US Equity Strategy Year Ahead

Hindsight is 2022

23 November 2021
Equity and Quant Strategy
United States

What will we say when we look back at today?

Probably similar comments to 2000 hindsight: lofty expectations, Wall St. stock allocations up ~20ppt, retail/democratized markets, frenzied IPO activity; first Fed hike into an overvalued market. And acceptance of the unthinkable: a negative cost of equity in '00, negative real rates today. But the last sign of a bubble – excessive corporate/ consumer leverage – has been transferred to the government. And bubbles can produce great stocks: 1 of 4 IPOs in 1999 are blue chips today. Where does that leave us? Selective: commodities > cash > stocks > bonds, real inflation > asset inflation; small > large, value (free cash flow) > growth (long duration). In 2022, get ready for…

A total return world: SPX at 4600; +6.5% EPS, +13% DPS

We forecast the S&P 500 at 4600 by year-end 2022 (-2% from here). We forecast S&P 500 EPS growth of 6.5%, a 30bp hit to margins from here but strong dividend growth of 13% in 2022. Drivers for our outlook: a higher discount rate, US GDP primacy vs. China, rising capex but slowing consumption, the end of the "equity shrinkage" bull case.

Seven reasons for a higher discount rate

For bonds and cash (1) Fed taper and (2) rate hike. For the equity risk premium (ERP), our ERP deep dive reveals that key drivers are poised to flat-line or worsen. These include rate and stock volatility, leverage, analyst certainty, and PE vs. CPI (54% R-sq relationship): today's PE only makes sense if the S&P 500 falls 40% or EPS grows 70%.

Taper, tighten TINA?

What happens to the TINA ("There is no alternative" to stocks) argument if cash yields rival the S&P 500's 1.3% dividend yield, and if the 10-yr yield hits 2% by YE2022 (BofA forecast)? Dividend growth needs to keep up, thus, our theme: inflation-protected yield.

Capex over consumption

Massive US underinvestment since the GFC; cost of labor spurring automation; re-shoring; the infrastructure bill all signal capex (and the Capex Guidance Ratio jumped.) But consumption at the low-end could be hit by oil tax next year, asset deflation could stall wealth effect, and higher cash yields skew to saving over spending, on the margin.

Free cash flow, Inflation protected yield, Quality

Late Cycle sees uses of cash increase (capex, cost of financing and COGS/labor) and free cash flow growth scarce. Amid higher debt costs, use enterprise value (EV) not equity value. Inflation-protected yield favors Energy, Financials and Real Estate. Finally, we see compelling cyclical and secular reasons for quality; plus it is surprisingly inexpensive.

O/W Energy, Health Care, Financials; avoid Consumer

Energy and Financials offer inflation-protected yield. Health Care offers Growth/Yield at a Reasonable Price. We are underweight Comm. Svcs. (long duration/crowded) and Staples & Discretionary: slowing consumption, labor intensity, oil tax impacting low price point sales, and shift to services spend (which benefits small caps more).

View Transcript

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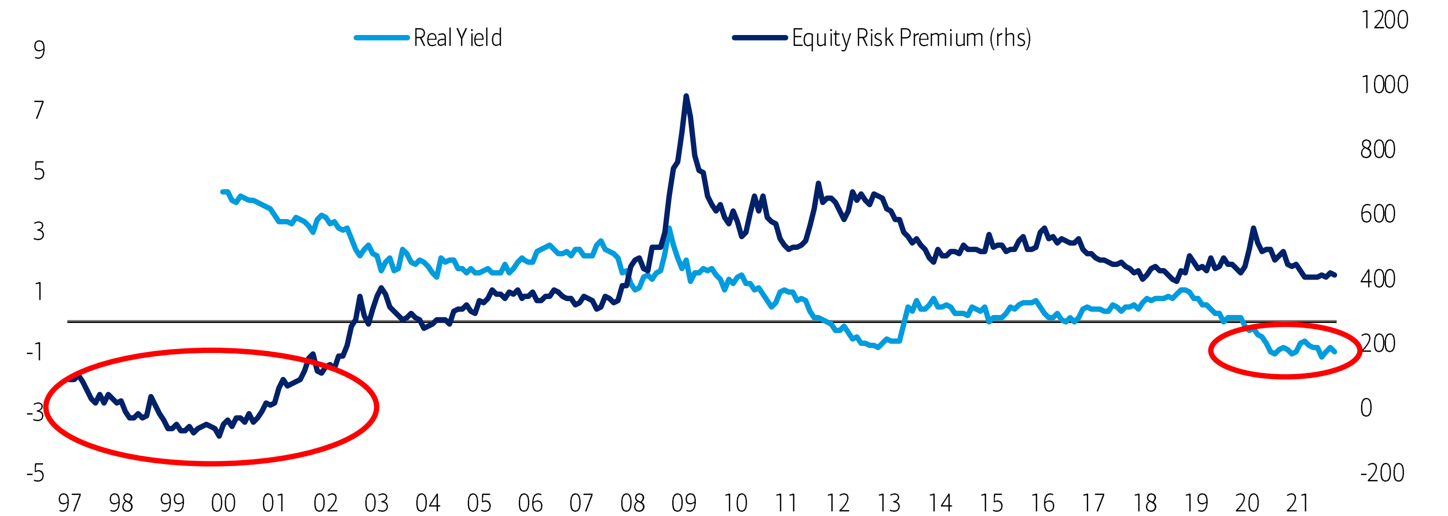
Hindsight: 2000 vs. 2022

What will we say when we look back at today? The shift from 2021 to 2022 can be characterized by a growing acceptance of the unthinkable: negative real rates, 6ppt inflation prints, liquidity risks in the world's largest asset classes like US treasuries and China real estate; the 'Metaverse'. We began our career in the late 1990s, which felt similar – Fed hike, valuations, IPOs, negative equity risk premia – and was also characterized by an acceptance of the outrageous.

There are too many similarities between today and 1999 / 2000 to ignore. But one out of four of the IPOs of 1999 are today's blue chips. Our advice to investors? Be selective.

Exhibit 1: Negative cost of equity during Tech Bubble, negative (real) cost of debt today
Equity Risk Premium and real 10-yr US Treasury yield



Source: Bloomberg, BofA US Equity & Quant Strategy

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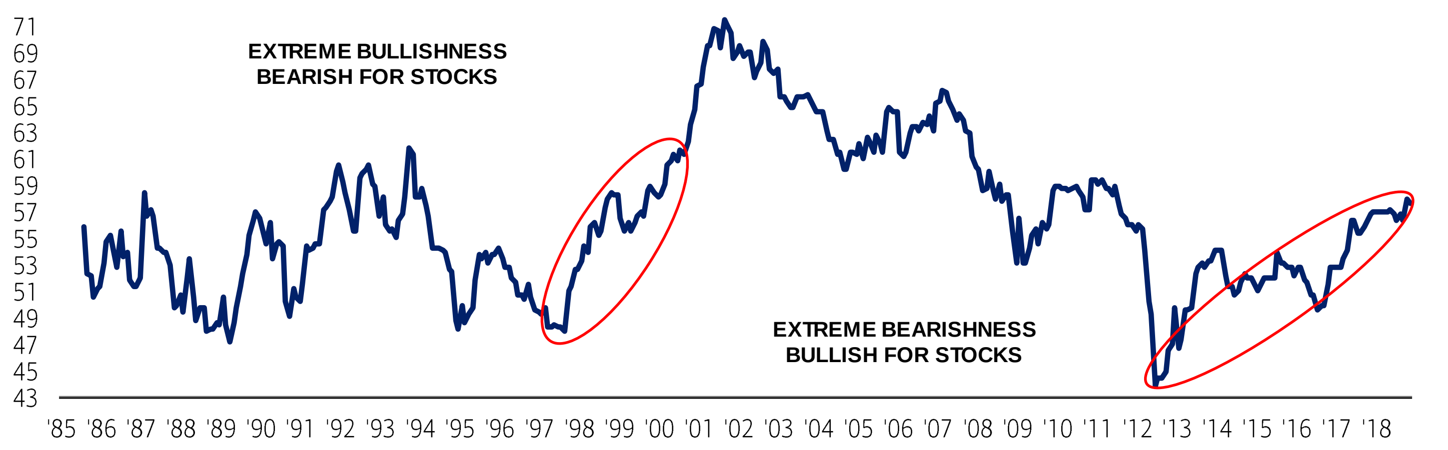
Exhibit 2: Wall Street strategists increasingly bullish ahead of March 2000 vs. ahead of today
Sell Side Indicator (average recommended equity allocation by Wall St. strategists), 1985-10/2021



Source: BofA Global Research

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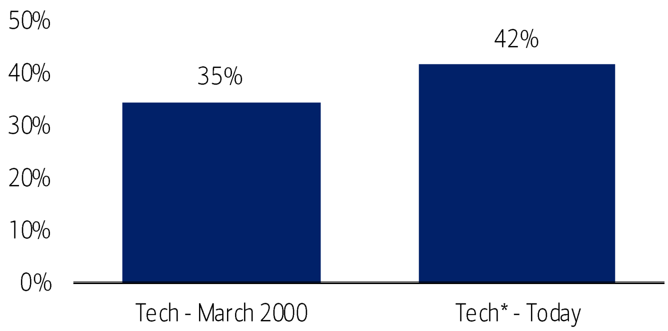
Exhibit 3: Tech domination (higher today)
Sector weight in the S&P 500 as of 3/24/2000 market peak vs. today (11/19/21)



Source: Bloomberg, BofA US Equity & US Quant Strategy
*Technology GICS Sector + Interactive Media & Entertainment and Entertainment industries in Communication Services + Internet & Direct Marketing Retail industry in Consumer Discretionary

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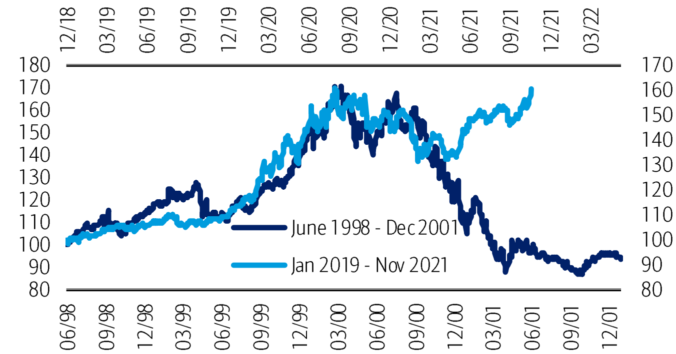
Exhibit 4: Growth vs. Value more dramatic than during Tech Bubble
Russell 1000 Growth vs Russell 1000 Value cum. Rel. perf.; June 1998-Dec. 2001 vs Jan 2019 – 11/19/21



Source: Bloomberg, BofA US Equity & Quant Strategy

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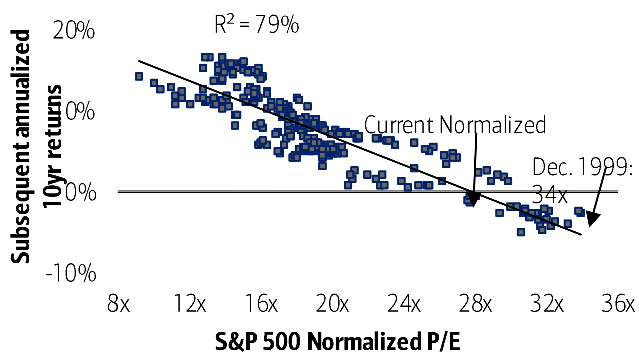
Exhibit 5: Today's valuation indicates negative 10-year out returns; most recent loss forecast was in 1999
S&P 500 Normalized P/E vs. subsequent 10yr ann. price rets, 1987-10/2021



Source: FactSet, S&P, BofA US Equity & Quant Strategy

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Exhibit 6: First rate hike into a statistically expensive market
Market characteristics in Fed tightening cycles

First hike	Last hike	Chg. in Fed Funds	Return 6-m before	Return 6-m after	Return 12-m after	Return 24-m after	PE at first hike
May83	May-84	0.87	17.2	2.5	-7.3	16.73	12.7
Dec86	Sep-87	1.25	-3.5	25.5	2.0	14.68	14.8
Mar88	Feb-89	3.00	-19.6	5.0	13.9	31.31	12.5
Feb94	Feb-95	2.75	0.8	1.8	4.3	37.10	16.8
Jun99	May-00	1.50	**11.7**	7.0	6.0	-10.80	**30.5**
Jun04	Jun-05	2.00	2.6	6.2	4.4	11.34	19.4
Dec16	Dec-17	0.75	6.7	8.2	19.4	11.97	19.3
Today			**10.1**				**25.2**

Source: FactSet, BofA US Equity & Quant Strategy

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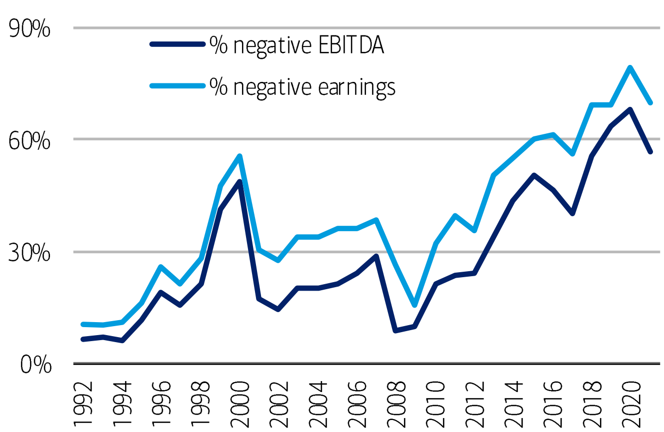
Exhibit 7: More IPOs with negative earnings today than Tech Bubble
% of US IPOs (ex-SPACs) with negative earnings and with negative EBITDA (1992-YTD 2021 as of Oct)



Source: Dealogic, FactSet, BofA US Equity & Quant Strategy

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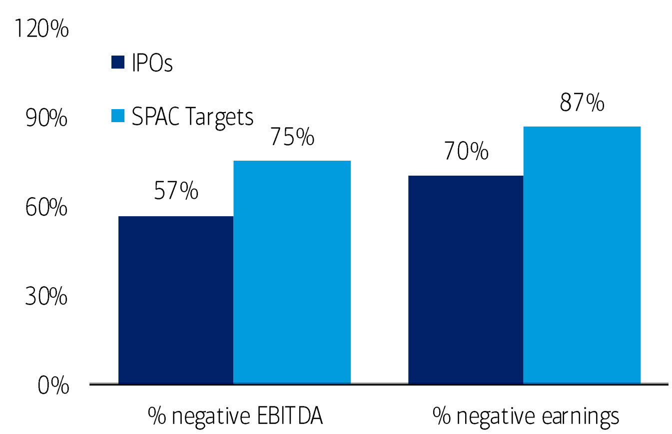
Exhibit 8: Even higher proportion of unprofitable co's if SPACs included
% of IPOs with negative earnings and negative EBITDA in 2021: traditional IPOs vs. IPOs via SPAC M&A



Source: FactSet, Dealogic, BofA US Equity & Quant Strategy

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Market outlook

S&P 500 target: 4600 in 2022

Our five-factor framework yields 4600 for the S&P 500 at year-end 2022. We increase the weight of our Estimate Revisions model by 5ppt (Fair Value Model lowered by the same amount), which is the most bullish model for 2022 (5,290), as we believe if we are proved to be too bearish, the upside would have likely come from stronger earnings. In the following sections we will explore the models and the underlying assumptions.

Exhibit 9: 2022 S&P 500 year-end forecast = 4600
S&P 500 2022 Target Models

Model	Category	Time Horizon	2022 Target	Current Weight in Forecast
BofA Fair Value Model	Fundamental/Valuation	Medium Term	4,086	45%
Sell Side Indicator	Sentiment	Medium Term	5,090	5%
Estimate Revisions	Fundamental/Sentiment	Short-term	5,290	10%
Long-term Valuation Model	Valuation	Long-term	4,631	20%
12-Month Price Momentum	Technical	Medium Term	5,271	20%
		Official S&P 500 Target	**4,600**	

Source: BofA US Equity & US Quant Strategy; Short-term = 1-3 months, medium-term = 1 year, and long-term = 5+ years. We calculate our price target based on S&P 500 price as of 11/19/21, and round to closest 50.

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S&P 500 Target Models

#1: BofA Fair Value Model

Fair value = 4086 for 2022 year-end

Exhibit 10: S&P 500 2022 Fair Value = 4,086
BofA Fair Value Model (2022)

BofA Fair Value Model (2022)	
Normalized 2022 EPS	$173
Normalized 2023 EPS	$184
Nominal Long-Term Risk-Free Rate	2.25%
Assumed Long-Term Inflation	2.25%
Normalized Real Risk-Free Rate	0.00%
Equity Risk Premium	450bp
Fair Real Cost of Equity Capital (Ke)	4.50%
Fair Forward PE (1 ÷ Fair Ke)	22.2x
2022 Year-End Target (Fair PE × Normalized 2023 EPS)	**4,086**

Source: BofA US Equity & Quantitative Strategy

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S&P 500's fair value = 4086 for 2022

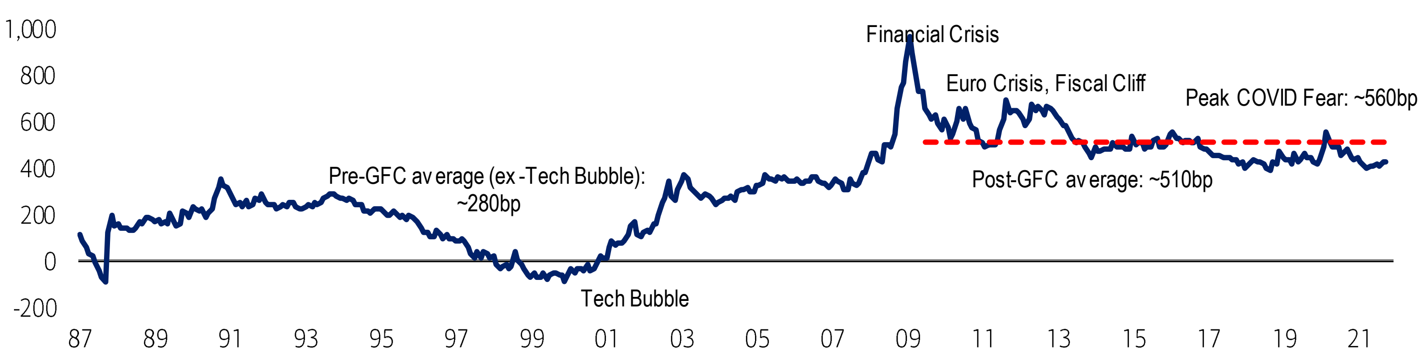
We make the following key assumptions for our Fair Value Model based on the current market environment:

- Our normalized 2023 EPS assumption is $184 based on a long-run log-linear regression, which is intended to estimate the underlying earnings power of the S&P 500 based on historical trends.

- We incorporate a normalized real rate of 0% into our framework (vs. current -0.5%) and also expect the equity risk premium to modestly increase from its. current level of 421bps to 450 (up from our prior estimate of 425bps) – see our Equity Risk Premium section.

Deep dive: Equity Risk Premium

Exhibit 11: Below post-GFC avg. ERP indicates elevated risk appetite
Normalized equity risk premium (ERP) with BofA forecast for YE 2021(450bp), 1/1987-10/2021



Note: Norm. ERP is calculated as the spread between the normalized EPS yield and normalized real risk-free rate, where normalized EPS is based on a log linear regression of S&P 500 operating EPS and the real normalized risk-free rate is the difference between (1) the average of the 30-yr Treasury yield and the 5-yr rolling average 10-yr Treasury yield and (2) average of the 10-yr TIPS spread and the 5-yr rolling average CPI inflation rate. **Source:** BofA US Equity & Quant Strategy, Federal Reserve Board, Standard & Poor's, BLS

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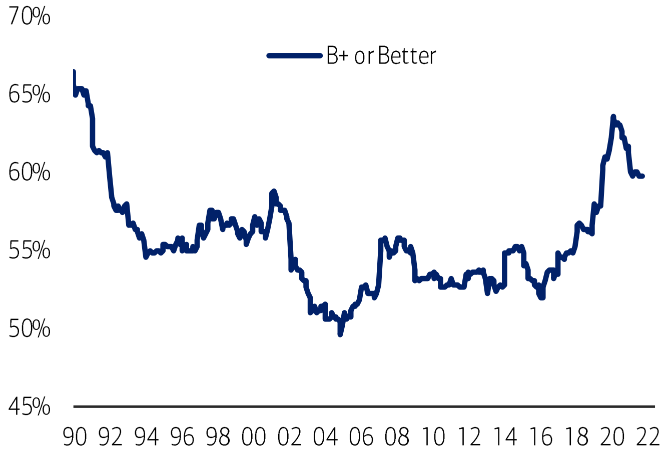
The good news: better quality than prior cycles

Exhibit 12: Offset: improved quality of S&P 500 = lower ERP
S&P500: % of B+ or better quality-rated stocks, 1990-present



Source: FactSet, BofA US Equity & US Quant Strategy

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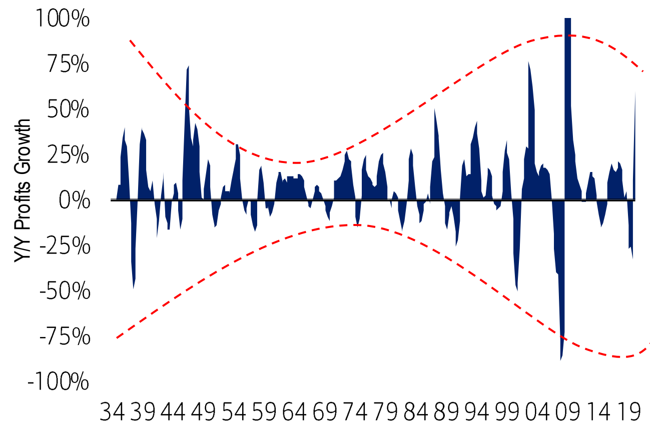
Exhibit 13: Offset: Earnings volatility has decreased, and the EPS drop in the 2020 recession was smaller than those of the prior two recessions
Profits cycle: S&P 500 YoY EPS growth 1935-present



Source: Haver Analytics/S&P, BofA US Equity & US Quant Strategy

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The bad news: the discount rate for stocks is more likely to increase than decrease from here. Why?

The Fed: On bonds and cash, it is straightforward to call for higher levels if the Fed tapers and tightens.

For the ERP, our quantitative analysis of the macro forces on the ERP indicate that drivers are poised to flat-line if not worsen. See Exhibit 15 for significant macro drivers.

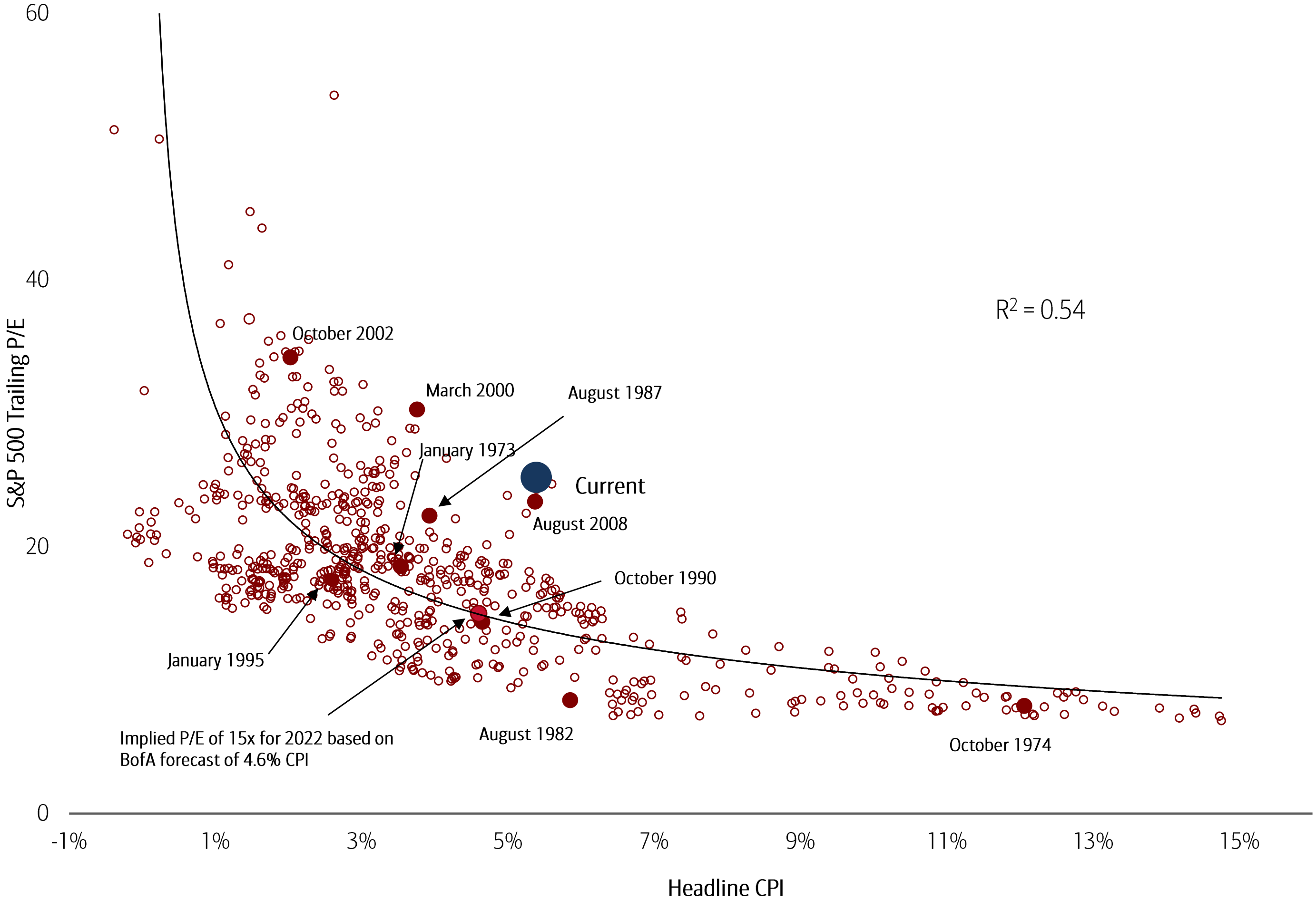
- **MOVE index, VIX index**: Our rates team is calling for increased rates volatility, and we have already seen liquidity risk in the US Treasury market. And our volatility tools (see Quality section) and Derivatives strategists' views align in the view that the VIX is likely to rise from here.

- **Leverage ratios** are at post-crisis lows. Companies are more likely to maintain than reduce leverage going forward – especially if the cost of debt increases.

- **Analyst certainty**: EPS Estimate dispersion is as low (or clustered/certain) as it has ever been in the post-GFC era, despite wide dispersion across macro, policy and commodity price forecasts.

- **PE vs. Inflation:** the strong relationship between CPI (BofA forecasts 4.6% for 2022) only makes sense if the S&P 500 drops by 40%, or S&P 500 earnings grow by 68%. See Exhibit 14.

Exhibit 14: Today's P/E multiple is 68% higher than that based on the historical CPI / P/E relationship
S&P 500 Trailing Price to Earnings Ratio vs. YoY change in CPI, 1965 to 10/31/21



Source: BofA US Equity and Quant Strategy, FactSet

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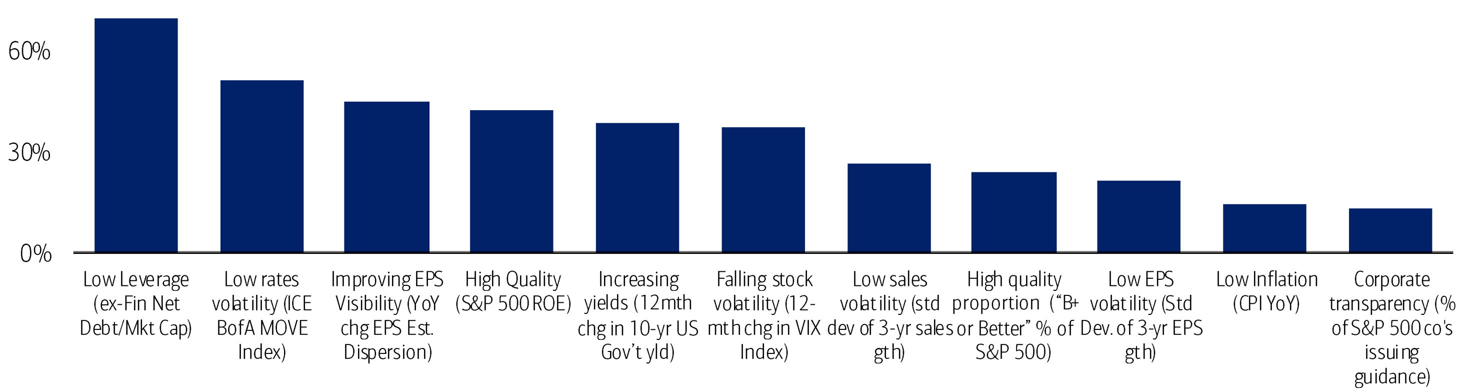
Exhibit 15: What drives the equity risk premium? Leverage, Interest rate vol, and change in estimate dispersion most predictive factors post-GFC
R-squared of S&P 500 fundamental factors and macro factors (both change and level) vs. change and level of normalized S&P 500 equity risk premium (ERP) post the Global Financial Crisis (2009-10/2021)



Source: FactSet, Bloomberg, ICE BofA, Haver Analytics, BofA US Equity & US Quant Strategy

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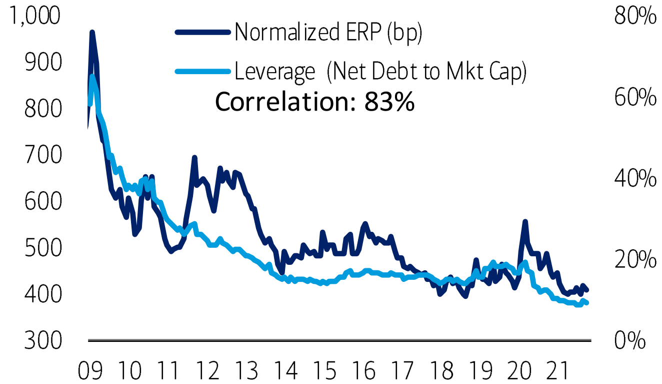
Exhibit 16: Low leverage = low ERP (how much lower can it go?)
S&P 500 non-Financials net debt to market cap (LHS) vs. Norm. ERP (RHS), 2009-10/31/21



Source: FactSet, Haver Analytics, BofA US Equity & US Quant Strategy
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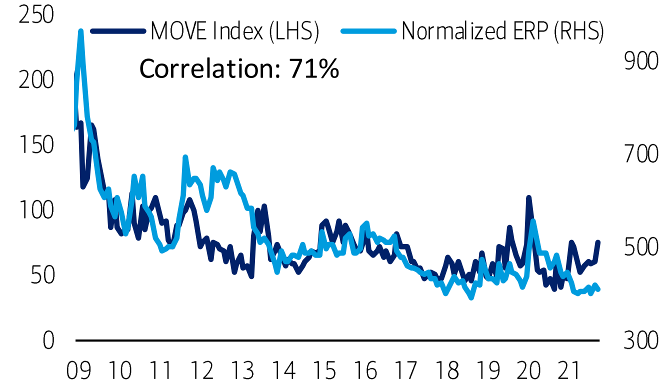
Exhibit 17: MOVE Index moved (and will likely continue to); ERP should catch up
ICE BofA MOVE Index (LHS) vs. Norm. ERP (RHS), 2009-10/31/21



Source: Bloomberg/ICE BofA, FactSet, Haver Analytics, BofA US Equity & US Quant Strategy
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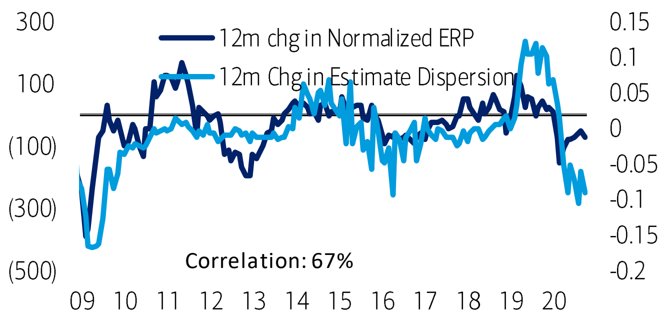
Exhibit 18: Improving certainty is correlated with falling ERP by 67% in the Post-GFC period
12m change in S&P 500 Estimate Dispersion (LHS) vs. Norm. ERP (RHS), 2009-10/31/21



Source: FactSet, Haver Analytics, BofA US Equity & US Quant Strategy
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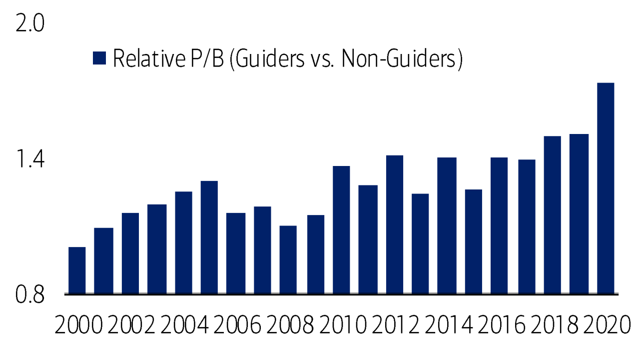
Exhibit 19: S&P 500 management guidance historically accompanied by an expanding transparency premium
Relative Price/Book of Guiders vs Non-Guiders in S&P 500, 2000-2020



Source: Bloomberg, BofA US Equity & Quant Strategy
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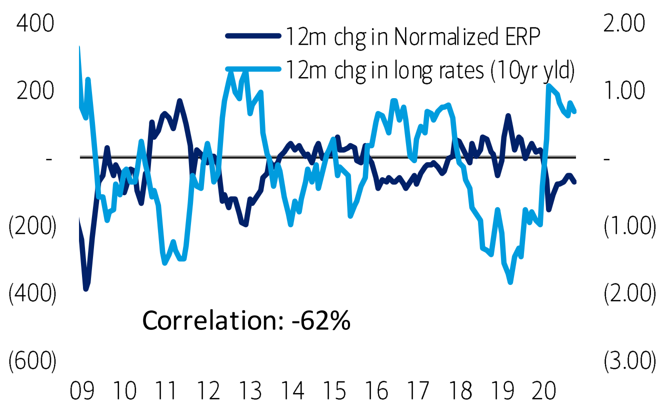
Exhibit 20: Tradeoff evident between cost of debt and cost of equity: -62% correlated post-GFC
12m change long rate (10yr yld) (LHS) vs. Norm. ERP (RHS), 2009-10/31/21



Source: FactSet, Haver Analytics, BofA US Equity & US Quant Strategy
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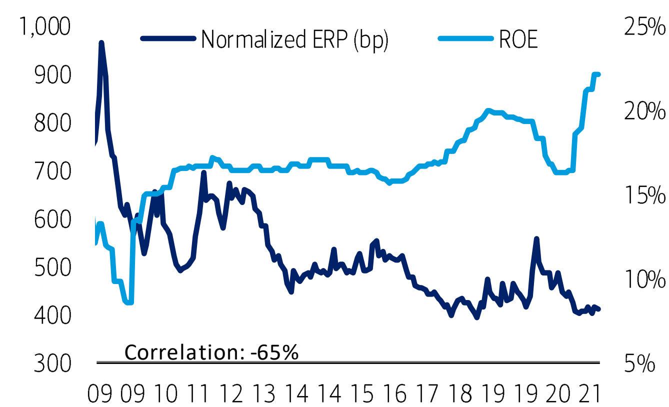
Exhibit 21: Quality and risk premium are -65% correlated post-GFC
S&P 500 ROE (LHS) vs. Norm. ERP (RHS), 1988-10/31/21



Source: FactSet, Haver Analytics, BofA US Equity & US Quant Strategy
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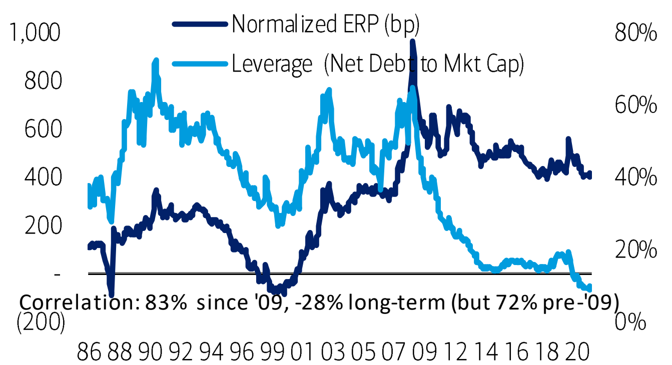
Exhibit 22: Leverage and Norm. ERP have been 83% correlated post-GFC
S&P 500 non-Financials net debt to market cap (LHS) vs. Norm. ERP (RHS), 1986-10/31/21



Source: FactSet, Haver Analytics, BofA US Equity & US Quant Strategy
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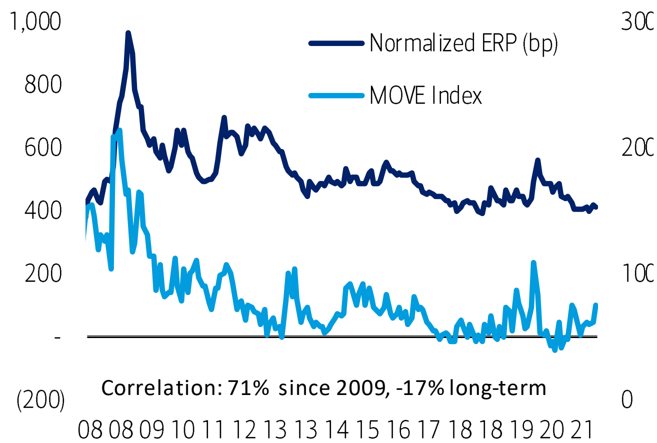
Exhibit 23: Interest rate volatility increases ERP and vice versa (71% correlated post-GFC)
ICE BofA MOVE Index (LHS) vs. Norm. ERP (RHS), 1988-10/31/21



Source: Bloomberg/ICE BofA, FactSet, Haver Analytics, BofA US Equity & US Quant Strategy
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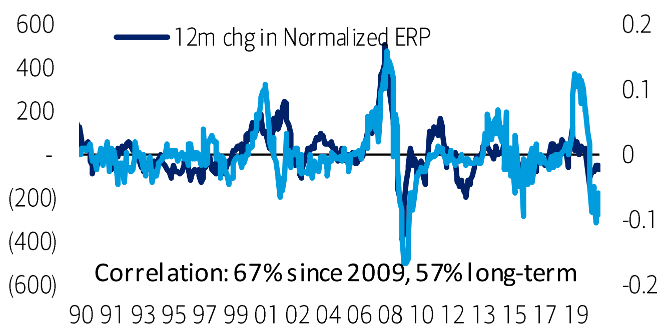
Exhibit 24: Strong relationship between estimate dispersion and equity risk premium (both long-term -+57% since '90 - and post-GFC +67%)
12m change in S&P 500 Estimate Dispersion (LHS) vs. Norm. ERP (RHS), 1990-10/31/21



Source: FactSet, Haver Analytics, BofA US Equity & US Quant Strategy
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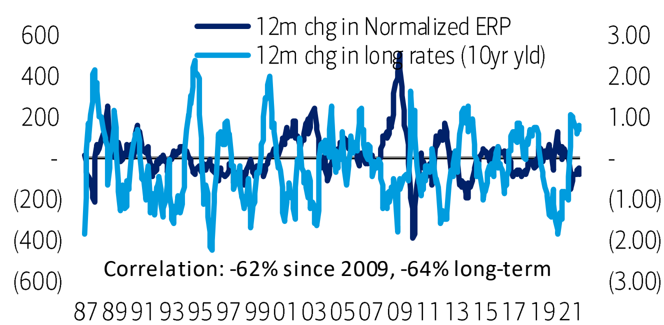
Exhibit 25: Change in 10yr yield negative correlated with change in Norm. ERP both long-term (-64% since '90) and since '09 (-62%)
12m change long rate (10yr yld) (LHS) vs. Norm. ERP (RHS), 1987-10/31/21



Source: FactSet, Haver Analytics, BofA US Equity & US Quant Strategy
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#2: Sell Side Indicator (SSI)

Closing in on a sell signal (<1ppt away): +7.5% price return over next 12 months

Wall Street's consensus equity allocation has been a reliable contrarian indicator over time. At 59%, Wall St. is still neutral; this level implies price returns of 7.5% over the next 12 months. When the SSI has been this close or closer to a "Sell", the subsequent 12-month total return was 9%, positive 72% of the time vs. 83% positive returns overall.

> Note that Wall Street's improving sentiment on stocks from trough levels in 2011 to today is roughly equivalent to improving sentiment from trough levels to the 2000 market peak – 16ppt.

Exhibit 26: Improving sentiment – less than 1ppt from "Sell"
Sell Side Indicator (SSI), as of 10/31/21

Disclaimer: The indicator identified as the Sell Side Consensus Indicator above is intended to be an indicative metric only and may not be used for reference purposes or as a measure of performance for any financial instrument or contract, or otherwise relied upon by third parties for any other purpose, without the prior written consent of BofA Global Research. This indicator was not created to act as a benchmark.

Source: BofA US Equity & Quant Strategy Note: Buy and Sell signals are based on rolling 15-year +/- 1 standard deviation from the rolling 15-year mean. A reading above the red line indicates a Sell signal and a reading below the green line indicates a Buy signal

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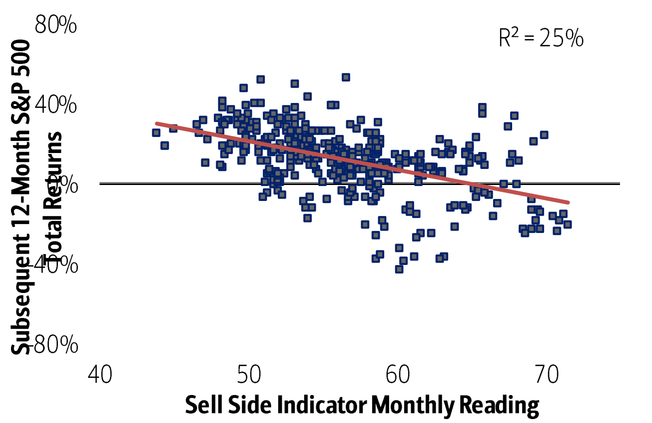
Exhibit 27: Sell Side Indicator Monthly Readings & Subsequent 12mo. S&P 500 Total Return
Sell Side Indicator Monthly Readings & Subsequent 12-Month S&P 500 Total Returns



Source: BofA US Equity & Quantitative Strategy

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Exhibit 28: Sell Side Indicator has a higher R-sq. than most single-factor mkt timing models
Predictive Power of Selected Indicators Forecasting 12-Month S&P 500 Total Returns

Indicator	R2
Sell Side Indicator	24%
Sell Side Indicator at extremes (Buy or Sell)	34%
S&P 500 Dividend Yield	11%
Proforma PE	11%
Adj. Fed Model (EPS Yld - Real 10-Yr Tsy Yld)	5%
M1 Growth	3%
Fed Model (EPS Yield - 10-Yr Treasury)	2%
BBB to Treasury Spread	0%
GAAP PE	0%
M2 Growth	0%
10-Yr Treasury Yield	0%
3-Mo T-Bill Rate	0%
Yield Curve (10-Yr - 3-Mo)	0%

Source: BofA US Equity & Quantitative Strategy

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Exhibit 29: The S&P 500 tends to show the weakest and the most volatile returns during "Sell" vs other thresholds...
S&P 500 subsequent return statistics during Sell Side Indicator thresholds

Sell Side Statistics	Buy	Sell	Neutral
Avg Subsequent 12m Perf	20.5%	2.7%	12.8%
Median Subsequent 12m Perf	19.7%	6.8%	14.4%
High Subsequent 12m Perf	49.8%	38.5%	56.4%
Low Subsequent 12m Perf	-6.2%	-26.6%	-43.3%
% Neg	3%	39%	12%
Number of months	89	90	220
Subsequent 12m Perf Volatility	15.5%	17.8%	15.4%

Source: BofA US Equity & Quant Strategy

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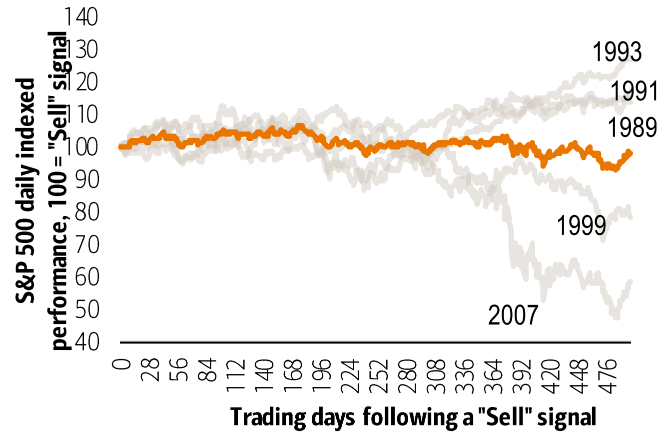
Exhibit 30: ...And tends to chart anemic returns following a "Sell" signal
S&P 500 following prior "Sell" signals, 1986-present



Source: Source: BofA US Equity & Quantitative Strategy, S&P

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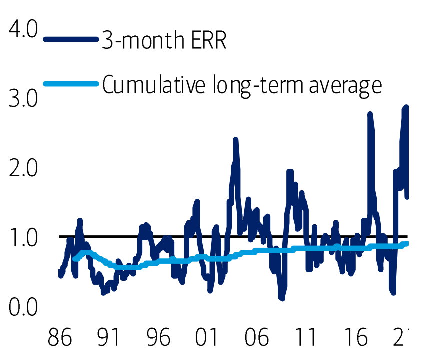
#3: Estimate Revision Ratios

Falling but still positive and above average

- S&P 500 returns have displayed predictable patterns based on the pace of upward or downward revisions. We track the ratio of upward to downward changes to consensus earnings estimates as a breadth measure.
- Post-COVID, earnings surprised to the upside every quarter, beating consensus by 17% on average over the past six months.
- At 1.56, the three-month (3m) estimate revision ratio (ERR) is well above its historical average of 0.90 (a strong signal), albeit off its highs. Historically, when the indicator is above its historical average, the S&P 500 has risen an average of 1.7% over the next two months (10% annualized).
- Our 3m guidance ratio (# above vs below consensus) also remains elevated, despite the recent sharp decline from its highs.

Exhibit 31: Our earnings revision ratio remains well above the average at 1.6x, albeit off its highs
S&P 500 3m EPS estimate revision ratio (ERR), 1986-10/2021



Source: FactSet, BofA US Equity & US Quant Strategy

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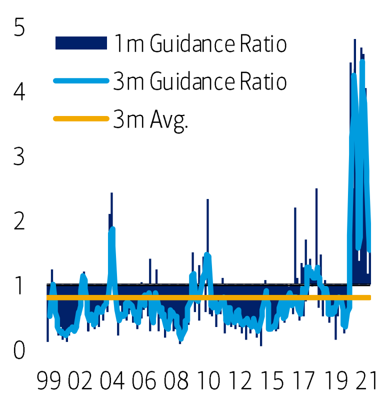
Exhibit 32: Our 3-mo. guidance ratio also remains elevated at 1.5x, despite the recent sharp decline from its highs
S&P 500 Management Guidance Ratio (#Above vs. Below Consensus) as of 11/11/2021



Source: BofA US Equity and Quantitative Strategy

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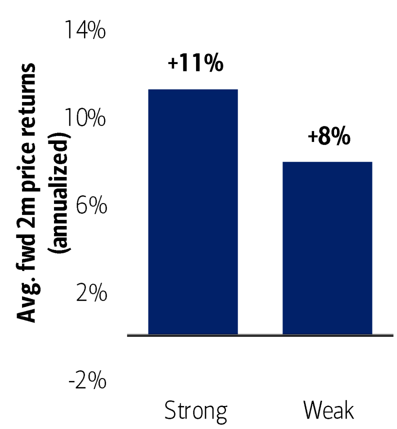
Exhibit 33: ERR vs. annualized forward 2-month returns (1986-present)
ERR vs. annualized fwd 2-month returns (1986-present)



Source: BofA US Equity & US Quant Strategy, FactSet

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#4: Long Term Valuation Model

10-year return forecast =-1.3% annualized price returns

First negative 10yr returns forecast since 1999

Price to normalized EPS has had 80% explanatory power over the next 10-yrs returns.

The S&P 500's current trailing normalized PE ratio suggests 10-year annual 12-month price return of -1.3%, representing the first negative returns since the Tech Bubble.

Exhibit 34: At 28x, the S&P trades 46% rich vs. the long-term avg.

S&P 500 Normalized P/E Ratio (1987-present)

Source: BofA US Equity & US Quant Strategy, FactSet, Haver Analytics

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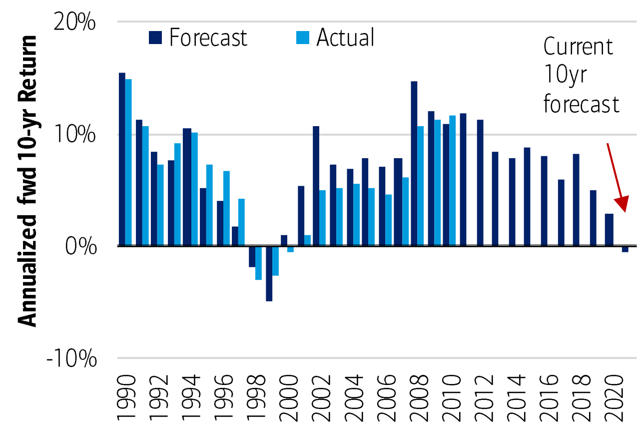
Exhibit 35: Valuation spits out negative (-1.3%) price returns over the next 10yrs

S&P 500 normalized P/E vs. subsequent annualized returns (since 1987)



Source: FactSet, Haver Analytics, BofA US Equity & US Quant Strategy

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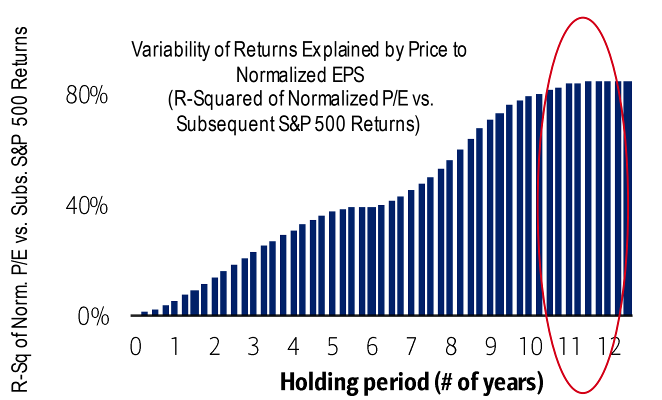
Exhibit 36: Valuation is almost all that matters for long-term stock returns

Price to normalized earnings predictive power on subsequent holding period returns (since 1987)



Source: BofA US Equity & US Quant Strategy, Haver Analytics, FactSet

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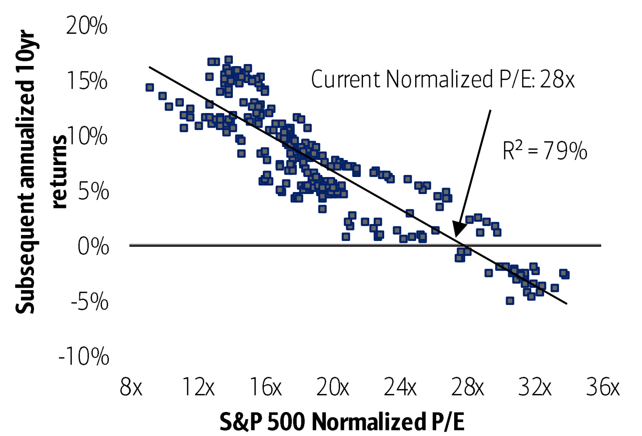
Exhibit 37: Valuations explained ~80% of 10yr returns

S&P 500 normalized P/E vs. subsequent annualized returns (since 1987)



Source: BofA US Equity & US Quant Strategy, Haver Analytics, FactSet

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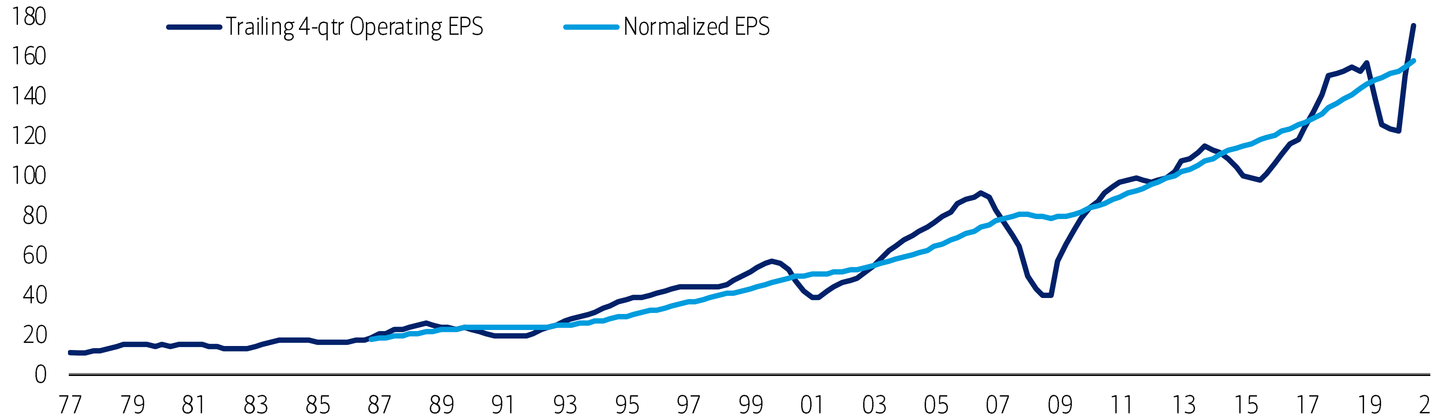
Exhibit 38: Earnings are cyclically stretched vs. normalized EPS
S&P 500 Operating and Normalized earnings (1978 to 2Q21)



Source: BofA US Equity & US Quant Strategy, Haver Analytics, FactSet

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#5: 12-month Price Momentum Model

Reversion to mean suggests 12m returns of +11%

- Our technical model is based on the oft-cited notion of equity returns reverting to some "normal" level.
- The last 12 months' return was 41% as of month-end October 2021. This is 1.6 standard deviations above the historical average. This would imply a projected 12-month return of 11%, all else equal

Exhibit 39: The last 12 mths price return of 41% is 1.6 std dev above average and implies a projected 12-month price return of 11%, all else equal.
Historical 12-month S&P 500 price return z-scores by range and average subsequent 12-month S&P 500 price returns

	-2 or Less Std Dev Below Avg.	-1 to -2 Std Dev Below Avg.	-1 to 0 Std Dev Below Avg.	0 to +1 Std Dev Above Avg.	+1 to +2 Std Dev Above Avg/	+2 or More Std Dev Above Avg.
Average 12-Month Return	30.9%	10.3%	9.3%	8.0%	10.9%	-3.7%
Standard Deviation of 12m Returns	13.9%	21.2%	18.8%	13.9%	14.2%	16.7%
Probability of Negative Returns	0.0%	30.8%	28.0%	28.6%	17.3%	75.0%
Percent of observations	0.7%	4.7%	35.0%	43.1%	6.8%	0.4%

Based on S&P 500 return data since 1928, with cumulative average and z-scores beginning in 1933 when at least 5 years of data history is available
Source: FactSet, BofA US Equity & US Quant Strategy

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Record duration risk

The S&P 500 has become a 35 year zero-coupon bond

The S&P 500 had become a 35-year zero coupon bond: elevated valuations, lower dividend yield and a larger proportion of secular growth stocks conspired to create a back-end loaded benchmark with lower cash flows in the near term, more payout in the long-term. Long duration stocks thrived against a backdrop of falling equity risk premia (ERP) and falling interest rates.

Exhibit 40: Stocks look vulnerable to rising rates, as S&P 500 duration remains near highs
S&P 500 duration based on our DDM framework

Source: BofA US Equity & Quant Strategy

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Record duration risk means that the sensitivity of the S&P 500 to changes in the cost of equity capital is higher than it has been in the history of our data. A small increase in the discount rate could roil equities. But we cannot ignore the opposite scenario – a move lower in the discount rate, be it through rates or via a drop in the S&P 500 equity risk premium. Our Fair Value framework indicates that a 100bp change in the real risk-free rate or the ERP would translate to 3600 or 6300 in the S&P 500 (Exhibit 41).

