

US Equity Strategy in Pictures

Redefining market and sector risks

Investment Strategy

Remember waiting for a better entry point?

The S&P 500 saw a 10% pullback from its July peak, not atypical given that corrections happen 1x per year on average. Despite today's better entry point for equities, the frequency of clients asking, "Should I wait for a better entry point?" has increased. Bears are vindicated and emboldened, and our [Sell Side Indicator \(SSI\)](#) saw the biggest drop in equity allocations since last October, and is nearly 3x closer to a contrarian "Buy" than a "Sell" signal (Exhibit 10). S&P 500 consensus long-term growth expectations are near all-time lows - excluding the Magnificent 7 (Exhibit 45). Professional investors' cyclical vs. defensive exposure remains near historical lows (Exhibit 13). The probability of a positive surprise in higher beta stocks is high in our view.

Extreme fear can be just as costly as greed

10y Tsy yields are at career highs for the average investor, but is a 2.5ppt real return (or lower, if inflation can't get back to 2%) compelling? Meanwhile for equities, 75% of S&P 500 debt is long-term fixed (almost double pre-GFC levels), as are 85% of US mortgages, suggesting corps and consumers have time to adapt (see [slow rate impact](#)). Cyclical are less credit sensitive than secular growth given (1) different lending channels (regionals/shadow lending vs. big banks), (2) capital extended exclusively to growth/green themes, and (3) cash used more for levered buybacks than manufacturing capacity. Short/medium duration equities - Large Cap Value - can do well in a high rate backdrop, but long duration small growth less so. See [Themes](#) for stock screens.

Bull case: renewed focus on efficiency, manufacturing pickup, new tools

2Q was likely the trough in profits, where 3Q earnings track a 4% beat and 4% growth YoY. After a decade of stalled productivity and low hanging earnings from globalization and cheap capital, inefficient old economy cyclical could now re-rate given better balance sheets, newfound supply & capital return discipline plus tools and incentives for efficiency (AI, etc.) and capex from re-shoring, underinvestment and IT infrastructure needs.

Why cyclical are safer, and defensives are riskier

We are overweight Energy, Cons. Discretionary, large Financials and Real Estate. We are underweight Health Care (crowded, floating rate risk, fiscal austerity victim), Comm. Services (crowded, Old Telco and New Media hurt by rates) and Staples (underperforms in recoveries, low price point retailers hit by oil shocks).

Trading ideas and investment strategies discussed herein may give rise to significant risk and are not suitable for all investors. Investors should have experience in relevant markets and the financial resources to absorb any losses arising from applying these ideas or strategies.

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Refer to important disclosures on page 59 to 61.

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OW: overweight

MW: marketweight

UW: underweight

GFC: Global Financial Crisis

ERP: Equity Risk Premium

ESG: Environmental, Social and Governance

AI: artificial intelligence

MNC: multinational corporation

IRA: Inflation Reduction Act

EV: electric vehicle

DOE: Department of Energy

W

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Market outlook:

S&P 500 year-end forecast 4600, better returns in the equal-weighted S&P 500

Exhibit 1: 2023 S&P 500 year-end forecast = 4600

S&P 500 2023 Target Models

Model	Category	Time Horizon	2023 Target	Current Weight in Forecast
BofA Fair Value Model	Fundamental/Valuation	Medium Term	4,108	15%
Sell Side Indicator	Sentiment	Medium Term	4,725	40%
Earnings Surprise Indicator	Fundamental/Sentiment	Short-term	4,640	15%
Long-term Valuation Model	Valuation	Long-term	4,572	15%
12-Month Price Momentum	Technical	Medium Term	4,623	15%
Official S&P 500 Target			4,600	

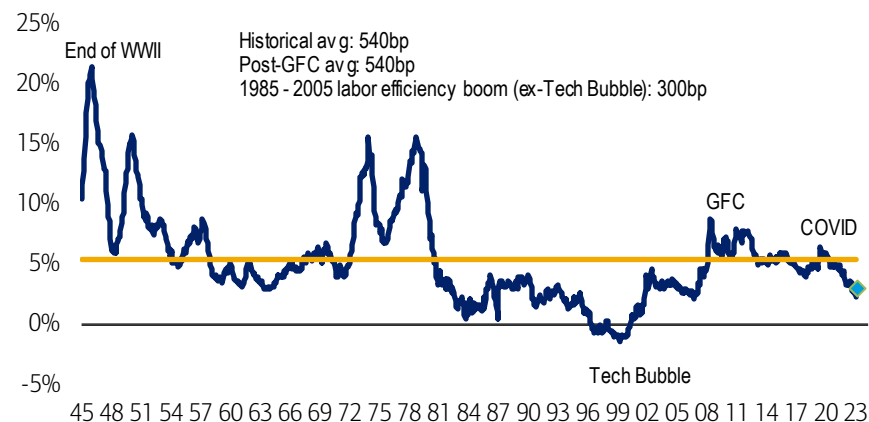
Source: BofA US Equity & US Quant Strategy; Short-term = 1-3 months, medium-term = 1 year, and long-term = 5+ years. We calculate our price target based on S&P 500 price as of 8/31/23, and round to closest 50.

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We are past peak rate and inflation volatility, have clarity around Fed policy, are back to positive real rates and 5ppt+ of Fed latitude for the next recession – the equity risk premium should be lower than 2010-2020's.

Exhibit 2: ERP should settle at lower levels than post-Global Financial Crisis average

Normalized equity risk premium (ERP) with BofA normalized ERP forecast (300bp), 1945-10/23

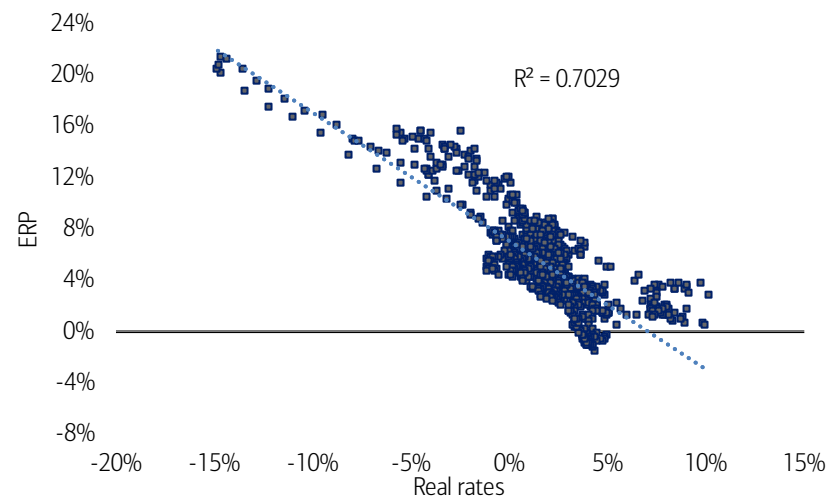


Source: BofA US Equity & Quant Strategy, Global Financial Data, Bloomberg; Note: Nominal ERP is spread between normalized earnings to price and real risk-free rate. Norm. EPS based on log linear regression of pro-forma and operating EPS. Real rate is difference between 10-yr Tsy yield and 10-yr breakeven(pre-1998, fwd. 1-yr CPI used as proxy, given strongest correlation).

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Exhibit 3: Higher real rates are almost always accompanied by lower ERP

Historical relationship between our normalized ERP vs. real rates (1945-present)



Source: BofA US Equity & Quant Strategy, Global Financial Data, Bloomberg

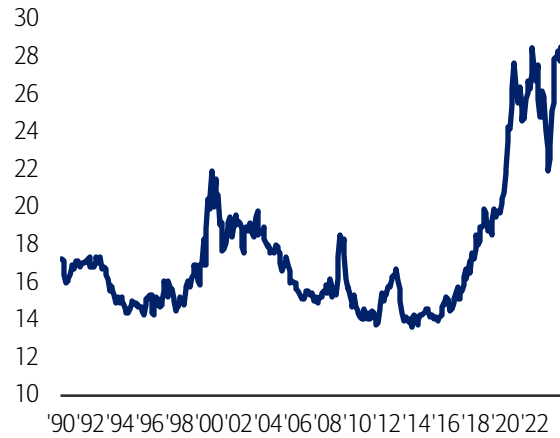
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The problem with indices

Exhibit 4: Top 7 S&P 500 companies account for nearly 30% of benchmark

Weight of largest 7 companies in the S&P 500

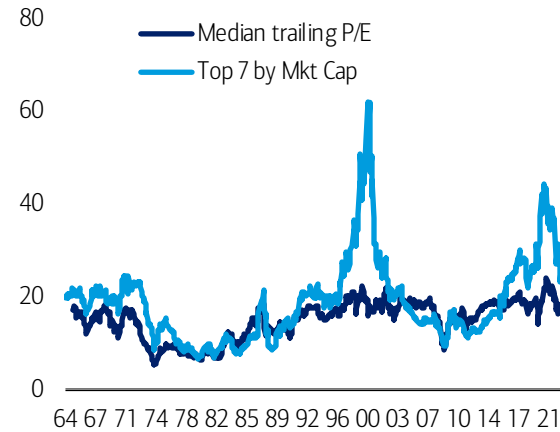


Source: FactSet, BofA US Equity & US Quant Strategy

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Exhibit 5: The index is expensive, but the average stock is not

S&P 500 median trailing P/E vs. top 7 P/E (1986-10/23)

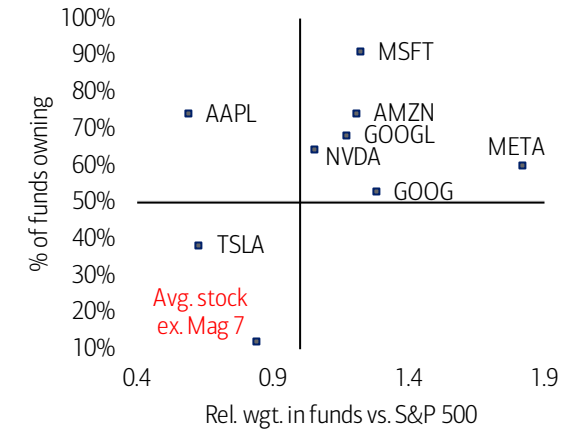


Source: FactSet, BofA US Equity & Quant Strategy

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Exhibit 6: Who is left to buy Mag 7?

Large cap long only funds holdings in Top 7 (as of 9/30/2023)

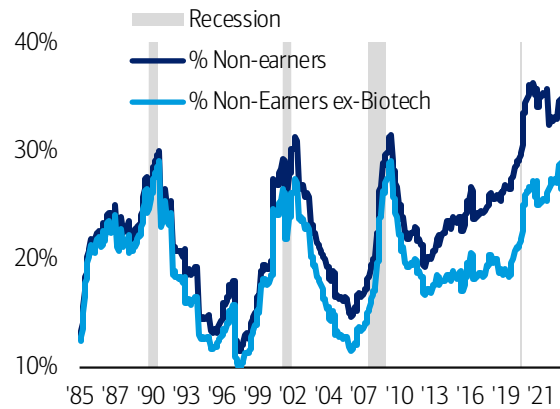


Source: FactSet Ownership, BofA US Equity & Quant Strategy. TSLA: Tesla, AMZN: Amazon, GOOG / GOOGL: Alphabet C / Alphabet A, META: Meta Platforms, MSFT: Microsoft, AAPL: Apple, NVDA: Nvidia

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Exhibit 7: One third of Russell 2000 stocks (~20% of mkt. cap) are non-earners

% of Russell 2000 stocks that are non-earners, 1985-9/30/23

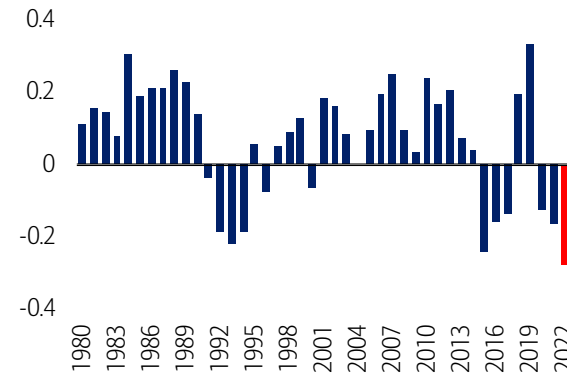


Source: FactSet, BofA US Equity & US Quant Strategy

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Exhibit 8: Record ratio of fallen angels to rising stars

(rising stars – fallen angels)/(rising stars + fallen angels); rising stars = stocks moving from Russell 2000 to Russell 1000; fallen angels = stocks moving from Russell 1000 to Russell 2000

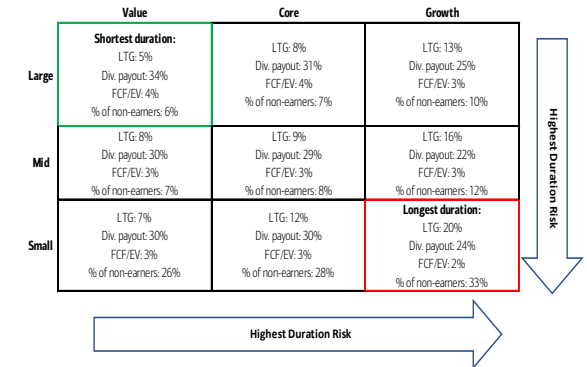


Source: FactSet, BofA US Equity & Quant Strategy

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Exhibit 9: Size and style vs. rate risk via equity duration

Russell style & size indices and their current metrics as of 9/23



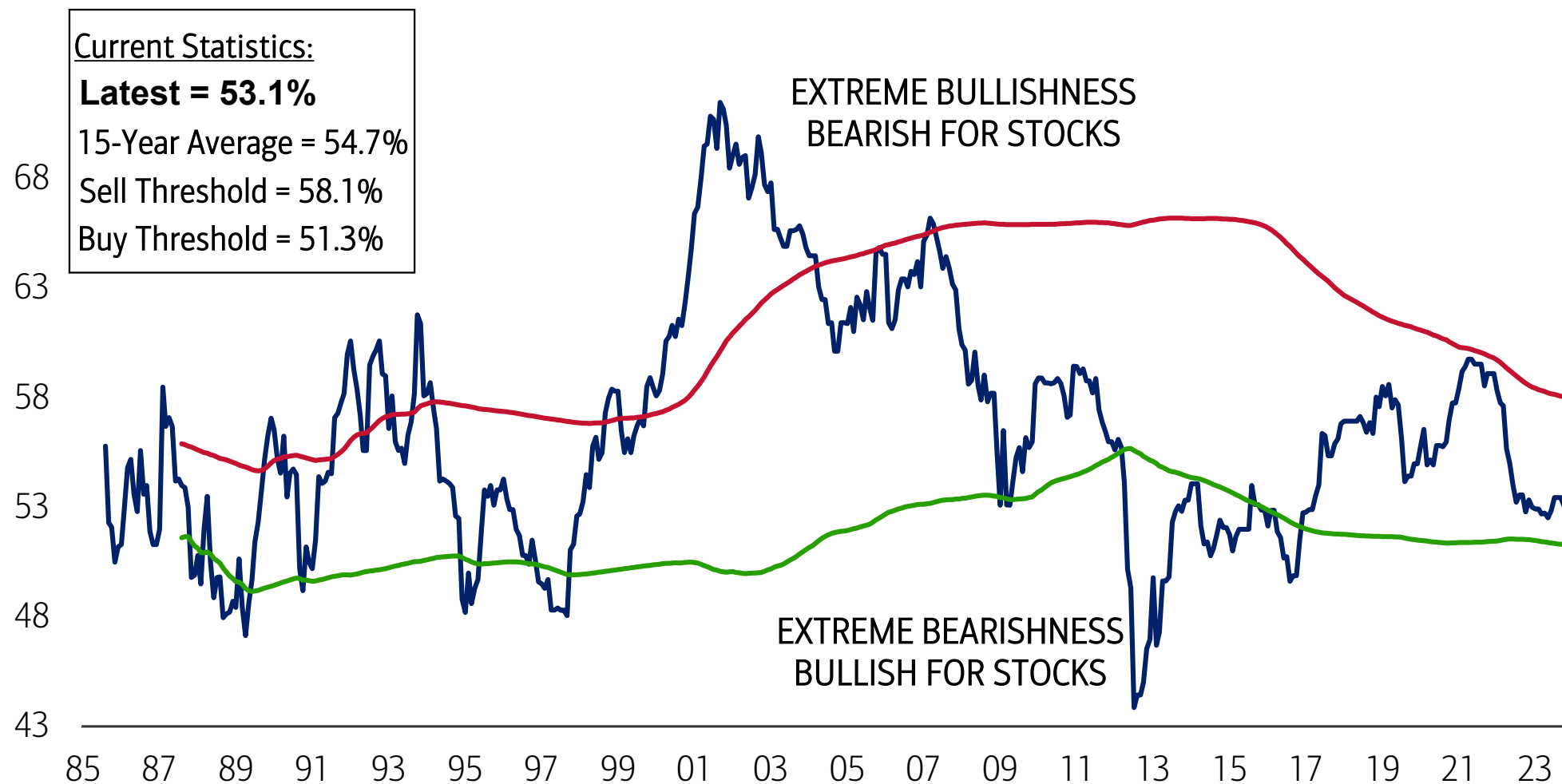
Source: BofA Equity & Quant Strategy, FactSet

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Wall Street is still bearish. This is still bullish.

Exhibit 10: Equity sentiment fell 37bp in October (largest drop in a year)

Sell Side Indicator (SSI), as of 10/2023



Source: BofA US Equity & Quant Strategy. The Sell Side 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: 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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Defensive positioning – bond love, cyclical hatred

Exhibit 11: Sell Side survey: Asset allocators love bonds

Average recommended allocation to bonds by Wall Street strategists (2006-9/2023)

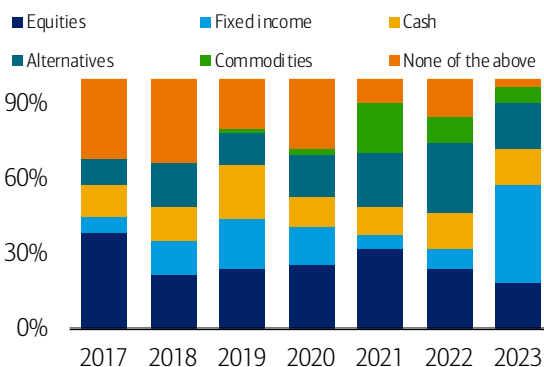


Source: BofA US Equity & Quant Strategy

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Exhibit 12: GWIM survey: Advisors love bonds

How are you currently changing your asset allocation? Moving more into...

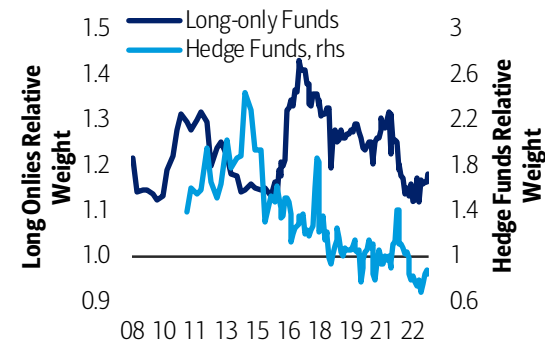


Source: Wealth Management Marketing Research, BofA US Equity & US Quant Strategy. GWIM = Global Wealth & Investment Management.

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Exhibit 13: Cyclical vs. defensive sector near lows

Long only fund (LO) and hedge fund (HF) relative exposure to cyclical vs. defensive* sectors within S&P 500 as of 9/30/2023



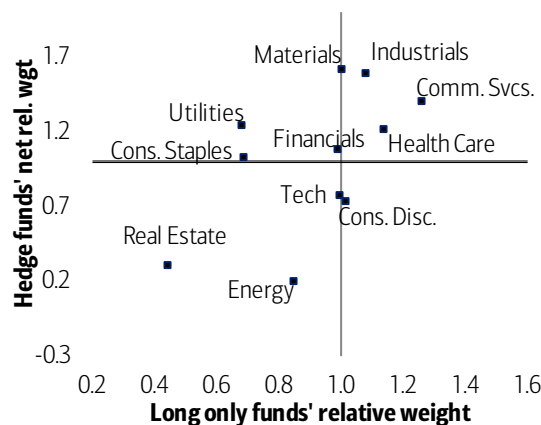
Source: FactSet Ownership, BofA US Equity & US Quant Strategy

*Cyclicals = Discretionary, Materials, Energy, Tech, Industrials; defensives = Staples, Health Care, Utilities

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Exhibit 14: Industrials = only consensus cyclical long...

