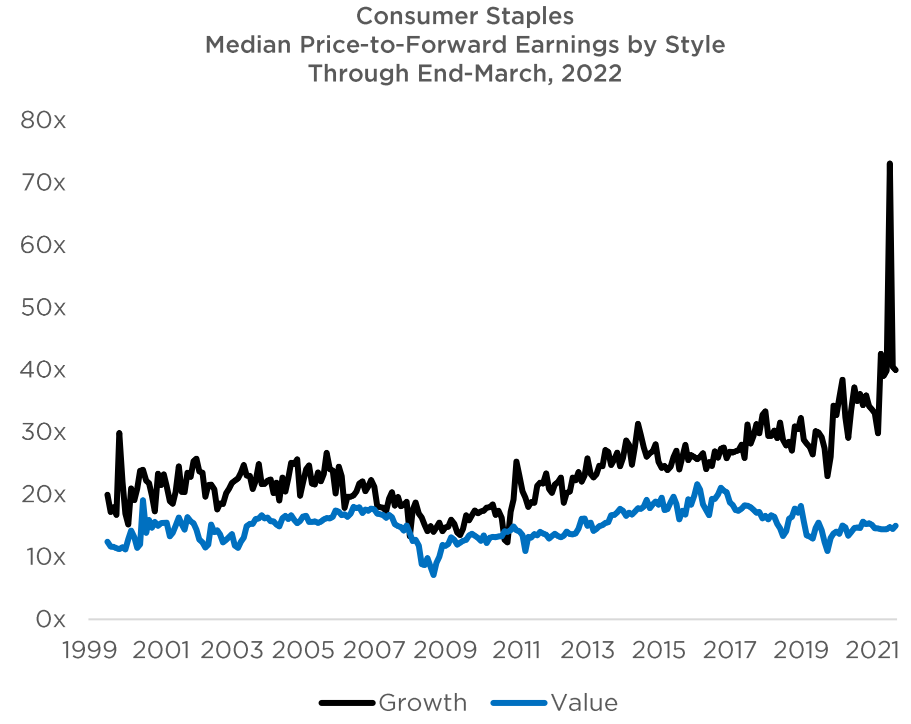
CAGR of Beta Adjusted Monthly Returns Increasing Consumer Activity Through End-March, 2022



CONSUMER GROWTH STOCKS STILL EXPENSIVE

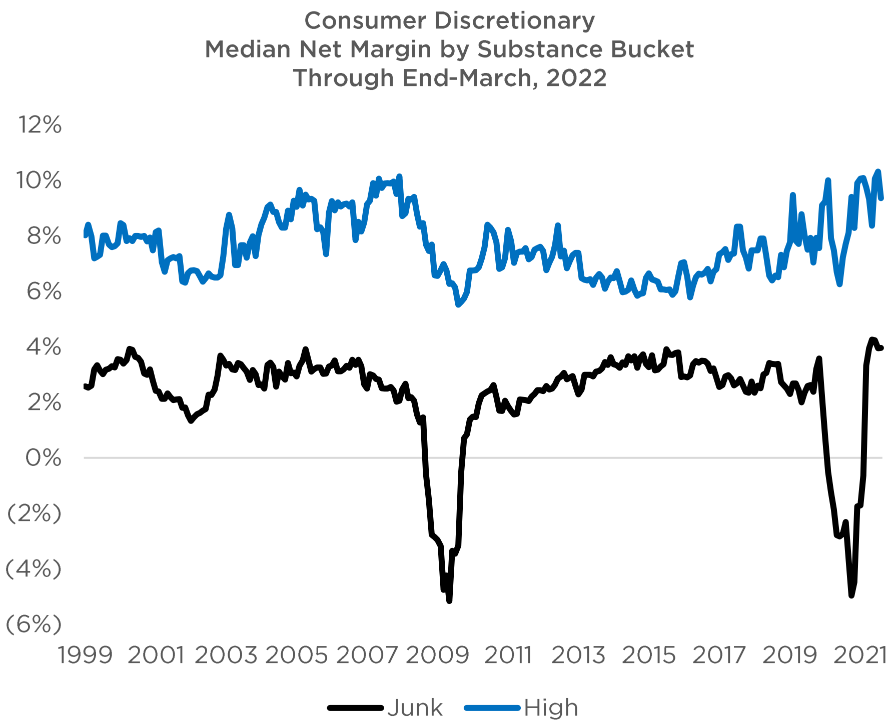
We broke down the consumer discretionary and staples sectors to see margin potential or valuation has been discounted differently than in the past. For discretionary (left) value stocks trade at historically low multiples, and the recent growth stock correction has not caused discretionary growth stocks to see multiples anywhere near historically average levels. For staples (right), price-to-forward earnings levels appear average, but like growth multiple remain quite high.

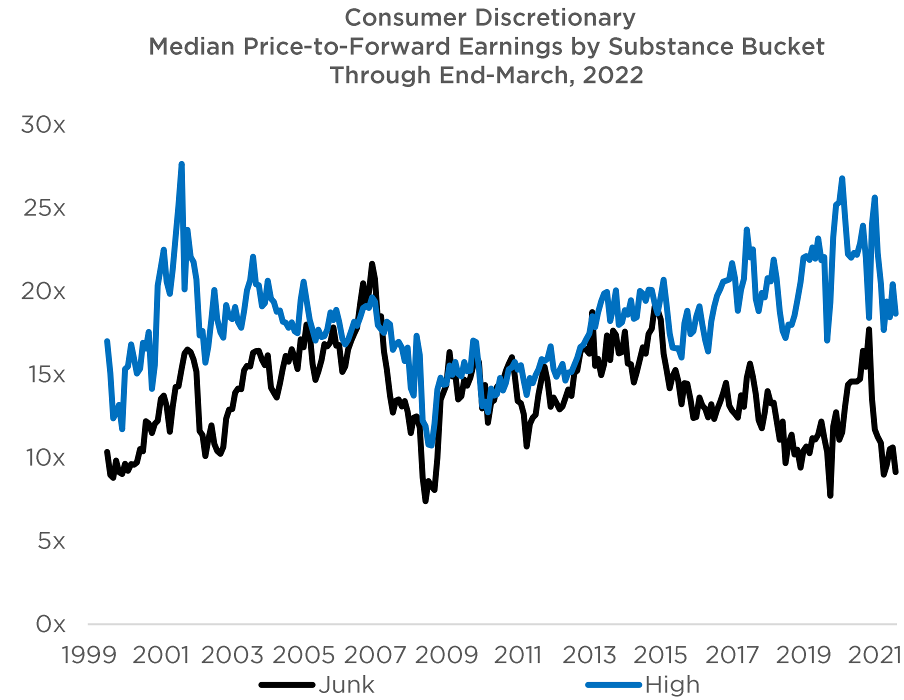




JUNK MARGINS HAVE RECOVERED BUT MULTIPLES HAVE NOT

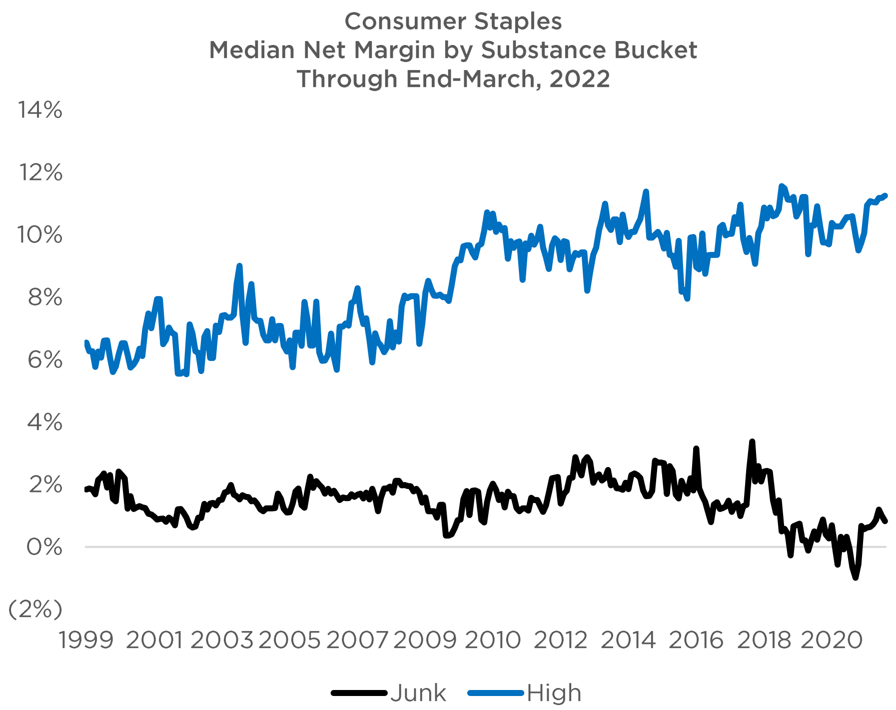
We also analyzed margins and valuation by quality buckets. The lowest quality quartile, "junk" has seen margins fully recover, and the highest quality margins are strong (left). Price-to-forward earnings multiples are oscillating around five-year averages for the highest quality quartile but are relatively low for the junk consumer discretionary stocks (right). This signals there is potential for junk multiples to expand.