What could drive the S&P to ~3600 is what could push it to ~6300: a 1ppt change in the cost of equity capital (up = bad, down = good)

Exhibit 41: 1ppt change in the cost of equity capital could result in 3,600 or 6,300, all else equal
S&P 500 2021 fair value sensitivity to real risk-free rate and ERP assumptions (bold= current trading range)

Normalized Real Risk-Free Rate \ Equity Risk Premium (ERP)	300	325	350	375	400	425	450	475	500
-1.25%	9,886	8,650	7,689	6,920	6,291	5,767	5,323	4,943	4,613
-1.00%	8,650	7,689	6,920	6,291	5,767	5,323	4,943	4,613	4,325
-0.75%	7,689	6,920	6,291	5,767	5,323	4,943	4,613	4,325	4,071
-0.50%	6,920	6,291	5,767	5,323	4,943	4,613	4,325	4,071	3,844
-0.25%	6,291	5,767	5,323	4,943	**4,613**	4,325	4,071	3,844	3,642
0.00%	5,767	5,323	4,943	4,613	4,325	4,071	3,844	3,642	3,460
0.25%	5,323	4,943	4,613	4,325	4,071	3,844	3,642	3,460	3,295
0.50%	4,943	4,613	4,325	4,071	3,844	3,642	3,460	3,295	3,145
0.75%	4,613	4,325	4,071	3,844	3,642	3,460	3,295	3,145	3,009

Source: BofA US Equity & Quant Strategy; Based on $173 in normalized 2022 operating EPS

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Don't forget convexity

The prevailing wisdom is that equity market convexity is positive. That is, each move higher in the cost of equity will hurt less than the prior increase, and vice versa, all else equal. But as shown above in Exhibit 41, upside risk and downside risk are asymmetric, and a 100bp move up in the cost of equity would result in 3600 in the S&P 500 (-21% from here), but a 100bp move lower in the cost of equity would result in 6300 in the S&P 500 (+36% from here).

The call feature for stocks is a change in cash return

And convexity would be negative if there were a prepayment or a callable feature to stocks. For example, mortgages can have negative convexity since prepayment and re-financing risks increase as rates fall. For equities, this optionality can be represented by changes in the payout to plowback ratio. A company may increase its plowback ratio on better growth options, or increase its payout ratio on weaker growth options. Is the convexity of the S&P 500 then unequivocally positive? In short, record duration risk of the S&P 500 might not be as clear-cut a negative for stocks as it is for bonds.

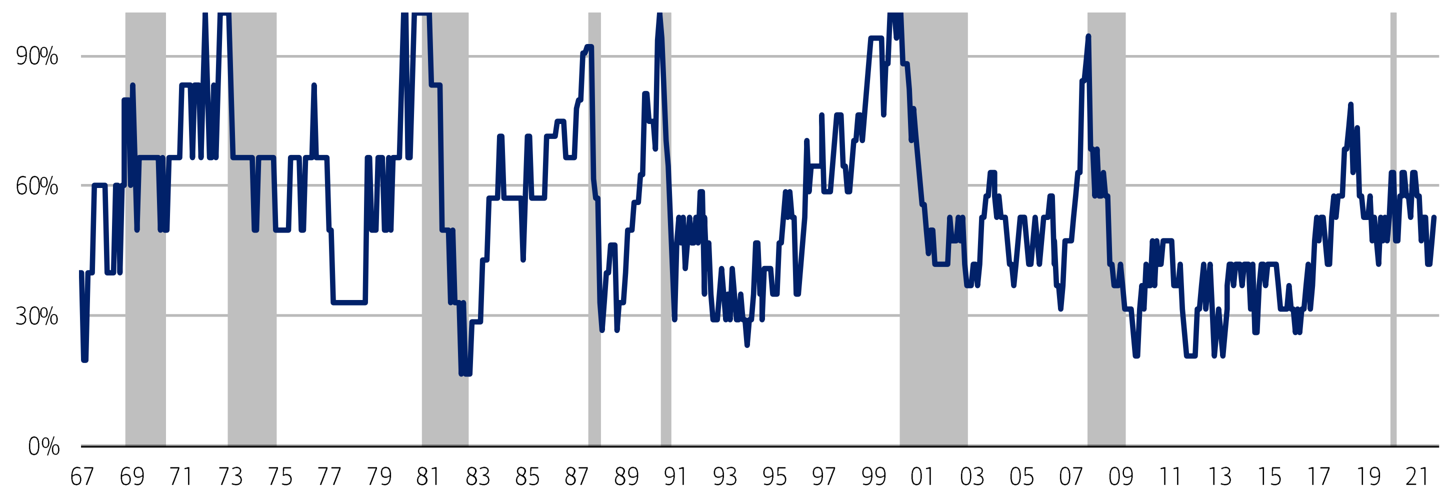
> If rates move higher on better growth, a company might plow back more earnings into operations on improved organic growth options. If higher rates cause multiple compression, a company might shift from paying a larger dividend to buying back stock at depressed levels. Both outcomes would be marginally positive for stocks.

Bear Market Signposts still constructive: 53% triggered

53% of our bear market signposts have been triggered as of October 2021 vs. the prior month with 47% of indicators triggered, but still far below the 80% threshold typically seen ahead of prior bear markets

Exhibit 42: Imminent bear market risk is contained

Percent of bear market signposts triggered (higher = more warning signals), 1967-present



Note: Bear markets are highlighted in grey **Source:** BofA US Equity & Quant Strategy

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Exhibit 43: 53% of our signposts have been triggered, up from 47% in September

Bear Market Signposts at 9/2018 peak and monthly since 2/2020, as of 10/31/21

Signpost	Sep-18	Feb-20	Mar-20	Jan-21	Feb-21	Mar-21	Apr-21	May-21	Jun-21	Jul-21	Aug-21	Sep-21	Oct-21
Fed raising rates	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Tightening credit conditions	☐	☑	☐	☑	☑	☑	☐	☐	☐	☐	☐	☐	☐
Trailing S&P 500 12m returns > 11%	☑	☑	☐	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑
Trailing S&P 500 24m returns > 30%	☑	☐	☐	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑
Low quality outperforms high quality (6m)	☑	☐	☐	☑	☑	☑	☑	☑	☑	☐	☐	☐	☐
Momentum outperforming (6m/12m)	☑	☑	☑	☐	☐	☐	☐	☑	☐	☐	☐	☐	☑
Growth outperforming (6m/12m)	☑	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☑
5% pullback over prior 12m	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑
Low PE underperforms (6m/12m)	☑	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☑	☐
Conf Board consumer confidence (prior 24m) > 100	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑
Conf Board net % expecting stocks higher (prior 6m) > 20	☑	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Lack of reward to EPS & sales beats (prior 3 qrts)	☑	☑	☐	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑
Sell Side Indicator	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
FMS cash levels	☐	☐	☐	☑	☑	☑	☐	☐	☑	☐	☐	☐	☐
Inverted yield curve (YC)	☐	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Chg in long-term growth expectations > +0.6ppt	☑	☐	☐	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑
Rule of 20 (prior 12m)	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑
VIX rises > 20 (prior 3m)	☑	☐	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑
ERR rule	☑	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
% triggered	79%	63%	42%	63%	58%	58%	47%	53%	53%	42%	42%	47%	53%

Source: BofA US Equity & Quant Strategy, BofA Global Investment Strategy, FRB, S&P, Conference Board, BLS

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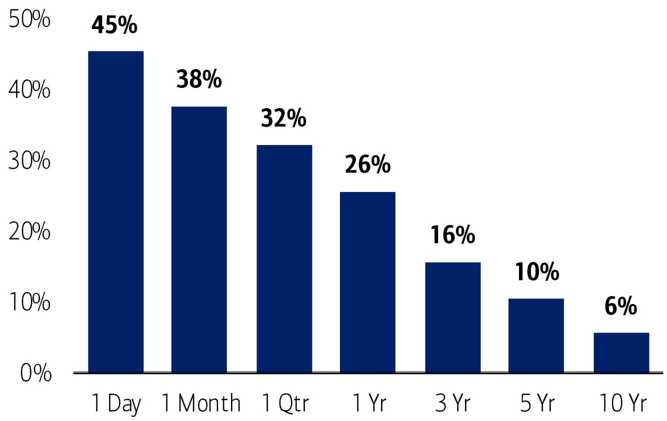
Time is literally on your side as an equity investor

Rule #1: Extend your time horizon

Exhibit 44: As time horizons grew, equity losses plummeted
Probability of negative returns, based on S&P 500 total returns from 1929-present



Source: S&P, Bloomberg, BofA US Equity & Quant Strategy

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Rule #2: Avoid panic-selling

Exhibit 45: Market timing can lead to missing out on the best days
S&P 500 returns by decade excluding the 10 best and 10 worst days

Decade	Price return	Excluding best 10d per decade	Excluding worst 10d per decade	Excluding best/worst 10d per decade
1930	-42%	-79%	39%	-50%
1940	35%	-14%	136%	51%
1950	257%	167%	425%	293%
1960	54%	14%	107%	54%
1970	17%	-20%	59%	8%
1980	227%	108%	572%	328%
1990	316%	186%	526%	330%
2000	-24%	-62%	57%	-21%
2010	190%	95%	351%	203%
2020	46%	-17%	177%	57%
Since 1930	**21,833%**	**58%**	**4,670,630%**	**33,525%**

Source: S&P, BofA US Equity & Quant Strategy

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Democratization of investing

Sign of a bubble, secular trend or both?

One of the often cited signs of a bubble is the democratization of markets. We saw this during the Tech Bubble when taxi drivers were offering riders tips on internet stocks. We saw this during the housing bubble, when house-flipping became an occupation and US consumers eligible for mortgages tripled. We are seeing similar trends in markets that have benefited from falling interest rates today. The causes for this are manifold, including secular disruption (ETFs, Robinhood and lower cost options for security selection) civil unrest (resentment of what some view as a seemingly rigged financial market system, the divide between the haves and the have nots) and many other factors. But the asset classes that have seen the broadest proliferation have generally been helped by a falling interest rate environment (SPACs, crypto, equity ETFs). And in most of the cases we see below, individual investors are increasingly active and, by the same token, bear increasing risks.

Cryptocurrency

We've also seen the democratization of money: crypto/digital assets now represent a $2T+ market. According to Alkesh Shah's Digital Assets Primer (4 Oct. 2020), bitcoin has become one of the 10 largest assets in the world (which include gold, silver and many of the US Tech/FANG stocks). Crypto trading volumes have spike in 2021 (chart below) with large institutional investors increasingly taking part. Yet as we wrote in Bitcoin's dirty little secrets (17 March 2021), bitcoin is volatile and ranks poorly on Environmental or "E" in ESG based on CO2 emissions.

Exhibit 46: Crypto trading volume by size of trade ($bn)
Large trades of $1mn or more have increased significantly

Source: Chainalysis

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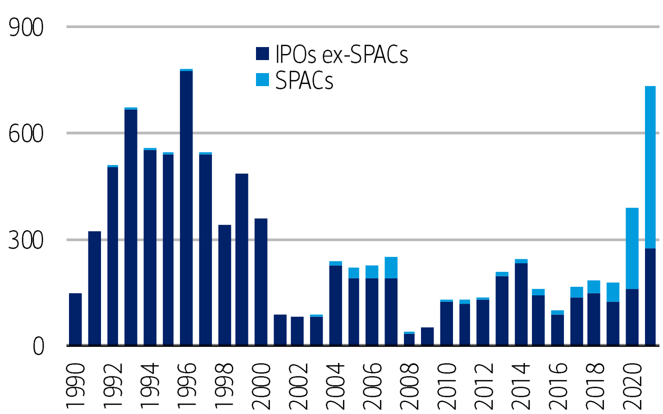
SPACs

SPAC (special purpose acquisition company) IPOs have also contributed to the democratization of investing. SPACs are shell companies that go public with the intent to merge with a private target, which then trades publicly. SPACs have represented ~60% of US IPOs YTD based on both deal count and value, up from just 10% six years ago. As our colleagues wrote in our departmental SPAC primer (Cross Asset Strategy: The rise of SPACS, 19 Feb. 2021), SPACs have proliferated in a market awash with liquidity/investors in search of returns, and have represented an alternative to the costly/time-consuming IPO process. They have also allowed retail investors with risk appetite to more easily access private assets – but require faith in management to find an attractive target/close a deal. According to their primer, retail investors accounted for 40% of SPAC trading on BofA's platform during 2H20 (vs. ~25% broker-dealer, ~20% asset manager and ~15% hedge funds).

Exhibit 47: SPACs have represented ~60% of the # of US deals YTD...
Count of US IPOs: traditional (non-SPAC) and SPAC 1990-Oct 2021



Source: Dealogic

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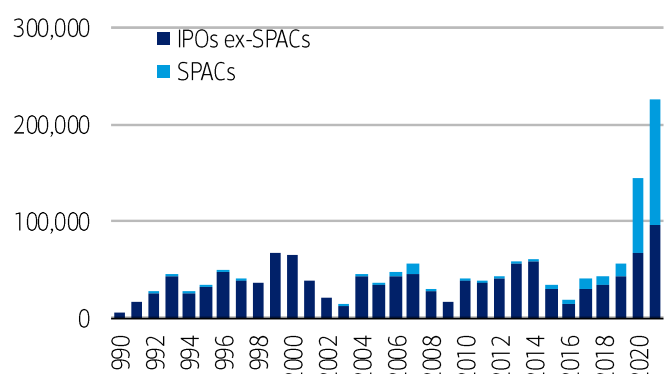
Exhibit 48: ...and SPACS have also comprised~60% of US deal value YTD
Deal value of US IPOs: traditional (non-SPAC) and SPAC 1990-Oct 2021



Source: Dealogic

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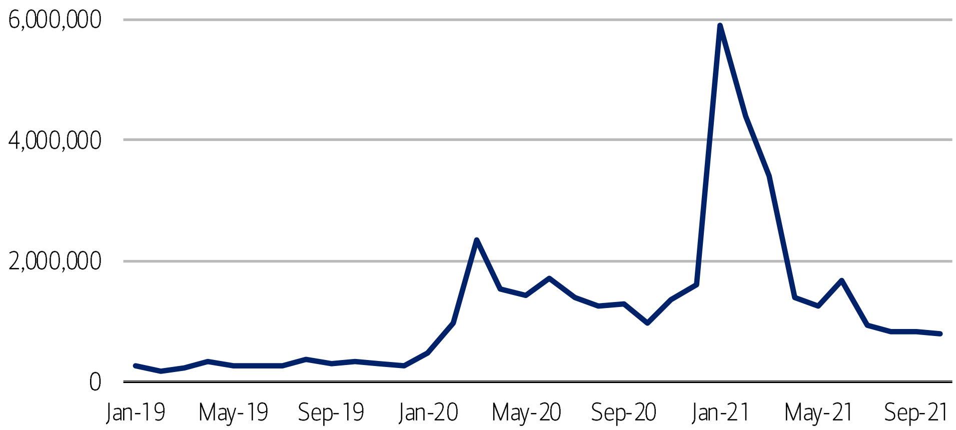
Retail vs Institutional

Retail investor participation in the US equity market has been on the rise the past few years, helped by high savings rates, more time at home during COVID, stimulus, and also the rise of Reddit (Exhibit 49; also see our report: Predictive Analytics & US SMID Cap

Strategy: Reddit simmering, but using data to identify the next potential boil-overs 13 May 2021). While retail participation is down from its late 2020/early 2021 highs amid re-opening and peak stimulus, it remains elevated vs. pre-COVID, comprising ~20% of large cap and ~40% of small cap trading volumes. Monthly active users on Robinhood, while down from peaks, are still above start-of-year (pre-Reddit levels).

Exhibit 49: 2021 saw a surge in stock discussions on Reddit's WallStreetBets forum
Total monthly WallStreetBets conversations on Reddit



Source: ListenFirst

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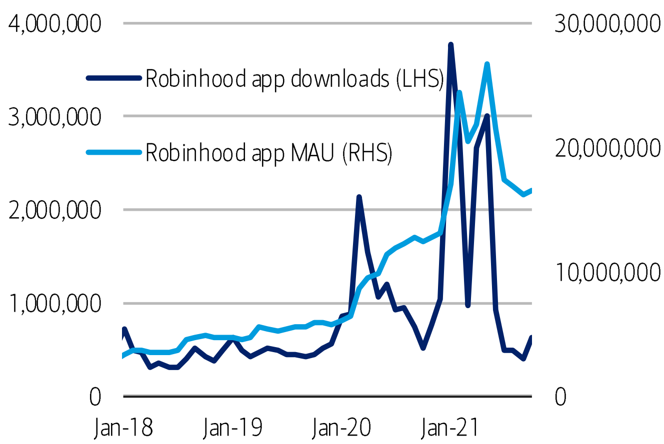
Exhibit 50: Robinhood users slightly above start of year (pre-Reddit) levels and elevated vs. recent years at 16mn
Robinhood monthly active uses and app downloads since 2018



Source: Robinhood

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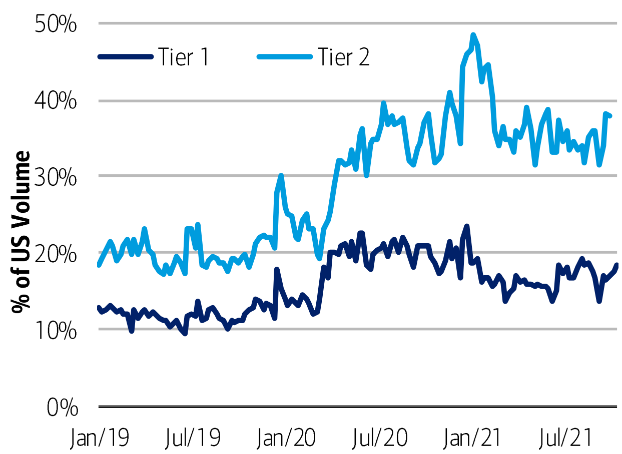
Exhibit 51: Retail participation makes up ~20% of large cap and ~40% of small cap volumes
Retail participation (Tier 1 = large, Tier 2 = small) as a % of US volumes



Source: FINRA OTC Transparency Data and BofA Securities Methodology

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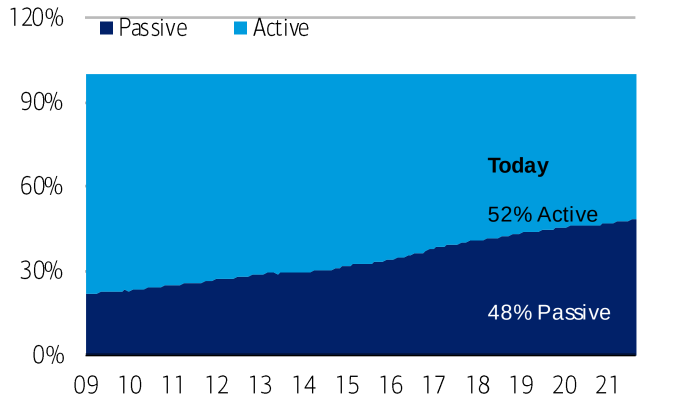
Passive vs. Active

Amid the rise of ETFs, passive now represents nearly 50% of US domiciled equity assets under management. Seven consecutive years of active outflows have caused pain for active fund managers. While we could be at a tipping point – and outflows from active funds have finally slowed substantially this year – Japan as a case study suggests there could be more to go, as the active/passive split is ~75/25 (in part helped by the Bank of Japan buying ETFs).

Exhibit 52: Passive AUM now = Active AUM (almost 50/50 split)
Asset under management(AUM) allocation between active and passive funds since 2009 to present



Source: Strategic Insight SimFund, BofA US Equity & Quant Strategy.

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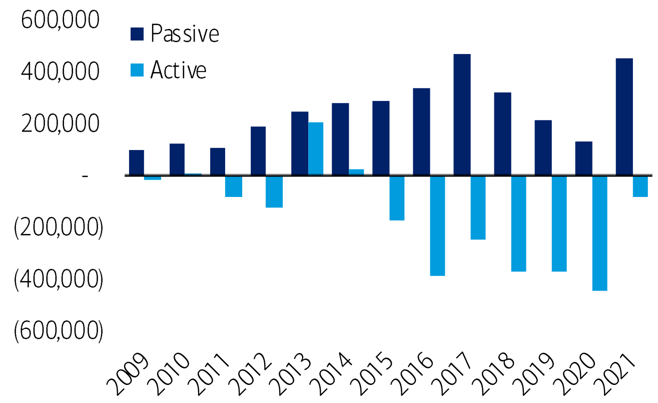
Exhibit 53: Active funds have seen outflows every year since 2015
Flows by year into active vs. passive funds ($mn), 2009-to present



Source: Strategic Insight SimFund, BofA US Equity & Quant Strategy

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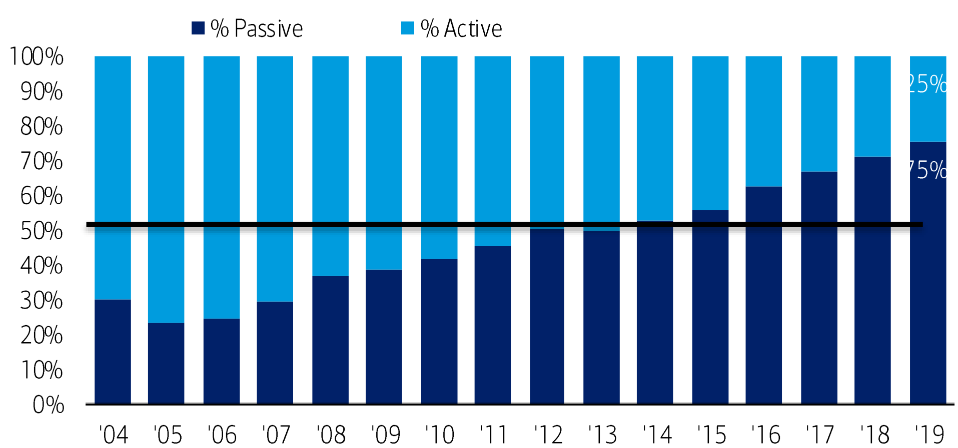
Exhibit 54: Passive can get even larger: in Japan, it's 75% of equity AUM
Japan: Split between passive vs. active equity assets under management by year



Source: Strategic Insight SimFund, BofA US Equity & Quant Strategy

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The end of "equity shrinkage"?

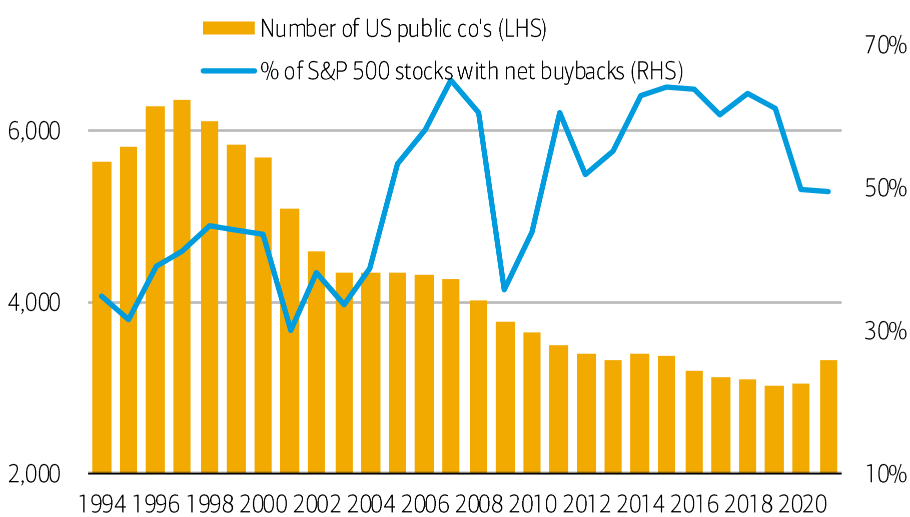
IPOs up, share buybacks down

One of the bull cases for US stocks over the last decade has been dubbed equity shrinkage – the shrinking supply of publicly traded US stocks has been bullish for prices. The number of public companies has been cut in half since the end of the Tech Bubble (2000) more recently driven by privatization and M&A. For the better part of the last decade, share buybacks systematically reduced share count of the S&P 500 stock universe, adding roughly 1ppt of earnings to the S&P 500 per year in recent years.

Equity Supply/Demand: The number of public companies has increased by 8ppt, while share buybacks have decreased by 7ppt.

Supply: IPOs in 2021 hit the highest count since the Tech Bubble with nearly 300 traditional IPOs (vs. 360 in 2000), or at 730 when including SPACs (the highest since 778 in 1996). Total deal size of IPOs as a percent of market capitalization of the S&P 500 is 0.28% today vs. 0.61% in 2000, but similar to 2000 levels when we include SPAC IPOs (0.65% vs. 0.61%).

Exhibit 55: A pause in one of the most bullish themes for US stocks: shrinkage
Number of US public co's vs. the net percentage of share buybacks for the S&P 500



Source: BofA US Equity & US Quant Strategy, FactSet, Bloomberg

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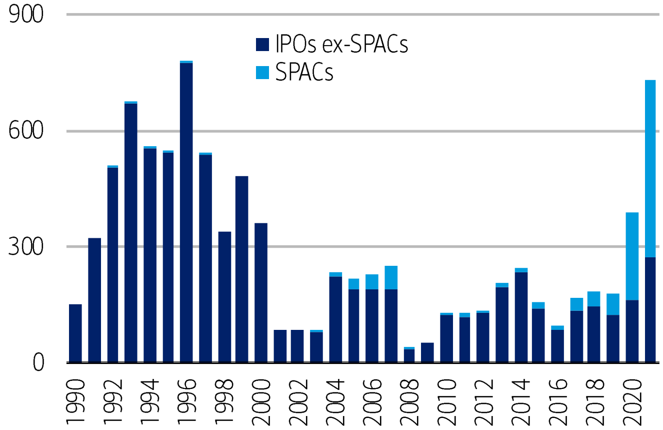
Exhibit 56: SPACs have represented ~60% of the # of US deals YTD...

Count of US IPOs by year: traditional (non-SPAC) and SPAC 1990-Oct 2021



Source: Dealogic

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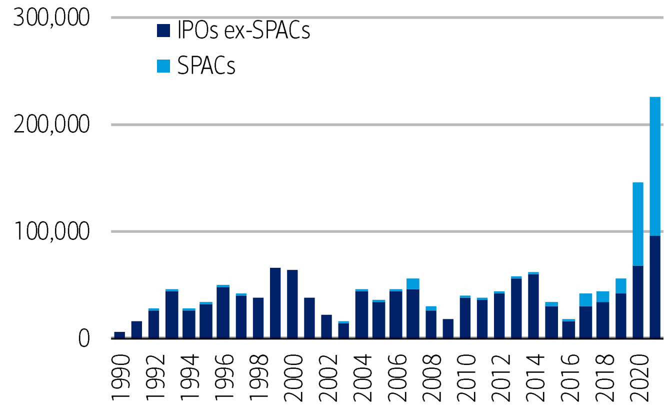
Exhibit 57: ...and SPACS have also comprised~60% of US deal value YTD

Deal value of US IPOs by year: traditional (non-SPAC) and SPAC 1990-Oct 2021



Source: Dealogic

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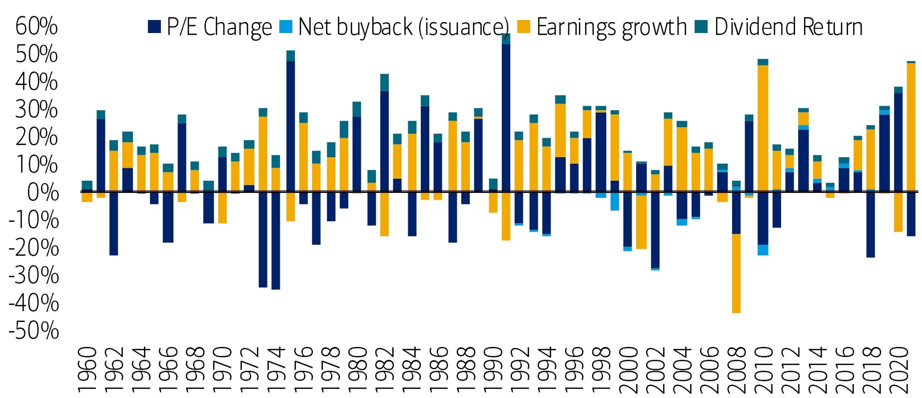
Meanwhile, share buybacks have dropped by 7ppt for US equities since last year and the proposed surtax on buybacks could further dissuade companies from buying back shares (not to mention higher valuations). We estimate the sectors that would be hardest hit by the surtax are Tech (-0.5% EPS hit) and Communication Services (-0.4% on EPS hit).

Exhibit 58: LTM net buybacks have slowed down compared to recent years

Proportion of earnings and performance driven by share buybacks for S&P 500



Source: BofA US Equity & US Quant Strategy, FactSet, Bloomberg

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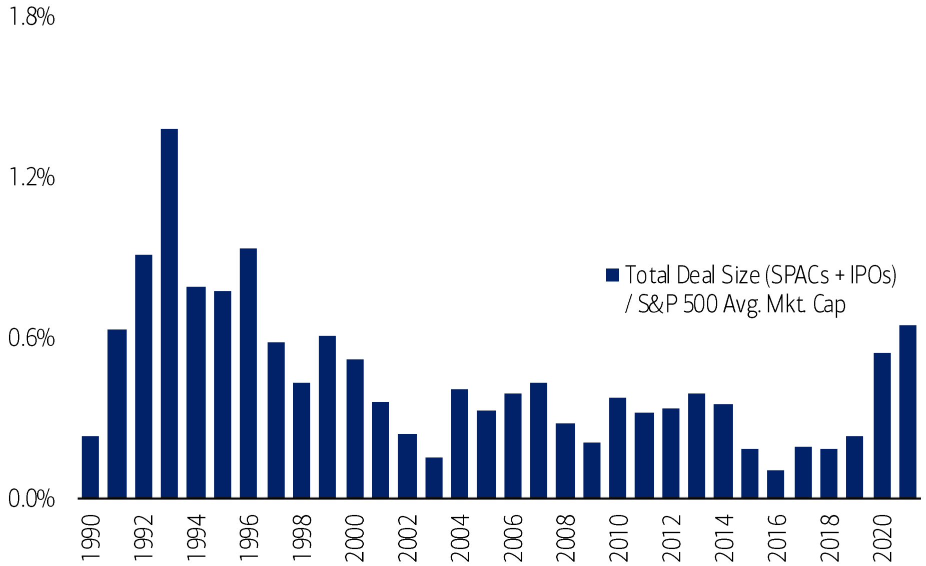
Exhibit 59: Deal size vs. S&P 500 Mkt. Cap are passed Tech. Bubble levels but not at all-time highs
Total deal size (SPACs + IPOs) vs. Avg. S&P Mkt. Cap



Source: BofA US Equity & US Quant Strategy, Dealogic

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Of the IPOs that took place in 1999, 1 out of 4 exist today and are some of the blue chips of the S&P 500 today - market valuations of these IPOs that survived increased by ~400%.

And even though we have seen a recent uptrend in equity issuances and rollbacks on buybacks, historically speaking, issuances are still lower and buybacks are still higher than during the Tech Bubble period.

Tax impact on buybacks?

For buybacks we expect sub-average numbers next year given the potential tax on the buybacks, expensive valuations, and potential rate hikes from the Fed. Moreover, if the cost of debt increases, levered buybacks could slow and large companies may shift focus from buying back shares to repairing balance sheet and business investment. We also see a stronger propensity for companies to issue dividends in an environment of still scarce yield and building inflation (see Strategy Snippet: 10 reasons for S&P 500 dividend growth 08 November 2021.

Exhibit 60: The four biggest S&P 500 sectors are hit hardest by buyback surtax

S&P 500 EPS hit from the proposed 1% buyback tax, gross buyback yield, dividend payout/yield by sector

	Buyback tax	Gross buyback yield			Div. payout			Div. yield		
	EPS impact	Current	Median	Diff.	Current	Median	Diff.	Current	Median	Diff.
Tech	-0.5%	1.9%	1.9%	0.0%	25%	28%	-3%	0.8%	1.0%	-0.2%
Comm. Svcs.	-0.4%	2.0%	1.2%	0.8%	19%	51%	-33%	0.7%	2.0%	-1.3%
Industrials	-0.3%	1.5%	1.3%	0.2%	44%	41%	3%	1.3%	2.0%	-0.7%
Cons. Disc.	-0.3%	0.9%	1.6%	-0.7%	22%	31%	-8%	0.5%	1.4%	-0.9%
Staples	-0.3%	1.2%	1.7%	-0.5%	70%	49%	21%	2.5%	2.4%	0.1%
Materials	-0.2%	1.5%	1.1%	0.4%	35%	68%	-33%	1.7%	2.3%	-0.6%
Financials	-0.2%	2.1%	2.2%	-0.1%	17%	27%	-9%	1.5%	2.1%	-0.6%
Real Estate	-0.2%	0.3%	0.8%	-0.5%	61%	63%	-2%	2.3%	3.3%	-1.0%
Health Care	-0.2%	1.1%	1.7%	-0.6%	42%	41%	1%	1.4%	1.7%	-0.2%
Utilities	-0.1%	0.4%	0.3%	0.1%	84%	74%	10%	3.1%	4.2%	-1.2%
Energy	0.0%	0.2%	0.7%	-0.4%	588%	49%	539%	3.9%	2.7%	1.2%
S&P 500	**-0.3%**	**1.5%**	**1.4%**	**0.1%**	**33%**	**42%**	**-9%**	**1.2%**	**1.9%**	**-0.7%**

Source: BofA US Equity & US Quant Strategy, FactSet, Bloomberg

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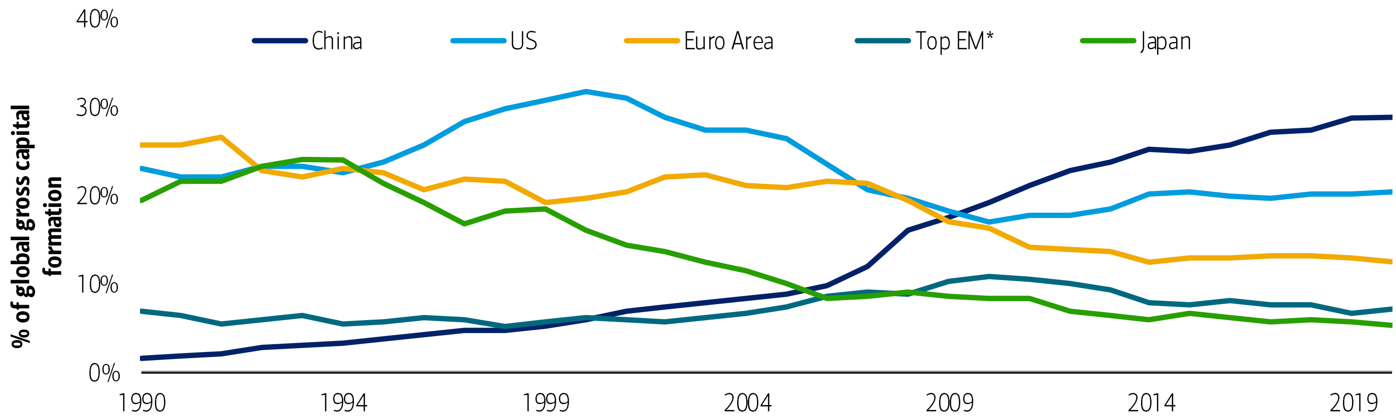
Post-peak globalization

2020 was peak globalization. We are now post-peak. Re-shoring of supply chains have been a major secular theme since the trade war in 2018, where we estimate $1T investment in supply chains over five years to shift all exports by foreign firms from China (see our Global Research team's supply chain reshoring note). National security and post-COVID disruptions argue for accelerated re-shoring. According to the Reshoring Initiative, over 20% of reshoring and foreign direct investment (FDI) job announcements in the US were jobs from China, followed by Germany (14%) and Japan (13%).

> The Reshoring Initiative projects reshoring and foreign direct investment (FDI) job announcements to be over 220,000 in 2021, +38% YoY, the biggest annual number in history.

Exhibit 61: China has gained significant market share of fixed investments since the financial crisis, fueled by foreign investments (nearly 30% as of 2020)
Gross capital formation by country/region (as % of world; 1990-2020)



Source: World Bank, BofA Global Research

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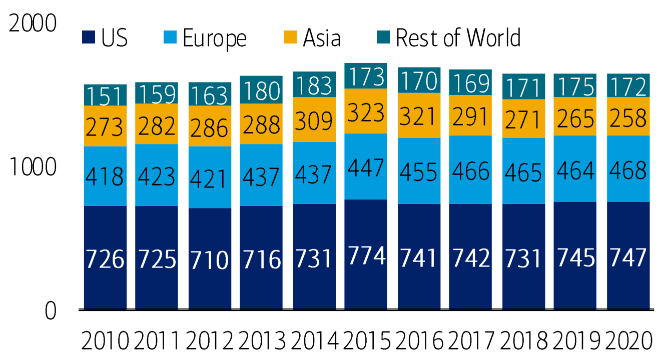
Reversal has begun

Exhibit 62: Number of manufacturing locations in the US has been rising since 2018, while shrinking in Asia
Manufacturing locations of S&P 500 Industrials companies (2010-2020)



Source: BofA Global Research, company filings
Note: includes AME, DOV, EMR, ETN, FLS, TT, ITT, JBT, ROK, RXN, ARNC/HWM, BWA, CAT, CMI, FAST, FLR, FBHS, HON, JEC, SNA, WAB, XYL

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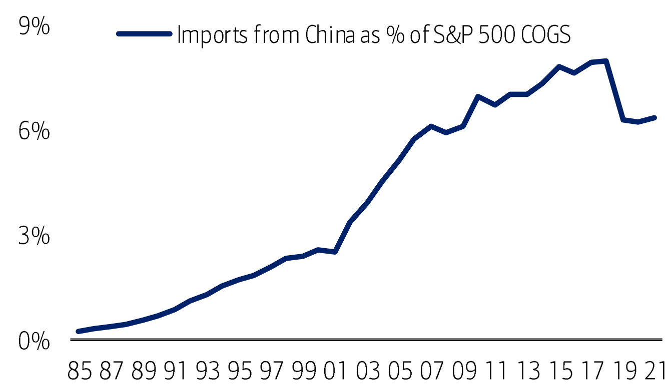
Exhibit 63: Companies are also less dependent on China imports (% of S&P 500 COGS ex-D&A has fallen to 6% from 8%)
Imports from China (final+intermediate) as % of S&P 500 COGS ex. D&A (1986-2019)



Source: Census data, FactSet, BofA US Equity & Quant Strategy

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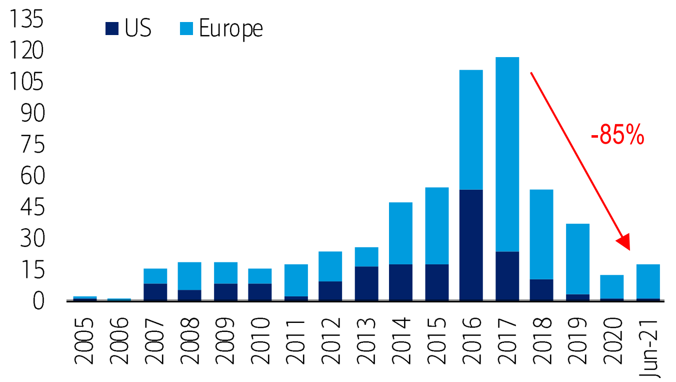
Exhibit 64: Chinese investments in the US and Europe have fallen sharply (-97% since the 2016 peak in the US)
Chinese investments in the US and Europe 2005-TTM as of June 2021 ($B)



Source: Rhodium Group, The China Global Investment Tracker (CGIT) from the American Enterprise Institute and Heritage Foundation.

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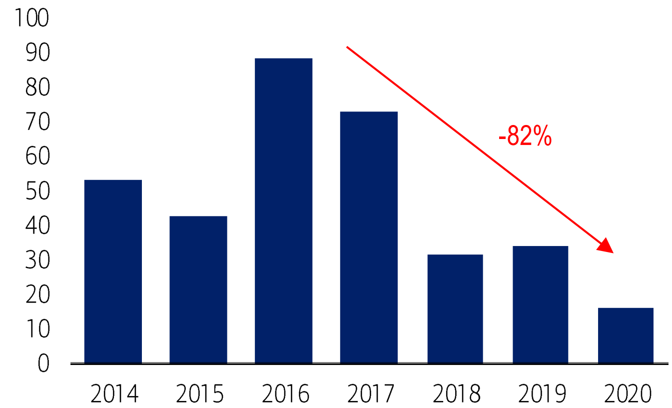
Exhibit 65: US investments in APAC plummeted since 2016 (-82%)
US investment expenditures in APAC (2014-2020)



Source: BEA, BofA US Equity & Quant Strategy

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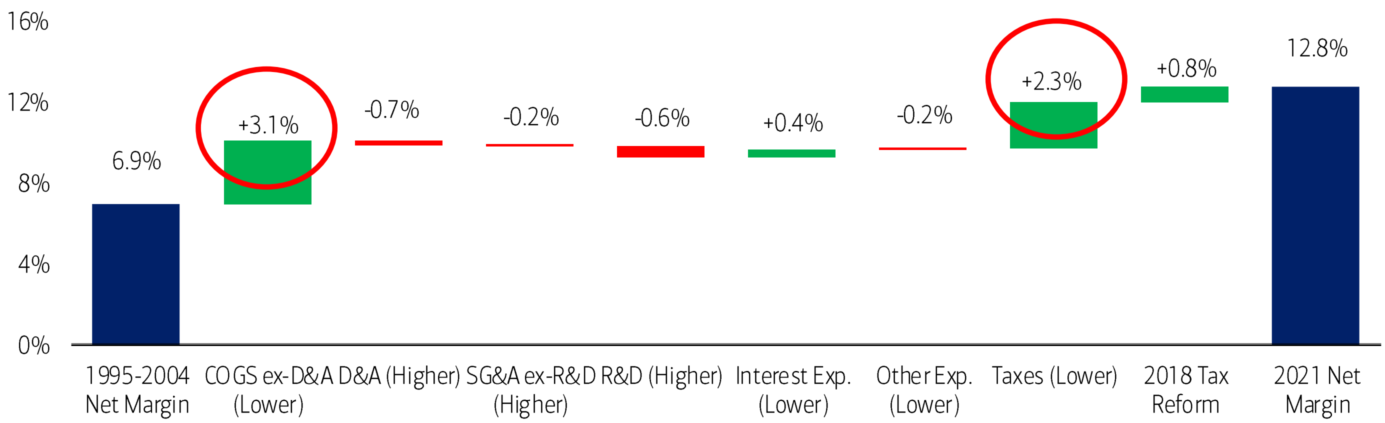
Peak globalization = peak margins

A significant portion of S&P 500 non-Financials margin expansion over the two decades has been driven by globalization via tax and labor arbitrage, supply chain efficiency gains, etc. A reversal could be painful, especially for multinationals heavily exposed to China.

Exhibit 66: Globalization has been a big contributor to S&P 500 net margins since 2004
2021 YTD net margin (ex-Financials) expansion waterfall vs. 1995-2004 levels (factors related to globalization circled in red)



Source: BofA US Equity & Quant Strategy, FactSet

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Downside risks in China-exposed stocks

Despite concerns around China's continued slowdown and peak globalization, S&P 500 companies with the highest sales exposure to China trade well above their historical average vs. the S&P 500, indicating potential downside risk amid growing China concerns.

Exhibit 67: China-exposed stocks trade around one standard deviation above the historical average
Relative fwd P/E of top 50 S&P 500 companies by China sales exposure vs. S&P 500 (2003-present)

Source: FactSet, BofA US Equity & Quant Strategy; Note: excluding TSLA

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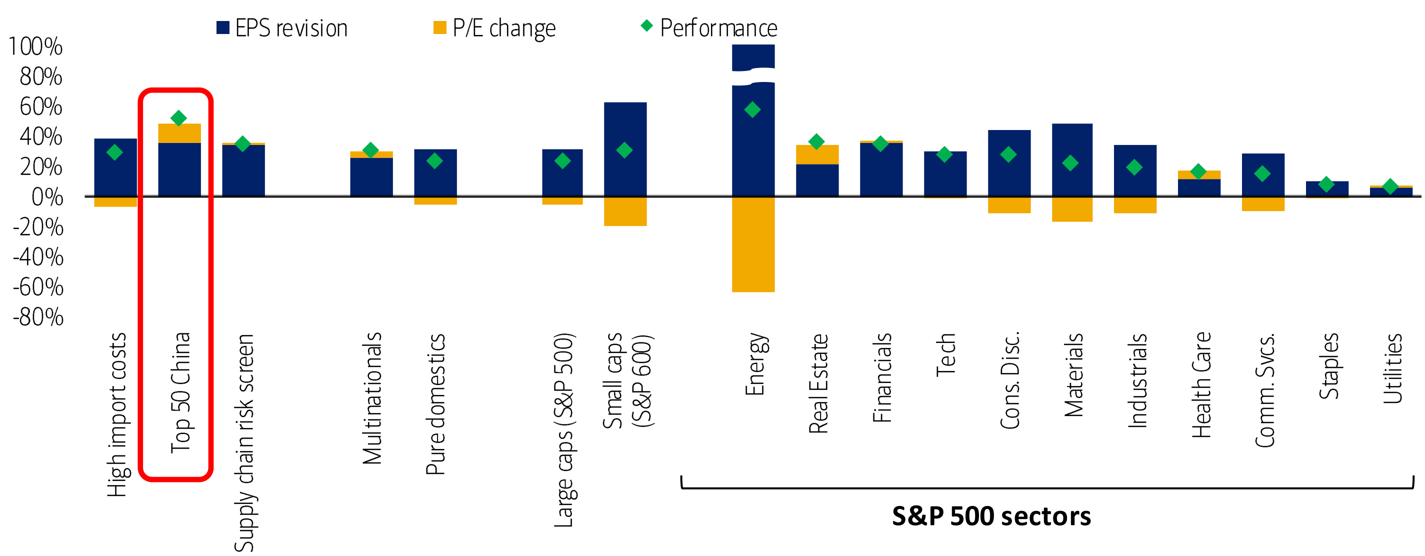
The top 50 stocks by China sales exposure have been one of the strongest segments of the market YTD, outperforming the S&P 500 by 28ppt. They also outperformed pure domestic companies by the same amount during the same period.

Exhibit 68: China-exposed stocks have been one of the best performing segments in the market this year
Price return decomposition by segment YTD (as of 11/17/21)



Source: FactSet, BofA US Equity & Quant Strategy

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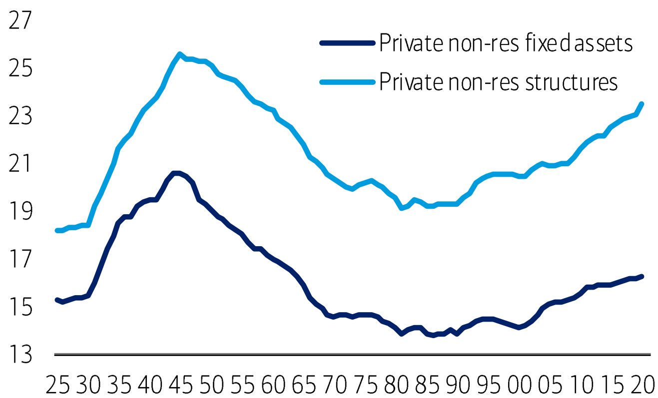
Capex over consumption

Why capex, why now?

Exhibit 69: Average age of assets at a 55-year high
Average age of private nonresidential fixed assets (years)



Source: BEA, BofA US Equity & US Quant Strategy

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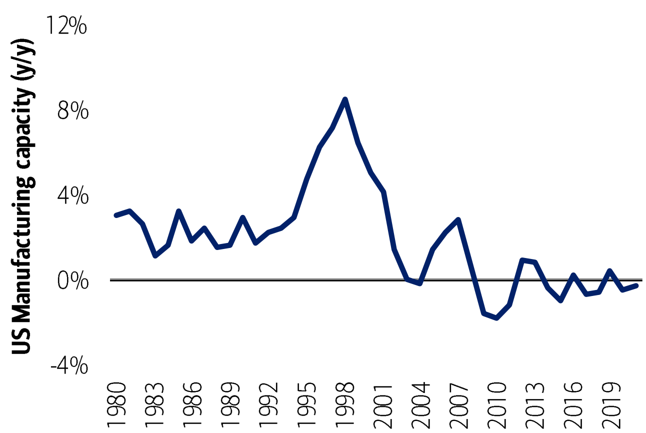
Stuff is old in the US

The average age of assets in the US is 16 years as of 2020 — the highest since the 1960s. This is chiefly due to structures (which are on average 24 years old). The average age of equipment is below its long-term average – although technological change may argue for higher replacement rates than historically.

Exhibit 70: US manufacturing capacity -0.4%/yr since Global Financial Crisis (GFC)
US manufacturing capacity YoY (1980-2021 YTD)



Source: Federal Reserve, BofA US Equity & US Quant Strategy

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US has seen massive underinvestment since the GFC

Since the financial crisis, US manufacturing capacity fell 0.4% per year, pointing to massive underinvestment.

Exhibit 71: Most industries saw manufacturing capacity decline post-GFC

Compound annual growth rates over the last four US economic cycles

Industry	'80-'90	'90-'01	'01-'07	07-'21*
Durable manufacturing	2.6%	7.1%	2.2%	0.7%
Wood products	1.3%	2.3%	0.7%	-1.9%
Nonmetalic minerals	0.4%	2.2%	2.8%	-2.1%
Primary metals	-2.9%	1.7%	0.7%	-0.3%
Fabricated metal products	0.0%	2.8%	-0.6%	-0.4%
Machinery	0.0%	3.3%	-0.5%	-0.4%
Electrical equipment	0.3%	2.8%	-2.4%	-0.3%
Motor vehicles	1.8%	4.5%	1.8%	0.9%
Aerospace	1.6%	0.2%	0.9%	1.4%
Furniture	2.1%	3.0%	-1.1%	-3.2%
Nondurable manufacturing	1.7%	2.1%	0.4%	-0.3%
Food & Beverage	1.3%	2.0%	0.3%	0.4%
Textiles	1.1%	1.5%	-5.0%	-3.0%
Apparel	-0.4%	-1.8%	-14.6%	-6.8%
Paper	1.9%	1.1%	-1.2%	-1.3%
Printing	4.4%	2.1%	-0.6%	-2.5%
Petroleum	-1.1%	0.5%	3.0%	0.8%
Chemicals	2.1%	2.9%	2.2%	-1.7%
Plastics	4.4%	4.2%	0.4%	-1.0%
Total US Manufacturing	2.2%	4.7%	1.2%	-0.4%

Source: Federal Reserve, BofA Global Research
*YTD average through Oct 2021

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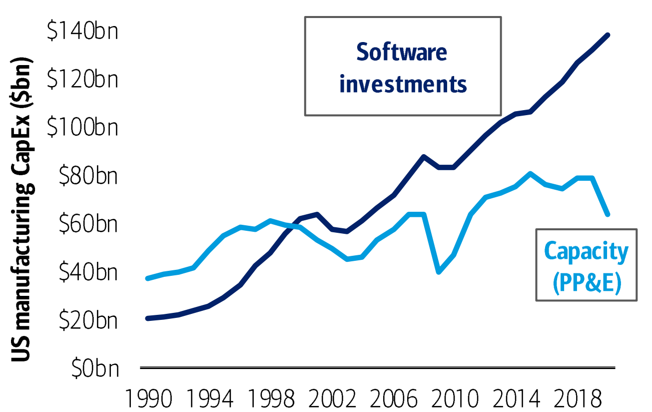
Pronounced underinvestment in most industries post-GFC

Exhibit 72: Since 2000, US manufacturers have spent more on software than equipment

US Manufacturing Capex spending: software vs. "core" industrial equipment



Source: Bureau of Economic Analysis, BofA Global Research
Note: Software investments include both third-party purchased and custom software. Equipment investments include industrial and transportation equipment and exclude information processing equipment (e.g. computers, communication equipment, etc.)

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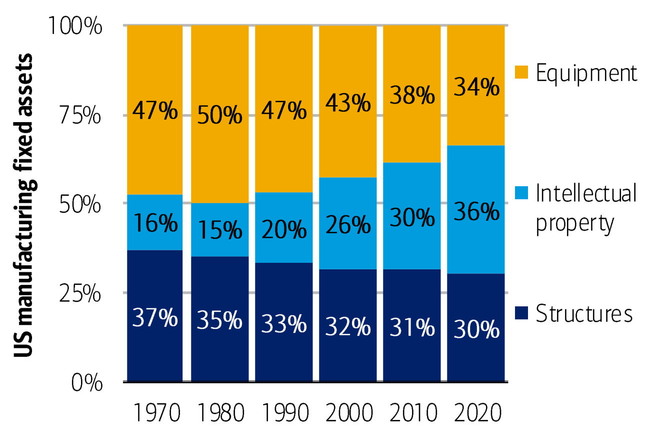
Exhibit 73: IP investments now represent the biggest portion of fixed assets

US manufacturing fixed assets (1970-2020)



Source: Bureau of Economic Analysis, BofA Global Research
Note: Net stock of fixed assets at current replacement cost

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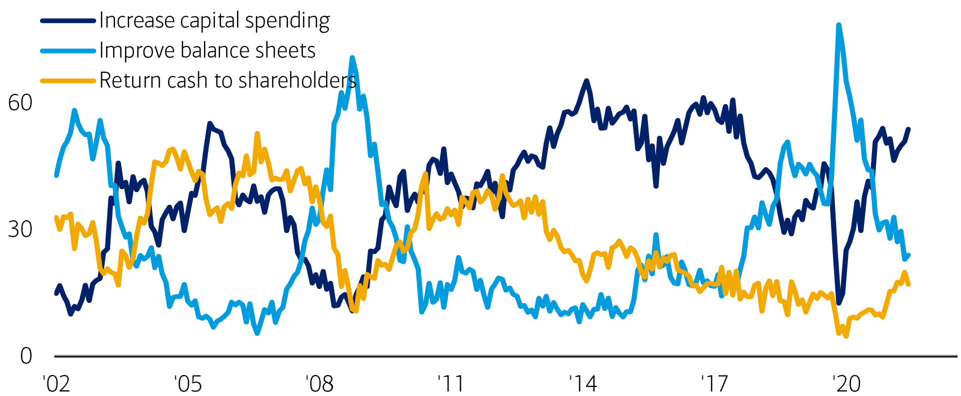
Exhibit 74: Investors want companies to increase capex
What would you MOST like to see companies do with their cash flow at the current time?



Source: BofA Global Fund Manager Survey

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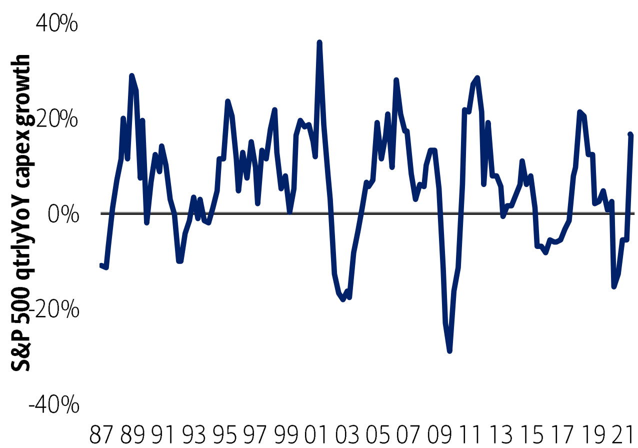
The percentage of investors that want companies to invest their cash flow into capex is close to a 4 year high.

1. Increase capital spending 54%
2. Improve balance sheet 24%
3. Return cash to shareholders 17%

Exhibit 75: Capex has started to accelerate
S&P 500 quarterly YoY capex growth (1987-3Q21)



Source: BofA US Equity & Quant Strategy, FactSet

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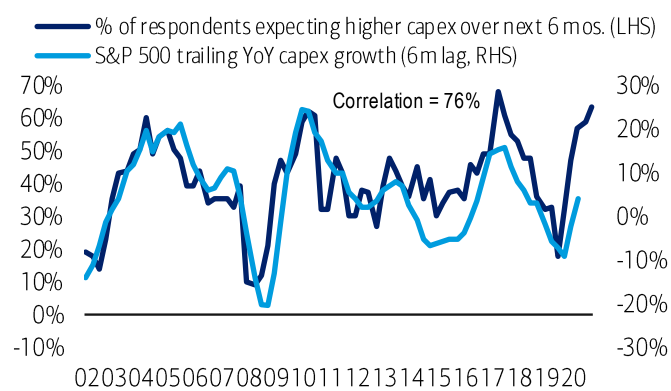
Exhibit 76: Business Roundtable CEO Survey points to a robust capex recovery
Business Roundtable CEO Survey: % expecting higher capex over the next 6 mos. vs. S&P 500 TTM YoY capex with a 6-mo lag (4Q02-now)



Source: Haver Analytics, FactSet, BofA US Equity & Quant Strategy

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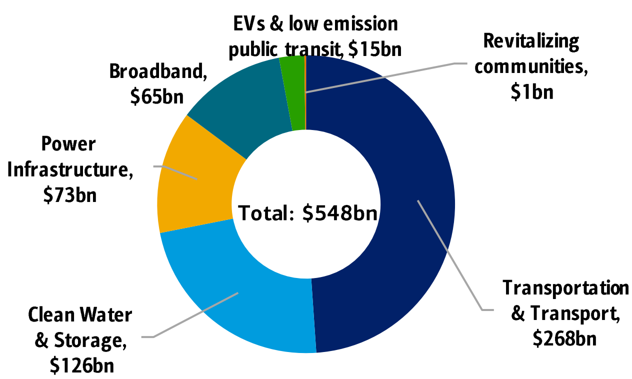
Exhibit 77: $550bn infrastructure bill supportive of capex
Breakdown of new spending in bipartisan infrastructure bill



Source: BofA Research Investment Committee, NPR

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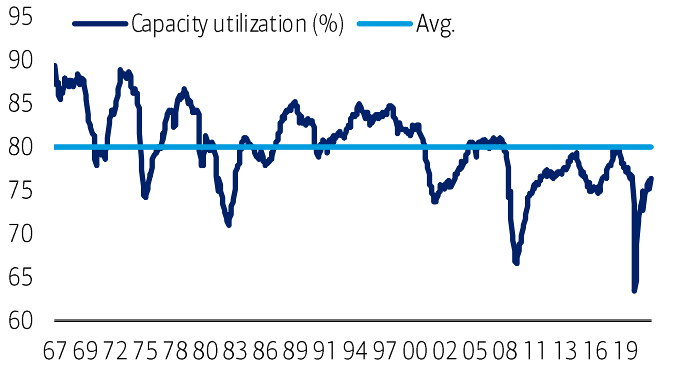
And then there's the infrastructure bill

Our Multi-Industrials team estimates (see report) that $550bn of federal investment in new infrastructure could add 50bp of annual US manufacturing capex growth (with funds authorized to be spent over fiscal years 2022-26). Combined with previously announced semiconductor capex plans and the American Rescue Plan Act of 2021 passed in March, they estimate capex growth grow at a 6.5-7.5% annual rate over 2019-24E.