Long only (LO) and hedge funds' relative weight in sectors vs. S&P 500 (as of September 2023)



Source: BofA US Equity & Quant Strategy, FactSet Ownership

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Exhibit 15: ...but defense/Conglomerates > cyclical/Machinery

LO relative exposure to Machinery (cyclical) vs. Industrial Conglomerates (defensive) within S&P 500 as of 9/30/2023



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

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Exhibit 16: US regulated: Financials hated, Utilities loved

LO relative exposure to Financials (cyclical) vs. Utilities (defensive) within S&P 500 (as of 9/2023)



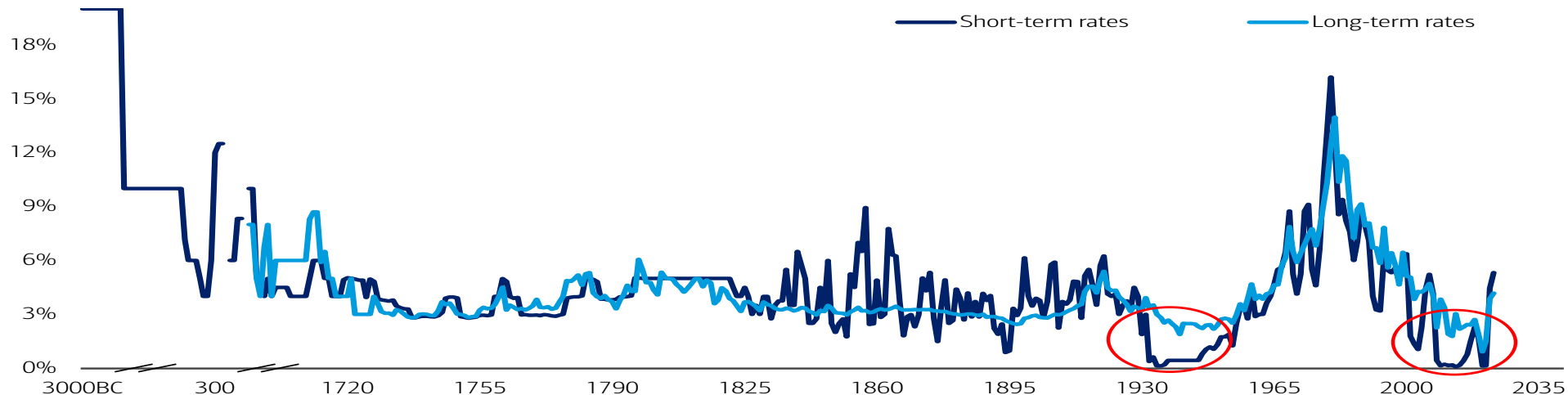
Source: FactSet Ownership, BofA US Equity & US Quant Strategy

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Just coming off 5,000-yr lows in rates

Exhibit 17: Rates to mean revert lower from last year? Rates are just off a 5000yr low

Interest rates since 3000 BC



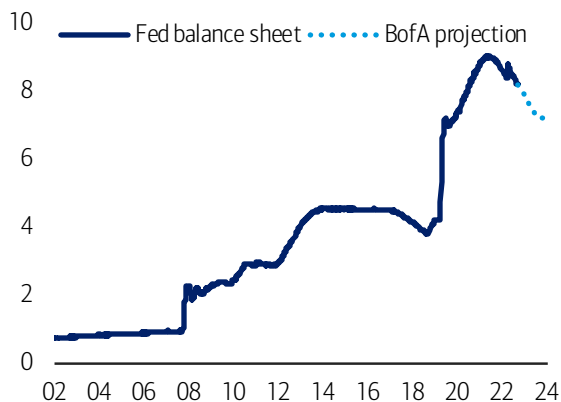
Source: Global Investment Strategy, Bank of England, Global Financial Data, Homer and Sylla "A History of Interest Rates" (2005)

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Supply/demand shift (Fed, China, Japan)

Exhibit 18: Fed normalization, T-bill supply on steroids

Fed balance sheet + BofA projection (\$T)

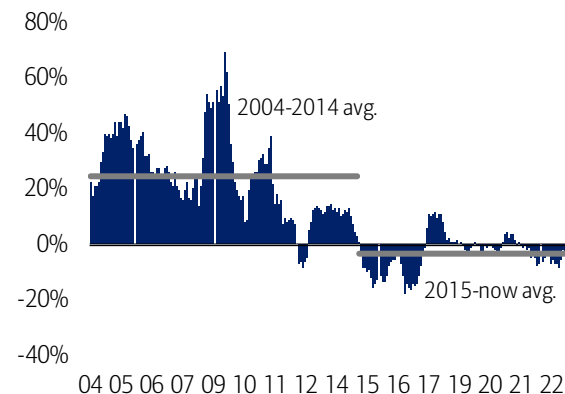


Source: Bloomberg, BofA Global Research

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Exhibit 19: China has been a net seller since 2015

YoY change in China's holdings of Treasuries (2004-6/2023)

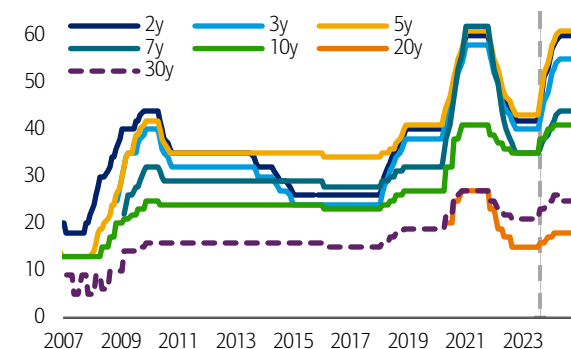


Source: Bloomberg, BofA Global Research

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Exhibit 20: Treasury note and bond auction sizes will likely grow through April '24

Projections for USTs auction sizes by tenor to YE '24 (\$bn)



Source: BofA Global Research, US Treasury

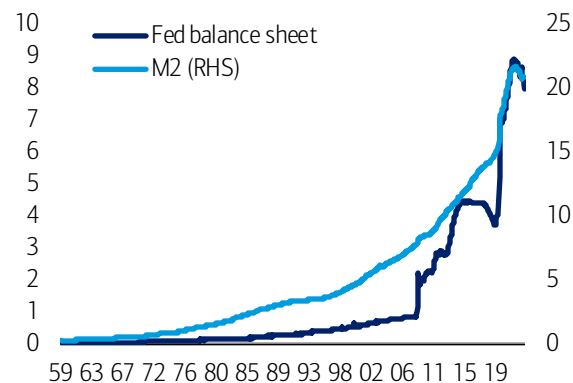
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Leverage risks shifted from private to public sector

Exhibit 21: +\$3.8T in Fed balance sheet & +5.5T in M2 since 2019

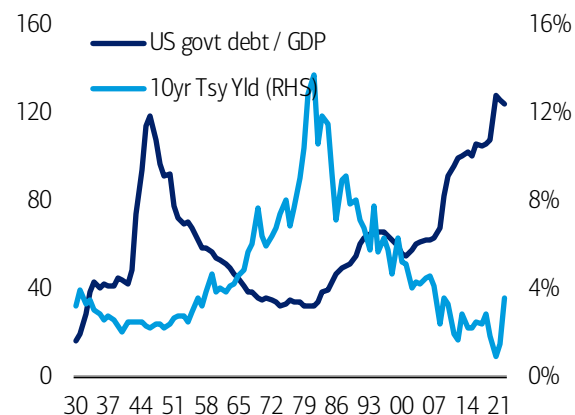
Fed balance sheet and M2 money supply (\$T; 1959-9/2023)



Source: Haver Analytics, Bloomberg, BofA US Equity & Quant Strategy
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Exhibit 22: US sovereign bonds: high risk, low return

US public debt to GDP vs. 10yr yields



Source: Haver Analytics, BofA US Equity & Quant Strategy
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Exhibit 23: Government debt is not anathema for equities

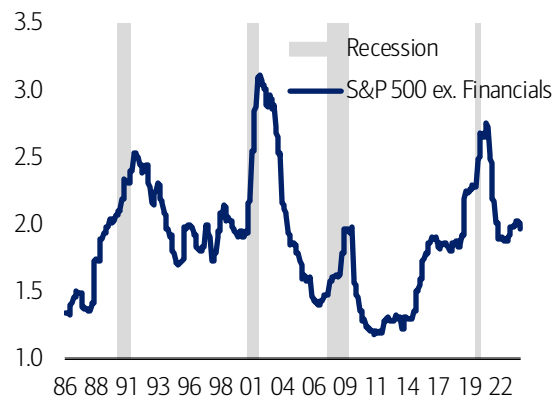
S&P 500 returns based on various US debt/GDP scenarios, 1930-present

	S&P 500 returns			
	Coincident	Next year	Next 5yrs	Nex 10yr
Above avg. (51)	10%	9%	56%	127%
Below avg.	4%	4%	31%	89%
Above 1SD (81)	9%	10%	69%	198%
Rest of time	7%	6%	39%	95%
Post-1946 peak (118)	-7%	1%	55%	203%
Post-1995 peak (66)	26%	18%	146%	110%
Control: Avg all years	7%	7%	45%	109%

Source: Federal Reserve, S&P, BofA US Equity & US Quant Strategy
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Exhibit 24: S&P 500 leverage ex. Financials below COVID levels

S&P 500 ex-Financials Net Debt/EBITDA (1986-10/2023)



Source: FactSet, BofA US Equity & Quant Strategy
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Exhibit 25: Structurally lower leverage, thanks to Uncle Sam

S&P 500 Financials: Total Assets/Equity (1987-3Q23)



Source: FactSet, BofA US Equity & Quant Strategy
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Exhibit 26: Consumer balance sheets > pre-COVID levels

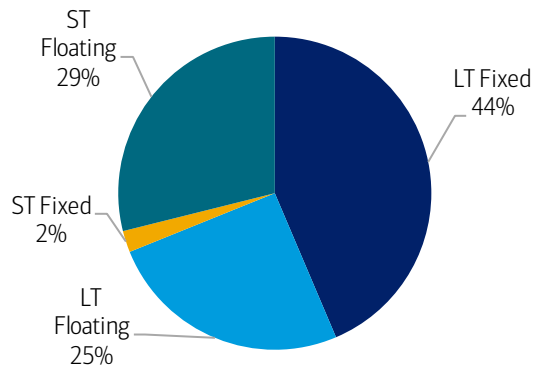
US Financial obligations ratio (Total, SA % of disposable income), 1980-2Q23



Source: Bloomberg, BofA US Equity & US Quant Strategy
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Corporates and consumers have time to adapt to higher rates

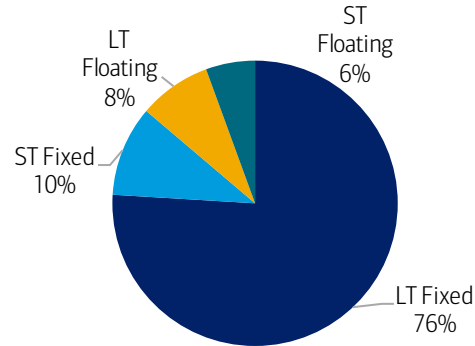
Exhibit 27: Then: 44% of S&P 500 debt was L/T fixed in 2007
S&P 500 debt composition (as of 4Q 2007)



Source: FactSet, BofA US Equity & US Quant Strategy

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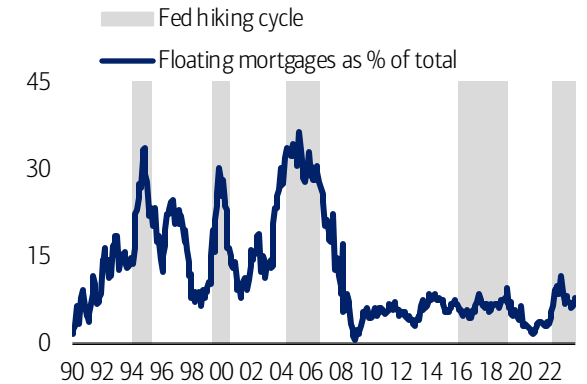
Exhibit 28: Now: 75%+ of S&P 500 debt is L/T fixed today
S&P 500 debt composition (as of March 2023)



Source: FactSet, BofA US Equity & US Quant Strategy

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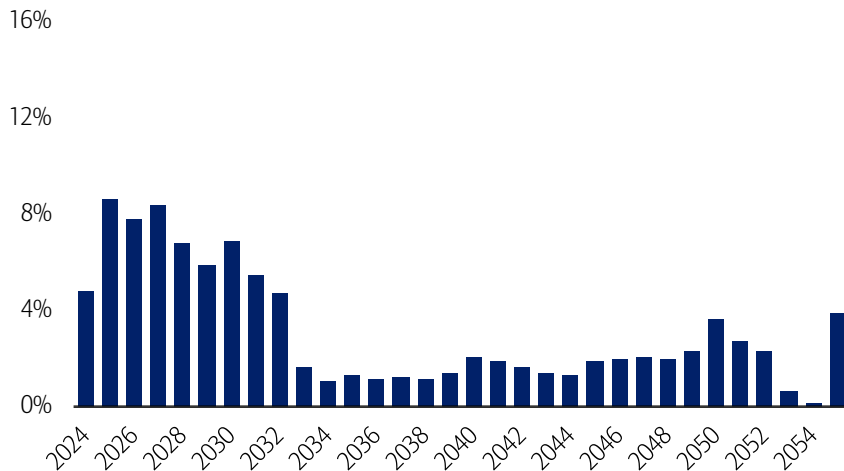
Exhibit 29: 15% of mortgages are adjustable-rate (ARMs)
New floating mortgages as a % of total vs. Fed hiking cycles (1990 9/2023)



Source: Bloomberg, BofA US Equity & Quant Strategy

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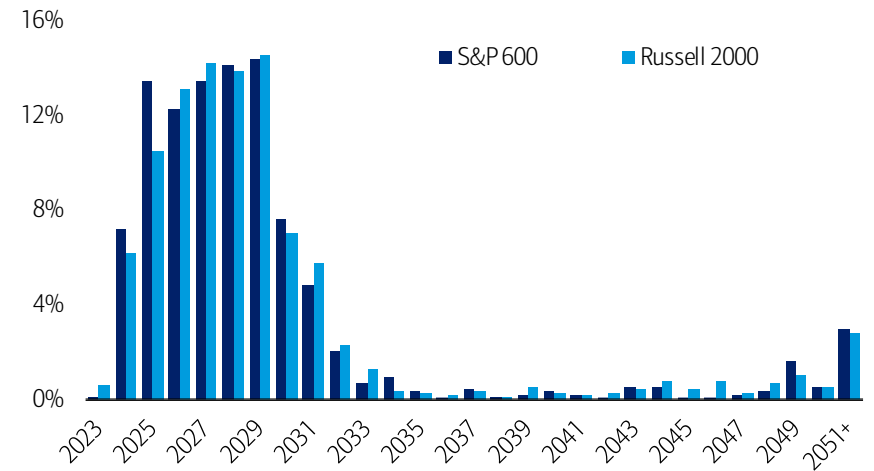
Exhibit 30: S&P 500 debt maturing in manageable chunks
% of LT fixed debt maturing each year for S&P 500 ex. Fins



Source: FactSet, BofA US Equity & Quant Strategy

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Exhibit 31: Faster timeline for small cap debt maturing
% of LT fixed debt maturing each year for S&P 600 / Russell 2000 ex. Fins



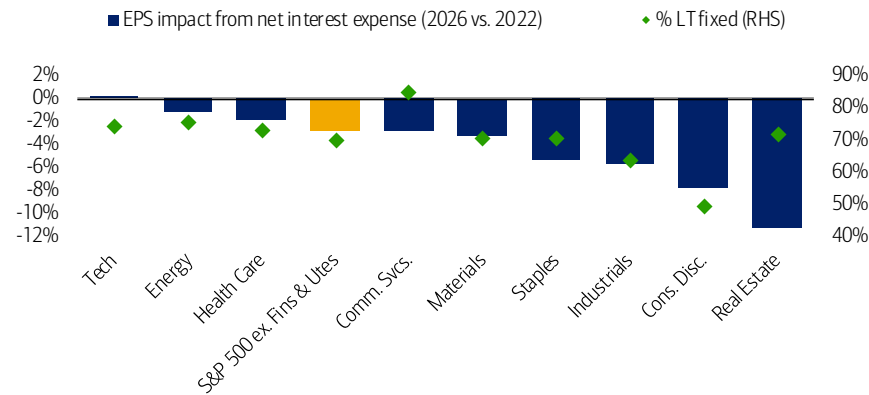
Source: Bloomberg, FactSet, BofA US Equity & US Quant Strategy

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Borrowing costs are just off a record low

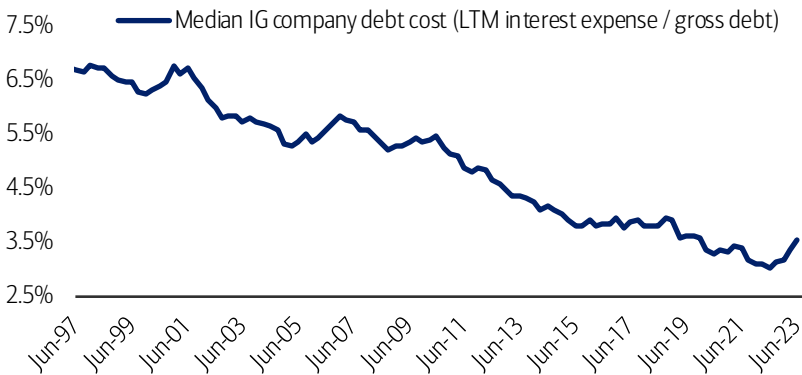
Exhibit 32: EPS impact will be manageable for the S&P 500 overall
Cumulative impact to S&P 500 EPS from higher interest rate by 2026, assuming 7% debt cost



Source: FactSet, BofA US Equity & Quant Strategy

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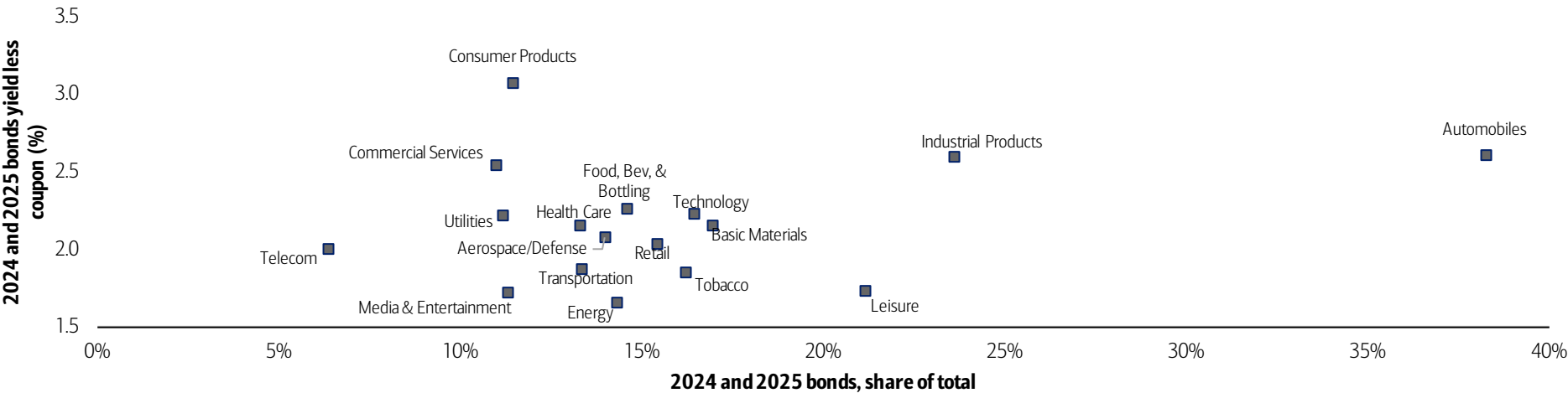
Exhibit 33: IG debt costs are rising, but from record low levels
Median IG company debt cost (LTM interest expense / gross debt)



Source: BofA Investment Grade Credit Strategy

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Exhibit 34: Biggest potential increase in funding costs: Autos, Industrial Products, Consumer Products
Investment grade bonds: 2024 and 2025 index bond maturities vs. potential borrowing cost increase



Note: bonds across all currencies for US-domiciled issuers.

Source: BofA Investment Grade Credit Strategy, ICE Data Indices, LLC

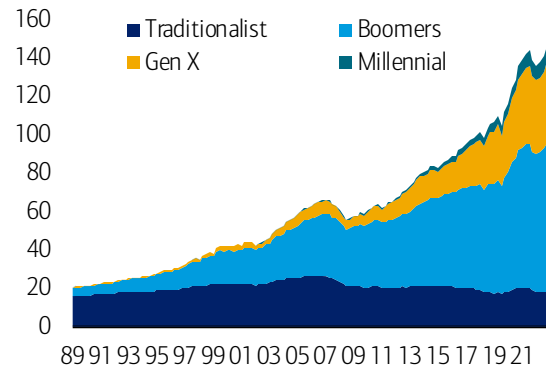
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Boomers helped by rising rates, wealth transfer to Gen X, Y, Z starting now

Average boomer age = life span of human

Exhibit 35: Household net worth = \$146T (540% of GDP)
Boomers + Traditionalists = 2/3 of total net worth
Higher rates = higher interest income for older generations
 Household net worth by generation (1989-2023)

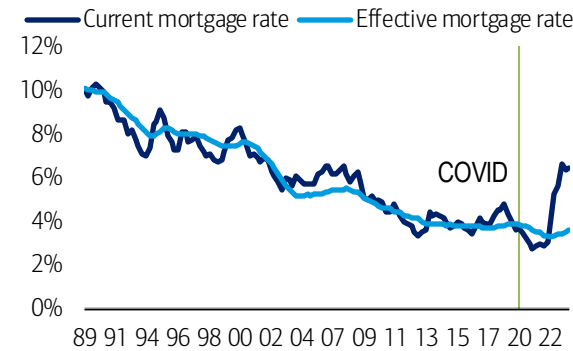


Source: Haver Analytics, BofA US Equity & Quant Strategy

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Exhibit 36: Effective mortgage rate is still below pre-COVID levels. Everyone locked in 3% mortgage...

Current mortgage rate vs. effective rate on all mortgage debt outstanding (1989-2023)

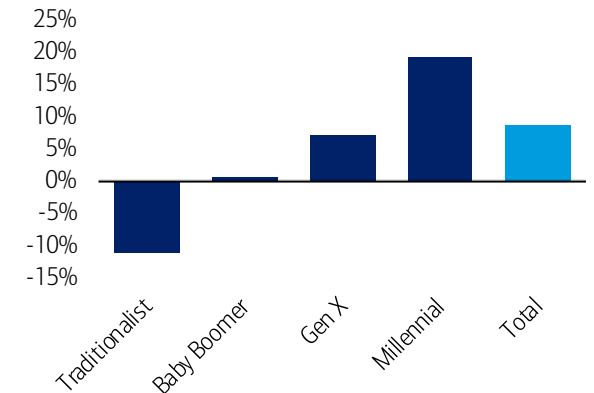


Source: Bloomberg, BofA US Equity & Quant Strategy

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Exhibit 37: ...except Millennials

% change in mortgage debt since 4Q21 by generation (as of 2Q23)

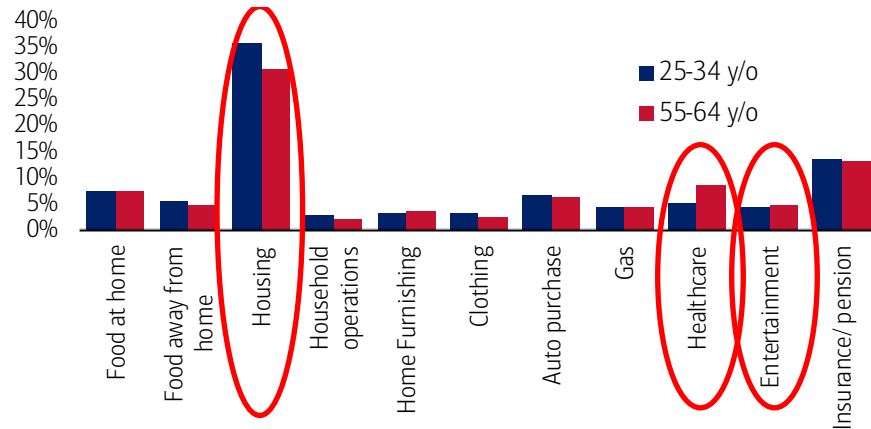


Source: Haver Analytics, BofA US Equity & Quant Strategy

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Exhibit 38: Millennials spend more on housing, Boomers on health care and entertainment

% share of expenditure by category (as of 2022)

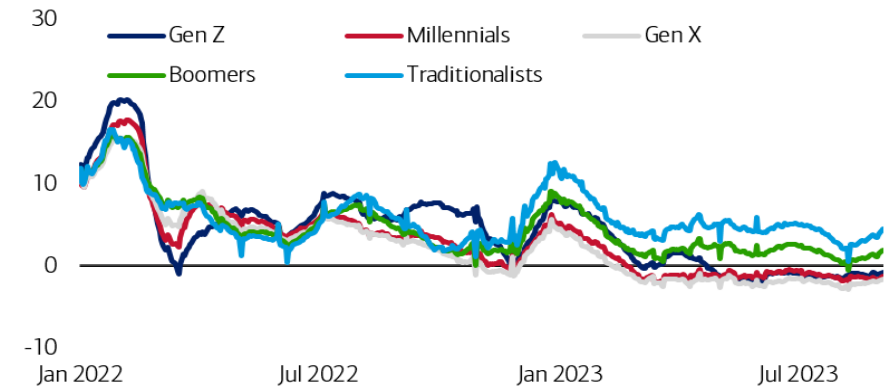


Source: Haver Analytics, BofA Global Research

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Exhibit 39: Boomer/traditionalist spending significantly higher than younger generations

Bank of America total card spending per household by generation (28-day moving average, % YoY)



Source: Bank of America Institute See [Consumer Morsel: Will silver spenders continue to outpace the young?](https://www.bofa.com/consumer-morsel) ([bofa.com](https://www.bofa.com)) for methodology, limitations, and disclaimers related to Bank of America transaction data.