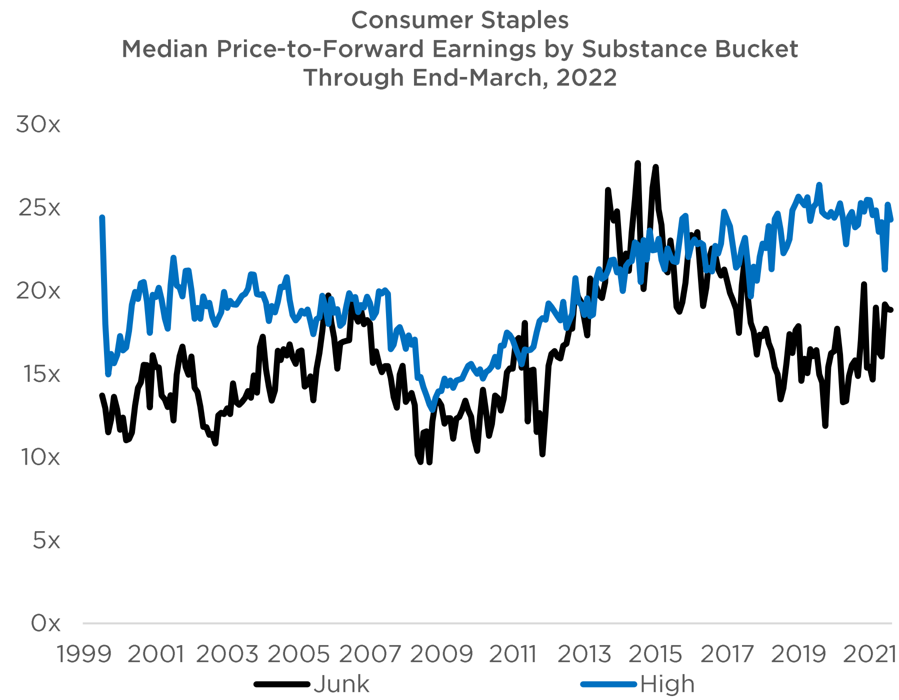




JUNK STAPLES STOCKS BARELY MAKE MONEY

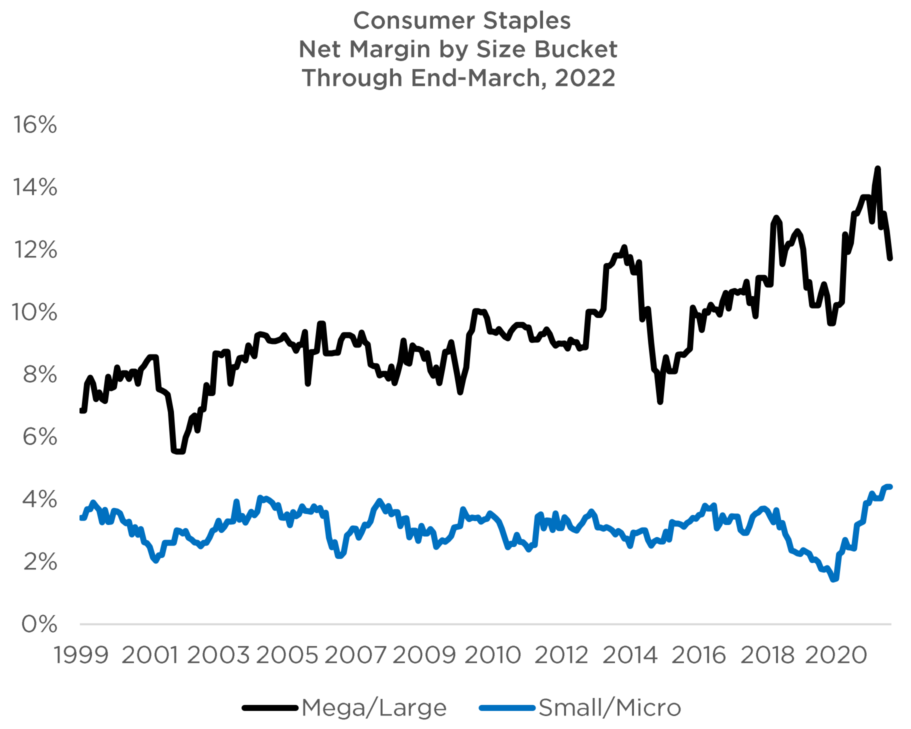
The median “junk” consumer staples stock barely makes money (left), where as the quality staples have consistently expanded net margins over the last two decades. Despite this profitability gap, the specter of higher growth kept price-to-forward earnings levels close through history. It seems to us consumer staples junk stocks need to grow fast and expand margins to merit the narrow valuation disconnect to the highest quality bucket (right).

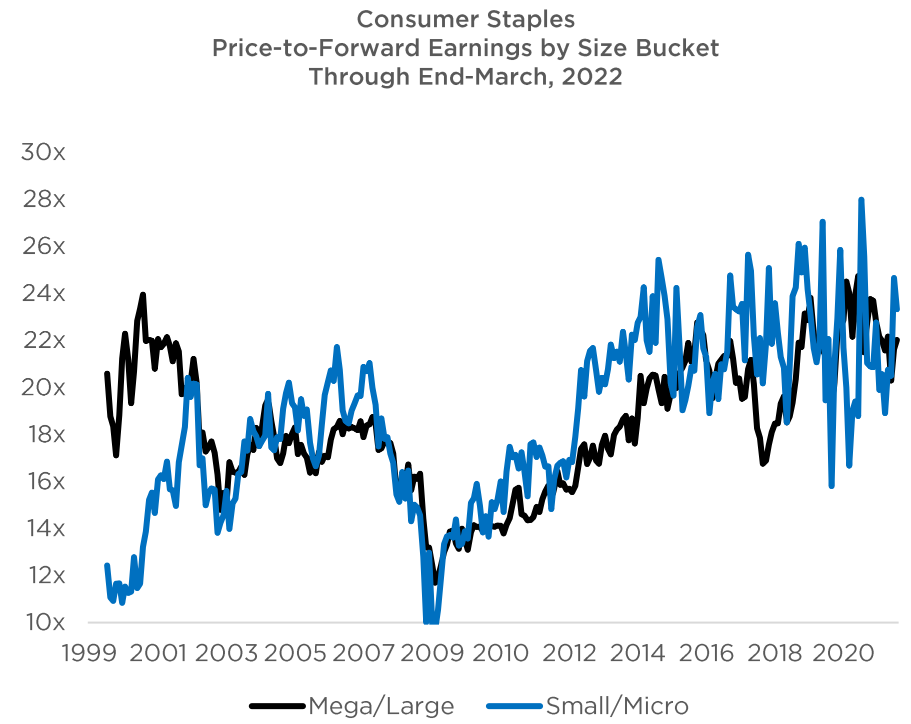




SMALL CAP STAPLES SEEM EXPENSIVE GIVEN CURRENT PROFITABILITY

Like the highest quality bucket, the profitability for the mega / large staples has also expanded over time (left). The profitability gap is substantial relative to the small / micro universe, though that group has seen steady expansion since COVID lows. Despite this, the price-to-forward earnings (right) for small /micro cap. staples is higher today than for the mega / large cap staples. We think this is overly generous, short of a fundamental story driving material revenue growth and margin expansion for small / micro cap. staples.





LONG IDEAS IN THE CONSUMER SPACE

Select Quantitatively Derived Consumer Longs

Ticker	Company Name	Sector	Industry Group	Market Cap ($ US. Bil)	Comment
PM	Philip Morris International Inc.	Consumer Staples	Food, Bev. & Tobacco	145.14	Value with above 3% rev. growth + margin expansion
MDLZ	Mondelez International, Inc.	Consumer Staples	Food, Bev. & Tobacco	85.48	Value with above 3% rev. growth + margin expansion
TJX	The TJX Companies, Inc.	Consumer Discretionary	Retailing	72.92	Junk with margin expansion and revenue growth
GM	General Motors Company	Consumer Discretionary	Autos & Components	64.75	Junk with margin expansion and revenue growth
HRL	Hormel Foods Corporation	Consumer Staples	Food, Bev. & Tobacco	27.10	Value with above 3% rev. growth + margin expansion
MGM	MGM Resorts International	Consumer Discretionary	Consumer Services	18.43	Junk with margin expansion and revenue growth
DRI	Darden Restaurants, Inc.	Consumer Discretionary	Consumer Services	16.86	Junk with margin expansion and revenue growth
KMX	CarMax, Inc.	Consumer Discretionary	Retailing	16.66	Junk with margin expansion and revenue growth
BG	Bunge Limited	Consumer Staples	Food, Bev. & Tobacco	15.75	Value with above 3% rev. growth + margin expansion
CAG	Conagra Brands, Inc.	Consumer Staples	Food, Bev. & Tobacco	15.50	Value with above 3% rev. growth + margin expansion
HAS	Hasbro, Inc.	Consumer Discretionary	Cons. Durables & Apparel	12.39	Junk with margin expansion and revenue growth
ARMK	Aramark	Consumer Discretionary	Consumer Services	9.41	Junk with margin expansion and revenue growth
INGR	Ingredion Incorporated	Consumer Staples	Food, Bev. & Tobacco	5.70	Value with above 3% rev. growth + margin expansion
TNL	Travel + Leisure Co.	Consumer Discretionary	Consumer Services	5.00	Cheap Value with forecasted revenue growth
SPB	Spectrum Brands Holdings, Inc.	Consumer Staples	Household & Personal	3.73	Value with above 3% rev. growth + margin expansion
AEO	American Eagle Outfitters, Inc.	Consumer Discretionary	Retailing	3.10	Cheap Value with forecasted revenue growth
EPC	Edgewell Personal Care Co.	Consumer Staples	Household & Personal	2.00	Value with above 3% rev. growth + margin expansion