Exhibit 78: Downside risk: Capacity utilization has improved to pre-COVID levels but remains below the historical average
US Capacity utilization % of total capacity SA (1/1967-10/2021)



Source: Bloomberg, BofA US Equity & Quant Strategy

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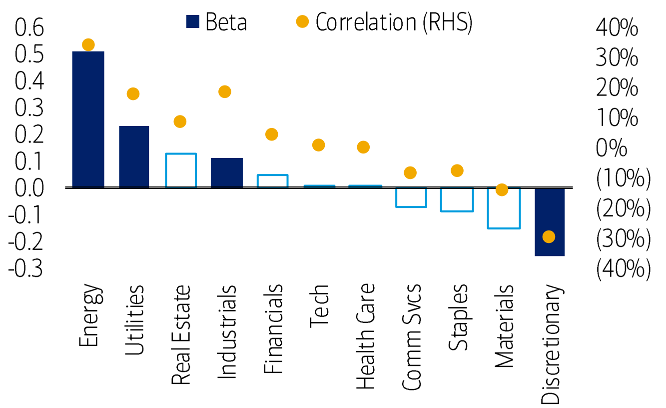
Risk to a full-fledged capex cycle: slack capacity

Capacity utilization remains below the long-term average.

Exhibit 79: Capex playbook: manufacturing over consumption sectors
S&P 500 sectors' relative performance sensitivity to S&P 500 capex growth (4Q85-present)



Source: FactSet, BofA US Equity & Quant Strategy
Note: Empty bars indicate not statistically significant

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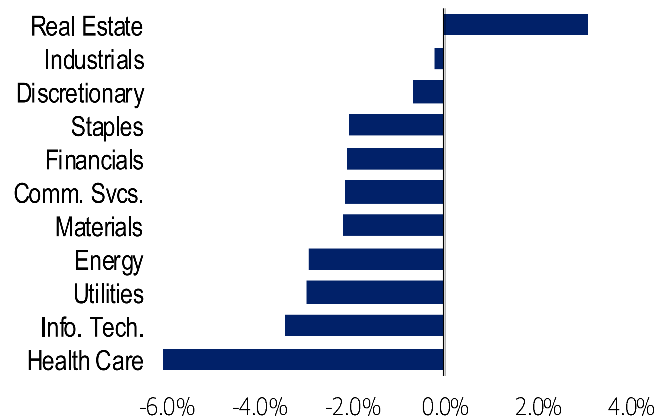
Exhibit 80: Own capex takers, avoid capex spenders: capex spenders have historically underperformed across all sectors except Real Estate
Performance of companies with the highest capex/sales in each sector relative to its own sector (1986-10/21)



Source: BofA US Equity & Quant Strategy, FactSet

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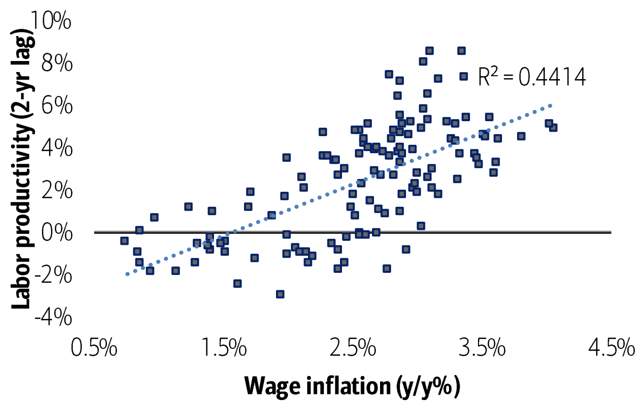
Exhibit 81: US Manufacturing wage inflation and labor productivity (y/y % changes)
Wage inflation has historically driven labor productivity growth on a lagged basis



Source: Bureau of Labor Statistics, BofA Global Research
Note: Quarterly data of US manufacturing labor productivity versus average hourly earnings of production & nonsupervisory employees

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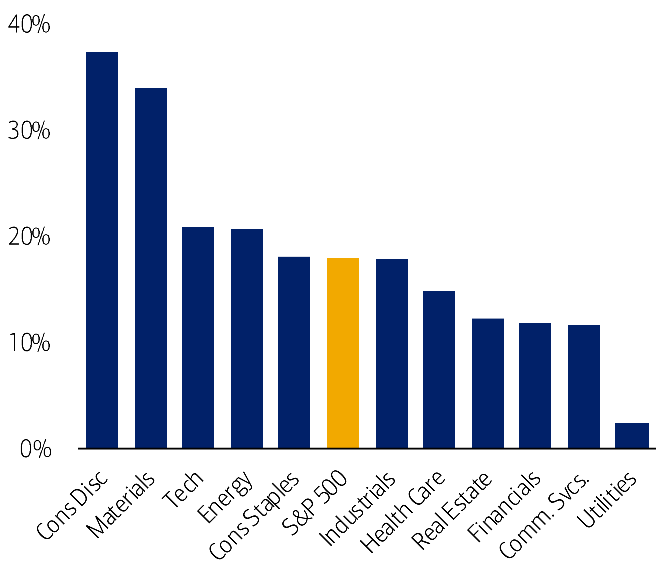
Wage inflation drives automation spend

Wage inflation has historically served as a catalyst for companies to invest in productivity-enhancing initiatives. This could include industrial automation, substitution of intermediary goods, or increased skill-based training.

Exhibit 82: In 3Q, Consumer Discretionary increased capex the most
S&P 500 3Q capex growth YoY by sector



Source: FactSet, BofA US Equity & Quant Strategy

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Most labor-intensive sector increased capex the most

Consumer Discretionary, the most labor-intensive sector in the S&P 500, grew capex the most in 3Q on a YoY basis (up nearly 40%), potentially positing to companies' increased incentive to automate amid rising wage inflation.

For investment ideas on rising capex and re-shoring, see our capex stock screens: Exhibit 13-17 in our Theme Screens.

Consumption to be more nuanced in 2022 vs. 2021

Sell low-, buy high- (income consumer, that is)

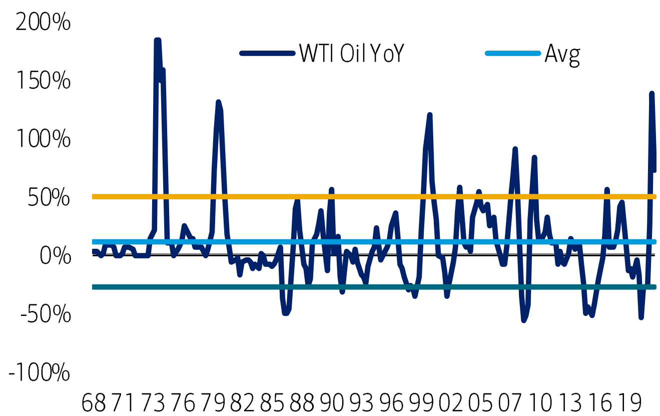
While continued re-opening is a positive, we see several nuances and risks for consumption in 2022. On the margin, Fed tightening (higher cash yields) could support the decision to save over spend. Pressure on China exporters could ramp up. Meanwhile, more pressure on the lower income consumer from the oil shock – where the hit to consumption usually occurs with a 3-4 quarter lag vs. the oil spike (more below) – plus other Staples inflation poses risk to stocks with low-end consumption exposure relative to high end consumption exposure. More benign tax reform than expected puts less pressure on high end consumption – but asset inflation could pause in 2022 (mid-term election year) if President Biden is more focused on controlling real inflation for Main Street.

Oil/gasoline shock may hit consumption in 1H21

In a hit to consumer wallets, oil prices experienced a three standard deviation spike in 2Q21, with gasoline prices seeing a nearly two standard deviation spike. Our work suggests that this hits consumption with a 3-4 quarter lag, with a similar relationship both over the long-term and more recently (last 20 years). See tables below. This suggests consumption could see the biggest hit in 1Q-2Q 2022.

At a category level, the most negatively impacted spending categories historically have included autos, insurance, household durables, apparel, jewelry and recreational equipment/guns/ammo, with on average about a four-quarter lag from the spike in oil prices. The good news – history suggests that any shock to savings has likely happened already (consistent with the recent YoY decline in the savings rate), where the relationship with oil prices has been more coincident.

Exhibit 83: Oil price spike: >1 standard deviation move
YoY change in WTI oil price (qtrly), 1968-3Q21



Source: Haver Analytics, BofA US Equity & US Quant Strategy

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Exhibit 84: Oil hits consumption with a 3-4 quarter lag
Correlation of YoY change in qtrly WTI prices vs. YoY change in consumption (PCE ex. Gasoline & Energy), 1968-present and last 20yrs

	Full history (since 1987):				Last 20 years:			
	PCE ex. Energy/ Gasoline	Discretionary spend	Staples spend	Savings Rate	PCE ex. Energy/ Gasoline	Discretionary spend	Staples spend	Savings Rate
Coincident	42%	46%	42%	42%	71%	72%	65%	-43%
1 Qtr Lag	27%	26%	35%	35%	41%	41%	54%	-32%
2 Qtr Lag	10%	6%	18%	18%	6%	6%	24%	-8%
3 Qtr Lag	0%	-5%	3%	3%	-4%	-7%	10%	-5%
4 Qtr Lag	-11%	-15%	-15%	-15%	-18%	-20%	-6%	4%
5 Qtr Lag	-10%	-12%	-21%	-21%	-6%	-7%	-3%	0%
6 Qtr Lag	-12%	-13%	-24%	-24%	-4%	-4%	-5%	-1%

Source: Haver Analytics, BofA US Equity & US Quant Strategy

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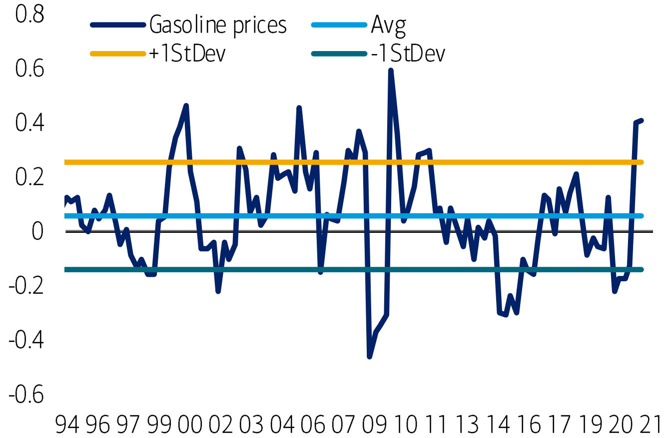
Exhibit 85: Gasoline price spike also a >1 standard deviation move
YoY change in retail gasoline prices(qtrly), 1994-3Q21



Source: Haver Analytics, BofA US Equity & US Quant Strategy

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Exhibit 86: Gasoline spikes also hit consumption with a 3-4 qtr lag
Correlation of YoY change in qtrly retail gasoline prices vs. YoY change in consumption (PCE ex. Gasoline & Energy), 1968-present and last 20yrs

	Full history (since 1987):				Last 20 years:			
	PCE ex. Energy/ Gasoline	Discretionary spend	Staples spend	Savings Rate	PCE ex. Energy/ Gasoline	Discretionary spend	Staples spend	Savings Rate
Coincident	40%	39%	45%	-32%	49%	53%	45%	-24%
1 Qtr Lag	41%	38%	49%	-30%	55%	56%	56%	-38%
2 Qtr Lag	18%	12%	31%	-3%	5%	7%	20%	-6%
3 Qtr Lag	4%	-2%	12%	9%	-12%	-12%	-1%	7%
4 Qtr Lag	-5%	-11%	-7%	7%	-17%	-18%	-11%	2%
5 Qtr Lag	-12%	-15%	-20%	12%	-19%	-18%	-14%	14%
6 Qtr Lag	-6%	-5%	-21%	-3%	8%	11%	1%	-11%

Source: Haver Analytics, BofA US Equity & US Quant Strategy

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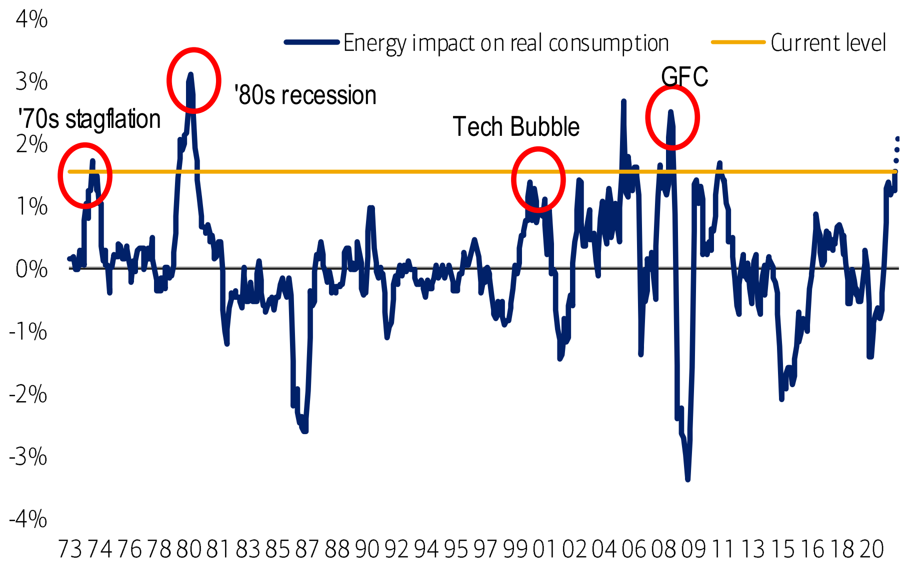
~2% "consumption tax" from higher oil

So far, our economists estimate the consumption tax from higher oil prices (based on CPI YoY minus CPI ex. Energy YoY) is around 1.7%, with potential to hit above 2% if oil reaches $100/bbl. That would represent a higher "tax" than in the '70s stagflation era – but lower than in the 1980s and the Global Financial Crisis.

Exhibit 87: 1.7% "consumption tax" so far from higher oil prices. The impact could top the peak during the '70s stagflation if WTI rallies to $100/bbl
Estimated consumption tax from oil prices: CPI YoY – CPI ex. Energy YoY (1973-10/21); dotted line assumes $100/bbl by December 2021



Source: BofA US Equity & Quant Strategy, Bloomberg
Note: The dotted line assumes $100/bbl WTI in December, Energy weight of 7.5% in CPI, the historical median Energy CPI / WTI ratio of 25%

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Stickier oil shocks have slowed consumption more

We find that oil shocks lasting at least two quarters have caused consumption to slow (based on the four-quarter lagged impact on consumption), while short-term shocks lasting only a quarter have not slowed consumption growth, on average.

Exhibit 88: Longer oil shocks have seen consumption slow more

Avg. change in quarterly YoY consumption and in consumption growth (PCE ex. Gasoline/Energy) four quarters later during oil shocks (qtrly WTI +50%+ YoY for one qtr. vs. two or more qtrs.), 1973-present

	Change in Consumption (PCE ex. Gasoline/Energy)	Change in Consumption Growth (PCE ex. Gasoline/Energy)
1 qtr shock	5%	1%
2 or more qtrs shock	5%	-1%

Source: Haver Analytics/EIA/BEA, BofA Us Equity & US Quant Strategy

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Pockets of strength

At the industry level, we flag relative beneficiaries of the consumption backdrop in 2022 based on our fundamental analysts' research below:

- **Travel**: We see more travel demand, especially business and international as those return in earnest. This benefits certain hotels, particularly those with disproportionate urban exposure, plus airlines with business or international exposure. See: Lodging: Q3 Preview: Delta delay but are hotels a supply chain play? 07 October 2021

- **Oil refiners** should benefit from the recovery in jet fuel demand in 2022 – where jet fuel demand (especially from emerging markets) remains below pre-COVID levels and could recovery with falling COVID case counts and international travel. See: US Oil and Gas: OIM#569: save for a few cents, Brent at the highest levels since 2014 21 October 2021 and Global Energy Weekly: A storm away from the next macro hurricane 01 October 2021.

- **Select Internet/e-Commerce stocks** should benefit any incremental improvement in labor supply (from a decline in COVID cases, less childcare issues, fewer unemployment benefits). See: Internet/e-Commerce: Two stocks for better labor supply post Labor Day 02 September 2021

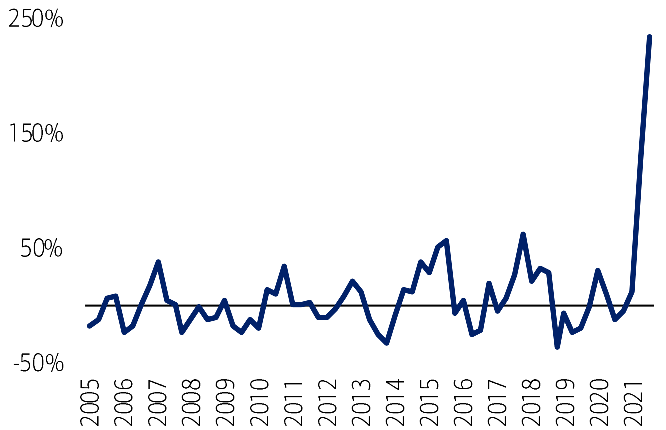
- **Restaurants** could see both top and bottom line benefits from better labor supply as capacity is less constrained and labor cost squeeze lessens. See: Restaurants Industry: 3Q21 Earnings Preview: Commodities, Compensation, and Covid 22 October 2021.

Labor: deep dive

A big headwind into 2022

The labor market remains tight and we believe rising wage growth is one of the biggest headwinds for companies heading into 2022 – the BEA estimates labor costs represent as much as 40% of total private sector costs. The market has gotten even tighter recently, with mentions of labor-related words skyrocketing to a record high during 3Q earnings calls, +234% YoY vs. +126% in 2Q (Exhibit 89). Similarly, average hourly earnings accelerated to +4.9% in October, following +4.6% in September.

Exhibit 89: Mentions of labor skyrocketed in recent quarters (+234% during 3Q earnings calls)
S&P 500 companies' mentions of labor-related words on earnings calls (2005-present)



Source: BofA Global Research; words included; "labor", "wage", "worker", "personnel"
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Exhibit 90: Wage growth has been accelerating
Average hourly earnings y/y, 1986-10/2021

Source: Haver Analytics
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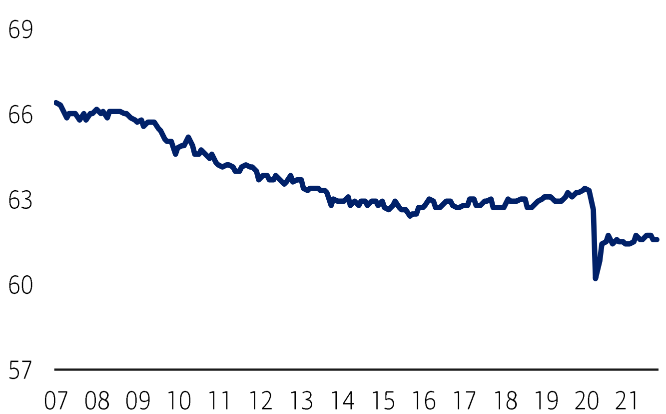
Who left? Why? Will they come back?

COVID marked a tipping point in the labor force participation rate, which sharply fell from 63% to 60% at its low in April 2020. The economic reopening brought some people back to work, with the participation rate edging up to 61% in June 2020, but it has remained largely unchanged since then, suggesting many workers have left the labor force for various reasons and have not come back yet. Retirement was the biggest driver of reduced labor pool, but there are several other reasons we highlight in Exhibit 93.

Exhibit 91: COVID was a tipping point in labor force participation rate
US labor force participation rate (seasonally adjusted; 2007-10/21)



Source: Bloomberg
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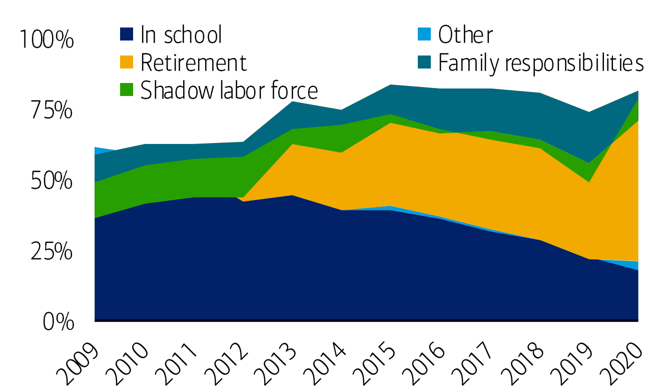
Exhibit 92: Retirement was the biggest factor to reduced labor force participation in 2020
% Contribution of each category to the total labor force participation rate



Note: Disability/Illness is not included. **Source:** FRB Atlanta, BofA US Equity & Quant Strategy
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Key factors on whether workers come back or not include COVID cases/hospitalization, school reopening or availability of child/elderly care, expiration of enhanced unemployment benefits, and financial markets.

Exhibit 93: Reduced labor force: Who left? Why did they leave? Will they come back?
COVID impact on labor force participation

Who left?	Why did they leave?	Will they come back?	Key factors to watch
Caregivers (Skewed toward less educated/Women/Hispanic)	Family responsibilities	The recovery will take place when more child and elderly care are available	School reopening / availability of child care and elderly care / vaccine for children
The Elderly	Early retirement	The recovery for early retirement during the pandemic will take years, depending on COVID hospitalizations & economic environment	COVID hospitalizations / financial markets
Minorities, the less educated; Opportunists (i.e those who made more money from unemployment than from working)	Shadow Labor Force (i.e. those who want a job but are not looking); Abundant unemployment relief package	Shadow labor force could recover quickly, depending on labor market tightening and education enrollment	Unemployment package / financial markets
The Elderly, The disabled	Disability/Illness	For the disabled, it takes time for them to return to labor force. Recovery for some illness will be fast	COVID hospitalizations
Young labor force	Pursue further education	COVID caused some young workers to return to school due to the tough job market. This group will return in the short time horizon (1-2 years)	Job openings / financial markets
Gig workers (Uber/Lyft driver, Grubhub/Doordash delivery)	Lack of benefits & protection	They will come back when more benefits are added, or after the COVID pandemic	Benefits for gig workers / Unemployment package

Source: BofA US Equity & Quant Strategy

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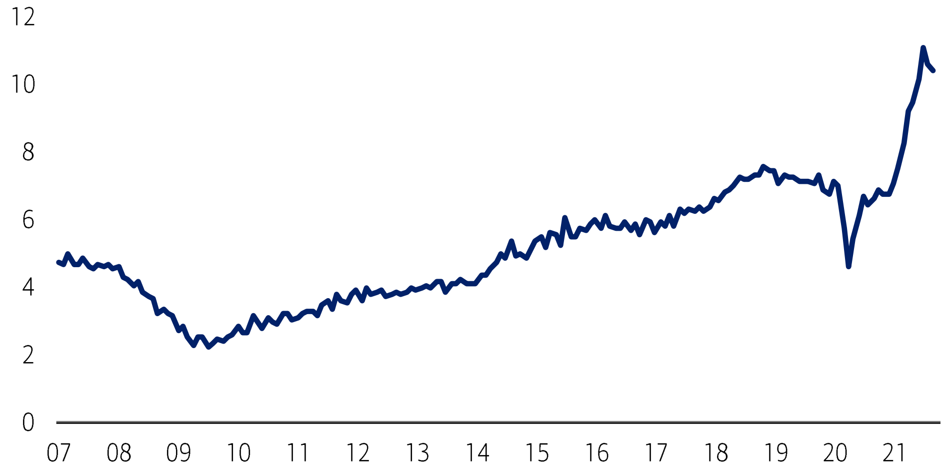
Demand for labor remain strong

Against reduced supply of labor, demand for labor remains robust, with job openings in the US soaring to a record high, up 50%+ vs. pre-COVID levels. The supply-demand imbalance led to a spike in wage growth, and we expect companies to explore other options to limit the impact from labor shortages (increased capex/automation). We expect the labor market to remain tight until causes of reduced participation get resolved (i.e. COVID, child/elderly care, etc.) and/or demand subsides.

Exhibit 94: Demand for labor remains robust; job openings +50% vs. pre-COVID
US Job openings by industry (seasonally adjusted; in millions, 2007-9/21)



Source: Bloomberg

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What are companies saying?

Companies generally sounded concerned on the labor market outlook during 3Q earnings season, but a number of recent reporters highlighted workers are starting to return following the expiration of enhanced federal unemployment benefits.

Positives

"Driver supply has materially improved and retention has been strong in Q3, after drivers increased by roughly 45% versus last year. New driver growth was robust, up 60% year-over-year. Keep in mind in September, the enhanced federal unemployment benefit sunset..." **Logan Green, CEO of Lyft (LYFT)**

"It seems like the most pronounced thing we saw would be in hiring. Back when the stimulus dollars started to go away, the hiring situation changed faster. We saw people come back. In a matter of weeks, we were back to being staffed." **Doug McMillon, CEO of Walmart (WMT)**

Negatives

John Deere and its union workers reached an agreement after a month-long strike. The six-year agreement included a 10% wage increase this year, a total increase of 20% over the life of contract, plus an $8,500 ratification bonus.

"This demand for labor has recently coincided with the shortage of available workers, particularly in the United States. This began in Q2 but it really started to impact our operations and cost structure in Q3. It has led to wage increases and sign-on incentives as companies compete for workers as well as inconsistent staffing levels in our operations." **Brian T. Olsavsky, CFO of Amazon (AMZN)**

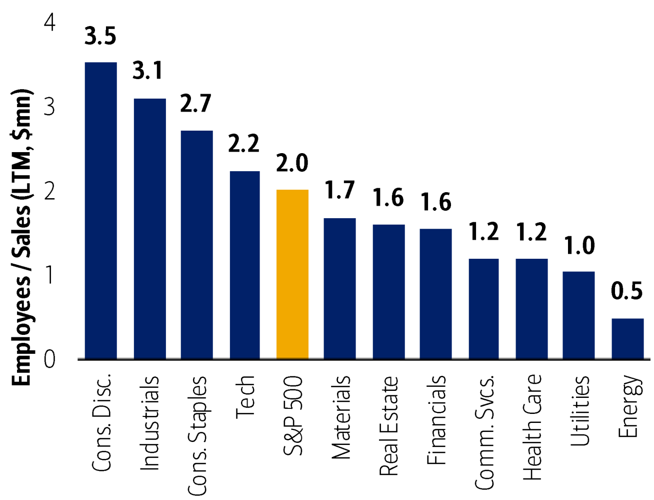
"US labor availability remains tight across most industries, driving wage inflation and staffing challenges that have resulted in a small number of our stores limiting operating hours, particularly during the early morning and late-night dayparts." **Chris Turner, CFO of Yum! Brands (YUM)**

Cautious on labor-intensive areas: Consumer Discretionary & Industrials

We expect a tight labor market to continue in 2022, at least in the first half. We recommend avoiding labor-intensive industries, the majority of which are found within

Consumer Discretionary, followed by Industrials. We lowered Consumer Discretionary to underweight in April and lowered Industrials to marketweight in June in part to due labor risks for these sectors.

Exhibit 95: Consumer Discretionary remains the most labor-intensive sector
Employees/Sales ($mn) by S&P 500 sector as of 11/19/21



Note: Employee data is based on data as of latest fiscal year, sales are latest 12 months
Source: BofA US Equity & Quant Strategy, FactSet

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Exhibit 96: 9 of the Top 10 labor-intensive industries are in Cons. Disc. And Industrials
Top 10 S&P 500 industries by high employee/sales ratio

Industry	Employees/Sales	Sector
Hotels Restaurants & Leisure	10.2	Consumer Discretionary
Professional Services	6.7	Industrials
Auto Components	6.5	Consumer Discretionary
IT Services	6.1	Information Technology
Multiline Retail	4.7	Consumer Discretionary
Electrical Equipment	4.2	Industrials
Specialty Retail	4.1	Consumer Discretionary
Air Freight & Logistics	4.0	Industrials
Airlines	3.8	Industrials
Commercial Services & Supplies	3.6	Industrials

Source: BofA US Equity & Quant Strategy, FactSet

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Taper. Tighten. TINA?

The TINA (there is no alternative) argument for equities becomes less compelling if cash yields rival the current S&P 500 dividend yield of 1.3%, and if the 10-yr yield rises to 2% by YE2022, as our Rates strategists forecast. We explore the ramifications to TINA under the scenario laid out by our economists, where upward pressure on cash yields and long-rates may present competitive alternatives to large cohorts of stocks.

Exhibit 97: BofA economists/rate strategists' view
BofA house view

Taper	Tighten
Potential for a faster taper following the hot October CPI print. A faster taper ($20B UST / $10B MBS) announced in December would pull forward the completion to March vs. June.	Three rate hikes in 2022, starting in June followed by a hike every quarter through the beginning of 2024 (total eight hikes until March 2024).
Base case: 2% 10-yr yield by year-end 2022	Base case: 2% Fed funds rate by March 2024.

Source: BofA Global Research

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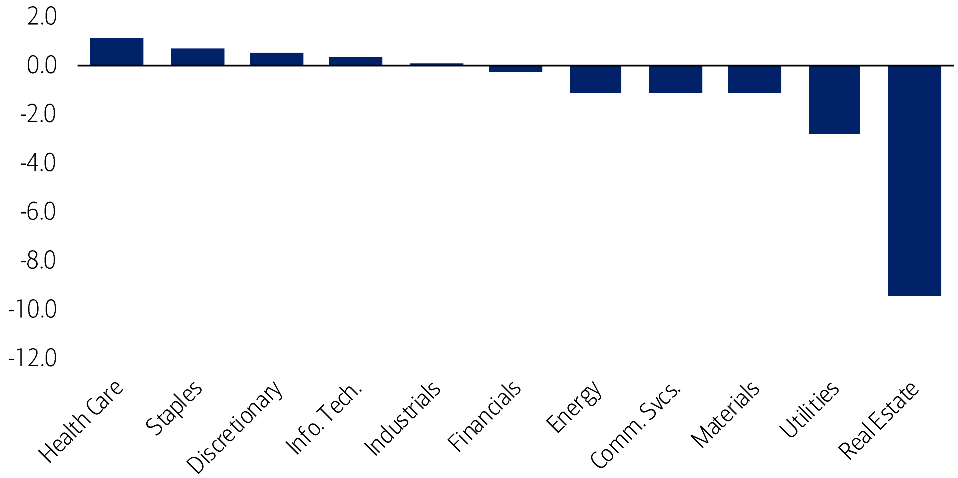
Taper

No tantrum this time.

When the Fed telegraphed its decision to start tightening monetary policy by scaling down its asset purchases in 2013, the markets responded with an outbreak of volatility, with the VIX index jumping 50% and S&P 500 index selling off 5.8% between 21 May 2013 and 24 June 2013. During that period, Health Care, Staples, Discretionary and Tech managed to decline less than the index, while Real Estate, Utilities and Materials underperformed most (Exhibit 98).

The Fed taper announcement recently was met with no market tantrum, indicating that either (1) it was well-telegraphed by the Fed, resulting in no surprise to the market, (2) the market can absorb a gradual rise in rates better today than in 2013, (3) the market has not adequately priced in this risk and may react more negatively upon the actual taper in a similar fashion to 2013, in which case Health Care, Staples, Consumer and Tech are likely to hold up better than bond-proxies, or (4) 2013's experience essentially primed the market for taper risk.

Exhibit 98: During 2013 "Taper Tantrum" Health Care and Staples outperformed most, while bond proxies (Real Estate and Utilities) lagged most.
Relative sector performance during 2013 Taper Tantrum (5/21/2013 – 6/24/2013)



Source: FactSet, BofA US Equity & Quant Strategy

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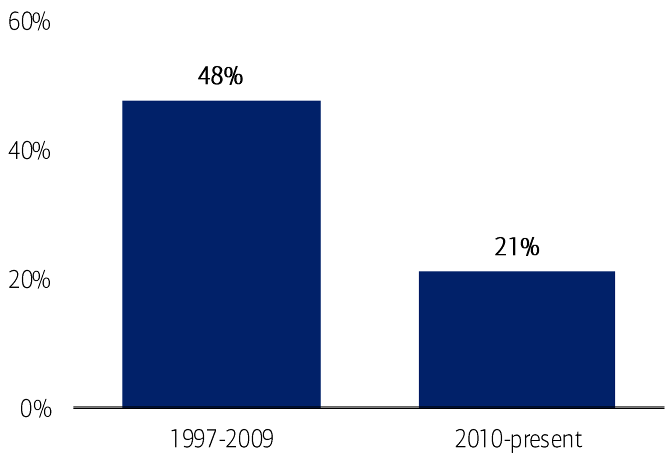
Our modern monetary theory (MMT) math = flat returns

MMT offers the promise of low rates and a gradual taper. However, based on 2022 EPS of $220E and our house forecast for the Fed balance sheet through year-end 2022, post-GFC correlations between non-earnings driven market cap changes and the rate of change of Fed balance sheet expansion would suggest essentially no change in the S&P 500 from current levels for year-end 2022 (4600; slightly below today's levels).

Exhibit 99: Earnings explained ~50% of market returns pre-GFC, but just 21% of post-GFC returns
R-sq of S&P 500 fwd EPS YoY vs. S&P 500 price returns on a monthly basis (May 1997-present)



Source: FactSet, BofA US Equity & Quant Strategy

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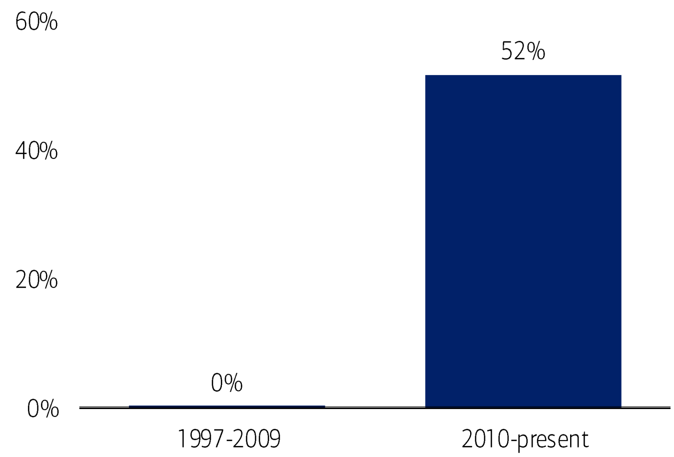
Exhibit 100: 52% of non-earnings driven market cap changes was explained by Fed balance sheet expansion since GFC
R-sq of Fed balance sheet YoY vs. YoY change in S&P 500 market cap that is not driven by earnings (May 1997-present)



Source: FactSet, BofA US Equity & Quant Strategy

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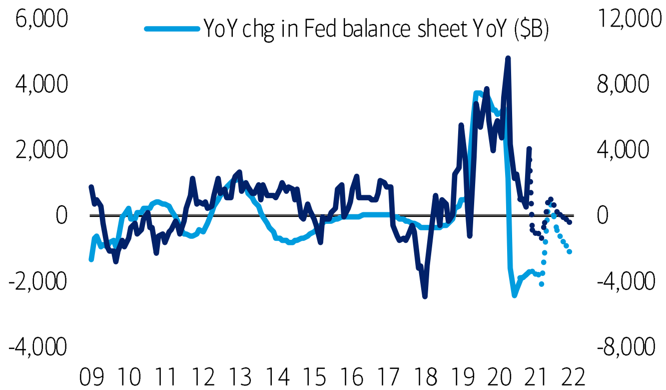
Exhibit 101: The pace of the Fed's balance sheet expansion/contraction correlated to S&P 500 market cap changes that are unexplained by earnings (r-sq = 27%)

YoY chg in Fed balance sheet YoY change vs. YoY change in S&P 500 market cap that is not driven by earnings (12/09-present; dots based on BofA forecast of the Fed balance sheet)



Source: Bloomberg. BofA US Equity & Quant Strategy; Note: dotted lines represent BofA forecasts based on $215 EPS in 2022 and 6% normalized growth in 2023

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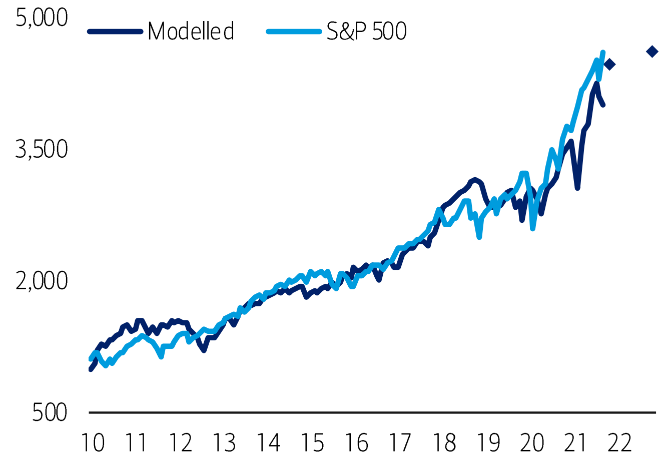
Exhibit 102: Based on history, estimated tapering will yield 4600 by December 2022

Modelled S&P 500 based on chg in fwd EPS and YoY chg in YoY chg of Fed balance sheet since 2010 vs. actual S&P 500 (dots=year-end 2021 and 2022 based on BofA EPS and Fed balance sheet forecasts)



Source: Bloomberg. BofA US Equity & Quant Strategy

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Tighten

Market generally up a year after the first hike

Our economists' expectation for the Fed tightening cycle to being in 2022 (Exhibit 97). Generally, the S&P 500 was higher 12-months after the first rate hike, advancing anywhere between 2ppt to 19ppt in the prior seven cycles. One exception was the '83 – '84 hiking cycle, when the index declined 7%, while the Fed Funds rate increased by just 87bp, the second smallest increase across all cycles.

In two of seven cycles, the S&P 500 peak occurred within the range of 6 months prior to the initial hike to 12 months after the initial hike.

Tightening into an asset bubble: 1999 case study

Today's market shares two things in common with 1999/2000: it is statistically expensive on all valuations measures we follow (see Relative Value Cheat Sheet note). And the real cost of debt is negative, where in 1999, the cost of equity was negative. The Tech-bubble cycle may also be similar from the perspective of the Fed addressing "irrational exuberance" in asset values, but the equity market had recently healed from Asia/Russia/LTCM crises in earlier years, as we are healing from COVID-related volatility in 2020.

At the start of that cycle:

- **Valuation:** The S&P 500 traded at 30.5x trailing earnings; today the index trades a touch below at 25x EPS.
- **Negative cost of capital:** The normalized Equity Risk Premium (ERP) was negative (-78bp) going into tightening in '99. Today negative real rates are observed in the market (10-yr real rate is -1.1%).

The Fed Funds rate increased by 150bp between June '99 and May 2000, and the market absorbed this well over the time period, with 6ppt price returns in the 12 months following the initial hike. But the S&P 500 peaked in March of 2000, and subsequently declined by 49% over the next 2.5 years. Whether the decline was even partially driven by the Fed or attributable to other factors is an open question, but tightening into the last asset bubble ended poorly.

Exhibit 103: Market valuations were record high (30.5x earning) in 1999; today the index trades not far below, at 25.2x EPS
Market characteristics in Fed tightening cycles

1st Hike	Last hike (or 12m)	Chg. in Fed Funds at last hike (or 12m)	S&P 500 return 6-m before 1st hike	S&P 500 return 6-m after 1st hike	S&P 500 return 12-m after 1st hike	S&P 500 return 24-m after 1st hike	PE ratio at start of hiking cycle	Mkt peak within 12-mth
May-83	May-84	0.87	17.2	2.5	-7.3	16.73	12.7	-
Dec-86	Sep-87	1.25	-3.5	25.5	2.0	14.68	14.8	Yes
Mar-88	Feb-89	3.00	-19.6	5.0	13.9	31.31	12.5	-
Feb-94	Feb-95	2.75	0.8	1.8	4.3	37.10	16.8	-
Jun-99	May-00	1.50	11.7	7.0	6.0	-10.80	30.5	Yes
Jun-04	Jun-05	2.00	2.6	6.2	4.4	11.34	19.4	-
Dec-16	Dec-17	0.75	6.7	8.2	19.4	11.97	19.3	-
	Avg:	1.73	2.3	8.0	6.1	16.05	18.0	
	Today:		**10.1**				**25.2**	

Source: FactSet, BofA US Equity & Quant Strategy

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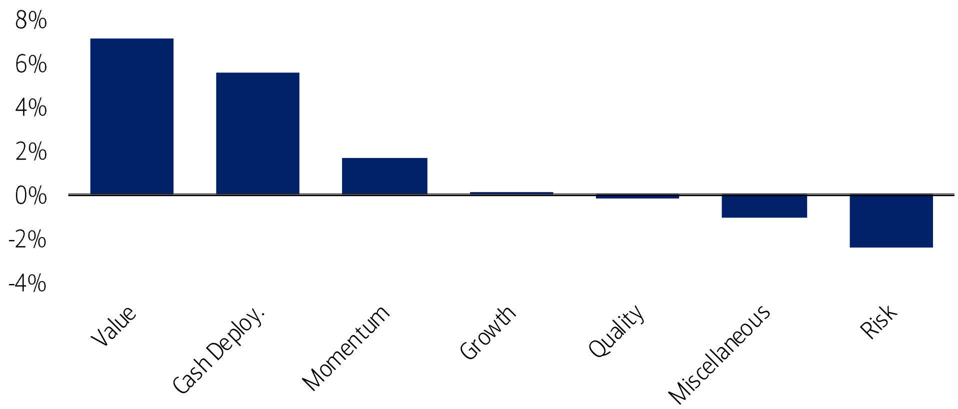
Value and cash return for tightening cycles

Factor performance in the initial 12 months of the Fed's hiking cycles (or the entire length of the cycle if it was shorter than 12 months) indicate that Value (+7.1ppt vs. the equal-weighted S&P 500 index), followed by Cash Deployment (+5.6ppt) and Momentum (+1.6ppt) are superior factors. Risk factors lagged (-2.4ppt relative return; Exhibit 104). Returns-based Quality and Growth performed in line with the benchmark

Exhibit 104: Value factors fared best during first 12m of tightening cycle, outperforming the equal-weighted S&P 500 index by 4ppt
Factor group annualized median relative return when the Fed tightens (1986 – 2017, ex Tech bubble 1999 – 2000 cycle)



Source: FactSet, BofA US Equity & Quant Strategy

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Low EV/EBITDA, High Free Cash Flow /EV and Low Price / Book fared well, with Low EV/EBITDA and High FCF/EV leading the index in every cycle, and Low Price / Book outperforming in 80% of the cases. Sectors which are currently inexpensive on these metrics are Energy Materials on EV/EBITDA; Energy and Health Care and Materials on free cash flow to EV and Financials and Energy on Price to Book. Technical/Momentum factors like 12-m and 1-m Reversal Price Return and 30wk / 75wk MA were also strong.

Exhibit 105: Low EV/EBITDA and High Free Cash Flow to EV were among the best performing factors in prior Fed tightening cycles
Factor performance in Fed tightening cycles since 1986

Style	Factor	Avg.	Median	Hit Rate
Momentum	30wk/75wk MA	9.0%	7.9%	80%
Value	EV/ EBITDA	8.8%	2.1%	100%
Momentum	Price Ret. – 12m and 1m Reversal	8.3%	5.5%	100%
Value	Price/ Free Cash Flow	8.1%	9.1%	80%
Momentum	10wk/40wk MA	7.6%	2.4%	80%
Value	Free Cash Flow/ EV	7.2%	7.9%	100%
Momentum	Price Return - 11-mth Perf.	7.1%	1.8%	80%
Value	Forward Earnings Yield	6.5%	7.8%	60%
Value	Price/ Cash Flow	6.3%	9.8%	60%
Corp. Cash Deploy.	Share Repurchase	6.1%	6.7%	80%
Momentum	Price Return - 9-mth Perf.	6.0%	1.4%	80%
Value	Price/ Book Value	5.5%	5.4%	80%
Value	Price/ Sales	5.4%	2.9%	60%
Growth	Earning Momentum	5.2%	0.1%	60%
Risk	Estimate Dispersion	4.3%	1.5%	60%
Leverage	High Net Debt / EBITDA	3.8%	4.1%	60%
Quality	1yr ROE Adj	3.3%	-0.4%	40%
Growth	EPS Estimate Revisions	3.2%	1.2%	80%
Quality	1yr ROE	3.1%	2.1%	60%
GARP	P/E-to-Growth	3.0%	8.4%	80%
Momentum	Price Return - 12-mth Perf.	2.9%	2.0%	60%
Momentum	Most Active	2.9%	1.6%	60%
Leverage	Low Net Debt / EBITDA	2.7%	6.1%	60%
Quality	ROC	1.9%	-0.1%	40%
Corp. Cash Deploy.	Dividend Growth	1.7%	5.6%	60%
Miscellaneous	Short Interest	1.6%	2.1%	67%
Quality	ROA	1.5%	-1.1%	40%
Leverage	Low Net Debt / EBITDA (Sector Neutral)	1.4%	1.5%	80%
Momentum	5wk/30wk MA	1.4%	0.6%	60%
Risk	Low Price	1.2%	-3.8%	40%
Value	Earnings Yield	1.2%	6.5%	60%
Leverage	High Net Debt / EBITDA (Sector Neutral)	1.0%	0.4%	60%
Risk	Variability of Earnings	0.4%	-7.2%	40%
Momentum	Price to Moving Average (200 day)	0.1%	1.0%	60%
Quality	5y ROE	0.0%	1.9%	60%

Source: FactSet, BofA US Equity & Quant Strategy

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Exhibit 106: Small Size and Beta were among the weakest factors during tightening
Factor performance in Fed tightening cycles since 1986

Style	Factor	Avg.	Median	Hit Rate
Miscellaneous	Size	-6.0%	-7.6%	20%
Momentum	Price Return - 12-mth and 1-mth	-5.6%	-7.2%	20%
Risk	Beta	-3.9%	-1.1%	40%
Corp. Cash Deploy.	Dividend Yield	-3.3%	-0.8%	40%
Growth (Negative)	Earnings Torpedo	-2.9%	-1.2%	40%
Miscellaneous	Neglect - Institutional Ownership	-2.5%	-1.7%	20%
Momentum	Price Return - 3-mth Perf.	-2.2%	-3.1%	20%
Quality	5yr ROE Adj	-0.7%	-4.9%	40%
Miscellaneous	Neglect - Analyst Coverage	-0.5%	-0.5%	50%
Growth	Proj. 5yr EPS Growth	0.0%	-0.5%	40%

Source: FactSet, BofA US Equity & Quant Strategy

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Exhibit 107: Energy and Materials are sectors with lowest EV/EBITDA; Energy and Health Care are sectors with highest FCF/EV; Energy and Financials are sectors with lowest Price / FCF
Sector valuations as of 10/2021

	Enterprise Value to EBITDA	Free Cash Flow to Enterprise Value	Book to Price
Communication Services	14.05	3.8%	0.21
Consumer Discretionary	24.59	1.2%	0.08
Consumer Staples	15.82	4.0%	0.16
Energy	9.68	6.4%	0.52
Financials	na	na	0.56
Health Care	18.72	5.0%	0.18
Industrials	17.72	2.9%	0.17
Information Technology	23.20	3.5%	0.08
Materials	10.48	4.5%	0.30
Real Estate	21.24	2.8%	0.23
Utilities	13.33	na	0.44

Source: FactSet, BofA US Equity & Quant Strategy

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Among factors which lagged most during hiking cycles, were Small Size (lagged in 80% of hiking cycles), High Beta and High 5-yr Debt Adjusted ROE.

Sectors with the smallest market cap are currently Real Estate, Materials and Utilities. The highest beta sectors are Energy, Financials and Industrials; and the sector with the highest Debt-Adjusted ROE is Utilities.

Consumer, Tech, Energy & Materials fared best in year of Fed hike cycle

Consumer Discretionary outperformed the S&P 500 in more cycles than any other sector. Other sectors with greater than a 50% hit rate and positive average/median returns were Tech, Energy, Materials, and Staples. The sectors which underperformed the index most consistently were bond proxies (Utilities and Real Estate) along with Industrials (all with a 20% hit rate).

But dispersion of sector alpha during hiking cycles was wide, indicating that factors rather than sectors may be a stronger explanatory variable.

Exhibit 108: Discretionary outperformed most frequently (80%) in tightening cycles
Sectors annualized relative return when the Fed tightens (1986 – present, ex Tech bubble 1999 – 2000 cycle), Total Return from the initial hike to the last hike or 12-mth

Sector (Total Return)	Avg	Median	Range	Hit Rate
Discretionary	0.4%	3.5%	-16.2% to 6.9%	80%
Info. Tech.	5.1%	11.3%	-12.3% to 20.8%	60%
Energy	2.4%	0.6%	-22.8% to 33.1%	60%
Financials	-5.5%	0.3%	-32.6% to 4.9%	60%
Materials	4.5%	2.0%	-4.2% to 25.3%	60%
Health Care	3.5%	0.3%	-4.2% to 22.4%	60%
Staples	1.1%	2.6%	-8.3% to 8.7%	60%
Comm. Svcs.	-2.4%	-4.7%	-8.5% to 3.3%	40%
Utilities	-6.6%	-6.0%	-48.6% to 31.7%	20%
Industrials	-2.0%	-1.8%	-5.8% to 3.1%	20%
Real Estate Sector	-11.1%	-11.0%	-41.1% to 19.2%	20%

Source: FactSet, BofA US Equity & Quant Strategy

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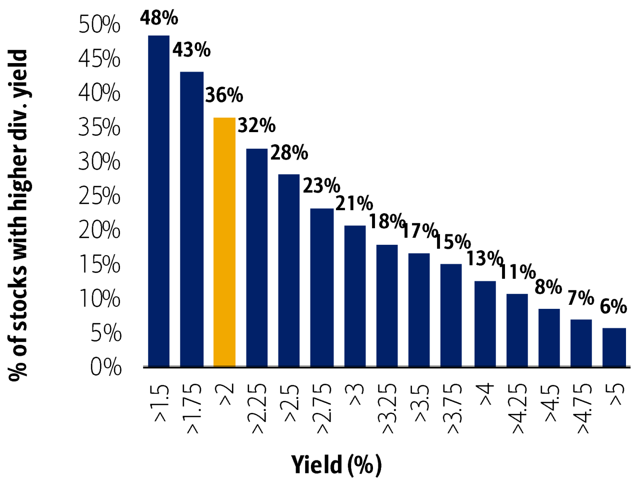
What happens to TINA?

The TINA (there is no alternative) argument for equities becomes less compelling if cash yields rival the current S&P 500 dividend yield of 1.3%, and if the 10-yr yield rises to 2% by YE2022, as our Rates strategists forecast.

Exhibit 109: Only 36% of stocks offer a dividend yield above 2% (YE 2022 house forecast for the 10-yr yield)

% of S&P 500 stocks with a div. yield above stated levels, as of 10/22/21



Source: BofA US Equity & Quant Strategy, FactSet

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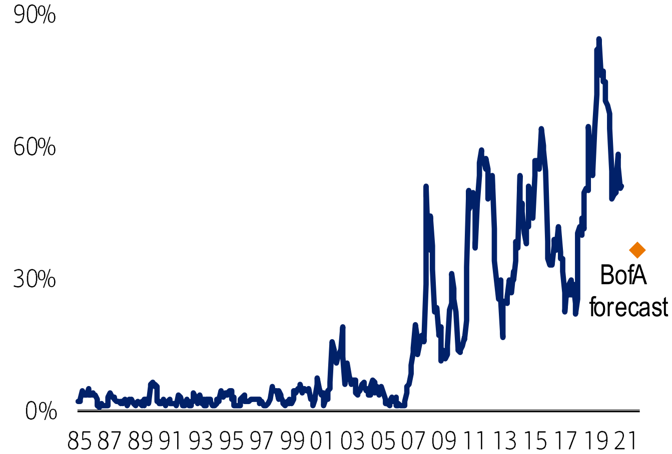
Exhibit 110: At 2% 10-yr yield, the % of S&P 500 stocks with better div yield drops to the lowest level since late 2018

% of S&P 500 stocks with trailing dividend yield > 10yr Treasury yield (1/86-10/21); BofA forecasts assumes 2% in the 10-yr yield by YE2022



Source: BofA US Equity & Quant Strategy, FactSet

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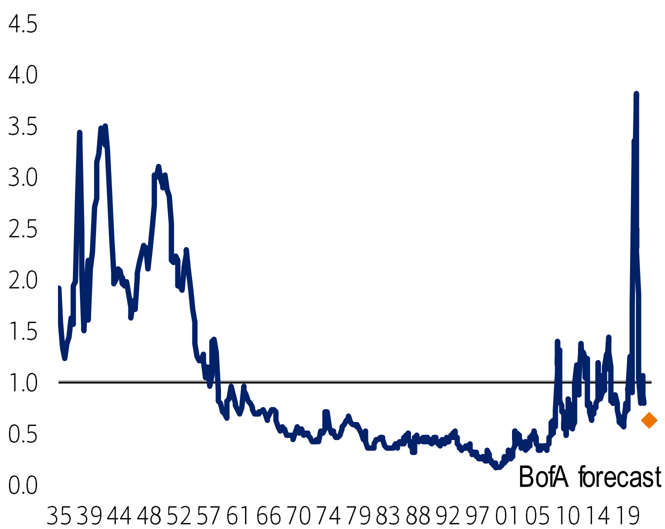
Exhibit 111: 2% in the 10-yr would push the equity/bond yield ratio to post-GFC lows

S&P 500 dividend yield divided by 10-year Treasury (1935-present); BofA forecast at 2% in the 10-yr yield and current dividend yield of 1.2%



Source: BofA US Equity & Quant Strategy, S&P, FactSet Note: based on Long-Term Treasury Composite prior to 2Q53

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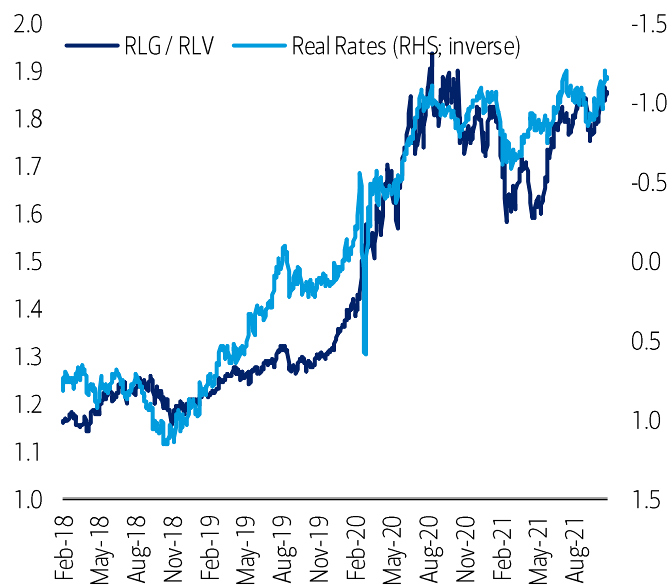
Exhibit 112: Falling real rates fueled Growth outperformance. A reversal could be painful (-96% correlation since 2018)

Russell 1000 Growth vs. Value relative performance and 10-yr year rates (2018-11/15/21)



Source: Bloomberg, BofA US Equity & Quant Strategy

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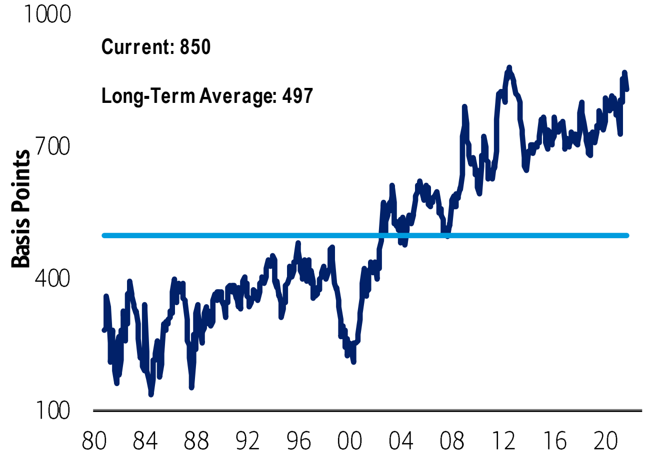
Exhibit 113: The equity risk premium indicates stocks are still inexpensive relative to bonds
DDM-implied expected return less AAA corporate bond rate, 1/1981-10/2021



Note: The market-derived ERP is based on the implied equity cost of capital using a Dividend Discount Model framework incorporating our analyst estimates for stocks under coverage and consensus estimates for the rest of the market
Source: BofA US Equity & Quant Strategy

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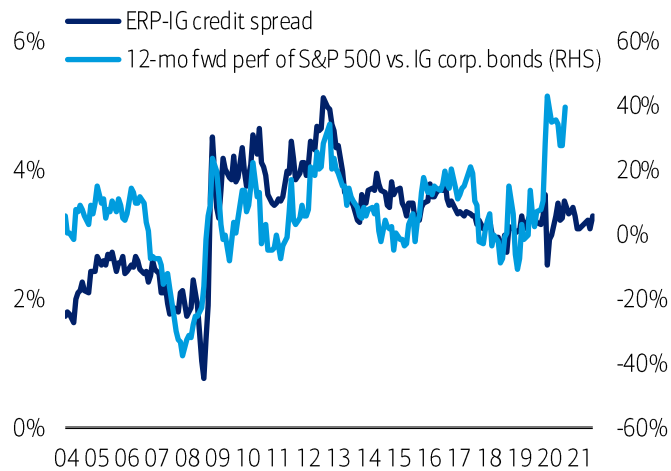
Exhibit 114: But the equity risk premium is stretched relative to corporate bonds
Difference between normalized ERP and IG credit spread vs. 12-mo fwd performance of S&P 500 vs. IG corp. bonds (2004-10/21; 29% r-sq)



Source: BofA US Equity & Quant Strategy, FactSet, Bloomberg

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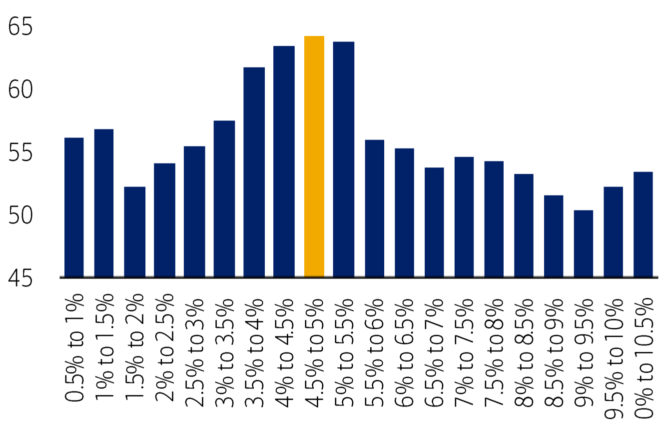
When do Investors get back to Bonds?

