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TRIVARIATE RESEARCH

2022 MID-YEAR OUTLOOK

06/03/2022

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SUMMARY AND CONCLUSIONS

Assessing macro conditions: Few if any areas of the economy are both increasing and accelerating. We analyzed over 150 macro variables, and have largely concluded that economic activity has peaked, but remains robust in absolute terms. The consumer (wages, jobs) data look stronger than housing and industrial activity (where transportation prices have declined). However, the consumer have plateaued, ending a run of 14 consecutive months of increasing consumer strength. A strong dollar, and higher oil and commodities are accompanied by tighter financial conditions. Perceptions about interest rates are what matter now, with any incrementally dovish commentary likely bullish for equities.

Context around the market drawdown: We studied the 25 SP500 peak-to-trough downturns of 10% or more over the last 100 years. Seven of these were drawdowns of 30% or more, and our judgment was this decline will not reach that territory. The average of these declines lasted seven months, and while there was ample deviation in the recovery time, **it historically took 2.5 years to get your money back if you built your entire position on the peak day.**

Earnings and multiples: Despite macro conditions and commodity prices being at relative highs, coupled with a strong dollar, **the SP500 earnings expectations for 2022 are actually higher now than they were on January 1st**. Energy and materials have seen the biggest upward revisions, while consumer discretionary, communication services, and industrials have seen the most negative revisions YTD. The market multiple has materially contracted, and the market pullback means today's price-to-forward earnings is at only a slight premium to the long-term historical average of 17x. We think multiples should be elevated vs. history given the constitution of companies in the SP500 is so different and superior to the past – they are in aggregate lower capital intensity, and less inventory-heavy, are more weighted towards biotech and software (which grow longer and have higher gross margins).

Frameworks: We highlight the double whammy, compounders, and melting ice cubes as idea generating frameworks. We can provide current long / short ideas upon request.

SUMMARY AND CONCLUSIONS

Capital uses and their consequences: We analyzed the distribution of returns following CEO changes, and CEO decisions, including buybacks and dividends. **Buybacks, even larger ones, have failed to distinguish winners from losers** – especially in a rising rate environment, consistently expanding one's dividend is preferential to buybacks as a corporate strategy. We also observe that varying dividend behaviors cause disparate market reactions.

Risks: Our research consistently focuses on risks, and we highlight **high signal correlation in industrials and work-from-home vs. reopening exposure as two risks that matter.** Furthermore, within the reopening stocks, high quality vs. junk is worth monitoring. Part of our work in risk is gauging alpha potential of sets of signals – using industrials as an example, signals that successfully picked winners from losers last cycle have failed recently, leading us to be cautious on anyone's ability to decipher winners from losers in that space.

Top recent questions: Among investor issues, we have been focusing our recent work on cheap cyclicals, growth opportunities, capital usage and intensity, US vs. non-US wage pressure, the # of stock in the small cap universe that trade below 15x earnings, and the potential for corporate earnings to decline for cyclicals, among other issues.

Buy and sell ideas: We like long energy, materials, biotech, healthcare services, and semiconductors. We would sell low quality work-from-home stocks, profitless software, industrials / machinery, expensive staples, and regional banks.

ASSESSING MACRO CONDITIONS

We systematically process over 100 pieces of macro data from Bloomberg of various frequencies ranging from daily to monthly, and smooth and transform this data to create twelve indices or gauges to assess where we are in the investing world today (with the exceptions of our corporate profitability and company-specific risk gauges, which are computed from granular company-specific data on our end). 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

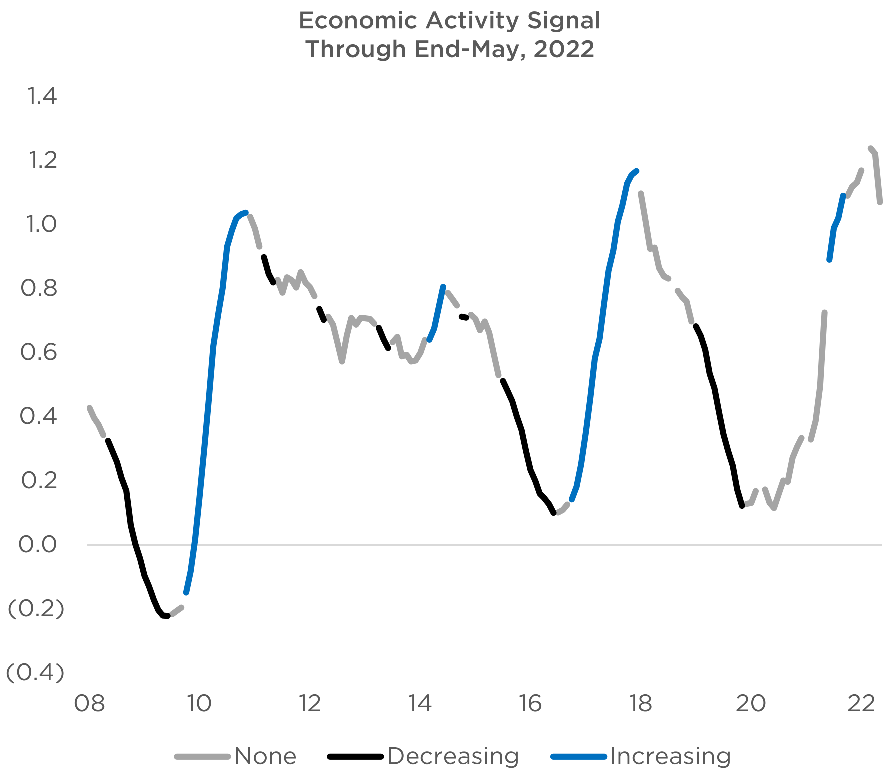
Many of our signals have multiple inputs (right side of below chart) and are designed to capture larger and longer-term trends, not shorter-term / smaller counter-trend movements. When we look at our 12 gauges (listed alphabetically below),The consumer remains very strong in absolute terms, but has turned over slightly in the past month for the first time in 14 months. Economic and industrial activity have both plateaued 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.

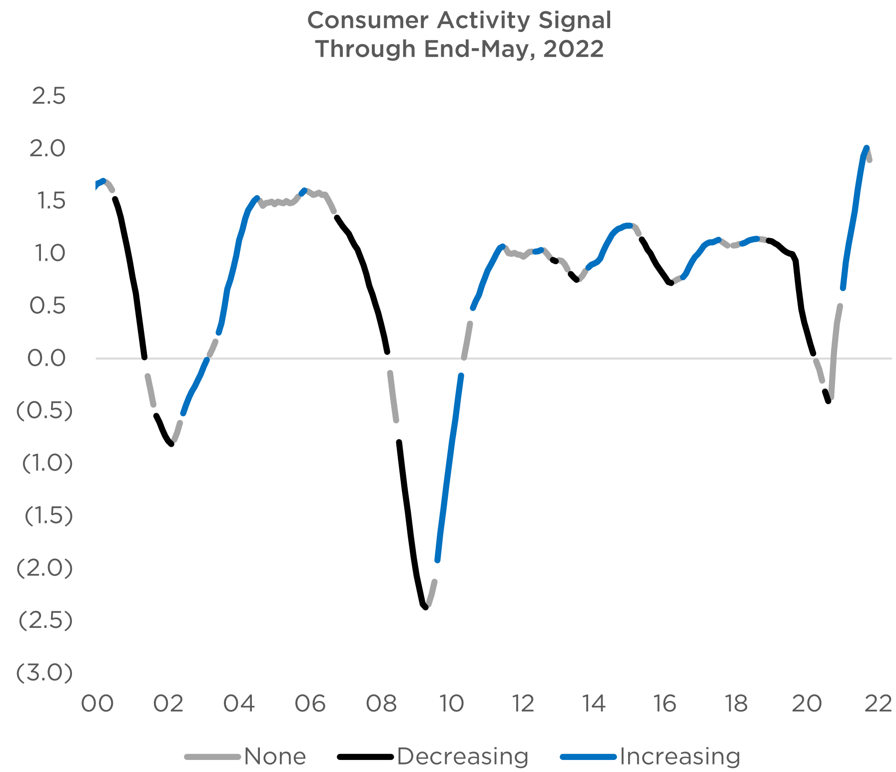
Current Regime for Each Macro Signal

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	Flat	Credit Card Delinquency, Retail Sales, Consumer Confidence, Wage Growth, Unemployment
Corporate Profitability	Decreasing	Operating Margin, 1-Year FWD Earnings Expectations, 2-Year FWD Earnings Expectations
Company-Specific Risk	Decreasing	The amount unexplained by our 7-factor model
Currency	Dollar Strengthening	AUD, CAD, CHF, DXY, EUR, GBP, INR, JPY, SEK
Economic Activity	Flat	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	Flat	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

ECONOMIC ACTIVITY LEVELING OFF BUT CONSUMER STRONG

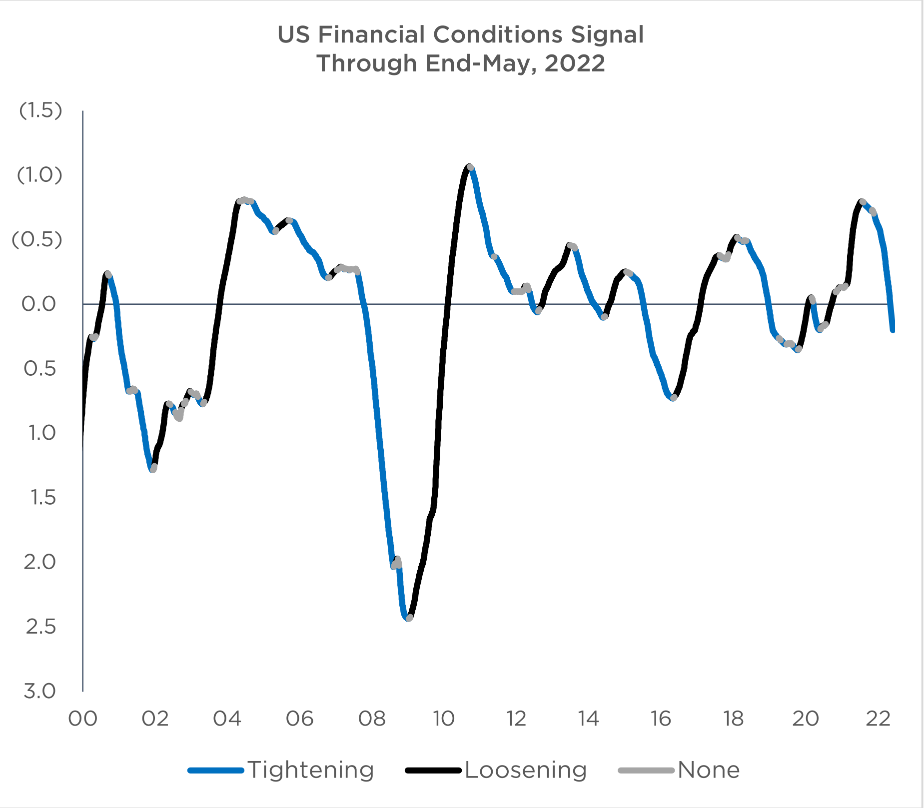
We show the economic and consumer activity gauges below. We evaluate where we are in the economic activity cycle by looking at variables like CEO Confidence, Philly Fed Business Outlook, Small Business Optimism, US Economic Surprise, US LEI, US 5y5y Forward Breakeven, etc. This month the gauge rolled over (left chart). Our consumer activity, driven by jobs, wages, retail sales, and consumer confidence, among other macro variables, remains robust (right chart), though has plateaued recently for the first time in 14 months.