SHORT IDEAS IN THE CONSUMER SPACE

Select Quantitatively Derived Consumer Shorts

Ticker	Company Name	Sector	Industry Group	Market Cap ($ US. Bil)	Comment
ULTA	Ulta Beauty, Inc.	Consumer Discretionary	Retailing	20.35	Growth more than 20x PEF + grows rev. less than 10%
CLX	The Clorox Company	Consumer Staples	Household & Personal	16.75	Expensive Junk with Low Revenue Growth
W	Wayfair Inc.	Consumer Discretionary	Retailing	13.41	Growth more than 20x PEF + grows rev. less than 10%
BURL	Burlington Stores, Inc.	Consumer Discretionary	Retailing	12.64	Growth more than 20x PEF + grows rev. less than 10%
GME	GameStop Corp.	Consumer Discretionary	Retailing	9.38	Growth more than 20x PEF + grows rev. less than 10%
CHDN	Churchill Downs Incorporated	Consumer Discretionary	Consumer Services	8.66	Growth more than 20x PEF + grows rev. less than 10%
CHGG	Chegg, Inc.	Consumer Discretionary	Consumer Services	4.63	Growth more than 20x PEF + grows rev. less than 10%
SMPL	The Simply Good Foods Co.	Consumer Staples	Food, Bev. & Tobacco	3.73	Expensive growth
SSTK	Shutterstock, Inc.	Consumer Discretionary	Retailing	3.49	Growth more than 20x PEF + grows rev. less than 10%
SKIN	The Beauty Health Company	Consumer Staples	Household & Personal	2.82	Expensive growth
CRCT	Cricut, Inc.	Consumer Discretionary	Cons. Durables & Apparel	2.71	Growth more than 20x PEF + grows rev. less than 10%
HMHC	Houghton Mifflin Harcourt Co.	Consumer Discretionary	Consumer Services	2.67	Growth more than 20x PEF + grows rev. less than 10%
OSTK	Overstock.com, Inc.	Consumer Discretionary	Retailing	2.18	Growth more than 20x PEF + grows rev. less than 10%
MED	Medifast, Inc.	Consumer Staples	Household & Personal	2.09	Expensive growth
BGS	B&G Foods, Inc.	Consumer Staples	Food, Bev. & Tobacco	1.86	Expensive Junk with Low Revenue Growth
ELF	e.l.f. Beauty, Inc.	Consumer Staples	Household & Personal	1.35	Expensive growth
SPTN	SpartanNash Company	Consumer Staples	Food & Staples Retailing	1.24	Expensive Junk with Low Revenue Growth
SFIX	Stitch Fix, Inc.	Consumer Discretionary	Retailing	1.22	Growth more than 20x PEF + grows rev. less than 10%
LOCL	Local Bounti Corporation	Consumer Staples	Food, Bev. & Tobacco	0.57	Expensive growth
VITL	Vital Farms, Inc.	Consumer Staples	Food, Bev. & Tobacco	0.55	Expensive growth
RAD	Rite Aid Corporation	Consumer Staples	Food & Staples Retailing	0.53	Expensive Junk with Low Revenue Growth

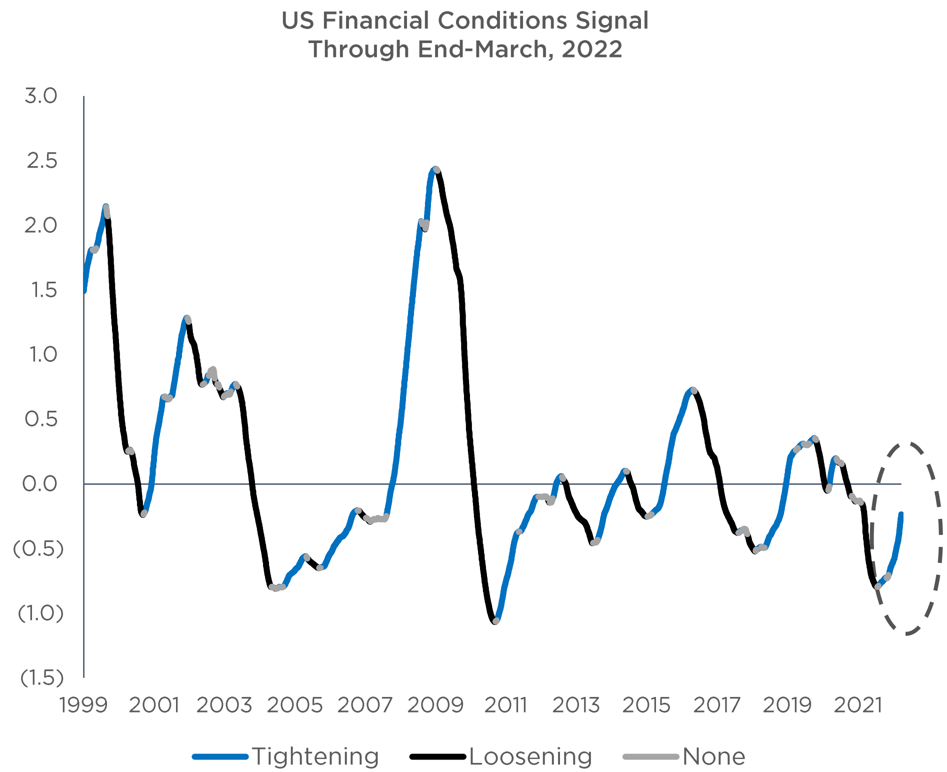
CONTROVERSIES AND VARIABLES TO MONITOR FOR BANKS

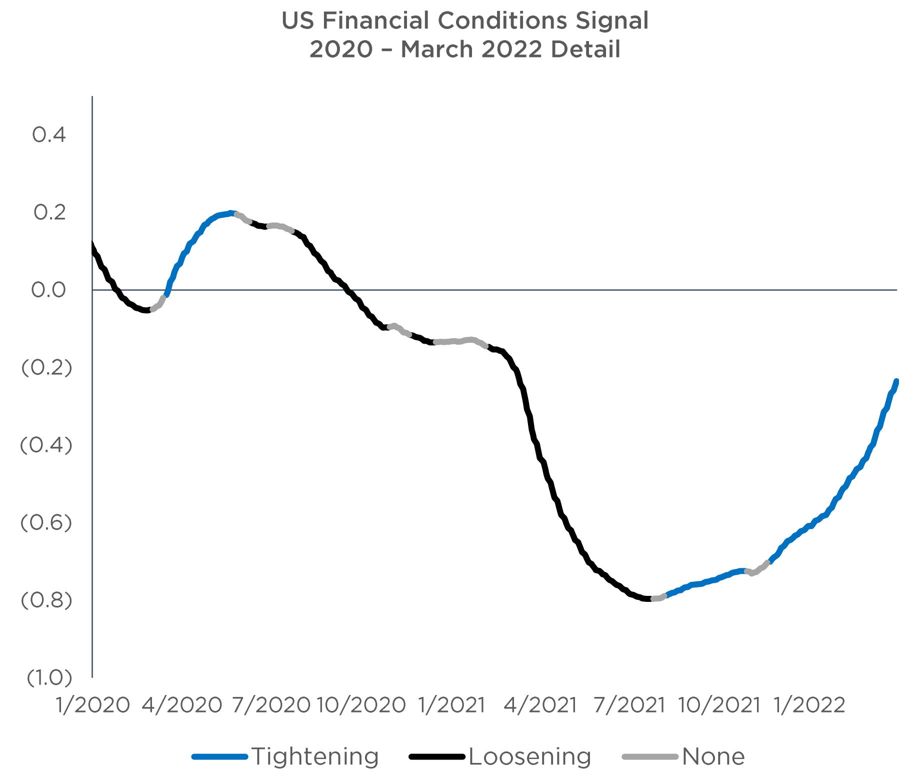
We took a detailed look at the banks sector and research key investment controversies facing bank stock investors and three data points to monitor. We think these concepts apply broadly to investors in other industries as well. The controversies are:

1. **Gross Exposure:** Our quantitative models work better at discriminating banks stocks when financial conditions are loosening, however, financial conditions have tightened over the past couple of months are near 1-year lows. 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. A flattening and now inverse yield curve fueled weak bank stock performance in Q1.
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 – they think rates will continue to rise and this well help the net interest margins of banks
3. **Growth vs. expenses:** While NIMs have expanded and loan growth is strong, expenses have materially risen. Our conclusion is that **large banks look more attractive than small**, with balance sheets that have improved more without a commensurate improvement in relative valuation particularly given their weakness in Q1. We would continue to monitor financial conditions, the savings rate, and loan growth as three key variables to see whether growth can improve for the group.

FINANCIAL CONDITIONS ARE TIGHTENING AGAIN

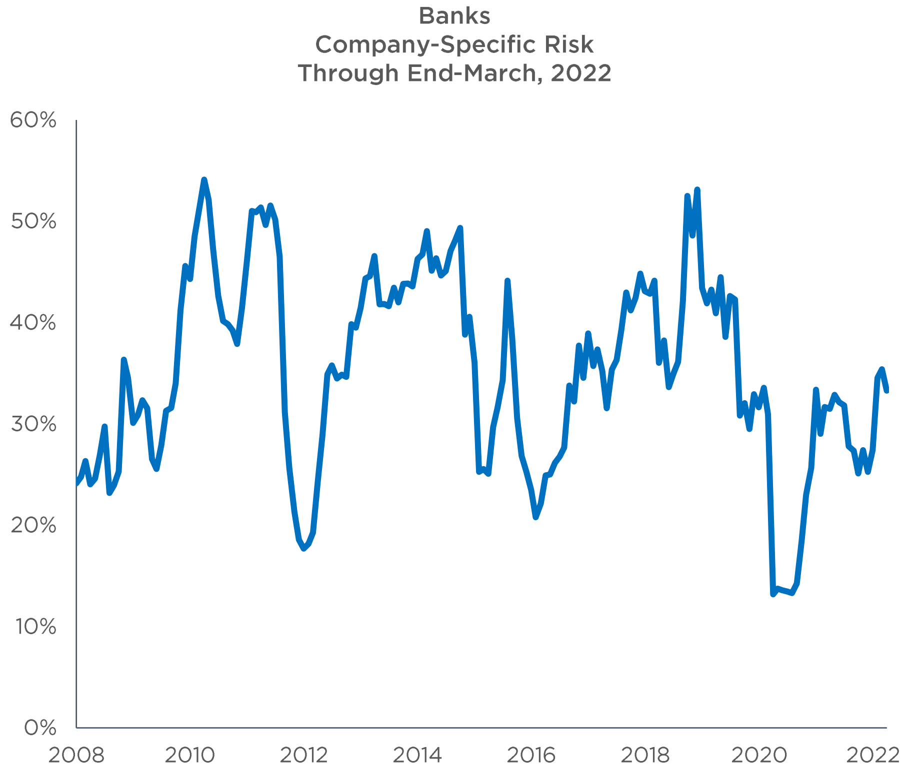
We evaluate financial conditions by combining credit spreads, mortgage rates, US Treasury volatility, the Bloomberg Financial Conditions Index, and other signals. We intentionally try to create a slower moving signal so that we are not over-reacting to shorter term moves in financial conditions. Our framework officially flagged loosening financial conditions in March of this year. This loosening stopped on July 26th according to our framework and tightening began on August 9th. Today, conditions are tightening after a short neutral period.