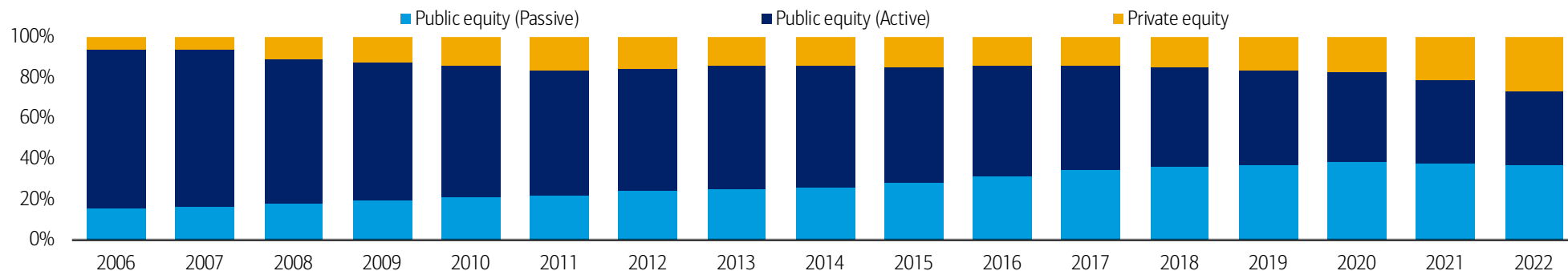
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New equity barbell: passive and private

Exhibit 40: Active public equity supplanted by passive & private equity

Pension allocation: Public equity (Active)*, Public equity (Passive)*, Private Equity as a % of total equity



Source: Pensions & Investments, Strategic Insights, SimFund, BofA US Equity & US Quant Strategy. Based on US pension funds within the top 1000 that have available asset allocations. Total equity includes public equity (global, international, and domestic) and private equity. *We make assumptions on mix shift based on SimFund US AUM tracked in passive vs active.

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Exhibit 41: Near record duration risk in S&P 500

S&P 500 duration based on our DDM framework (as of 9/2023)

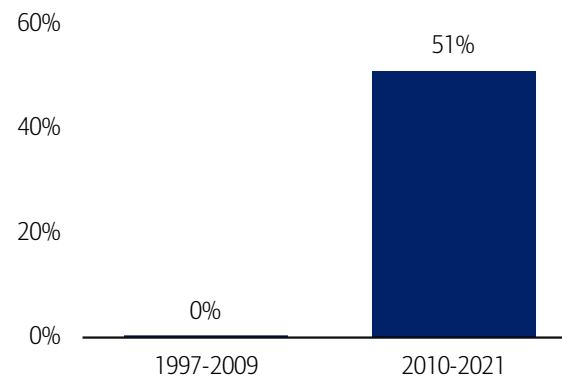


Source: BofA US Equity & Quant Strategy

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Exhibit 42: Tech, TMT, Cons. Disc P/E expansion from QE

R-sq of Fed balance sheet YoY vs. YoY change in S&P 500 market cap that is not driven by earnings (5/97-12/21)



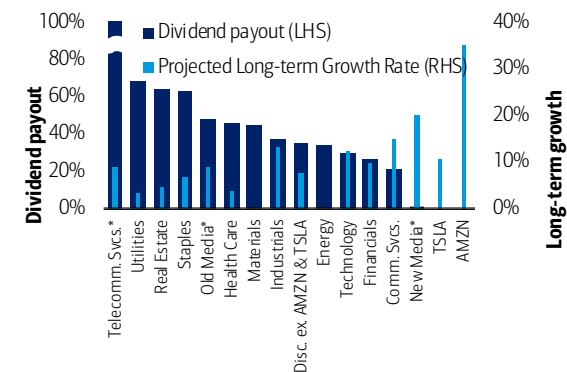
Source: FactSet, BofA US Equity & Quant Strategy

*Non-earnings driven market cap change = [total market cap change] - [historical avg. fwd P/E] x [chg. in fwd EPS]

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Exhibit 43: 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 10/24/23



Source: FactSet, BofA US Equity & Quant Strategy. *denotes industry groups/industries in Communication Services; "New Media" includes Entertainment and Interactive Media & Services industries; "Old Media" includes Media industry.

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The S&P 500 is statistically expensive on most measures

Exhibit 44: S&P 500 Valuations – shading indicates that metric is statistically expensive relative to history (as of 10/23)

S&P 500 valuation metrics

Metric	Current	Average	Avg. ex. Tech Bubble	Min	Max	% Above (below) avg	Z-Score	History
Trailing PE	19.4	14.8	14.5	5.2	30.5	30.6%	0.9	1960-present
Trailing GAAP PE	23.2	15.1	14.8	4.2	122.4	53.3%	0.9	1832-present
Forward Consensus PE	17.9	15.8	15.0	9.8	25.1	13.7%	0.6	1986-present
Trailing Normalized PE	21.1	19.1	17.8	9.2	34.5	10.4%	0.4	9/1987-present
Median Forward P/E	16.0	15.5	15.3	10.0	21.9	3.0%	0.2	1986-present
Shiller PE	30.8	17.4	16.8	4.8	44.2	77.1%	1.9	1881-present
P/BV	4.04	2.66	2.49	0.98	5.34	52.0%	1.4	1978-present
EV/EBITDA	13.0	10.5	10.2	6.0	17.1	24.1%	1.1	1986-present
Trailing PEG	2.11	1.67	1.64	1.05	3.24	26.4%	1.3	1986-present
Forward PEG	1.95	1.43	1.41	0.93	3.50	36.2%	1.4	1986-present
P/OCF	15.0	11.3	10.7	5.4	19.3	32.7%	1.1	1986-present
P/FCF	26.0	27.8	25.0	12.9	65.7	-6.8%	-0.2	1986-present
EV/Sales	2.57	1.98	1.91	0.86	3.40	30.0%	1.0	1986-present
ERP (Market-Based)	519	505	521	136	880	2.9%	-0.1	11/1980-present
Normalized ERP	231	348	394	-143	880	-33.6%	0.5	1987-present
S&P 500 Div. Yld. vs. 10yr Tsy. Yld.	0.33	1.23	1.25	0.17	4.20	-73.1%	1.5	1792-present
S&P 500 in WTI terms	49.0	26.8	24.5	2.7	175.3	83.2%	1.2	1960-present
S&P 500 in Gold terms	2.10	1.64	1.42	0.17	5.48	27.8%	0.4	1968-present
S&P 500 vs. R2000 Fwd. P/E	1.46	1.04	0.99	0.76	1.70	41.1%	2.1	1986-present
S&P 500 Market Cap/GDP	1.27	0.66	0.63	0.22	1.64	93.2%	1.8	1964-present

*Above average implied equities are attractive relative to bonds. Note: Trailing P/E based on GAAP EPS from 1960-77, Operating EPS from 1978-87, Pro forma EPS 1988-now. Trailing GAAP P/E based on GAAP P/E for entire series. Market-based ERP based on DDM-implied S&P 500 return less AAA corp bond yield. Normalized ERP based on normalized EPS yield less normalized real risk-free rate.

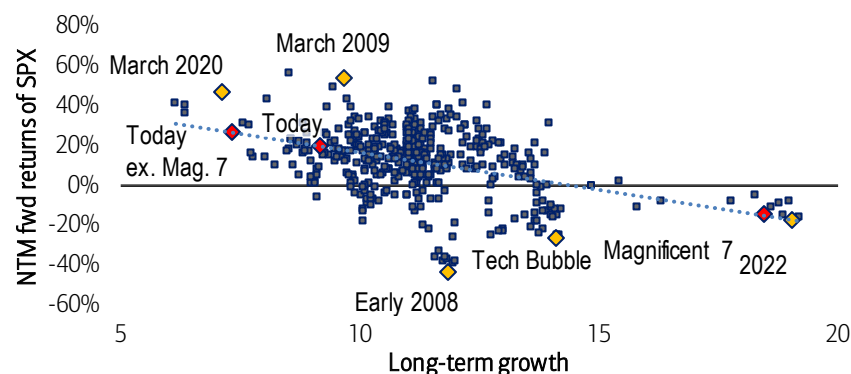
Source: S&P, Compustat, Bloomberg, FactSet/First Call, BofA US Equity & Quant Strategy

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High PEG from low growth expectations = bullish for S&P

Exhibit 45: Low long-term earnings growth expectations suggest outsized equity market returns

Long-term growth rates vs. forward 12-month returns



Source: BofA US Equity Strategy & Quantitative Strategy

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Exhibit 46: Consensus growth expectations are most bearish on Energy, most bullish on Communication Services

Consensus long-term growth vs. trailing 5-yr earnings growth (as of 10/23)

	Trailing 5-yr growth	Long-term growth (LTG) expected	LTG expected 1 yr ago
Energy	40%	-7%	20%
Materials	16%	-1%	2%
Tech	13%	12%	11%
Health Care	13%	4%	4%
S&P 500	12%	8%	11%
Financials	10%	10%	10%
Cons. Disc.	8%	12%	36%
Comm. Svcs.	7%	15%	8%
Real Estate	7%	6%	5%
Staples	6%	7%	7%
Industrials	6%	13%	19%
Utilities	2%	3%	6%

Source: BofA US Equity & Quant. Strategy, FactSet

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Macro/geopolitical shocks and stocks

Exhibit 47: S&P 500 peak-to-trough declines have been 8% on average during major macro shocks/geopolitical events, but more than fully recovered after three months

S&P 500 price changes around historical macro shocks and geopolitical events since 2010

Events	-1 month	-1 day	+1 day	+1 month	+3 month	Peak to trough	Trough to +3m after event	Trough days after (before) event
S&P downgrades Greek Sovereign Debt to junk/1st Greek Bailout	3.9%	-0.4%	-2.3%	-9.0%	-8.1%	-16.0%	9.0%	66
Arab Spring: "Beginning", Tunisian Revolution begins	3.9%	0.1%	0.3%	4.1%	2.8%	-1.6%	13.8%	-18
Arab Spring: Syrian/Libyan civil war begins	-2.4%	-0.6%	-1.1%	1.8%	-2.4%	-6.4%	8.5%	1
S&P downgrades US debt	-10.3%	-4.8%	-0.1%	-2.2%	4.4%	-18.8%	16.9%	59
US government shuts down	3.0%	-0.6%	0.8%	4.8%	9.9%	-5.4%	13.2%	7
Scotland passes referendum to vote on independence (voting date was 9/18/14)	3.6%	-0.4%	0.3%	2.8%	1.5%	-2.3%	11.7%	-24
Russia annexes Crimea	1.0%	1.0%	0.7%	0.3%	5.3%	-4.0%	7.8%	24
Swiss abandons cap on Franc vs. Euro FX rate	1.1%	-0.6%	-0.9%	4.3%	4.7%	-0.8%	7.3%	-30
Greece: misses debt payment to IMF	-2.3%	0.3%	0.7%	2.0%	-6.8%	-12.2%	6.8%	55
China: Devalues yuan	1.3%	1.3%	-1.0%	-6.8%	-1.4%	-12.2%	13.0%	14
S&P downgrades Japan credit rating	-5.4%	1.3%	0.9%	2.8%	4.8%	-11.2%	13.0%	-22
Turkey shoots down Russian plane for violating Turkish airspace	0.6%	-0.1%	0.1%	-1.2%	-7.5%	-13.3%	6.4%	79
Fed - 1st rate hike - increase interest rate 25bps	-0.5%	1.1%	1.5%	-8.0%	-0.8%	-13.0%	10.8%	57
Brazil: House votes to begin President impeachment trial	1.5%	-0.1%	0.7%	-1.6%	4.1%	-5.6%	8.3%	70
Brexit: UK votes to leave the EU	3.2%	1.3%	-3.6%	2.9%	2.4%	-5.6%	9.5%	4
Trump orders 59 Tomahawk cruise missiles to be fired at the Shayrat airbase in Syria	-0.9%	-0.3%	0.2%	2.0%	2.4%	-2.4%	5.3%	7
Trump fires FBI director James Comey	1.9%	0.0%	-0.1%	1.3%	3.1%	-1.2%	6.5%	-26
North Korea detonates a hydrogen bomb -its most powerful nuclear test ever	0.0%	0.2%	0.0%	2.1%	6.7%	-2.2%	9.2%	-15
Catalonia votes for independence from Spain	1.7%	0.4%	0.4%	2.4%	6.1%	-0.8%	9.5%	-26
The US announces imports of steel and aluminum threaten national security Under Section 232	-1.6%	1.2%	0.0%	0.8%	-0.3%	-10.2%	8.0%	-8
Trump administration releases initial list of Chinese products worth \$50bn that are under consideration for tariffs	-4.1%	-2.2%	1.3%	1.9%	5.1%	-7.3%	7.9%	-1
Italian bond yields spike on budget concerns	0.6%	0.4%	-0.1%	2.1%	4.7%	-2.9%	8.7%	-14
Collapse in Argentina and Turkey's currency ignites concerns of emerging market currency crisis	1.6%	-0.3%	0.7%	1.4%	5.5%	-1.5%	8.9%	-18
US releases list of \$200bn Chinese goods subject to tariffs	0.2%	0.9%	0.3%	1.8%	0.1%	-3.1%	8.6%	-13
Powell says we're "a long way" from neutral on interest rates	0.8%	0.0%	0.1%	-6.9%	-16.3%	-19.8%	6.8%	82
US government shuts down	-8.8%	-2.1%	-2.7%	8.9%	15.9%	-15.7%	21.4%	2
US Treasury designates China as a currency manipulator	-2.0%	-0.7%	-3.0%	1.5%	4.9%	-6.1%	8.4%	9
Drones were used to attack the state-owned Saudi Aramco oil processing facilities	4.1%	-0.1%	-0.3%	-0.6%	6.1%	-2.6%	12.1%	-24
Top Iranian military official killed by US airstrike	3.8%	0.0%	0.8%	-0.2%	-21.8%	-1.0%	17.6%	81
China puts Wuhan City, the center of the COVID-19 outbreak, on lockdown	3.0%	0.0%	0.1%	0.5%	-15.8%	-33.9%	28.5%	60
Russia/Ukraine conflict begins	-4.2%	-1.8%	1.5%	7.0%	-6.7%	-15.8%	1.9%	84
Average	-0.1%	-0.2%	-0.1%	0.7%	0.4%	-8.2%	10.5%	17
Median	0.8%	0.0%	0.1%	1.8%	2.8%	-5.6%	8.9%	4
Min	-10.3%	-4.8%	-3.6%	-9.0%	-21.8%	-33.9%	1.9%	
Max	4.1%	1.3%	1.5%	8.9%	15.9%	-0.8%	28.5%	
Average non-US	0.9%	0.1%	-0.1%	0.9%	-0.6%	-7.4%	10.3%	
% positive	61%	45%	61%	71%	65%			

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

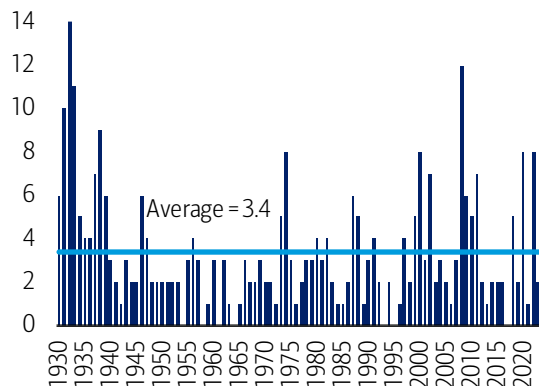
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Pullbacks are normal, time is on your side for equities

Exhibit 48: 5%+ pullbacks occur more than three times a year on average

of 5%+ pullbacks on the S&P 500 since 1930

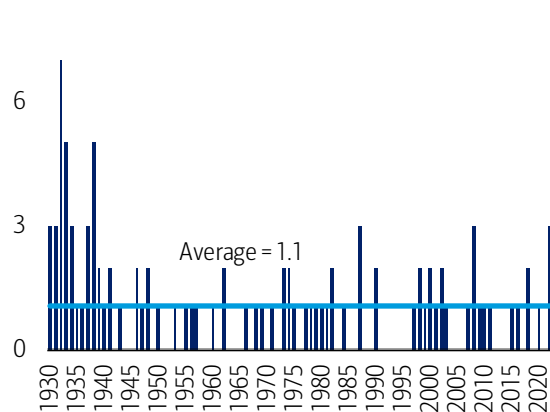


Source: BofA US Equity & Quant Strategy, Bloomberg

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Exhibit 49: 10%+ corrections occur once a year on average

of 10%+ pullbacks on the S&P 500 since 1930

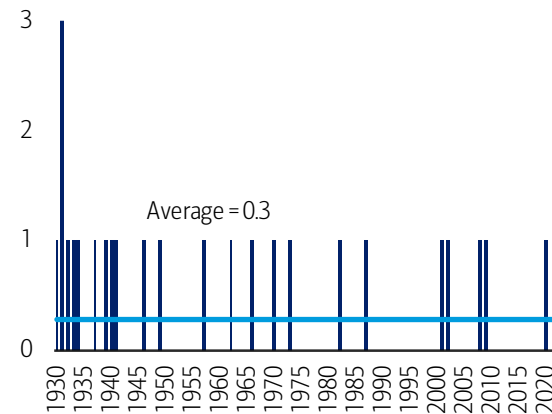


Source: BofA US Equity & Quant Strategy, Bloomberg

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Exhibit 50: 20%+ pullbacks occur every 3-4 years on average

of 20%+ pullbacks on the S&P 500 since 1930

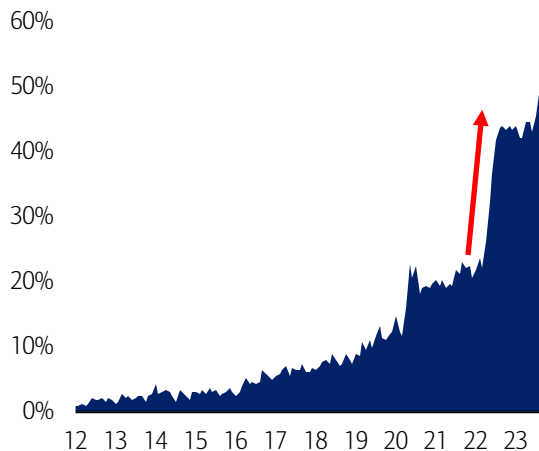


Source: BofA US Equity & Quant Strategy, Bloomberg

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Exhibit 51: Massive shift in focus to short-term trading

SPX 0-days to expiry option volume as a % of total options volume

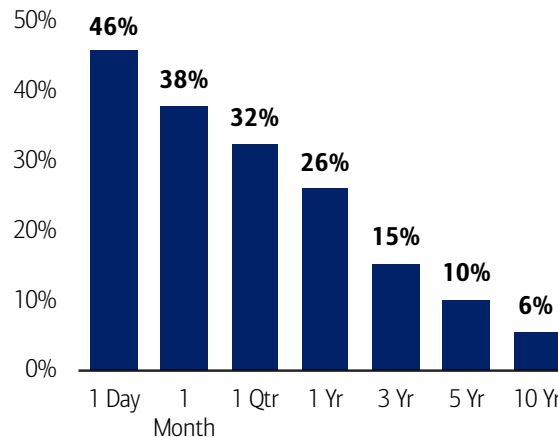


Source: BofA Global Research, Bloomberg

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Exhibit 52: But as time horizons grow, equity losses plummet

Probability of negative returns, based on S&P 500 total returns from 1929-present

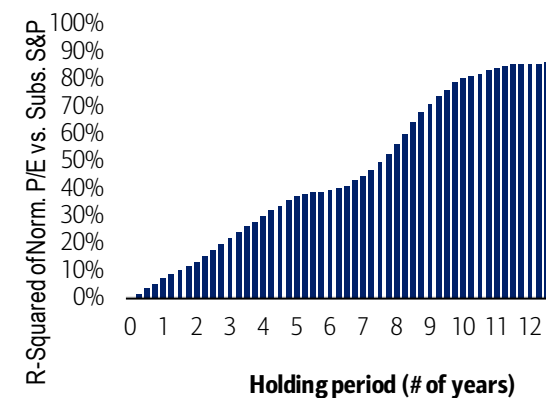


Source: S&P, Bloomberg, BofA US Equity & Quant Strategy

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Exhibit 53: Valuation is almost all that matters for long-term stock returns, and suggests ~6% p.a. returns over the next decade

Price to normalized EPS r-sq. vs. returns (1987-present)



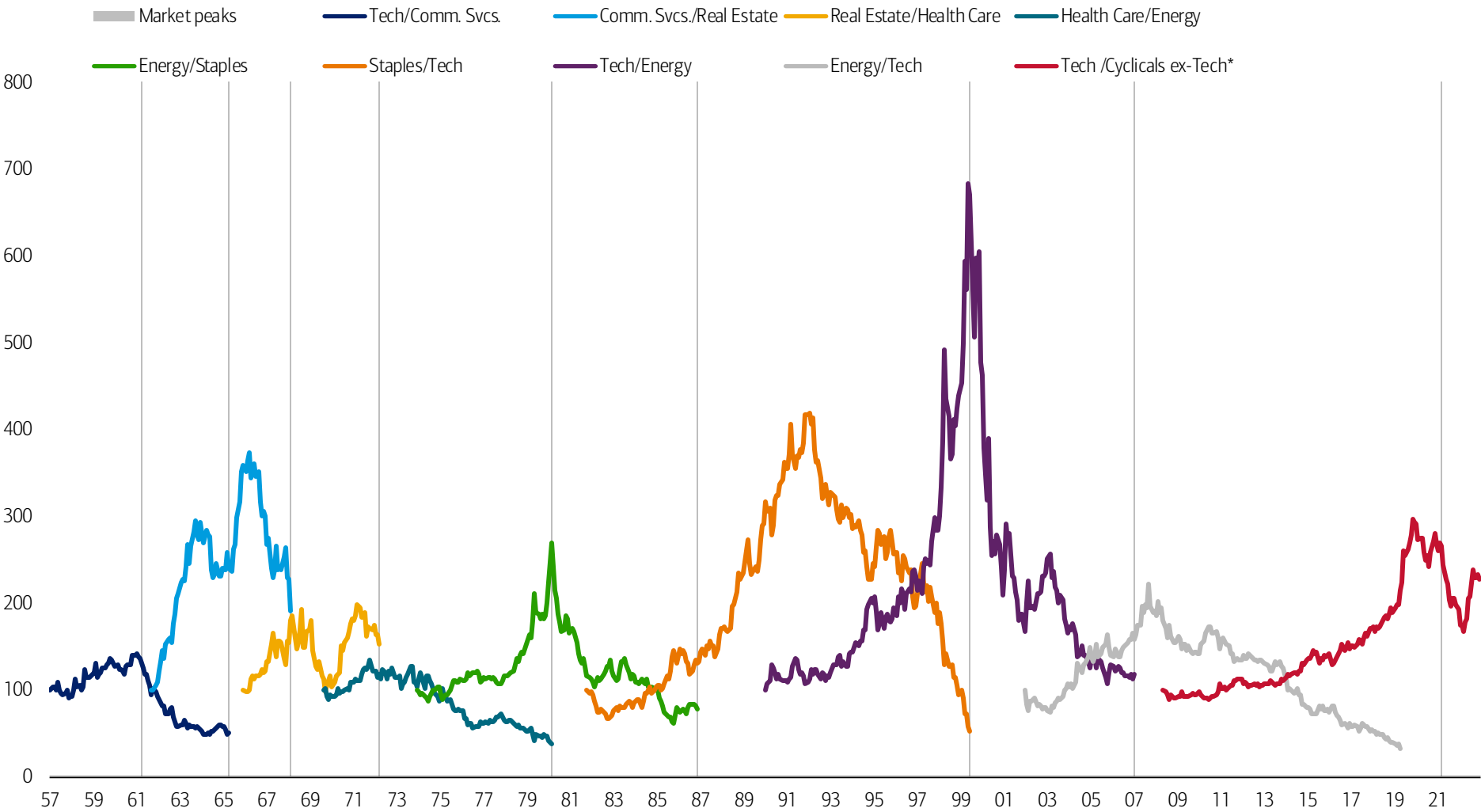
Source: BofA US Equity & Quant Strategy, Haver, FactSet

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Leadership changes far from over

Exhibit 54: Bear markets typically bring changes in leadership
Relative performance of prior bull market leader vs. the next bull market leader (beginning of bull market = 100)



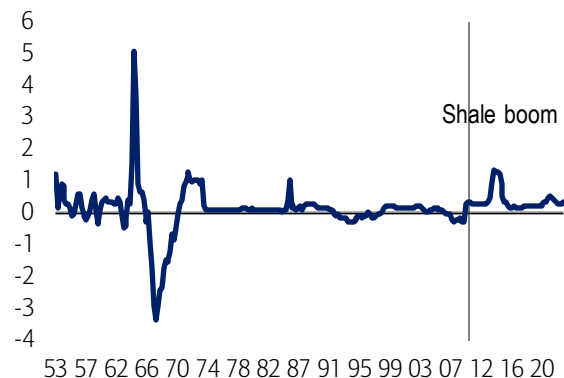
Source: BofA US Equity & Quant Strategy, FactSet *Cydicals ex-Tech include Energy, Materials, Financials, Industrials.