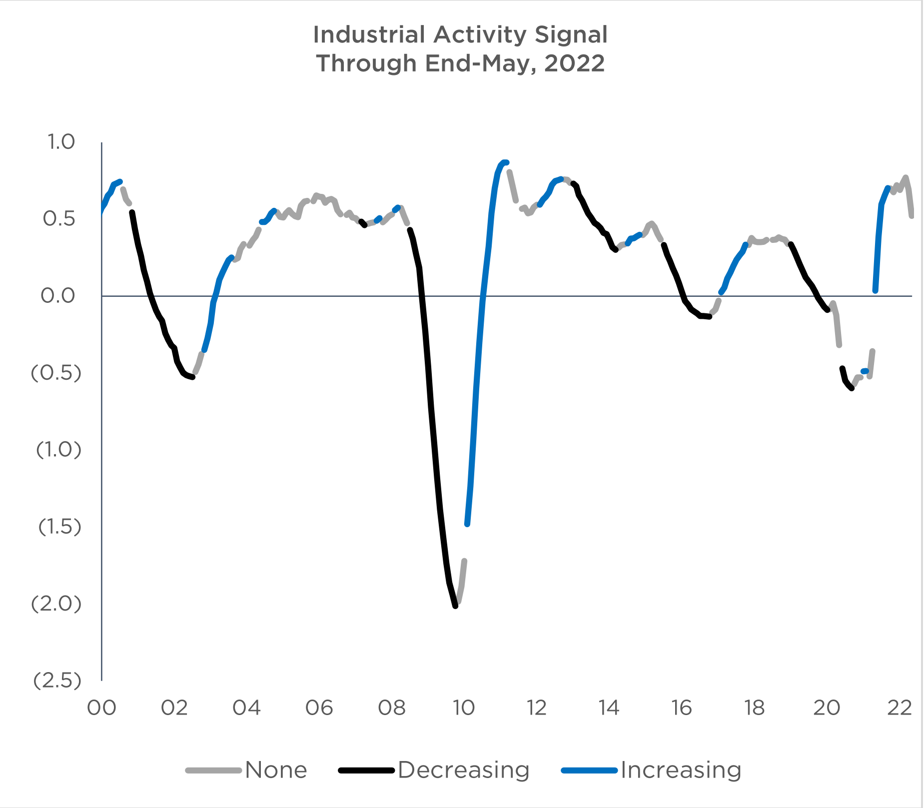




FINANCIAL CONDITIONS TIGHTER AND INDUSTRIAL ACTIVITY FLAT

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. Today, conditions are tightening after a short neutral period, though there is still ample precedent for far less accommodative financial conditions. Industrial activity (right) has levelled-off, driven in particular by weaker transportation and logistics data.





HISTORY SAYS DE-GROSS TMT BUT GROSS UP DISCRETIONARY

Our economic activity gauge has stopped increasing, and that caused us to recommend reducing our gross exposure to TMT stocks. Why? The left chart shows that our quantitative models perform far better in the TMT cohort at picking winners from losers when economic activity is increasing. Our consumer discretionary quantitative model (right) performs better when our consumer activity gauge is increasing, with a hit rate of 71.9% vs. 60.2% when activity is not increasing. As such we had been recommending investors gross up their exposure to discretionary stocks until this month. We create our 12 gauges for two purposes – one to unemotionally evaluate conditions, and two, is to use the regime shifts as timing gauges for our quant models, which ultimately aid in sizing recommendations.

TMT Model Performance Through End-May, 2022

Stat (Beta-Adjusted)	Economic Activity Increasing	Economic Activity Not Increasing	Difference
Weighted Mean	14.7%	6.1%	8.6%
Weighted Median	16.8%	4.9%	11.8%
Weighted Information Ratio	1.66	0.65	1.01
Hit Rate	65.7%	53.9%	11.8%

Discretionary Model Performance Through End-May, 2022

Stat (Beta-Adjusted)	Consumer Activity Increasing	Consumer Activity Not Increasing	Difference
Weighted Mean	14.6%	(10.4%)	4.2%
Weighted Median	19.9%	13.9%	6.0%
Weighted Information Ratio	1.25	0.92	0.33
Hit Rate	71.9%	60.2%	11.7%

CONTEXT AROUND THE MARKET DRAWDOWN

We analyzed daily S&P500 price levels since 1928 and found that there have been 25 "start to finish" drawdowns of 10% or more over the last 95 years - or roughly one every four years. The recent one that started on January 3rd, has been the 15th worst in history (as of the close 5/11/22). Where could this end up?

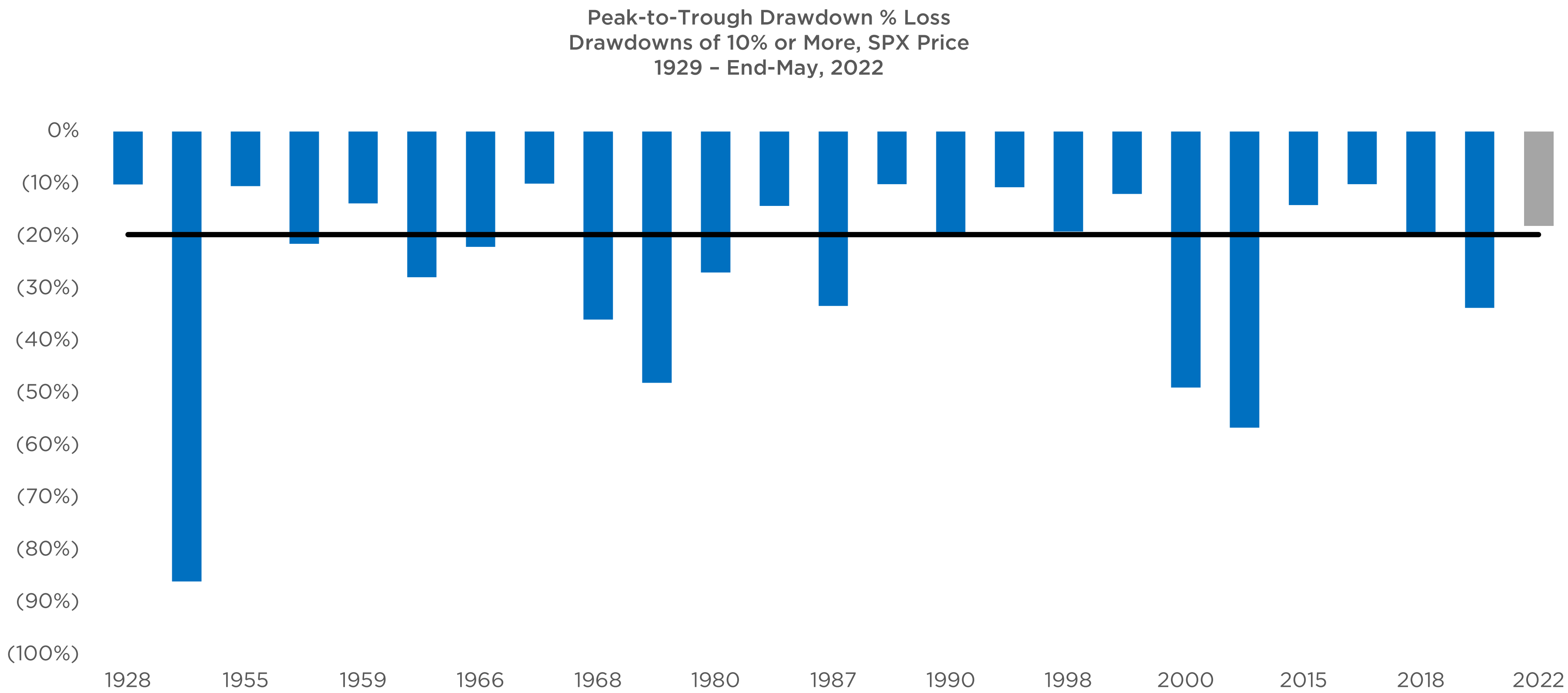
We have seen seven price downturns of 30% or more since 1928, with three instances (TMT Bubble, Great Financial Crisis, and COVID outbreak) happening in the last 20 years. Our judgment is that the fundamentals and macro backdrop do not make it likely we will see a sell-off anywhere near the magnitude of these three extreme events.

Of the potentially more relevant set of downturns, those that were 10-30% from peak-to-trough, the median trough-to-peak absolute performance was down 16%, and this movement happened within a median timeframe of just less than four months.

The median recovery time following the bottom to "get your money back" if you invested exactly at the top and held it all the way to the bottom and then all the way until it got you all your initial money back was 7.2 months from the bottom. If you wanted to hold on until you got 20% return on your initial investment, the median time to get 20% above the initial entry point was 2 years and 7 months from these 10-30% peak-to-trough drawdowns.

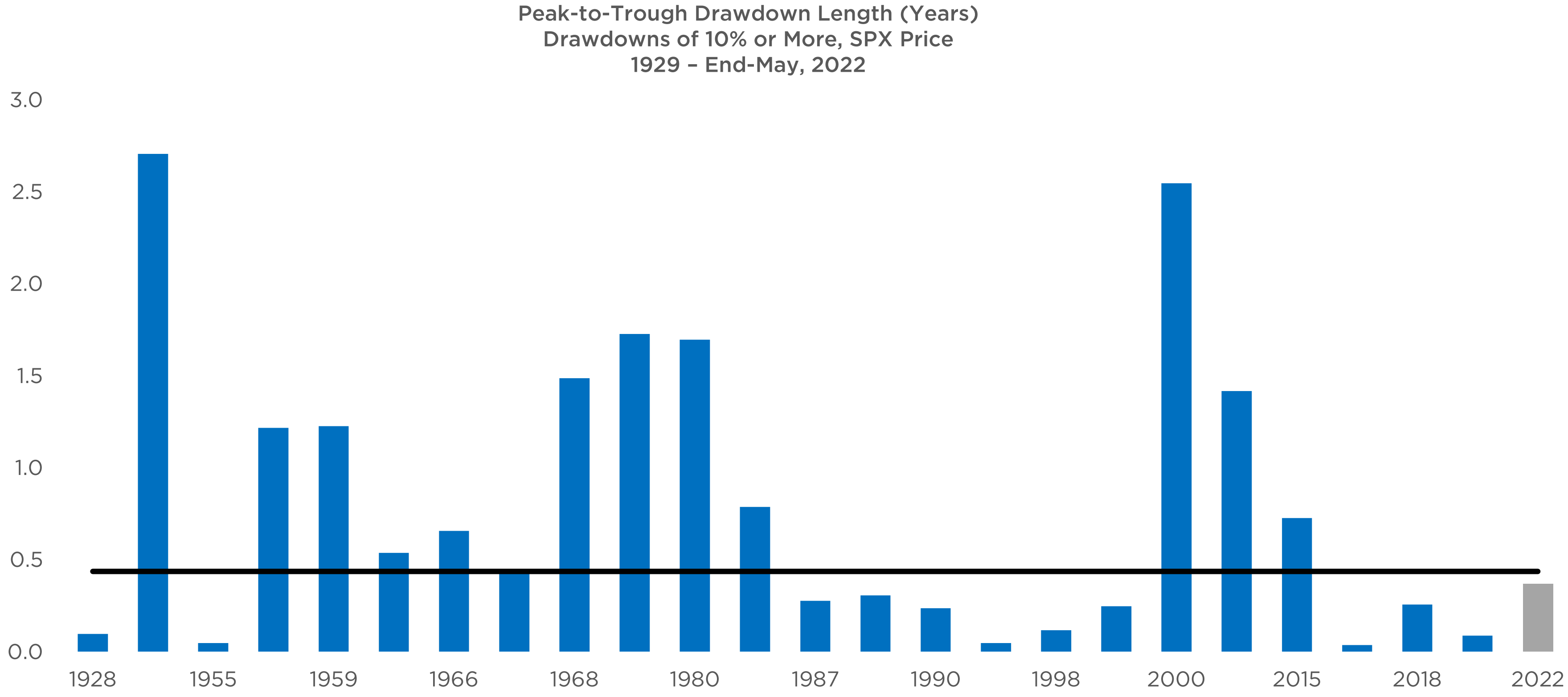
THE 25 SP500 DRAWDOWNS OF 10% OR MORE

Since 1925, there have been 25 drawdowns of 10% or more, and seven of 30% or more, with TMT, Financial Crisis and COVID all occurring in the last 25 years.