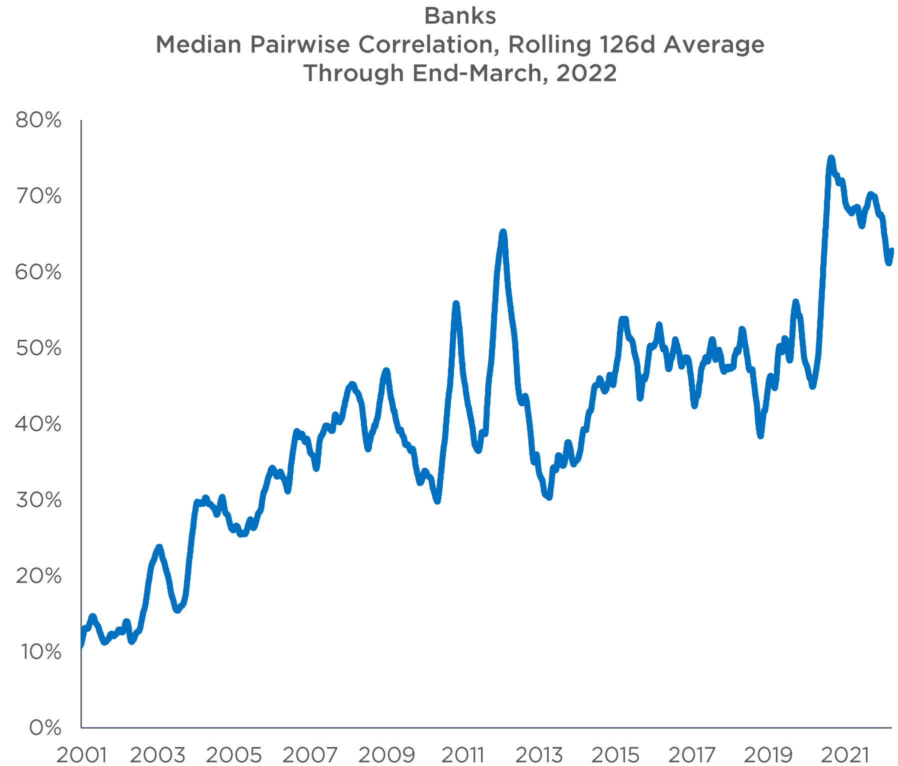




OTHER DATA SUGGEST STOCK SELECTION IN BANKS IS TOUGH TODAY

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 0.6 on a twenty-year trend of higher correlation that was only 0.2 following the TMT crisis (right chart).



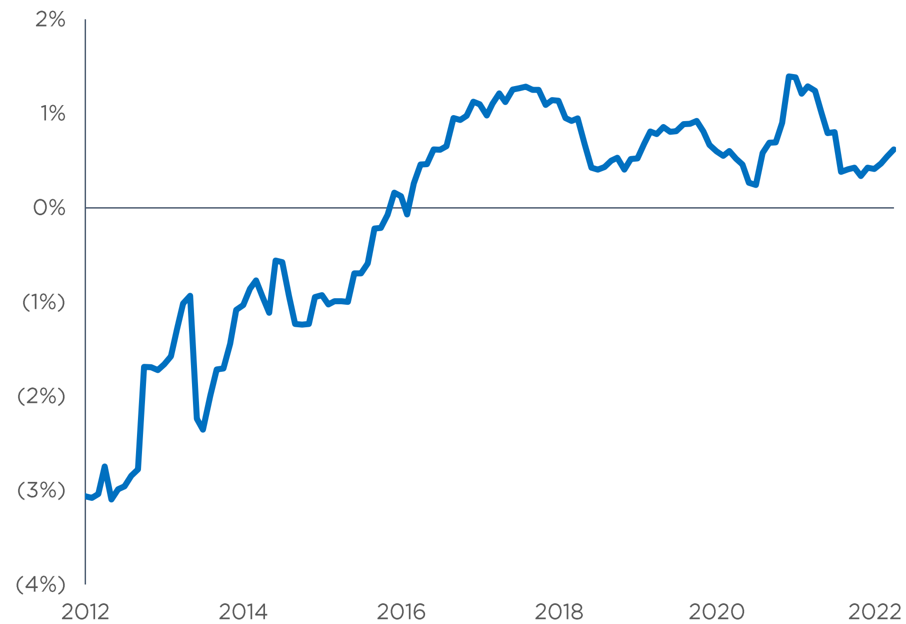


THE BIG 8: INCOME STATEMENT AND BALANCE SHEET IMPROVEMENT

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 19.4% vs 14.5% for the larger universe). This is 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).

Relative Return on Tangible Equity
Big 8 Banks Minus Top 3000 Median
Through End-March, 2022

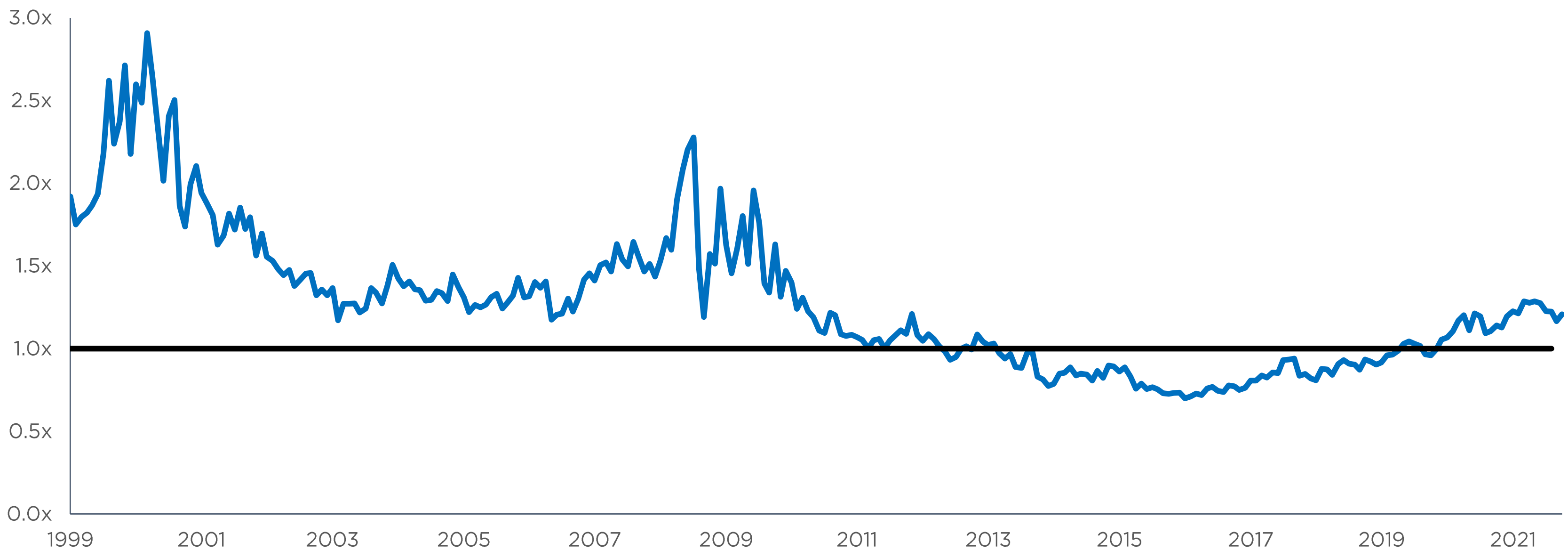
Relative Tier One Ratio
Big 8 Banks Minus Top 3000 Average
Through End-March, 2022



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.

Relative Price-to-Tangible Book
Top 8 Banks to Top 3000 Median
Through End-March, 2022



STOCK IDEAS BASED ON VALUATION AND GROWTH

Among the large banks (left), WFC, USB, and C are cheap relative to their own history. Stocks with substantial multiple expansion relative to book growth are shown on the right.

Big 8 Banks
Price-to-Tangible Book Percentile vs. History
Through End-March, 2022

Ticker	Company Name	Market Cap ($ US. Bil)	Price-to-Tangible Book	Percentile vs. History
JPM	JPMorgan Chase & Co.	402.53	1.93	51.3%
BAC	Bank of America Corporation	332.43	1.89	54.9%
WFC	Wells Fargo & Company	184.22	1.29	5.5%
MS	Morgan Stanley	155.86	2.15	63.7%
GS	The Goldman Sachs Group, Inc.	111.55	1.18	32.7%
C	Citigroup Inc.	105.33	0.67	7.7%
USB	U.S. Bancorp	78.93	2.10	4.8%
PNC	The PNC Financial Services Group, Inc.	77.18	1.94	47.3%

Banks Stocks with Relatively Weak Tangible Book Growth
That Have Also Seen Material Price-to-Tangible Book Multiple Expansion
August 4th, 2020 Through End-March, 2022

Ticker	Company Name	Market Cap ($ US. Bil)	Book Value Growth	Price-to-Tangible Book Growth
PNC	The PNC Financial Services Group, Inc.	77.18	(9.0%)	89.7%
TFC	Truist Financial Corporation	75.36	(4.7%)	57.9%
FITB	Fifth Third Bancorp	29.51	(4.4%)	122.4%
RF	Regions Financial Corporation	20.86	0.0%	103.1%
KEY	KeyCorp	20.59	(2.3%)	78.8%
CFG	Citizens Financial Group, Inc.	19.14	0.2%	84.9%
CMA	Comerica Incorporated	11.85	1.3%	122.2%
FCNCA	First Citizens BancShares, Inc.	10.59	1.0%	180.0%
ZION	Zions Bancorporation, National Association	9.96	0.2%	88.0%
BPOP	Popular, Inc.	6.25	2.9%	98.4%
FHB	First Hawaiian, Inc.	3.57	(3.4%)	69.9%
FBP	First BanCorp.	2.59	(6.7%)	133.4%
FIBK	First Interstate BancSystem, Inc.	2.29	2.4%	79.9%
FFBC	First Financial Bancorp.	2.17	(3.6%)	70.1%
WSBC	WesBanco, Inc.	2.1	(0.4%)	57.8%
NTB	The Bank of N.T. Butterfield & Son Limited	1.74	(1.8%)	41.1%
CASH	Meta Financial Group, Inc.	1.64	2.5%	151.3%
BHLB	Berkshire Hills Bancorp, Inc.	1.38	4.7%	183.0%
CHCO	City Holding Company	1.19	(1.8%)	20.7%
AMTB	Amerant Bancorp Inc.	1.09	0.5%	175.3%

RESEARCH SUMMARY FOR SEMICONDUCTORS AND SOFTWARE

Most of our recent research has led us to believe that gross margin expansion above consensus expectations is crucial for success at this point in the cycle and has been important for identifying compounders over the last decade. Back on October 1, 2002, we initiated as the US Semiconductor analyst at Sanford C. Bernstein & Co, with a note title “Share Gainers and Margin Expanders Are Multiple Expanders”. Nineteen years later we wanted to research the relevance of share gain and margin expansion in software and semis to identify dislocated stocks that may signal an investment opportunity.