Higher oil, but not a shock to the system

Exhibit 55: Higher oil prices have historically been a tailwind to earnings, 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 (1953-2Q23)

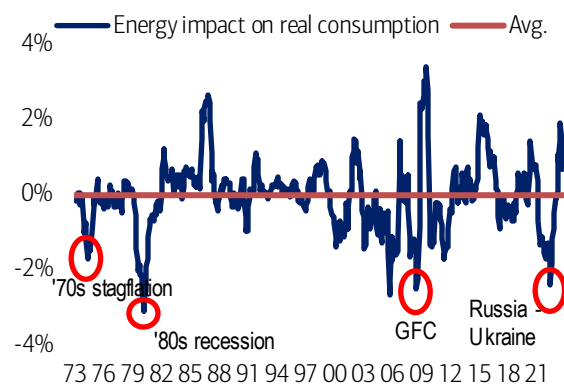


Source: Haver, FactSet, BofA US Equity & Quant Strategy

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Exhibit 56: The recent jump in oil is not a 'shock' – lower energy prices added 40bps YoY to consumption power

Energy inflation impact on real consumption (CPI YoY – CPI ex. Energy YoY) – 1973-present



Source: BofA US Equity & Quant Strategy, Bloomberg

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Exhibit 57: Energy costs are not a significant cost component for most industries

Energy Costs as % of Total Operating Costs by Industry (the use of commodities by industries; as of 2020)



Source: BEA, BofA US Equity & Quant Strategy

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Exhibit 58: Labor costs are the biggest cost component for most industries

Labor Costs as % of Total Operating Costs by Industry (the use of commodities by industries; as of 2020)



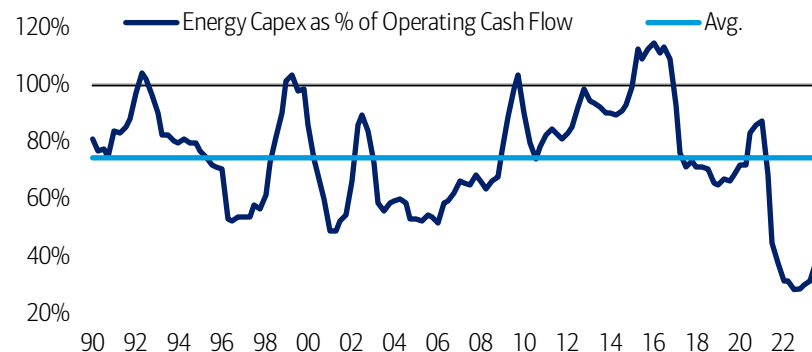
Source: BEA, BofA US Equity & Quant Strategy

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Bad actors of the last crisis, capital-starved since GFC, are higher quality

Exhibit 59: Minimal supply response in Energy...

S&P 500 Energy capex as % of operating cash flow (1990-2Q23)

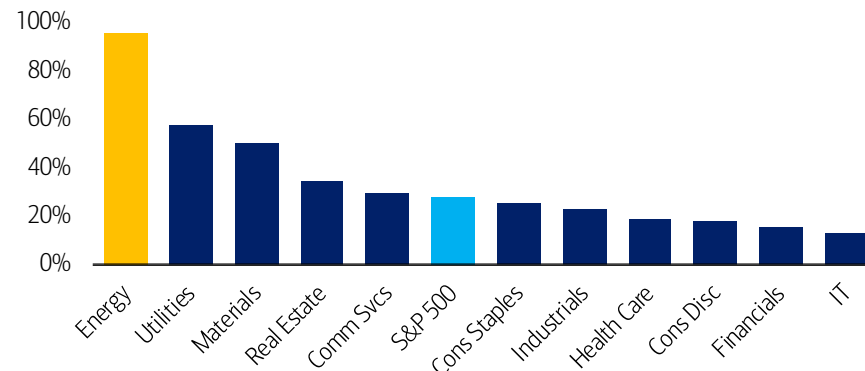


Source: BofA US Equity & Quant Strategy, FactSet

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Exhibit 60: ...until CEO comp incentives revert to production goals

% of S&P 500 companies with ESG metrics as part of CEO short-term compensation plan within the last 3 years, as of 8/2023

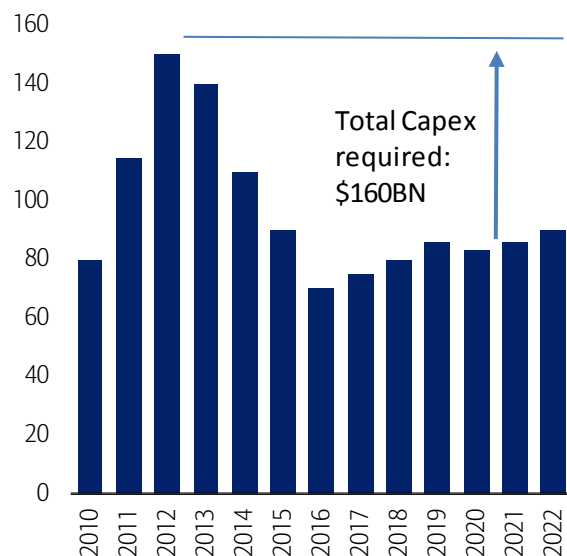


Source: ICE Data Indices, LLC, BofA US Equity and Quant Strategy

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Exhibit 61: Mining capacity needs to double to get to net zero

Global Metals and Mining capex (\$bn)

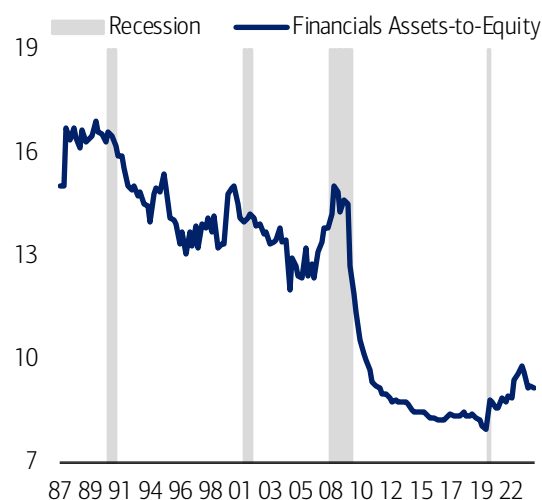


Source: S&P, BofA Global Research

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Exhibit 62: Financials leverage is still near record lows

Financials Assets-to-Equity (1987-3Q23)



Source: FactSet, BofA US Equity & Quant Strategy

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Exhibit 63: Health Care & Telecoms lead in default risk

High yield sector default estimates

Sector	Face	DC Face	DR	DPx
Healthcare	119,504	14,960	12.5%	68
Telecoms	68,145	7,482	11.0%	70
Cable	99,281	8,041	8.1%	70
Retail	74,819	5,523	7.4%	66
Media	73,634	4,553	6.2%	75
Technology	64,934	3,597	5.5%	76
Chemicals	44,077	929	2.1%	76
Food Producers	24,779	271	1.1%	83
Financials	115,296	1,159	1.0%	66
Transportation	38,497	294	0.8%	76
Real Estate	61,331	265	0.4%	66
Gaming	44,335	173	0.4%	70
Travel	88,421	286	0.3%	86
Autos	87,538	0	0.0%	0
Services	48,632	0	0.0%	0
Metals	30,219	0	0.0%	0
Packaging/Paper	39,516	0	0.0%	0
Energy	170,492	0	0.0%	0
Capital Goods	63,910	0	0.0%	0
Utilities	33,334	0	0.0%	0

Source: BofA High Yield Credit Research

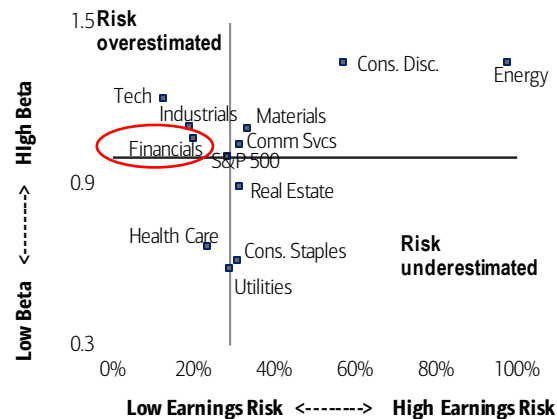
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Mispriced risk in equities

Exhibit 64: Financials: low EPS vol, high beta

S&P Quality rankings (cap-wtd. % of Low Quality B or Worse stocks) vs. 5-yr price beta (as of 9/23)

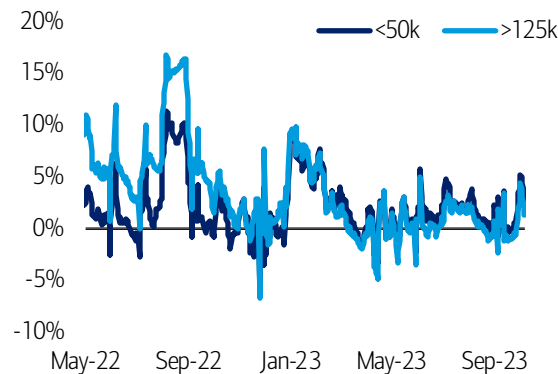


Source: S&P, FactSet, BofA US Equity & Quant Strategy. Note: Financials excludes BRK/B.

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Exhibit 65: Luxury defensive? Higher-income consumer spend has been lagging

Total spending ex groceries and gas, per HH by income group, based on aggregated BAC card data (y/y % change of the 7-day moving average of spending levels)

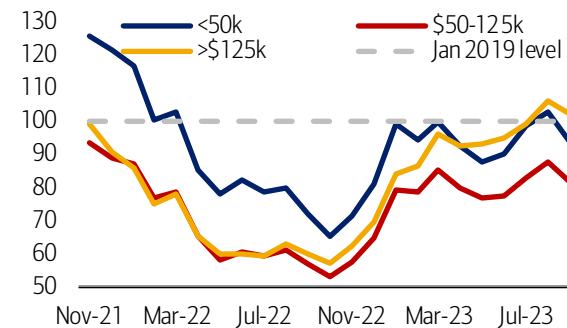


Source: BAC internal data

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Exhibit 66: Unemployment for higher-income households has risen above January 2019 levels

Number of households receiving unemployment benefits through direct deposit (index, Jan 2019=100 for each income group)

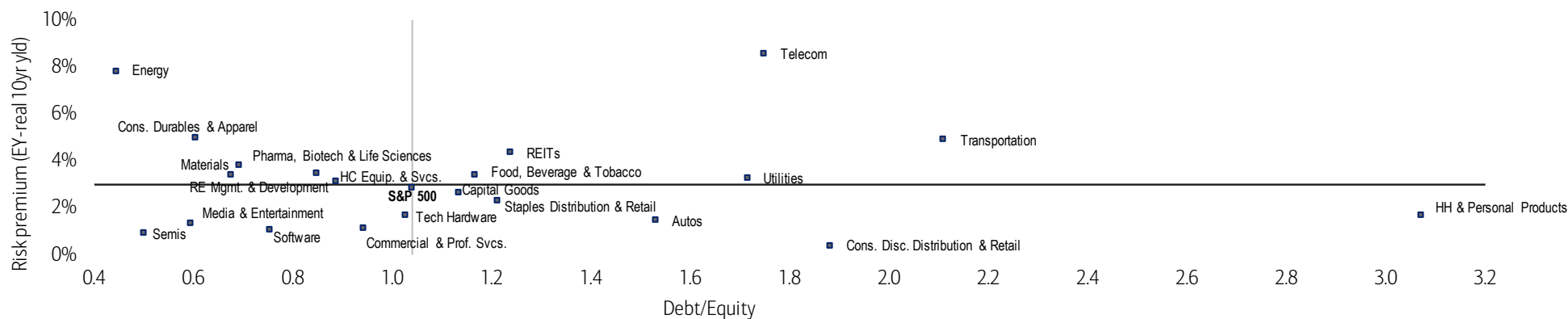


Source: Bank of America Institute. Note: this calculation adjusts for growing consumer sample size. Bank of America Institute See [Consumer Checkpoint: Not falling in the Fall \(bofa.com\)](#) for methodology, limitations, and disclaimers related to Bank of America transaction data.

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Exhibit 67: Leverage risk vs. equity risk: Energy/Consumer Durables/Materials/Pharma pricing in the worst; Staples/Dist. & Retail/Autos/Cap Goods priced for perfection

Debt to equity for S&P 500 industry groups vs their risk premia (trailing earnings yield – real risk-free rate)



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

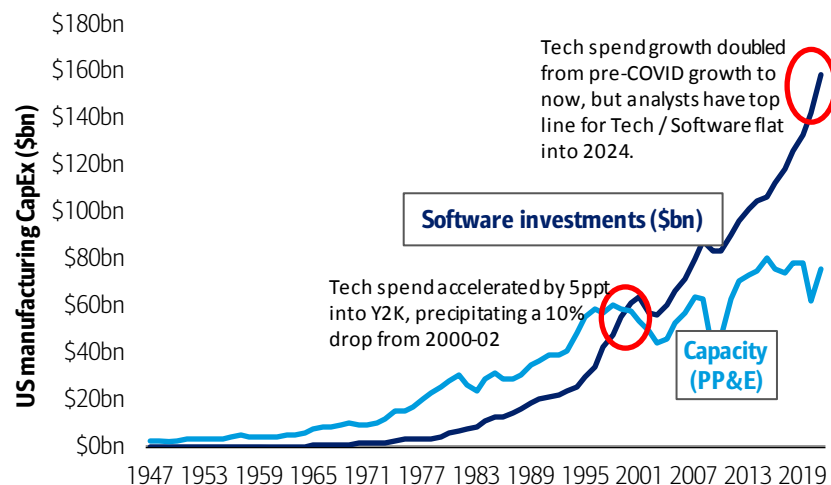
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Risks to software: demand pull forward, AI won't float all boats

Exhibit 68: Secular shift afoot?

US Manufacturing CapEx spending: software vs. "core" industrial equipment (1990-2021)

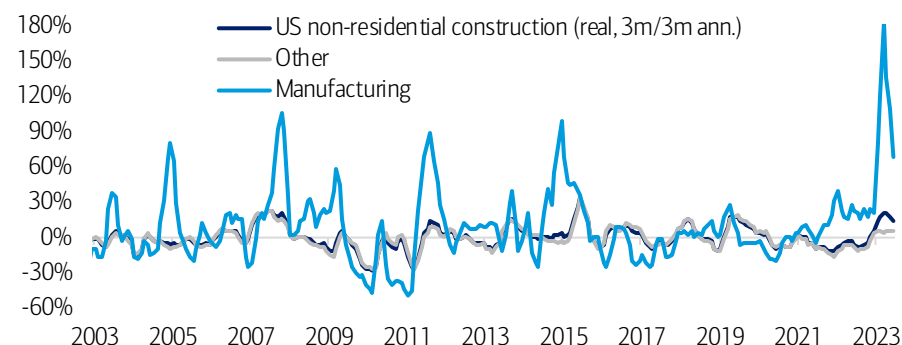


Source: BofA Global Research, BEA. Software investments include both third-party purchased and custom software. Equipment investments include industrial and transportation equipment and exclude information processing equipment (e.g., computers, communication equipment, etc.)

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Exhibit 70: Strength within non-residential investment has come from manufacturing structures on the back of fiscal support and reshoring

US non-residential construction growth

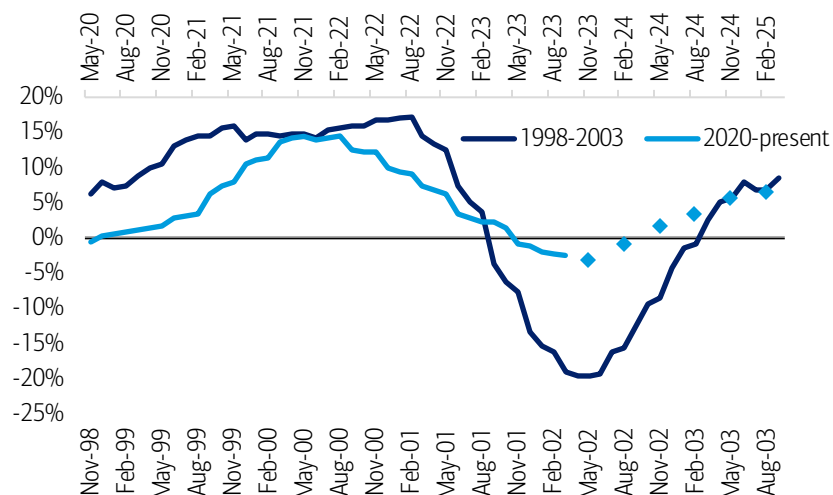


Source: BofA Global Research

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Exhibit 69: COVID demand pull-forward COVID just as strong as Y2K, but analysts pencil in just a mild drop in Tech sales

S&P 500 Tech YoY sales growth today vs. Tech Bubble (dots = consensus forecast)



Source: FactSet, BofA US Equity & Quant Strategy

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Exhibit 71: Green capex pull forward from 5yr tax incentive

Estimated impact to corporates from the IRA (\$bn)

Total capex needed for net zero	741
Benefits:	
IRA tax credits	43
PTC for renewables	30
Carbon capture benefits to Energy	8
Borrowing benefit to Energy – preferential rate	4
Total benefits	84
% of total capex needed for net zero	11%
Tax hit (15% min. & buyback)	123
Total net impact	-39

Source: BofA US Equity & Quant Strategy

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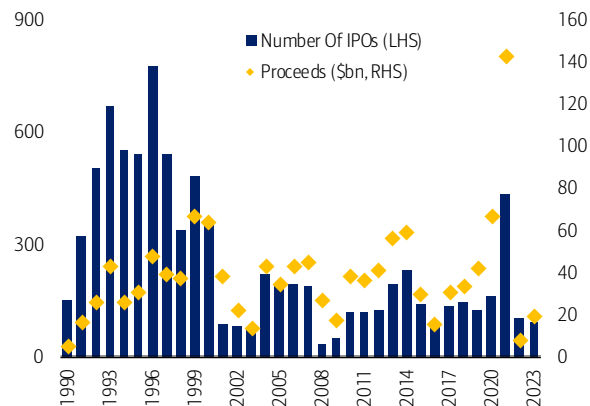


Supply / demand equity backdrop

Bad appetite for new issuance

Exhibit 72: Still tepid activity; improved deal values

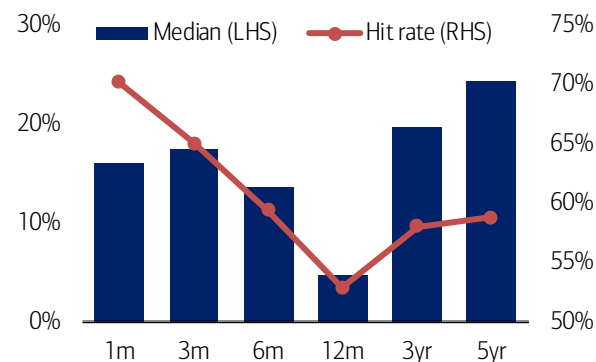
IPO Deal Count (LHS) and Proceeds (\$bn, RHS)



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Exhibit 73: Historically IPOs have enjoyed positive near- and long-term performance...