THE AVERAGE DRAWDOWN DURATION WAS SEVEN MONTHS

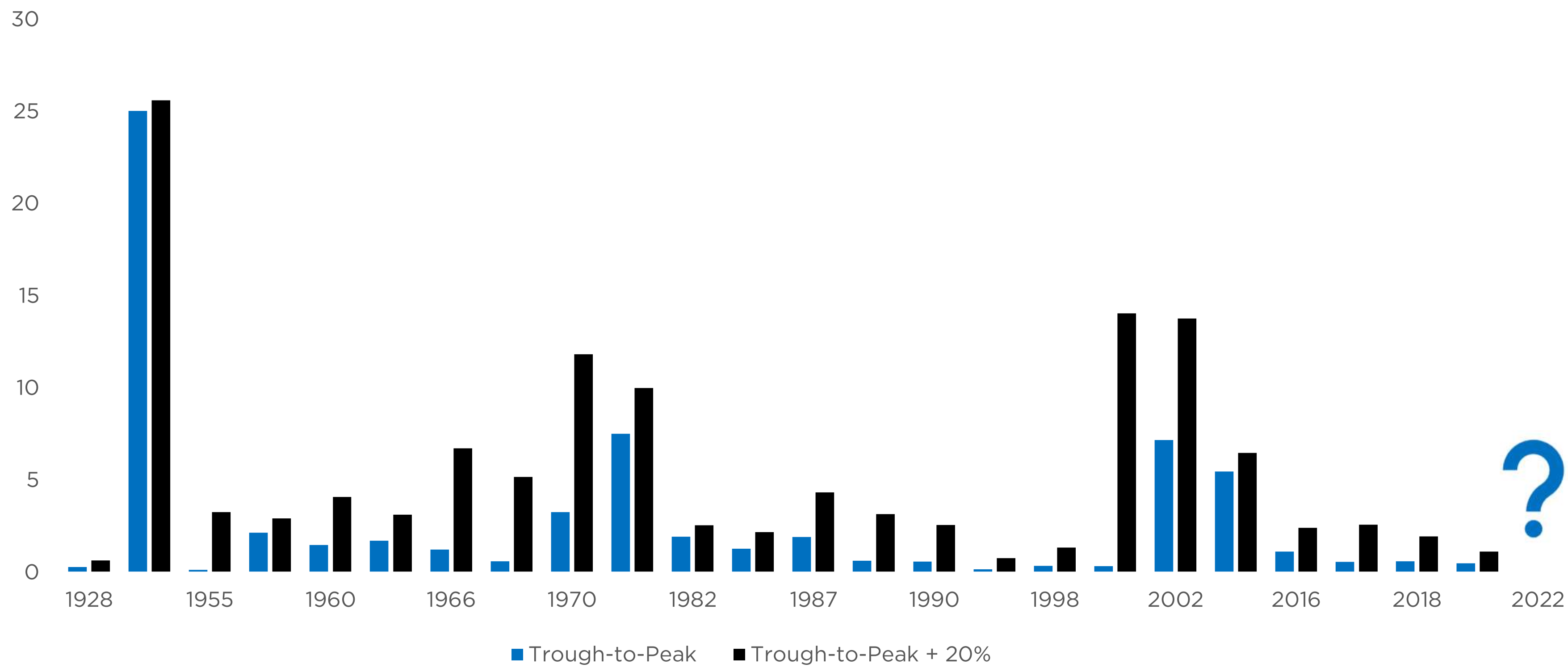
At the market level, the drawdown started at the beginning of 2022 - meaning we are five months in at this juncture vs. an average of seven months peak-to-trough time across the worst drawdowns of the last 100 years.



IF YOU BOUGHT AT THE TOP, IT TOOK 2.5 YEARS TO RECOVER

If an investor took their position at the exact peak and rode the market down peak-to-trough, on average it took 2.5 years to recover their initial position and over three years to get 20% above their initial position. Perhaps this is more compelling for "staying the course" than some think, as we have heard many "it could be five years" comments in the last few weeks. It could, but there is not much historical precedent for that.

Drawdown Recovery Length (Years)
Drawdowns of 10% or More, SPX Price
1929 – End-May, 2022



EARNINGS AND MULTIPLES – IS THIS UP TO DATE

Earnings: Earnings are forecasted to grow 9.9% in 2022 and another 9.2% in 2023. Energy and materials are forecasted to grow sharply in 2022, but then are expected to begin collapsing in 2023. On the other hand, industrials earnings expectations are currently forecasted to be strong for the foreseeable future. Our conclusion is that the industrial sectors earnings estimates are relatively less achievable. We see downside risk to SP500 overall number but remain convicted that 2022 earnings will be above 2021 earnings.

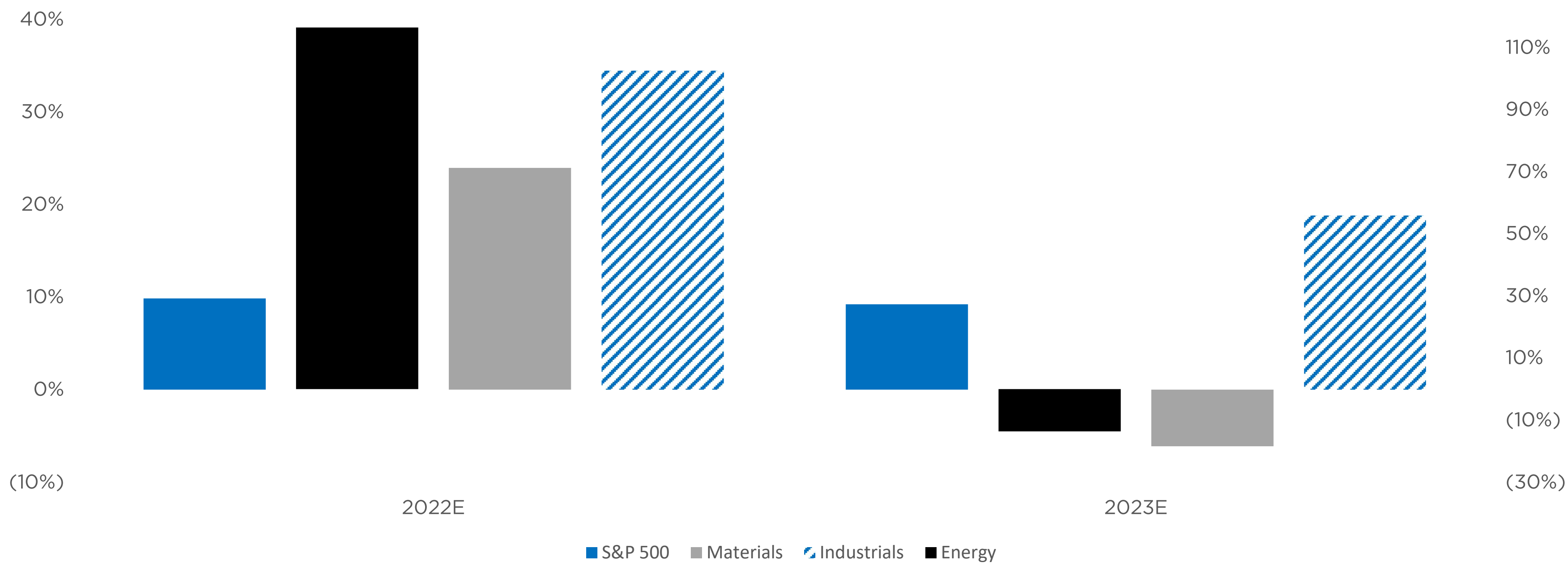
So far this year, we have seen strong upward revisions for energy and metals as commodity prices are higher. However, industrials, communication services, and consumer discretionary have see the most negative revisions YTD. Overall, SP500 2022 earnings expectations are slightly higher now than they were on January 1st, despite the stronger dollar and higher commodities, posing risk to back half estimates in our judgment.

Valuation: While the market is slightly 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 how much the now more than three-month-long Russian / Ukraine exacerbates energy and food shortages. At present, the market trades around 18x the consensus 2023 earnings, which we think is reasonable, only a small premium to the long-term average of 17x forward earnings which seems merited given the constitution of companies, their margins, inventory and capital intensity, new additions to the SP500, etc. In the end, we suspect perception about rates, measured by Fed Fund Futures will be the key metric to watch – as anything dovish likely fuels multiple expansion.

WE THINK EXPECTATIONS LOOK LOFTY FOR INDUSTRIALS

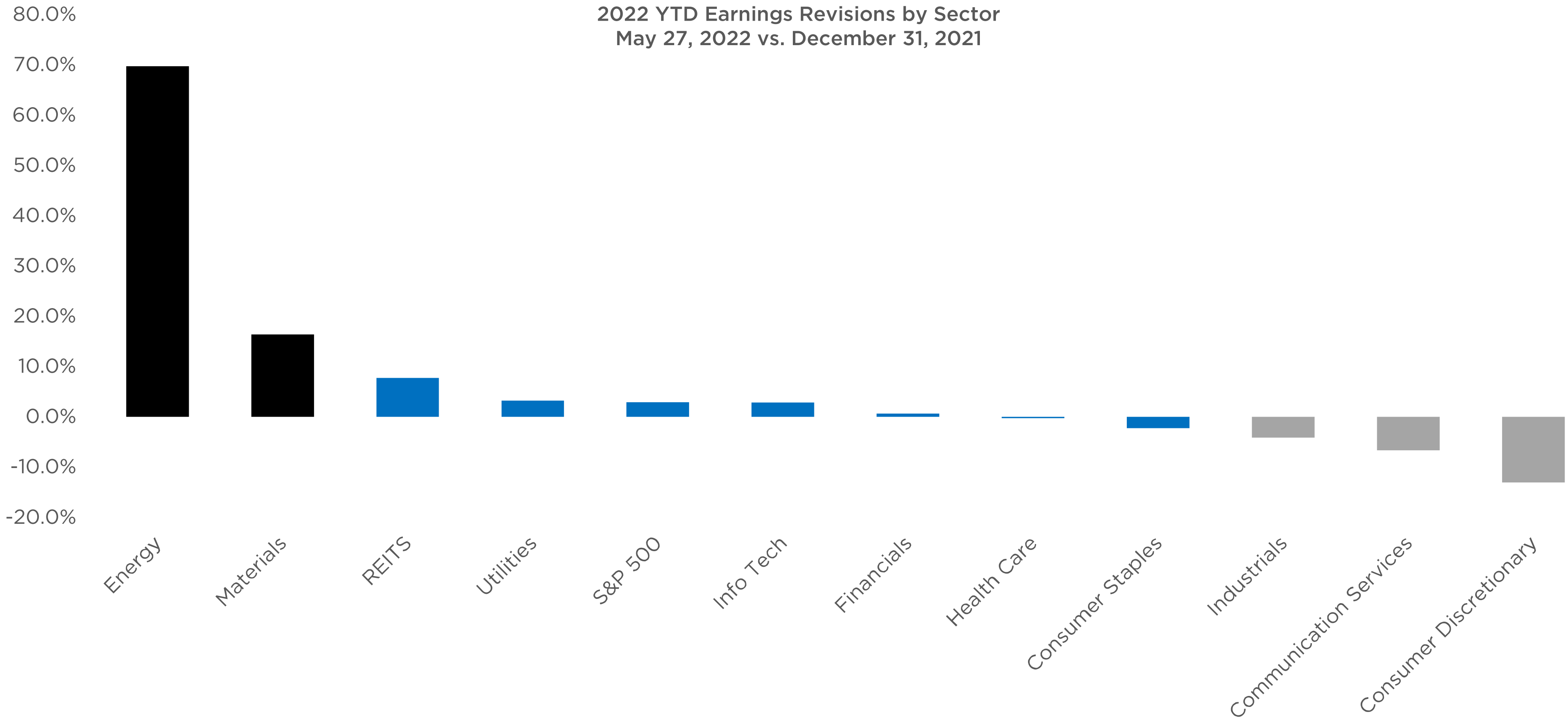
Earnings are expected to grow by over 9% in 2022 and in 2023. Energy and materials are forecasted to grow sharply in 2022, but then are expected to begin collapsing in 2023. On the other hand, industrials earnings expectations are currently forecasted to be strong for the foreseeable future. Our conclusion is that the industrial sectors earnings estimates are relatively less achievable given rising input costs and high margin expectations from levels that have already peaked. We see downside risk to the SP500 overall number but remain convinced that 2022 earnings will be above 2021 earnings.