There is clearly some tension in the market on these key areas of technology, with high options activity and recent volatility reflecting supply chain concerns, etc. Going “back to the basics” of revenue growth vs. peers and margin expansion seems timely today. As such, we split each sector into high and low gross margin peer groups to account for substantial business model differences and searched for investment opportunities.

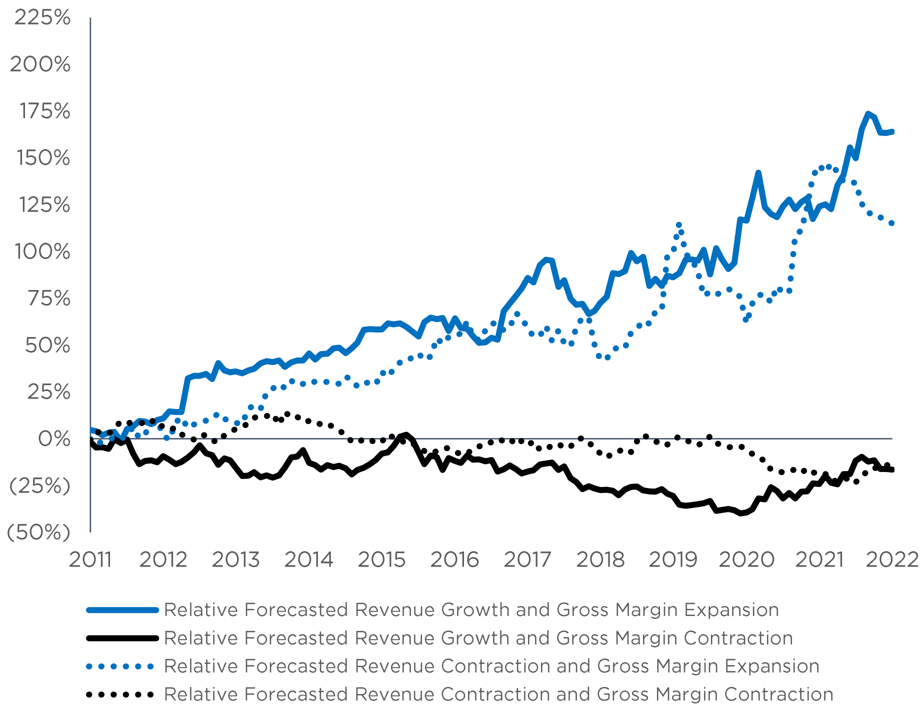
Semiconductors: Gross margin expansion is more important than share gain for both high and low gross margin chip makers. Multiple expansion / contraction and price momentum help us further refine the stock ideas.

Software: Revenue growth matters more than gross margin expansion among high gross margin companies. The only thing that matters for low gross margin software companies is improving gross margins.

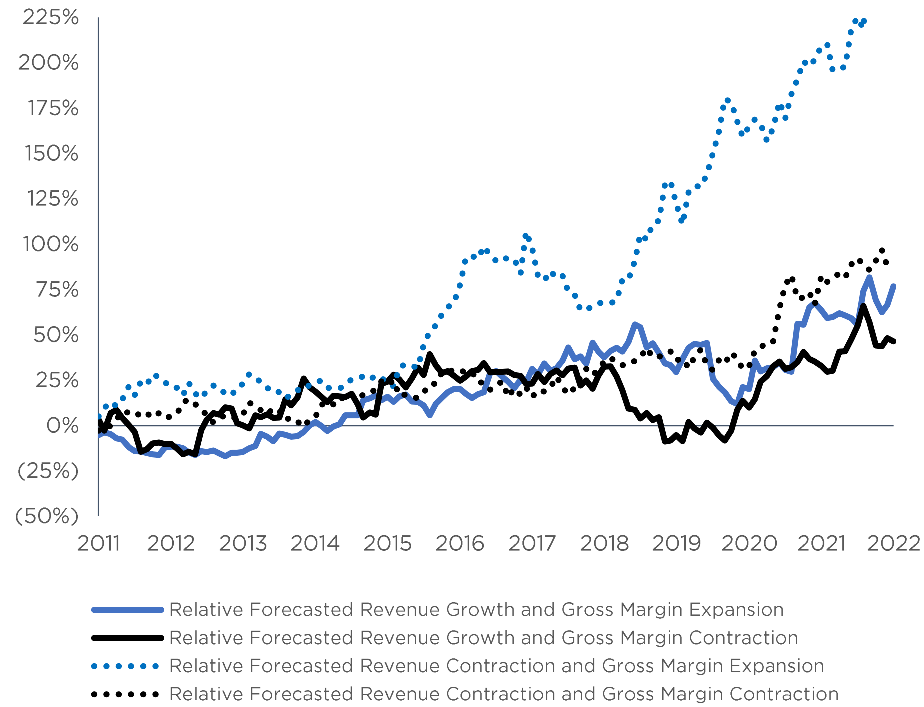
MARGIN EXPANSION MORE IMPORTANT THAN SHARE GAIN FOR CHIPS

Combining share gain / loss and margin expansion / contraction, we notice that among high margin semis (left chart) margin contraction is punished, independent of the forecasted revenue outlook, and margin expansion is rewarded. For low margin chip makers (right chart), forecasted share loss and gross margin expansion yields by far the best return – meaning the market wants low margin companies to chase higher margin revenue and improve their mix.

One-Month Forward Relative Return
High Gross Margin Semiconductors
Through End-March, 2022



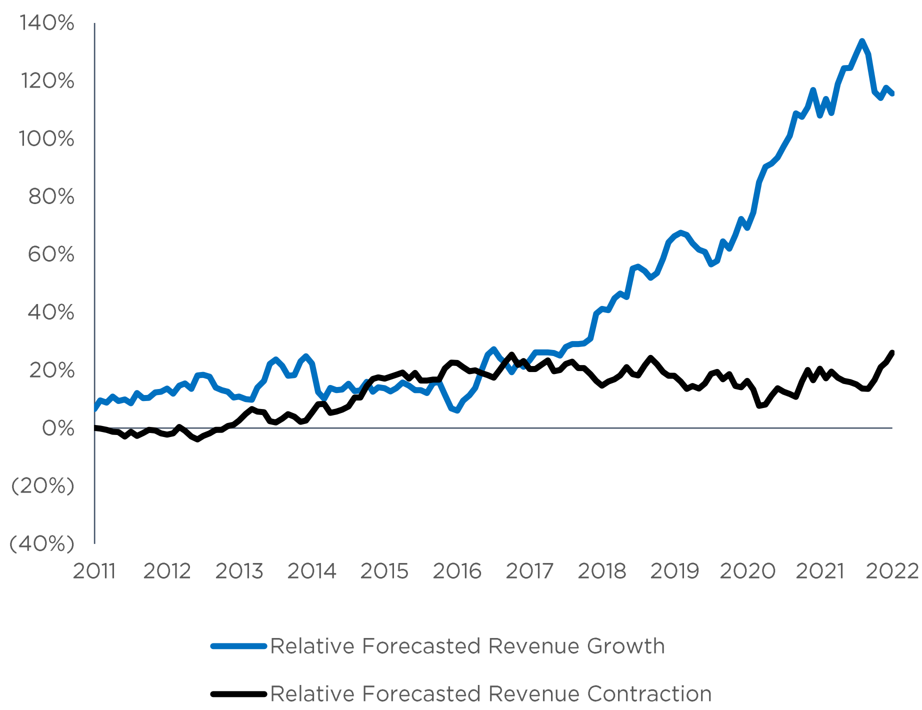
One-Month Forward Relative Return
Low Gross Margin Semiconductors
Through End-March, 2022



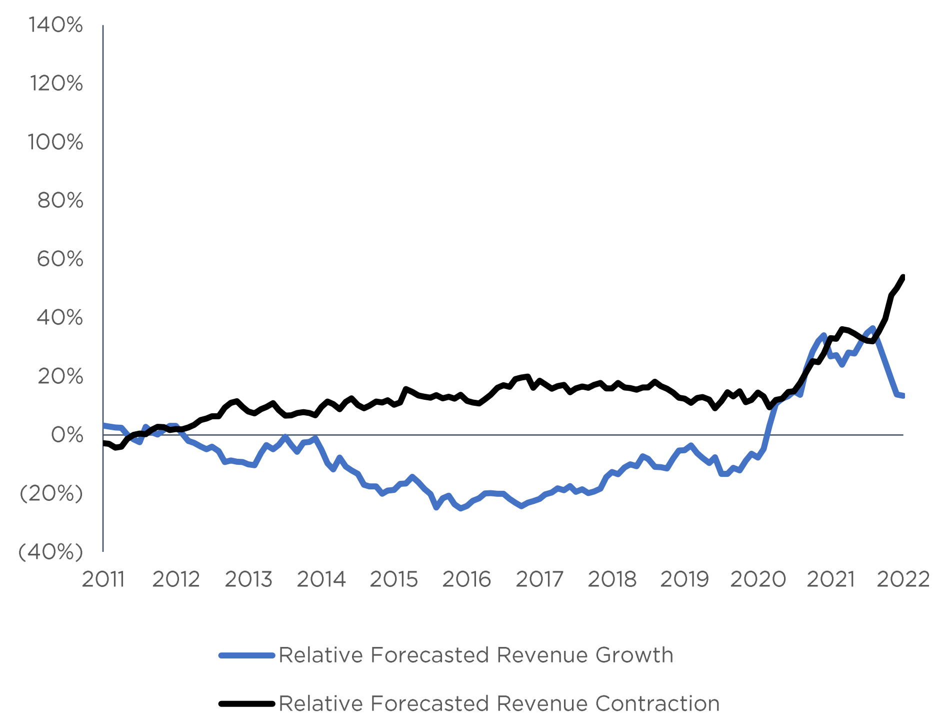
SHARE GAIN IS IMPORTANT FOR HIGH MARGIN SOFTWARE (NOT IN EXCEL)

For high gross margin software companies, it is extremely important for forecasted revenue growth to be faster than average (left chart), with strong outperformance for share gainers among the high margin software companies relative to those high margin software companies forecasted to be share losers. The recent growth scare caused a correction. Low gross margin software companies are generally weak stocks, whether forecasted revenue is high or low (right chart).