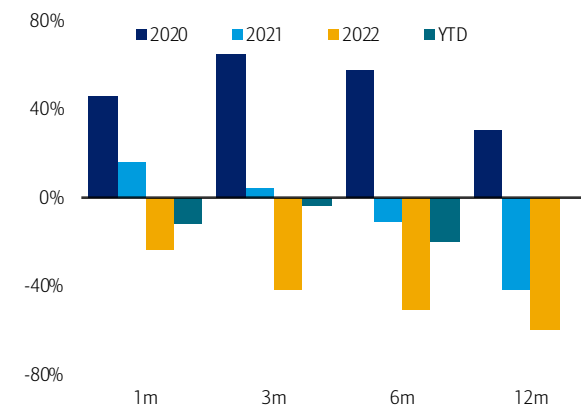
Historical absolute performance of US IPOs (excludes SPACs) over subsequent time periods, 2008-present (Oct'23)



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Exhibit 74: Recent IPO performance has shifted negative

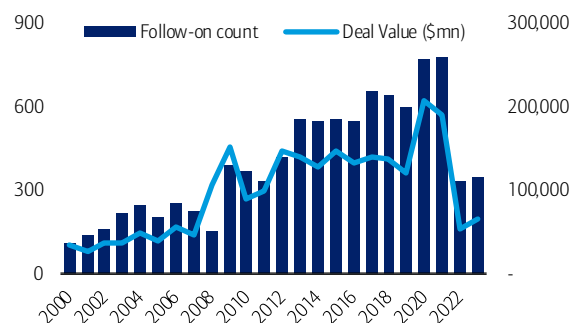
Median absolute performance of US IPOs (excludes SPACs) over subsequent time periods in 2020, 2021, 2022 and 2023 (YTD)



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Exhibit 75: Follow-ons drying up, valuations dropping

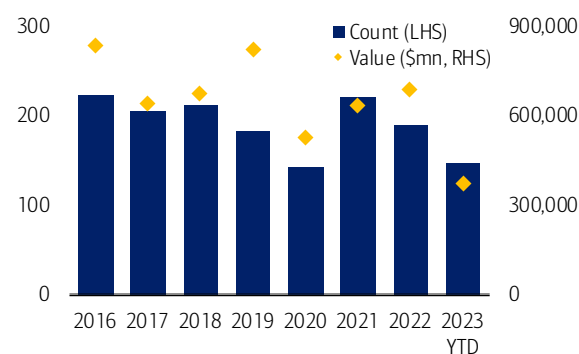
Follow-on count (LHS) and Deal Value (\$mn, RHS) since 2000-present



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Exhibit 76: Deal count is near a 3-year low and value is at a 7-year low

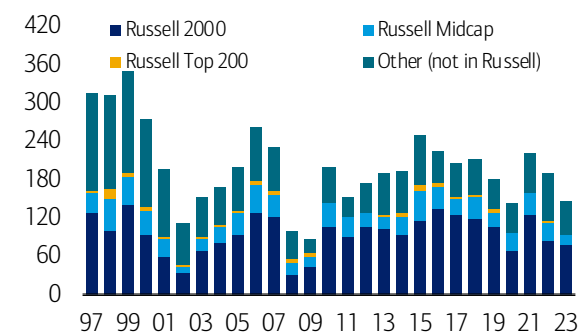
M&A deal count (RHS) and value (\$mn, LHS)



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Exhibit 77: Majority of M&A activity these past two years have been companies in Russell 2000

M&A activity divided into their corresponding indices and other (not in Russell)



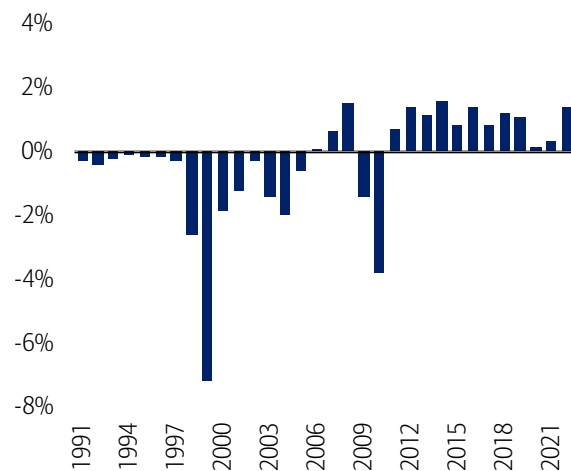
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Demand: Buybacks dwindling as cost of capital increases

Exhibit 78: Buyback driven per share growth is a ZIRP phenomenon

Net buyback (issuance) contribution to EPS growth

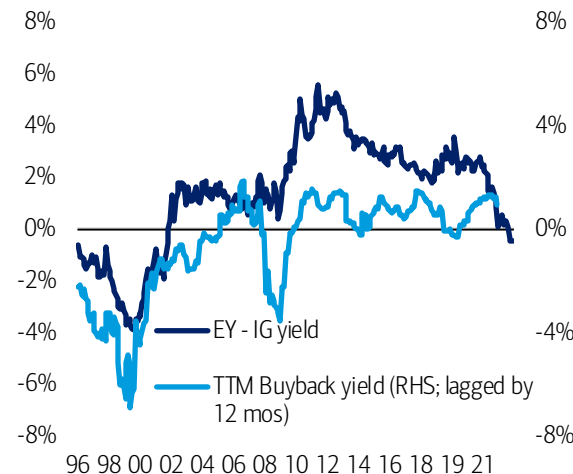


Source: BofA US Equity & Quant Strategy, FactSet, Bloomberg

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Exhibit 79: Higher borrow cost likely to pressure buybacks

S&P 500 EPS yield - IG yield vs. TTM buyback yld with 12-mo lag (1996-9/23)

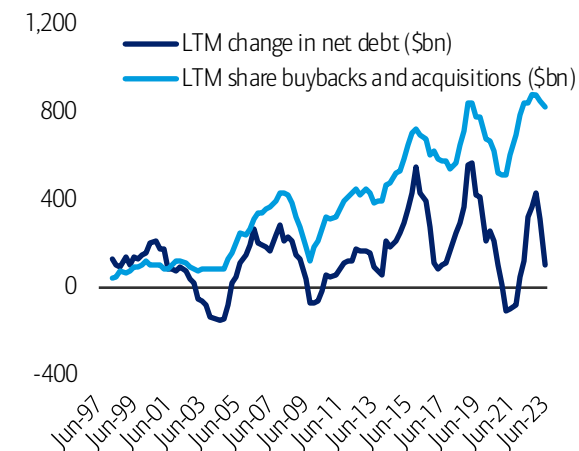


Source: FactSet, Bloomberg, BofA US Equity & Quant Strategy

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Exhibit 80: Share of buybacks and M&A funded with debt declined in 1H2023

LTM change in net debt vs. share buybacks and acquisitions (\$bn)



Source: BofA US IG Credit Strategy

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Exhibit 81: 2Q buybacks were -26% YoY

2Q23 buyback growth by sector

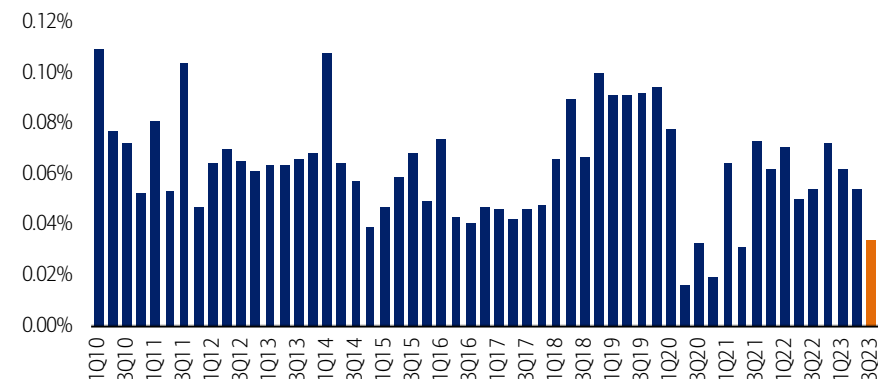
Sector	Aggregate YoY	Contribution to Agg. Change
Consumer Discretionary	-41%	17%
Consumer Staples	-66%	12%
Energy	10%	-3%
Financials	2%	-1%
Health Care	-50%	14%
Industrials	-37%	12%
Information Technology	-29%	33%
Materials	-67%	11%
Real Estate	6%	0%
Communication Services	-13%	8%
Utilities	-121%	-3%
S&P 500	-26%	

Source: FactSet, BofA US Equity & US Quant Strategy

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Exhibit 82: Buyback slowdown: weakest quarter in 2+ years

BofA corporate client buybacks as a % of S&P 500 avg. mkt. cap by qtr, 2010-3Q23



Source: BofA Securities, Bloomberg.

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Earnings outlook

Exhibit 83: We forecast 2% growth in 2023, followed by 6% growth in 2024

S&P 500 EPS outlook

All based on current constituents unless specified

	2022	Bottom-up Consensus				BofA Analyst estimates				BofA Strategy			
		2023	y/y	2024	y/y	2023	y/y	2024	y/y	2023	y/y	2024	y/y
S&P 500 Pro-forma EPS (Historical Index)	\$218.1												
S&P 500 Pro-forma EPS (Current Constituents)	\$223.2	\$221.4	2%	\$247.9	12%	\$222.3	2%	\$244.1	10%	\$222.0	2%	\$235.0	6%
Sector (\$ billions)													
Consumer Discretionary	110.5	146.0	32%	165.4	13%	165.7	50%	192.8	16%	155.0	40%	168.0	8%
Consumer Staples	116.7	120.9	4%	129.5	7%	121.1	4%	128.6	6%	122.0	5%	125.0	2%
Energy	202.9	140.4	-31%	140.0	0%	138.9	-32%	132.5	-5%	145.0	-29%	150.0	3%
Financials	304.4	310.8	2%	331.4	7%	308.4	1%	324.8	5%	315.0	3%	325.0	3%
Health Care	309.2	260.6	-16%	291.9	12%	260.2	-16%	293.9	13%	261.0	-16%	280.0	7%
Industrials	141.4	158.5	12%	177.0	12%	158.0	12%	174.8	11%	160.0	13%	170.0	6%
Information Technology	354.0	363.7	3%	422.1	16%	363.2	3%	414.1	14%	363.0	3%	400.0	10%
Materials	64.1	49.8	-22%	52.5	5%	50.0	-22%	52.5	5%	50.0	-22%	52.0	4%
Real Estate	50.4	52.7	5%	55.3	5%	53.3	6%	56.7	6%	53.5	6%	55.0	3%
Communication Services	148.9	173.0	16%	201.1	16%	183.3	23%	209.3	14%	178.0	20%	188.0	6%
Utilities	51.0	54.5	7%	59.2	9%	55.3	8%	59.6	8%	55.0	8%	58.0	5%
S&P 500	1,853.4	1,830.9	-1%	2,025.4	11%	1,857.5	0%	2,039.6	10%	1,857.5	0%	1,971.0	6%
S&P 500 ex. Financials	1,549.0	1,520.0	-2%	1,694.0	11%	1,549.0	0%	1,714.8	11%	1,542.5	0%	1,646.0	7%
S&P 500 ex. Energy and Financials	1,346.1	1,379.6	2%	1,554.0	13%	1,410.2	5%	1,582.3	12%	1,397.5	4%	1,496.0	7%
S&P 500 ex. Energy	1,650.5	1,690.5	2%	1,885.4	12%	1,718.6	4%	1,907.0	11%	1,712.5	4%	1,821.0	6%
Energy Sector (\$bn)	202.9	140.4	-31%	140.0	0%	138.9	-32%	132.5	-5%	145.0	-29%	150.0	3%
Avg. Oil Price (wtd. blend of Brent & WTI)	\$97/bbl									~\$78/bbl	-20%	~\$88/bbl	13%
S&P 500 Dividends (Historical Constituents, \$/share)	\$66.94									\$70.00	5%	\$80.00	14%
Key Macro Economic Forecasts													
Global GDP growth (real)	3.6%									3.0%		2.8%	
US GDP growth (real)	2.1%									2.1%		1.1%	
FX Rate: US\$/Euro (average)	1.05									1.07		1.12	

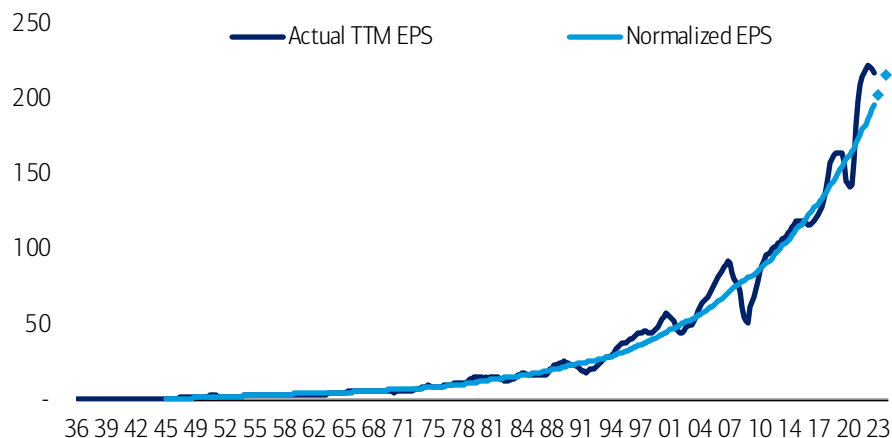
Source: BofA US Equity & Quant Strategy, FactSet, Bloomberg

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Exiting a great earnings era for MNCs, hyper-growth stocks...

Exhibit 84: Cyclical peak: Normalized earnings suggests flat earnings growth through 2024
Trailing 12-mo. actual EPS vs. normalized EPS (1936-2Q23; dots = 2023 and 2024 normalized EPS)

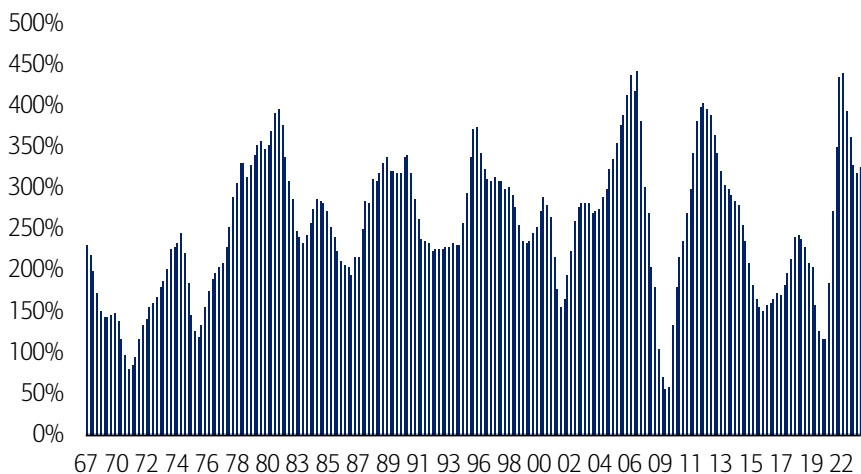


Source: BofA US Equity & Quant Strategy, Haver Analytics, FactSet. Pro-forma EPS used since 1988, Operating EPS used between 1977-1988, GAAP EPS (adjusted for write-offs) used from 1936-1977.

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Exhibit 86: Secular peak: record 20-yr growth since World War II

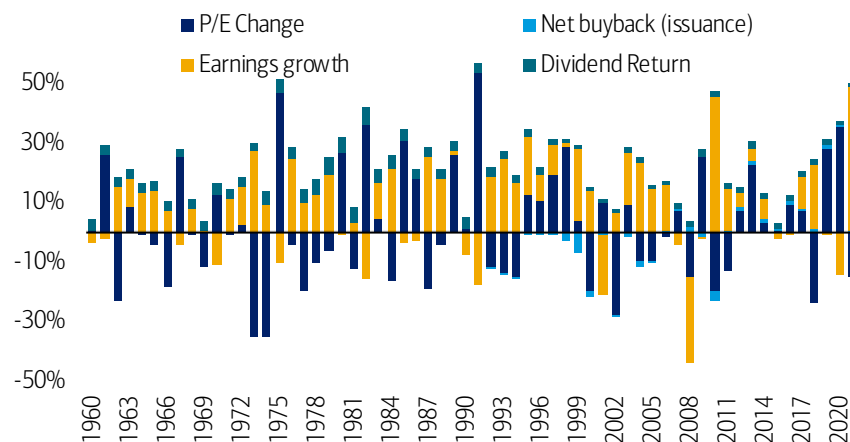
20yr growth rate of S&P 500 EPS (1967-present)



Source: Haver Analytics, BofA US Equity & Quant Strategy. GAAP EPS used prior to 1977, operating EPS used after.

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Exhibit 85: Buybacks have added 1ppt/yr of EPS over the past decade
S&P 500 total return decomposition, 1960-2022

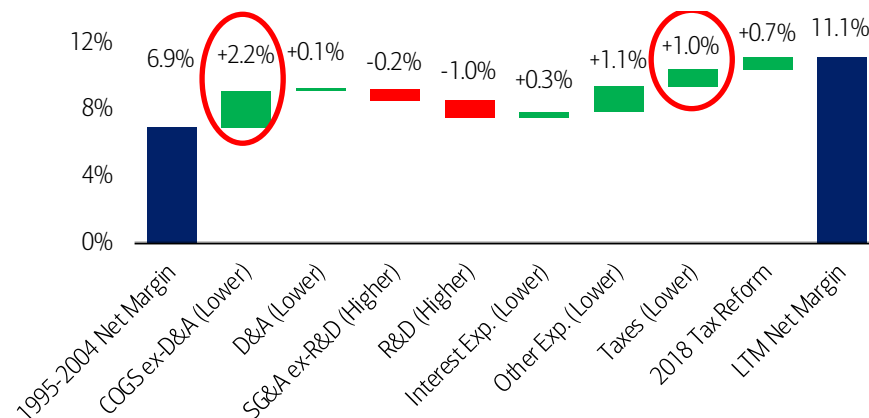


Source: BofA US Equity & Quant Strategy, FactSet, Bloomberg

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Exhibit 87: Globalization: lower labor/taxes/COGS/manufacturing costs

LTM net margin (ex-Financials) expansion waterfall vs. 1995-2004 levels (factors related to globalization circled in red)



Source: BofA US Equity & Quant Strategy, FactSet

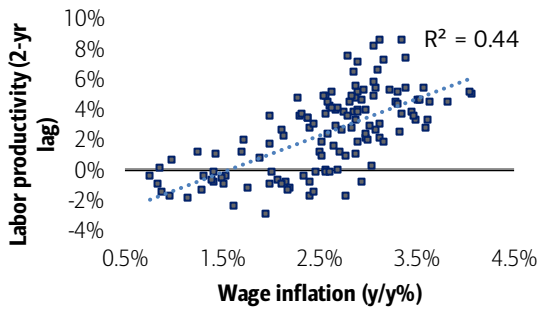
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Next bull case for margins & multiples: productivity & efficiency

Exhibit 88: Wage inflation has driven labor productivity growth with a multi-year lag

US Manufacturing wage inflation and labor productivity (y/y % changes)

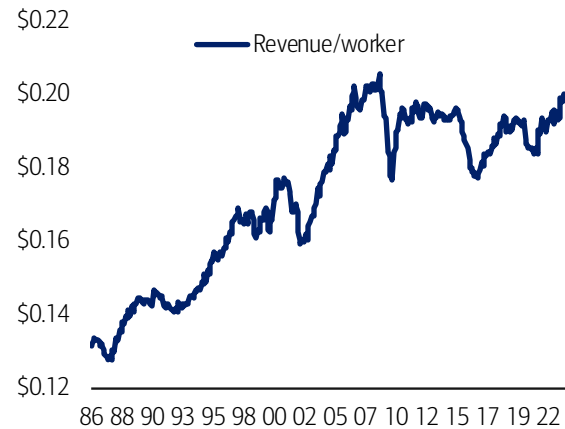


Source: Bureau of Labor Statistics, BofA Global Research. Note: Quarterly data of US manufacturing labor productivity versus average hourly earnings of production & nonsupervisory employees

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Exhibit 89: Labor efficiency improvements stalled amid ZIRP

S&P 500 companies' revenue per worker (\$M 1986 dollar)

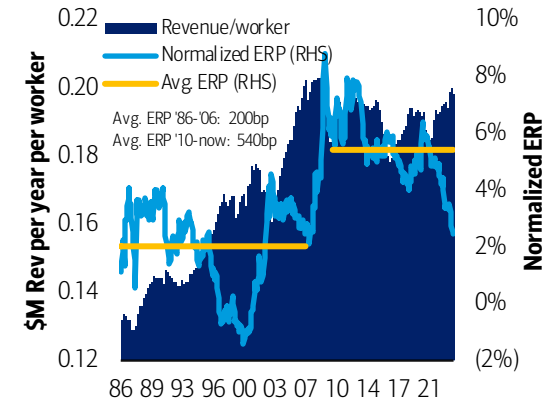


Source: FactSet, Bloomberg, BofA US Equity & Quant Strategy

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Exhibit 90: Higher ERP amid stalled productivity

S&P 500 \$M revenue per year per worker (CPI adjusted) vs. Normalized ERP (1986-9/2023)

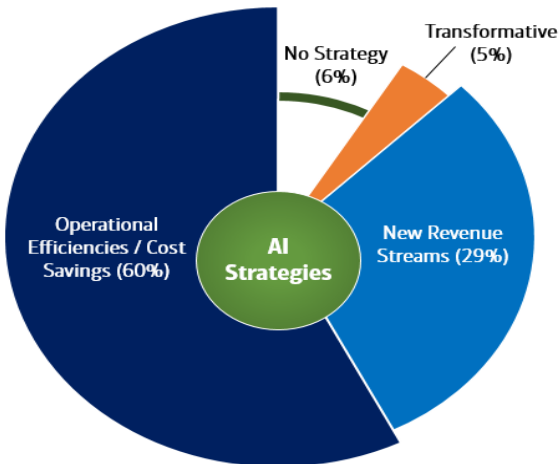


Source: FactSet, Bloomberg, BofA US Equity & Quant Strategy

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Exhibit 91: AI = operational efficiencies & cost savings

Survey of BofA fundamental equity analysts on corporate AI strategies

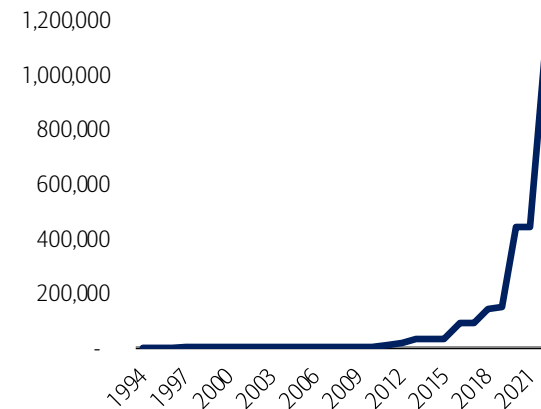


Source: BofA Global Research. Results are based on survey responses. See [AI primer](#) for more detail.