Bottom-Up Analyst Earnings Growth Expectations
SP500, Energy, Materials, & Industrials
May 27, 2022



EARNINGS HAVE ACTUALLY BEEN REVISED UP YTD

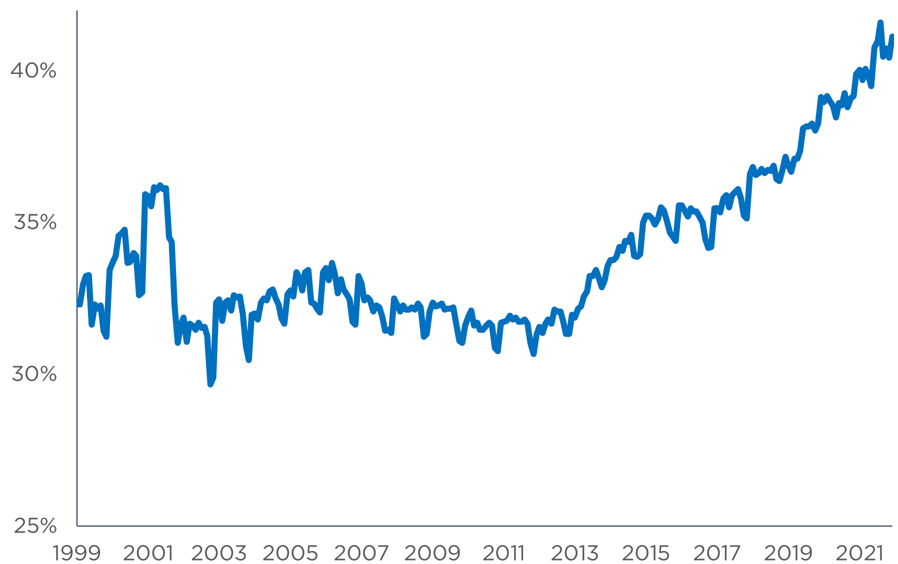
So far this year, we have seen strong upward revisions for energy and metals as commodity prices are higher. However, industrials, communication services, and consumer discretionary have see the most negative revisions YTD. Overall, SP500 2022 earnings expectations are slightly higher now than they were on January 1st, despite the stronger dollar and higher commodities, posing risk to back half estimates in our judgment.



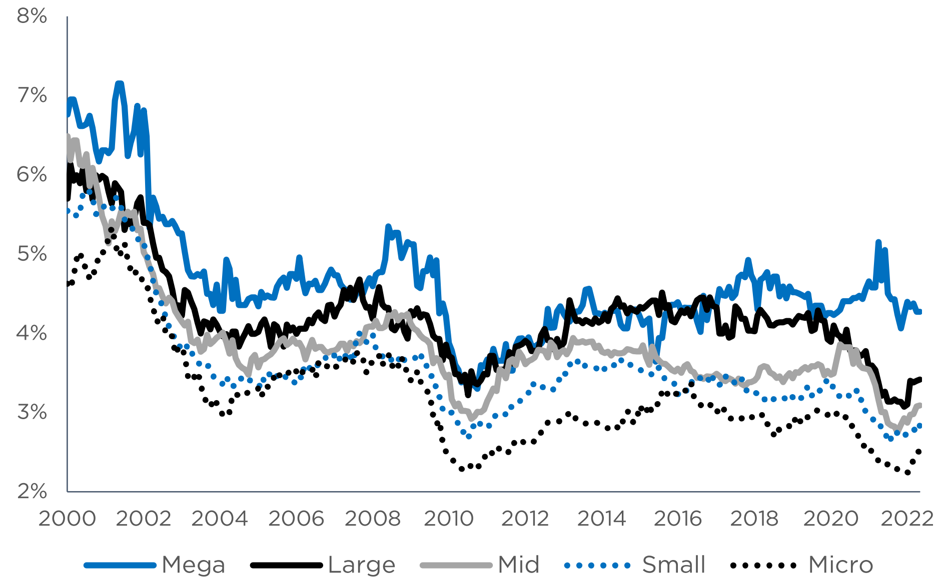
INVENTORY AND CAPITAL SPENDING ARE NOT BURDENS TO PROFITS

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 in the near-term. 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.

% of Top 3000 US Companies That Have Zero Inventory Dollars Through End-May, 2022

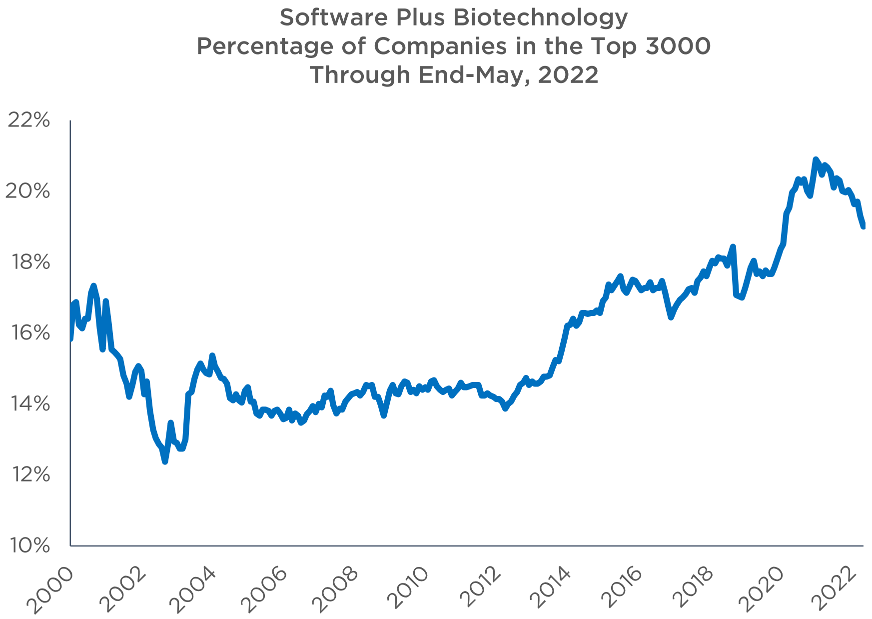


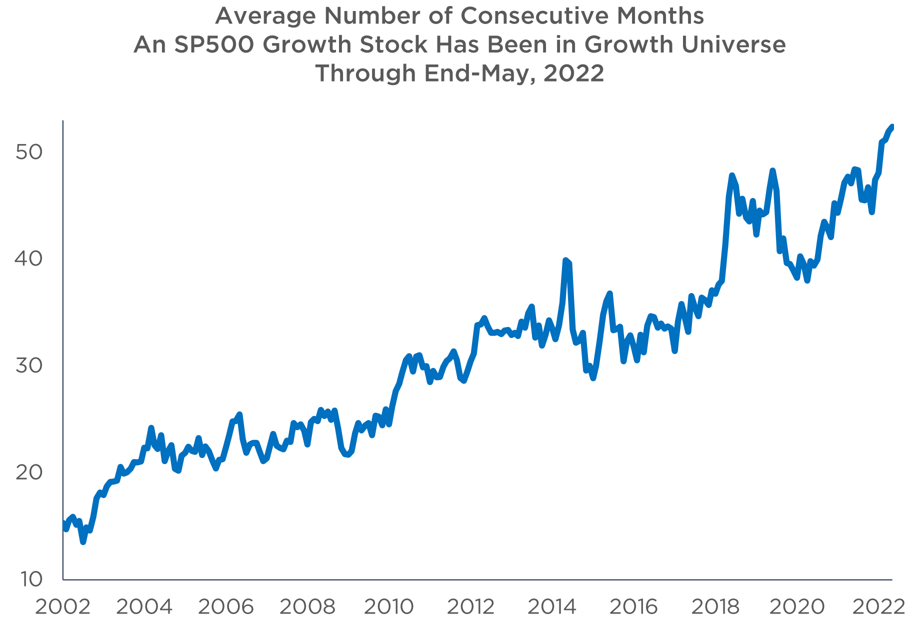
Capital Spending to Sales By Market Cap Group Through End-May, 2022



IS VALUATION DEFENSIBLE? CONSTITUENTS HAVE SHIFTED

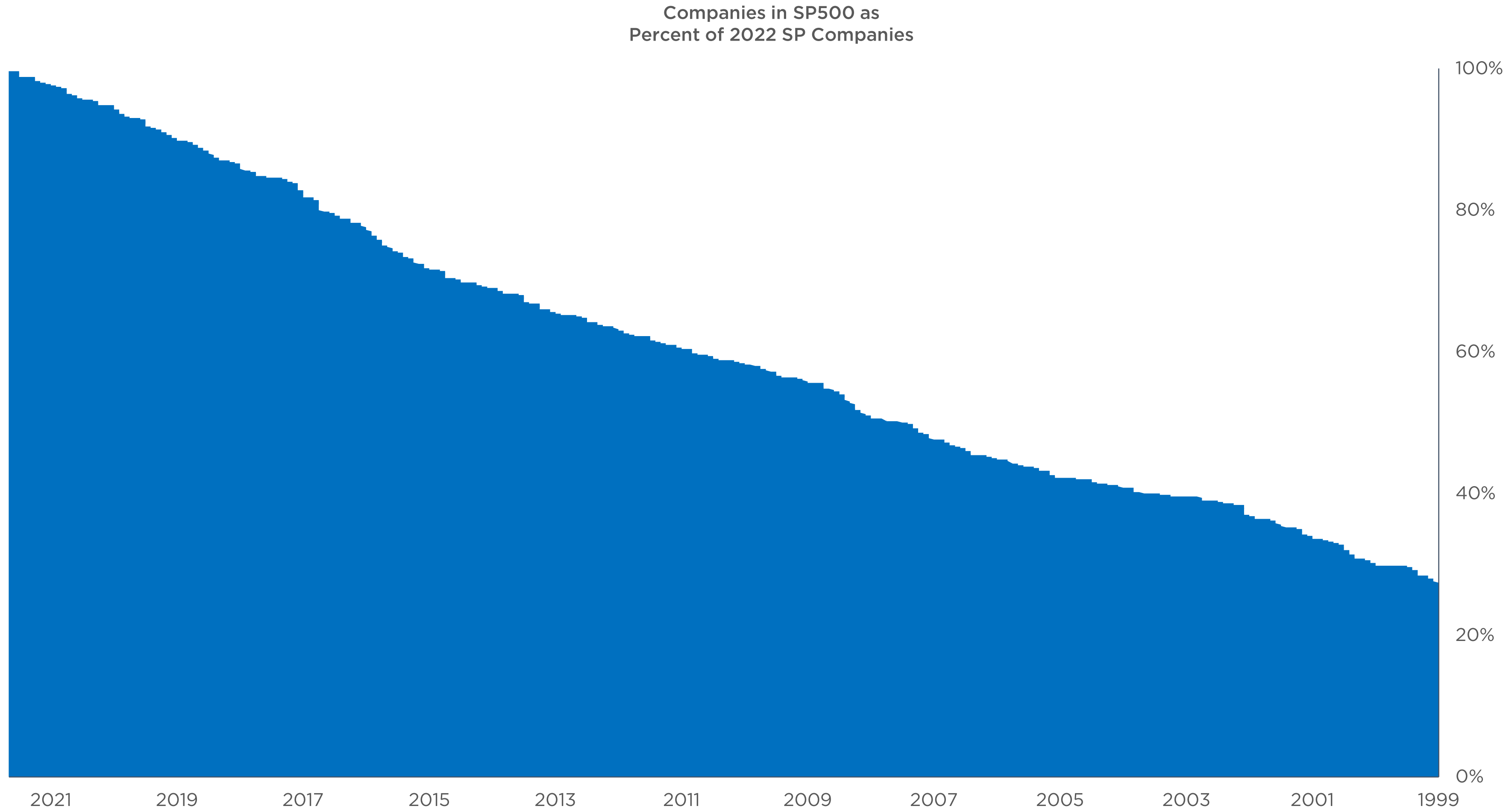
Even with the dramatic sell-off in hyper growth stocks, the top3000 equities is over 18% software and biotechnology today. That is roughly 1.5x the number we had 20 years ago. Relative to long-term history, investors are buying long-dated potential growth, not current profitability (left chart). We think that the slightly 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 a record level of over 48 months straight, up from just under two years in 2007.