One-Month Forward Relative Return
High Gross Margin Software & Services
Through End-March, 2021



One-Month Forward Relative Return
Low Gross Margin Software & Services
Through End-March, 2021



SEMICONDUCTOR STOCK IDEAS

High margin semis that are forecasted to have continued margin expansion and have recently lagged and seen multiple contraction subsequently perform best (stocks buy, top of left table). High margin semi short ideas with poor momentum continue to be weak (bottom left table). For low gross margin semis, buying stocks with good recent price momentum and forecasted margin expansion is best (top of right table). Low margin semis with poor momentum continue to lag (bottom right).

High Gross Margin Semiconductors
Buy Relative Gross Margin Growers, Multiple Contraction, and Low Momentum
Sell Relative Gross Margin Shrinkers, and Low Momentum

End-March, 2022

Ticker	Company Name	Market Cap ($ US. Bil)
Long		
KLAC	KLA Corporation	55.17
NXPI	NXP Semiconductors N.V.	48.59
MCHP	Microchip Technology Incorporated	41.78
SWKS	Skyworks Solutions, Inc.	21.55
QRVO	Qorvo, Inc.	13.46
LSCC	Lattice Semiconductor Corporation	8.38
SYNA	Synaptics Incorporated	7.88
ALGM	Allegro MicroSystems, Inc.	5.39
MXL	MaxLinear, Inc.	4.48
Short		
QCOM	QUALCOMM Incorporated	172.23
TER	Teradyne, Inc.	19.2
SLAB	Silicon Laboratories Inc.	5.73
SITM	SiTime Corporation	5.16
SMTC	Semtech Corporation	4.45
AMBA	Ambarella, Inc.	3.88
NVMI	Nova Ltd.	3.08
PI	Impinj, Inc.	1.57
CAMT	Camtek Ltd.	1.34

Low Gross Margin Semiconductors
Buy Relative Gross Margin Growers with Lower Revenue Growth Expectations, Multiple Expansion, and High Momentum
Sell Relative Gross Margin Shrinkers with Higher Revenue Growth Expectations, and Low Momentum

End-March, 2022

Ticker	Company Name	Market Cap ($ US. Bil)
Long		
ON	ON Semiconductor Corporation	27.08
TSEM	Tower Semiconductor Ltd.	5.27
FORM	FormFactor, Inc.	3.29
AOSL	Alpha and Omega Semiconductor Limited	1.46
VECO	Veeco Instruments Inc.	1.38
PLAB	Photronics, Inc.	1.05
ON	ON Semiconductor Corporation	27.08
TSEM	Tower Semiconductor Ltd.	5.27
FORM	FormFactor, Inc.	3.29
Short		
ACMR	ACM Research, Inc.	1.22

SOFTWARE STOCK IDEAS

For high gross margin software, stocks that have strong price momentum, but multiple contraction are buys (top left). Shorts are high margin software with strong momentum that are also seeing multiple expansion, as the sales growth is not offsetting the change in valuation (bottom left). Among low gross margin software, buys have good momentum and multiple expansion, the opposite of high margin (top right), and sells have high momentum.

High Gross Margin Software

Buy Relative Share Gainers, Multiple Contraction, and High Momentum
Sell Relative Share Losers, Multiple Expansion, and High Momentum
End-March, 2022

Ticker	Company Name	Market Cap ($ US. Bil)
Long		
WDAY	Workday, Inc.	60.1
NET	Cloudflare, Inc.	38.79
BILL	Bill.com Holdings, Inc.	23.49
APPN	Appian Corporation	4.39
SPT	Sprout Social, Inc.	4.34
KNBE	KnowBe4, Inc.	4.02
Short		
ORCL	Oracle Corporation	220.74
SNPS	Synopsys, Inc.	51.02
PAYX	Paychex, Inc.	49.27
CDNS	Cadence Design Systems, Inc.	45.78
CHKP	Check Point Software Technologies Ltd.	18.36
NLOK	NortonLifeLock Inc.	15.44
PTC	PTC Inc.	12.6
OTEX	Open Text Corporation	11.44
WEX	WEX Inc.	8
CYBR	CyberArk Software Ltd.	6.76
QLYS	Qualys, Inc.	5.56
BOX	Box, Inc.	4.17
CVLT	Commvault Systems, Inc.	2.96
PING	Ping Identity Holding Corp.	2.3
TUFN	Tufin Software Technologies Ltd.	0.34

Low Gross Margin Software

Buy Relative Gross Margin Growers, Multiple Expansion, and High Momentum
Sell Relative Gross Margin Shrinkers, High Momentum
End-March, 2022

Ticker	Company Name	Market Cap ($ US. Bil)
Long		
IBM	International Business Machines Corporation	116.93
FISV	Fiserv, Inc.	66.13
PANW	Palo Alto Networks, Inc.	61.31
GPN	Global Payments Inc.	38.55
SSNC	SS&C Technologies Holdings, Inc.	19.24
DXC	DXC Technology Company	7.98
RPD	Rapid7, Inc.	6.46
NCR	NCR Corporation	5.47
MNDT	Mandiant, Inc.	5.18
SPSC	SPS Commerce, Inc.	4.72
SWCH	Switch, Inc.	4.58
Short		
MSFT	Microsoft Corporation	2311.36
ADP	Automatic Data Processing, Inc.	95.58
FIS	Fidelity National Information Services, Inc.	61.22
CTSH	Cognizant Technology Solutions Corporation	47.04
IT	Gartner, Inc.	24.48
AKAM	Akamai Technologies, Inc.	19.21
JKHY	Jack Henry & Associates, Inc.	14.35
GDDY	GoDaddy Inc.	13.99
DOX	Amdocs Limited	10.14
MANH	Manhattan Associates, Inc.	8.76
WU	The Western Union Company	7.37
TDC	Teradata Corporation	5.16

SUMMARY AND CONCLUSIONS FOR INDUSTRIALS

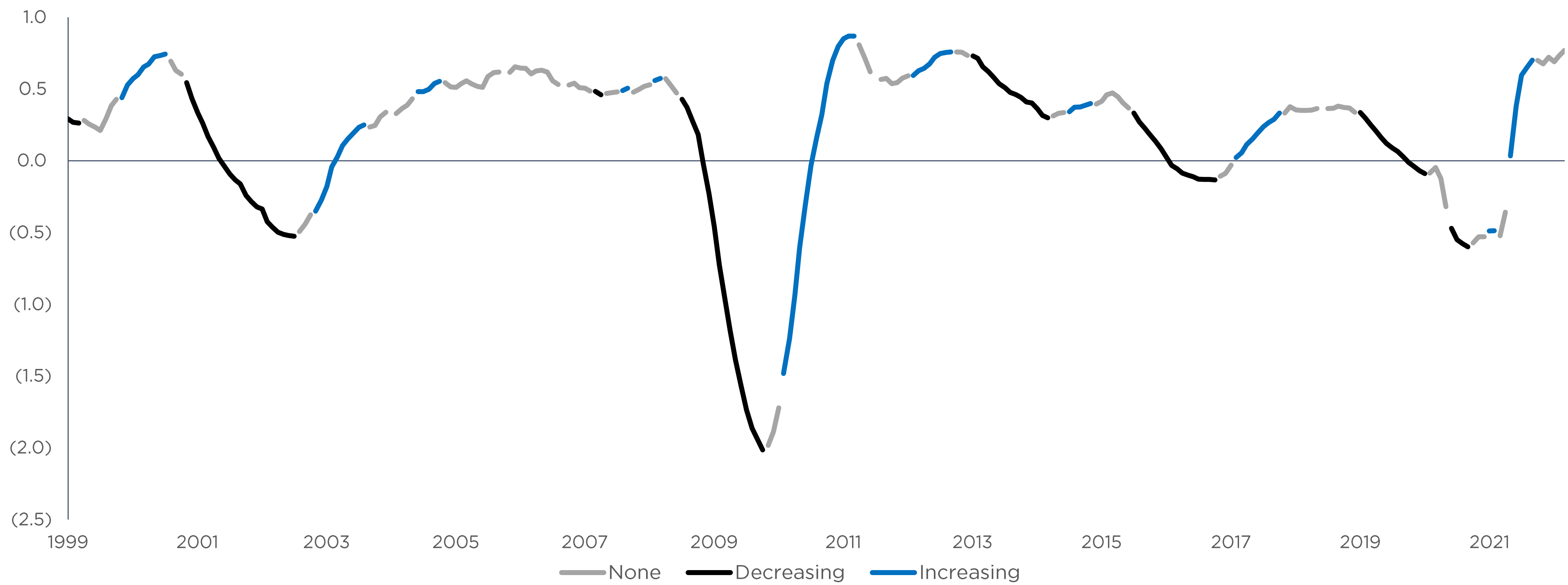
We are negative on the industrials sector relative to the market and would initiate new shorts, or sell down large long positions now

1. **Macro softening:** Our proprietary gauge of macro indicators of industrial activity shows a softening of late after a huge recovery since March of 2020. In particular, C&I loans, manufacturing capacity utilization, durable goods orders, industrial production, PMI, and North American carloads have all rolled over. Moreover, rising oil has historically improved our stock selection in industrials, driving our confidence in our underweight call.
2. **Earnings expectations are high:** Despite the softening of macro data, bottom-up analyst earnings estimates for the GICS industrial sector appear to embed sustained economic strength, with above 20% YoY earnings growth forecasted each quarter through 2022, among the highest of any sector.
3. **Inventory not lean:** While there have been ample supply-chain shortages and logistics problems for many manufacturers, our judgment is that inventory levels for the industrials companies themselves are average.
4. **Group is expensive:** Valuations have become elevated, so unlike materials and energy which are cheap on peak earnings, many / most of the industrials' industries are in the 95th percentile or higher vs. their own history on EV-to-EBITDA.
5. **Use margin expectations to find short ideas:** Therefore, it appears that the key to investing today will be further margin expansion. Our judgment is to short stocks where incremental margin expectations are high.