Different frameworks yield different answers, centered around 3%

Exhibit 115: ~5% gets investors back to bonds, but it may be lower this time
Sell side indicator bucketed by 10yr Tsy range (Aug 1985 to Oct 2021)



Source: BofA US Equity & Quant Strategy

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Exhibit 116: 1 to 3% on interest rates is the sweet spot for equities
Avg. monthly S&P 500 returns based on ranges and direction of 10yr Tsy. yield since 1953

10-yr yield range	Rising	Falling
1-2%	1.5%	-0.3%
2-3%	1.8%	1.0%
3-4%	1.1%	-0.4%
4-5%	0.7%	0.4%
5-6%	0.6%	0.1%
6-7%	-0.2%	2.5%
7%+	-0.6%	1.8%

Source: FRB, FactSet, BofA US Equity & Quant Strategy

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Rising rates alone aren't bad for stocks

Exhibit 117: Stocks have posted positive total returns in 13 of the last 15 rising rate cycles

Historical periods of rising rates: Change in S&P 500 multiple, performance, and EPS change (Shading = P/E contraction; boxes = EPS growth drove P/E contraction while the market was flat or up)

Start Date	End Date	Starting 10yr Tsy. Yld.	Ending 10yr Tsy. Yld.	Change in 10yr Tsy. Yld. (bp)	Starting P/E	Ending P/E	Change in S&P 500 Trailing P/E	S&P 500 Price Change	EPS Change	S&P 500 Total Return
4/30/1954	10/31/1957	2.3	4.0	168	11.1	11.8	7%	45%	36%	68%
4/30/1958	1/31/1960	2.9	4.7	184	13.8	16.4	19%	28%	8%	36%
5/31/1961	8/31/1966	3.7	5.2	151	22.0	14.0	-36%	16%	82%	37%
3/31/1967	5/31/1970	4.5	7.9	337	16.6	13.9	-16%	-15%	1%	-6%
10/31/1971	9/30/1975	5.9	8.4	250	16.5	10.8	-35%	-11%	36%	3%
12/31/1976	9/30/1981	6.9	15.3	845	10.8	7.7	-29%	8%	53%	38%
4/30/1983	5/31/1984	10.4	13.4	301	12.8	9.0	-30%	-8%	30%	-4%
8/31/1986	9/30/1987	7.2	9.4	225	15.1	17.3	15%	27%	11%	32%
9/30/1993	11/30/1994	5.4	8.0	260	18.1	14.3	-21%	-1%	25%	2%
12/31/1995	8/31/1996	5.7	6.6	93	16.3	17.0	4%	6%	2%	7%
9/30/1998	1/31/2000	4.8	6.7	185	22.4	28.7	28%	37%	7%	39%
5/31/2003	6/30/2006	3.6	5.1	154	19.6	16.7	-15%	32%	55%	39%
12/31/2008	4/30/2010	2.4	3.9	143	11.9	19.1	61%	31%	-19%	35%
7/31/2012	12/31/2013	1.5	2.9	137	13.8	17.4	26%	34%	7%	38%
7/31/2016	10/31/2018	1.5	3.2	165	18.6	18.3	-2%	25%	27%	30%
	Avg.						-2%	17%	24%	26%
	Median						-2%	25%	25%	35%
	% negative						53%	27%	7%	13%

Source: FRB, S&P, FactSet, BofA US Equity & US Quant Strategy

Note: Shading denotes periods when P/E contracted, and boxes show periods when EPS growth was driving that P/E contraction while the market was flat or up

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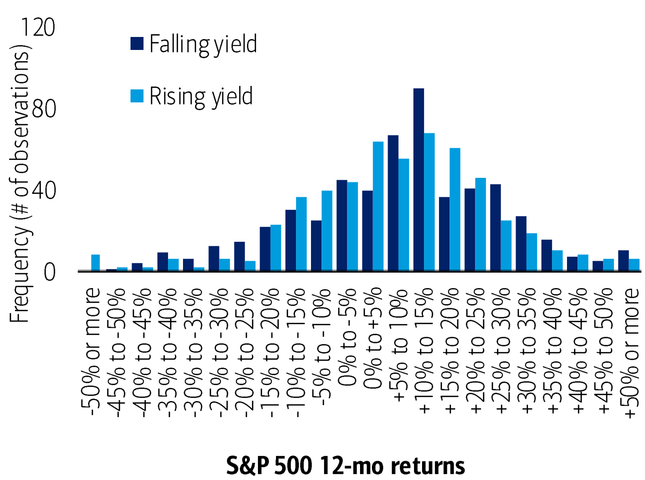
Exhibit 118: No clear relationship between change in rates & stock returns

S&P 500 12-mo. return distribution by YoY changes in long-term (10yr+) treasury yield (1928-present)



Source: Bloomberg, Haver Analytics, BofA US Equity & Quant Strategy

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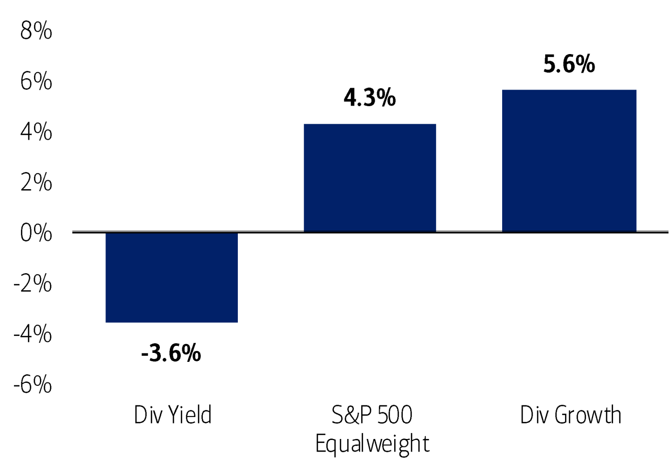
Exhibit 119: Buy dividend growers, not yielders

Correlation of monthly total returns for S&P 500 top decile factors vs. changes in 10-year Treasury yields, 1986-10/21



Source: Bloomberg, BofA US Equity & US Quant Strategy

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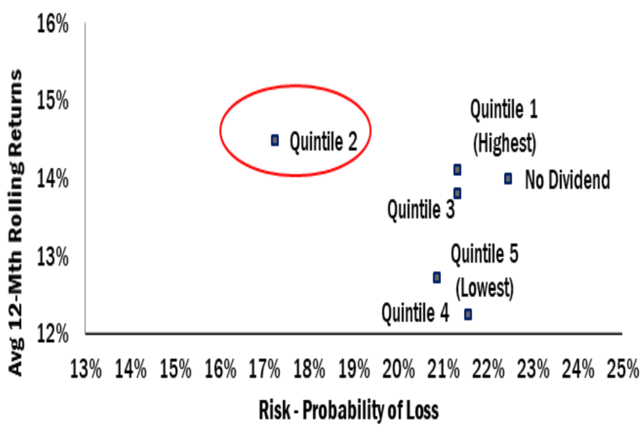
Inflation-protected yield

If the Fed, the ultimate arbiter of returns in the post-crisis era based on our math (see Exhibit 100 showing explanatory power of Fed balance sheet) wants inflation but wants to keep rates low, inflation-protected yield could be a scarce resource in a low-rate world with cost pressure risks. Stocks sit in the sweet spot offering inflation protection (earnings are nominal) as well yield (the S&P 500 dividend yield vs. 10-yr yields is still the 80th percentile!) Certain dividend growth stocks are particularly attractive in this environment. We like Quintile 2 of the Russell 1000 by dividend yield, Energy and Real Estate.

Quintile 2: steady eddy screen

One of the simplest, all-weather dividend strategies is Quintile 2 of the Russell 1000 by dividend yield. These are companies that offer high, but not stretched, dividends, have historically offered the highest return (even compared to the "hares" – no dividend growth stocks) and the lowest downside risk of all dividend quintiles. We have seen that these companies are more likely to raise dividends and keep up with inflation. Moreover, these are companies that still offer an above market dividend, and if prices fall signaling distress, they migrate into Quintile 1 well ahead of the dividend cut.

Exhibit 120: Stick with the tortoise: historically best reward vs. risk in Quintile 2
Back-tested average annual returns vs. downside risk of quintiles by dividend yield in the Russell 1000, 1/31/84-9/30/21



Note: Average 12-month performance in the above chart is based on backtested results from 1/31/84 through 9/28/10. Actual performance is from 9/28/10-present. This performance is backtested and does not represent the actual performance of any account or fund. Backtested performance depicts the theoretical (not actual) performance of a particular strategy over the time period indicated. No representation is being made that any actual portfolio is likely to have achieved returns similar to those shown herein. Disclaimer: The screen identified as Quintile 2 is intended to be an indicative metric only and may not be used for reference purposes or as a measure of performance for any financial instrument or contract, or otherwise relied upon by third parties for any other purpose, without the prior written consent of BofA Global Research. This screen was not created to act as a benchmark.

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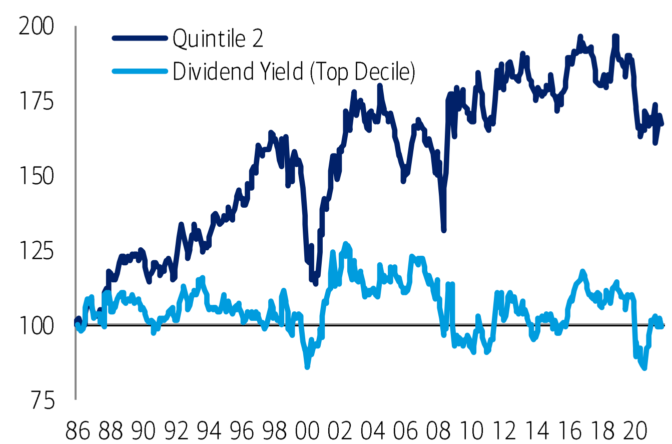
Exhibit 121: High dividend yield strategies underperformed during market downturns; secure yield outperformed over the long run
Relative performance of Quintile 2 vs. the equal-weighted Russell 1000 Index and the Dividend Yield* factor vs. the equal-weighted S&P 500 Index (1/1986-10/2021)



Source: FTSE Russell, BofA US Equity & Quant Strategy.
*See our Quantitative Profiles report for details about the Dividend Yield (QP) factor. Quintile 2 performance in the above chart is based on backtested results from 1/31/84 through 9/28/10. Actual performance is from 9/28/10-present. This performance is backtested and does not represent the actual performance of any account or fund. Backtested performance depicts the theoretical (not actual) performance of a particular strategy over the time period indicated. No representation is being made that any actual portfolio is likely to have achieved returns similar to those shown herein. Disclaimer: The screen identified as Quintile 2 is intended to be an indicative metric only and may not be used for reference purposes or as a measure of performance for any financial instrument or contract, or otherwise relied upon by third parties for any other purpose, without the prior written consent of BofA Global Research. This screen was not created to act as a benchmark.

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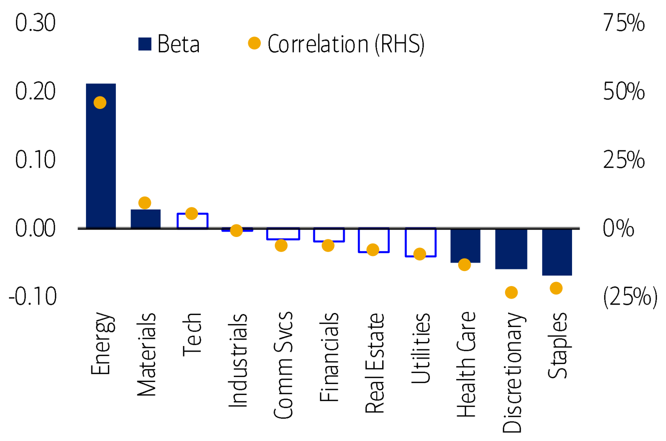
A case for Energy: from a sector perspective, Energy is the poster child for inflation-protected yield. It has the highest free cash flow yield (which is also a good factor amid Fed rate hiking cycles) and the highest inflation beta of all sectors. Consumer sectors (both Consumer Discretionary and Staples) have historically underperformed when oil prices rose.

Exhibit 122: Higher oil = buy Energy, sell Consumer sectors
S&P 500 sectors' relative performance vs. WTI oil based on monthly changes (1972-present)



Source: BofA US Equity & Quant Strategy, Bloomberg, FactSet

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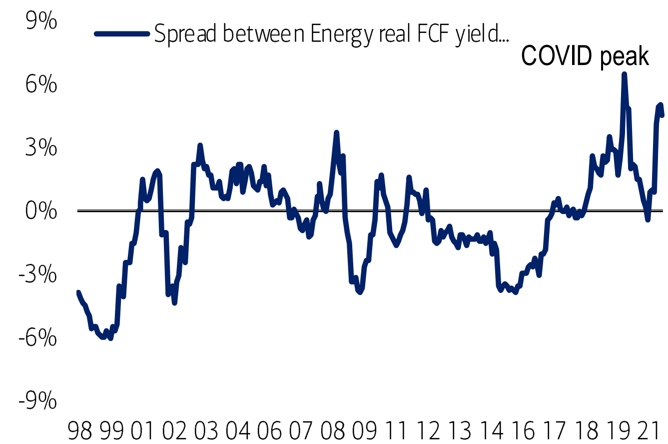
Exhibit 123: Energy stocks offer a far more attractive Inflation-protected yield than TIPS
Real dividend yield of S&P 500 Energy sector vs. TIPS yield (1998-present)



Source: BofA US Equity & Quant Strategy, FactSet, Bloomberg

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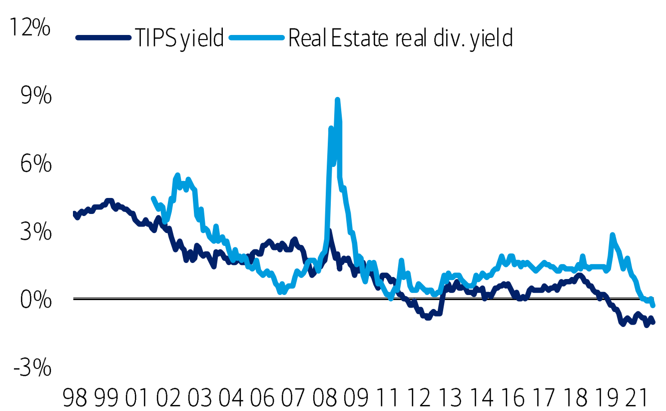
A case for Real Estate: Similar to Energy, Real Estate offers inflation-protected yields, where 90% of stocks in the sector have a higher dividend yield than the 10-yr yield. Real Estate's sales growth has also generally been correlated to CPI, benefitting from higher real inflation.

Exhibit 124: Real Estate offers attractive inflation-protected yields vs. TIPS
Real Estate real div. yield vs. TIPS real yield (2001-10/21)



Source: FactSet, BofA US Equity & Quant Strategy

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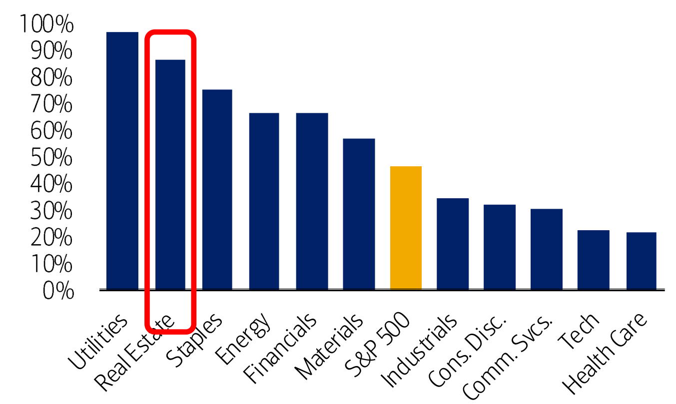
Exhibit 125: With 90% of RE stocks yielding higher than the 10-yr yield
% of stocks with a higher dividend yield than the 10-yr yield by sector (as of 11/19/21)



Source: FactSet, BofA US Equity & Quant Strategy

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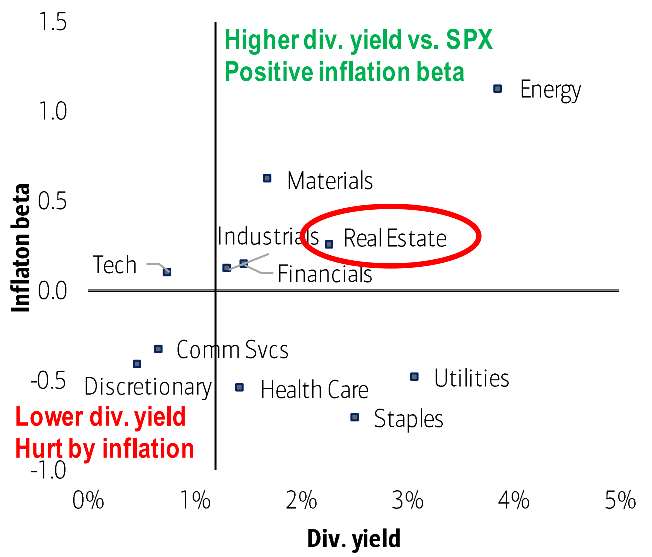
Exhibit 126: Real Estate offers attractive inflation-protected yield
Div. yield vs. inflation beta (based on relative performance vs. SPX) of S&P 500 sectors, 10/21



Source: BofA US Equity & Quant Strategy, FactSet

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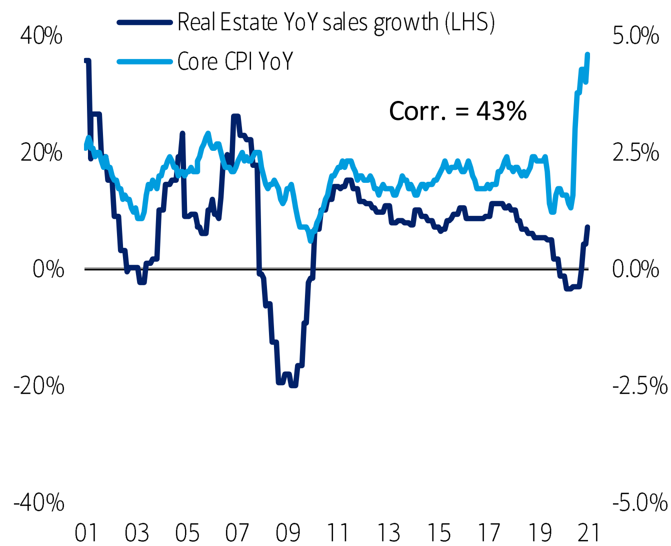
Exhibit 127: Real Estate sales are tied to core inflation
Real Estate YoY sales growth vs YoY changes in Core CPI, 10/01-10/21



Source: BofA US Equity & Quant Strategy, FactSet, Bloomberg

BofA GLOBAL RESEARCH

Quality

Cyclical and secular tailwinds

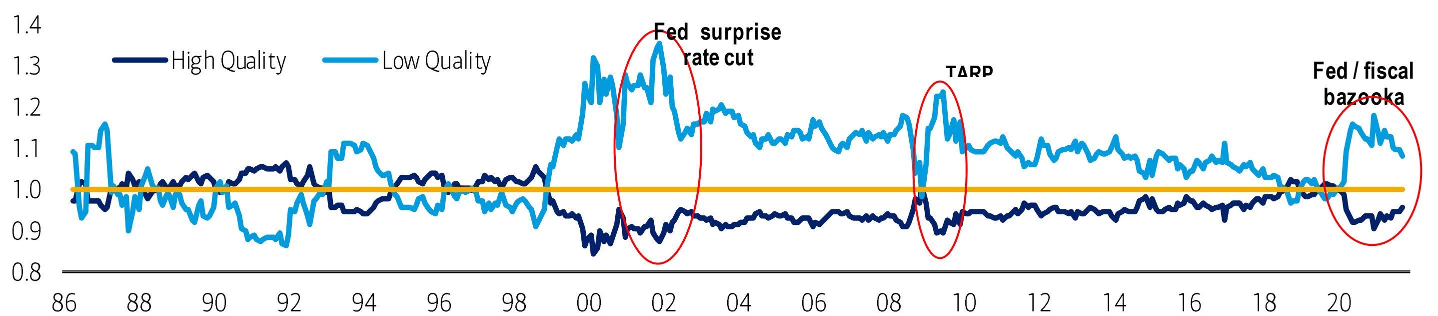
We have found predictable behavior across Quality factor baskets based on where we are in the economic cycle and where we are in the behavioral cycle. How much risk aversion or gain-seeking is driving investor preferences? How plentiful or scarce is growth? We see several reasons for investors to shift toward a higher quality portfolio today. The secular case is that of tighter liquidity going forward. The cyclical case is slowing profits growth, rising volatility. The fundamental case? Valuation – Quality is inexpensive by our work, and is likely to re-rate for the reasons we outline below.

How do we measure Quality? We use S&P Common Stock quality rankings (different from their debt ratings) which gauge the stability and growth of a company's earnings and dividends over a long time period.

Easy money helps Low Quality stocks

Fiscal and monetary stimulus have buoyed risk assets, and today, the discount for High Quality stocks relative to Low Quality stocks is at a decade low. Flaunting financial theory – where we are taught to pay a premium for safety and be compensated for risk – we are doing the opposite and have been for the better part of 20 years.

Exhibit 128: Today's entry point for quality is particularly attractive in our view, as High Quality stocks continue to trade at a discount to Low quality stocks
B+ or Better vs. B or Worse Fwd. P/E relative to BofA Universe (1986 – 10/30/21)



Source: FactSet, BofA US Equity & Quant Strategy

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Exhibit 129: Diminishing returns to risky stocks from an easy monetary policy...how can we top COVID stimulus?
Low Quality vs. High Quality performance over periods with easy monetary policy (i.e., QE)

From	To	Low Quality vs. High Quality performance	B+ or Better	B or Worse
Mar-09	Jul-09	19.20%	35.50%	54.70%
Aug-10	Feb-11	4.20%	28.70%	32.90%
Dec-11	Mar-12	3.30%	10.70%	14.00%
May-13	Dec-13	1.10%	13.60%	14.70%
Mar-20	present	35.87%	87.92%	123.79%

Source: FactSet, BofA US Equity & Quant Strategy

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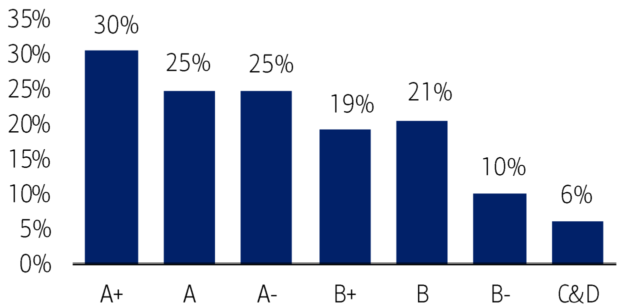
Following the Global Financial Crisis, each policy response was met with a smaller response by riskier stocks, suggesting diminishing returns.

2020's "bazooka" of fiscal and monetary stimulus drove a meaningful reflation in low quality stock premia. But Exhibit 129 suggests that the reflation from here of low quality stocks would be unlikely absent a liquidity infusion of equivalent or higher amounts than the massive COVID stimulus package.

Cyclical drivers: profits growth and volatility

When profits are scarce, investors tend to pay up for stable earnings growth. High Quality stocks have historically outperformed during periods of profits deceleration. We expect profits to decelerate considerably over the next 12 months (see Earnings Outlook) which would favor higher quality.

Exhibit 130: High Quality stocks (A+) have outperformed when the profits cycle decelerates...
Average performance by S&P 500 Quality Ranks when the profits cycle decelerated (last seven cycles, 1988-present)



Source: BofA US Equity and Quant Strategy, S&P

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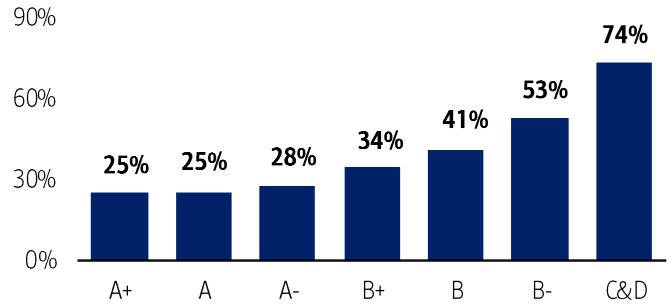
Exhibit 131: ...and have underperformed when the profits cycle accelerates
Average performance by S&P Quality Ranks when the profits cycle accelerated (last seven cycles, 1988-present)



Source: BofA US Equity and Quant Strategy, S&P

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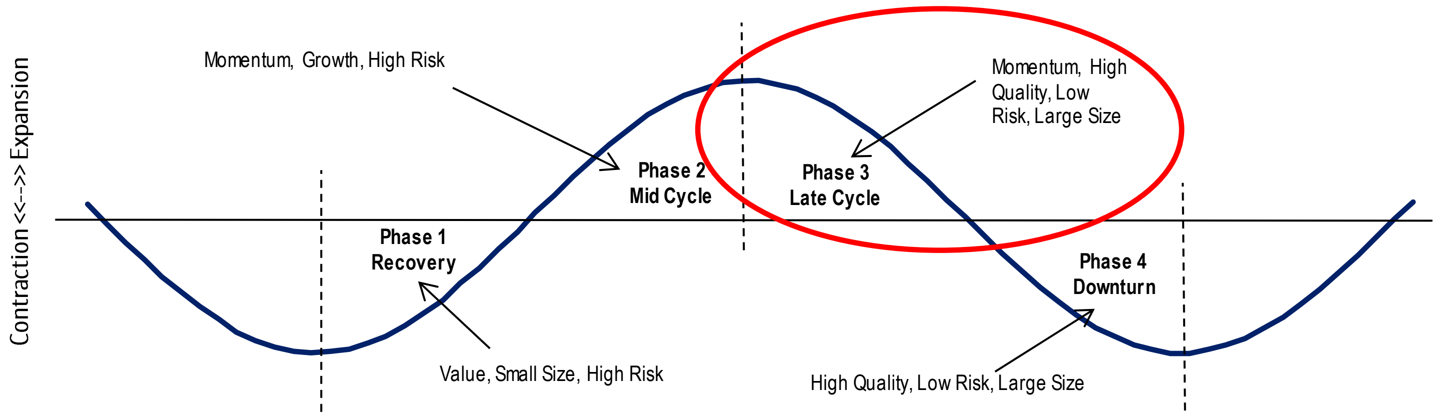
Exhibit 132: Late-cycle favors Quality
US Regimes – a heuristic



Source: BofA US Equity & US Quant Strategy

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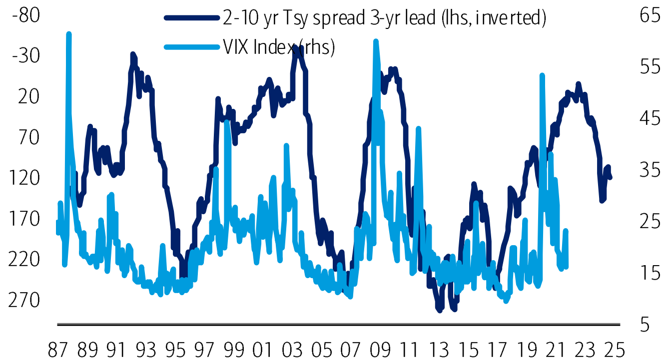
Volatility more likely to increase than decrease

We began tracking the slope of the yield curve as a predictor of volatility in the 2000s, and found a strong long-lead predictive capacity for changes in the VIX. Currently, it suggests that volatility is likely to increase precipitously over the next twelve months (Exhibit 133).

Our Derivatives team has highlighted that volatility in "early cycle" sectors like Consumer Discretionary have been very correlated with rising 2-year government bond yields (see Global Liquid Markets note). And quantitative easing and tightening have had mirroring and equivalent effects on equity volatility, where tightening tends to amplify volatility whereas easing tends to suppress it.

Exhibit 133: Volatility is likely to rise from current levels
CBOE VIX and Inverted Slope of Yield Curve (1986 to 10/31/2021)



Source: CBOE, BEA, BofA US Equity & Quant Strategy

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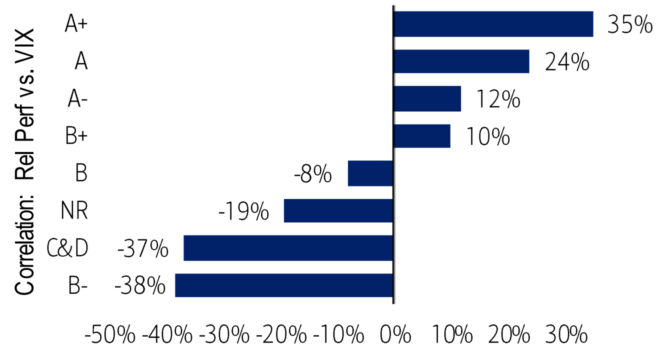
Exhibit 134: High Quality tends to outperform when volatility rises
BofA Quality Indices 12m Performance Correlation to 12m Changes in CBOE VIX (1986 to 10/31/21)



Source: BofA US Equity and Quant Strategy, Standard & Poor's

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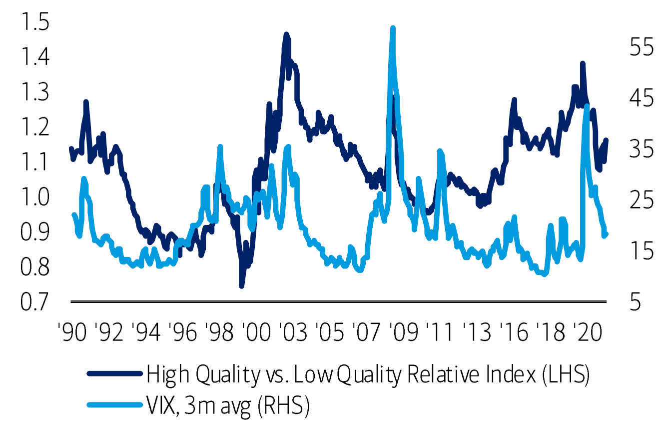
Exhibit 135: Nearly every spike in volatility has coincided with the outperformance of higher Quality stocks
B+ or Higher vs. B or Lower relative index and 3m avg VIX, 1990-10/31/21



Source: BofA US Equity & Quant Strategy, S&P, FactSet, CBOE

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Exhibit 136: The positive relationship between High Quality stock outperformance and volatility has strengthened over the last five years
High Quality vs. Low Quality and 3-month average VIX correlation, as of 10/31/21

	Correlation
Since 1990	19.1%
Last 10 years	18.4%
Last 5 years	32.5%

Source: BofA US Equity & Quant Strategy, S&P, FactSet, CBOE

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Quality = capital preservation

Based on data from 1986 to today, high quality stocks ("B+ or Better") have never had negative returns over a 10-year period – even excluding the benefit of dividends.

Exhibit 137: Quality offers stronger capital preservation: 10yr returns have never been negative
High quality stocks (B+ or Better S&P Quality rank) 10-yr rolling price returns, 1996-10/31/21

Source: BofA US Equity & Quant Strategy, S&P

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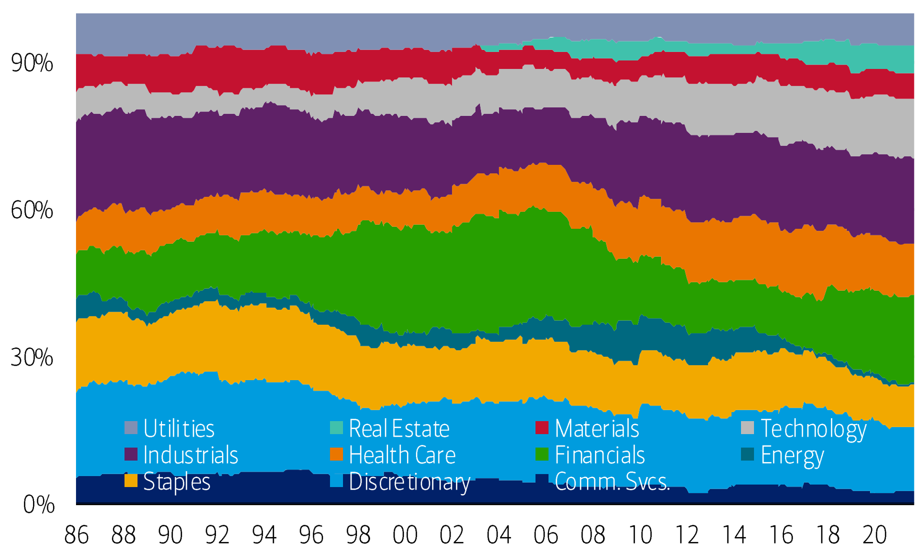
Exhibit 138: Trends in Quality composition by sector
B+ or Better sector exposure over time based on number of co.'s (as of 10/31/21)



Source: BofA US Equity and Quant Strategy, FactSet, S&P

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S&P 500 EPS outlook

Back to trend; +6.5% YoY in 2022 EPS

- We raise our 2021 EPS forecast to $206.50 (+48% YoY) from $201 and 2022 EPS to $220 (+6.5%) from $215, following a strong 9% beat in 3Q.
- We expect trend growth of 6.5% in 2022 despite our economists' above-trend real US GDP growth of +4.0%. We believe service spending will drive economic growth next year rather than goods, where S&P 500 earnings are more skewed towards goods than services (Exhibit 142).
- Companies impressively maintained margins at a record level in 3Q despite accelerating cost inflation. However, we expect more margin pressure in 4Q-1Q as costs have further accelerated, with Consumer sectors facing the biggest headwind.
- Positives: continued pricing power, positive operating leverage, potential capex boom, some signs of improvement in supply chain and labor.
- Negatives: Continued slowdown in China, inflation-driven margin/consumption hit, waning corporate sentiment.
- We expect higher interest rates to lift the cost of debt by 30bps YoY (a 2% hit to EPS), while a stronger USD is expected to be another 2% hit to EPS.
- We believe a further rally in oil prices will be a headwind to EPS this time (historically, it's been a tailwind). We expect a ~0.5% direct hit to EPS if oil spikes to $100/bbl next year (house view), assuming a 2% consumption hit (Exhibit 87).
- We expect dividends to grow twice as fast as earnings (+13% YoY in dividends vs. +6.5% in EPS), after a 39ppt lag in dividend growth vs. EPS over the last 12 months.

Exhibit 139: We expect EPS growth to slow to +6.5% in 2022 from +48% in 2021– download our Excel model

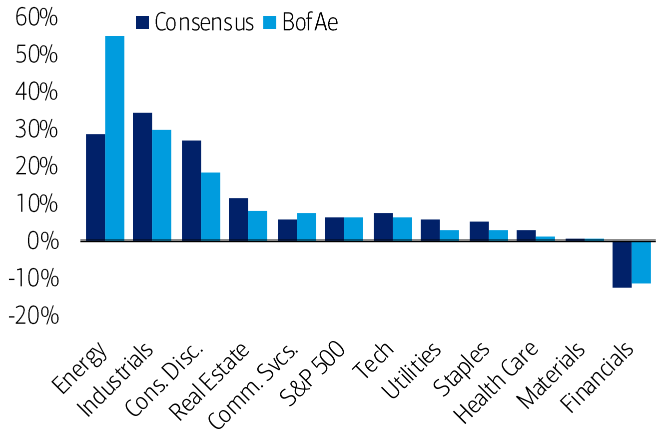
BofA S&P 500 EPS outlook

All based on current constituents unless specified	2019	2020	**Bottom-up Consensus** 2021	*y/y*	2022	*y/y*	**BofA Analyst estimates** *2021*	*y/y*	*2022*	*y/y*	**BofA Strategy** *2021*	*y/y*	*2022*	*y/y*
S&P 500 Pro-forma EPS (Historical Index)	$162.93	$139.72												
S&P 500 Pro-forma EPS (Current Constituents)	$159.61	$143.88	$205.68	47%	$221.49	8%	$208.67	49%	$221.18	6%	$206.50	48%	$220.00	7%
Sector ($ billions)														
Consumer Discretionary	102.9	78.1	124.4	59%	157.7	27%	133.3	71%	161.2	21%	124.2	59%	147.1	18%
Consumer Staples	89.6	93.2	101.8	9%	106.9	5%	101.8	9%	107.1	5%	101.5	9%	104.1	3%
Energy	50.6	(5.7)	73.3	1375%	94.4	29%	77.4	1445%	116.7	51%	77.5	1447%	116.7	51%
Financials	247.7	197.1	324.4	65%	283.1	-13%	322.0	63%	276.2	-14%	328.2	66%	291.5	-11%
Health Care	207.4	229.9	289.0	26%	297.1	3%	290.0	26%	291.6	1%	289.4	26%	291.4	1%
Industrials	125.5	66.2	112.5	70%	150.8	34%	112.6	70%	148.1	32%	111.8	69%	147.7	32%
Information Technology	268.0	299.1	380.1	27%	408.7	8%	377.7	26%	401.9	6%	380.4	27%	408.5	7%
Materials	34.1	31.9	58.7	84%	59.2	1%	58.6	84%	59.8	2%	58.6	84%	59.1	1%
Real Estate	36.3	35.7	41.6	17%	45.0	8%	36.7	3%	39.0	6%	41.9	18%	45.2	8%
Communication Services	133.3	137.4	188.4	37%	199.6	6%	209.3	52%	219.5	5%	185.5	35%	199.7	8%
Utilities	43.1	44.5	46.4	4%	49.1	6%	46.3	4%	50.5	9%	47.1	6%	48.4	3%
S&P 500	1,338.3	1,207.2	1,740.4	44%	1,851.5	6%	1,765.7	46%	1,871.6	6%	1,746.0	45%	1,859.5	7%
S&P 500 ex. Financials	1,090.7	1,010.1	1,416.1	40%	1,568.4	11%	1,443.7	43%	1,595.4	11%	1,417.8	40%	1,568.0	11%
S&P 500 ex. Energy and Financials	1,040.1	1,015.9	1,342.8	32%	1,474.0	10%	1,366.3	35%	1,478.7	8%	1,340.4	32%	1,451.3	8%
S&P 500 ex. Energy	1,287.8	1,213.0	1,667.1	37%	1,757.1	5%	1,688.4	39%	1,754.9	4%	1,668.5	38%	1,742.8	4%
Energy Sector ($bn)	50.6	(5.7)	73.3	1375%	94.4	29%	77.4	1445%	116.7	51%	77.5	1447%	116.7	51%
Avg. Oil Price (wtd. blend of Brent & WTI)	*$62/bbl*	*$42/bbl*					*~$70/bbl*	68%	*~$84/bbl*	19%	*~$70/bbl*	68%	*~$84/bbl*	19%
S&P 500 Dividends (Historical Constituents, $/share)	*$58.22*	*$58.22*									$61.00	5%	$69.00	13%
Key Macro Economic Forecasts														
Global GDP growth (real)	2.9%	-3.2%									5.8%		4.2%	
US GDP growth (real)	2.2%	-3.5%									5.6%		4.0%	
FX Rate: US$/Euro (average)	1.12	1.14									1.18		1.12	

Source: BofA US Equity & Quant Strategy, FactSet/First Call; Note: 2021 EPS growth is relative to actual S&P 500 2020 EPS of $139.72

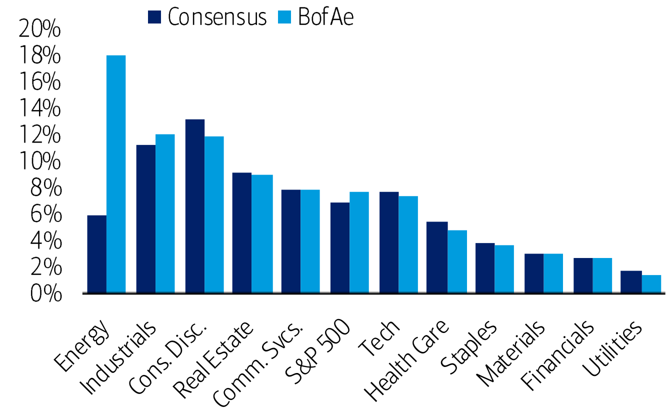
BofA GLOBAL RESEARCH

Exhibit 140: We are most bullish on Energy vs. consensus in 2022
BofA vs. consensus net income YoY growth in 2022



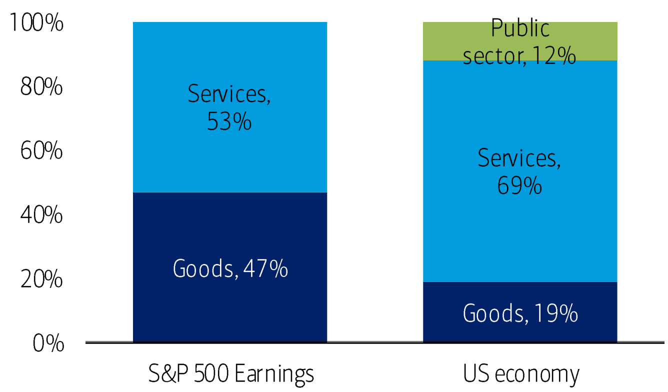
Source: BofA US Equity & Quant Strategy, FactSet
BofA GLOBAL RESEARCH

Exhibit 141: We expect higher Energy and Industrials sales (higher oil & capex), but lower Consumer spending
BofA vs. consensus sales YoY growth in 2022



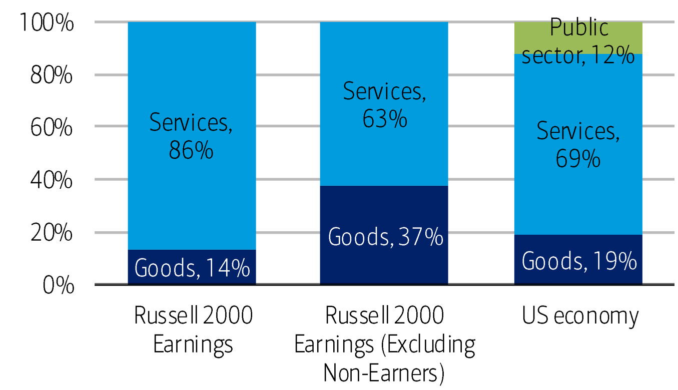
Source: BofA US Equity & Quant Strategy, FactSet
BofA GLOBAL RESEARCH

Exhibit 142: S&P earnings may not benefit as much from service-led economic growth in 2022...
Our estimate for Goods vs. Services exposure of S&P 500 based on industry breakout of 2019 earnings vs. % goods/services for US economy (based on gross value added by industry, 2019)



Source: Haver Analytics, FactSet, BofA US Equity & US Quant Strategy
BofA GLOBAL RESEARCH

Exhibit 143: ...But small caps are more geared toward services (like US GDP)
Our estimate for Goods vs. Services exposure of Russell 2000 based on industry breakout of 2019 earnings vs. % goods/services for US economy (based on gross value added by industry, 2019)



Source: Haver Analytics, FactSet, BofA US Equity & US Quant Strategy
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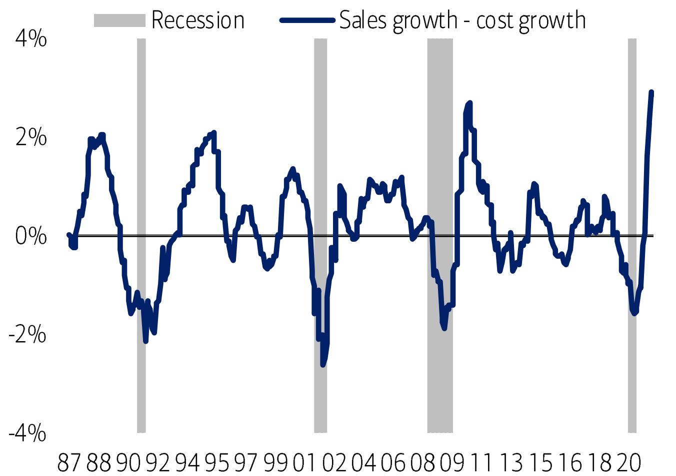
Historical read on operating leverage

Operating leverage has driven margins to a record high post-COVID, where the spread between sales growth and cost growth jumped to the highest level in history (Exhibit 144). However, amid rising inflationary pressure and tough comps, we expect lower operating leverage in 2022. Historically, the sales-cost spread fell by 1.6ppt the year after it peaked. Assuming the spread peaks around the current level (+2.9%), history suggests it may shrink to +1.3% (still healthy levels) in 2022.

Exhibit 144: Sales outpaced cost by the biggest margin in history
Spread between sales and cost growth (1987-10/21)



Source: FactSet, Haver Analytics, US Equity & Quant Strategy

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Exhibit 145: Spread between sales and cost growth narrowed by 1.6ppt a year after it peaked
Spread between sales and cost growth coming out of recessions

Peak date	Peak	+1yr	chg.
Jan-89	2.0%	0.2%	(1.9%)
Aug-95	2.1%	(0.2%)	(2.3%)
Mar-03	1.0%	0.3%	(0.7%)
Nov-10	2.7%	1.0%	(1.7%)
Avg.	**2.0%**	**0.3%**	**(1.6%)**
Current*	**2.9%**		

Source: FactSet, Haver Analytics, US Equity & Quant Strategy
*We assume the current level is close to the peak, unless 1) supply chain issues alleviate immediately and 2) labor and commodity costs plateau right now, where #2 is not our house view

BofA GLOBAL RESEARCH

4.5-5.0% in wage inflation is the break point for margins

Wage inflation is a big headwind heading into next year, where the BEA estimates wages represent nearly 40% of total costs. Assuming consensus sales growth of 7.5% YoY, a 1.3% spread between sales and cost growth, a 4.2% rise in the number of employees (house view for non-farm payroll growth), and a 30bps rise in cost of debt, wage inflation of 4.5-5.0% will be a break point for flat margins YoY. A monthly increase of 0.4% until the end of 2022 (similar pace as in October) would result in a 5% rise in annual inflation YoY. Wage inflation above/below the level will lead to margin contraction/expansion YoY, in our view.

Exhibit 146: 4.5-5.0% in wage inflation is a break point for companies to maintain margins
S&P 500 net margin scenario for 1Q-3Q22

	2021 YTD	1Q-3Q22
Sales	8,368,969	8,996,642
Sales growth		*7.5%*
Labor costs	2,619,140	2,860,143
Employee # growth		*4.2%*
Wage growth		*4.8%*
OPEX ex. Labor and D&A	4,018,401	4,267,542
Cost growth %		*6.2%*
D&A	468,219	497,248
Cost growth %		*6.2%*
Other	-124,131	-124,131
EBIT	**1,387,341**	**1,495,841**
Op. margin %	*16.6%*	*16.6%*
Net int. exp	135,653	149,565
Int. rate %	*3.0%*	*3.3%*
EBT	**1,251,688**	**1,346,275**
Pre-tax margin %	*15.0%*	*15.0%*
Tax exp.	183,501	197,368
Tax rate	*14.7%*	*14.7%*
Net Income	**1,068,186**	**1,148,907**
Net margin %	*12.76%*	*12.77%*

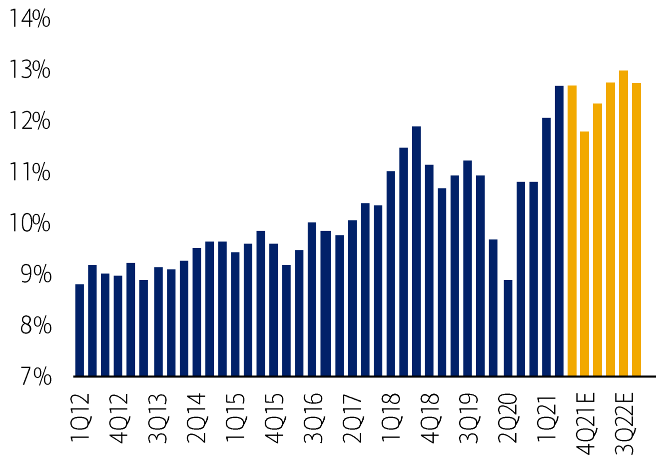
Source: FactSet, US Equity & Quant Strategy
Note: based on +7.5% consensus sales growth, +2.9% in non-farm payroll (house view), +7.1% in cost growth (more below), +30bps rise in interest rate based on the historical relationship between LIBOR and cost of debt, flat tax rate y/y

BofA GLOBAL RESEARCH

What can go right?

Companies still have pricing power

Exhibit 147: 3Q margins were unscathed, despite rising cost inflation
S&P 500 quarterly net margins ex-Financials (2012-4Q22E)



Source: FactSet, BofA US Equity & Quant Strategy

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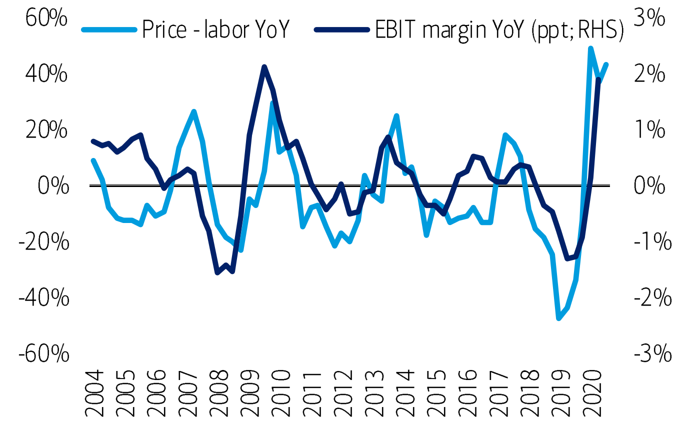
Exhibit 148: The spread between price vs. labor mentions also ticked up, pointing to continued margin strength
S&P 500 companies' mentions of price less labor YoY vs. EBIT margin YoY (2004-present; 53% correlation)



Source: BofA Global Research, FactSet
Note: words included in each category: **price**: "price", "pricing"; labor: "labor", "wage", "worker", "personnel "

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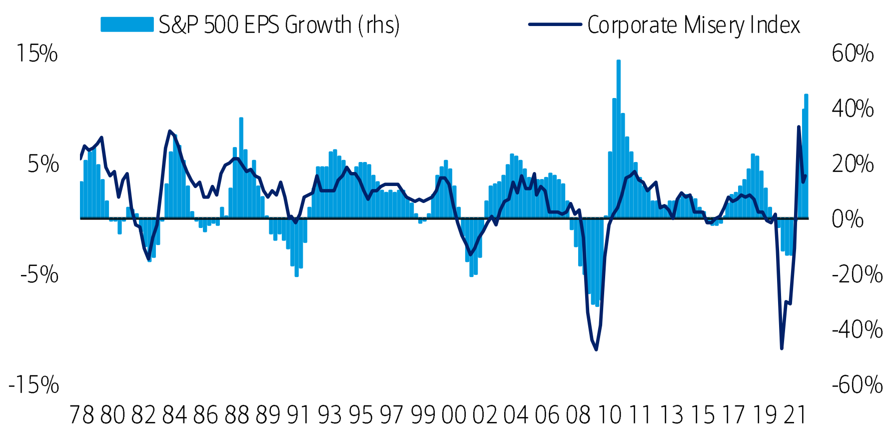
Exhibit 149: Our Corporate Misery Indicator remains positive, albeit off its highs
BofA Corp. Misery Indicator (lower=more miserable) 4Q78-10/21



Disclaimer: The indicator identified as BofA Corporate Misery Indicator above is intended to be an indicative metric only and may not be used for reference purposes or as a measure of performance for any financial instrument or contract, or otherwise relied upon by third parties for any other purpose, without the prior written consent of BofA Global Research. This indicator was not created to act as a benchmark. Note: see Appendix for full details/methodology.
Source: BofA US Equity & Quant Strategy, Conference Board, BLS

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Exhibit 150: Consensus expects margins improving to new highs in mid-2022

S&P 500 sector quarterly net margins

Sector	1Q19	2Q19	3Q19	4Q19	1Q20	2Q20	3Q20	4Q20	1Q21	2Q21	3Q21E	4Q21E	1Q22E	2Q22E	3Q22E	4Q22E
Consumer Discretionary	7.0%	7.4%	7.7%	6.5%	3.0%	2.5%	7.5%	6.1%	7.9%	8.0%	**7.2%**	5.6%	7.3%	8.6%	8.9%	7.7%
Consumer Staples	6.4%	6.9%	7.1%	6.8%	6.3%	6.6%	7.3%	6.8%	7.0%	7.2%	**7.1%**	6.6%	6.9%	7.4%	7.5%	7.0%
Energy	4.7%	6.1%	5.6%	4.7%	3.6%	-8.7%	-0.7%	-0.4%	4.4%	6.5%	**9.0%**	9.2%	9.0%	9.0%	9.0%	9.2%
Financials	17.5%	17.7%	17.0%	15.5%	10.9%	8.3%	15.1%	17.4%	23.1%	21.1%	**19.7%**	18.8%	19.0%	18.4%	18.6%	19.0%
Health Care	10.6%	10.8%	10.2%	9.7%	9.9%	10.8%	10.4%	9.6%	11.5%	11.5%	**11.6%**	10.3%	11.3%	11.1%	11.1%	10.4%
Industrials	9.3%	9.2%	10.6%	9.0%	6.5%	2.5%	6.2%	6.8%	7.7%	9.4%	**9.4%**	8.7%	9.2%	10.9%	11.1%	10.8%
Information Technology	21.7%	21.4%	21.9%	23.1%	21.3%	21.1%	22.5%	24.4%	24.6%	25.7%	**25.8%**	25.4%	24.7%	24.9%	25.6%	26.4%
Materials	7.9%	8.5%	8.8%	8.4%	8.2%	8.6%	9.5%	10.6%	11.8%	14.9%	**13.5%**	13.6%	13.7%	14.3%	13.1%	12.4%
Real Estate	32.2%	31.9%	32.3%	31.8%	31.0%	30.9%	31.5%	32.5%	36.1%	37.5%	**35.9%**	33.7%	36.0%	36.5%	36.7%	35.9%
Communication Services	16.3%	16.5%	15.2%	18.0%	15.4%	13.4%	15.1%	16.6%	18.7%	18.8%	**17.8%**	16.7%	17.4%	17.8%	17.8%	17.6%
Utilities	13.2%	12.5%	16.8%	11.2%	15.1%	14.6%	22.5%	11.4%	13.0%	15.0%	**18.1%**	11.3%	14.0%	13.3%	17.1%	12.4%
S&P 500 ex. Financials	10.7%	10.9%	11.2%	10.9%	9.7%	8.9%	10.8%	10.8%	12.1%	12.7%	12.7%	11.8%	12.3%	12.8%	13.0%	12.7%
S&P 500	11.6%	11.8%	11.9%	11.5%	9.8%	8.8%	11.4%	11.6%	13.5%	13.7%	13.5%	12.6%	13.1%	13.4%	13.6%	13.4%
ex. Fins & Energy	11.3%	11.5%	11.8%	11.6%	10.2%	9.8%	11.6%	11.5%	12.7%	13.2%	13.1%	12.0%	12.7%	13.1%	13.4%	13.0%
ex. Energy	12.2%	12.4%	12.5%	12.1%	10.3%	9.6%	12.1%	12.3%	14.1%	14.3%	13.9%	12.8%	13.4%	13.8%	14.0%	13.7%

Source: FactSet, BofA US Equity & Quant Strategy

BofA GLOBAL RESEARCH

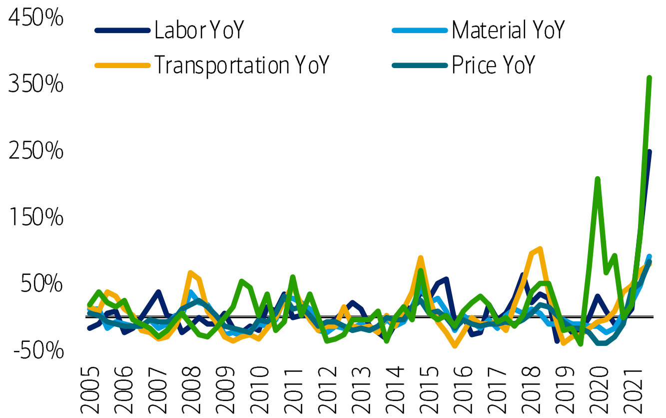
"We are aggressively combating raw material inflation with significant pricing actions across each of our businesses. We implemented multiple price increases in the quarter. We will continue to do so as necessary." John Morikis, CEO of The Sherwin-Williams (SHW)

"We do have that commodity inflation, but we still remain convicted about our ability to be able to offset either that through productivity or through some of the pricing actions that we've seen." Paul A. Jacobson, CFO of General Motors (GM)

"We're on track to implement price increases on 50% of our portfolio, most of which will take effect in November. We're also planning additional pricing actions through the end of fiscal 2022, resulting in increases to about 70% of our portfolio." Linda Rendle, CEO of Clorox (CLX)

Some signs of stabilization in supply chain

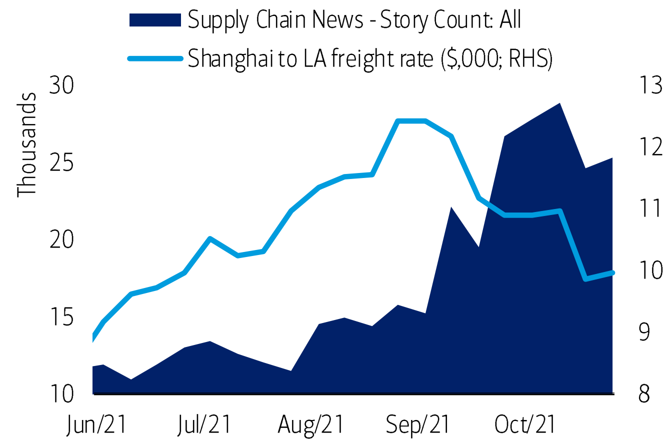
Exhibit 151: Supply chain was the biggest topic in 3Q earnings...
S&P 500 companies' mentions of inflation-related words on earnings calls (2Q04 = 100; 2004-present)



Source: BofA Global Research
Note: words included in each category: **price**: "price", "pricing"; **materials**: "material", "commodit"; **transportation**: "transportation", "shipping", "freight", "logistic", "fuel"; labor: "labor", "wage", "worker", "personnel"; **supply chain**: "supply chain"

BofA GLOBAL RESEARCH

Exhibit 152: ...but despite record ships at the port, freight rates have moderated recently
"Supply chain" story count on Bloomberg (,000) & Shanghai to LA container freight benchmark rate per 40ft box ($,000)



Source: Bloomberg, BofA US Equity & Quant Strategy

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De Minimis tax impact

We had previously estimated a 5% EPS hit from higher corporate taxes (statutory tax rate going to 25%, higher GILTI tax, and 15% minimum tax). But with the Build Back Better plan watered down to $1.7T, it includes just the 15% minimum tax rate, plus a 1% tax on corporate buybacks, which together translate to about 1% hit to EPS. Concerns around higher taxes have largely subsided now.