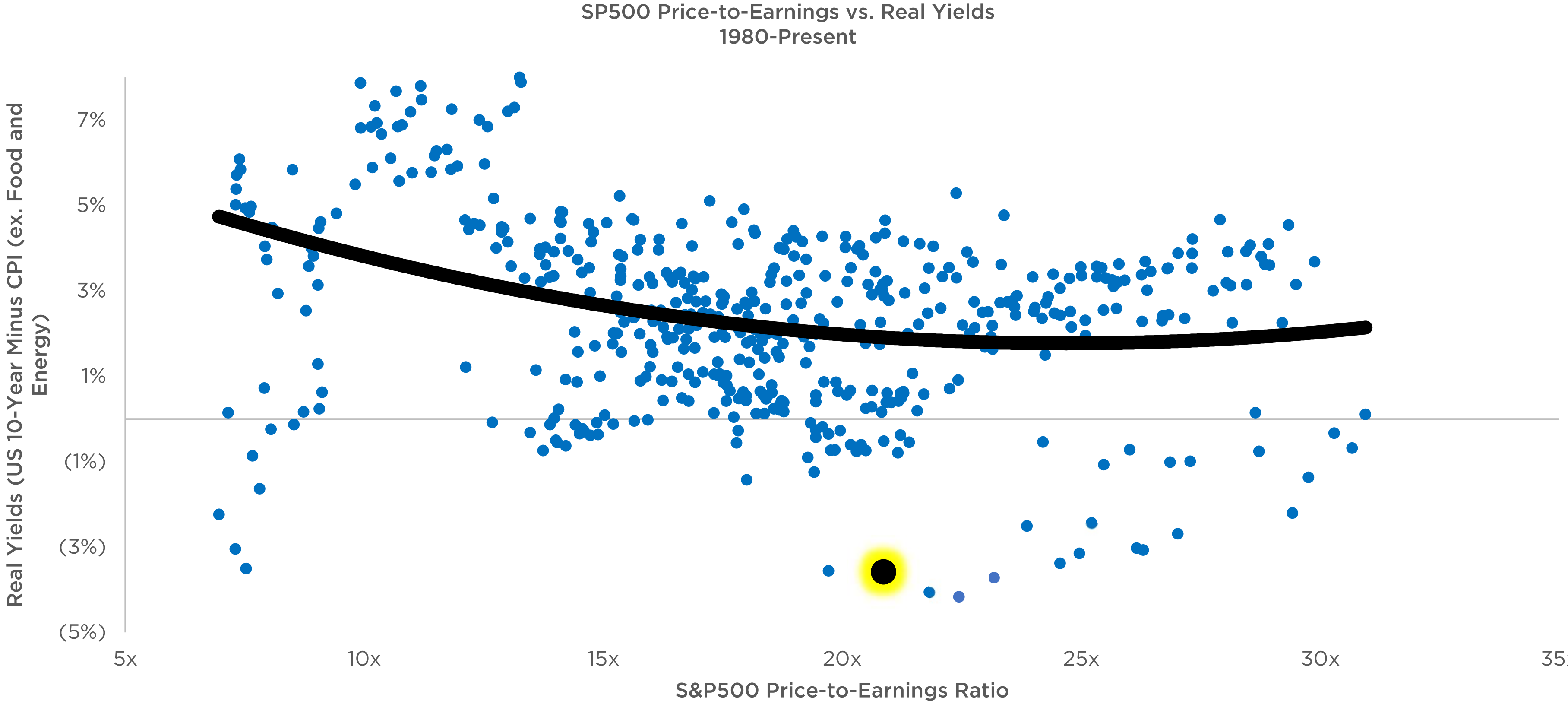
75% OF THE SP500'S CONSTITUENTS WERE NOT THERE 20 YEARS AGO

Another potentially underappreciated aspect of the SP500 is that it is a managed index or a moving target, Half the current SP500 constituents were not in the index 15 years ago, and 75% are different from 20 years ago. The companies that get added, on average 6% each year, grow faster and are more expensive than the ones that are deleted, continuously propping up the multiple.



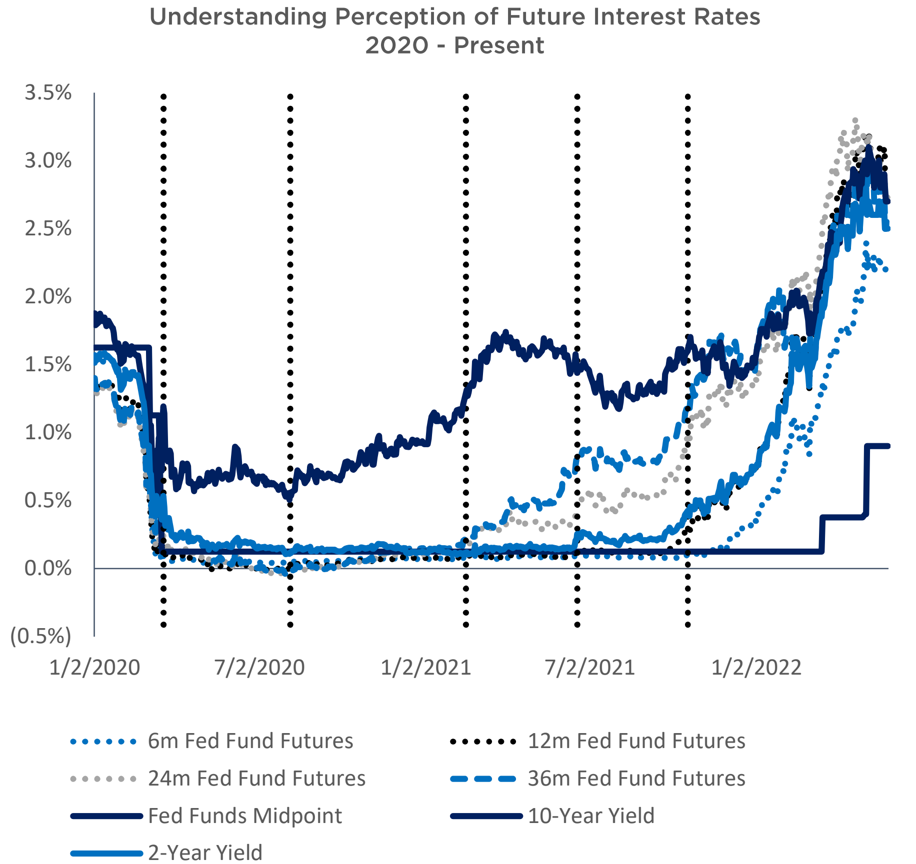
THE RELATIONSHIP BETWEEN REAL YIELDS AND MULTIPLES IS BROKEN

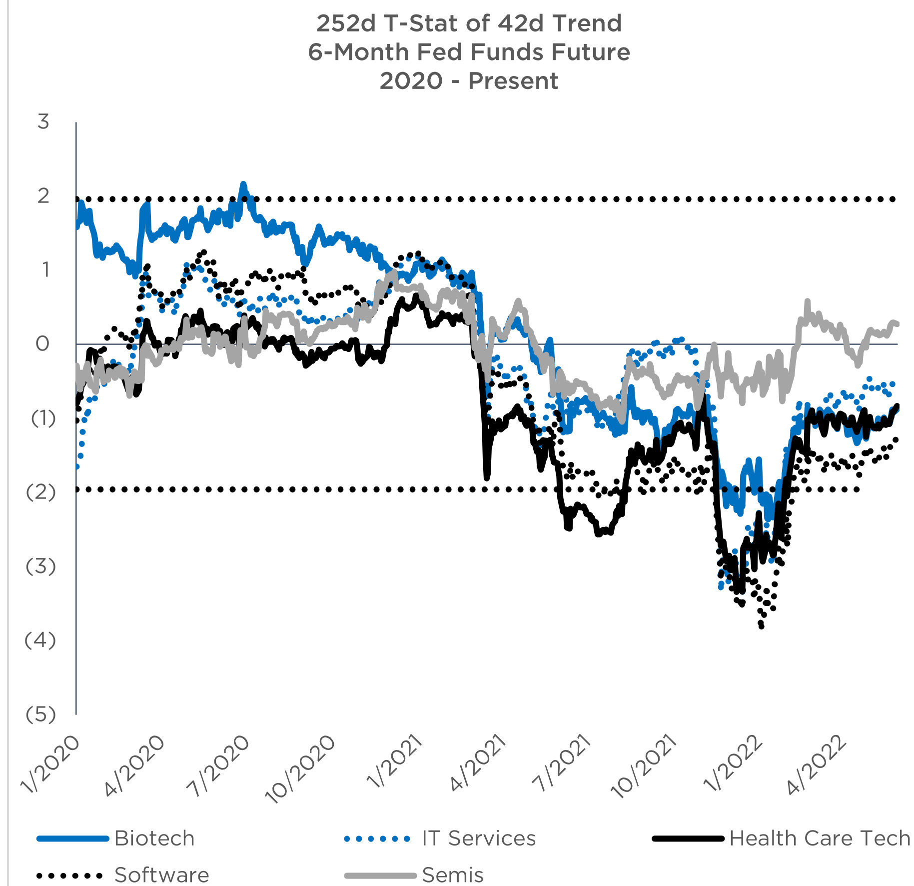
The interest rate environment is an important metric for assessing an appropriate price-to-earnings ratio for the overall market and individual stocks within it. Historically extreme real yields were accompanied by lower multiples because they were considered risk regimes. But when real-yields are negative, 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 2.95% 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.



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 near zero correlation.





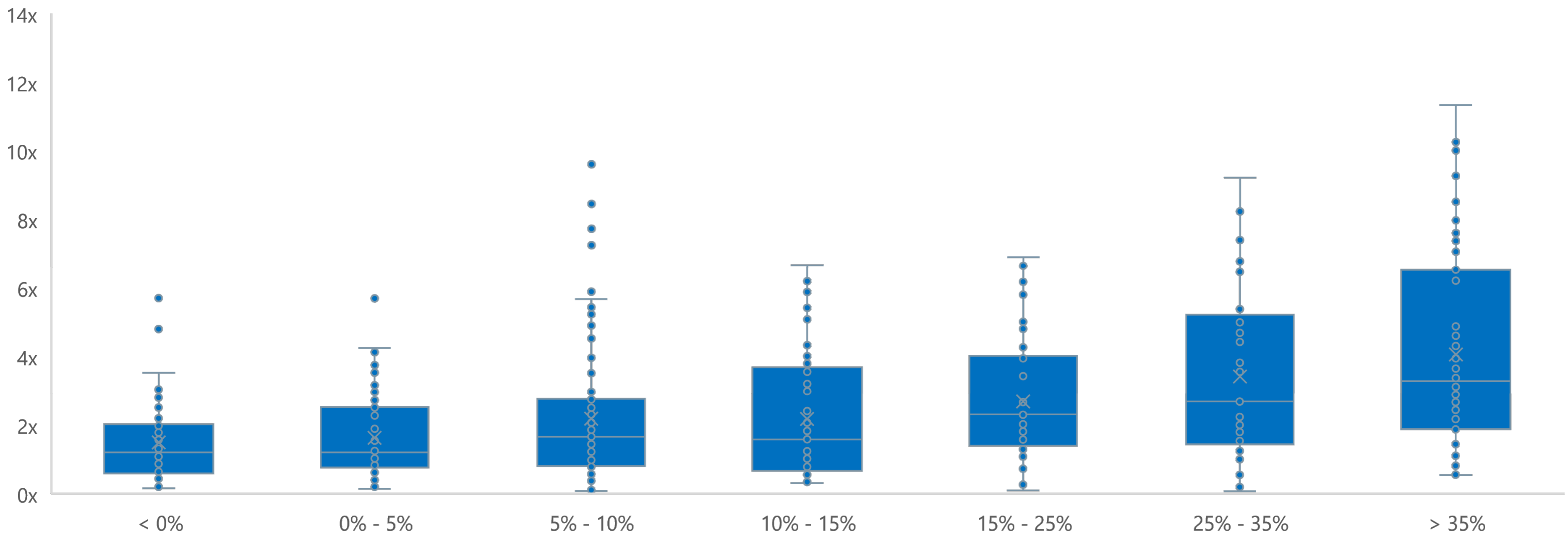
FRAMEWORKS AND THEN ULTIMATELY RISKS?