OUR INDUSTRIAL ACTIVITY GAUGE IS NO LONGER INCREASING

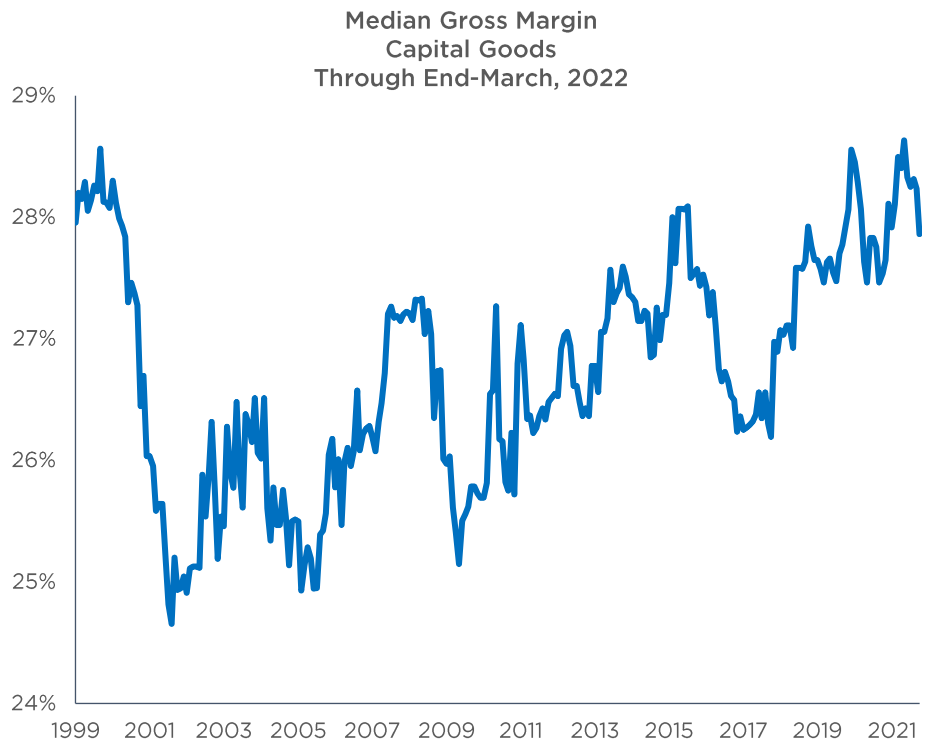
Our industrial activity gauge, which is a broad-based combination of several metrics like C&I loans, Baker Hughes rig count, private nonresidential construction, capacity utilization, new orders of durable goods, PMI, industrial production, and several others show that industrial activity rebounded sharply off the lows of March 2020. However, several signals have begun to roll-over. As of this month, we are no longer in a regime of increasing industrial activity – it seems to have peaked, something we highlighted as a potential outcome in our early September cautious note on machinery and capital goods.

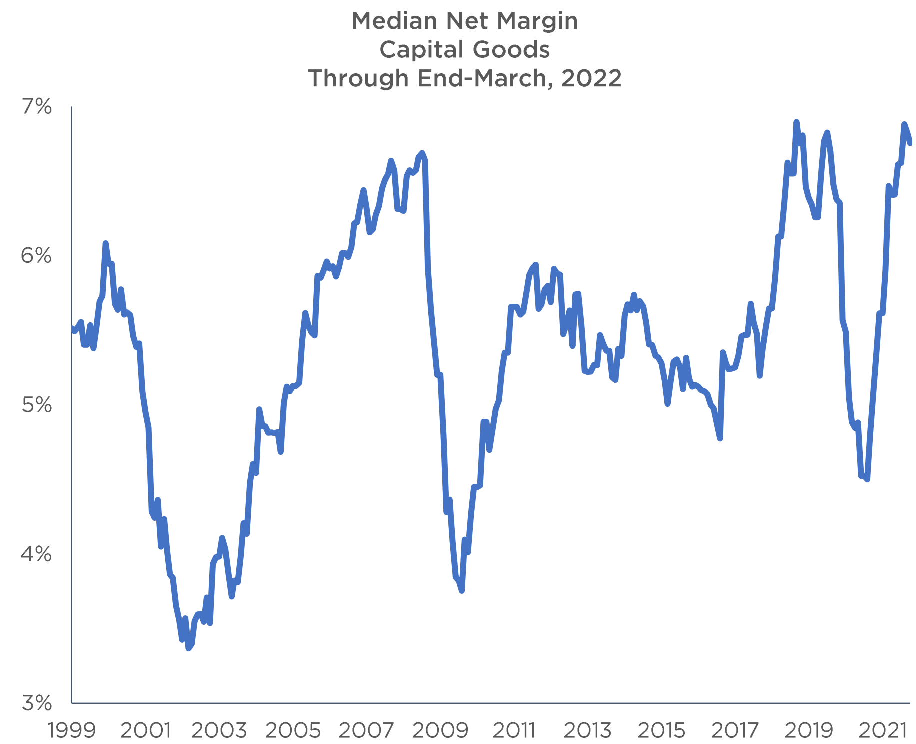
Trivariate's Industrial Activity Signal
Through End-March, 2022



CAPITAL GOODS PROFITABILITY HAS RECOVERED

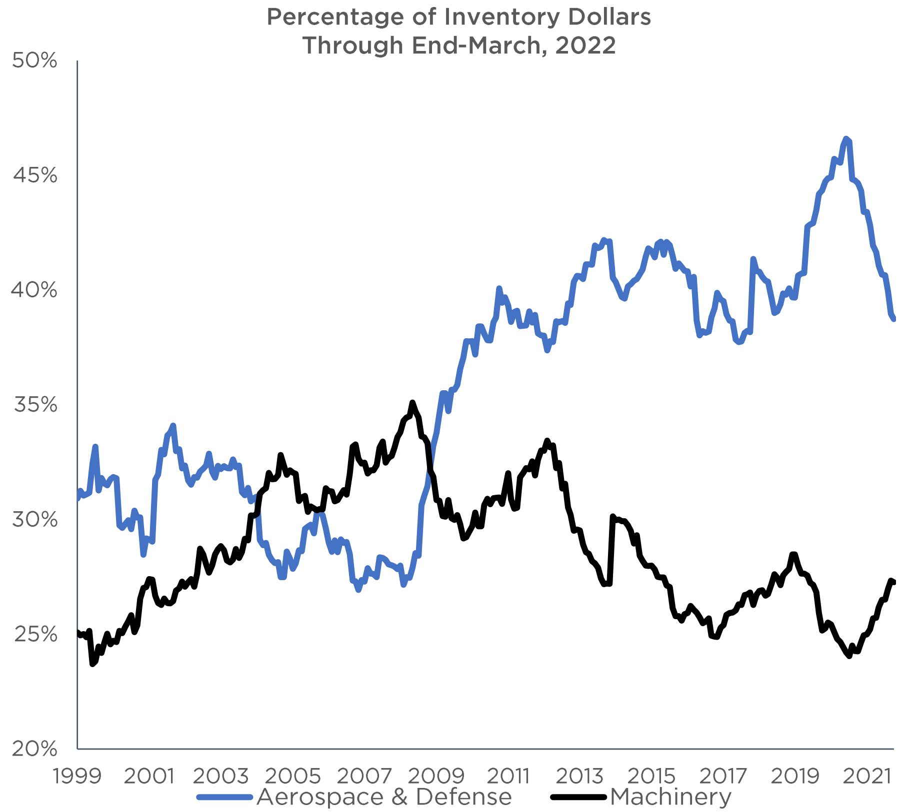
Within industrials, profitability (gross margin) has reached 20-year highs for the Capital Goods industry group, which makes up over 65% of industrials names with market capitalization over $1 billion (left chart). Net margins are also nearing peaks (right chart). With forward estimates for earnings growth strong even from these peak levels, it seems clear to us that stronger industrial activity and limited headwinds to future profitability will need to emerge for these forecast to be realized – and that does not seem likely to us.