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Exhibit 92: Computer processing power jumped 3,145% from 2015 to 2022

Computational capacity of the fastest supercomputer (teraFLOPS) from 1994-2022



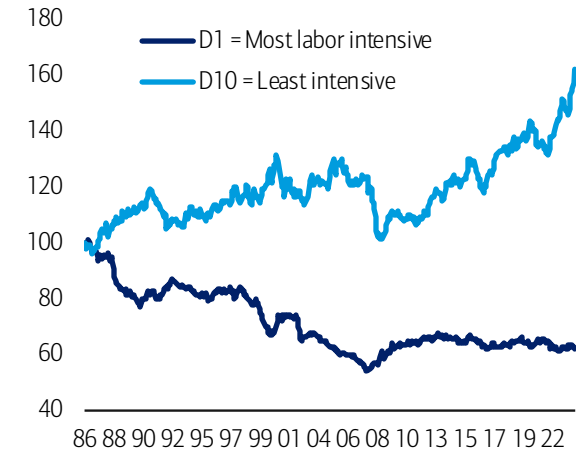
Source: TOP500 Supercomputer Database (2023)

FLOPS = floating-point operations per second. 1 teraFLOPS = 1,000 gigaFLOPS = 1,000,000,000,000 FLOPS.

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Exhibit 93: Labor lightness chronically outperforms

Cumulative relative performance vs. equal weighted S&P 500 index (based on top and bottom sector neutral deciles by # of employees to sales ratio)



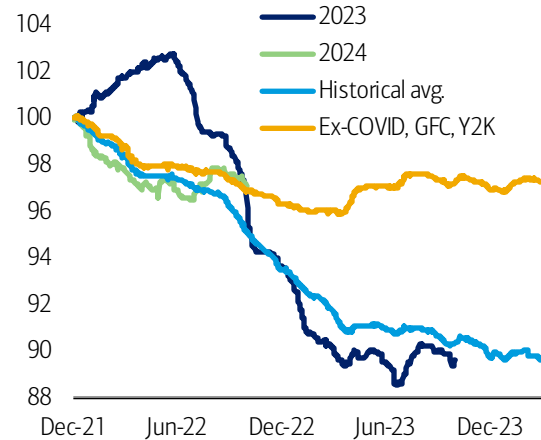
Source: BofA US Equity & Quant Strategy, FactSet

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Don't underestimate Corporate America

Exhibit 94: Consensus 2023-24 EPS is holding up

S&P 500 historical FY2 EPS revisions vs. 2023 consensus EPS (2023 as of 10/27/23)

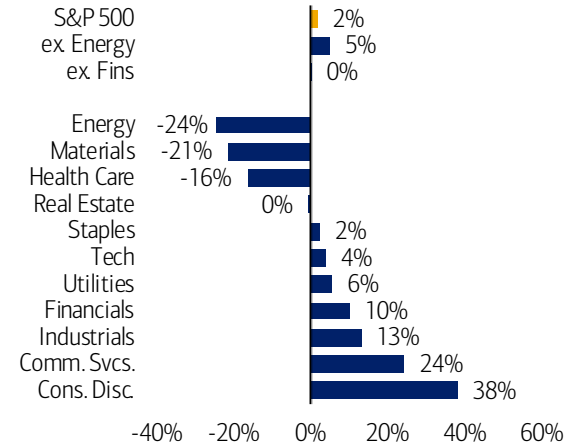


Source: FactSet, BofA US Equity & Quant Strategy

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Exhibit 95: Consensus expects +2% YoY growth in 2023 earnings, led by Consumer Discretionary

S&P 500 2023 consensus earnings YoY by sector (as of 10/26/23)

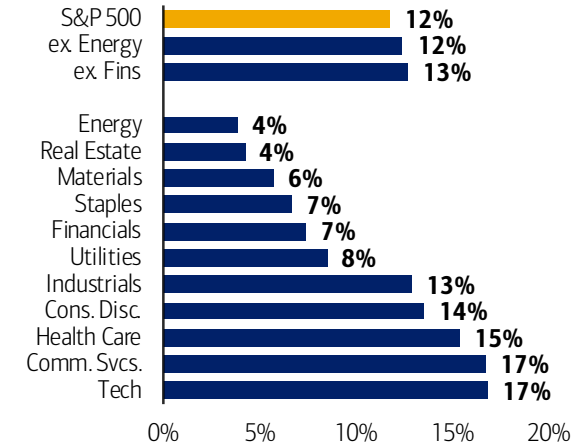


Source: FactSet, BofA US Equity & Quant Strategy

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Exhibit 96: Consensus expects +12% YoY growth in 2024 earnings, led by Tech/TMT

S&P 500 2024 consensus earnings YoY by sector (as of 10/26/23)

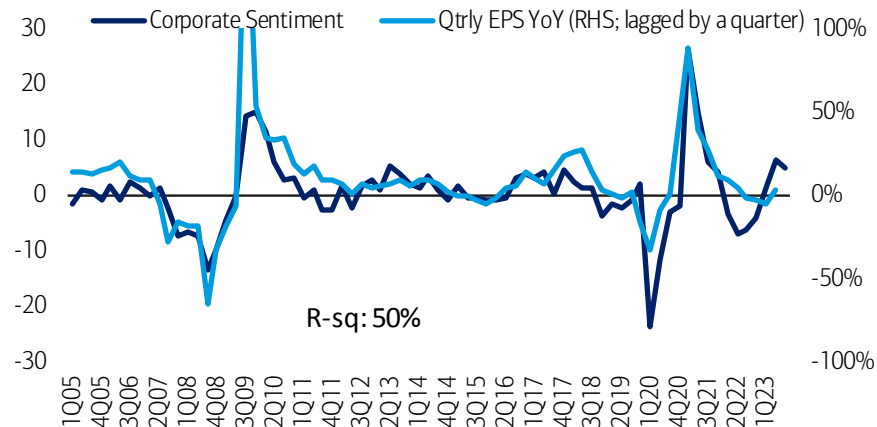


Source: FactSet, BofA US Equity & Quant Strategy

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Exhibit 97: Corporate sentiment ticked down but is still well off its lows

S&P 500 avg. sentiment YoY vs. 4Q EPS YoY with 1Q lag, 1Q05-10/25/23

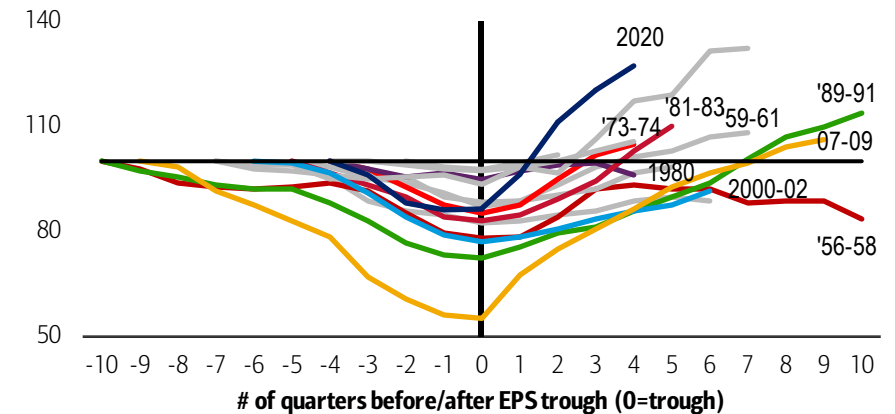


Source: BofA Global Research, FactSet

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Exhibit 98: Earnings have generally recovered faster than they have fallen

S&P 500 TTM EPS before/after earnings troughs (same # of quarters leading to the trough and following the trough; 100=pre-recession peak; 1950-present)



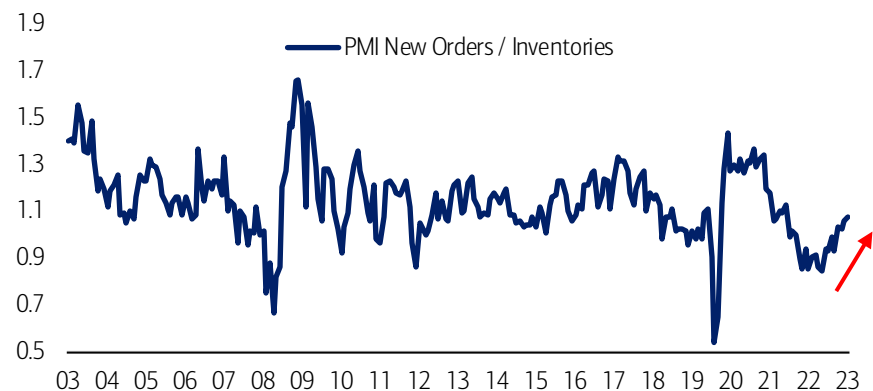
Source: BofA US Equity & US Quant Strategy, FactSet, Haver Analytics

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De-stocking is over, goods > services

Exhibit 99: De-stocking cycle turn: orders rising, inventories falling

ISM Manufacturing PMI new orders / inventories (2003-9/23)

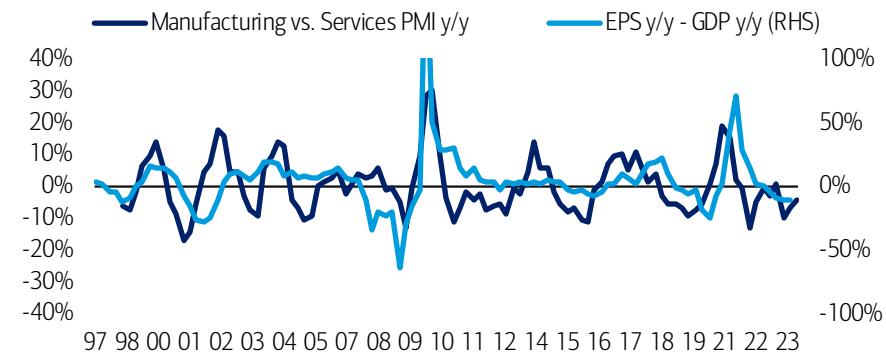


Source: Bloomberg, BofA US Equity & Quant Strategy

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Exhibit 100: Manufacturing outpacing services has generally been a tailwind for earnings vs. GDP

ISM Manufacturing PMI – Services PMI YoY vs. EPS YoY – GDP YoY (1997-9/23)



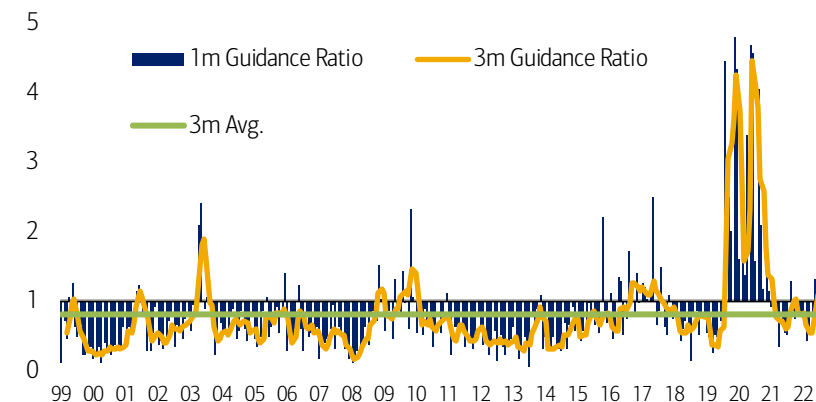
Source: FactSet, Bloomberg, BofA US Equity & Quant Strategy

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Guidance improved in October after weak September

Exhibit 101: 1m guidance ratio is tracking 0.8x in October, up from 0.2x in September

S&P 500 management guidance ratio (# above vs. below consensus) – 10/27/23

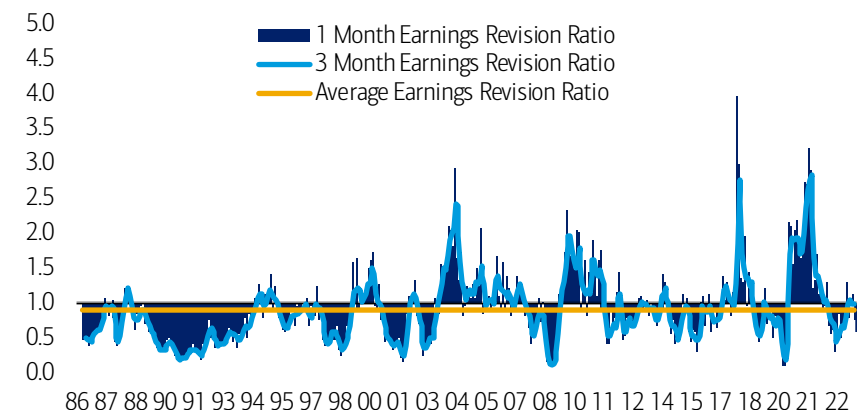


Source: BofA US Equity and Quantitative Strategy

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Exhibit 102: Earnings revisions weakened to 0.6x in October

S&P 500 earnings estimate revision ratio, 1/86-10/31/23



Source: BofA US Equity and Quantitative Strategy, FactSet

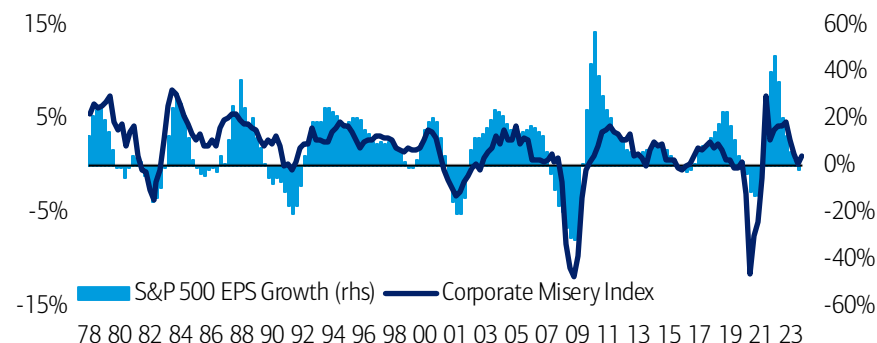
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Corporate Misery Indicator says better environment ahead

Exhibit 103: Our Corporate Misery Indicator ticked up in 3Q

BofA Corporate Misery Indicator (lower=more miserable) 4Q78-3Q23



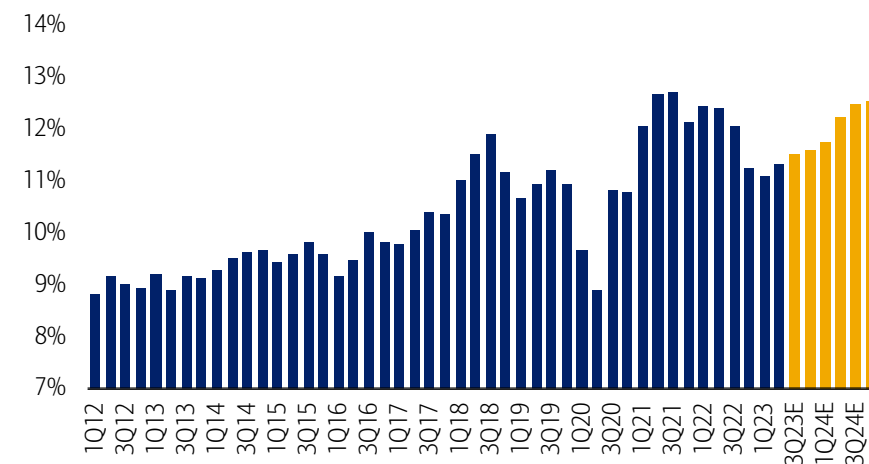
Disclaimer: The indicator identified as BofA Corporate Misery Indicator above is intended to be an indicative metric only and may not be used for reference purposes or as a measure of performance for any financial instrument or contract, or otherwise relied upon by third parties for any other purpose, 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 104: Margins are expected to improve for the second straight quarter in 3Q

S&P 500 quarterly net margins ex-Financials (2012-4Q24E)



Source: FactSet, BofA US Equity & Quant Strategy

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Exhibit 105: 2024 margin outlook may be too optimistic, especially in Tech

S&P 500 quarterly net margins by sectors

Sector	1Q21	2Q21	3Q21	4Q21	1Q22	2Q22	3Q22	4Q22	1Q23	2Q23	3Q23E	4Q23E	1Q24E	2Q24E	3Q24E	4Q24E
Consumer Discretionary	7.8%	8.0%	7.4%	6.2%	6.5%	6.3%	7.0%	5.7%	6.8%	8.6%	8.6%	7.2%	7.4%	8.7%	9.4%	8.1%
Consumer Staples	6.9%	7.2%	7.1%	6.6%	6.7%	6.7%	6.6%	6.3%	6.1%	6.4%	6.0%	6.0%	6.4%	6.8%	6.5%	6.4%
Energy	4.5%	6.5%	9.0%	11.1%	10.7%	14.7%	14.4%	13.0%	12.6%	10.0%	10.9%	10.7%	10.7%	11.1%	11.3%	11.1%
Financials	23.0%	21.1%	19.6%	17.5%	18.3%	17.0%	15.0%	15.9%	18.4%	17.6%	17.6%	17.4%	18.8%	18.3%	18.4%	19.2%
Health Care	11.6%	11.5%	11.6%	11.4%	11.8%	11.1%	10.7%	9.5%	9.3%	7.6%	9.0%	9.1%	9.4%	9.2%	9.5%	9.5%
Industrials	7.0%	9.4%	9.4%	8.2%	8.1%	10.3%	9.6%	9.8%	9.5%	11.4%	9.8%	10.2%	10.0%	11.5%	11.4%	11.3%
Information Technology	25.0%	25.7%	25.9%	24.5%	25.2%	23.9%	24.0%	24.4%	22.8%	24.0%	24.2%	25.3%	24.9%	25.1%	25.7%	27.0%
Materials	11.8%	14.9%	13.7%	13.0%	13.6%	14.4%	11.3%	10.5%	11.2%	11.9%	9.8%	9.9%	10.6%	12.0%	11.3%	11.3%
Real Estate	36.3%	37.5%	36.0%	35.3%	37.1%	36.1%	37.1%	36.1%	36.0%	37.1%	34.8%	34.9%	35.1%	35.4%	35.5%	35.3%
Communication Services	18.7%	18.8%	17.8%	16.2%	16.8%	14.3%	12.9%	12.1%	13.9%	16.1%	16.4%	16.7%	16.8%	17.9%	17.7%	18.1%
Utilities	13.0%	15.0%	18.1%	14.2%	15.2%	11.9%	13.5%	9.1%	10.4%	12.2%	14.5%	12.1%	14.2%	13.3%	17.3%	13.5%
S&P 500 ex. Financials	12.1%	12.7%	12.7%	12.1%	12.5%	12.4%	12.0%	11.3%	11.1%	11.3%	11.5%	11.6%	11.7%	12.2%	12.5%	12.5%
S&P 500	13.4%	13.7%	13.5%	12.7%	13.1%	12.9%	12.4%	11.8%	12.0%	12.1%	12.3%	12.3%	12.6%	13.0%	13.2%	13.3%
ex. Fins & Energy	12.7%	13.2%	13.1%	12.2%	12.7%	12.1%	11.7%	11.1%	10.9%	11.5%	11.6%	11.7%	11.9%	12.3%	12.6%	12.7%
ex. Energy	14.0%	14.3%	13.9%	12.9%	13.4%	12.7%	12.1%	11.6%	12.0%	12.3%	12.4%	12.4%	12.8%	13.2%	13.4%	13.5%

Source: FactSet, BofA US Equity & Quant Strategy

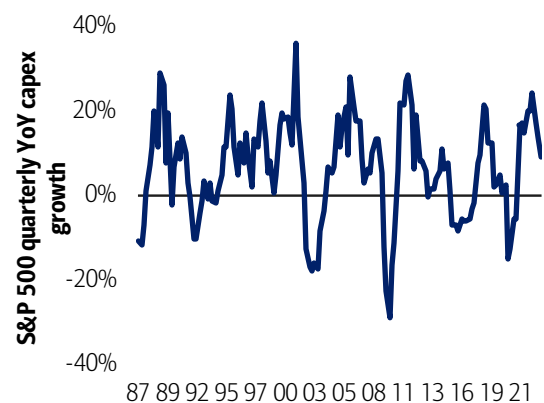
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Capex cycle afoot

Exhibit 106: Capex grew 9% YoY in 2Q, the 9th consecutive quarter of capex growth

S&P 500 capex YoY (1987-2Q23)



Source: FactSet, BofA US Equity & Quant Strategy

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Exhibit 107: But capex has slowed in 3Q, tracking +1% YoY
S&P 500 3Q23 capex YoY (as of 10/27/23)

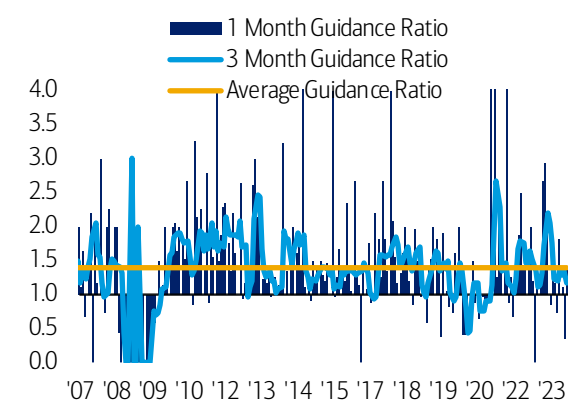
Sector	YoY	Aggregate Contribution to Agg. chg,
Consumer Discretionary	-3%	-116%
Consumer Staples	17%	150%
Energy	25%	345%
Financials	-8%	-17%
Health Care	2%	12%
Industrials	6%	116%
Information Technology	1%	18%
Materials	26%	146%
Real Estate	16%	31%
Communication Services	-15%	-666%
Utilities	14%	81%
S&P 500	1%	
ex. AMZN & META	7%	

Source: FactSet, BofA US Equity & Quant Strategy

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Exhibit 108: 40% more above- than below- capex guides in October

S&P 500 capex guidance ratio (2007-10/27/23)

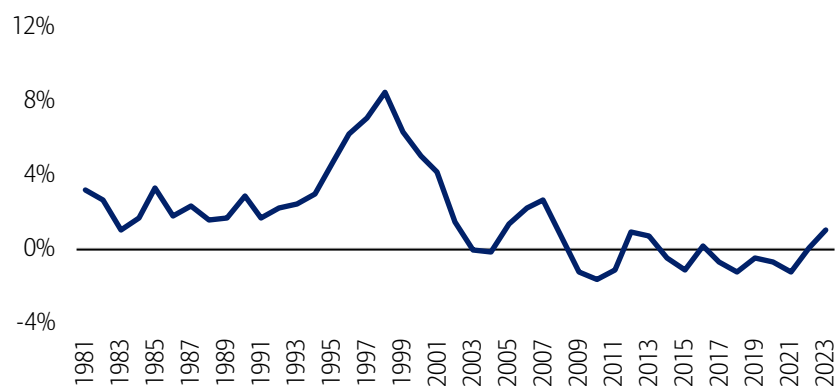


Source: Bloomberg, BofA US Equity & Quant Strategy

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Exhibit 109: Limited manufacturing capacity additions since 2008 recession