- **Double Whammy:** 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.
- **Compounders:** 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.
- **Melting Ice Cubes:** Attributes associated with identifying "melting ice cubes" are different – what matters is accruals and prior weak stock performance relative to peers. Share loss and margin contraction does not really add incremental underperformance to accrual and momentum.
- **Risks:** We have seen a degradation YTD in some of these framework ideas, because compounders became crowded. This could potentially become more of a sustained risk than alpha

FASTER GROWTH MEANS DISPROPORTIONATELY HIGHER MULTIPLES

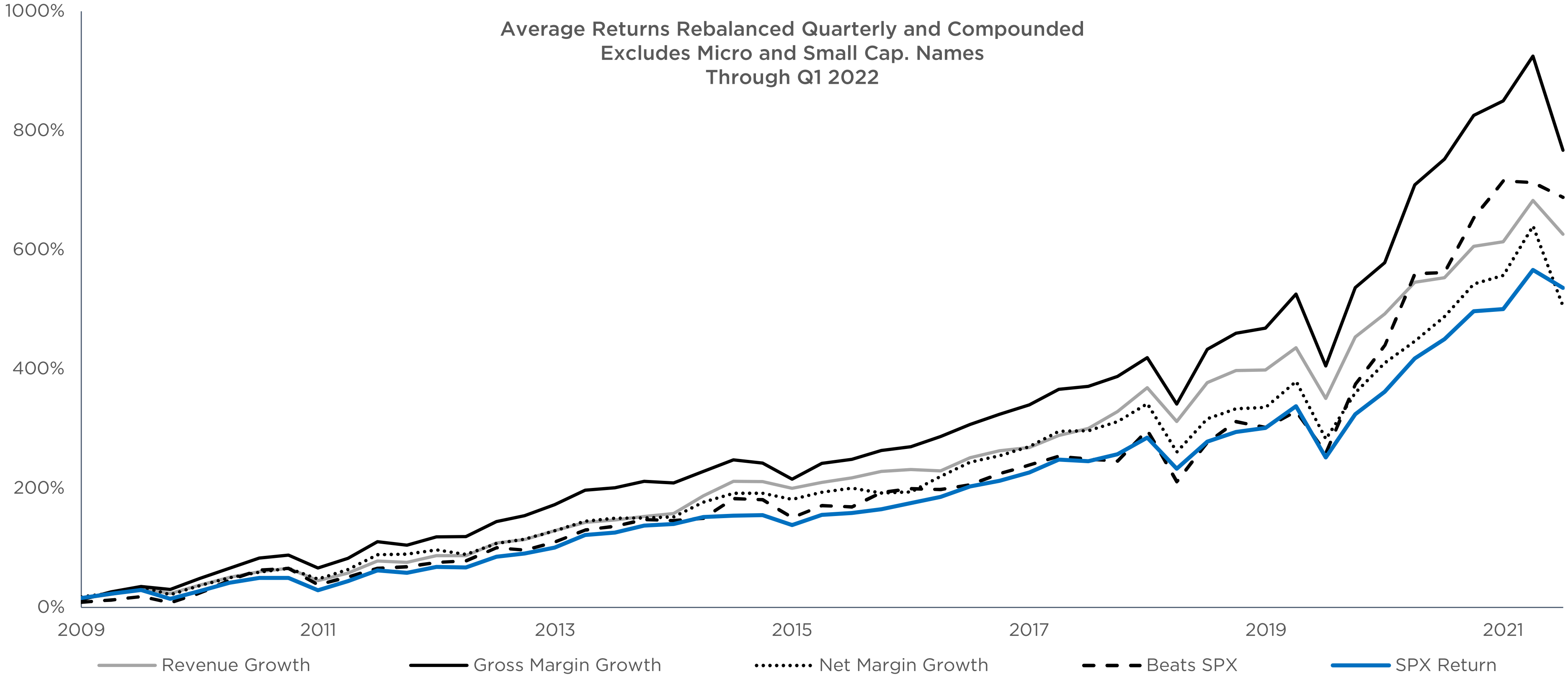
We analyzed the growth rates and relative to SP500 price-to-sales multiples for US stocks (excluding small / micro caps and value stocks). Growth / neither stocks with revenue growth below 0% have a relative price-to-sales multiple close to the market level, but as annual revenue growth exceeds 10%, 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!**

Distribution of Relative to Top 500 Price-to-Forward Sales Multiple
By Growth Rate Bucket
End-May, 2022



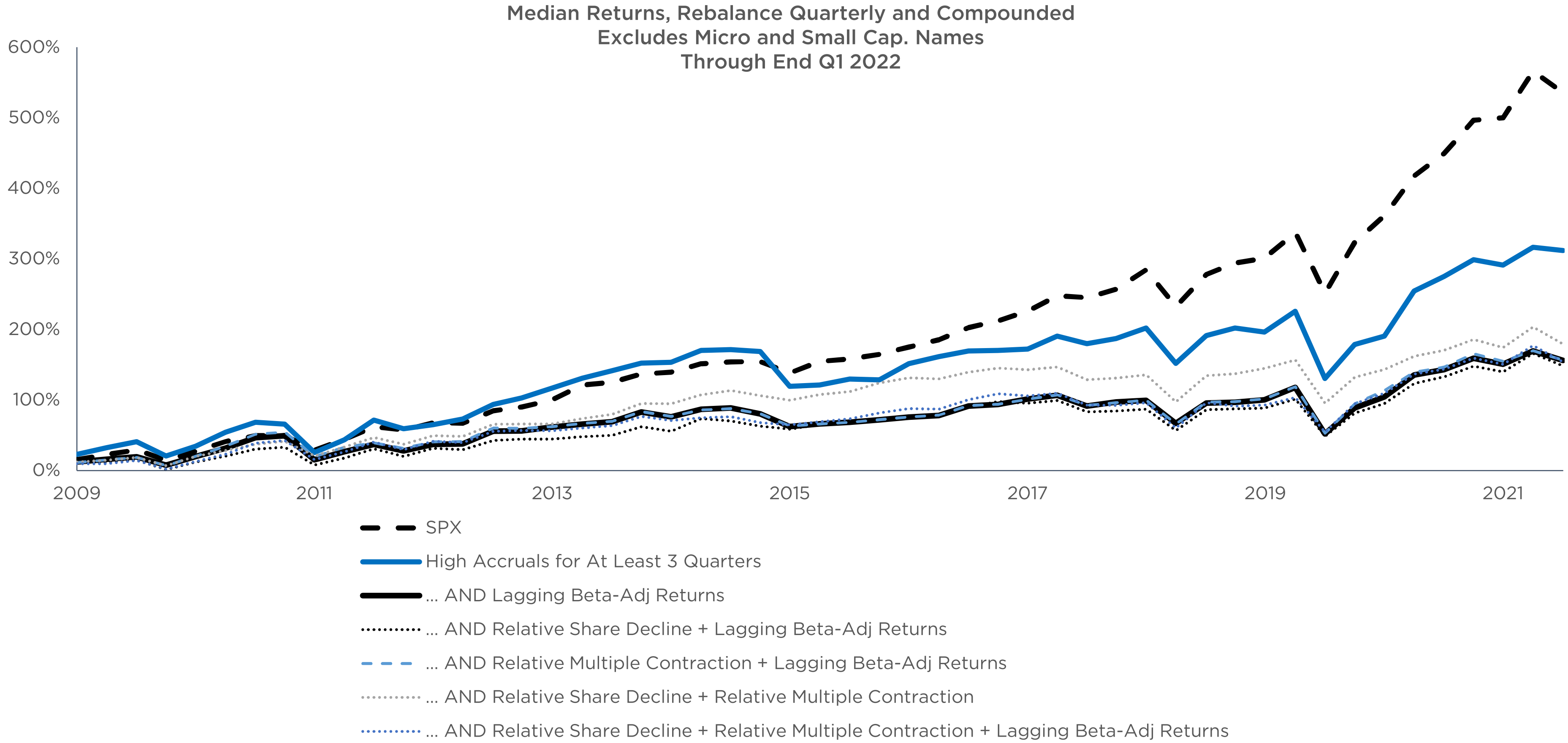
BUY CONSISTENT GROSS MARGIN EXPANDERS

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. We have seen the consistent gross margin expanders perform poorly this year as some were crowded longs.



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.

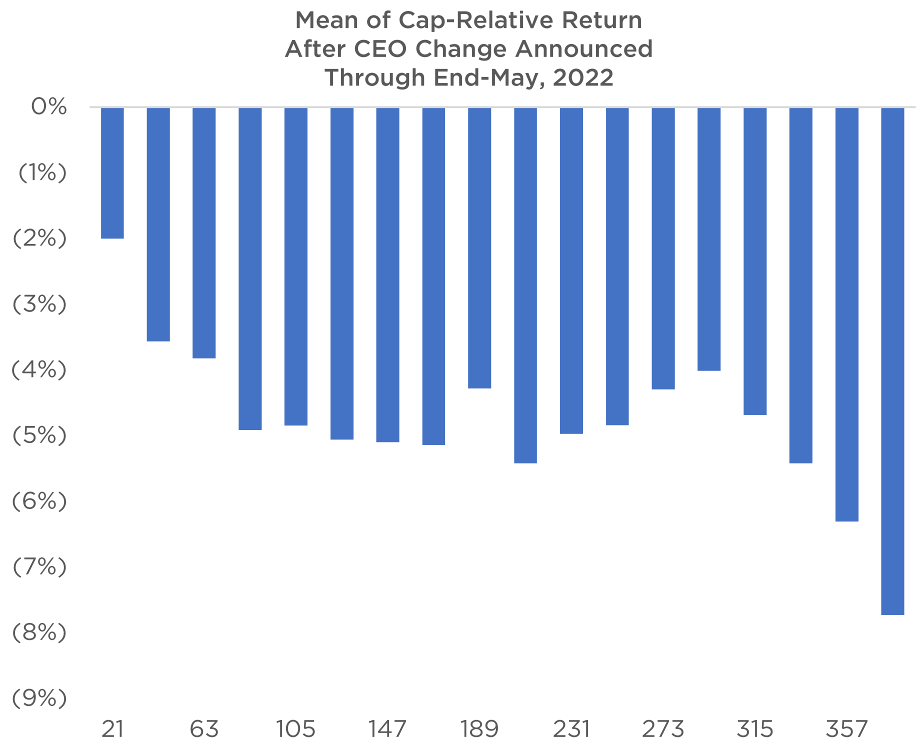


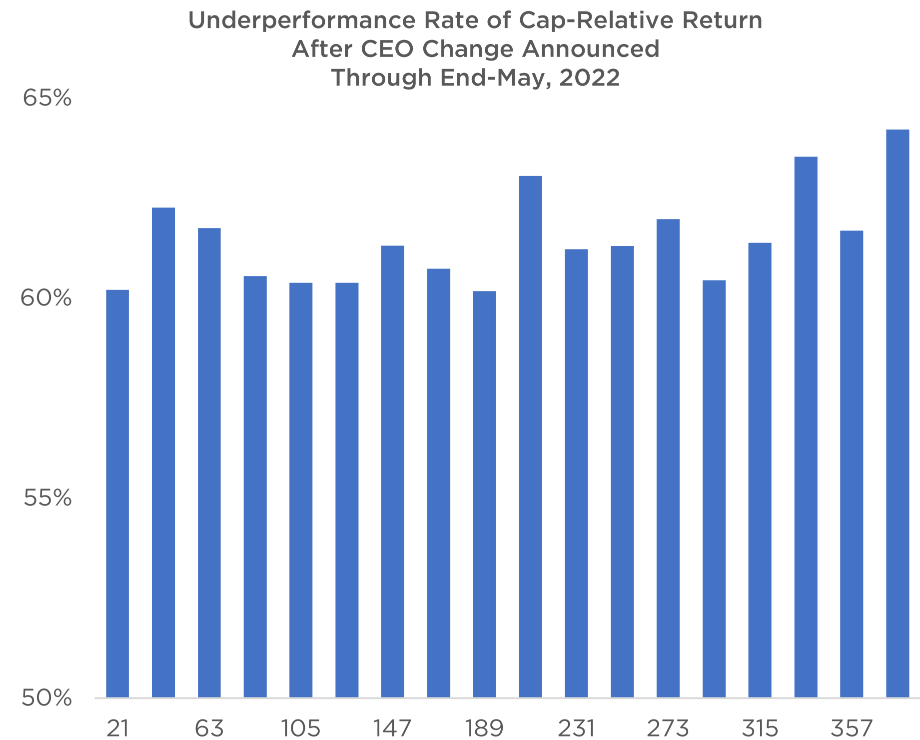
CAPITAL USES AND THEIR CONSEQUENCES

- **New CEOS:** About 65% of expensive growth stocks that have CEO changes underperform, with this negative performance vs. industry / cap peers average nearly 800 bps and last for nearly two years.
- **Stock buybacks:** Buybacks, including net buybacks of greater than 2.5% of shares over a three-quarter period, does not result in superior subsequent stock performance to those companies diluting by 2.5% of more over the same time frame. The market really has not rewarded buybacks over the last cycle.
- **Dividend strategies:** The market however does reward or penalize various dividend strategies, with dividend growth by far the best idea during rising interest rates.
- **Acquisitions:** With deals of over 20% of the acquiror's market cap, the initial five day market reaction is surprisingly prescient. Those the market does not like tend to lag on average for two years.