Exhibit 153: Hit to EPS from higher taxes is now just 1% (-0.6% cash impact)
S&P 500 estimated hit to 2022 EPS from higher taxes

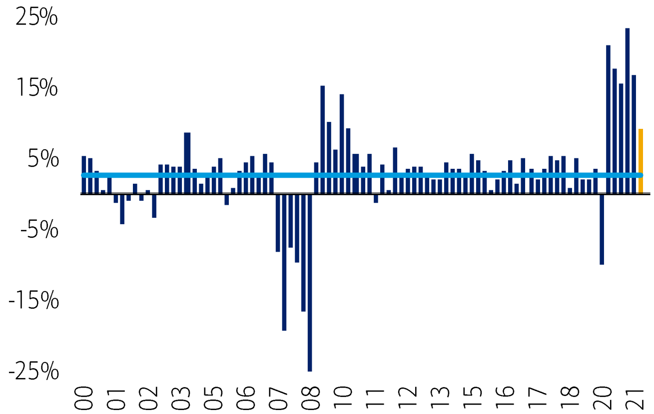
		15% minimum tax		Buyback tax
Sector	**Total EPS impact**	**Cash impact**	**EPS impact**	**Impact**
Information Technology	-2.2%	-0.7%	-1.7%	-0.5%
Consumer Discretionary	-1.7%	-0.2%	-1.5%	-0.3%
Industrials	-0.9%	-0.4%	-0.6%	-0.3%
Communication Services	-0.9%	0.0%	-0.5%	-0.4%
Materials	-0.8%	-0.5%	-0.6%	-0.2%
Health Care	-0.8%	-0.1%	-0.6%	-0.2%
Consumer Staples	-0.3%	0.0%	-0.1%	-0.3%
Financials	-0.3%	-0.1%	-0.1%	-0.2%
Real Estate	-0.2%	0.0%	0.0%	-0.2%
Energy	0.0%	0.0%	0.0%	0.0%
S&P 500	-1.0%	-0.3%	-0.7%	-0.3%

Source: BofA US Equity & Quant Strategy, FactSet, Bloomberg
Note: cash impact is adjusted for net operating loss

BofA GLOBAL RESEARCH

But earnings momentum has slowed

Exhibit 154: Strong 3Q beat, but momentum has slowed...
Quarterly aggregate EPS beats % (2000-3Q21E)



Source: FactSet, BofA US Equity & Quant Strategy

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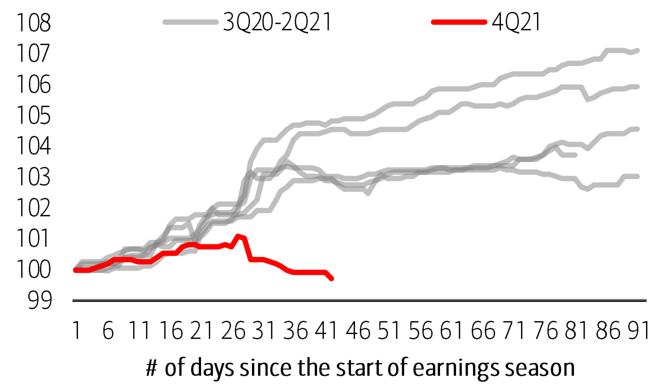
Exhibit 155: ...and 4Q21 estimates have fallen despite the 3Q beat
Subsequent quarter's EPS revision in post-COVID quarters (100=start of earnings season)



Source: FactSet, BofA US Equity & Quant Strategy

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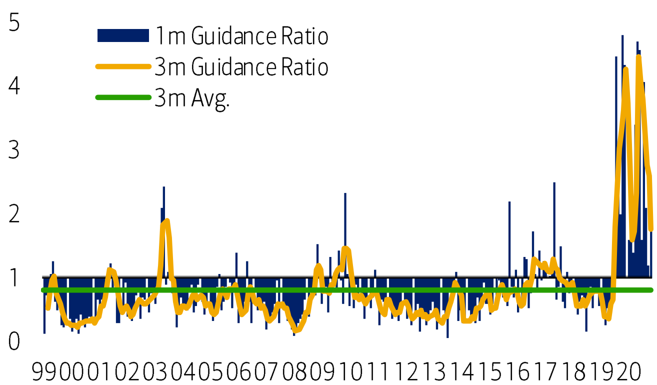
Exhibit 156: Our 3-mo. guidance ratio sharply fell from record highs
S&P 500 Management Guidance Ratio (# Above vs. Below Consensus) – 10/21



Source: BofA US Equity and Quantitative Strategy

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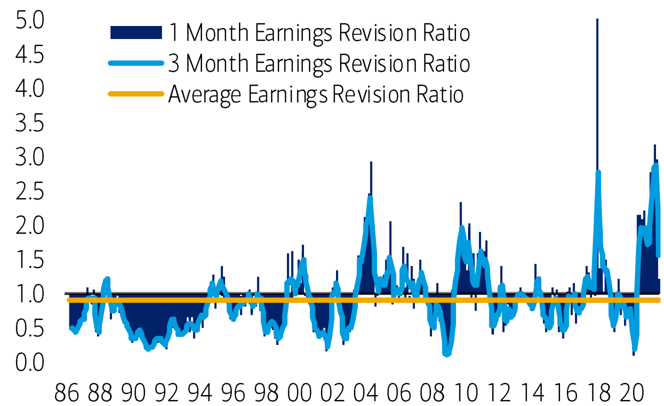
Exhibit 157: Similarly, our earnings revision ratio fell to the lowest level since July 2020
S&P 500 earnings estimate revision ratio (1986-10/21)



Source: BofA US Equity and Quantitative Strategy

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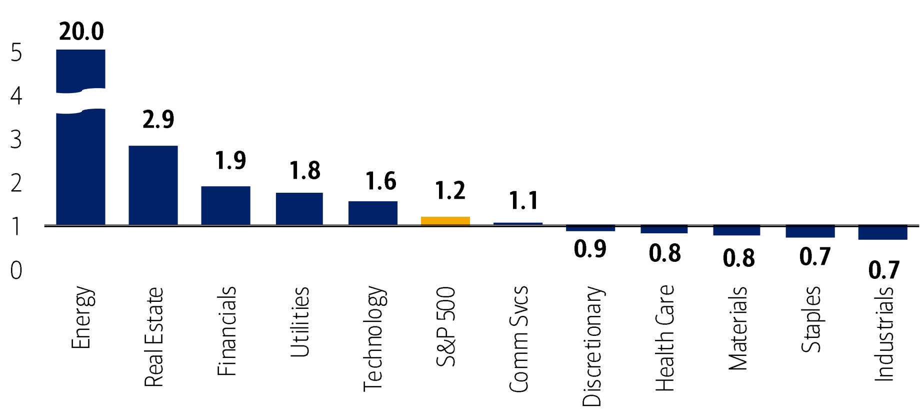
Exhibit 158: By sector, Energy had the strongest revision, while Industrials, Materials, Health Care and Consumer sectors saw more downward than upward revisions
S&P 500 1-mo. earnings estimate revision ratios by sector (as of Oct 21)



Source: BofA US Equity and Quantitative Strategy

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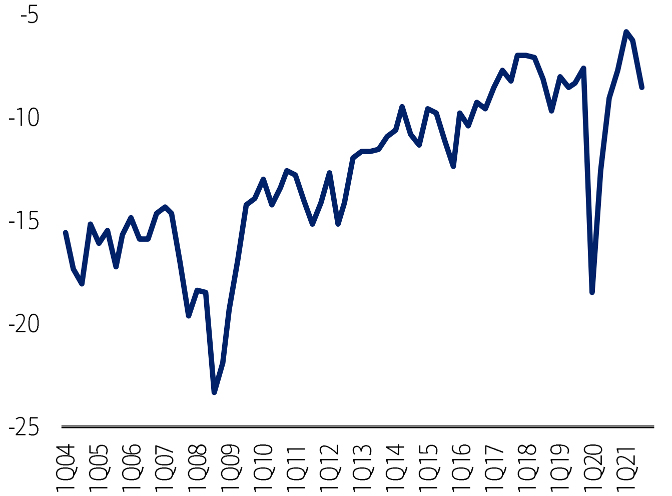
Corporate sentiment is weakening

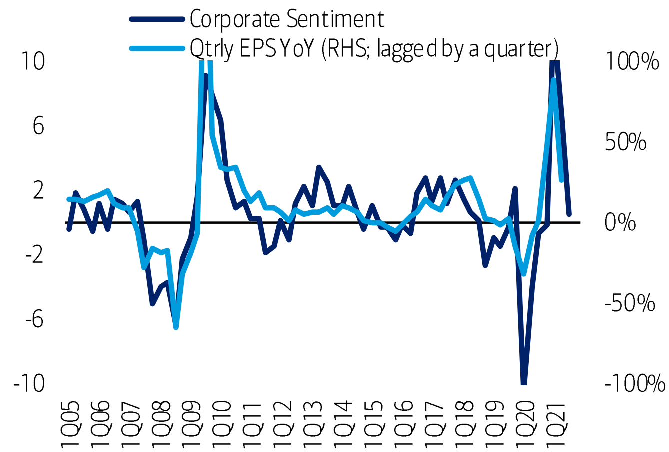
Exhibit 159: Corporate sentiment fell to the lowest level since 3Q20
Avg. negative sentiment score for S&P 500 companies



Source: BofA Global Research

BofA GLOBAL RESEARCH

Exhibit 160: Weaker corporate sentiment points to slowing earnings growth ahead
S&P 500 avg. negative sentiment score YoY vs. quarterly EPS YoY with a quarter lag (r-sq=53%; 1Q05-3Q21)

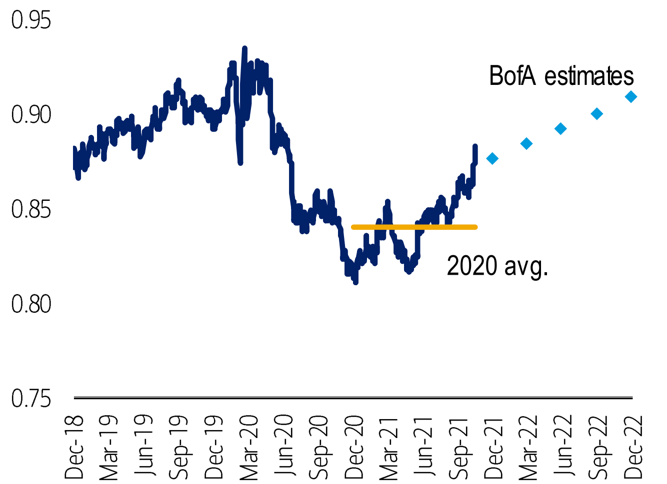


Source: BofA Global Research, FactSet

BofA GLOBAL RESEARCH

A combined 4% hit to EPS from FX and higher rates

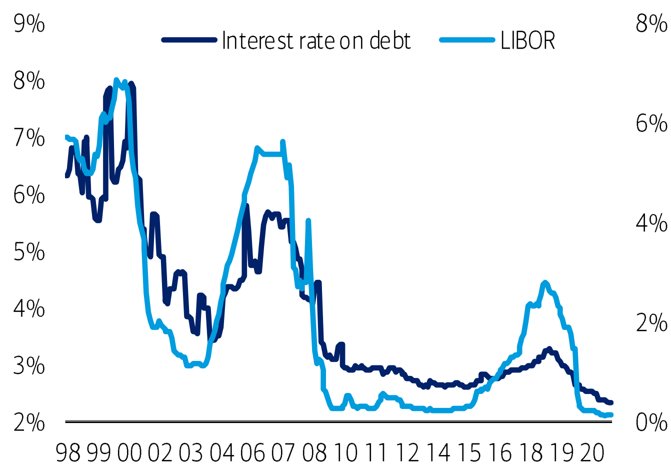
Exhibit 161: A stronger USD is expected to shave 2% of 2022 earnings
USDEUR (2018-2022 BofA forecasts)



Source: Bloomberg, BofA Global Research

BofA GLOBAL RESEARCH

Exhibit 162: Cost of debt is also expected to rise by 30bps, a 2% hit to EPS
S&P 500 interest rate on debt vs. 3-mo. LIBOR (90% correlation; 1998-10/21)



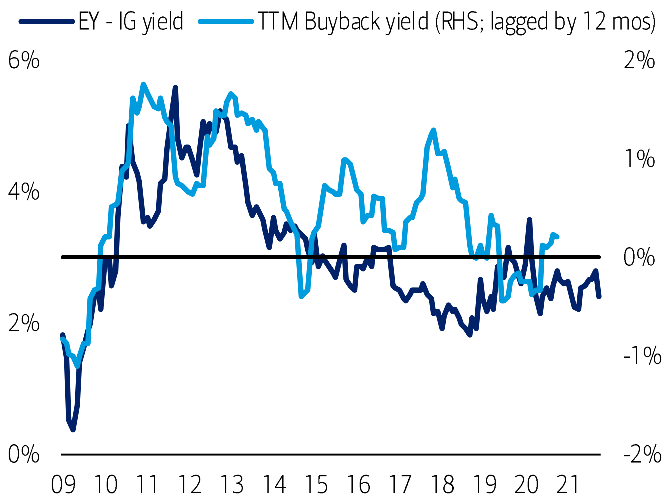
Source: FactSet, BofA US Equity & Quant Strategy

BofA GLOBAL RESEARCH

Dividends over buybacks

Exhibit 163: Elevated equity valuations suggest tepid buybacks going forward

S&P 500 earnings yield (EY) less IG yield vs. buyback yield with a 12-mo lag (2009-present)



Source: BofA US Equity & US Quant Strategy, FactSet, Bloomberg

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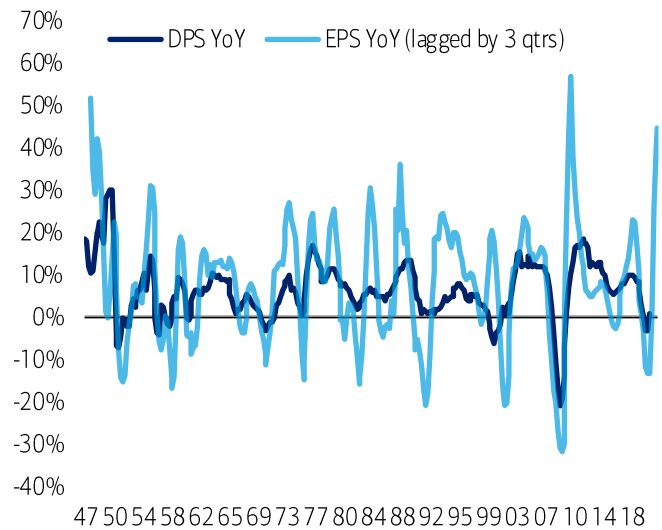
Exhibit 164: Dividends lagged earnings by nearly 40ppt. We expect strong dividend growth in 2022

S&P 500 TTM dividend per share vs. EPS YoY with a 3-qtr lag (1945-3Q21)



Source: BofA US Equity & US Quant Strategy, FactSet, Haver Analytics

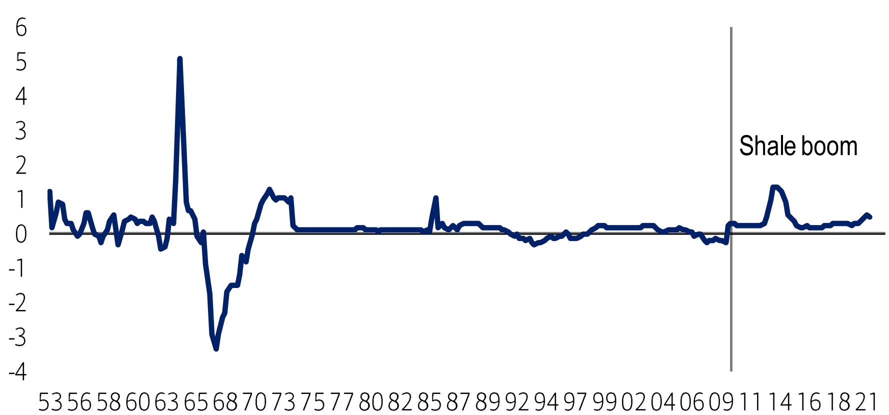
BofA GLOBAL RESEARCH

Why oil is a headwind to earnings this time

History suggests higher oil = higher S&P EPS

Exhibit 165: Higher oil prices translated into higher S&P EPS, especially after the shale revolution

WTI 5-yr rolling beta to S&P 500 earnings based on a multivariate regression using WTI and GDP vs. S&P EPS (1953-2Q21)



Source: Haver, FactSet, BofA US Equity & Quant Strategy

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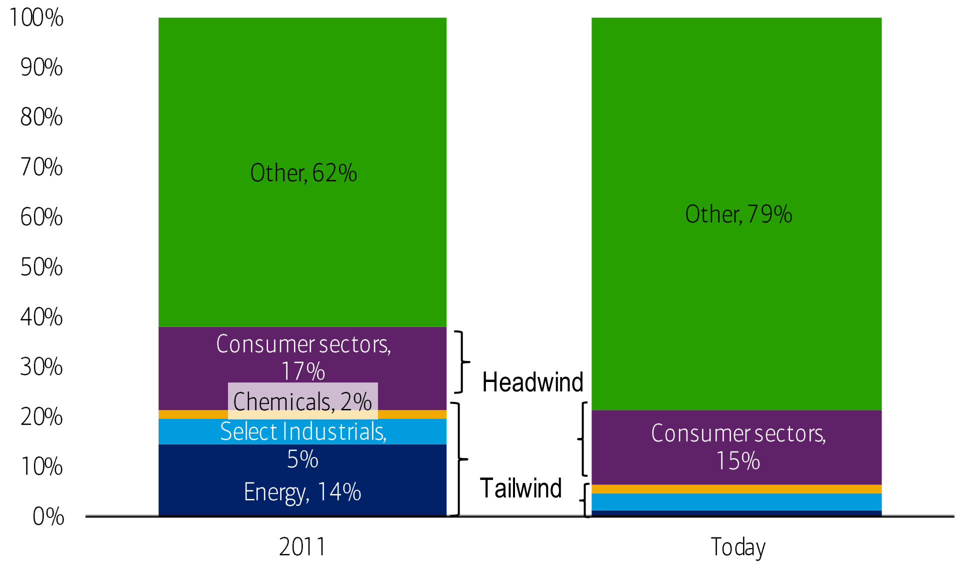
…but it's different this time

#1 Oil beneficiaries have shrunk from 20% to 6% of EPS

Exhibit 166: Sectors that benefit from higher oil prices are much smaller now
% of S&P 500 earnings by sector



Source: FactSet, BofA US Equity & Quant Strategy
Note: Industrials with oil exposure includes Machinery, Industrial Conglomerates, Electrical Equipment, Construction & Engineering, and Trading Companies & Distributors

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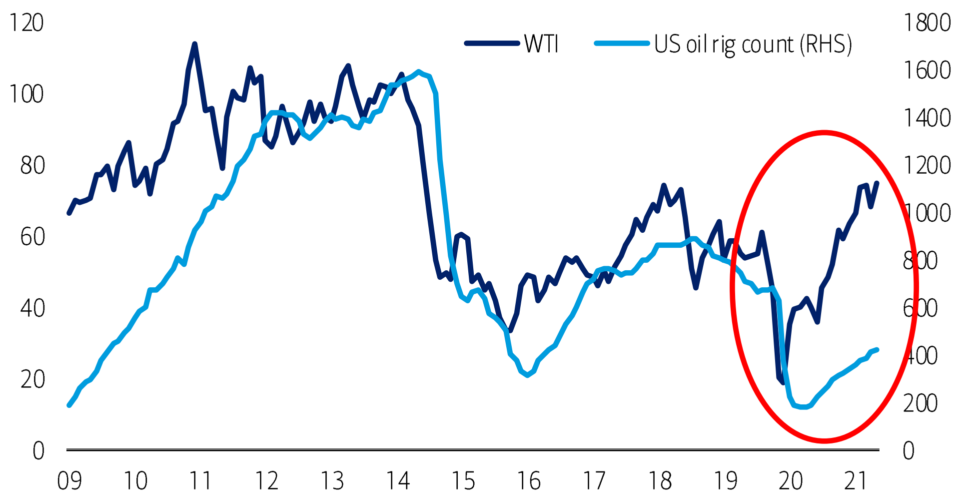
#2 US oil companies are much more capital disciplined

Exhibit 167: US oil companies are much more capital disciplined now – lower capex, lower volume = lower earnings multiplier
WTI oil vs. US oil rig count (since 2009)



Source: Bloomberg, BofA US Equity & Quant Strategy

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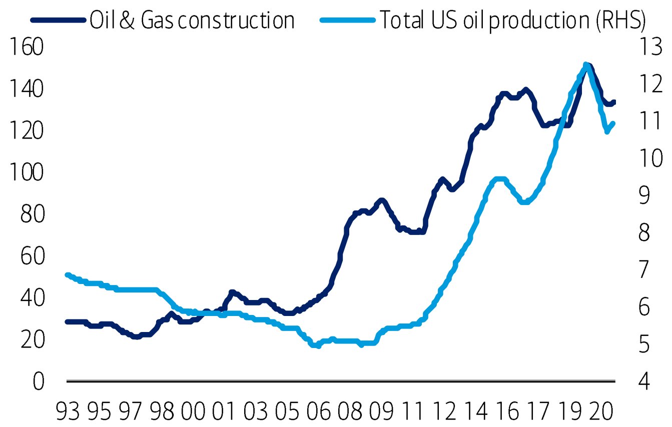
#3 US shale is much more mature now

Exhibit 168: Shale revolution has driven a robust investment cycle in the Oil & Gas industry…
Power (incl. Oil and Gas) + Chemical construction spending ($B) vs. total US oil production (mmbpd); 1993-present



Source: Bloomberg, BofA US Equity & Quant Strategy

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Exhibit 169: …but the industry now needs far less infrastructure investment per barrel of production
Oil & Mining capex/ total US oil production ($,000/barrel)

Source: Haver Analytics, BofA US Equity & Quant Strategy

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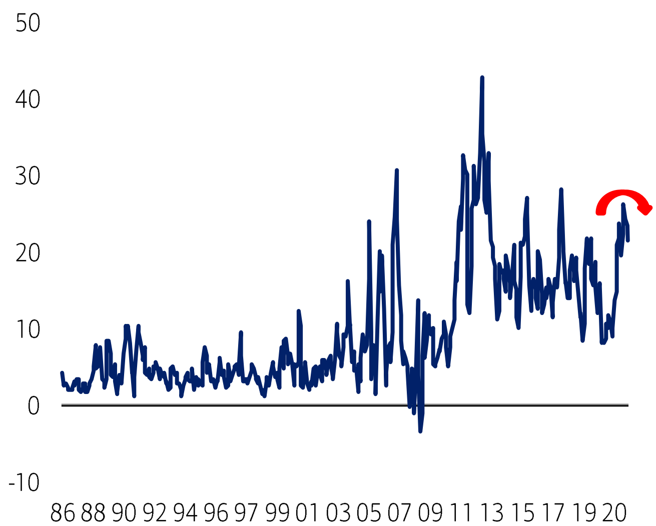
#4 Supply-driven oil spike = headwind for S&P 500

Exhibit 170: A narrowing crack spread suggests the recent oil spike was more driven by supply than demand
The spread between gasoline and WTI (1986-present)



Source: EIA, BofA US Equity & Quant Strategy

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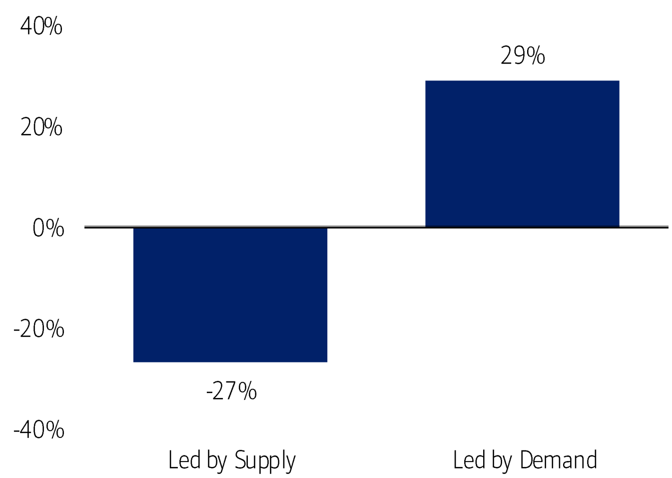
Exhibit 171: Supply-driven oil spike = headwind for S&P 500
Correlation between S&P 500 QoQ return and WTI QoQ price change when higher oil prices are led by supply (narrowing crack spread) vs. demand (widening crack spread), 3/1986-9/2021



Source: EIA, BofA US Equity & Quant Strategy

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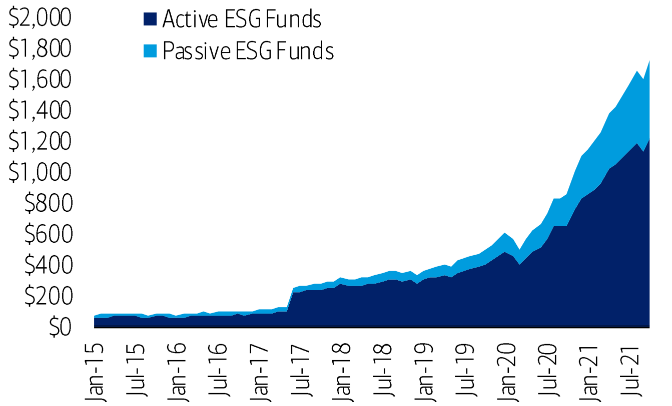
#5 And then there is ESG

Exhibit 172: AUM in global ESG equity funds has doubled y/y
Assets under management in global ESG equity funds, US$ billions (1/2015-10/2021)



Source: EPFR Informa Financial Intelligence, BofA US Equity & Quant Strategy

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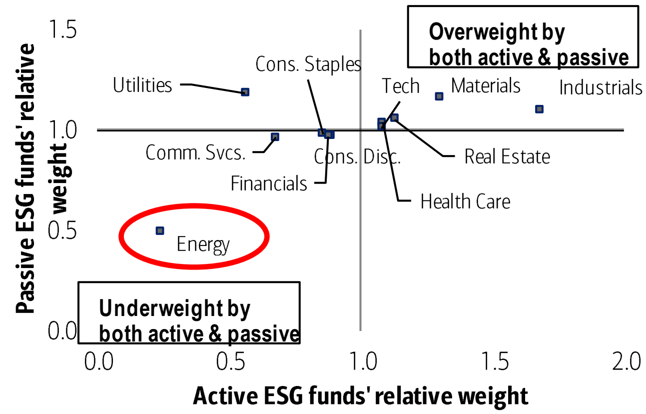
Exhibit 173: ESG funds (both active and passive) are underweight the Energy sector in the US
Active vs. Passive US ESG funds' sector positioning relative to the S&P500 weight (8/2021)



Source: BofA US Equity & Quant Strategy

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Sector outlook

Exhibit 174: BofA US Equity Strategy sector views
Bull & bear case by sector

Sector	Weight in S&P 500	BofA View	Bull case	Bear case
Energy	2.6%	O/W	Inflation-protected yield $120/bbl in Brent by mid-2022 (house view) Biggest earnings growth in 2022 / highest ERR; ranks #1 in our tactical quant framework ESG purge behind us; represents ESG "improver", EPA policies matter less than supply/demand	COVID Too small to matter Highest direct emissions profile + secular headwinds from renewables Lowest Quality sector
Health Care	12.7%	O/W	Catchup trade: inexpensive, Near-record low positioning by long-only funds Strong fundamentals / Quality / record discount vs. S&P 500 on Fwd PE Defensive hedge / Social factors of ESG could drive increased corporate HC spending	Hurt by rising inflation & rates Supply high (IPOs) vs. demand falling (buybacks) - dynamics less attractive Headline risk on drug pricing pressure although regulatory risk has subsidized
Financials	10.8%	O/W	Quality Value / Mispriced risk: Lower EPS variability than S&P 500 despite high price beta Beneficiary of rising interest rates Positioning risk rising but still underweight by long-only funds	Flattening curve COVID variant Disinflationary pressures from disruptors (passive, fin-tech)
Real Estate	2.6%	M/W	Inflation-protected yield Improving fundamentals / record low earnings volatility / domestic Shift from financial asset inflation to real asset inflation	Hurt by rising rates Fund positioning elevated vs history but still very underweight
Industrials	8.0%	M/W	Beneficiary of capex, rising GDP, rates & inflation, Infrastructure bill Half cyclical, half Quality / re-shoring and automation beneficiary Underweight by long-only funds	Peak PMI could hurt Most overweight by ESG funds Increasingly expensive valuations, rising earnings volatility Aerospace: structurally challenged post-COVID-19 (17% of the sector)
Technology	29.0%	M/W	Secular themes (cloud, telecommuting, robotics, etc) accelerated by COVID-19 and onshoring Automation & capex Clean balance sheets, strong margins and fundamentals Long-only positioning slightly below average	Peak globalization / high EM and China exposure Regulatory / anti-monopolistic overhang From Trade War to Tech War / Tech may not be as green as it seems
Materials	2.5%	M/W	Strong commodity prices / Helped by inflation Inexpensive & underweight by long only funds Infrastructure/capex beneficiary	Risk from China economic slowdown Expect slower earnings growth vs. S&P 500 Hurt by a stronger dollar
Utilities	2.4%	M/W	Resilient fundamentals / defensive hedge / highest Quality sector Relative valuations are in-line with avg. levels Underweight by long only funds	Hurt by higher rates/inflation Elevated payout ratio Ranks poorly in our tactical quant frame work
Consumer Staples	5.6%	U/W	Defensive hedge Inexpensive and positioning near record lows	Re-opening risk to stock-up beneficiaries / pent-up demand for services, not goods Hurt by rising inflation / rates Margin pressure in discount retailers
Communication Services	10.6%	U/W	TMT = Disruptors / beneficiary of telecommuting trends & streaming Resilient fundamentals FANG governance improving but still historically low	Regulatory risk on Interactive Media Short and long duration at risk of rising rates Value rotation / low short interest / elevated crowding risk
Consumer Discretionary	13.3%	U/W	Secular shift into e-commerce (AMZN: over 30% of the sector) Housing = discretionary spending, but may be a headwind if activity slows Higher consumer demand may offset increased cost pressure	Capex over consumption - potential consumption hit from higher oil/inflation The most labor-intensive sector – a risk of wage inflation Expensive valuations / long duration sector hurt by rising rates

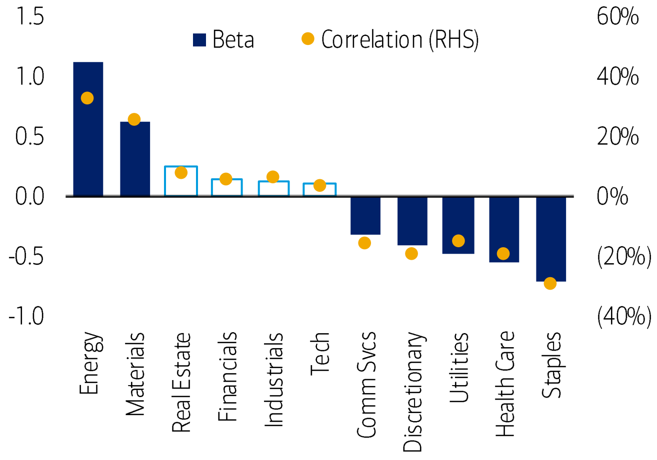
Note: O/W = overweight, M/W = marketweight, U/W = underweight. Weights in S&P 500 as of 11/19/2021 may not add to 100% due to rounding. **Source:** BofA US Equity & Quant Strategy

BofA GLOBAL RESEARCH

Big picture view on sectors

Exhibit 175: Inflation playbook: own commodities/cyclicals, avoid consumer/defensives

Sectors' rel. perf. correlation (since '74) with our BofA Inflation Composite



Source: Bloomberg, FactSet, BofA US Equity & Quant Strategy Note: For a full description of our Inflation Composite, please see the Appendix in Equity Strategy Theme Screens: 26 Oct 2021; Empty bars indicate not statistically significant

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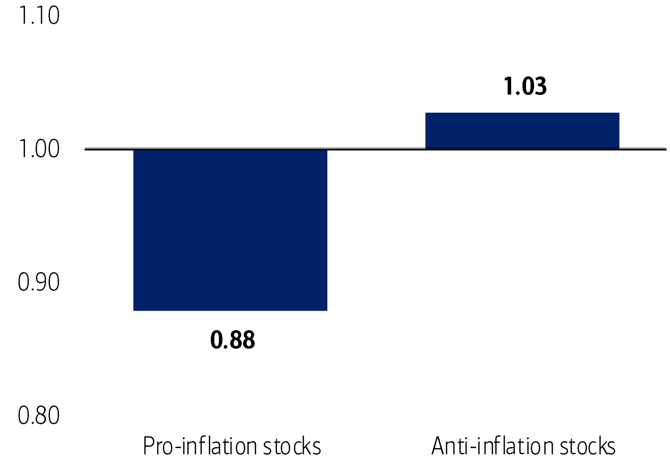
Exhibit 176: Mutual funds are not positioned for inflation

Relative weight (vs. Russell 1000 index) of pro-inflation basket vs. anti-inflation basket in large cap active fund holdings (based on stocks with most positive/most negative historical betas to inflation), as of 10/21



Source: FactSet Ownership, BofA US Equity & US Quant Strategy

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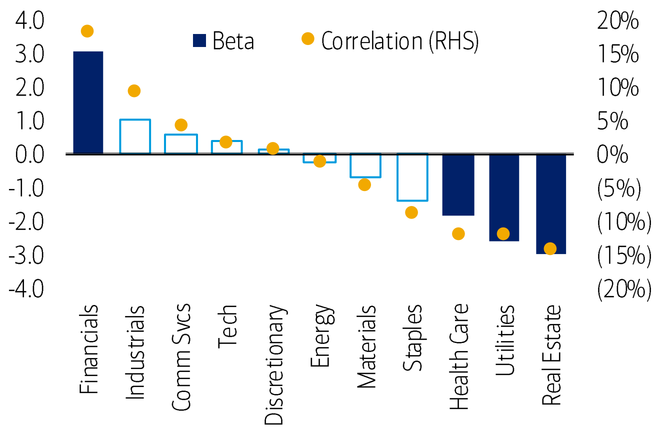
Exhibit 177: Higher real rates: Buy Financials, sell high dividend yield

S&P 500 sectors' relative performance sensitivity to real rates (1997-present)



Source: Bloomberg, FactSet, BofA US Equity & Quant Strategy
Note: Empty bars indicate not statistically significant

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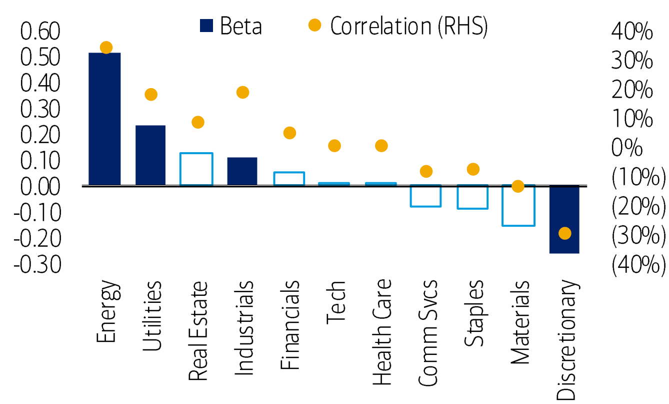
Exhibit 178: Higher capex: Energy/Utilities/Industrials benefit, while Discretionary gets hurt

S&P 500 sectors' relative performance sensitivity to S&P 500 capex (1985-present)



Source: Bloomberg, FactSet, BofA US Equity & Quant Strategy
Note: Empty bars indicate not statistically significant

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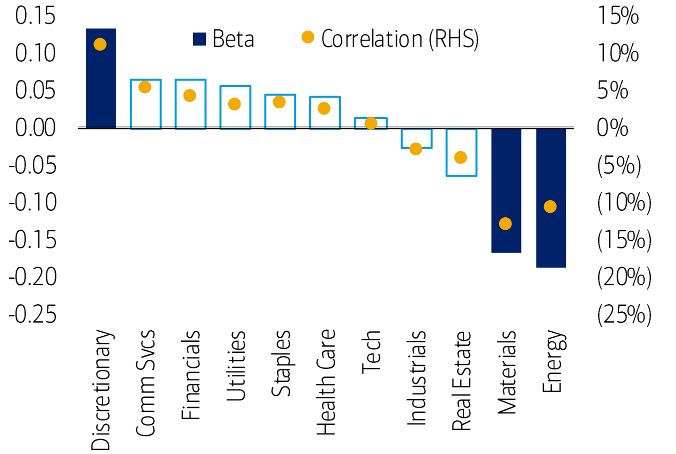
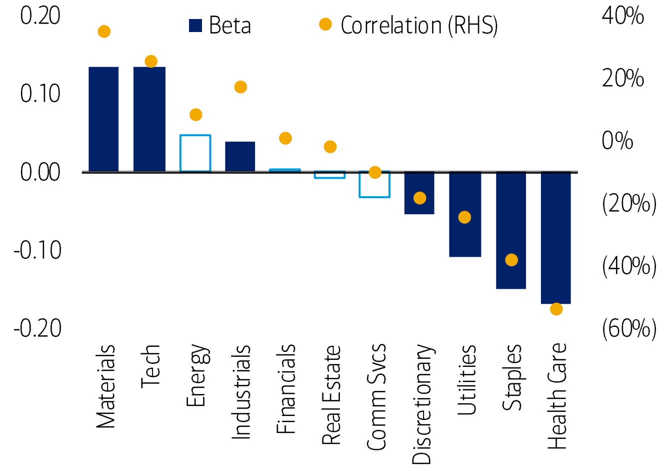
Exhibit 179: Strong USD: Commodities get hurt, Discretionary benefits
S&P 500 sectors' relative performance sensitivity to USD (1997-present)



Source: Bloomberg, FactSet, BofA US Equity & Quant Strategy
Note: Empty bars indicate not statistically significant

BofA GLOBAL RESEARCH

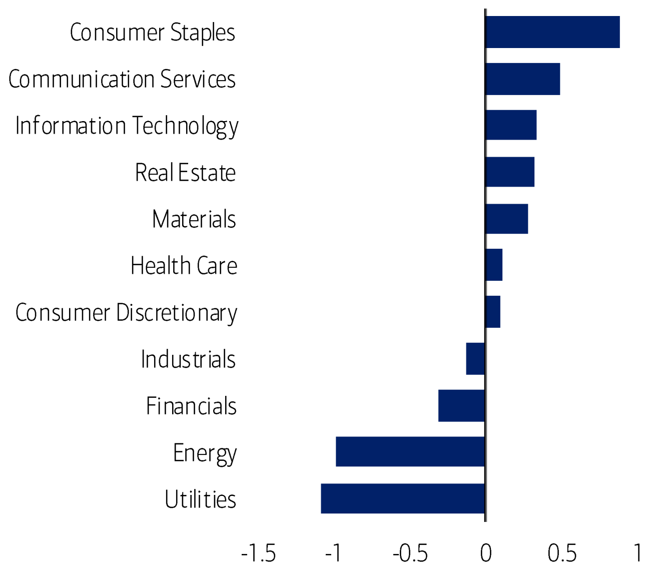
Exhibit 180: China risk: Materials & Tech are most exposed
S&P 500 sectors' rel. perf. to MSCI China (May 1996 to present)



Source: Bloomberg, FactSet, BofA US Equity & Quant Strategy
Note: Based on MSCI China index on a YoY basis; Empty bars indicate not statistically significant

BofA GLOBAL RESEARCH

Exhibit 181: Consumer Staples, Comm Svcs are among the sectors that have the most positive BofA Analyst Tone
BofA Analyst tone signal by sectors, date as of 10/2021



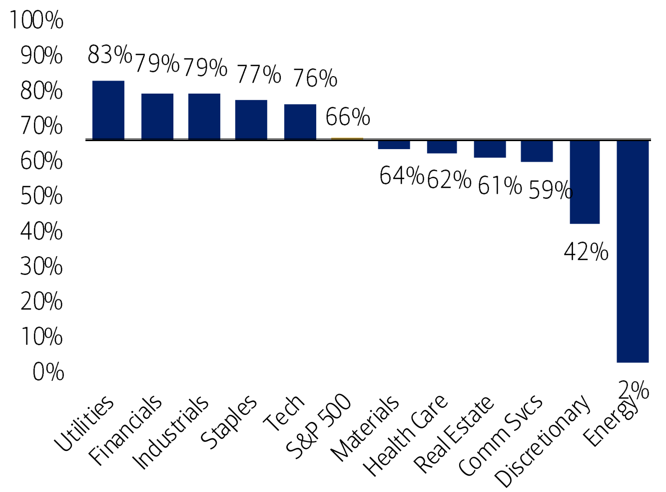
Source: BofA Global Research
Disclaimer: The indicator identified as the BofA Analysts' Tone above is intended to be an indicative metric only and may not be used for reference purposes or as a measure of performance for any financial instrument or contract, or otherwise relied upon by third parties for any other purpose, without the prior written consent of BofA Global Research. This indicator was not created to act as a benchmark. Source: BofA US Equity & Quant Strategy. See Sector Focus Point: Back to school: new signals, new sector outlook 03 September 2019 for a detailed methodology

BofA GLOBAL RESEARCH

End of the "policy put" = buy High Quality on re-rating

See Quality section for more.

Exhibit 182: Utilities, Financials and Industrials are the highest Quality sectors
Market cap-weighted proportion of B+ or better (High Quality) stocks, as of 10/2021



Source: BofA US Equity & Quant Strategy, FactSet

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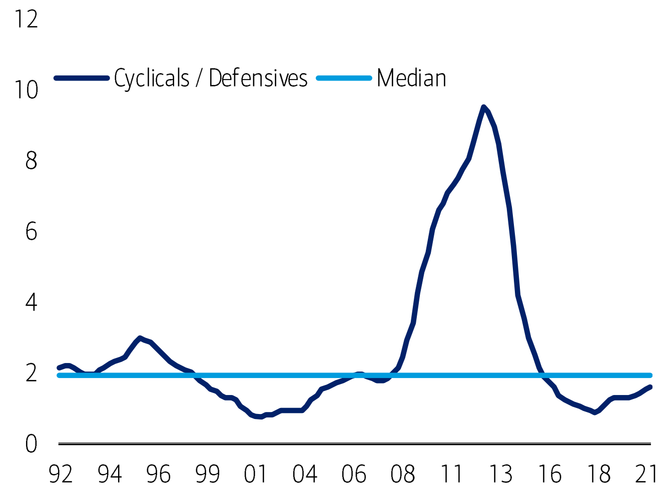
Exhibit 183: Cyclicals are now high quality (earnings vol below history)
Rolling 5yr trailing 12m earnings volatility (std. dev. / average) of Cyclicals vs Defensives, 1992-3Q21



Note: Cyclicals = Cons Disc, Fins, Ind, Mat; Defensives = Staples, Health Care, Utes
Source: BofA US Equity & US Quant Strategy, FactSet, IBES

BofA GLOBAL RESEARCH

Value over Growth

See Exhibit 300: Hedge funds are O/W re-opening stocks but stay at home beneficiary positioning has been increasing recently section for more details.

Exhibit 184: Health Care and Energy, are the most attractive sectors from a valuation standpoint vs. history
Relative price to book, price to operating cash flow, price to earnings by sector, as of 10/2021

	Price to Book (Relative)			Price to Operating Cash Flow (Relative)			Forward P/E (Relative)		
Sector	**Current**	**Average**	**Implied upside**	**Current**	**Average**	**Implied upside**	**Current**	**Average**	**Implied upside**
S&P 500 (absolute metrics)	**4.90**	**3.02**	**-38%**	**19.44**	**11.08**	**-43%**	**21.53**	**15.63**	**-27%**
Consumer Discretionary	2.56	1.33	-48%	1.50	0.91	-39%	1.55	1.06	-31%
Consumer Staples	1.29	1.71	32%	0.84	1.26	50%	0.96	1.11	16%
Energy	0.39	0.77	96%	0.46	0.74	60%	0.63	1.08	72%
Financials	0.36	0.60	65%	N/A	N/A	N/A	0.71	0.75	6%
Health Care	1.12	1.69	51%	0.89	1.60	81%	0.81	1.09	35%
Industrials	1.20	1.11	-8%	1.02	0.99	-3%	0.99	1.01	2%
Information Technology	2.44	1.46	-40%	1.25	1.23	-2%	1.24	1.13	-9%
Materials	0.68	0.89	31%	0.69	0.89	30%	0.77	0.99	30%
Real Estate	0.90	1.00	10%	N/A	N/A	N/A	1.09	1.16	6%
Communication Services	0.98	1.01	3%	0.78	0.85	9%	1.01	1.20	19%
Utilities	0.46	0.58	26%	0.67	0.64	-5%	0.90	0.89	-2%

Note: Averages for Tech exclude the Tech Bubble (7/98-10/00 excluded). Financials excludes Real Estate historically. Relative Fwd. P/E for Real Estate uses P/FFO for REITs and Fwd P/E for Real Estate Management & Development, relative to the S&P 500 Fwd. P/E over time. Real Estate valuations from 2001-present. Valuations for Telecom are less meaningful given small number of companies in sector/constituent changes over time.
Source: FactSet/FirstCall, Compustat, BofA US Equity & Quant Strategy

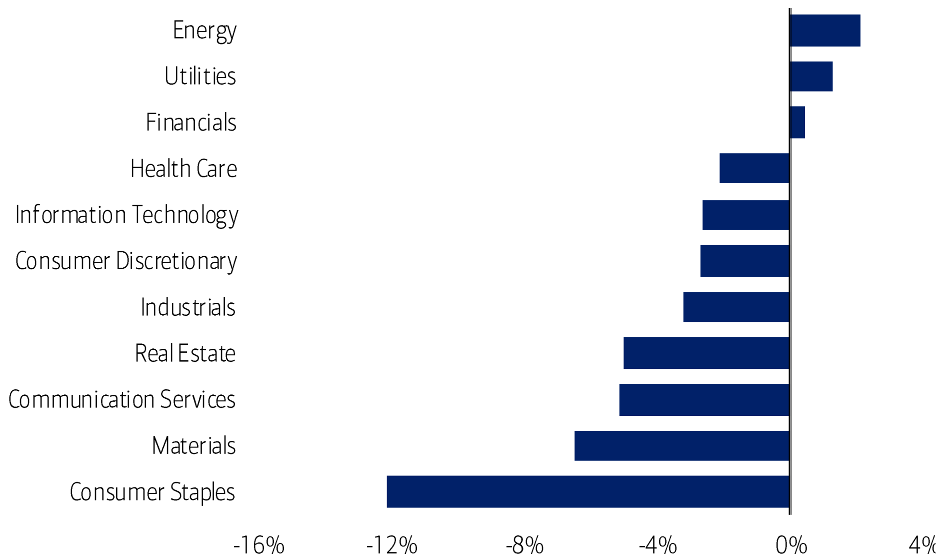
BofA GLOBAL RESEARCH

ESG 2.0 re-think new economy vs. old economy

COVID-driven industry culture shifts can drive big alpha

Employees' take on the culture of their workplace is more correlated with overall satisfaction than any other component, based on our analysis of glassdoor.com data. And culture has systematically predicted alpha since 2012 and could matter more today amid a tighter labor market with record turnover in some industries. Changing dynamics amid COVID played a big role in redefining culture and we saw a marked deterioration in Consumer and TMT (Communication Services), but improvement in Energy, Financials and Utilities.

Exhibit 185: COVID helped and hurt sectors from a culture perspective
% chg. of average Glassdoor culture score by sector (equal-weighted) pre- and post- COVID (9/19 vs. 9/21)



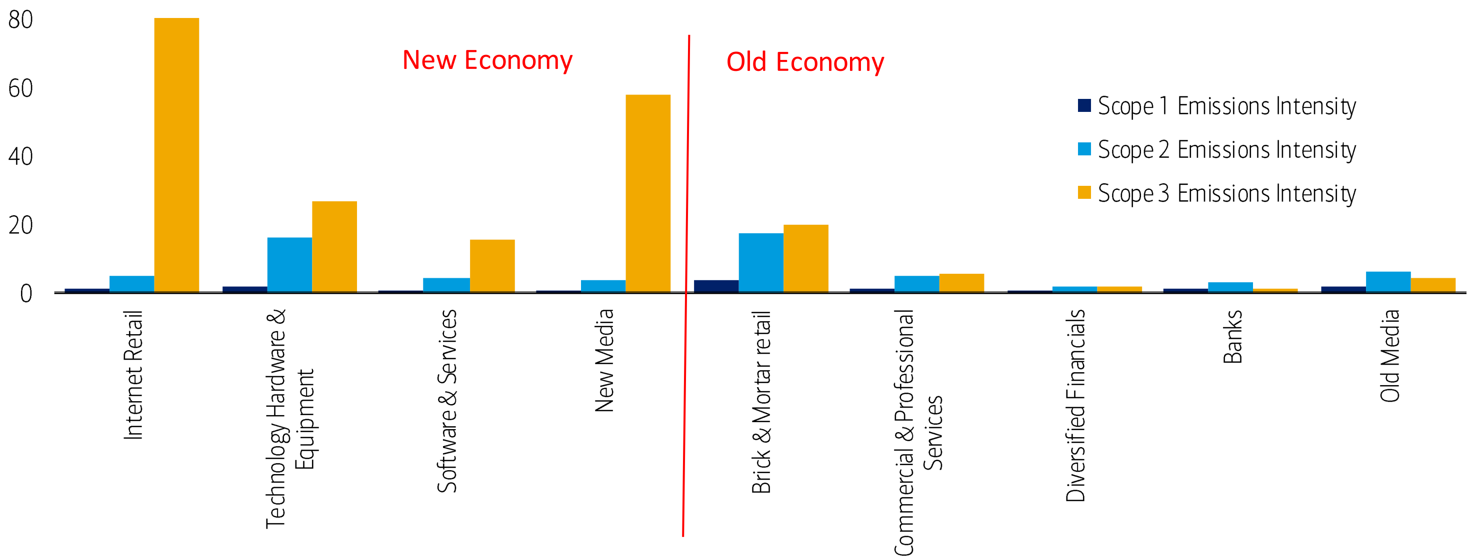
Source: Glassdoor, BofA US Equity & Quant Strategy

BofA GLOBAL RESEARCH

New economy lags old economy on total carbon emissions

The "greenium" in place for new economy companies may be misplaced and poised to reverse, not just based on culture but based on emissions. Supply chain emissions data disclosure has improved and tells a different story than direct emissions. Based on ICE ESG data, the total emissions of new economy vs. old economy companies is surprisingly skewed in favor of old economy. Internet Retail carries 3x the emissions of Brick & Mortar; Software & Services eclipse Banks, Insurance and Commercial Services; and New Media Scope 3 emissions intensity is 13x of the Old Media.