US manufacturing capacity (1957-9/2023)

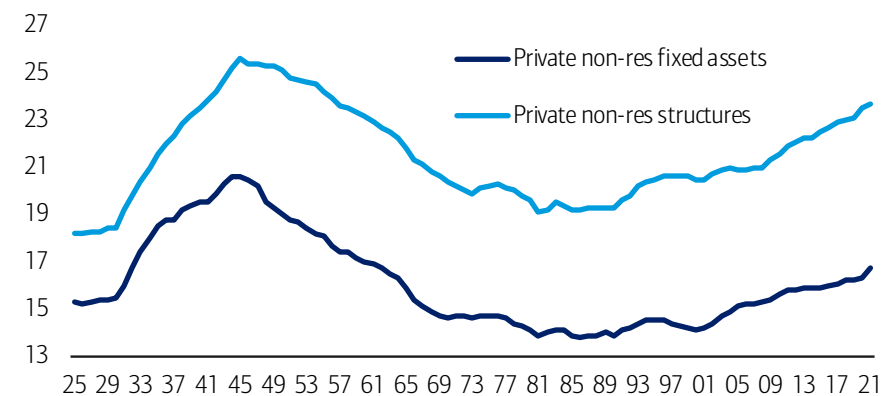


Source: Federal Reserve, BofA Global Research

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Exhibit 110: Stuff is old

Avg. age of private nonresidential fixed assets (years) (1925-2021)



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

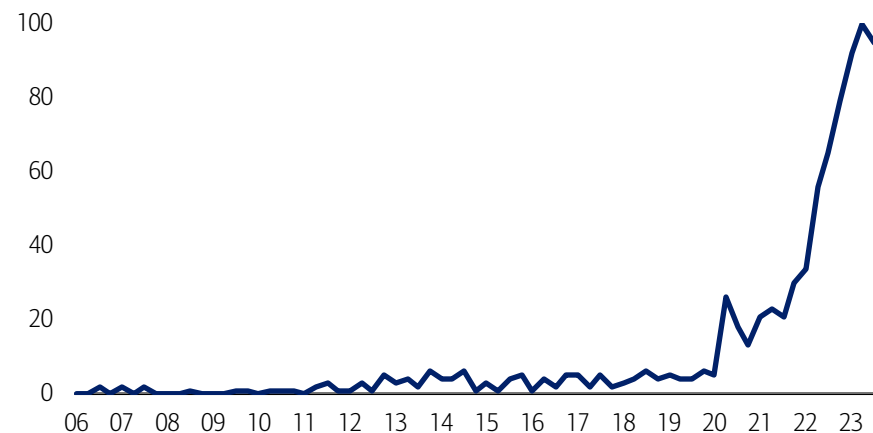
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Reshoring: from theory to practice

Exhibit 111: Companies are talking the talk: Mentions of re-shoring increased sharply over the past year

Companies mentions of re-/near-/on-shoring (100=max; 2006-9/30/23)

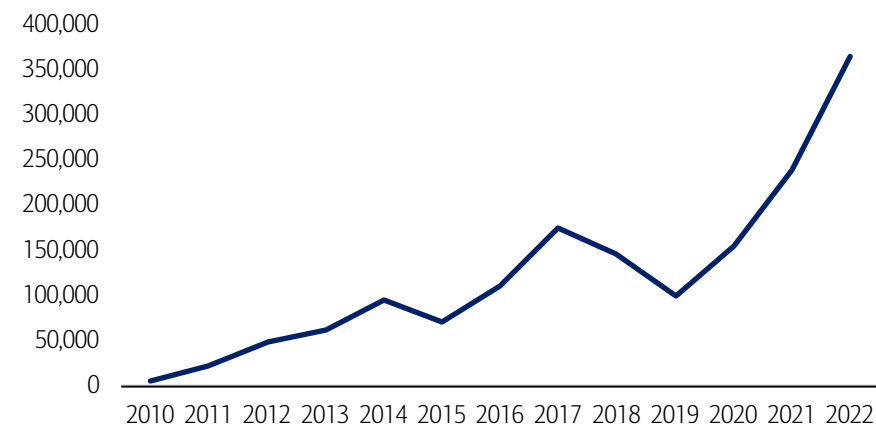


Source: AlphaSense, BofA Global Research

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Exhibit 112: Reshoring in practice: Reshoring/FDI jobs in 2022 at an all-time high

Manufacturing job announcements, reshoring + Foreign Direct Investment (FDI)

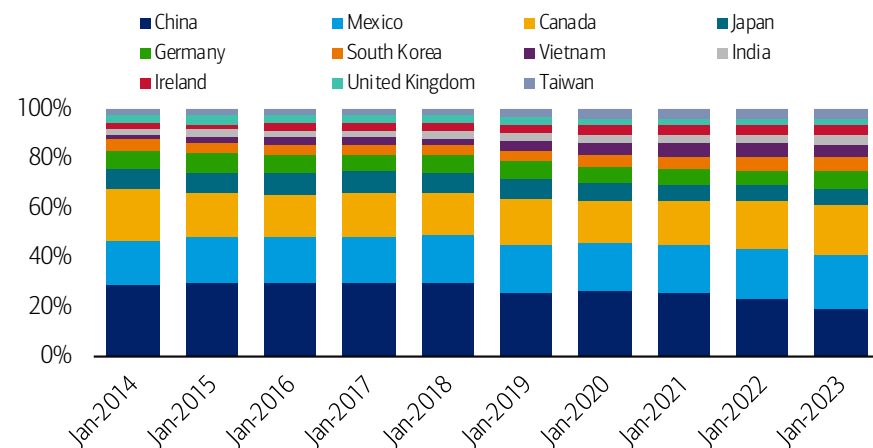


Source: Reshoring Initiative Library data

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Exhibit 113: China, Mexico, Canada account for >40% of US imports...

Imports of everything to the United States by major trade partners

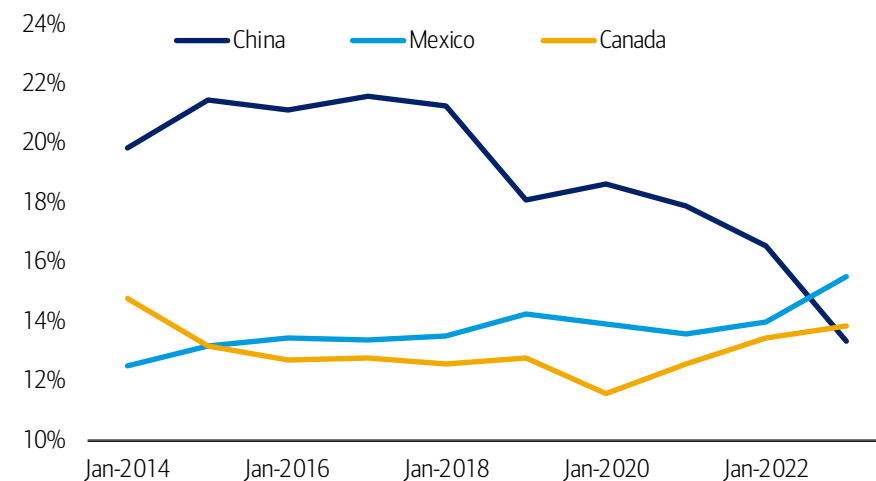


Source: Panjiva

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Exhibit 114: China's share of US imports now < Mexico and Canada

% of US imports of everything from China, Mexico, and Canada



Source: Panjiva

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Why spend in a slowdown? Pressure to get to net zero

Exhibit 115: Enhancing energy efficiency, switching to clean energy or renewables, carbon offsets and re-shoring/near-shoring of supply chains are most commonly cited strategies by corporates in getting to net-zero

2022 BofA Global Research Survey: Strategies that corporates are employing to navigate towards their goal of net-zero

	Enhancing energy efficiency	Switching to clean energy / renewables	Carbon offset schemes	Re-shoring/ near-shoring of supply chains	Automation	Digitalization	Sustainable packaging	Carbon capture and storage (CCS) technologies	Restructuring
Autos	✓	✓		✓	✓	✓			✓
Cons Durables	✓	✓	✓	✓			✓		
Consumer Services	✓	✓	✓	✓					
Retailing	✓	✓	✓	✓			✓		
Food/Staples Retail	✓	✓		✓			✓		
Food Beverage	✓	✓		✓			✓		
Household Products	✓	✓		✓			✓		
Energy	✓	✓	✓					✓	✓
Materials	✓	✓		✓	✓			✓	✓
Capital Goods	✓	✓	✓	✓	✓	✓			✓
Commercial Services	✓	✓		✓		✓			✓
Transportation	✓	✓	✓						
Utilities	✓	✓		✓				✓	✓
Semis	✓	✓	✓	✓					
Software	✓	✓	✓	✓					
Tech Hard/Equip	✓	✓		✓	✓		✓		
Telecom	✓	✓		✓					
Media & Ent.	✓	✓	✓						
Health Care Equip/Svc	✓	✓	✓	✓		✓			
Pharma & Biotech	✓	✓	✓	✓		✓	✓		
Real Estate	✓	✓	✓	✓	✓				✓
Banks	✓	✓				✓			✓
Div Financials	✓	✓	✓		✓	✓			
Insurance	✓	✓				✓			✓

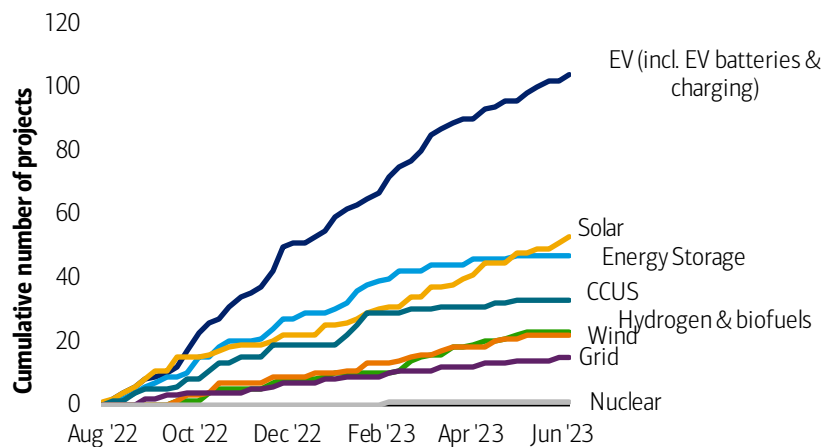
Source: BofA Global Research

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IRA: bullish for capex, for jobs, for renewables and for oil

Exhibit 116: 270+ projects related to clean economy announced

Cumulative number of projects announced since passage of IRA, 8/2022-6/2023

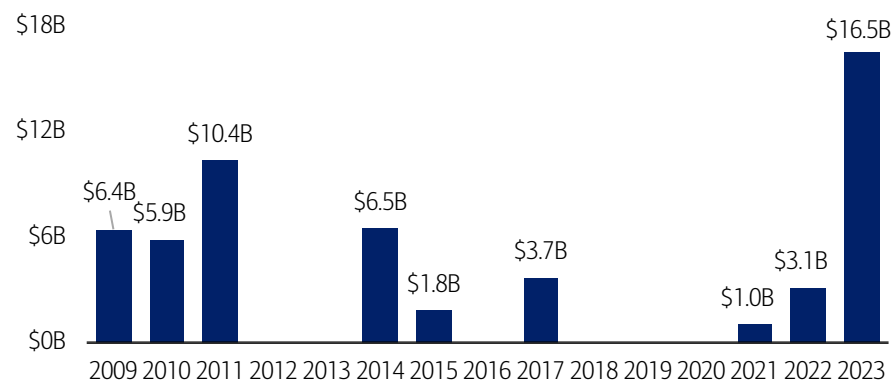


Source: BofA US ESG Research, E2 Clean Economy Works project tracker, The White House (invest.gov), IEA CCUS Projects Database. Note that some projects are associated with more than 1 category.

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Exhibit 118: Post-IRA, the DOE has issued a record amount of loans to clean energy projects after years of near-dormancy

Loans and loan guarantees issued to clean energy projects, 2009-6/2023

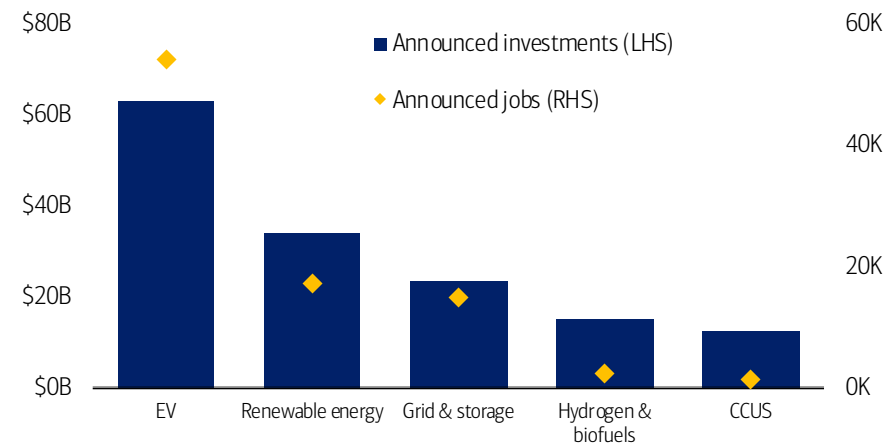


Source: US Department of Energy Loan Programs Office

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Exhibit 117: Boost from clean economy projects: >\$132bn in investments, >86K jobs

Investments into and jobs generated by private clean economy projects post-IRA, 8/2022-6/2023

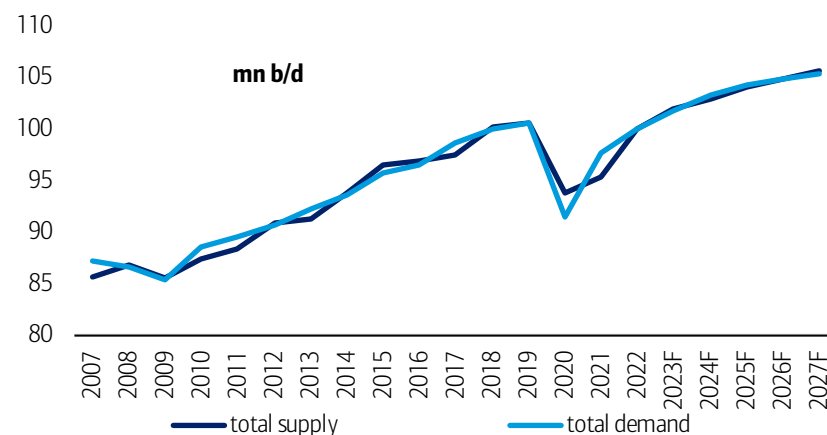


Source: BofA US ESG Research, E2 Clean Economy Works project tracker, The White House (invest.gov), IEA CCUS Projects Database. Renewable energy includes solar, wind, and nuclear. Some projects are associated with more than 1 category. Not all projects disclosed the investment or job amount. CCUS = Carbon Capture, Use & Storage.

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Exhibit 119: Floor on oil likely to remain high from tight supply

Global oil demand and supply



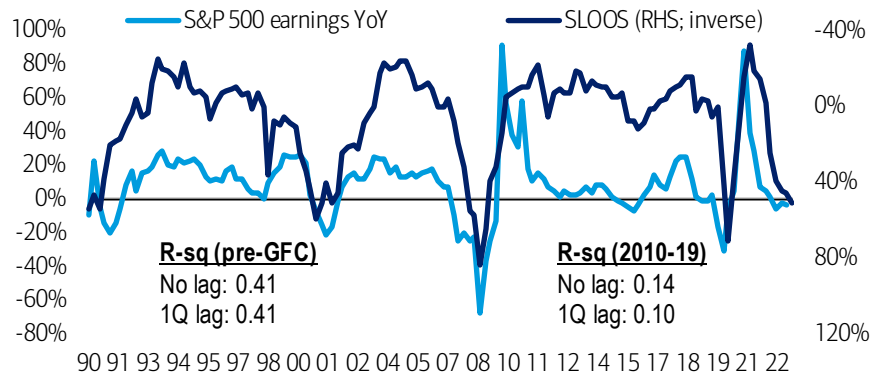
Source: IEA, BofA Global Research estimates

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Not your parents' credit cycle

Exhibit 120: Earnings sensitivity to SLOOS weakened post-GFC

S&P 500 quarterly earnings YoY vs. % banks tightening C&I loans to large firms (1990-2Q23)

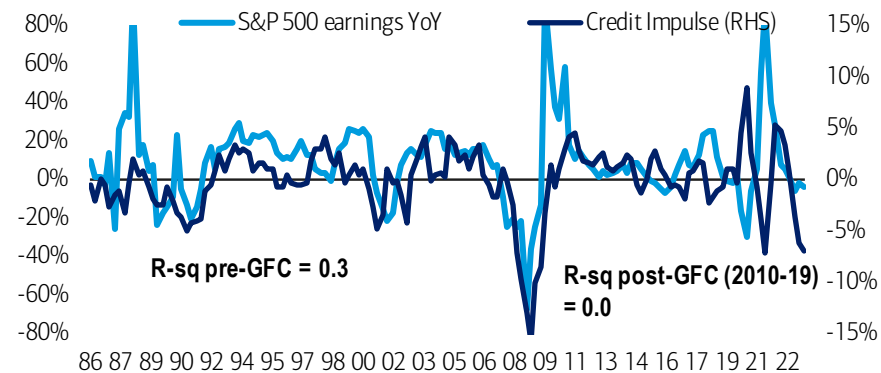


Source: Bloomberg, FactSet, BofA US Equity & Quant Strategy

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Exhibit 121: Earnings had no correlation to credit impulse post-GFC

S&P 500 quarterly earnings YoY vs. US credit impulse (1986-2Q23)



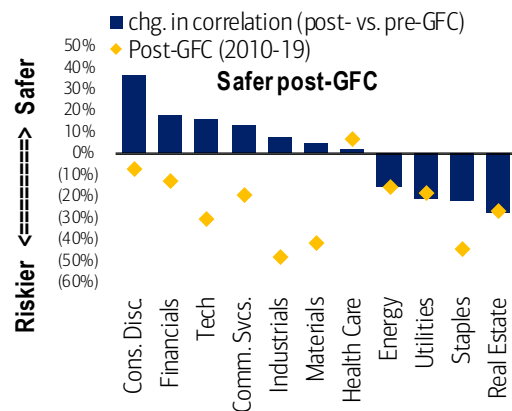
Source: Haver Analytics, FactSet, BofA US Equity & Quant Strategy

Credit impulse: non-financial private sector borrowing as % of GDP (2-qr average)

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Exhibit 122: 6 of 11 sectors show lower sensitivity to SLOOS

Sector earnings correlations to SLOOS % banks tightening C&I loans to large firms

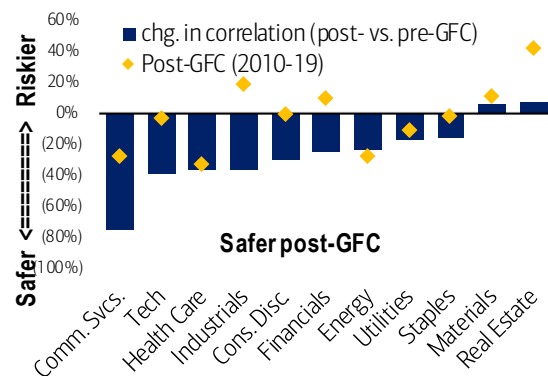


Source: Bloomberg, FactSet, BofA US Equity & Quant Strategy

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Exhibit 123: 9 of 11 sectors show lower sensitivity to CI

Correlations between S&P 500 sectors' quarterly earnings YoY vs. US credit impulse



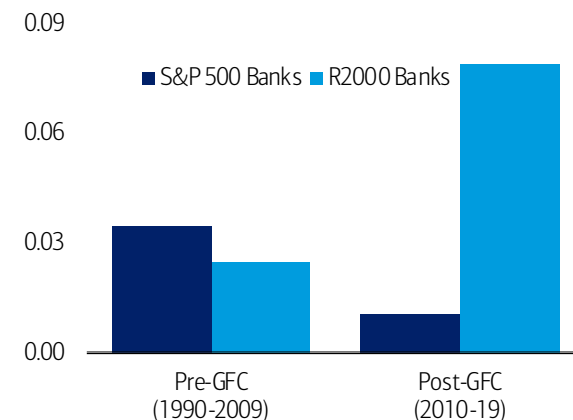
Source: Haver Analytics, FactSet, BofA US Equity & Quant Strategy

Credit impulse: non-financial private sector borrowing as % of GDP (2-qr average)

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Exhibit 124: S&P 500 less sensitive vs. Russell 2000 banks

R-sq of earnings vs. sr. loan officer opinion survey



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

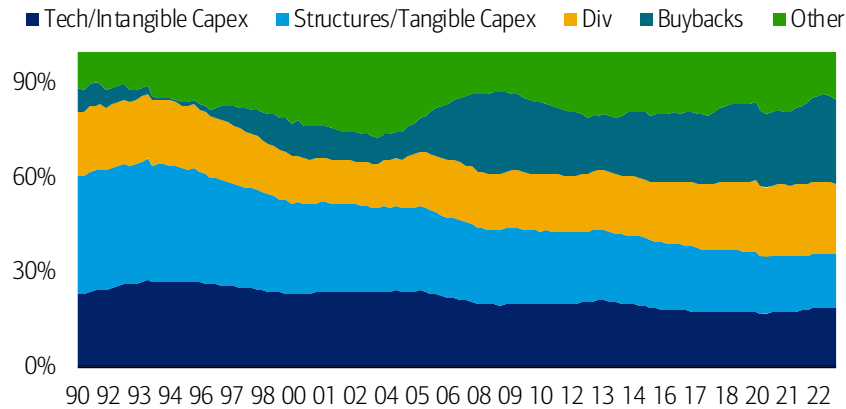
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Uses of capital have been different

Exhibit 125: Companies spent less on traditional capex more on buybacks/tech capex

Use of rolling 5-yr operating cash flow + debt issued (4Q85-2Q23)

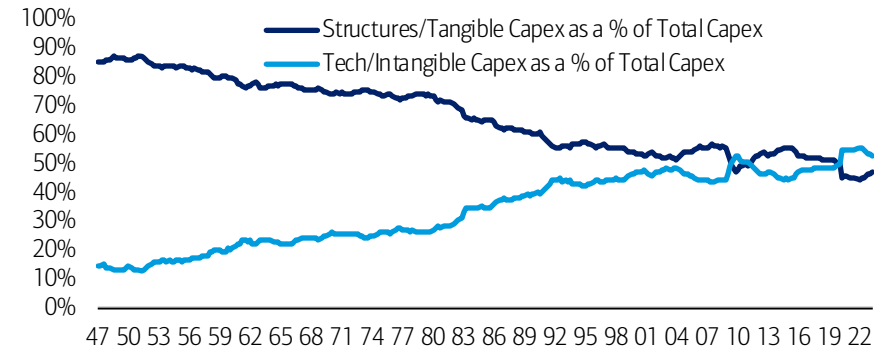


Source: FactSet, BofA US Equity & Quant Strategy *Other uses of cash can include cash build, acquisitions, etc.