EXPENSIVE GROWTH STOCKS LAG WHEN THE CEO CHANGES

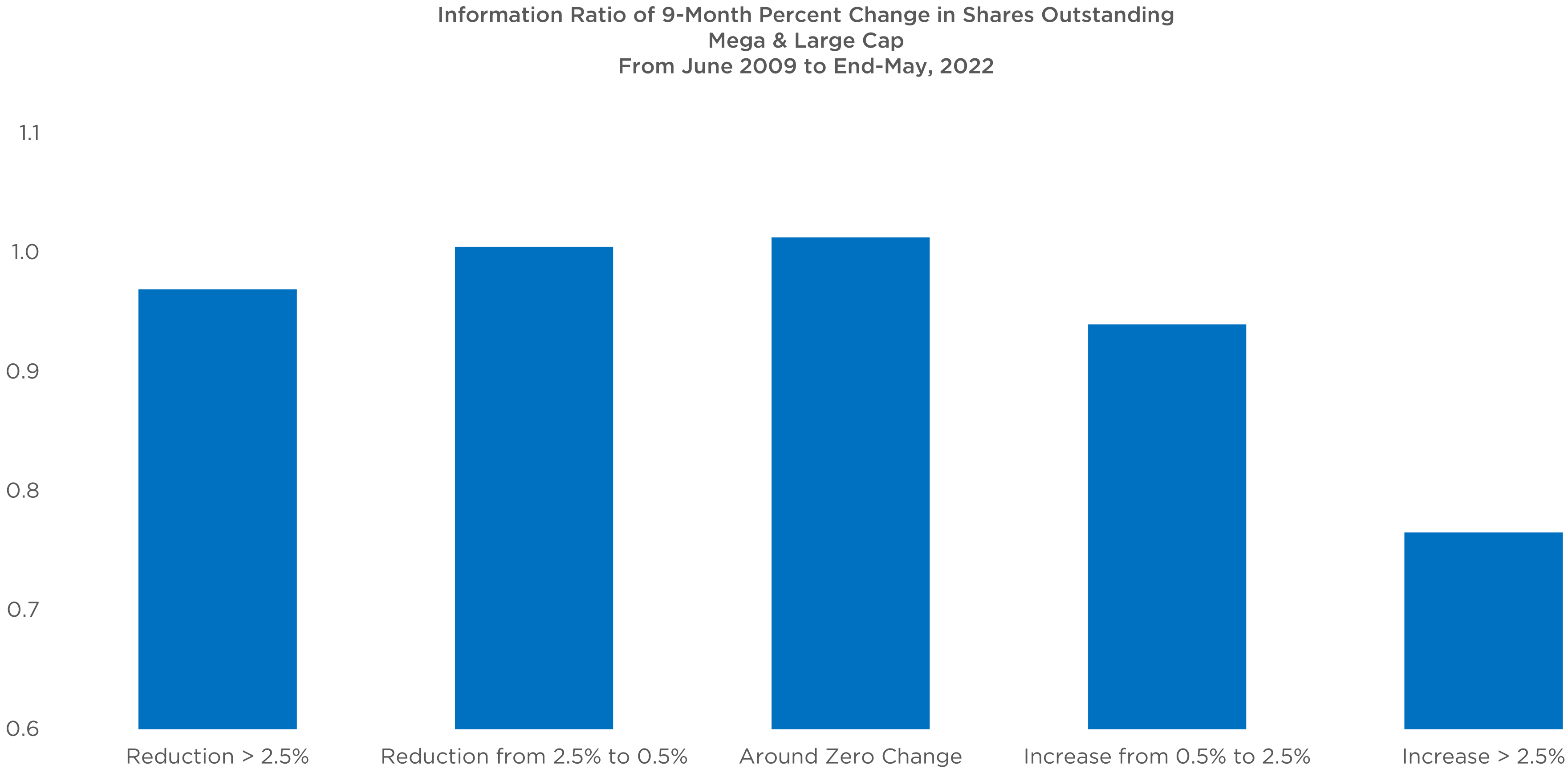
We analyzed the performance of the expensive growth universe that have new CEOs. Expensive growth stocks underperform the most dramatically of any sub-group and should on average be sold / shorted following the announcement for three-to for months (left chart). This strategy has a hit rate well over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





BUYBACKS ARE WASTE OF MONEY FOR LARGE CAP

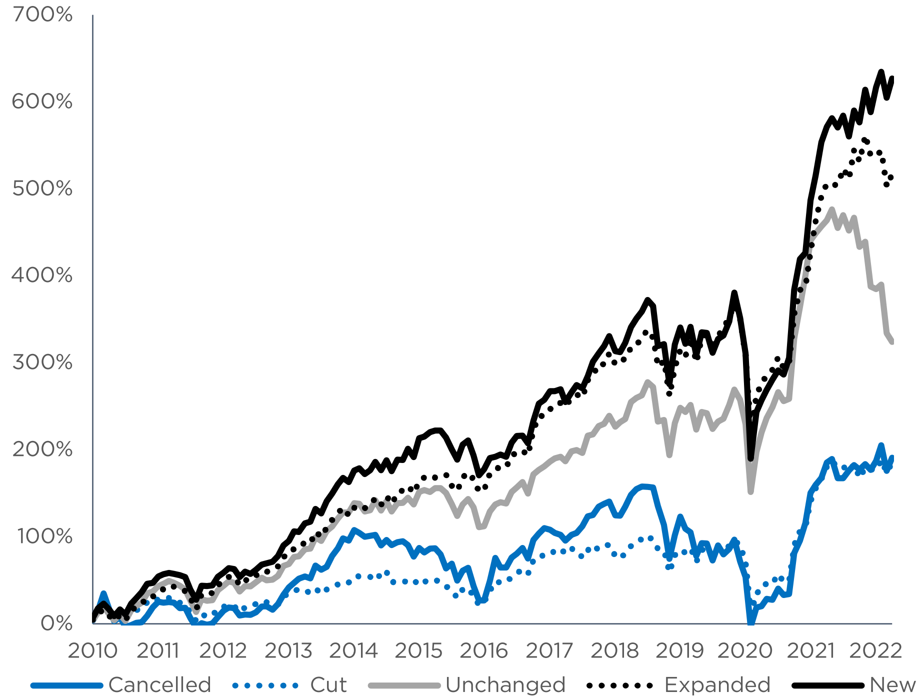
Big buybacks do not really drive incremental subsequent stock performance vs. average buybacks, or even dilution.



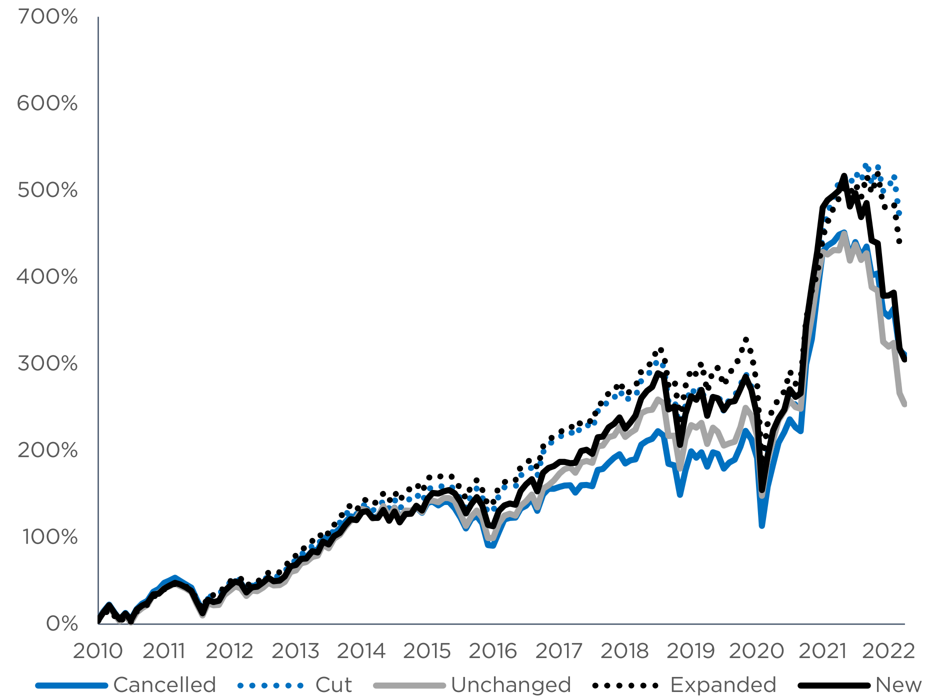
YIELD AND BUYBACK RETURNS – BUYBACKS DON'T SEPARATE

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.