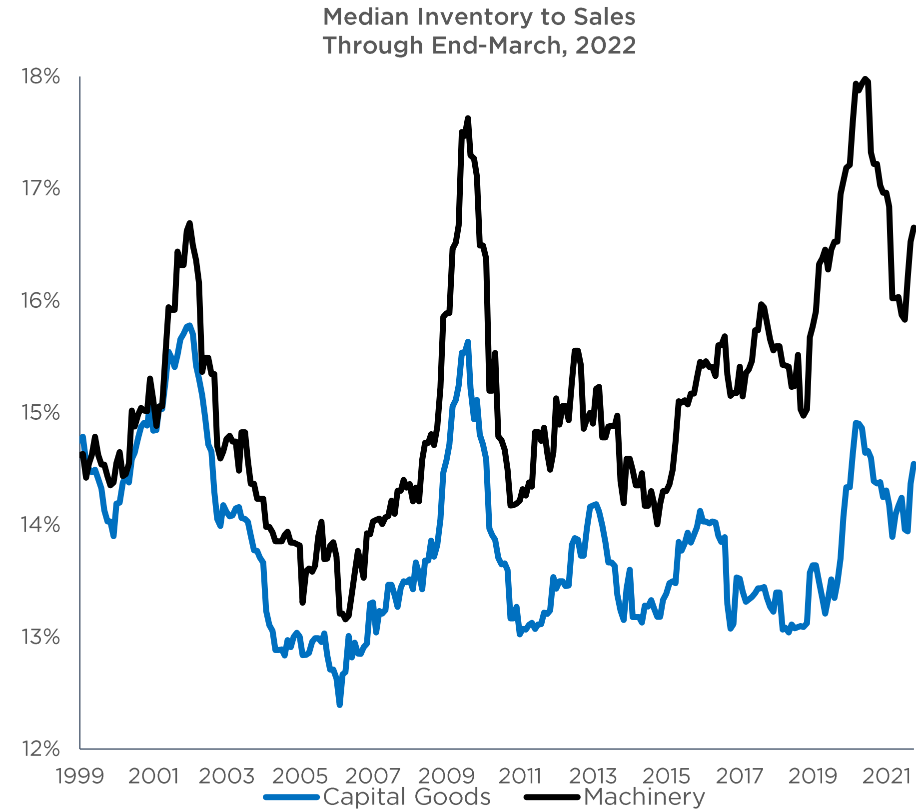




MACHINERY AND CAPITAL GOODS INVENTORY IS NOT LEAN

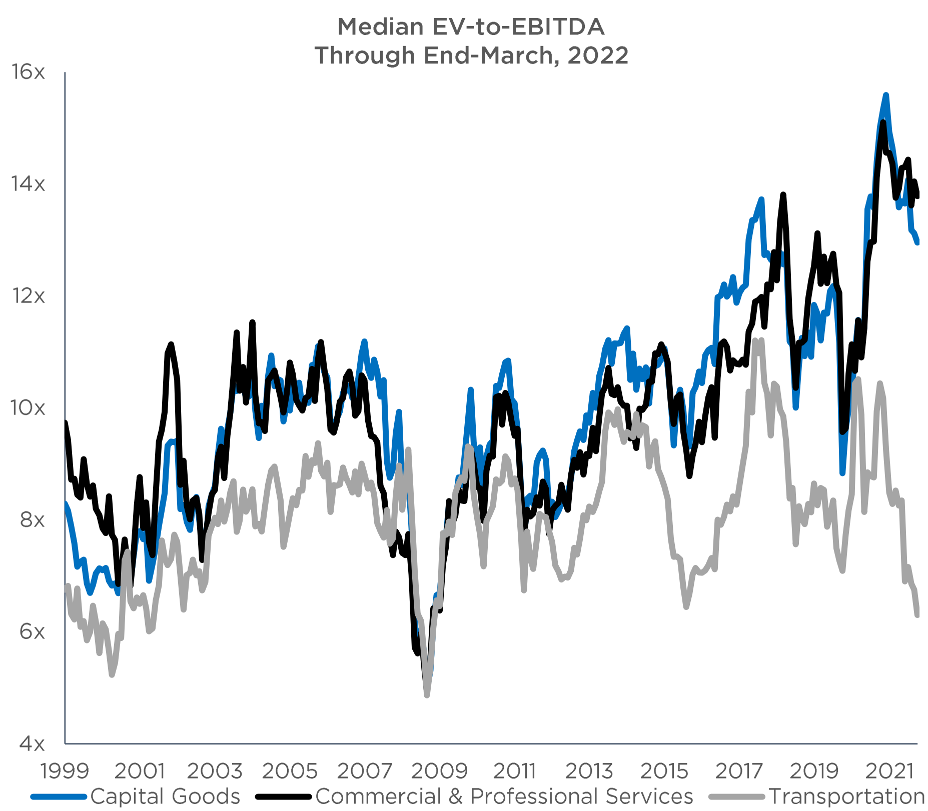
Margin expansion can be helped if inventory levels are low. However, it is not obvious to us that rising factory utilization will drive better cost absorption from here. Aerospace and defense alone make up over 40% of the industrials sector inventory dollars (left chart), making sector-level aggregation of inventory dollars misleading. Capital goods and machinery inventory levels are above pre-COVID levels, even if they've declined recently (right).





VALUATIONS HAVE EXPANDED FOR INDUSTRIALS

While other cyclicals like materials and energy have seen sharp multiple contraction as there is a view that they are over-earning, that is not the case for industrials, with elevated EV-to-EBITDA (left chart) multiples across capital goods and professional services. Conglomerates, commercial and professional services, machinery, and electrical equipment have rarely, if ever, been more expensive (right chart). Airlines and marine are exceptions.

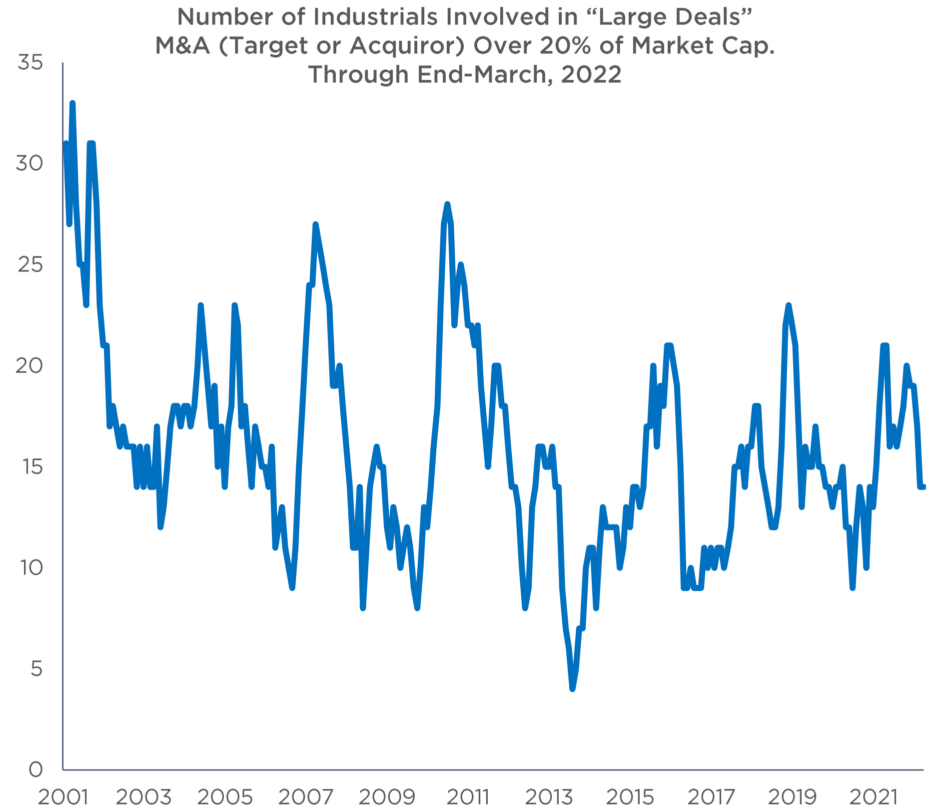


Median EV-to-EBITDA Percentile Rank vs. History End-March, 2022

Industrials GICS Industry	Rank
Industrial Conglomerates	96.3%
Professional Services	94.4%
Commercial Services & Supplies	94.1%
Machinery	91.9%
Aerospace & Defense	88.3%
Trading Companies & Distributors	87.9%
Building Products	80.6%
Electrical Equipment	75.8%
Construction & Engineering	73.3%
Transportation Infrastructure	31.5%
Road & Rail	22.3%
Air Freight & Logistics	7.0%
Marine	6.6%
Airlines	0.0%

LEVERAGE HAS MODESTLY PICKED UP, M&A NOT PARTICULARLY ACTIVE

Elevated valuations can be at least partially justified if balance sheets have massively improved, or if there has been an outsized amount of M&A in a sector. But that is not the case. Companies on average have higher leverage than they did in previous cycles (left chart) and the current number of industrial-sector deals is roughly at a 20-year average (right chart), meaning there is not sector-related euphoria about a rash of imminent deals



SHORT IDEAS: IT ALL COMES DOWN TO MARGIN EXPECTATIONS

Our conclusion therefore is to short non-growth industrials with near-record profit margins that are forecasted to have improved profitability next year despite the industrial activity roll-over (left chart), or those with high incremental gross margin expectations that screen badly in our quantitative models (right chart). We think these are good places to search for short ideas

High 2022 Incremental Margin Forecasts and Already At / Near Record Profitability
End-March, 2022

Ticker	Company	Industry Group	Market Cap. (US$ Bil.)
CTAS	Cintas Corporation	Commercial Serv. & Supplies	43.57
RSG	Republic Services, Inc.	Commercial Serv. & Supplies	41.84
PH	Parker-Hannifin Corporation	Machinery	36.46
VRSK	Verisk Analytics, Inc.	Professional Services	34.62
WAB	Westinghouse Air Brake Tech.	Machinery	17.82
J	Jacobs Engineering Group Inc.	Professional Services	17.81
BLDR	Builders FirstSource, Inc.	Building Products	11.41
WSO	Watsco, Inc.	Trading Companies & Dist.	10.82
WCC	WESCO International, Inc.	Trading Companies & Dist.	6.6
CR	Crane Co.	Machinery	6.16
EME	EMCOR Group, Inc.	Construction & Engineering	5.93
WTS	Watts Water Technologies, Inc.	Machinery	4.67
BECN	Beacon Roofing Supply, Inc.	Trading Companies & Dist.	4.18
FELE	Franklin Electric Co., Inc.	Machinery	3.85
HEES	H&E Equipment Services, Inc.	Trading Companies & Dist.	1.55
EPAC	Enerpac Tool Group Corp.	Machinery	1.33
SXI	Standex International Corp.	Machinery	1.22
CMCO	Columbus McKinnon Corp.	Machinery	1.21

High Forecasted Incremental Margins vs. Current Gross Margins
Bottom Half of Trivariate Quantitative Model
End-March, 2022

Ticker	Company	Industry Group	Market Cap. (US$ Bil.)
CAT	Caterpillar Inc.	Machinery	119.41
JCI	Johnson Controls International plc	Building Products	46.05
CMI	Cummins Inc.	Machinery	29.14
CNHI	CNH Industrial N.V.	Machinery	21.51
SWK	Stanley Black & Decker, Inc.	Machinery	21.34
IR	Ingersoll Rand Inc.	Machinery	20.54
WAB	Westinghouse Air Brake Technologies Corporation	Machinery	17.82

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