Exhibit 186: "New economy" sectors often have higher total emissions than "old economy" counterparts
Median Scope 1, 2, 3 greenhouse gas emissions (metric tons) per million dollars of revenue by category



Source: ICE Data Services, BofA US Equity & Quant Strategy

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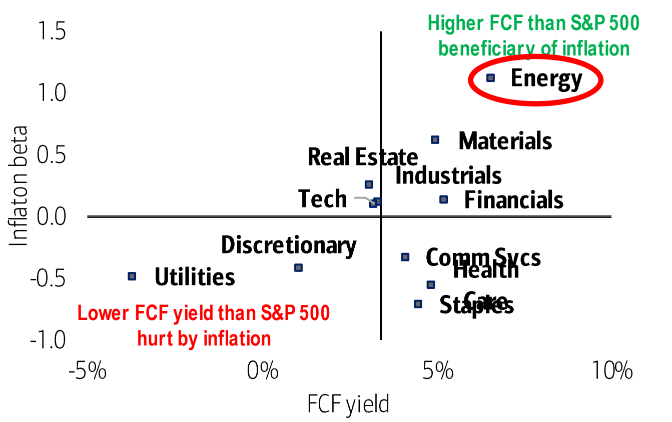
Overweight Energy

Exhibit 187: Energy = inflation-protected yield
Free Cash Flow yield vs. inflation beta (based on relative performance vs. SPX), 10/21)



Source: FactSet, BofA US Equity & Quant Strategy

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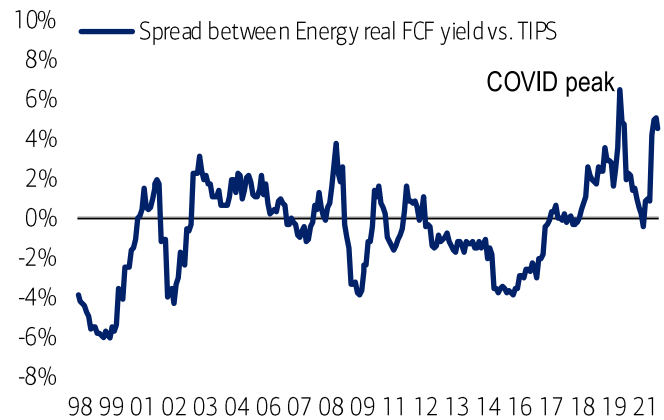
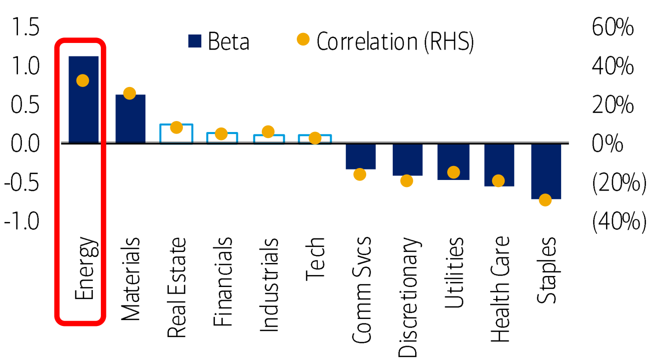
Exhibit 188: Energy stocks offer a far more attractive Inflation-protected yield than TIPS
Real dividend yield of S&P 500 Energy sector vs. TIPS yield (1998-present)



Source: BofA US Equity & Quant Strategy, FactSet, Bloomberg

BofA GLOBAL RESEARCH

Exhibit 189: Biggest beneficiary in inflationary environment
S&P 500 sectors' rel. perf. beta vs. BofA inflation composite (1974-present)



Source: Bloomberg, FactSet, BofA US Equity & Quant Strategy; Empty bars = not statistically significant

BofA GLOBAL RESEARCH

Exhibit 190: Energy #1 in our tactical framework
S&P 500 Momentum & Value Framework Sector Ranks as of 10/21

Sector	Combined Rank	Price Momentum Rank	EPS Revision Rank	Valuation Rank
Energy	33	11	11	11
Health Care	20	5	5	10
Materials	20	4	7	9
Consumer Discretionary	19	9	9	1
Industrials	18	3	10	5
Information Technology	17	8	6	3
Financials	17	10	1	6
Real Estate	17	7	8	2
Utilities	13	6	3	4
Communication Services	12	2	2	8
Consumer Staples	12	1	4	7

Source: BofA US Equity & US Quant Strategy

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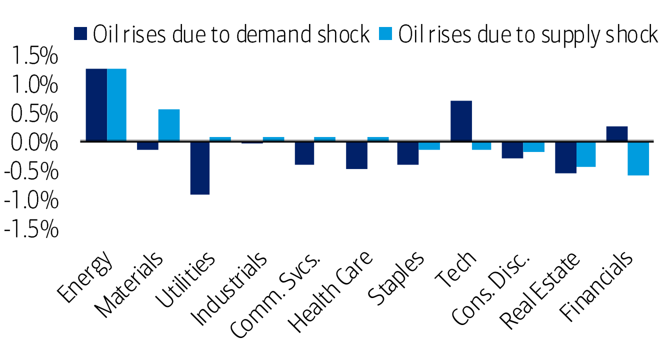
Exhibit 191: Energy outperforms when oil rises, regardless of whether it's driven by demand or supply
Avg. rel. monthly return by sector vs. S&P 500 (7/86-10/21)



Source: BofA US Equity & Quant Strategy, U.S. Energy Information Administration, Bloomberg
Note: Demand/supply shocks are determined by narrowing/widening crack spread and rising WTI

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Exhibit 192: Energy = the new Tobacco? Tobacco stocks outperformed despite the surgeon general's 1964 report linking smoking with cancer
S&P 500 Tobacco industry's relative performance vs. the S&P 500 (1969-90)

Source: FactSet, BofA US Equity & Quant Strategy

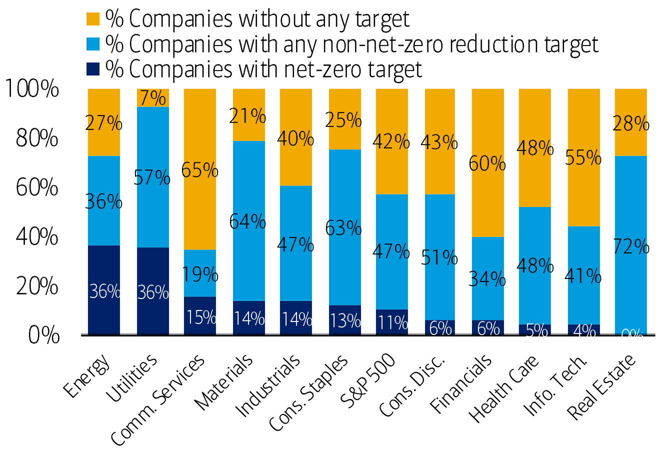
BofA GLOBAL RESEARCH

ESG 2.0 is actually bullish for Energy

The sustainable investor's Energy purge is behind us; companies setting emissions targets see re-rating

Exhibit 193: The Energy sector leads the S&P 500 in setting net zero targets

% of S&P 500 companies with emissions reduction targets



Source: ICE Data Services, BofA US Equity & Quant Strategy

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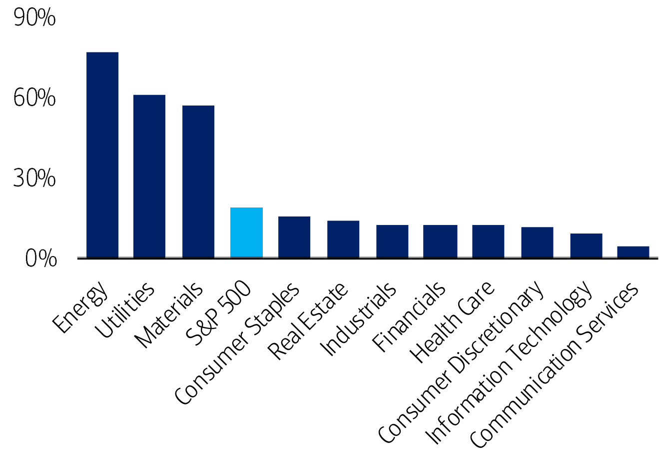
Exhibit 194: The Energy sector leads the S&P 500 in aligning CEO compensation to ESG metrics

% of S&P500 companies with ESG metrics as part of CEO short-term incentive compensation plan



Source: ICE Data Services, BofA US Equity & Quant Strategy

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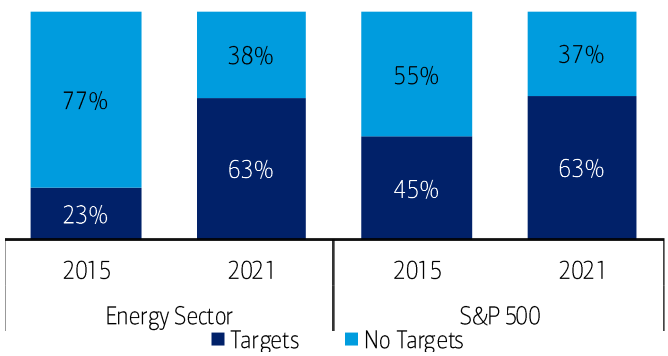
Exhibit 195: The Energy sector no longer lags the S&P 500 in setting carbon reductions targets

% of S&P 500 companies that have set carbon emissions reduction targets



Source: Refinitiv, Bloomberg, BofA US Equity & Quant Strategy

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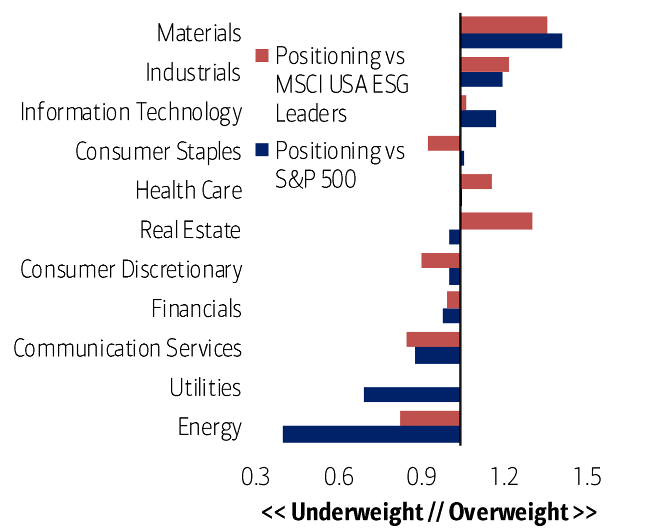
Exhibit 196: ESG funds are UW Energy in US overall, less so vs. an ESG benchmark

Sectors relative weight of ESG funds vs S&P 500 index as of 10/31/21



Source: BofA US Equity & Quant Strategy, FactSet Ownership

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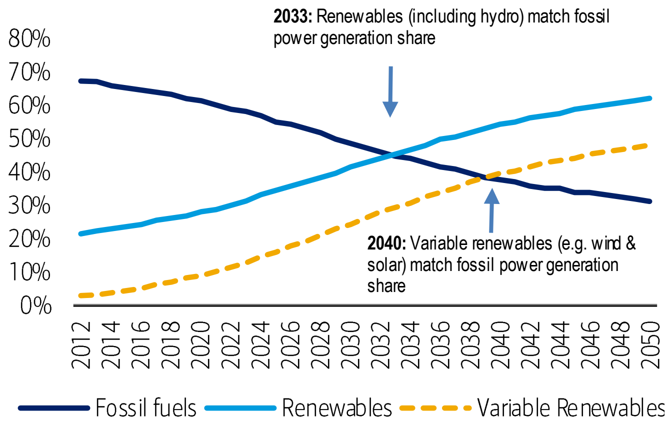
Key risks:

Exhibit 197: Obsolescence risk: renewables = fossil by '33 – '40

Mix of energy consumption by category, 2012-2050E



Source: Bloomberg NEF data, BofA Global Research graphic

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Exhibit 198: Is Energy too small to matter?

Relative performance of S&P 500 sectors after dropping below 5% weight, as of 10/21

	+6 mo	+9 mo	+12 mo	+24 mo	+36 mo	Since <5%
Materials	(7%)	(26%)	(28%)	(46%)	(74%)	(153%)
Telecom	(19%)	(3%)	(12%)	(20%)	(23%)	(615%)
Utilities	(9%)	(6%)	(11%)	(23%)	(48%)	(779%)
Energy	(13%)	(27%)	(42%)	(59%)	-	(61%)

Note: Energy's weight crossed below 5% on a month-end basis on 5/31/19

Source: Bloomberg, BofA US Equity & Quant Strategy

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Overweight Health Care

The forgotten sector: We had a health care crisis, US Health Care companies saved the world from a deeper recession, the U.S. government, consumers and corporations are likely to spend more on Health Care in the years to come – but the sector has underperformed the S&P 500 by 15ppt since the beginning of 2020.

Exhibit 199: Underperforming by 15ppt since the start of 2020
Health care relative performance vs. S&P 500 (12/31/19-11/12/21)

Source: Bloomberg, BofA US Equity & US Quant Strategy

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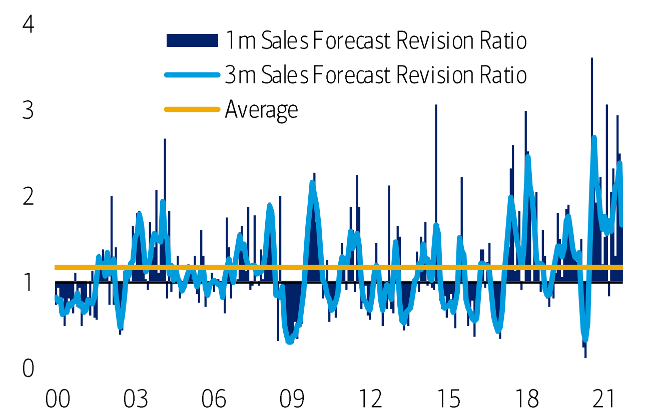
Exhibit 200: ...despite strong fundamentals
Health Care 1m and 3m Sales Forecast Revision Ratio (SRR), 1/1986 – 10/2021



Source: BofA US Equity & US Quant Strategy, FactSet

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Exhibit 201: ...and record valuation discount vs. the S&P 500
Health Care relative forward Price/Earnings Ratio (1/1986 - 10/2021)

Source: FactSet, BofA US Equity & Quant Strategy

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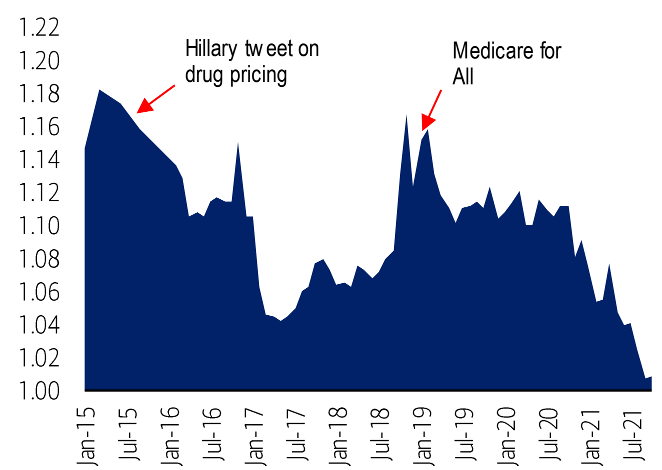
Exhibit 202: Positioning and regulatory risk has subsided
Large cap active managers' relative weight in HC: 1Q15-10/2021



Source: Lionshares, BofA US Equity & Quant Strategy

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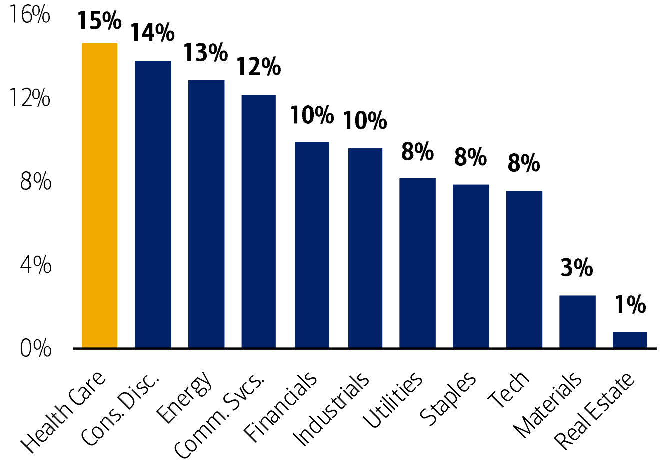
Exhibit 203: Health Care has been at the center of activist campaigns over the past five years...
% of activist campaigns over the past five years by sector (2017-21)



Source: FactSet, BofA US Equity & Quant Strategy

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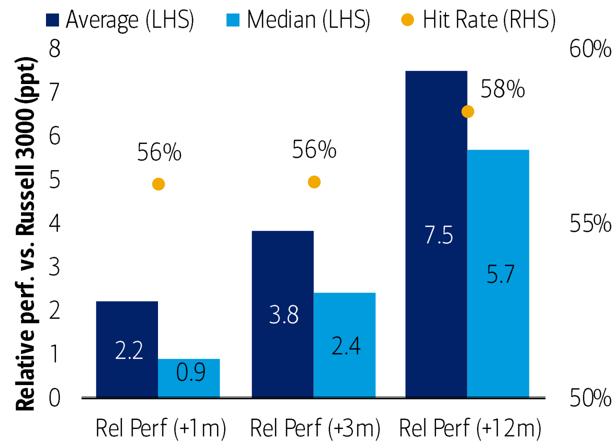
Exhibit 204: ...And activist campaigns have historically driven future outperformance
Subsequent relative performance of Russell 3000 companies targeted by corporate governance campaigns (12/1994-10/2021)



Source: FactSet, BofA US Equity & Quant Strategy

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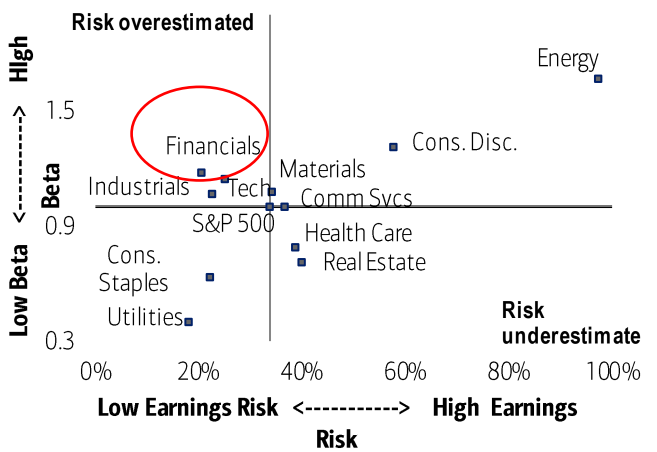
Overweight Financials

The new High Quality sector

Exhibit 205: Mispriced risk
S&P Quality ratings (cap-wtd. % of Low Quality B or Worse stocks) vs. 5-yr price beta (as of 11/2021)



Note: Financials excludes BRK/B (13% of Financials' market cap)
Source: S&P, FactSet, BofA US Equity & Quant Strategy

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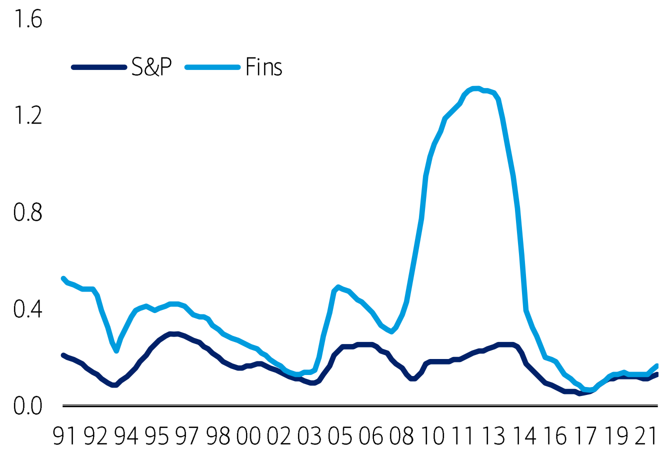
Exhibit 206: Same EPS stability as S&P 500's
Rolling 5yr trailing earnings vol for S&P 500 and Financials (std dev of trailing net income divided by mean trailing net income; 1990-3Q21)



Source: US Equity & Quant Strategy, FactSet

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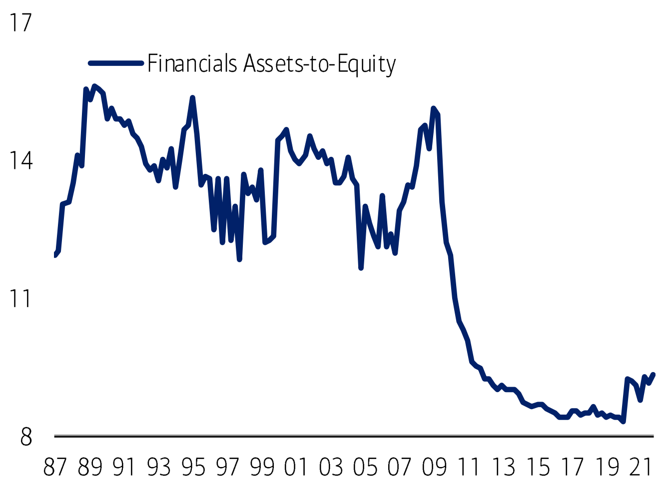
Exhibit 207: Balance sheets still healthier than historically
S&P 500 Financials: Total Assets/Equity (1987-10/21)



Source: FactSet, BofA US Equity & Quant Strategy

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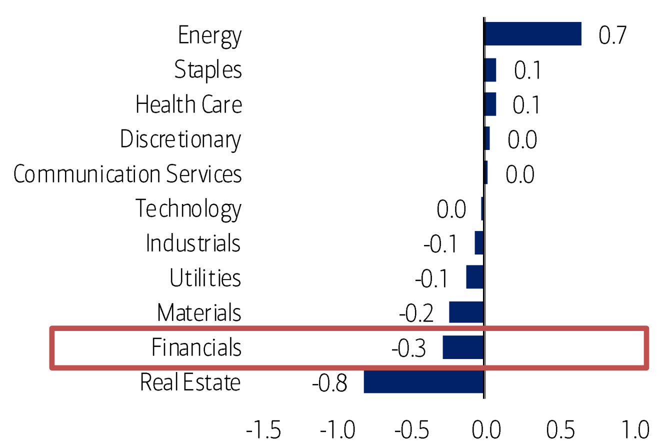
Exhibit 208: The new low volatility sector
Five-year beta by sector (now vs 10 years ago, spreads), as of 10/21



Source: FactSet, BofA US Quantitative Strategy

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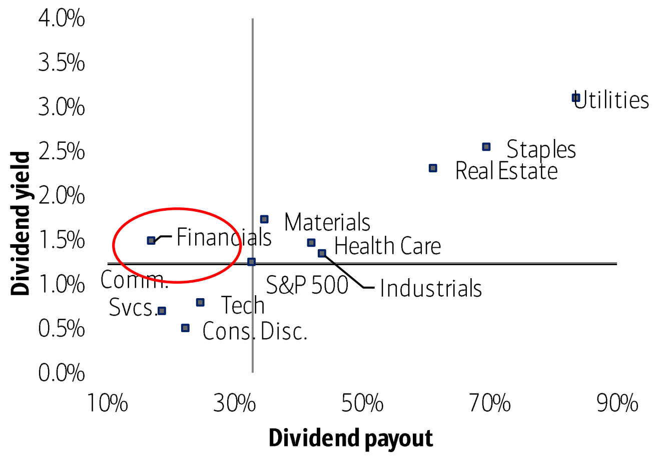
Exhibit 209: High dividend yield, comfortable payout ratio
Dividend yield vs. dividend payout ratio for S&P 500 sectors



Source: FactSet, BofA US Equity & Quant Strategy

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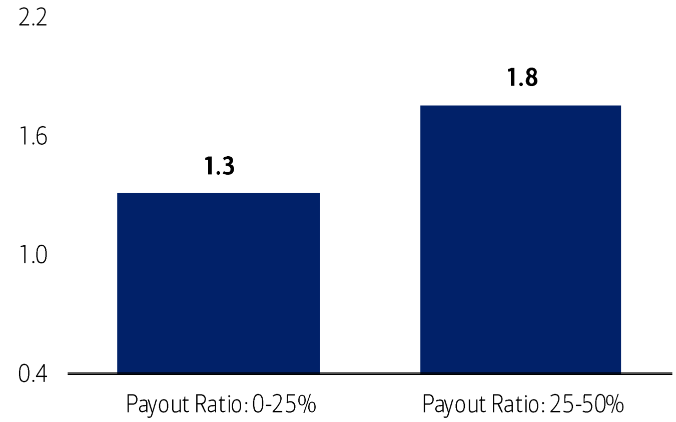
Exhibit 210: Capital return = multiple expansion (current payout = 17%; P/B = 1.8)
Historical median Price to Book ratio for Financials based on payout ratios (1986-9/2021)



Source: BofA US Equity & US Quant Strategy, Factset

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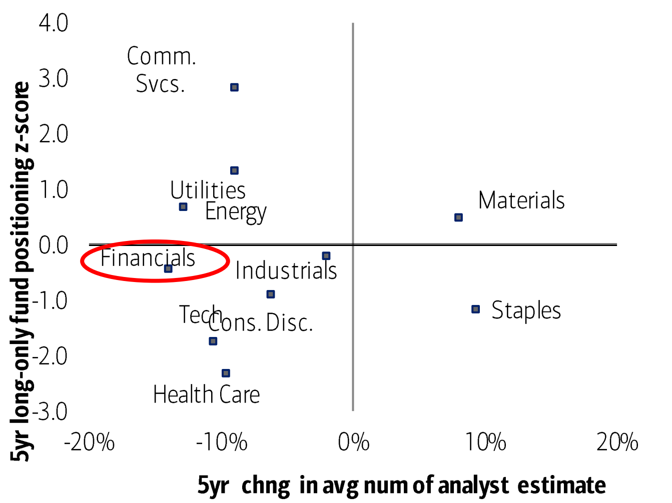
Exhibit 211: Buy-side selling, sell-side firing
5yr change in average number of analyst earnings estimate vs the 5yr long-only fund positioning (vs S&P 500) z-score by sector (as of 10/2021)



Source: US Equity & Quant Strategy, IBES, FactSet Ownership

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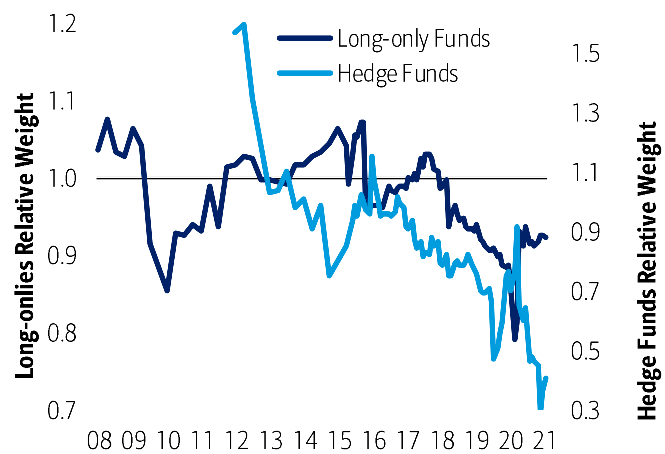
Exhibit 212: Long only positioning rising but still underweight,, HFs at historical lows
Long-only and Hedge Fund (>1 is overweight) relative positioning (versus S&P 500) in Financials, 9/2008-10/2021



Source: FactSet, BofA US Equity & Quant Strategy

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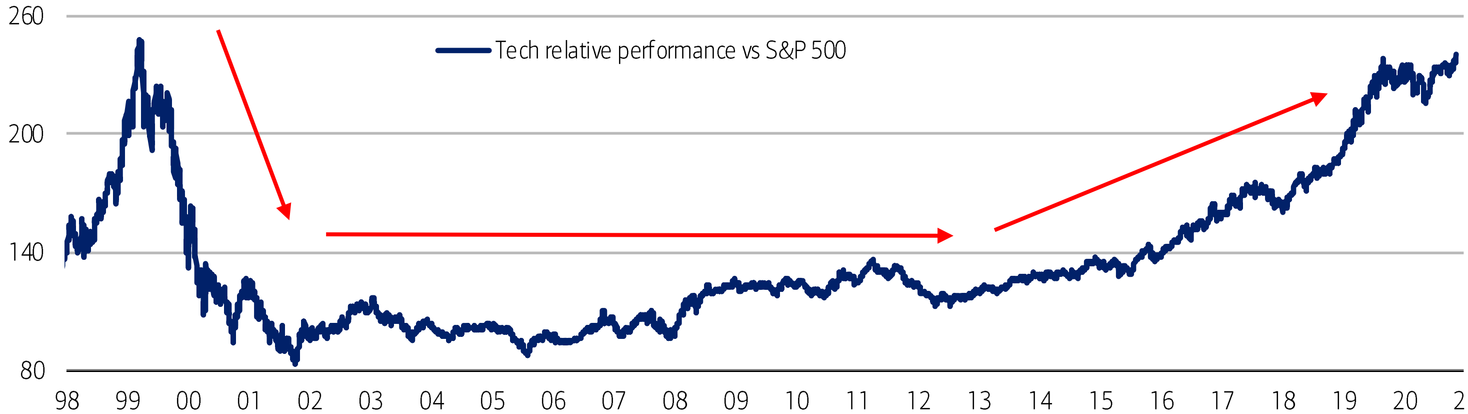
Problem sectors take years to rise from the ashes

And require three steps: i. Shoring up capital; ii. Consolidation; and iii. Investor indifference

Exhibit 213: Tech 10yrs after bubble burst = Financials today
S&P 500 Tech relative performance vs. S&P 500 1997-present (indexed to 100 12/31/1997)



Source: BofA US Equity & Quant Strategy, Bloomberg

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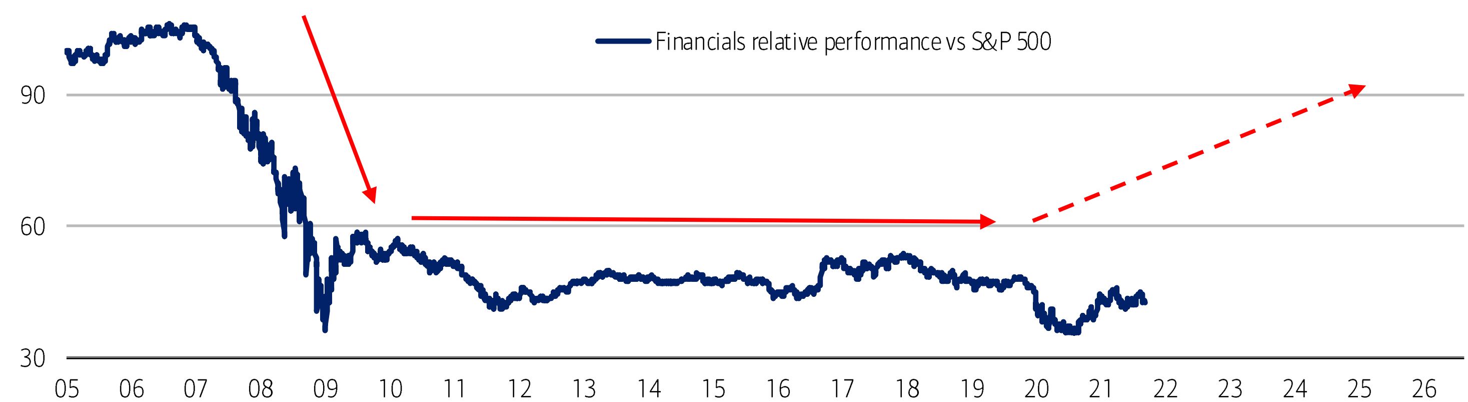
Exhibit 214: Financials poised to outperform after a 10yr period of post-crisis healing (similar to Tech following the Tech Bubble)
S&P 500 Financials relative performance vs. S&P 500 2005-present (indexed to 100 12/31/2004)



Source: BofA US Equity & Quant Strategy, Bloomberg

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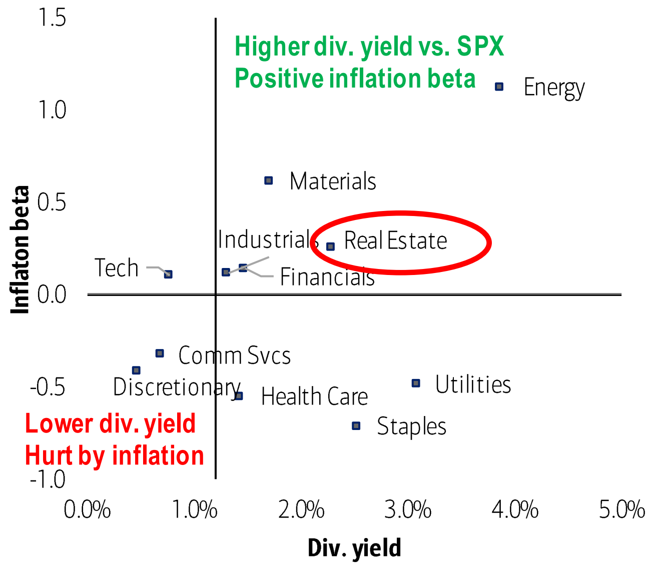
Marketweight Real Estate

Exhibit 215: Real Estate offers attractive inflation-protected yield
Div. yield vs. inflation beta (based on relative performance vs. SPX) of S&P 500 sectors, 10/21



Source: BofA US Equity & Quant Strategy, FactSet

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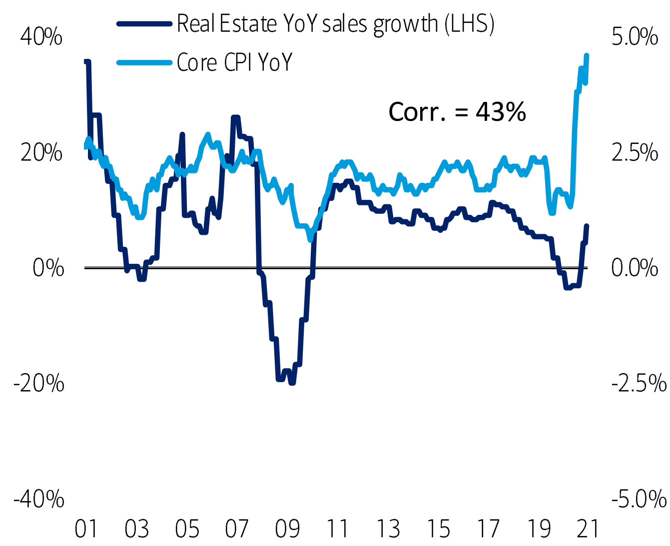
Exhibit 216: Real Estate sales are tied to core inflation
Real Estate YoY sales growth vs YoY changes in Core CPI, 10/01-10/21



Source: BofA US Equity & Quant Strategy, FactSet, Bloomberg

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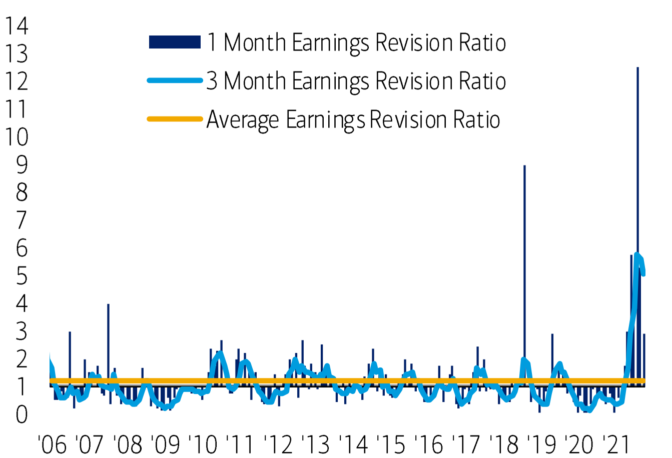
Exhibit 217: Strong fundamentals
Real Estate 1m and 3m Estimate Revision Ratio (1/1986-10/2021)



Source: BofA US Quantitative Strategy, I/B/E/S

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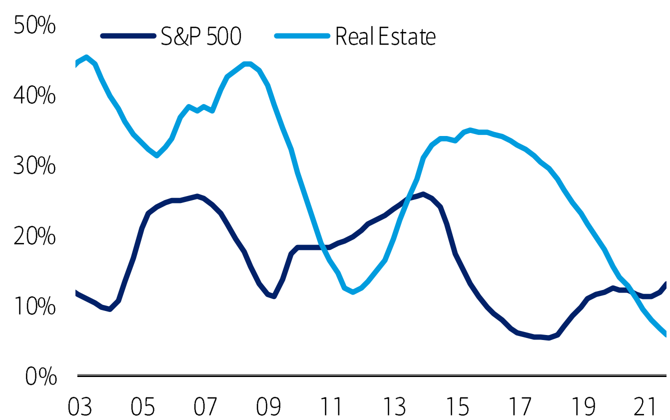
Exhibit 218: Record low earnings volatility
Rolling 5yr trailing 12m earnings volatility (std. dev. / average) of Real Estate vs S&P 500, 2003-3Q21



Source: BofA US Equity & US Quant Strategy, FactSet, IBES

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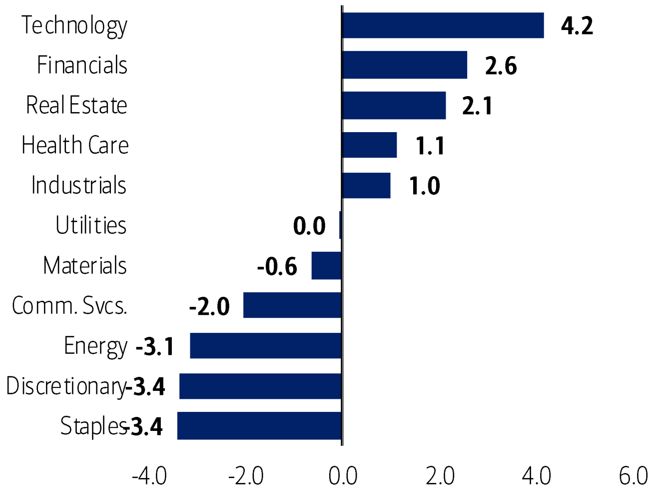
Exhibit 219: Big improvement in High Quality rank vs history
B+ or Better current sector weight vs. historical avg (ppt), as of 10/21



Note: based on equal weight (number of companies), Real Estate since 5/2003, all other sectors since 1986. **Source:** BofA US Equity and Quant Strategy, FactSet, S&P

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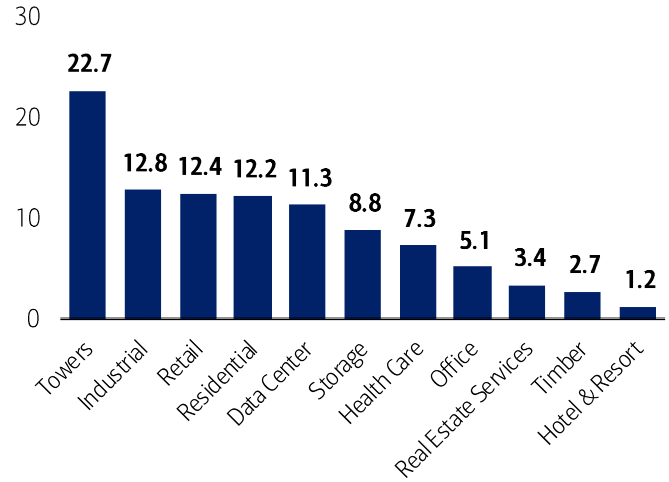
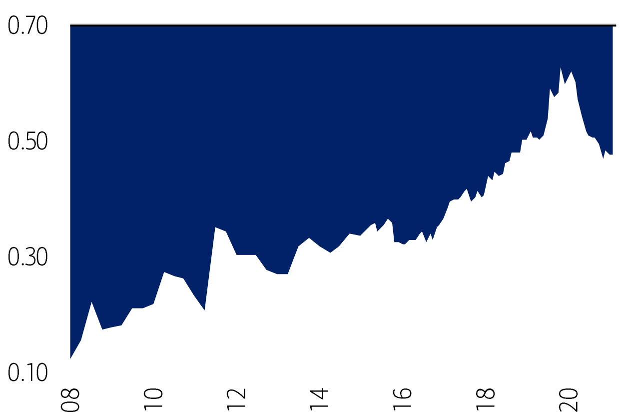
Exhibit 220: Secular winners (Communications/Data Center) are ~40% of the sector, secularly challenged (Office) are only 5%
Real Estate sub industry weights, as of 11/15/21



Source: BofA US Equity and Quant Strategy, Bloomberg

BofA GLOBAL RESEARCH

Exhibit 221: Still underweight (but less so than historically)
Large cap active funds' relative weight in Real Estate (vs. S&P 500) as of 10/2021



Source: FactSet, S&P, BofA US Equity & Quant Strategy

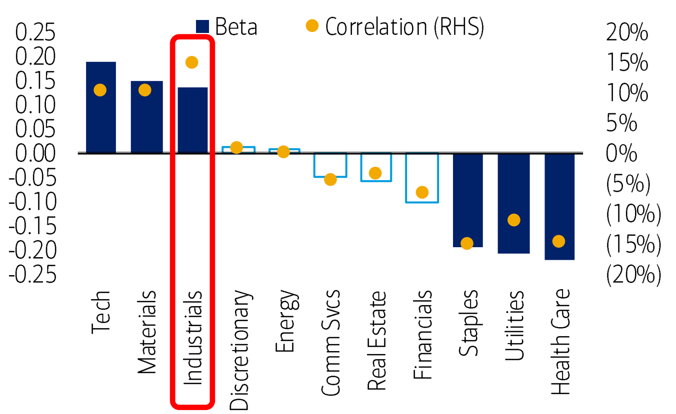
BofA GLOBAL RESEARCH

Marketweight Industrials

What's on our watch-list? The BofA Industrial Momentum indicator ticked up, but the BofA Truckload Diffusion Indicator ticked down (see Trucking Survey). The market appears to be pricing in peak pain now, with resolution by 1H22 end; shippers are beginning to see some capacity availability. But we remain in wait and see mode for ports to de-clog and for signs that current pricing can hold.

Exhibit 222: Most correlated sector to PMI – a peak PMI could hurt

S&P 500 sectors' monthly relative performance sensitivity to monthly changes in PMI (1970-present)

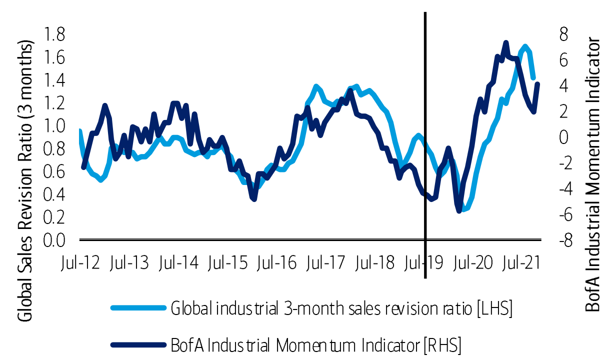


Source: BofA US Equity & Quant Strategy, FactSet

BofA GLOBAL RESEARCH

Exhibit 223: BofA Industrial Momentum Indicator vs Global Industrial Sales Revisions

BofA Industrial Momentum Indicator typically leads Industrial Sales Revisions



Source: BofA Global Research, Backtested period = January 2012 through January 2019, Actual Performance since February 2019. This performance is back-tested and does not represent the actual performance of any account or fund. Back-tested performance depicts the theoretical (not actual) performance of a particular strategy over the time period indicated. No representation is being made that any actual portfolio is likely to have achieved returns similar to those shown herein. Disclaimer: The indicator identified as BofA Industrial Momentum Indicator above is intended to be an indicative metric only and may not be used for reference purposes or as a measure of performance for any financial instrument or contract, or otherwise relied upon by third parties for any other purposes, without the prior written consent of BofA Global Research. The indicator was not created to act as a benchmark

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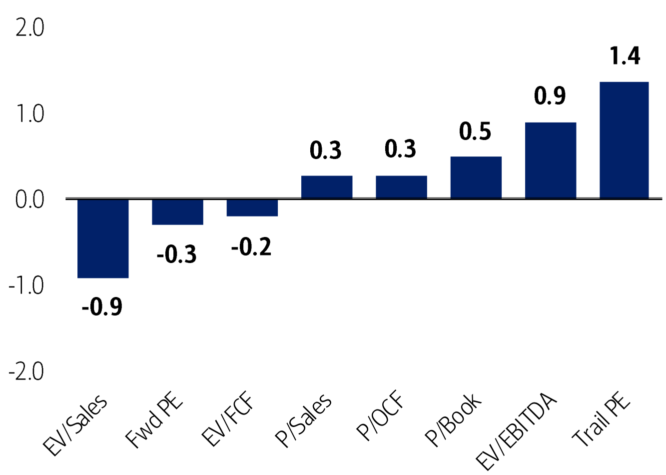
Exhibit 224: Risk: Getting expensive

Industrials relative valuations z-score (since 1986), as of 10/2021

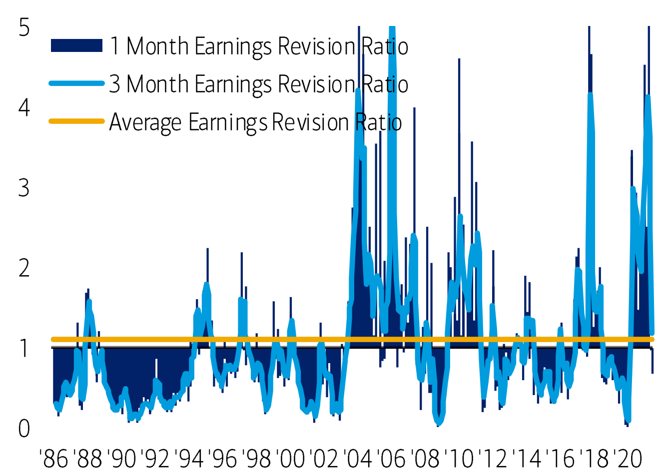


Source: BofA US Equity & Quant Strategy

BofA GLOBAL RESEARCH

Exhibit 225: Risk: earnings momentum has flipped to negative

Earnings revision ratio for Industrials (1986-present)



Source: BofA US Quantitative Strategy, I/B/E/S

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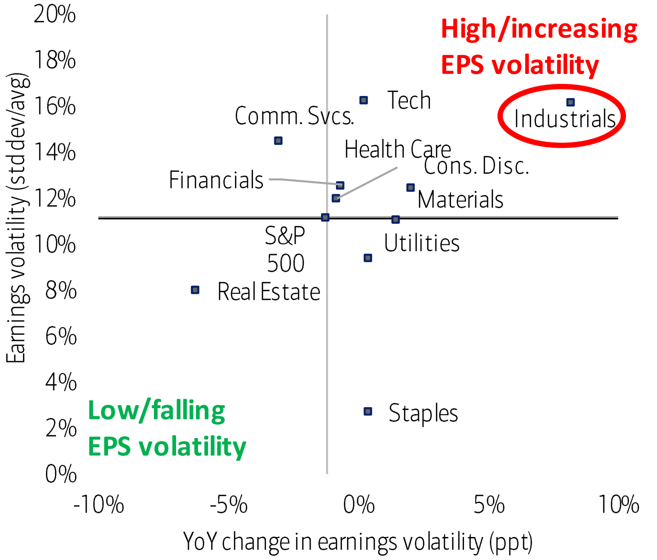
Exhibit 226: Despite being High Quality today, Industrials has elevated and notably rising earnings volatility
5yr earnings volatility vs YoY change for S&P 500 sectors, as of 3Q21



Source: FactSet, BofA US Equity & Quant Strategy

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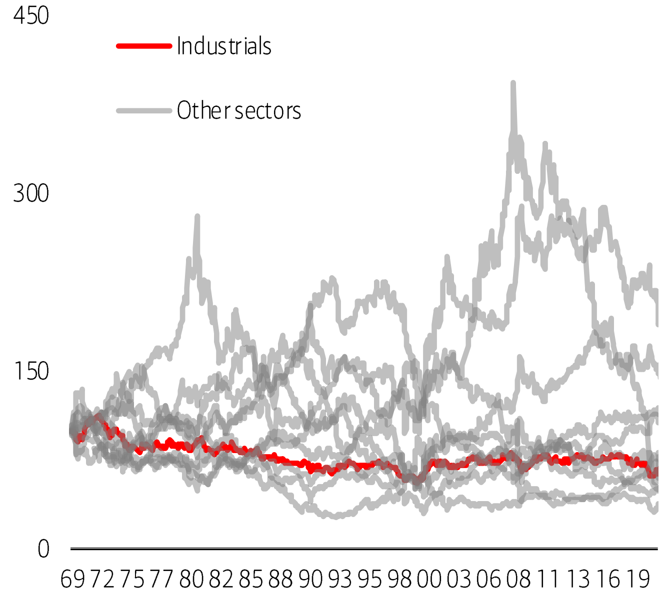
Exhibit 227: Industrials = a perpetual market performer
Sector relative performance (total return) vs. S&P 500 (1969-present)



Source: Bloomberg, FactSet, BofA US Equity & Quant Strategy

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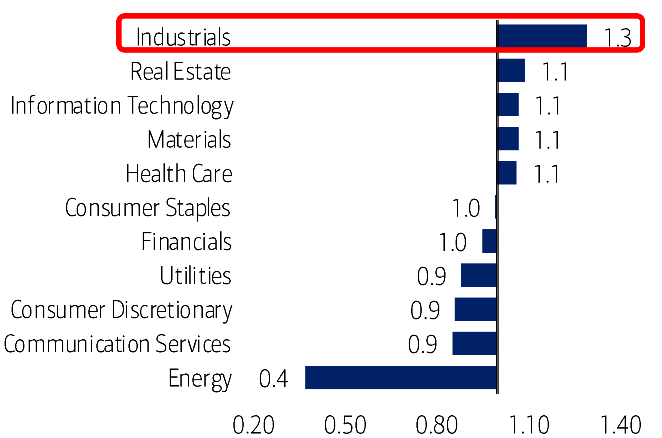
Overweight by ESG funds but not as green

Exhibit 228: ESG funds are most overweight Industrials
ESG funds' sector positioning relative to the Russell 1000 weight (10/2021)



Source: BofA US Equity & Quant Strategy

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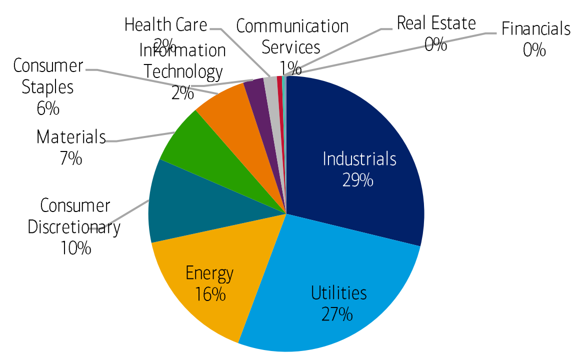
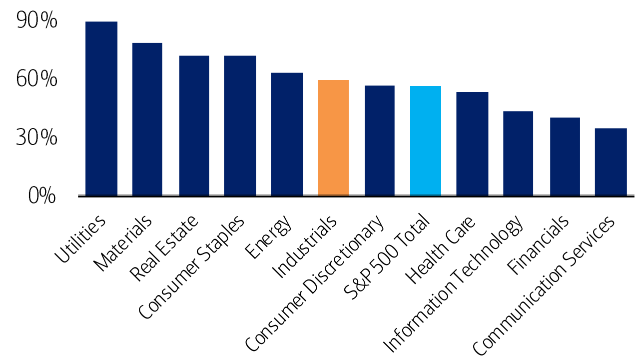
Exhibit 229: Industrials contributes the largest percentage of overall emissions to the S&P 500, well above its market-cap weight of 9%
S&P 500 Scope 1, 2, and 3 emissions by sector



Source: ICE Data Services, company reports, BofA US Equity & Quant Strategy
Note: Sector average emissions are assumed for companies without disclosure
BofA GLOBAL RESEARCH

Exhibit 230: Industrials lags other heavy-emitting sectors like Utilities, Energy, and Materials when it comes to setting emissions reduction targets

% of S&P 500 companies with carbon emissions reduction targets by sector



Source: ICE Data Services, BofA US Equity & Quant Strategy

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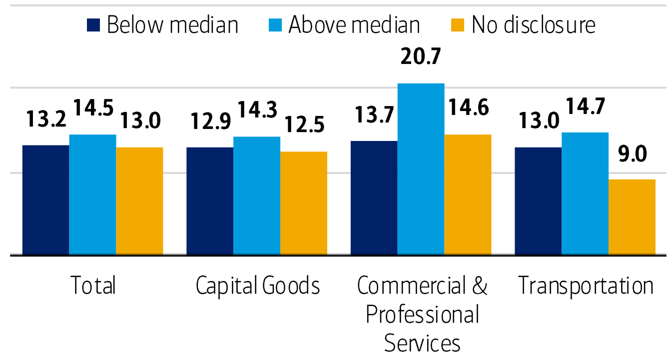
Exhibit 231: Lower emissions are rewarded with higher multiples in Industrials, and in the heavier-emitting Transportation and Industrial Goods industries saying nothing can be worse than saying something bad

Median fwd EV/EBITDA (12m)



Source: BofA US Equity & Quant Strategy, ICE Data Services, FactSet

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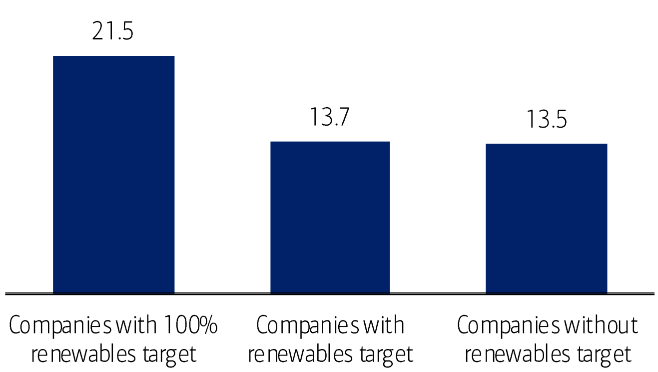
Exhibit 232: Industrials companies with clean energy targets trade at a premium valuation

Median Forward 12-month EV/EBITDA



Source: BofA US Equity & Quant Strategy, ICE Data Services, FactSet

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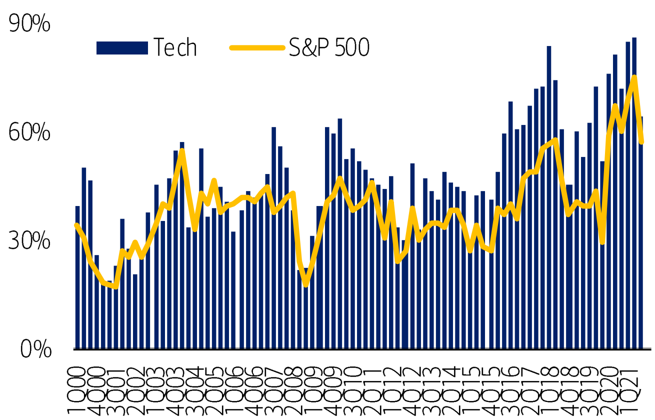
Marketweight Technology

Exhibit 233: Stronger beats than S&P for 52 straight quarters – longest streak in any sector
% of companies beating on both sales & EPS (2000-3Q21)



Source: FactSet, BofA US Equity & Quant Strategy

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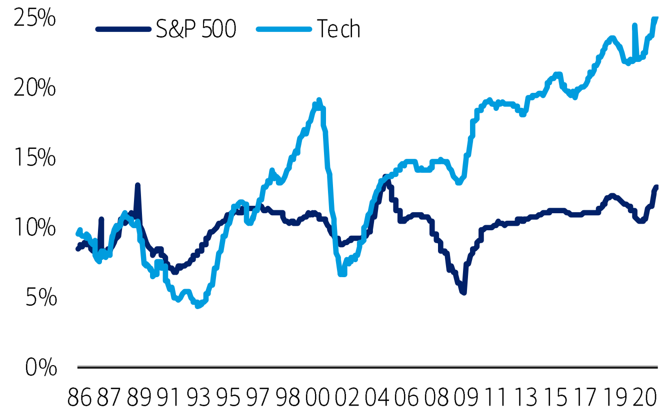
Exhibit 234: Tech profitability continues to improve
Net margins % of S&P 500 vs. Tech (1986-present)



Source: FactSet, BofA US Equity & Quant Strategy

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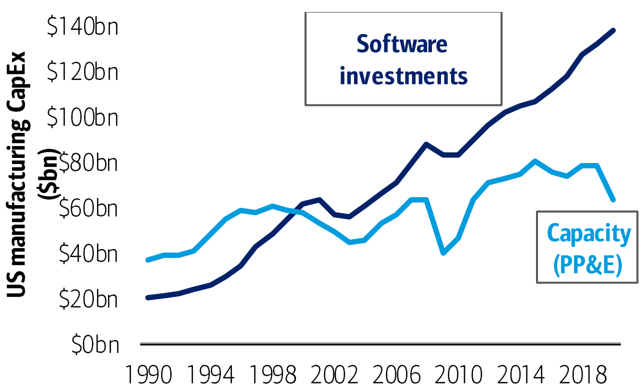
Exhibit 235: Don't fight the secular trend
US Manufacturing Capex spending: software vs. "core" industrial equipment



Source: Bureau of Economic Analysis, BofA Global Research
Note: Software investments include both third-party purchased and custom software. Equipment investments include industrial and transportation equipment and exclude information processing equipment (e.g. computers, communication equipment, etc.)

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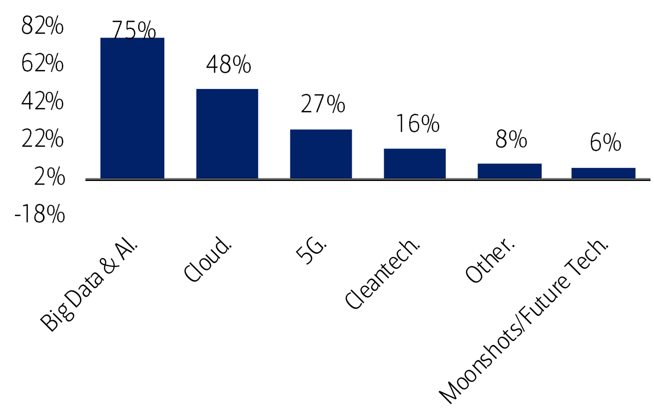
Exhibit 236: 3 of 4 BofA analysts believe Big Data & AI to be a key technology for their sector
BofA Survey* response: Which of these technologies are the most important for your companies post-coronavirus?



Source: BofA Global Research. *See report 'Covid-19 Investment Implications Series: The World After Covid Primer', May 3 2020.