Compounded Average Return
By Dividend Change Category
2010 - End-May, 2022

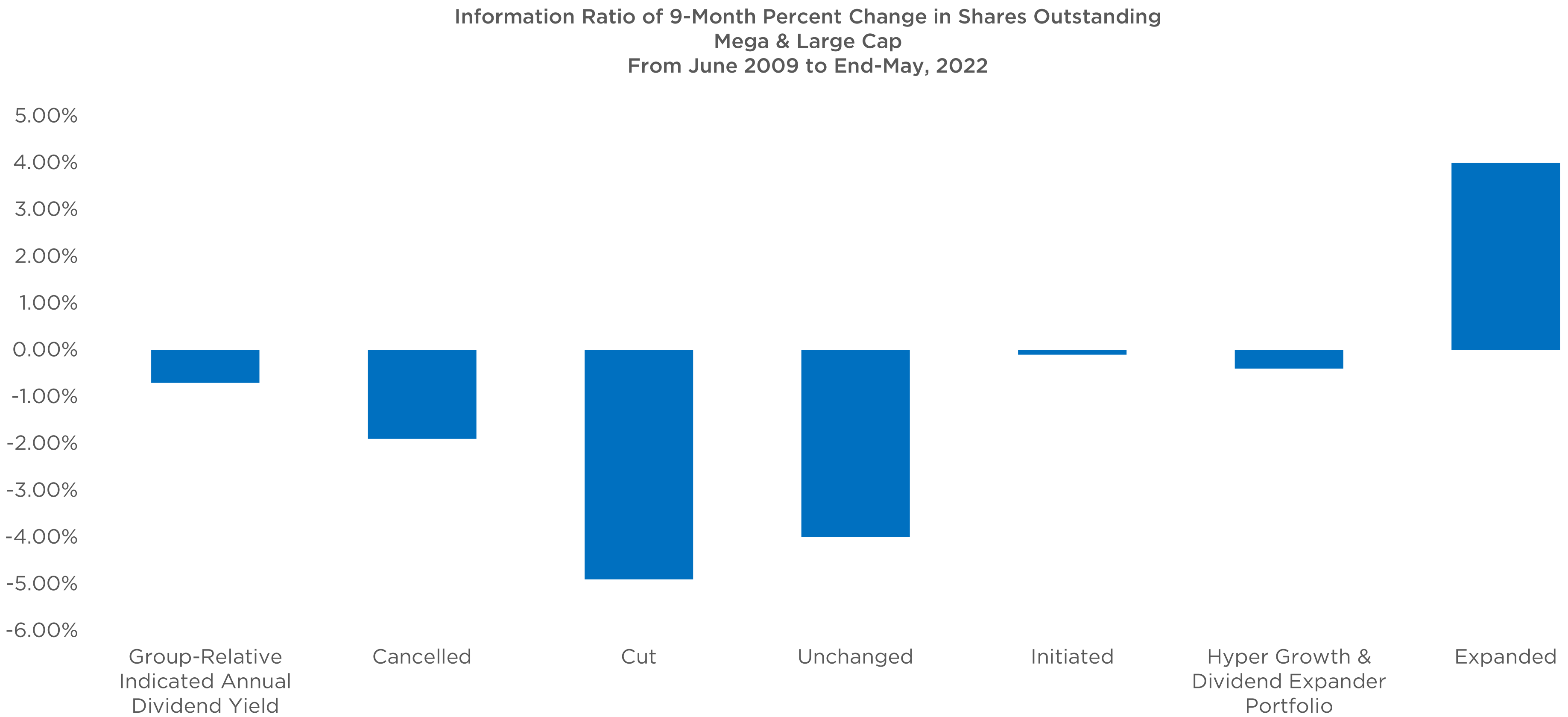


Compounded Average Return
By Buyback Change Category
2010 - End-May, 2022



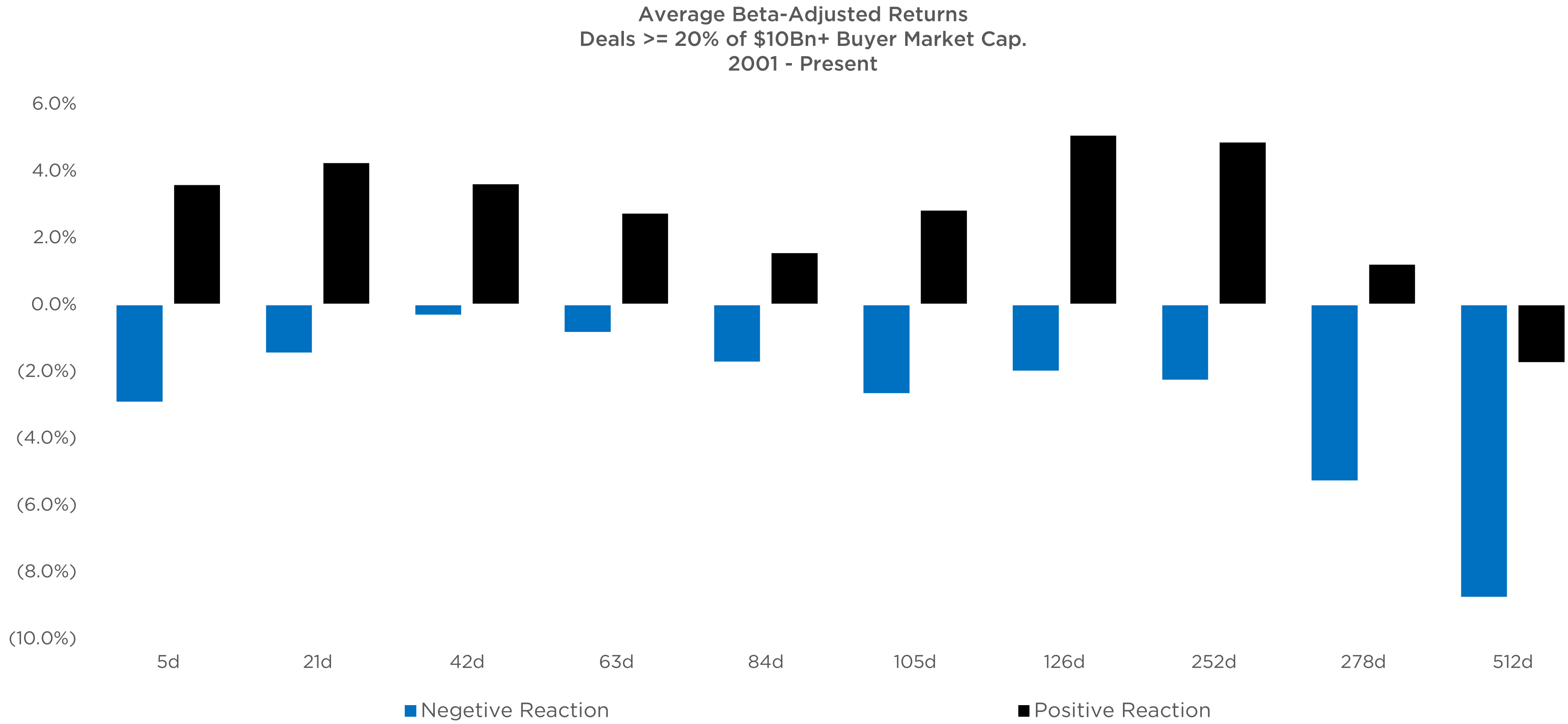
EXPAND YOUR DIVIDEND WHEN RATES RISE

Expanding your dividend when rates rise is the most prudent strategy.



FIRST IMPRESSIONS MATTER

If the market reaction is initially negative (or positive) to a deal of more than 20% of the market cap., that tended to last for several quarters, particularly if the first impression was negative.



RISKS

- **Signal correlation in industrials:** A major risk we see is the increased correlation of signals in the industrials sector. We developed a quantitative “alpha” 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). Today, the average pairwise correlation of these model signals is near 0.6, indicating using the same classic signals to generate alpha has failed.
- **Work from home vs. 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. 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.

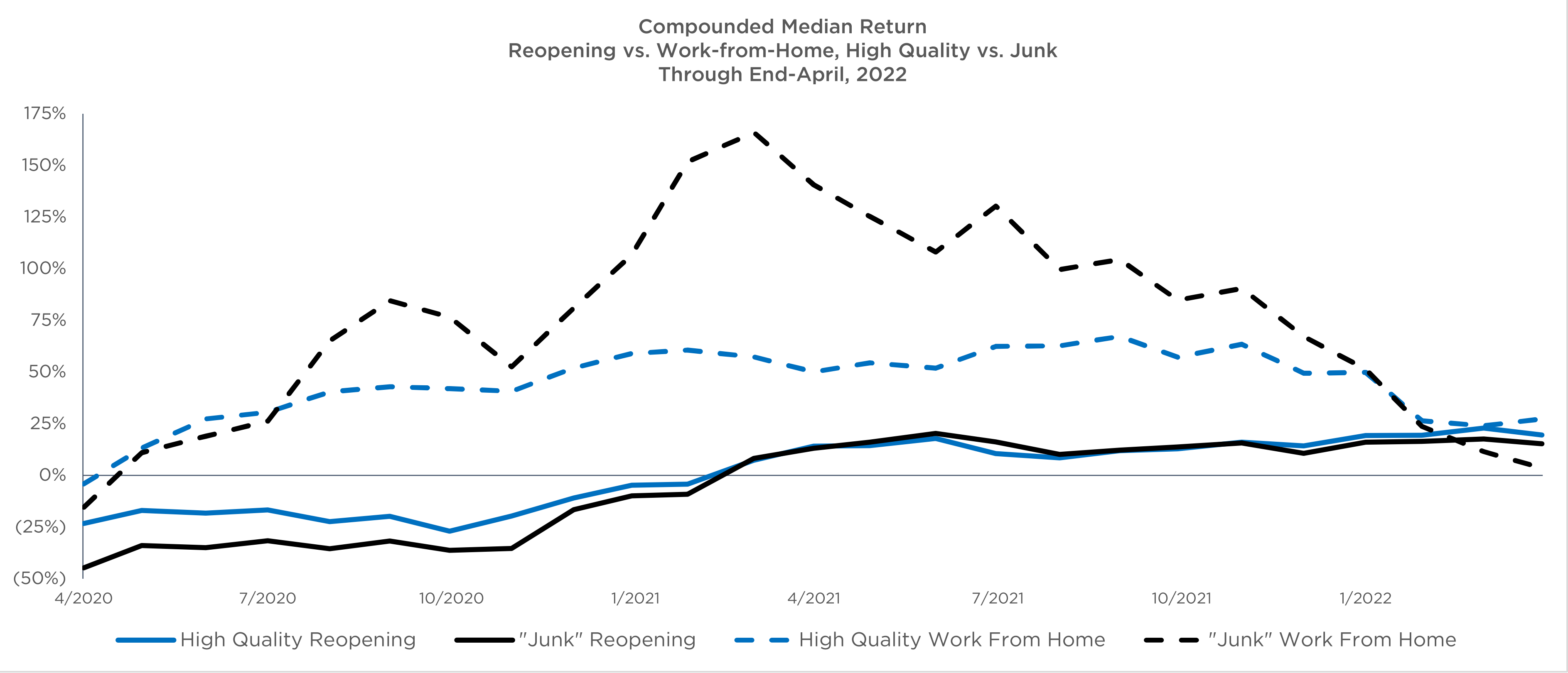
RISK ONE: HIGHLY CORRELATED SIGNALS IN INDUSTRIALS

We analyzed all 21 of our quantitative models to see if signals have become increasingly correlated recently. A major risk we see is the increased correlation of signals in the industrials sector. We developed a quantitative "alpha" 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). Today, the average pairwise correlation of these model signals is near 0.6, indicating using the same classic signals to generate alpha has failed.

Industrials Cohort Model
Average 21-Day Pairwise Correlation
Through End-May, 2022

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. In our minds, high quality reopening names should not only have passed junk work from home but more materially pass junk reopening as well, something that has not happened since the beginning of COVID. Contact us for current long / short ideas.



FIVE IMPORTANT ISSUES

1) US vs. non-US labor exposure: We think there is limited wage pressure outside the US, and businesses with fungible workforces or high non-US exposure should withstand wage pressure better than those with all US employees.

2) **Small cap valuations:** We see just under 50% of all small cap stocks now trading below 15x price-to-forward earnings. While many have high US wage forces and pressure, the valuation is more attractive than many large caps after the historic large cap run last year.

3) **Cyclicals:** Some classic cyclical industries are so cheap that even if you project a 33-50% earnings decline they still look attractively valued and in the interim enjoy substantial balance sheet repair. Metals and mining look more attractive than machinery.

4) **Growth:** We evaluated historical growth rates and price-to-sales multiples and concluded biotechnology looks more attractive than software. Overall, it does seem the market is being overly onerous on innovation.

5) **Crowding:** While many investors focus on sentiment, we have a proprietary way of measuring crowding we think is particularly important when the VIX is elevated.

BUY IDEAS

Buy oil-sensitive energy stocks: The risk-reward skewed to the upside for oil. XOM, CVX, and others are statistically significantly sensitive to oil prices. We have been pushing this for over one year, but our main thesis of upward revisions, cheap valuation, positive price momentum, and negative sentiment all generally still exist.

Buy metals: We continue to like aluminum and copper and think these stocks are discounting massive negative earnings revisions and long-term demand growth is likely to exceed supply growth

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 as our "hyper-growth" play but would short profitless software against it to avoid net long hyper growth exposure.

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.

Buy US semiconductors: The prices have started to discount a recession, with the group down 25% YTD. There are so many secular winners, that while most likely have excess in their backlogs, a recession in their earnings is at least partially discounted.

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.

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. PTON and NFLX are good examples.

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.

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. The sector has had the most negative earnings revisions of any sector YTD, but estimates remain too high in our judgment.

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, BGS are examples of expensive staples.

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.

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