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Exhibit 237:Today vs 2000 better = valuations, profitability, shareholder returns; worse = growth
S&P 500 tech financial metrics today (10/31/2021) vs. in 2000; red = worse than 2000

	Technology			Communication Services		
Metric	Today	Mar. 2000	Change	Today	Mar. 2000	Change
Valuations						
Fwd P/E	26.76	52.56	+	21.70	34.06	+
Trailing P/E	29.62	70.00	+	23.57	43.79	+
PE Trail ex Cash	27.9	75.8	+	22.0	44.4	+
FCF Yield	3.2%	1.0%	+	4.1%	0.8%	+
EV/FCF	30.77	93.42	+	26.98	124.95	+
EV/EBITDA	23.2	37.2	+	14.0	12.2	-
P/BV	11.95	14.24	+	4.79	5.87	+
P/Sales	7.4	12.0	+	4.2	8.4	+
EV/Sales	7.4	7.8	+	4.7	2.5	-
P/OCF	24.36	55.68	+	15.24	17.87	+
EV/OCF	24.4	52.9	+	16.9	19.3	+
PEG	1.5	2.1	+	0.8	1.8	+
Quality/Profitability						
Quality ranking (% of B+ or Better Rated Stocks)	48.6%	35.5%	+	36.4%	47.1%	-
% of stocks with negative earnings	0.0%	3.2%	+	4.3%	14.7%	+
ROC	16.5%	17.0%	-	8.7%	6.9%	+
ROA	15.9%	12.7%	+	8.4%	5.4%	+
ROE	45.9%	27.6%	+	21.8%	14.0%	+
Gross Margin	49.9%	39.6%	+	43.6%	32.2%	+
EBITDA Margin	32.4%	22.1%	+	34.3%	33.9%	+
EBIT Margin	28.0%	14.8%	+	23.0%	20.1%	+
Net Margin	25.1%	17.3%	+	18.0%	19.2%	-
Growth						
Div. Growth	5.9%	13.4%	-	-6.5%	9.8%	-
Trailing Net Income Growth	28.0%	35.3%	-	32.6%	19.1%	+
Trailing Sales Growth	18.1%	14.4%	+	15.2%	26.4%	-
Trailing FCF Growth	23.7%	28.9%	-	36.3%	15.8%	+
LT (5yr) EPS growth	18.4%	25.2%	-	25.6%	18.8%	+
Shareholder returns						
Dividend Yield	0.8%	0.1%	+	0.69%	0.81%	-
Buyback Yield	0.8%	-3.3%	+	1.1%	-8.6%	+
Dividend Payout	24.8%	6.7%	+	18.8%	29.8%	-
Total (Div+Buyback) Payout	51.6%	-240.8%	+	50.4%	-297.0%	+
Total shareholder return (Buyback + Div Yield)	1.6%	-3.3%	+	1.8%	-7.5%	+
Balance sheet						
Cash/Market Cap	5.7%	2.5%	+	6.9%	2.0%	+
Net Debt/Market Cap	1.1%	-0.2%	-	12.2%	14.8%	-
Total Debt/Market Cap	6.9%	1.6%	+	19.0%	6.0%	+
Net Debt/EBITDA	0.3	-0.1	-	1.7	1.7	-

Source: BofA US Equity & Quant Strategy, FactSet

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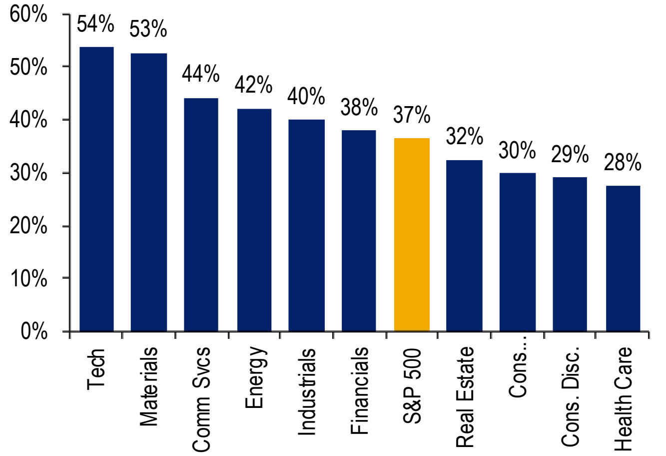
Exhibit 238: Risk: Tech is the poster child for globalization
S&P 500 foreign exposure by sector (based on 2019 sales)



Source: BofA US Equity & Quant Strategy, 2019FY company filings, Georev, FactSet, BofA analyst estimates

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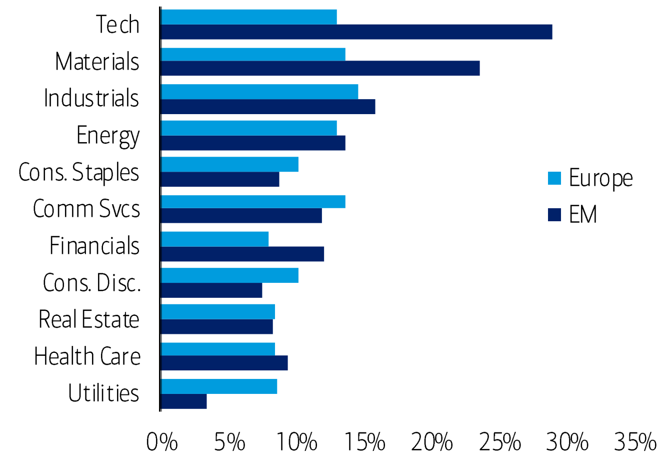
Exhibit 239: Risk: Tech has large EM/China exposure
S&P 500 Europe vs EM foreign exposure by sector



Source: BofA US Equity & Quant Strategy, 2019FY company filings, Georev, FactSet, BofA analyst estimates

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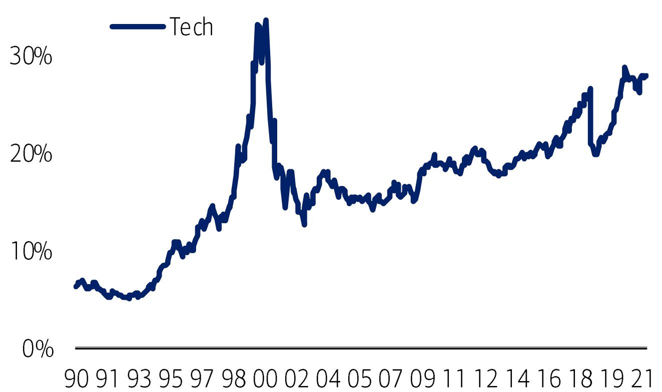
Exhibit 240: Risk: Tech a near-record 28% today (vs. 34% in Tech Bubble)
Tech weight in S&P 500 (1990-present)



Source: S&P, FactSet, BofA US Equity & US Quant Strategy

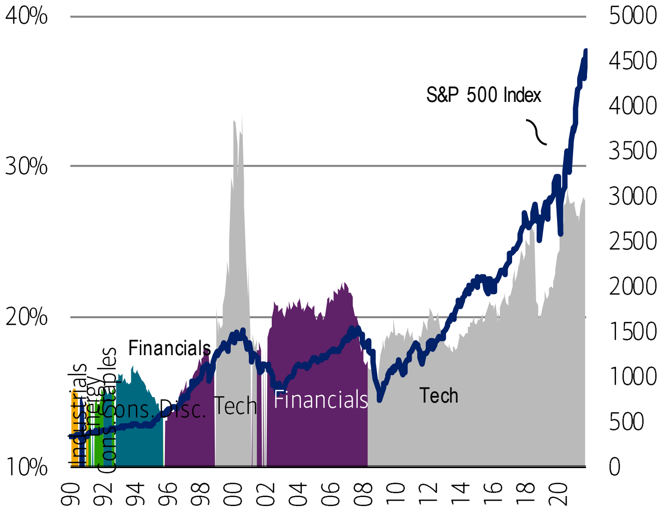
Tech's weight is particularly high

Tech's weight in the S&P 500 has climbed to 28% today – above Financials' peak 21% weight in 2006/2007, though still below its 34% peak during the Tech Bubble.

Financials' weight peaked in Sept. 2006 (12 months before the market peaked), and Tech's weight during the Tech bubble peaked at 34% in March 2000 (the same month the market peaked).

Subsequent 12-month returns for the S&P 500 have historically been negative on average/median when the weight of the largest sector has been above 21%/23%.

Exhibit 241: Record streak as the biggest sector: Tech has dominated the index post-crisis and is now 28% of the S&P 500
S&P 500 sector with the largest market cap weight in the S&P 500 (1990-present)



Source: S&P, FactSet, BofA US Equity & US Quant Strategy

Table 1: The more the largest sector rises above 20%, the weaker subsequent S&P 500 returns have been
S&P 500 subsequent 12-month total returns based on weight of largest sector in the index (1990-present)

Weight greater than:	Avg. N12m Returns	Median N12m returns
15%	4%	10%
16%	3%	10%
17%	3%	10%
18%	3%	10%
19%	2%	9%
20%	1%	10%
21%	-6%	7%
22%	-13%	4%
23%	-18%	-4%
24%	-23%	-7%
25%	-29%	-14%

Source: S&P, FactSet, BofA US Equity & US Quant Strategy

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Exhibit 242: 20-25% weight has historically been a tipping point for the biggest sector's underperformance
Median relative N12m relative sector performance (vs. S&P 500) of sector with the biggest weight, when weight is greater than specified (1990-now)

Weight	Avg. N12m relative returns	Median N12m relative returns	# of periods represented
15%	0.6%	2.0%	87%
16%	0.6%	1.9%	78%
17%	1.2%	2.3%	71%
18%	1.3%	2.2%	64%
19%	1.2%	1.8%	52%
20%	0.8%	2.7%	40%
21%	-0.3%	2.8%	25%
22%	-1.7%	5.2%	17%
23%	-4.3%	3.9%	14%
24%	-8.5%	2.3%	12%
25%	-14.3%	-8.0%	10%
26%	-21.9%	-30.0%	8%
27%	-25.3%	-35.6%	7%
28%	-29.7%	-36.3%	3%

Source: S&P, FactSet, BofA US Equity & US Quant Strategy

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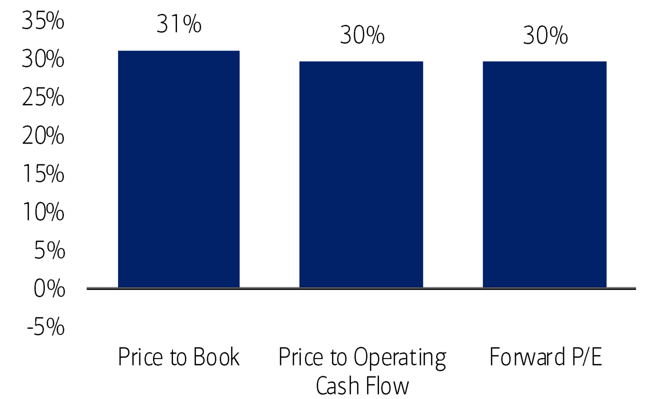
Tech has bucked historical trends

Being the biggest sector in the S&P 500 doesn't mean a sector will underperform—Tech has been the biggest sector for the entire post-crisis period. But how big it gets may matter: since 1990, the biggest sector in the S&P 500 has historically underperformed over the subsequent year when the sector's weight has climbed in the 20%+ range (based on average returns) or the 25%+ range (based on median returns).

Despite hitting 25% in March 2020, Tech has outperformed since then – suggesting risk of pay-back.

Marketweight Materials

Exhibit 243: Upside potential on valuation
Upside/(downside) % from historical average for Materials based on relative valuations (vs S&P 500) since 1986, as of 10/2021



Source: BofA US Equity & Quant Strategy, FactSet

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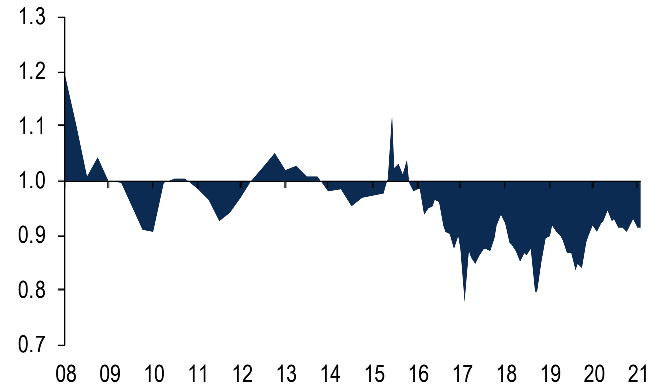
Exhibit 244: Active positioning remains underweight
Materials' long-only relative weight vs S&P 500 (1/2008-10/2021)



Source: BofA US Equity & Quant Strategy, FactSet

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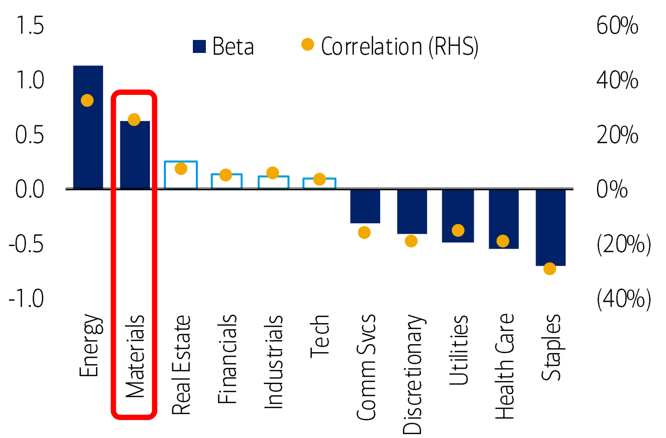
Exhibit 245: Inflation beneficiary
S&P 500 sectors' rel. perf. beta vs. BofA inflation composite (1974-present)



Source: Bloomberg, FactSet, BofA US Equity & Quant Strategy
Note: Empty bars indicate not statistically significant

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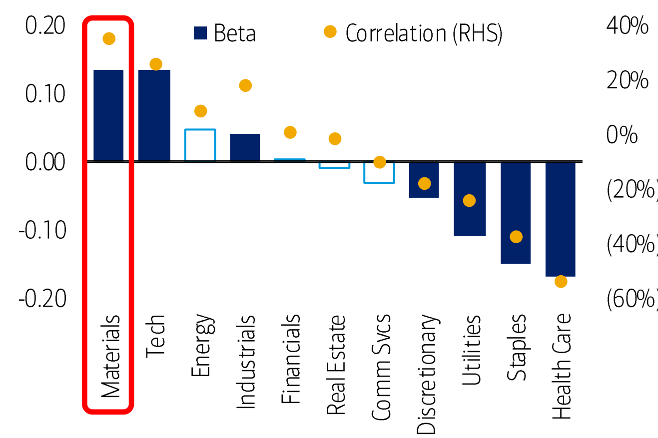
Exhibit 246: ...But most exposed to China risk
S&P 500 sectors' rel. perf. to MSCI China (May 1996 to present)



Source: Bloomberg, FactSet, BofA US Equity & Quant Strategy
Note: Based on MSCI China index on a YoY basis; Empty bars indicate not statistically significant

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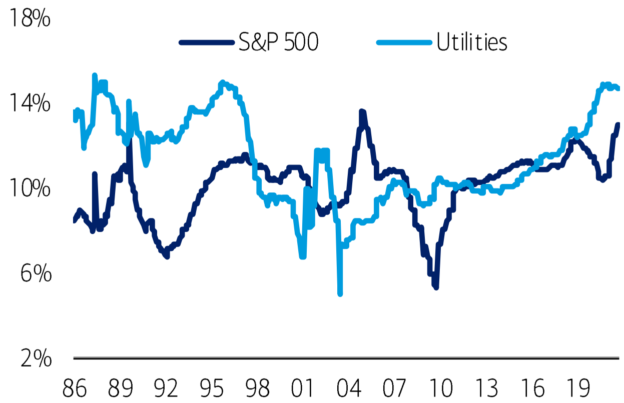
Marketweight Utilities

Exhibit 247: Pro: strong fundamentals
S&P 500 and Utilities net margin, 1/1986-10/2021



Source: BofA US Equity & Quant Strategy, FactSet

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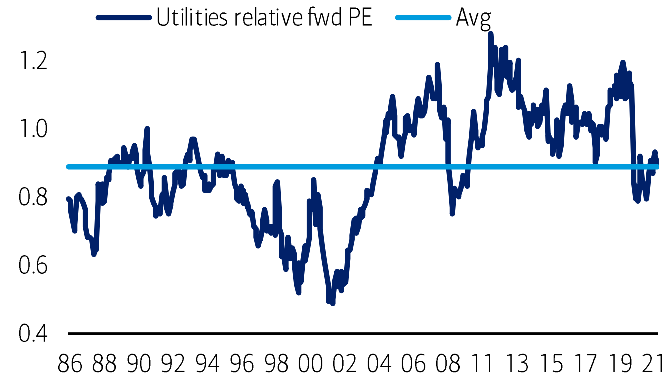
Exhibit 248: Neutral: valuations back to LT avg levels
Relative (versus S&P 500) forward PE (1/1986-10/2021)



Source: FactSet, Compustat, BofA US Equity & Quant Strategy

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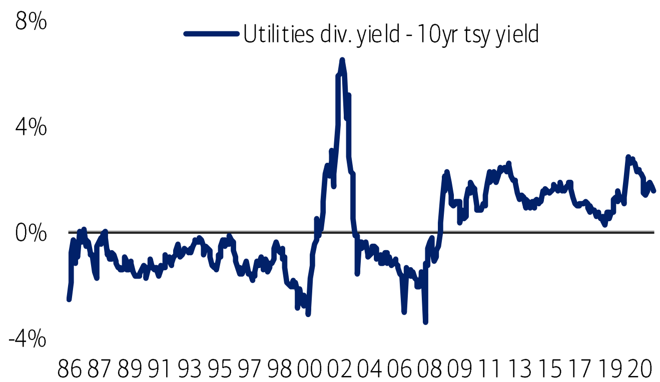
Exhibit 249: Neutral: yield vs. bonds back to post-GFC avg
Utilities dividend yield less 10-year yield (1/1986-10/2021)



Source: FactSet, FRB, BofA US Equity & Quant Strategy

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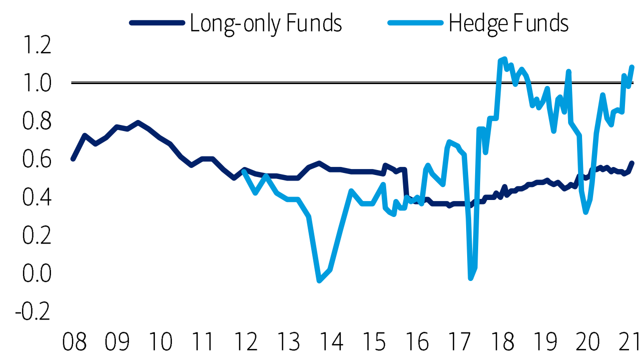
Exhibit 250: Pro: underweight but bid from HFs
Long-only and hedge funds' net relative positioning (as of 10/2021)



Source: Lipper Analytical Services, BofA US Equity & Quant Strategy, FactSet Ownership

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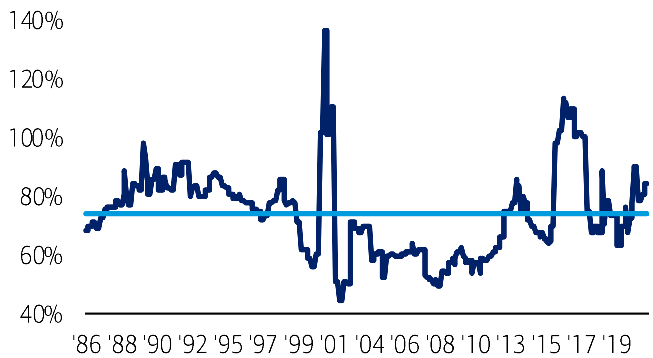
Exhibit 251: Con: elevated payout ratio
Utilities dividend payout ratio (1/1986-10/2021)



Source: FactSet, Compustat, BofA US Equity & Quant Strategy

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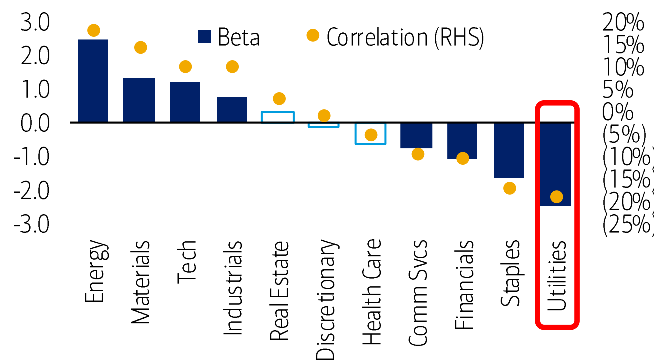
Exhibit 252: Con: the worst performer when rates rise
S&P 500 sectors' relative performance sensitivity to nominal rates (1972-present)



Source: Bloomberg, FactSet, BofA US Equity & US Quant Strategy
Note: Empty bars indicate not statistically significant

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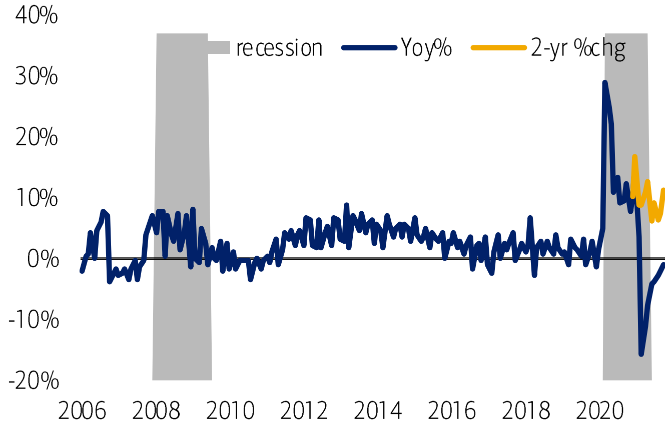
Underweight Consumer Staples

Exhibit 253: Reopening of the economy hurts Staples
Daily spending at grocery stores, based on BAC aggregated card data (% yoy, 2006-10/21)



Source: BAC internal data; Note: Shaded area indicates recessions. For all BAC Internal Data please see the BofA US Economics team's BofA on USA report for detailed explanation of the methodology and limitations in connection with aggregated BAC credit and debit card data.
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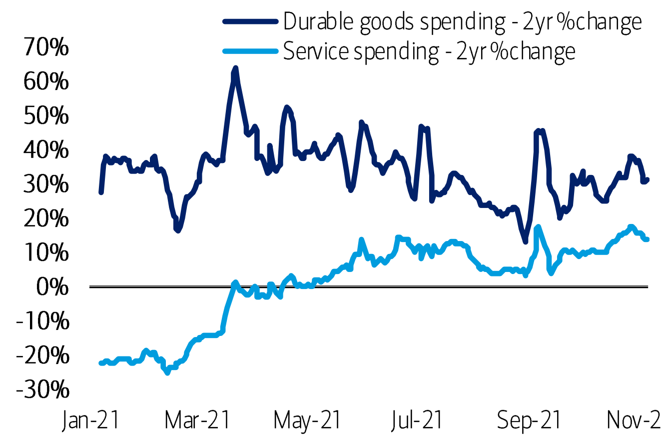
Exhibit 254: Pent-up demand for services, not goods
Aggregated daily spending by types of spending, based on BAC aggregated card data (% yoy, 7-day moving average (as of 11/07/21)



Source: BAC internal data
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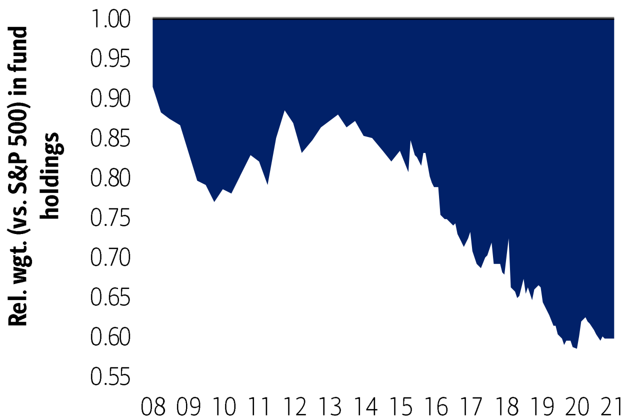
Exhibit 255: Contrarian positive: hated by active funds
Staples' relative weight at all-time lows (1/2008-10/2021)



Source: FactSet, BofA US Equity & Quant Strategy
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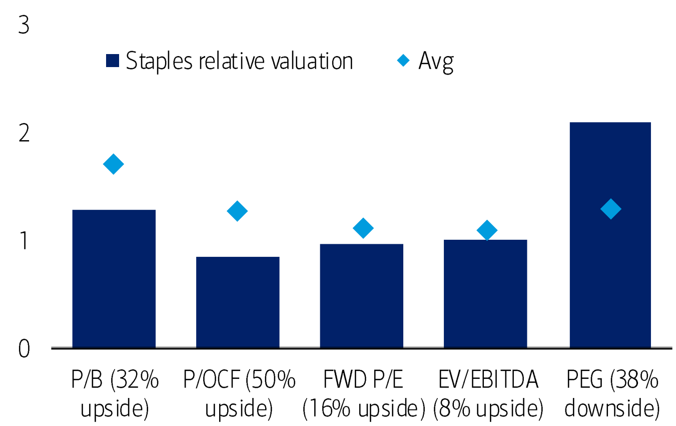
Exhibit 256: Pro: cheap on most valuation measures
Relative valuations of Staples (versus S&P 500) and percent upside/downside versus historical average as of 10/2021



Source: FactSet, BofA US Equity & Quant Strategy
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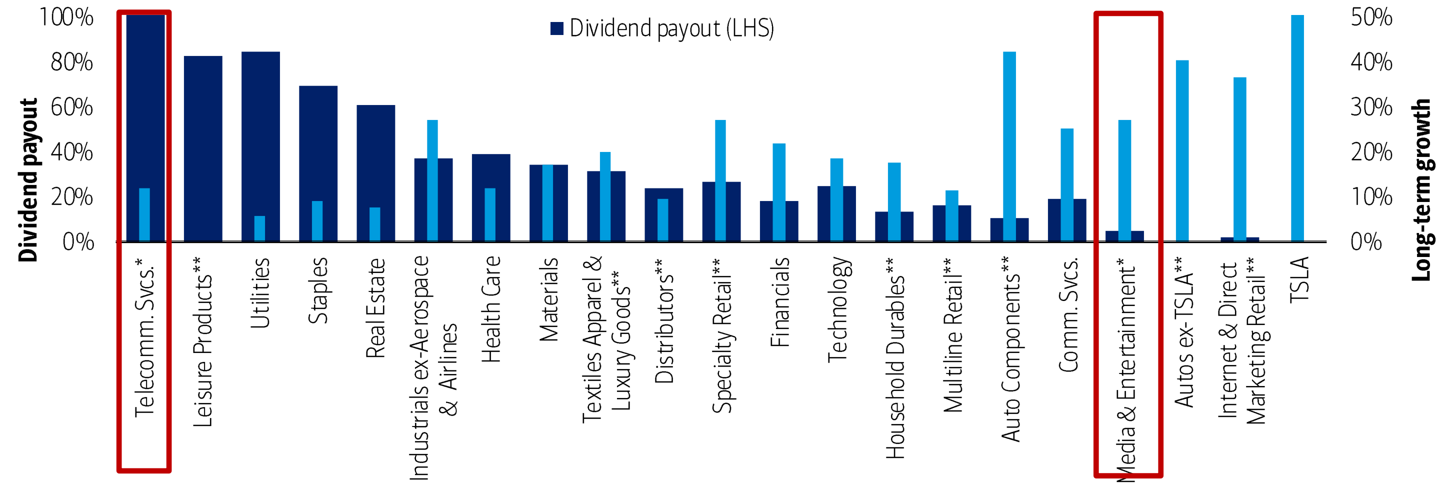
Underweight Communication Services

Exhibit 257: Sector and select industry group spectrum from short duration (high payout/low growth) to long duration (high growth/low payout) – Comm. Svcs. exposed at both ends

S&P 500 dividend payout ratios and projected long-term growth rates as of 11/12/21



Note: *denotes industry groups in Comm. Svcs.; **denotes industry groups in Cons. Disc.; Energy, Hotels Restaurants & Leisure, and Aerospace and Airlines excluded due to non-earners

Source: BofA US Equity & US Quant Strategy

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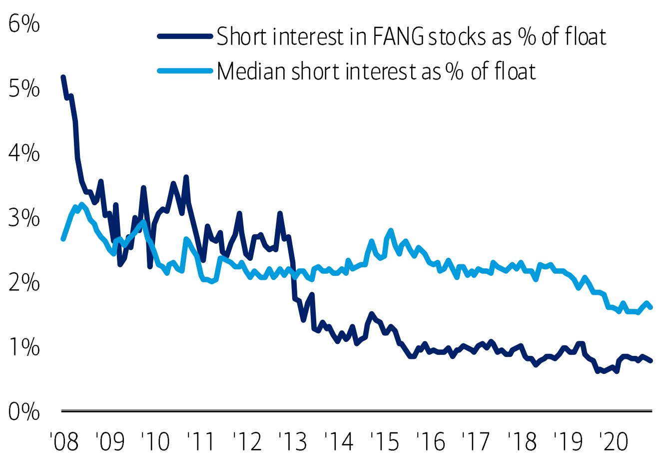
Exhibit 258: Record low short interest

Short interest on FANG stocks vs. S&P 500 as % of float: 12/2008 – 10/2021



Source: BofA US Equity & Quant Strategy, FactSet Ownership

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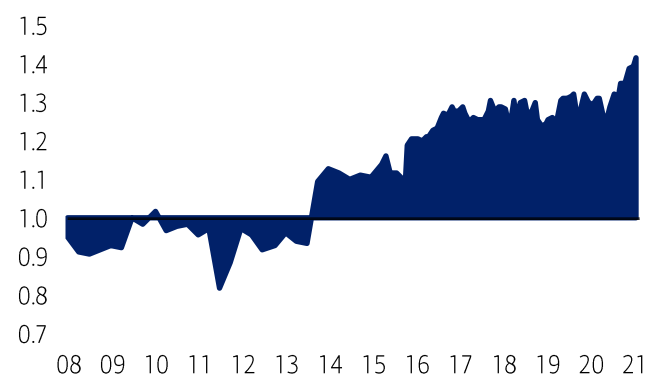
Exhibit 259: Record crowding by long-only funds

Relative weight (versus S&P 500) in Comm. Svcs. by long-only funds, 1/2008 – 10/2021



Source: FactSet, BofA US Equity & Quant Strategy

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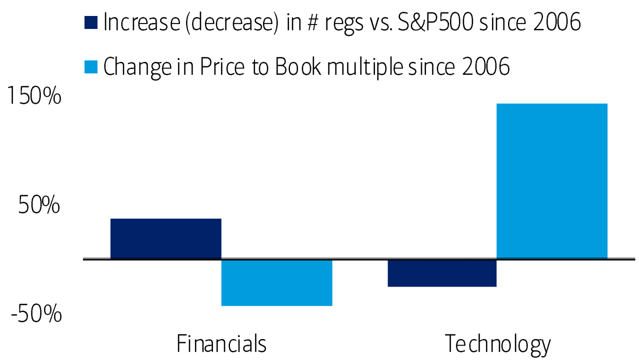
Exhibit 260: US Financials vs. US Tech: regulations led to lower multiples (and vice versa)
# of regulations vs. change in Price to Book Value, 2006 vs. 2017



Source: BofA US Equity & Quant Strategy, quantGov

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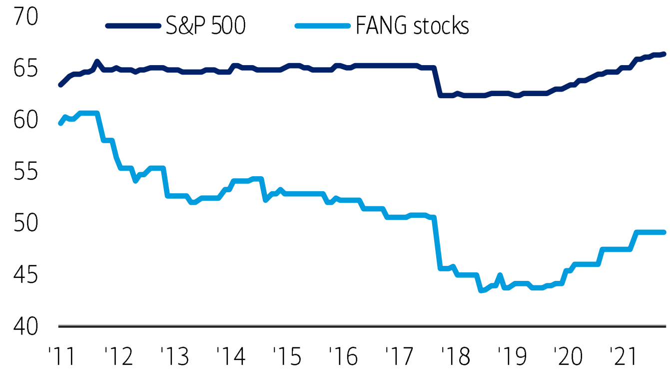
Exhibit 261: FANG corporate governance improving but still low vs history
Based on average Sustainalytics Governance scores (1/2011-10/2021)



Source: Sustainalytics, BofA US Equity & Quant Strategy

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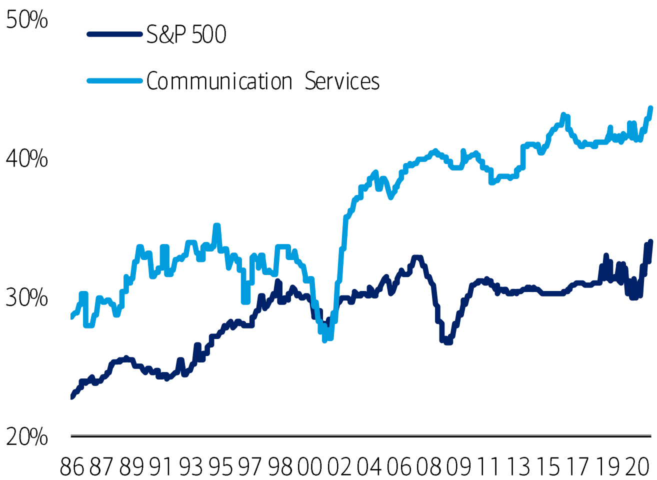
Exhibit 262: Upside risk: Resilient fundamentals
S&P 500 and Communication services gross margin, 1/86-10/21



Source: FactSet, BofA US Equity & Quant Strategy

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Underweight Consumer Discretionary

Exhibit 263: Statistically expensive on every measure
% upside/downside of relative valuations vs relative long-term average by sector, 1986-10/21*

Sector	P/BV	P/OCF	Fwd P/E	EV/Sales
S&P 500 (absolute)	-37.6%	-43.5%	-26.6%	-45.9%
Comm. Svcs.	1.2%	4.9%	15.1%	-50.3%
Cons. Disc.	-47.6%	-26.3%	-28.7%	-68.9%
Energy	122.9%	38.7%	63.4%	-21.3%
Financials	74.4%	N/A	16.1%	-45.0%
Health Care	47.1%	64.3%	31.4%	40.8%
Industrials	-12.1%	-7.0%	-3.6%	0.7%
Materials	26.9%	24.8%	23.9%	-44.8%
Real Estate	9.0%	N/A	3.5%	-65.5%
Staples	29.2%	54.4%	11.5%	-51.6%
Technology	-42.1%	-0.3%	-8.7%	-25.3%
Utilities	24.6%	-5.4%	-3.8%	-51.3%

*Note: Real Estate since 2002. **Source:** BofA US Equity & Quant Strategy, FactSet
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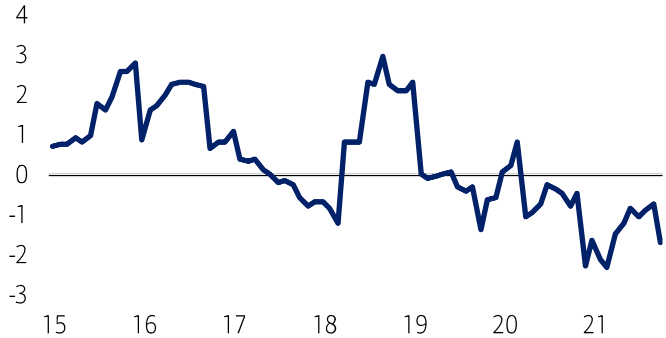
Exhibit 264: Dividend Discount Model alpha historically low
Consumer Discretionary Dividend Discount Model alpha, 2015-10/21



Note: Dividend Discount Model Alpha defined as the implied return from the BofA Quantitative Strategy three-stage dividend discount model less the required return from a Capital Asset Pricing Model
Source: BofA US Equity & Quant Strategy, FactSet
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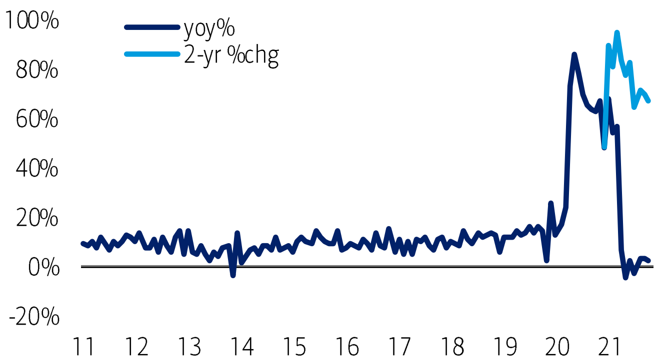
Exhibit 265: Mean reversion likely from internet to brick and mortar
Monthly yoy and 2yr growth of online retail spend, based on BAC aggregated card data (as of 10/2021)



Source: BAC Internal Data
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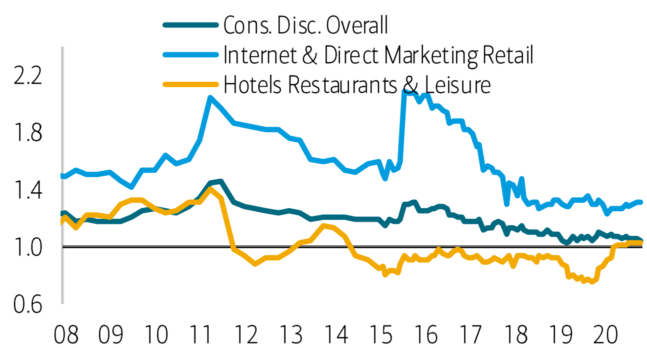
Exhibit 266: ...but Internet& Direct Marketing Retail is still favored by investors
Long-only fund positioning (relative to the S&P 500, above 1 = overweight), 9/08-10/21



Source: BofA US Equity & US Quant Strategy, FactSet
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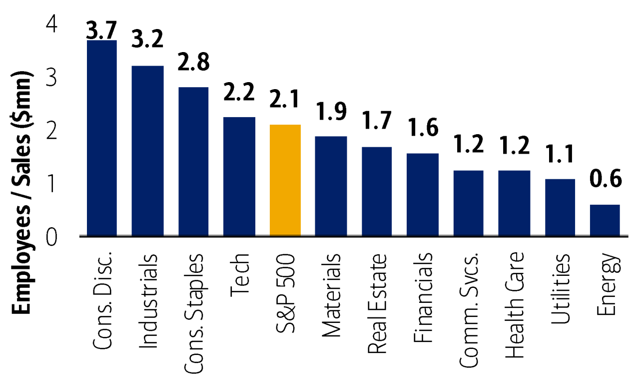
Exhibit 267: Discretionary is labor-intensive sector – a risk if wages continue to rise
Employees/sales (LTM; $mn) by S&P 500 sector as of 10/20/21



Note: Employee data is based on data as of latest fiscal year, sales are latest 12 months
Source: BofA US Equity & Quant Strategy, FactSet
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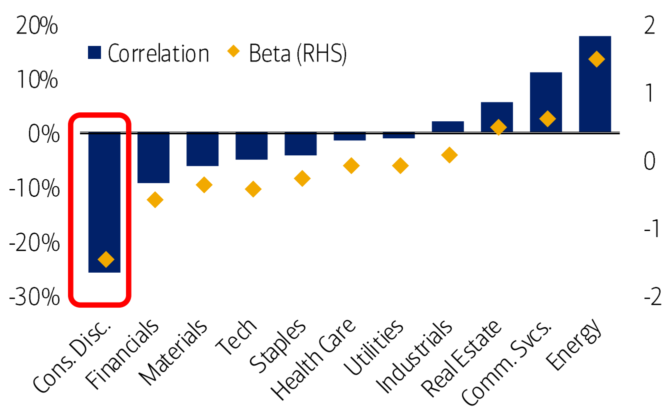
Exhibit 268 Historically underperformed when wages rose
Relative sector performance (vs. S&P 500) vs. average hourly earnings (1970-present)



Source: BofA US Equity & Quant Strategy, FactSet, Bloomberg
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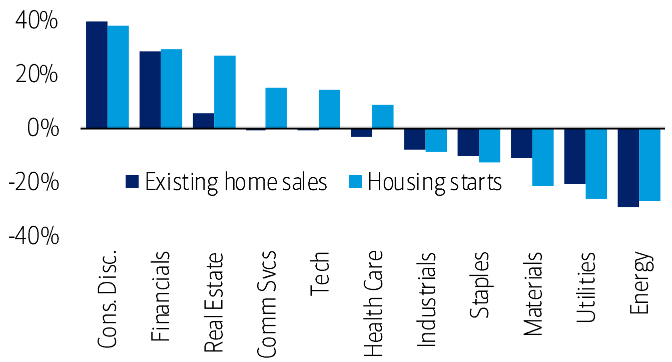
Exhibit 269: Housing (discretionary spending) headwind to the sector if affordability falls/rates rise

Correlation between housing data vs. relative sector performance: 12/1970 – 9/2021



*Based on data since 2000 for existing home sales and 1970 for housing starts

Source: Bloomberg, BofA US Equity & Quant Strategy

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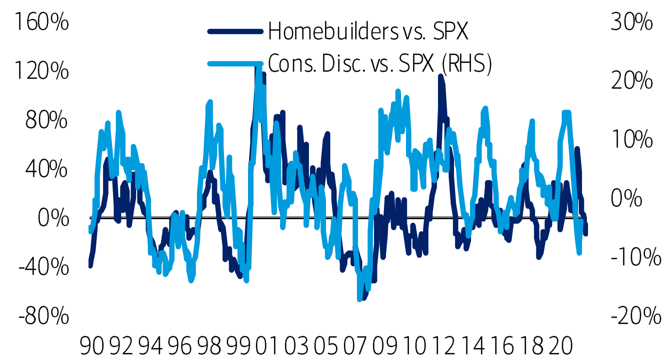
Exhibit 270: Homebuilders = canaries for Cons. Disc.

Relative performance of S&P 500 Homebuilders vs. S&P 500 & Cons. Disc. Vs. S&P 500 (lagged by five months), 1990-present



Source: BofA US Equity & Quant Strategy, Bloomberg

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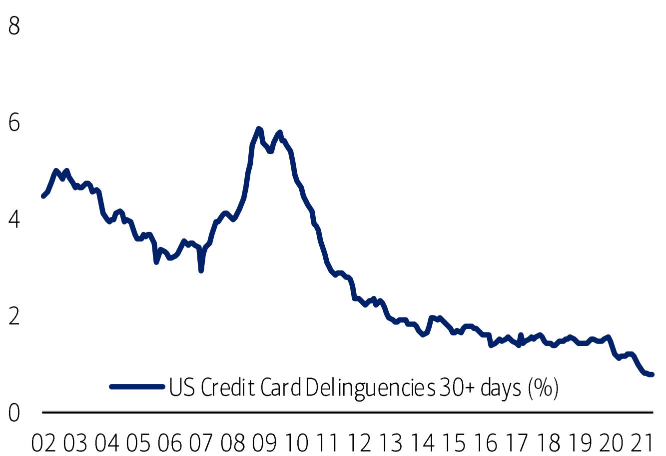
Exhibit 271: Upside risk: despite recession, no credit issues

US credit card delinquencies 30+ days composite (%), 5/2002 – present



Source: Bloomberg, BofA US Equity & US Quant Strategy

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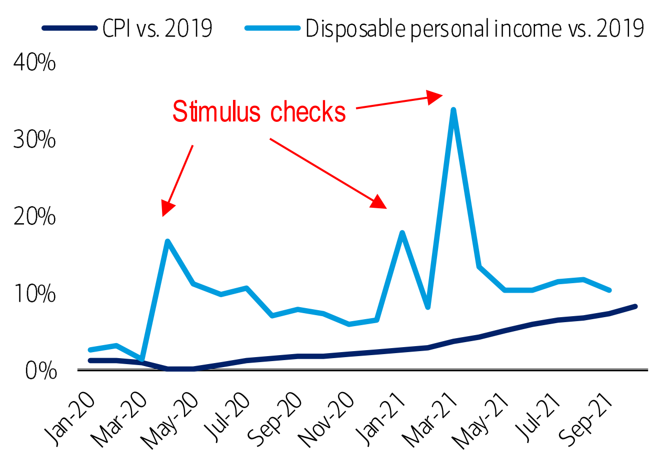
Exhibit 272: Upside risk: despite rising inflation, personal income has outpaced inflation so far (even without stimulus checks), but the gap is narrowing

Disposable personal income and CPI vs. 2019 levels



Source: Bloomberg, BofA US Equity & US Quant Strategy

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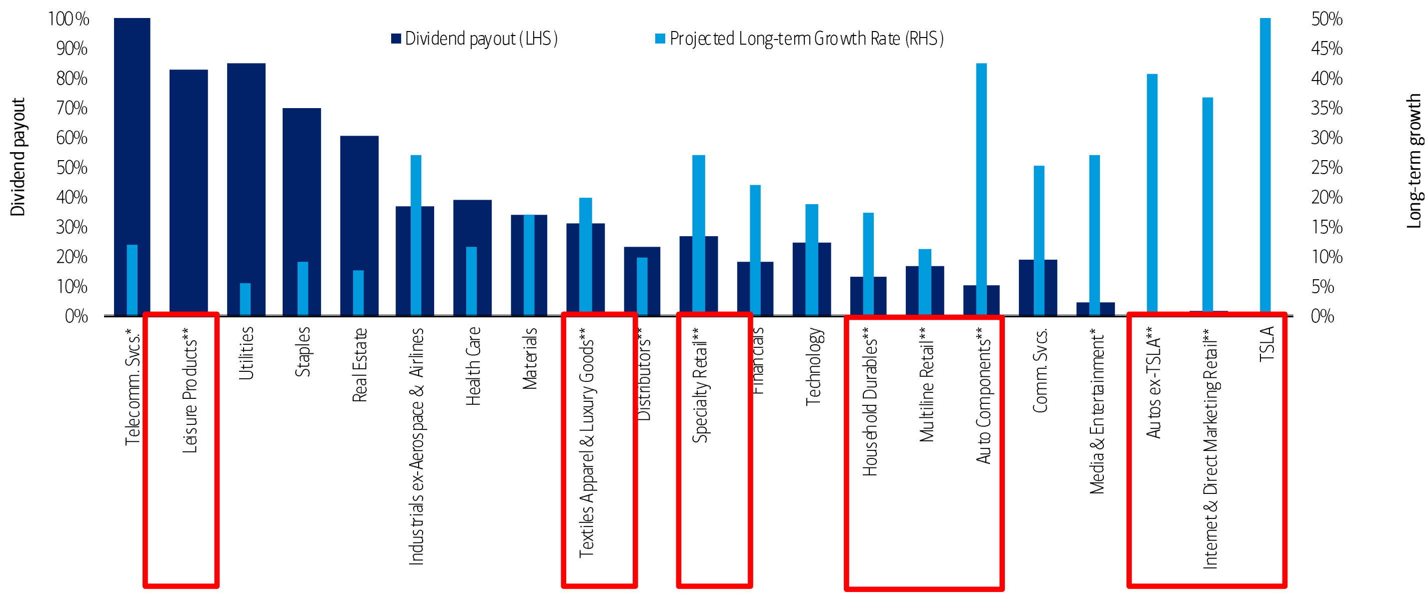
A stock picker's sector but watch out for long duration stocks

Exhibit 273: Sector and select industry group spectrum from short duration (high payout/low growth) to long duration (high growth/low payout)

S&P 500 dividend payout ratios and projected long-term growth rates as of 11/12/21



Note: *denotes industry groups in Comm. Svcs.; **denotes industries in Cons. Disc.; Energy, Hotels Restaurants & Leisure, and Aerospace and Airlines excluded due to non-earners. Source: BofA US Equity & US Quant Strategy

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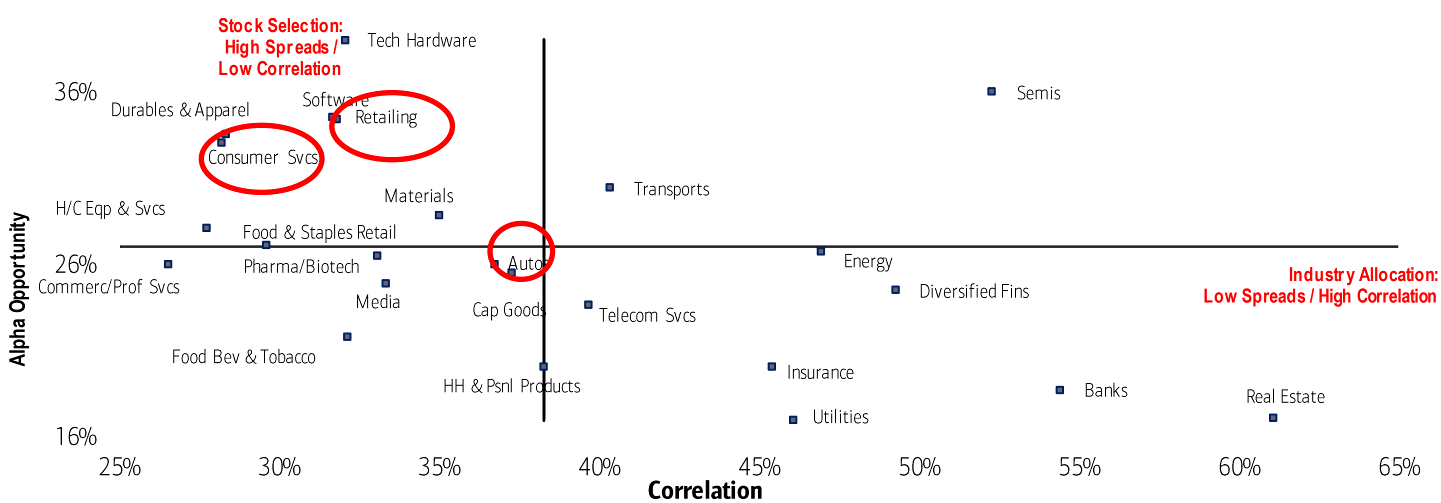
Exhibit 274: Disc is, and has always been, a stock-picker's sector: more idiosyncratic, less macro

Historical Intra-stock correlation vs. performance spread (2Q86 to 3Q21)



Source: BofA US Equity & US Quant Strategy

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Small caps>large caps

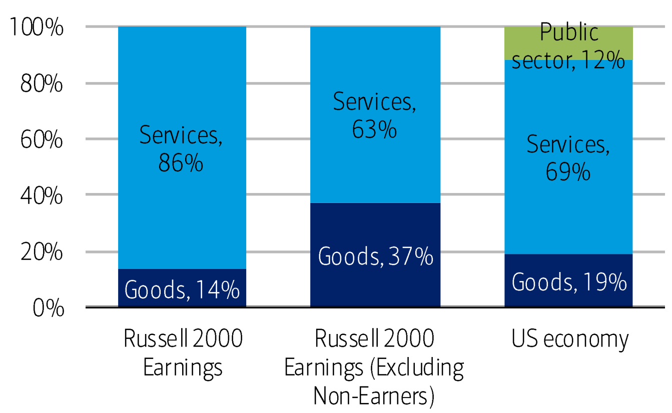
We would continue to stick with small caps as we head into 2022. We see several reasons why small caps could outperform large caps, at least for the first half of '22:

- **More domestic/more geared to US growth** – where our economists expect the US to remain an engine of growth with above-trend 4% US GDP in 2022. Risks from China also support owning domestically-oriented small caps.
- **Services recovery beneficiaries** – where small caps are more geared to services than goods spending, the opposite of the S&P 500.
- **Capex recovery/re-shoring beneficiaries** – small caps' sales have benefitted more during US capex cycles, where we expect a capex recovery in 2022.
- **Continued improvement in COVID** – small vs. large caps' relative performance has been correlated with rising/falling COVID cases.
- **Relative value** – small caps trade at a 23% discount to large caps on forward P/E when typically they trade at a 2% premium Valuations today suggest high single digit annualized returns the Russell 2000 over the next decade.

Risks:

- **Late Cycle:** Small caps have performed in-line with or below large caps in Late Cycle (current phase of our US Regime Indicator), though COVID case counts have been a bigger driver of returns than regimes since the vaccine.
- **Fed tightening**: small caps have outperformed, on average, leading into the first rate hike, but have slightly underperformed, on average, during tightening cycles. Performance was better during the '99 tightening cycle – the only other time besides today when small caps weren't expensive vs. large caps.

Exhibit 275: Small caps more geared toward services (like US GDP)...
Our estimate for Goods vs. Services exposure of Russell 2000 based on industry breakout of 2019 earnings vs. % goods/services for US economy (based on gross value added by industry, 2019)



Source: Haver Analytics, FactSet, BofA US Equity & US Quant Strategy

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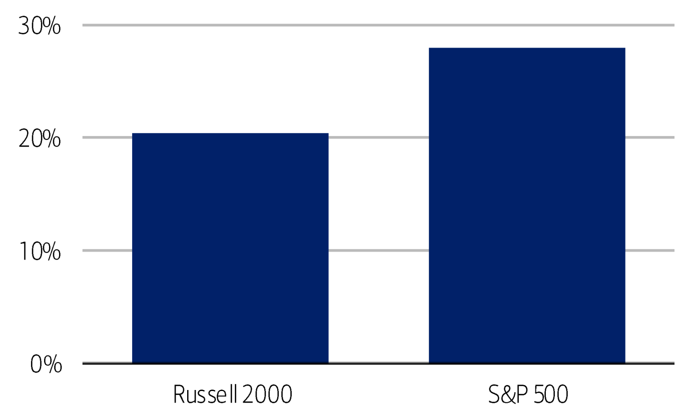
Exhibit 276: Small caps are more domestic (20% foreign exposure vs. close to 30% for large caps)
Foreign sales exposure for Russell 2000 vs. S&P 500 (as of 2020)



Source: FactSet, company reports, BofA US Equity & US Quant Strategy

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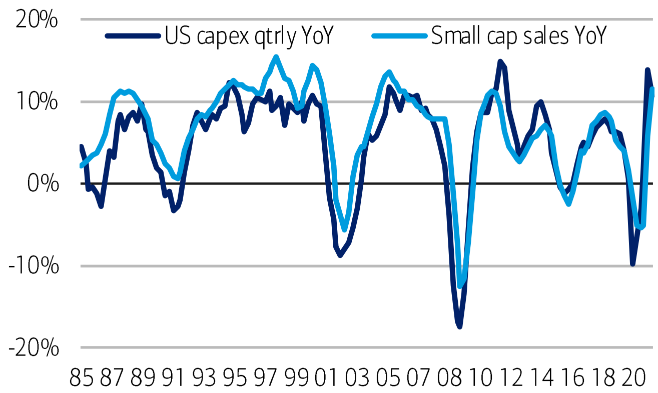
Exhibit 277: Small cap sales growth has been highly correlated with US capex growth (where capex growth has accelerated to 11% y/y)
US qtrly YoY capex growth vs. Russell 2000 YoY sales growth, 1986-3Q21



Source: FactSet, Haver Analytics, BofA US Equity & US Quant Strategy
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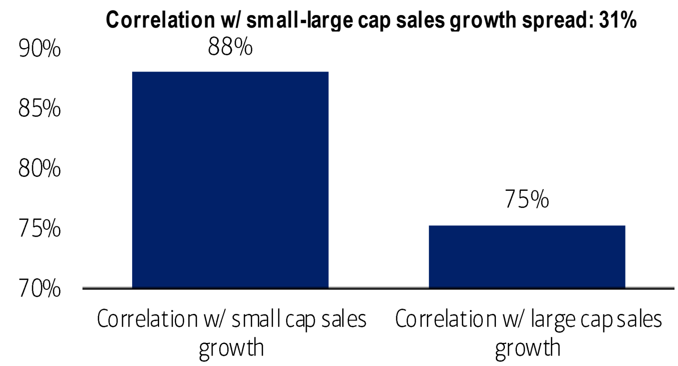
Exhibit 278: …where the correlation (88%) is higher than for large caps' sales (75%)
Correlation of US capex growth with small cap (Russell 2000) and large cap (S&P 500) sales growth, 1985-present



Source: FactSet, Haver Analytics, BofA US Equity & US Quant Strategy
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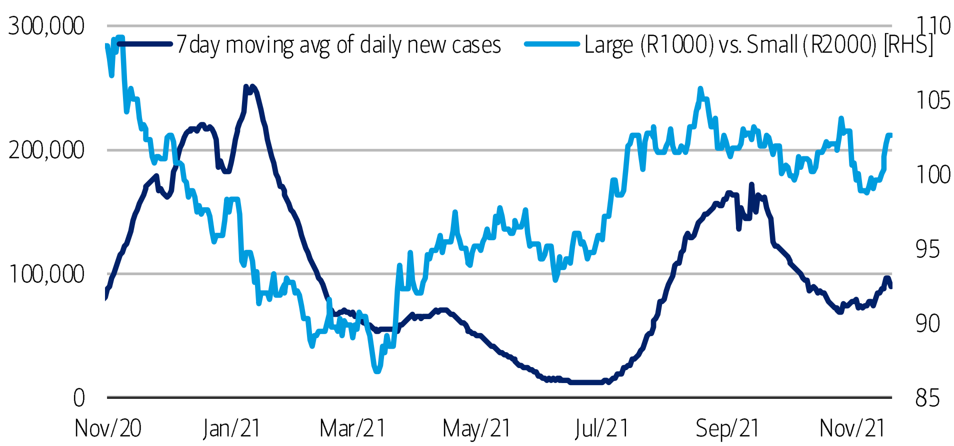
Further fall in COVID cases would be bullish for small caps

Exhibit 279: Since the vaccine, small caps have outperformed large caps when COVID cases are falling (risk: cases have increased since start of Nov from ~70,000 to 90,000)
7-day moving avg. of daily new cases vs. Russell 1000/Russell 2000 relative performance Nov'20-now



Source: Bloomberg, BofA US Equity & US Quant Strategy
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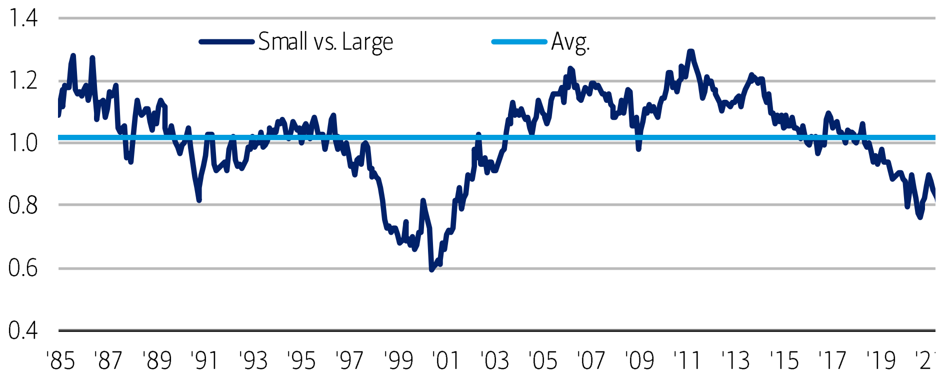
Valuation: small caps still cheap vs. large caps

…which suggests outperformance over the next decade

The historical relationship (since 1985) between the forward P/E and subsequent 10-year returns for the Russell 2000 suggests that based on today's valuations, small caps could see mid-to-high single digit annualized returns over the next decade. The relative forward P/E (0.77x today vs. 1.02x historical average) also suggests small caps should outperform large caps over the next decade.

Exhibit 280: Small caps remain cheap vs. large caps (23% P/E discount vs. 2% historical avg. premium)
Relative Forward P/E: Russell 2000 vs. Russell 1000, 1985-10/31/2021



Source: BofA US Equity & Quant Strategy, Russell Investment Group, I/B/E/S, Compustat

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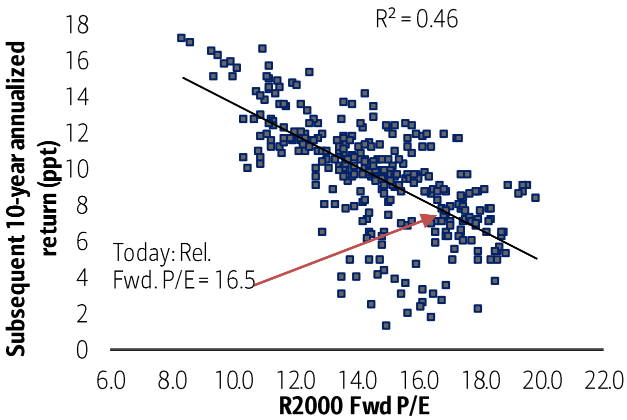
Exhibit 281: The absolute fwd. P/E for the Russell 2000 suggests mid-to-high single digit annualized 10yr returns
Russell 2000 fwd P/E vs. next 10yr annualized returns, 1985-10/2021



Source: FactSet, BofA US Equity & US Quant Strategy

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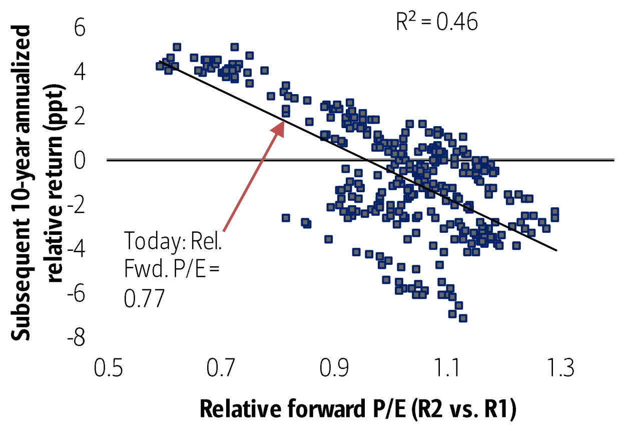
Exhibit 282: Relative multiple suggests that small caps could outperform large caps over the next ten years
Relationship between relative fwd. P/E of Russell 2000 vs. Russell 1000 and next 10yr annualized relative returns, 1985 - 10/2021



Note: Represents the relationship between the relative forward PE for the Russell 2000 vs the Russell 1000 (since 1979) and subsequent rolling 10-year annualized returns differential.
Source: Russell Investment Group, FactSet, BofA US Equity & Quant Strategy

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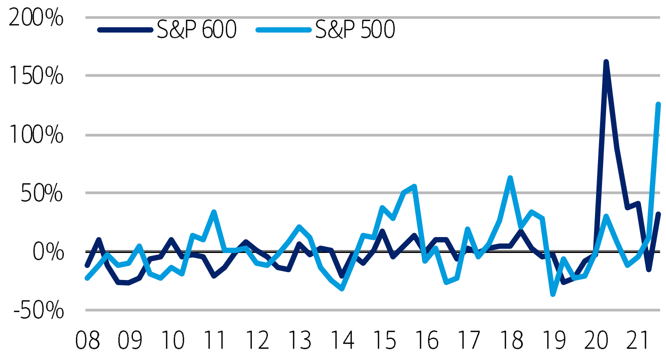
Small caps and inflation

Our economists expect inflation pressures to ease, but we see several reasons why small caps could hold up well despite continued near-term pressures. After seeing a similar pick-up in mentions of cost inflation on earnings calls, mentions of labor (proxy for labor inflation) have increased more for large caps (where small caps saw a bigger hit a year ago), and small caps have also seen a bigger tick-up in pricing mentions (proxy for pricing power). Commodity inflation is positive for capex cycles, where small caps are beneficiaries. Additionally, after years of low inflation and oligopolistic trends within the equity market in which larger companies have taken share, this could finally be reversing given pro-small-business sentiment and a focus on social/income equality by the Biden administration, plus potential regulation and anti-monopolistic sentiment in areas like Big Tech (see: Recovery, reflation, re-rating note).

Note that small caps outperformed during the historical analog of the late 60's inflationary period (see: The Thundering Word: Trading the Inflation Theme 11 March 2021), and could serve as a hedge against stagflation (have outperformed large caps during historical stagflationary backdrops).

Exhibit 283: Small caps have mentioned labor less YoY vs. in large caps....
YoY change in mentions of "labor" per company on S&P 600 & S&P 500 earnings calls



Source: BofA Global Research
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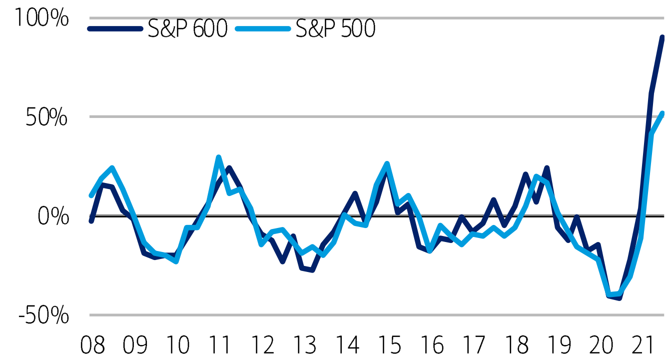
Exhibit 284: ...and more signs of pricing power vs. large caps YoY
YoY change in mentions of "price" per company on S&P 600 & S&P 500 earnings calls



Source: BofA Global Research
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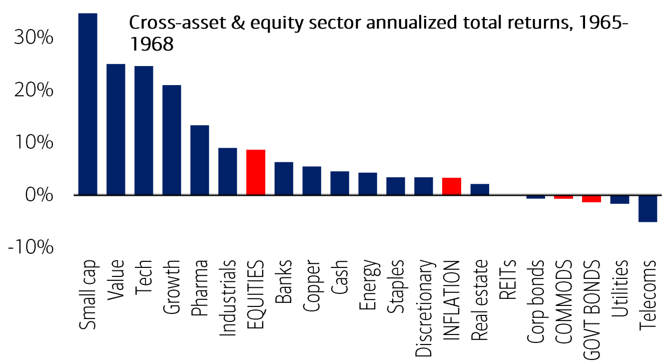
Exhibit 285: Historical analog of late-'60s: small caps were best performers
Cross-asset & equity sector annualize total returns, 1965-1968



Source: BofA Global Investment Strategy, Bloomberg, Ibbotson, Global Financial Data, Homer and Sylla "A History of Interest Rates", (2005). As published in: The Thundering Word 11 March 2021.
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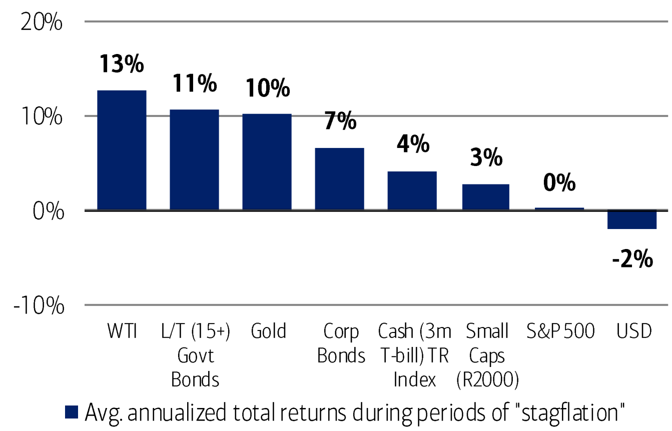
Exhibit 286: Small caps aver outperformed large caps, on avg. during staflationary environments (3% vs. 0% avg. annualized returns)
Avg. annualized total returns of asset classes during periods of below trend growth and rising inflation since 1972



Source: Haver Analytics, Bloomberg, BofA US Equity & US Quant Strategy
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Rates backdrop: outlook for long end & yield curve a (+)...

Our Rates team expects the 10yr yield to rise to 2.0% by the end of 2022, with a flattening yield curve (bear flattener). Historically, small caps have outperformed in bear flattener environments (bear flatteners and bear steepeners have been the two best yield curve environments for small vs. large). And since the Global Financial Crisis, small caps have outperformed in periods of rising long rates.

Exhibit 287: Bear flattener (Rates team's base case) has been positive for small>large caps
Small cap (Russell 2000) absolute and relative (vs. S&P 500) performance during yield curve phases since 1978

Avg. returns	**RTY**	**RTY vs. SPX**
bull-steepener	0.0%	(0.4%)
bull-flattener	1.2%	(0.2%)
bear-flattener	1.1%	0.5%
bear-steepener	1.3%	0.4%
Median returns	**RTY**	**RTY vs. SPX**
bull-steepener	0.8%	(0.3%)
bull-flattener	1.1%	(0.0%)
bear-flattener	0.6%	0.2%
bear-steepener	2.2%	0.3%
Hit rate	**RTY**	**RTY vs. SPX**
bull-steepener	54%	38%
bull-flattener	58%	44%
bear-flattener	58%	52%
bear-steepener	64%	54%

Source: Bloomberg, BofA US Equity & US Quant Strategy

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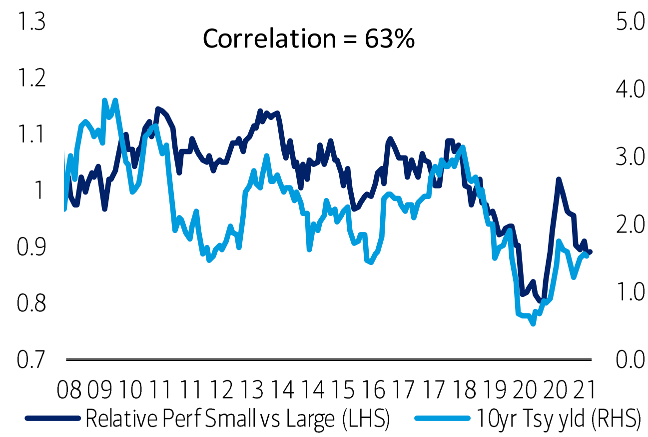
Exhibit 288: Small vs. large relative perf. has also been positively correlated (63%) with the 10yr yield post-crisis
Relative performance of Russell 2000 vs. Russell 1000 and 10yr Treasury yield, 2009-present



Source: Bloomberg, BofA US Equity & US Quant Strategy

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But higher short end (Fed tightening) a risk (w/ nuances)

Our economists' forecast that the Fed beings hiking rates in June poses a key risk for small caps. Returns have been positive (and on average, ahead of large caps) in the months leading into the first hike, but mixed afterwards (performing in-line with large caps, on average in the six months after the first hike and underperforming by 1ppt on average over the full tightening cycle). One difference today: small caps are trading at a 23% P/E discount to large caps, vs. a 2% average premium heading into all other tightening cycles except one. The exception: 1999, as noted throughout this report, we see many parallels with the market backdrop then. In that hiking cycle, small caps performed in-line with large caps over the course of the tightening cycle.

Exhibit 289: Small caps have performed well leading into tightening cycles, and are typically up (but with mixed performance vs. large) once tightening starts
Performance of Russell 2000 (absolute and vs. S&P 500) ahead of and during Fed tightening cycles since 1983 and valuation at time of first rate hike

	Russell 2000				**Russell 2000 vs. S&P 500**					**Valuation at start of tightening**	
Start of hiking	**3m before**	**6m perf after hike**	**12m perf after hike**	**Full hiking cycle (annualized)**	**3m before**	**6m perf after hike**	**12m perf after hike**	**Full hiking cycle (annualized)**		**Fwd P/E**	**Rel. Fwd. P/E**
May-83	16%	-2%	-6%	-4%	3%	-1%	-5%	-5%		11.0	1.10
Dec-86	-3%	16%	-20%	28%	-2%	-1%	-13%	-7%		13.9	1.14
Mar-88	22%	7%	13%	13%	6%	9%	6%	6%		11.2	1.01
Feb-94	3%	-8%	-7%	-3%	0%	-4%	-5%	-5%		15.2	1.04
Jun-99	12%	4%	12%	9%	7%	-3%	1%	0%		16.8	0.75
Jun-04	-3%	12%	10%	12%	-1%	7%	2%	6%		17.7	1.08
Dec-15	3%	-4%	10%	4%	-2%	-4%	4%	-2%		17.5	1.06
Avg	**7%**	**3%**	**2%**	**9%**	**2%**	**0%**	**-1%**	**-1%**	**Avg**	**14.8**	**1.02**
Hit Rate	**71%**	**57%**	**57%**	**71%**	**43%**	**29%**	**57%**	**29%**	**Today**	16.5	0.77

Source: Bloomberg, FactSet, BofA US equity & US Quant Strategy

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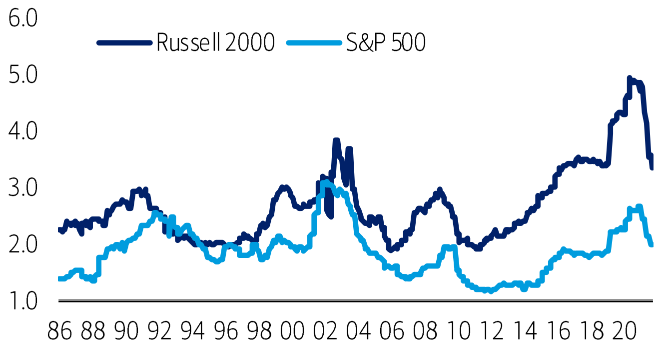
Big improvement in balance sheets

Exhibit 290: Leverage still elevated, but has fallen from 5x to 3.3x (late 2018 levels)
Russell 2000 and S&P 500 non-Financials Net Debt/EBITDA, 1986-present



Source: FactSet, BofA US Equity & US Quant Strategy

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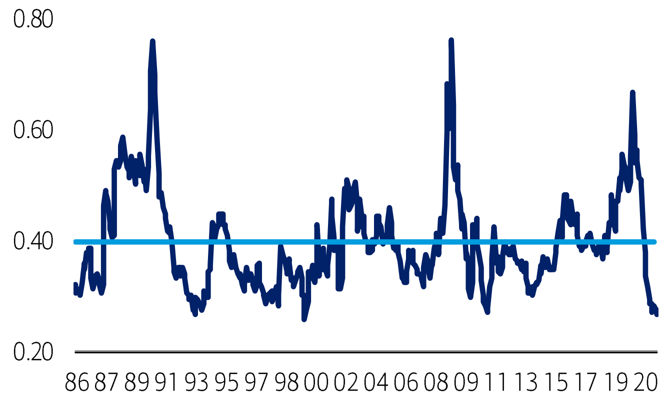
Exhibit 291: And net debt to market cap is now at historic lows (0.27)
Russell 2000 net debt to market cap, 1986-present



Source: FactSet, BofA US Equity & US Quant Strategy

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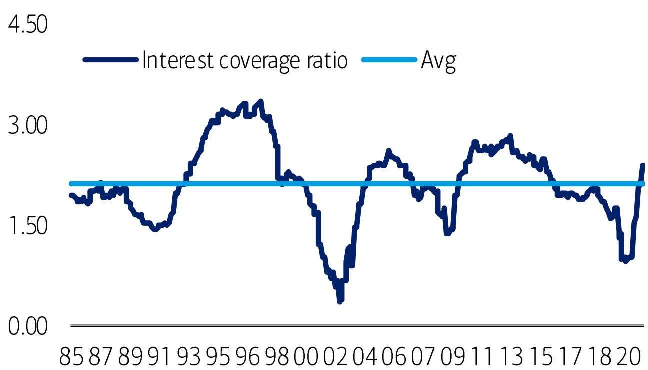
Exhibit 292: Interest coverage of 2.4x now above the avg. of 2.1x
Russell 2000 interest coverage ratio 1986-present



Source: FactSet, BofA US Equity & US Quant Strategy

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Risk: Mixed performance vs. large during Late Cycle

Small caps have seen positive returns during late cycle backdrops nearly two-thirds of the time, but performance vs. large caps has been more mixed: the Russell 2000 has typically lagged the Russell 1000, while the S&P 600 has performed in-line with the S&P 500 on a median basis (with 50/50 hit rate).

Exhibit 293: Absolute and relative performance of small vs. large caps during Late Cycle
Based on our US Regime Indicator Late Cycle regimes since 1994

Start	End	# Yrs	Russell 2000	Russell 2000 vs. Russell 10000	S&P 600	S&P 600 vs. S&P 500
11/30/1994	9/29/1995	0.83	34%	-3%	39%	3%
10/31/1997	2/27/1998	0.33	21%	-30%	27%	-26%
3/31/2000	11/30/2000	0.67	-25%	-6%	-9%	8%
6/30/2004	7/31/2007	3.08	9%	0%	11%	3%
5/31/2010	11/30/2010	0.50	21%	3%	20%	2%
3/31/2011	11/30/2011	0.67	-18%	-9%	-12%	-3%
6/30/2014	1/30/2015	0.58	-4%	-7%	-3%	-6%
4/30/2018	2/28/2019	0.83	3%	-4%	3%	-3%
		Avg	**5%**	**-7%**	**9%**	**-3%**
		Median	**6%**	**-5%**	**7%**	**0%**
		Hit rate	**63%**	**25%**	**63%**	**50%**

Source: Bloomberg, BofA US Equity & US Quant Strategy

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US Regime Indicator

Late Cycle regime = tighter financial conditions

Our US Regime Indicator ticked deeper into Late Cycle in October, which is aligned with the idea that the Fed will gradually tighten its monetary policy - note that tightening cycles occurred in four of the seven Late Cycle periods in our data history since 1990.

> Late Cycle regimes are often accompanied by increasing costs and wage pressures, rising interest rates and ramped up business investment. All of these represent uses of cash. Companies that continue to generate healthy free cash flow are the sought after and scarce resource during this phase of our US Regime Indicator.

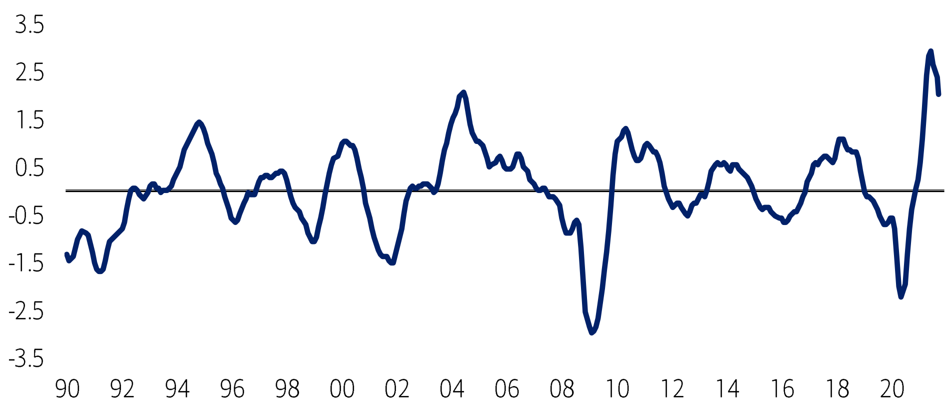
During Late Cycle regimes, our Free Cash Flow to Enterprise Value factor (top decile of S&P 500 stocks by this factor) has generated annualized alpha of 4.2%, on average, more than any other Value factors we follow. Another valuation framework that fares well during Late Cycle regimes is our Dividend Discount Model, with a 63% monthly hit rate since 1990 – where this factor incorporates rising rate risks more explicitly than multiple-based valuation factors. Thus, we recommend valuing companies on free cash flow and discount-rate based measures at this point in the cycle.

Free Cash Flow is king: Profitability measures that reflect rising business investment, higher interest expense and other drains on profitability are important.

Swap Enterprise Value for Equity Value: In a rising short- or long-rate environment, investors are well served by swapping out equity value or price based measures and multiples for firm value or EV based measures to incorporate the rising cost of debt.

Avoid long duration: Equity duration as long duration stocks are hurt more by an increasing discount rate, and make sure to adjust profitability measures for debt burdens (see our Adjusted for Debt measures).

Exhibit 294: US Regime Indicator declined from record high level, now in Late Cycle
The indicator edged lower to 2.0 in October (January 1990-October 2021)



Source: BofA US Equity & Quant Strategy, Refinitiv, ICE Data Indices, LLC, Institute for Supply Management, Bureau of Labor Statistics, Federal Reserve

Note: Phase 1 – Early Cycle; Phase 2 – Mid Cycle; Phase 3 – Late Cycle; Phase 4 – Recession

Disclaimer: The indicator identified as the US Regime Indicator above is intended to be an indicative metric only and may not be used for reference purposes or as a measure of performance for any financial instrument or contract, or otherwise be relied upon by third parties for any other purpose, without the written consent of BofA Global Research. This indicator was not created to act as a benchmark.

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How to use the US Regime Indicator for factor investing

Factor behavior is relatively predictable during different phases of the US Regime Indicator. See below for trends and definitions.

Exhibit 295: Style performance in the four US Regime indicator phases
Relative performance vs. equal-weighted S&P 500

		Value	Growth	Momentum	High Quality	Low Quality	High Risk	Low Risk	Large Cap	Small Cap	Low Beta	High Div. Yield
Phase 1	Avg:	19.4%	-7.5%	-5.9%	-6.0%	8.4%	18.4%	-10.7%	-8.4%	19.0%	-12.8%	7.0%
Recovery	Median:	14.9%	-5.3%	-1.7%	-6.5%	10.7%	12.9%	-12.5%	-7.8%	11.2%	-13.4%	7.8%
	Hit Rate:	100.0%	12.5%	50.0%	25.0%	75.0%	75.0%	25.0%	12.5%	75.0%	12.5%	87.5%
Phase 2	Avg:	3.8%	10.9%	11.2%	0.8%	3.9%	11.0%	-6.6%	-2.1%	6.0%	-12.6%	-6.7%
Mid Cycle	Median:	4.3%	2.3%	4.0%	-0.7%	2.2%	10.3%	-4.9%	-6.6%	9.1%	-12.1%	-7.1%
	Hit Rate:	77.8%	66.7%	77.8%	44.4%	66.7%	77.8%	22.2%	33.3%	77.8%	0.0%	11.1%
	Hit Rate ex. Tech Bubble:	*87.5%*	*62.5%*	*75.0%*	*37.5%*	*75.0%*	*75.0%*	*25.0%*	*25.0%*	*87.5%*	*0.0%*	*12.5%*
Phase 3	Avg:	-0.9%	-7.5%	-4.9%	4.5%	-8.1%	-13.9%	8.9%	-0.6%	-8.2%	6.9%	6.7%
Late Cycle	Median:	-1.6%	-2.9%	0.3%	5.9%	-7.4%	-12.1%	9.9%	3.2%	-8.6%	0.3%	2.5%
(Current)	Hit Rate:	37.5%	25.0%	50.0%	75.0%	12.5%	0.0%	75.0%	62.5%	12.5%	50.0%	75.0%
Phase 4	Avg:	-0.8%	-0.2%	3.1%	5.2%	-4.7%	-6.1%	4.8%	5.6%	-3.0%	-0.9%	-2.4%
Downturn	Median:	-6.3%	0.4%	0.9%	3.7%	0.0%	-4.5%	4.3%	6.5%	-7.5%	0.9%	-5.9%
	Hit Rate:	28.6%	57.1%	57.1%	71.4%	28.6%	42.9%	85.7%	85.7%	14.3%	57.1%	28.6%

Note: Performance is calculated as price return relative to equal-weighted S&P 500, for all styles except High Dividend Yield, where total return for the style and the index are used. Hit rate = % of months in phase where style outperformed equal-weighted S&P 500.
Source: BofA US Equity & Quant Strategy, Refinitiv, ICE Data Indices, LLC, Institute for Supply Management, Bureau of Labor Statistics, Federal Reserve

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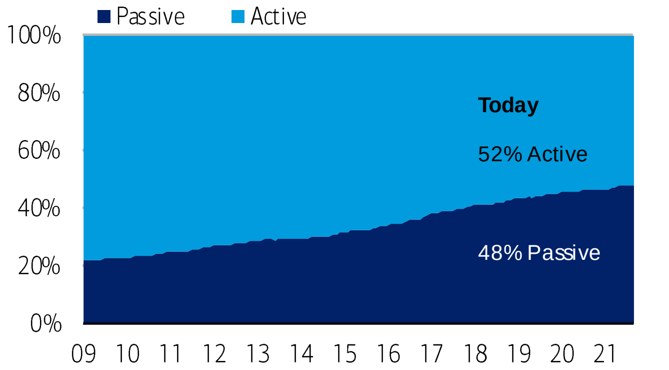
Inputs for the US regime indicator include the following eight signals:

- **Earnings Revision ratio:** The ratio between the number of companies in the S&P 500 for which Thomson Financial consensus earnings estimates have been raised versus those that have been lowered. Rising = improving economic cycle.
- **ISM PMI:** ISM PMI Institute for Supply Management Manufacturing Purchasing Managers Index, represented as the Z-Score. The index monitors activity reported by 300 supply management professionals. Above 50 indicates economic expansion.
- **Inflation:** The 12-month change in the BofA Inflation Composite (see methodology), represented a Z-Score. Rising inflation indicates improvement.
- **GDP Forecast:** The next 12-month US GDP growth forecast from the Federal Reserve Bank of Philadelphia Survey, represented as a Z-Score.
- LEI **index:** The 12-month change in the Conference Board US Leading Index of Ten Economic Indicators represented as a Z-Score. Rising = improving.
- **US Capacity Utilization:** The 12-month change in US capacity utilization, represented as a Z-score. The capacity utilization rate indicates the percentage of total economic capacity currently used. Rising capacity utilization implies improving economic conditions. Rising capacity utilization suggests expansion and potential inflationary pressure.
- **10-yr US Treasury Bond Yield:** The 12-month change in the bond yield, represented as the Z-Score. Rising yields indicate improving economic conditions.
- **High Yield corp. bond spread:** The 12-month change in the credit spread of the ICE BofA US High Yield Index, represented as a Z-score. Falling = improving.

Positioning

Exhibit 296: Tipping point? Passive AUM = Active AUM
Asset under management(AUM) allocation between active and passive funds since 2009 to present



Source: Strategic Insight SimFund, BofA US Equity & Quant Strategy.
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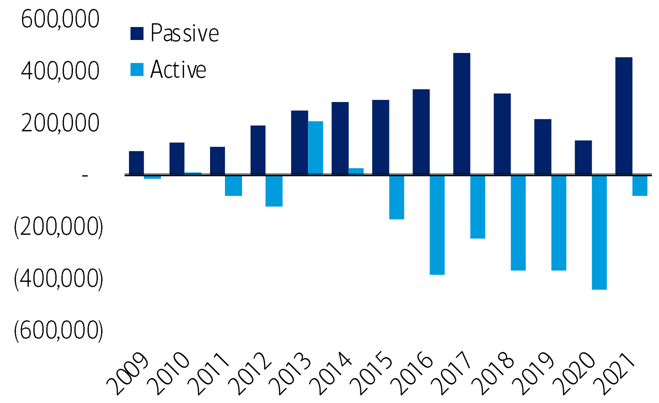
Exhibit 297: Outflows from active funds have slowed in 2021
Flows by year into active vs. passive funds ($mn), 2009-to present



Source: Strategic Insight SimFund, BofA US Equity & Quant Strategy
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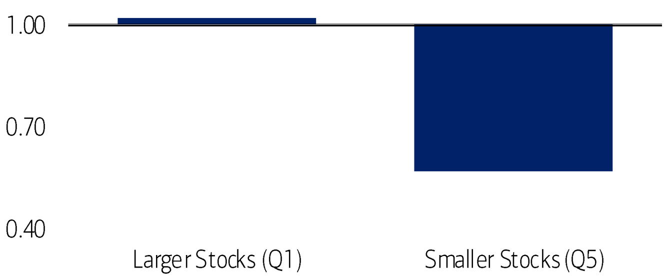
Exhibit 298: Large cap bias could hurt if inflation overheats
Active funds' positioning in the top (Q1) and bottom (Q5) quintile of S&P500 stocks by market cap as of September 2021



Source BofA US Equity & Quant Strategy, FactSet ownership
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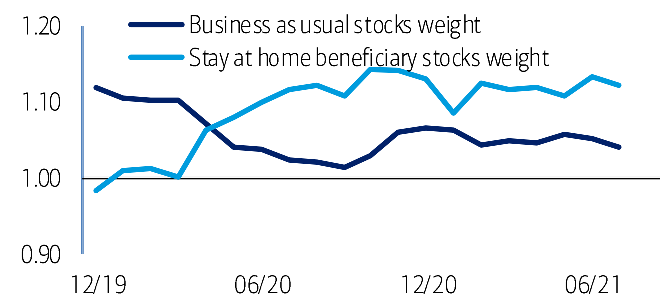
Exhibit 299: Long only managers are persistently O/W stay at home beneficiaries on an aggregate basis
Long only positioning in stay at home beneficiary stocks vs. business as usual stocks vs. S&P 500 index



Source: BofA US Equity & Quant Strategy, FactSet Ownership
Note: Please see appendix for the screen of stay at home vs business as usual stocks.
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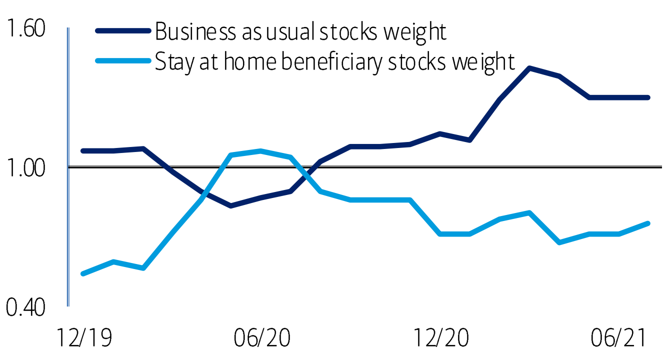
Exhibit 300: Hedge funds are O/W re-opening stocks but stay at home beneficiary positioning has been increasing recently
Hedge funds positioning in stay at home beneficiary stocks vs. business as usual stocks vs. S&P 500 index



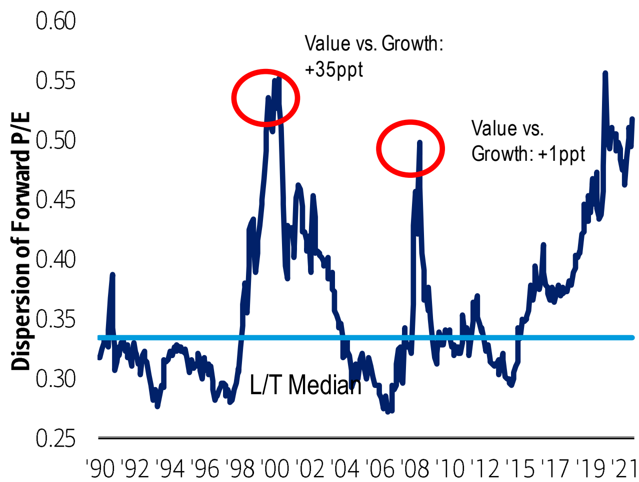
Source: BofA US Equity & Quant Strategy, FactSet Ownership
Note: Please see appendix for the screen of stay at home vs business as usual stocks.

Style: Value over Growth

Five key reasons we prefer Value over Growth:

1. **Valuation dispersion** remains near record highs, and heightened dispersion historically preceded periods of Value outperformance. (Exhibit 301)
2. **COVID containment**: if case counts continue to decline amid vaccinations and pandemic controls, Value is likely to outperform Growth. COVID case counts have dominated style rotation and have played a larger role than the profits cycle in the current recovery. (Exhibit 302)
3. **Valuation:** Value is historically inexpensive on most measures (Exhibit 303 to Exhibit 307).
4. **Positioning:** investors remain overweight Growth, underweight Value at a factor and sector level. (Exhibit 309 to Exhibit 310)
5. **Fed hiking cycles favor value**: see Exhibit 104

Exhibit 301: Valuations dispersion peaks usually precede Value cycles
S&P 500 valuation dispersion of forward P/E (std. dev / avg, 1990-10/21)



Source: FactSet, BofA US Equity & Quant Strategy

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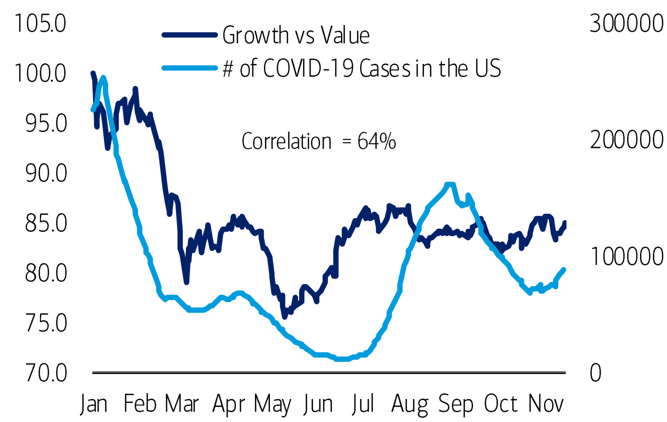
Exhibit 302: COVID case counts are dominating style rotations
New daily COVID cases and High Projected 5-yr EPS Growth vs Low Price / Book performance



Source: BofA US Equity and Quant Strategy, CDC. Note: Growth was represented by High Expected 5-yr EPS Growth factor, Value was represented by Low Price to Book factor. # of COVID Cases is the 7-day moving average of new daily COVID-19 Cases

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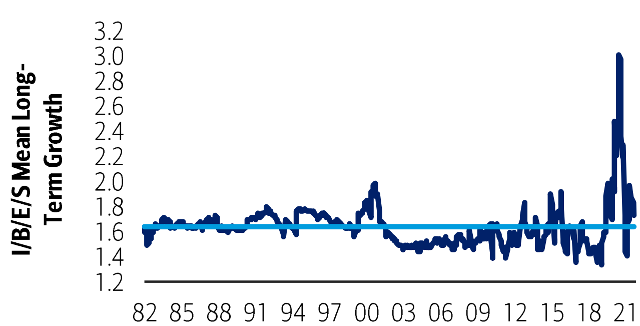
Exhibit 303: Relative Long term growth of the Growth index has been trending lower vs the Value index since June 2021
I/B/E/S Long Term Growth estimates of Russell 1000 Growth vs. Value as of 10/21



Source: FactSet, BofA US Equity & Quant Strategy

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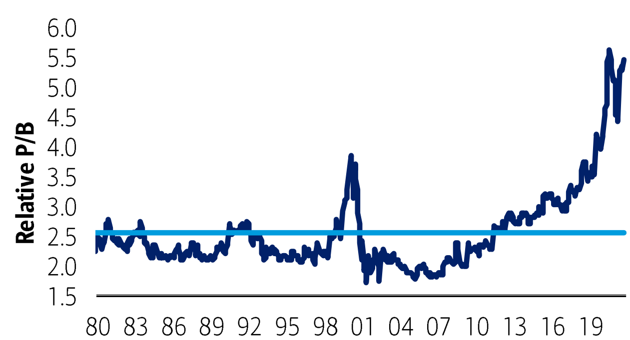
Exhibit 304: The Growth index trades near all-time highs vs the Value index on a Price / Book basis
Russell 1000 Growth vs. Value Price to Book as of 10/21



Source: FactSet, BofA US Equity & Quant Strategy

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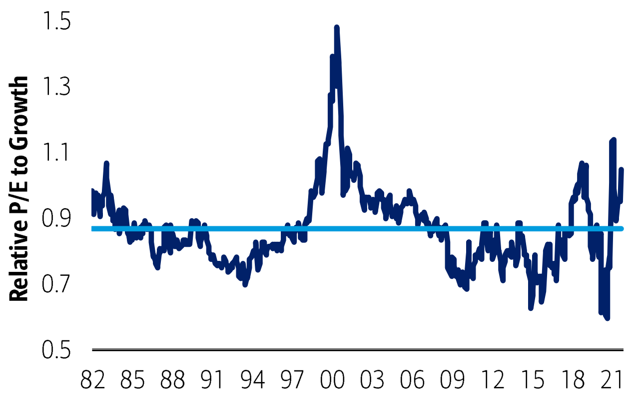
Exhibit 305: Adjusted for long-term growth, the Growth benchmark looks more expensive than the Value index
Russell 1000 Growth vs. Value P/E to Growth as of 10/21



Source: FactSet, BofA US Equity & Quant Strategy

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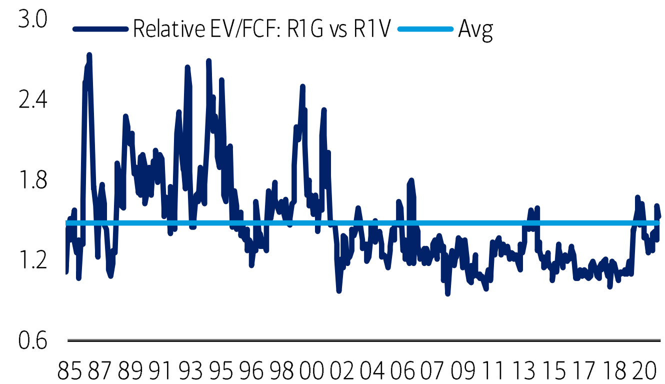
Exhibit 306: Growth index trades 3% above historic average vs. Value index on a EV/FCF basis
Aggregate EV to FCF of Russell 1000 Growth vs Value index (excluding Financials)



Source: FactSet, BofA US Equity & Quant Strategy

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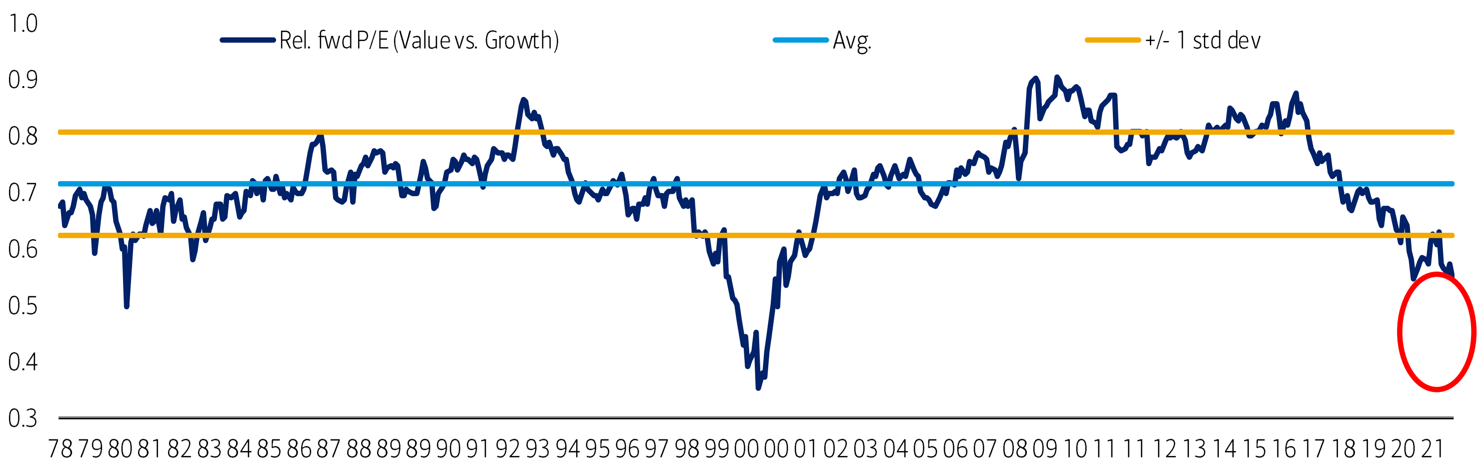
Exhibit 307: Value vs. Growth forward P/E more than 1 standard deviation below avg.
Relative forward P/E of Russell 1000 Growth vs Value style indices as of 10/21



Source: BofA US Equity and Quant Strategy, FactSet

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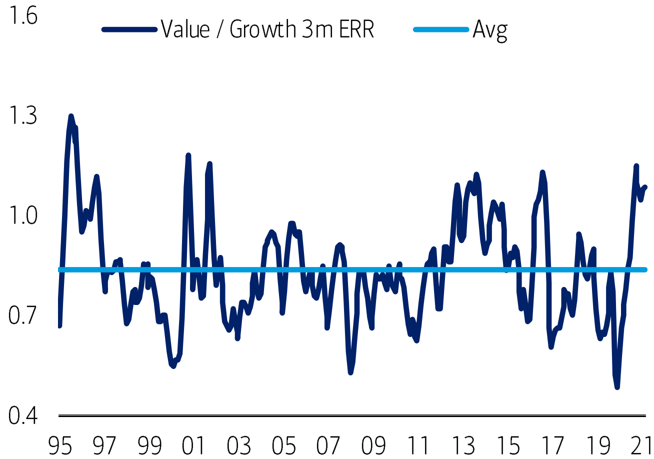
Exhibit 308: Stronger earnings revisions for Value than Growth
Russell 1000 Value vs Growth relative three-month earnings revision ratio (3m ERR), 1995-10/31/2021



Source: BofA US Equity and Quant Strategy, FactSet

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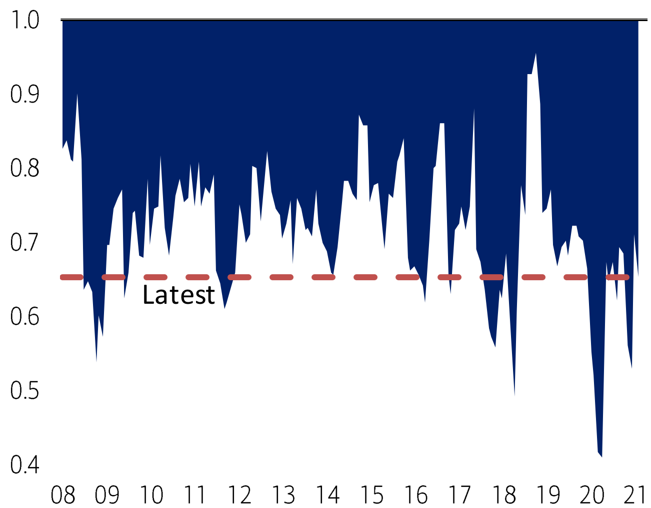
Exhibit 309: Large cap funds are 35% underweight Value vs. Growth, more underweight than 31 out of 158 observations
Large cap positioning in top decile Price to Book vs. Projected 5-yr EPS Growth for S&P 500 stocks as of 10/31/21



Source: FactSet, BofA US Equity & Quant Strategy

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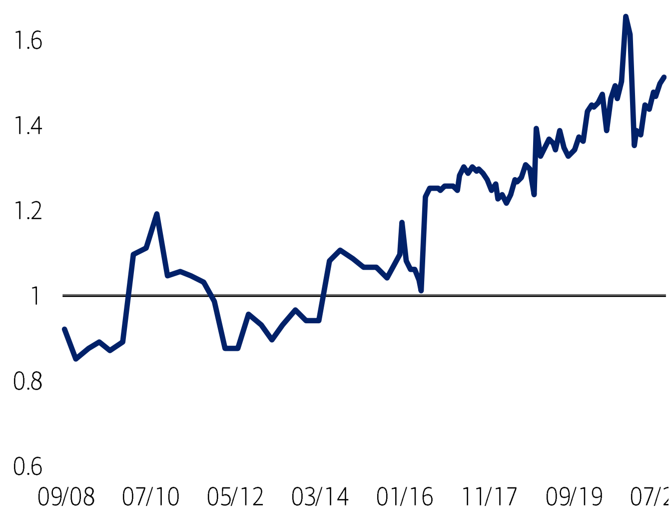
Exhibit 310: TMT (Growth) love vs. Financials (Value) hatred
Long-only funds are overweight Communication Services by 42% and underweight Financials by 8 of October 31, 2021



Source: FactSet, BofA US Equity & Quant Strategy

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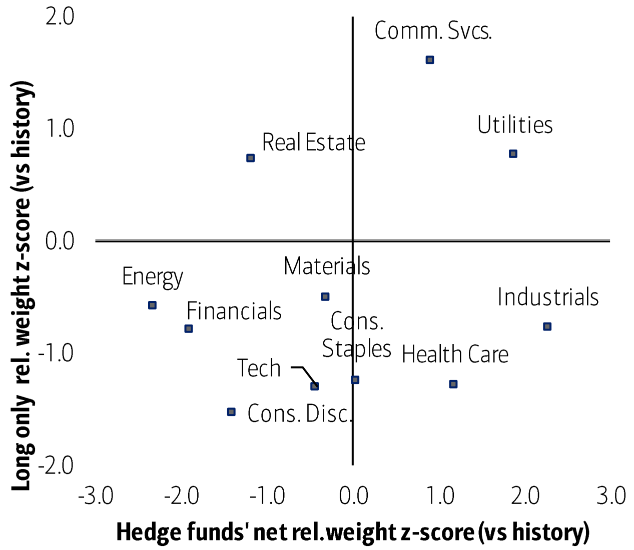
Exhibit 311: Cyclicals/Value neglected vs history by hedge funds & mutual funds

Hedge fund net relative sector exposure and long only relative weight as z-score vs. history, as of 10/21



Source: BofA US Equity & Quant Strategy, FactSet Ownership

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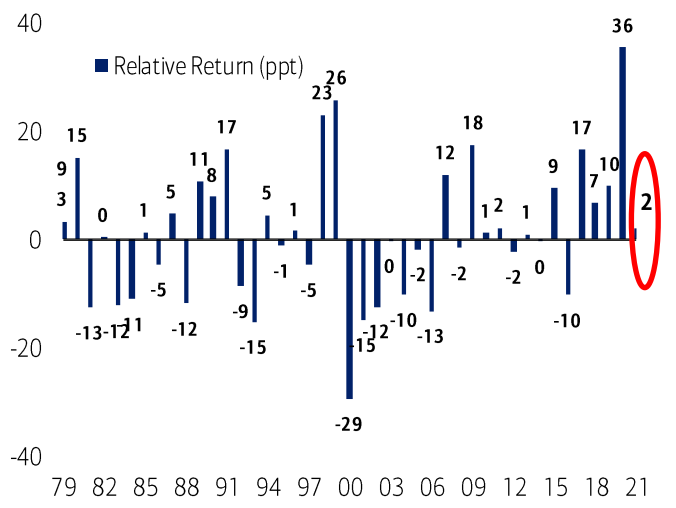
Value led in 1H21, but underperformed since. Value has outperformed Growth for 12 months on average after previous recessions indicating there might be more room for Value to outperform (Exhibit 315).

Exhibit 312: Growth is leading Value only by 2ppt YTD

Relative return of the Russell 1000 Growth Index vs. the Russell 1000 Value Index, 1979-2020 YTD (as of 10/31/21)



Source: FactSet, BofA US Equity & Quant Strategy

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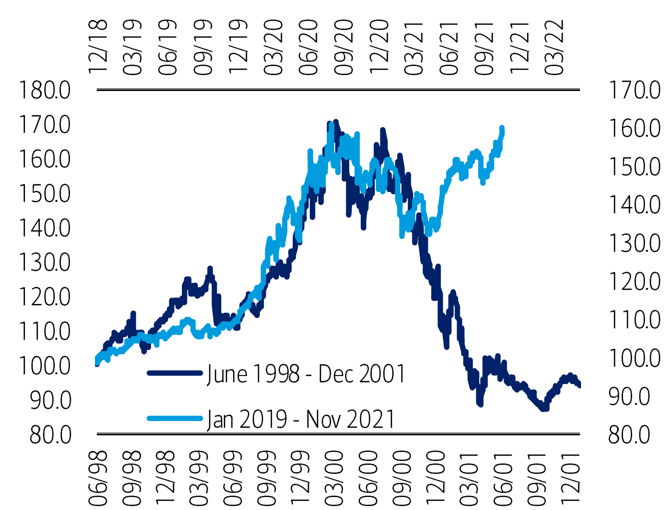
Exhibit 313: If today resembles 1999, growth has overshot its post-2000 performance run

Russell 1000 Growth vs Russell 1000 Value cumulative relative performance; Comparison: 1998-2001 vs 2019 - 2021



Source: BofA US Equity & Quant Strategy, Bloomberg

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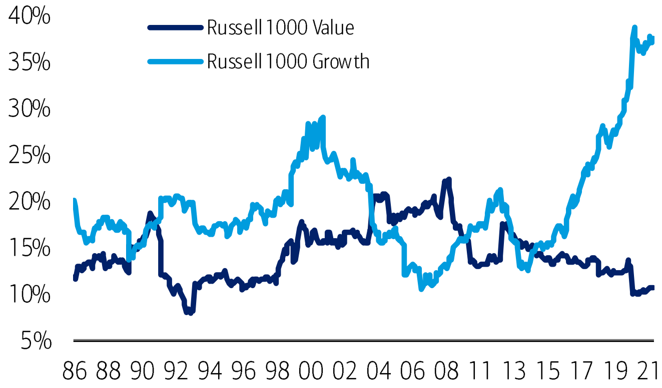
Exhibit 314: Record growth concentration risk: 38% of the Russell 1000 Growth index comprised of 5 stocks

Top 5 largest stocks' market cap as % of total in the Russell 1000 Value and the Russell 1000 Growth Indices



Source: FactSet, BofA US Equity & Quant Strategy

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Exhibit 315: Value led following 14 of the last 14 recessions

Relative price performance of the Fama-French Value factor (High Book Value to Market Cap) vs. S&P 500 post recessions, 1929 to 2009

NBER Peak / Trough dates		Value vs SPX performance			
Peak	**Trough**	**Start**	**End (or 12mth)**	**# Mth**	**Rel. Perf. vs SPX**
August 1929	March 1933	May-32	Aug-32	3	78.3
May 1937	June 1938	May-40	Jul-41	14	33.0
February 1945	October 1945	Aug-45	Nov-45	3	11.1
November 1948	October 1949	Mar-50	Jan-51	10	29.7
July 1953	May 1954	Dec-53	Aug-55	20	25.9
August 1957	April 1958	Dec-57	Sep-59	21	39.3
April 1960	February 1961	Jun-60	May-61	11	9.8
December 1969	November 1970	Dec-69	Aug-70	8	9.0
November 1973	March 1975	Nov-74	Feb-76	15	38.2
January 1980	July 1980	Nov-80	Sep-82	22	45.1
July 1981	November 1982	Jun-83	Nov-84	17	23.0
July 1990	March 1991	Dec-91	Jun-92	6	18.1
March 2001	November 2001	Oct-01	Jun-02	8	10.3
December 2007	June 2009	Feb-09	Apr-10	14	25.9

Source: BofA US Equity & Quant Strategy, Dartmouth University data library, Bloomberg

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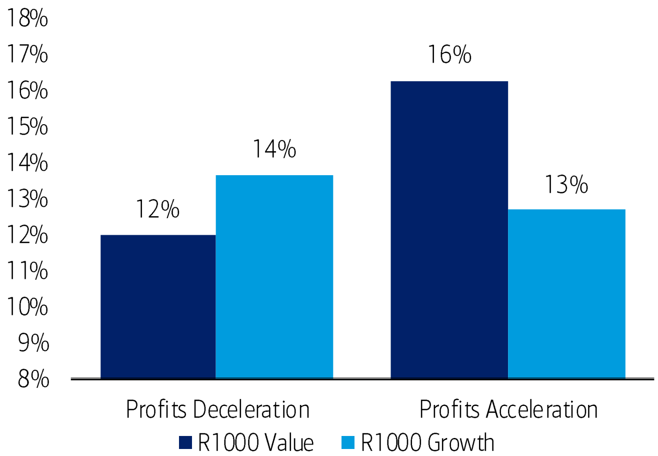
Two risks:

Slowing profits growth in 2022 would historically favor Growth stocks over Value stocks.

Exhibit 316: Growth vs. Value performance during the profits cycle (1982-present)
Value tends to outperform Growth when profits accelerate



Source: Russell Investment Group, BofA US Equity Strategy

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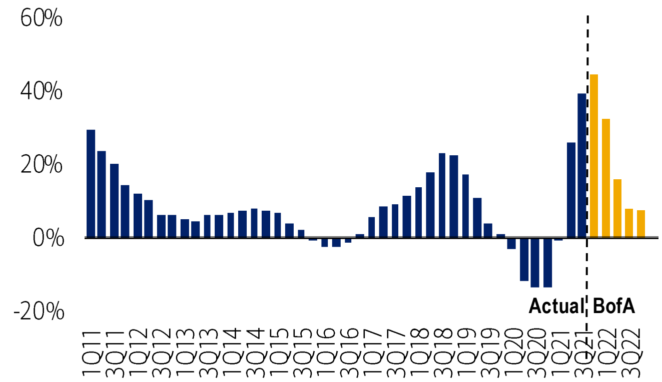
Exhibit 317: We expect earnings to decelerate in 2022
S&P 500 trailing 12-mo YoY profit growth, 1Q11-3Q21 and BofA forecasts for 4Q21-4Q22



Source: BofA US Equity & Quant Strategy, Haver Analytics, FactSet

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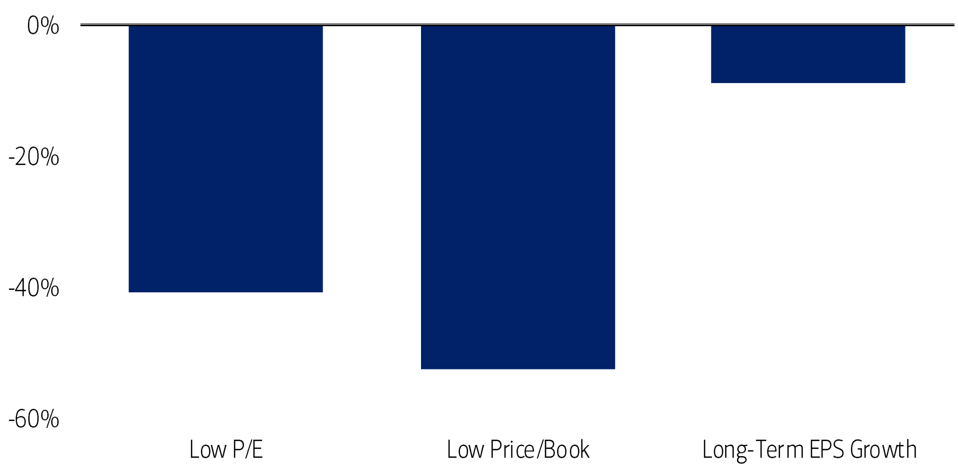
Rising volatility from a Fed hiking cycle would favor quality and Growth over Value.

Exhibit 318: Value historically more hurt by rising volatility than Growth
Correlations of relative12-mth P/E, Price/Book and Projected Long-Term EPS Growth performance vs 12-m change in VIX (1991 – present)



Source: FactSet, BofA US Equity & Quant Strategy

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Appendix

Guidance Ratios

We track the number of instances of above-consensus management guidance vs. below-consensus management guidance for earnings over the last three months for S&P 500 companies. If a company issues changes to its outlook more than once in a one-month period, we incorporate all instances of guidance into our aggregate number. The ratio also includes all instances of above- or below-consensus earnings guidance issued by a company (for example, if they issue both quarterly and annual guidance). The one-month and three-month revision ratios are calculated as they are for estimate revision ratios. The data source is Bloomberg.

For companies that provide both GAAP and Operating guidance, or for REITs that provide both EPS and FFO guidance, we remove one data point if both data points provide the same guidance direction, otherwise both data points are used.

Capex Guidance Ratio

We track the number of instances of above-consensus management guidance vs. below-consensus management guidance for planned capex over the last three months for S&P 500 companies. The ratio is calculated the same way as the earnings guidance ratio, and the data source is FactSet.

Methodology: Earnings Calls Sentiment

With the help of BofA's Predictive Analytics team, we parsed through earnings calls transcripts to calculate sentiment for the S&P500 universe of companies that have reported since 31st March 2020. We use the Loughran McDonald's financial dictionary to calculate sentiment scores as per the definition below.

Sentiment score = No. of Unique positive words – No. of unique negative and uncertainty words

The sentiment score is computed with three different filters: the full transcript, management discussion and answers of CEO/CFO from Q/A section. Calculated scores were then averaged on the Sector level.

Loughran-McDonald Sentiment and Uncertainty:

1. **Loughran-McDonald Sentiment:** Examples of positive words include ***accomplish, achieve, outperform, stabilize, strength*** and negative words such as ***abandon, abnormal, downturn, evade, failing, stagnate.*** In total, the lexicon has 2,355 negative words and 354 positive words.

2. **Loughran-McDonald Uncertainty**: Examples of uncertain words include ***almost, ambiguity, hidden, fluctuate, doubts, unclear.*** In total, the lexicon has 297 words.

Note that the charts show the sentiment score multiplied by (- 1) and after applying the natural log to normalize the data on the same scale.

Our Predictive Analytics team is currently researching more advance modeling approaches including Deep Learning so please stay tuned for future enhancements.

BofA Corporate Misery Indicator methodology

The Corporate Misery Indicator is our macro-based predictor of the profits cycle and is based on the CPI, Average Hourly Earnings, and the Coincident Indicators. Our theory is that corporate profits are a function of how many units a company sells and their margin per unit. Implicitly, these factors incorporate productivity because enhanced productivity will result in either better margins or more units sold for the same inputs.

We use the year-to-year change in the Coincident Indicators as a proxy for units, because the Coincident Indicators are a proxy for Real GDP, a measure of unit growth. We use the spread between the year-to-year change in the CPI and the year-to-year change in Average Hourly Earnings to approximate margins:

Corporate Misery Indicator *= CPI (YoY) – Average Hourly Earnings (YoY) + Coincident Indicators (YoY)*

When the indicator declines, it implies that profits are being squeezed. This has historically coincided with a decelerating profits cycle.

Disclosures

Important Disclosures

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Investment rating	Total return expectation (within 12-month period of date of initial rating)	Ratings dispersion guidelines for coverage cluster[R1]
Buy	≥ 10%	≤ 70%
Neutral	≥ 0%	≤ 30%
Underperform	N/A	≥ 20%

[R1] Ratings dispersions may vary from time to time where BofA Global Research believes it better reflects the investment prospects of stocks in a Coverage Cluster.

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