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Exhibit 126: Traditional capex dropped from 85% of total capex in 1950 to <50% of total capex today

Structures/tangible capex and tech/intangible capex as a % of total capex (1947-present)



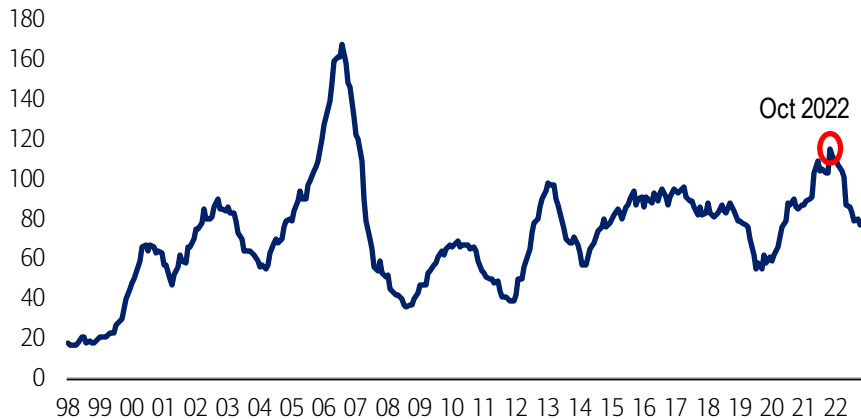
Source: "Structures/Tangible Capex" includes structures capex and equipment capex, excluding information processing equipment. "Tech/Intangible Capex" includes information processing equipment and intellectual property capex. Total capex reflects nonresidential fixed investment.

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Private capital = white knight to distressed, marked public equity

Exhibit 127: Significant privatization during 2022 downturn...

Number of US public companies taken private (TTM; 1998-9/23)

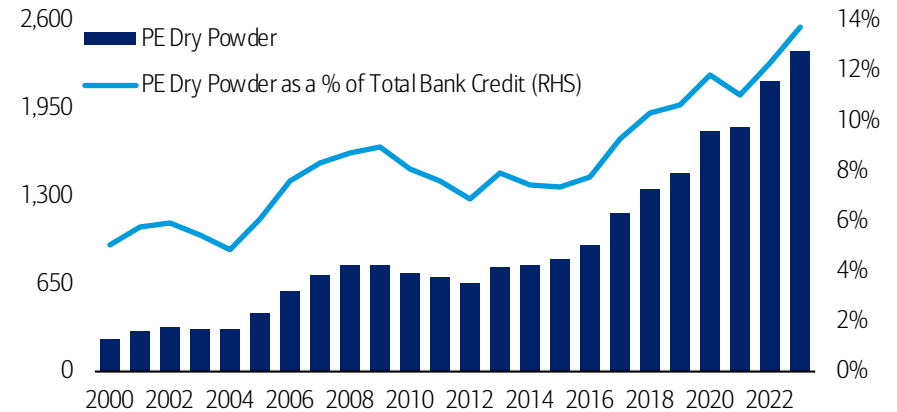


Source: Bloomberg, BofA US Equity & Quant Strategy

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Exhibit 128: ...from PE dry powder deployed in less expensive public markets

Private equities' total dry powder (\$B) and as % of total bank credit (2023 as of 9/12/2023)



Source: Board of Governors of the Federal Reserve System, Preqin, BofA Global Research

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Sector outlook

Exhibit 129: BofA US Equity Strategy sector views

Bull & bear case by sector

Sector	Weight in S&P 500	BofA View	Bull case	Bear case
Energy	4.7%	O/W	Commodity cycles end w/ oversupply; not likely if CEO pay is on ESG/div targets, not production. Avg. \$90/bbl Brent in 2024 (house view); attractive FCF even at \$70 Inflation-protected yield; peak USD? War pushes energy security ahead of decarbonization Re-rating on capital and supply discipline, IRA beneficiary	Lowest Quality sector based on S&P rankings High GHG direct emissions profile + secular headwinds from renewables, green capex Ceasefires, peace breaks out
Consumer Discretionary	10.4%	O/W	Housing benefit from structural shortages Positioning: long-only fund and hedge fund positioning near historical lows Real wage growth positive, #3 in Quant model, Recovery regime beneficiary E-commerce secular shift (AMZN = 30% of sector) Consumer resilient - 85% of US mortgages are fixed; Boomers transferring wealth; tight labor	Risk if job losses extend beyond Silicon Valley/Wall Street Long duration (AMZN + TSLA represent 50% of the sector), AMZN = COVID demand pull forward Expensive (but in line ex. TSLA/AMZN) Continued Fed hiking
Financials	12.6%	O/W	Contagion risk mitigated - Regional Banks = 2.5% of the sector High quality and low leverage; Mispriced risk: Lower EPS vol than S&P 500 but high price beta Higher interest rates vs. prior cycle; 100% hit rate in Recovery regimes; historically inexpensive	Rising deposit costs & increased regulatory risk after bank fallouts Commercial Real Estate (23% of total loans)
Real Estate	2.3%	O/W	Dividend yield Inexpensive and unloved by long-only funds and hedge funds Real asset, but also a bond proxy	Commercial real estate risk (but only 14% of sector) Biggest exposure to refinancing risk, most negative real rate beta
Materials	2.4%	M/W	Underinvestment in manufacturing, single family, mining over last decade drives higher returns Continued capex cycle Attractive FCF/EV Potential recovery in goods spending (exposed to housing/autos/etc.)	Most exposed to China (along with Tech) Overweight by hedge funds, long-only positioning is near a 7-yr high Ranks poorly in Quant model (#10) Commodity chemicals recovery could be slow (Chemicals note)
Industrials	8.3%	M/W	Capex, automation, green solutions and re-shoring beneficiary Half cyclical, half Quality Fiscal stimulus (bipartisan infrastructure bill = 11% of nonresidential construction spend)	Industrials is crowded (only cyclical sector overweight by both long-only and hedge funds) Rising earnings volatility amid de-globalization / less diversified end markets
Technology	28.0%	M/W	Secular themes (AI, cloud, telecommuting, robotics, etc.) and onshoring automation & capex Long-only positioning risk has largely subsided Clean balance sheets, strong margins, and improving earnings trends	Peak globalization (most multinational sector) COVID demand pull-forward was just as extreme as into Y2K Regulatory / anti-monopolistic overhang
Utilities	2.4%	M/W	Stable fundamentals / defensive hedge IRA / energy transition beneficiary Disinflation and lower rates	Positioning risk: HFs are overweight, long only positioning near decade highs Renewables / green themes were born during ZIRP, not a 5% hurdle rate world Dividend yield vs. 10-yr yield below post-GFC avg. Underperforms in Recovery regimes with a 100% hit rate
Communication Services	9.1 %	U/W	No longer a Value Trap; #1 in our tactical quant model Big buybacks and cash returns mean duration risk shortening	Positioning risk rising after strong YTD performance ESG risk: data privacy controversies, low social disclosure scores, highest use of carbon offsets Regulatory risk + anti-monopolistic risk / competition risks
Health Care	13.4%	U/W	Inexpensive defensive sector offering secular growth Aging popular beneficiary AI beneficiary vis a vis housers of big data; ripe for automation and efficiency gains in certain areas	Crowded (overweight by both long-only funds and hedge funds) after a year of preparing for a recession Government sales exposure ahead of fiscal austerity, overhang from drug pricing regulatory pressure Labor tightness in nursing and care harder to automate or "AI away" Floating rate risk
Consumer Staples	6.5%	U/W	No matter what, we still have to eat - defensive hedge Benefits from consumers trading down	Still elevated positioning by hedge funds Typically underperforms in Recovery regime Ranks last in Quant model; lower quality vs. history Hit harder by regressive tax of rising oil prices – low price point retailers like drugstores, grocers.

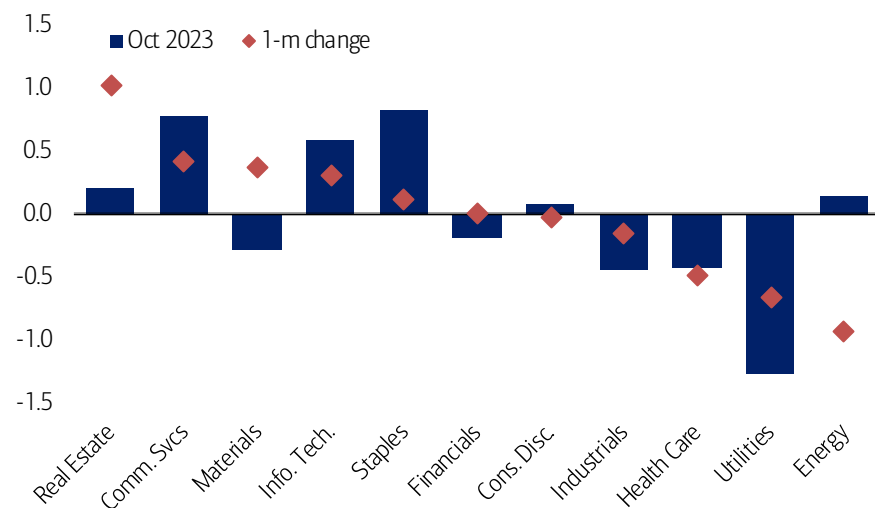
Note: O/W = overweight, M/W = market weight, U/W = underweight. Weights in S&P 500 as of 10/23/2023 and may not add to 100% due to rounding. Source: BofA US Equity & Quant Strategy



Macro matters for sectors

Exhibit 130: BofA fundamental analysts like Staples most and Utilities least

BofA Analyst tone

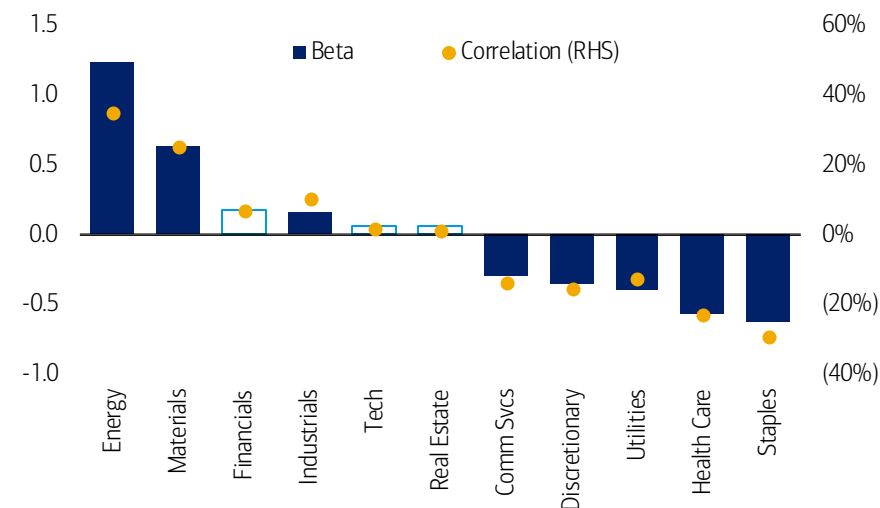


Source: BofA US Equity & US Quant Strategy

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Exhibit 131: Inflation playbook: own commodities/cyclicals, avoid consumer/defensives

Sectors' rel. perf. correlation (since '74) with our BofA Inflation Composite (as of 9/23)



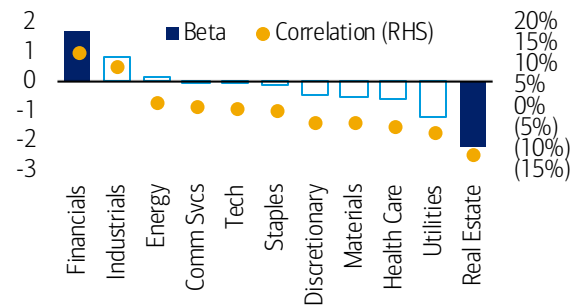
Source: Bloomberg, FactSet, BofA US Equity & Quant Strategy

Note: Empty bars indicate not statistically significant

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Exhibit 132: Real rates: Financials has most positive beta, Real Estate most negative beta

S&P 500 sectors' relative performance sensitivity to real rates (1997-9/23)



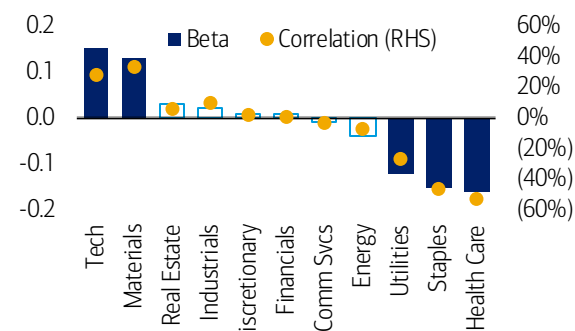
Source: Bloomberg, FactSet, BofA US Equity & Quant Strategy

Note: Empty bars indicate not statistically significant

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Exhibit 133: China: Tech and Materials have highest betas

S&P 500 sectors' rel. perf. to MSCI China (May 1996-9/23)



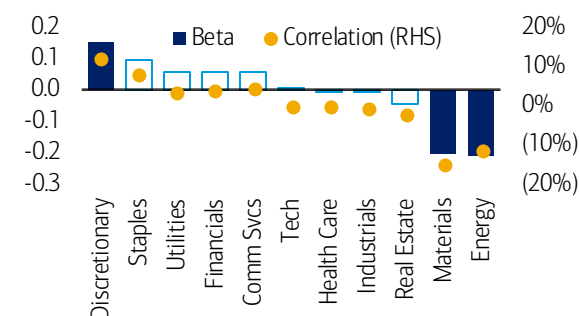
Source: Bloomberg, FactSet, BofA US Equity & Quant Strategy

Note: Based on MSCI China index on a YoY basis; Empty bars indicate not statistically significant

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Exhibit 134: Strong USD: Commodities hurt, Consumer Discretionary helped

S&P 500 sectors' rel. perf. to MSCI China (1973-9/23)



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

Note: Empty bars indicate not statistically significant

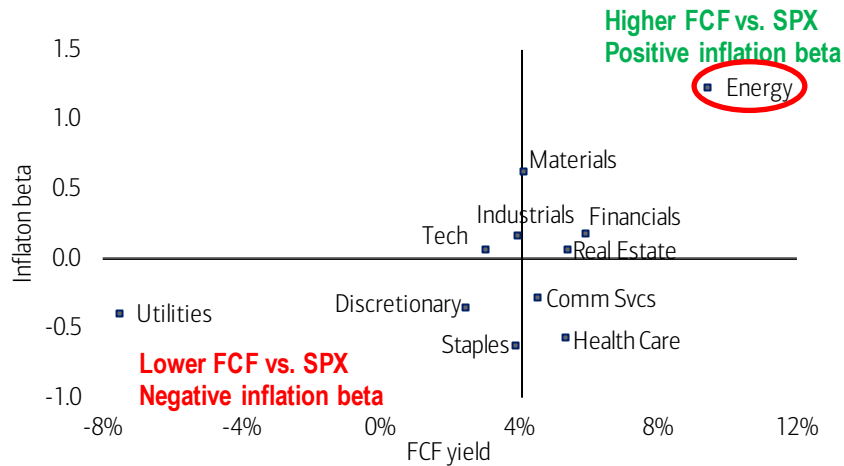
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Overweight Energy

Exhibit 135: Inflation beneficiary/hedge, high real yield

Free Cash Flow yield vs. inflation beta (based on relative performance vs. SPX), as of 9/23

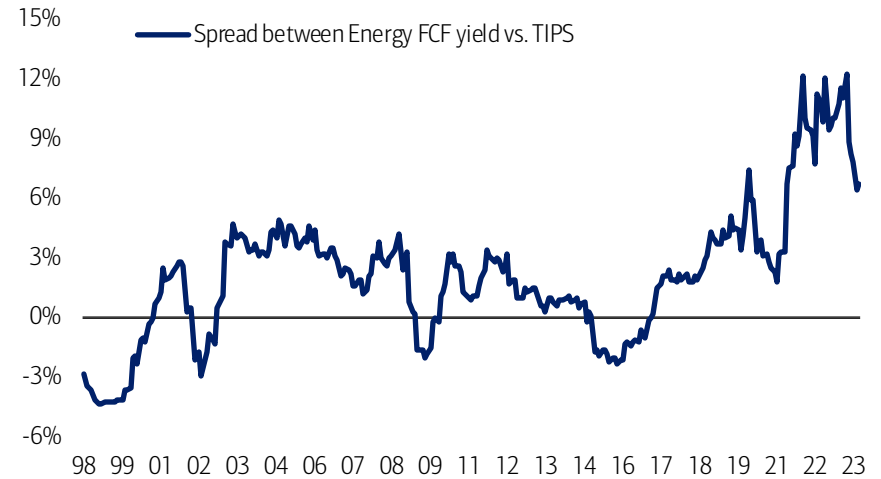


Source: FactSet, BofA US Equity & Quant Strategy

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Exhibit 136: TIPS + 7ppt

Spread between Energy FCF yield vs. TIPS (1998-10/2023)

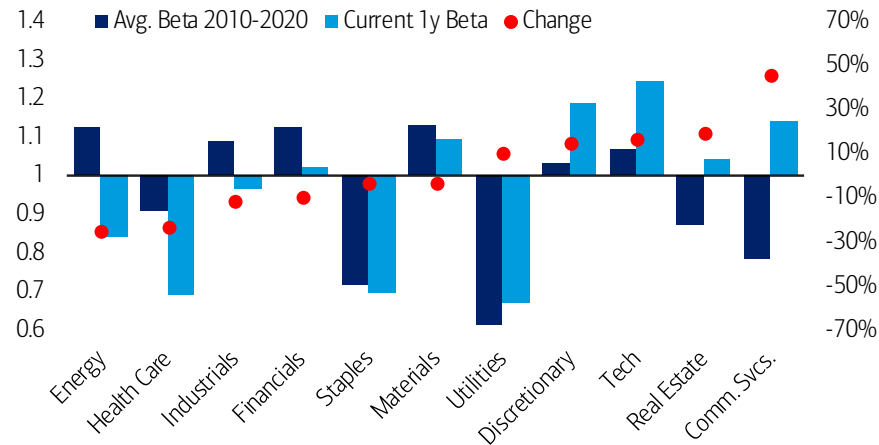


Source: BofA US Equity & Quant Strategy, FactSet, Bloomberg

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Exhibit 137: Energy shift: risky to safe

Current sector betas (as of 9/23) vs. average betas in prior decade and change (RHS)

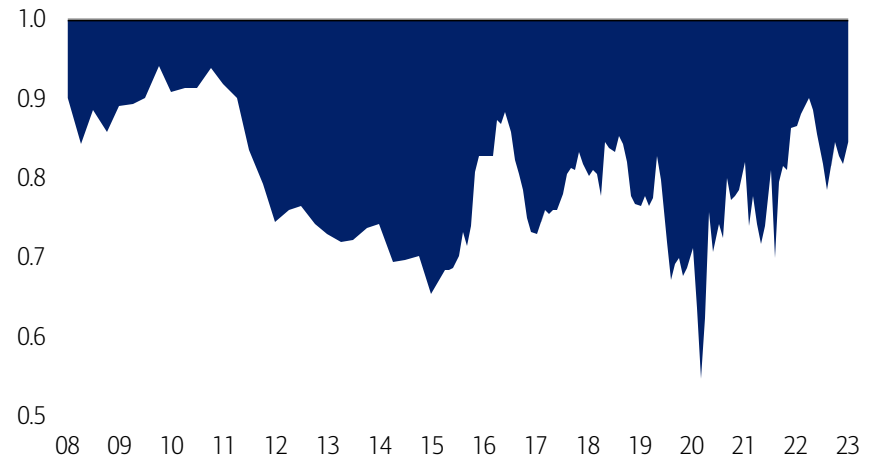


Source: BofA US Equity & Quant Strategy, FactSet

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Exhibit 138: Long onlies still underweight Energy

Long-only funds' Energy weight relative to the S&P 500 (9/2008-9/2023)



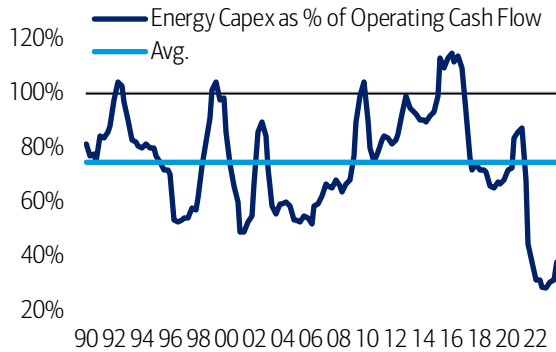
Source: FactSet, BofA US Equity & Quant Strategy

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Exhibit 139: Supply discipline > production goals

S&P 500 Energy capex as % of operating cash flow (1990-2Q23)

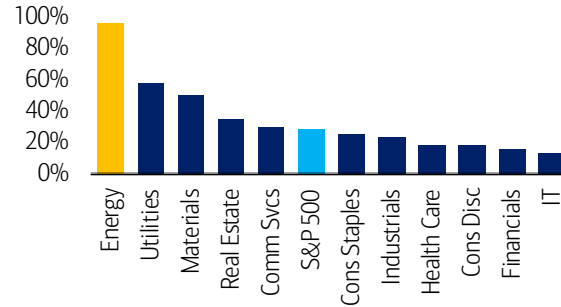


Source: BofA US Equity & Quant Strategy, FactSet

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Exhibit 140: Energy leads in aligning CEO compensation to ESG metrics

% of S&P 500 companies with ESG metrics as part of CEO short-term compensation plan within the last 3 years, as of 8/2023

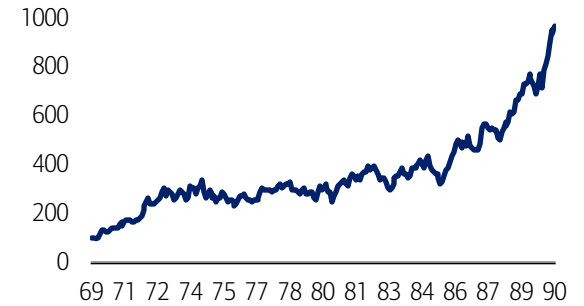


Source: ICE, BofA US Equity and Quant Strategy

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Exhibit 141: Oil going to \$0? Tobacco similarly “doomed” post-60s surgeon general warning

S&P 500 Tobacco industry's relative performance vs. the S&P 500 (1969-90)

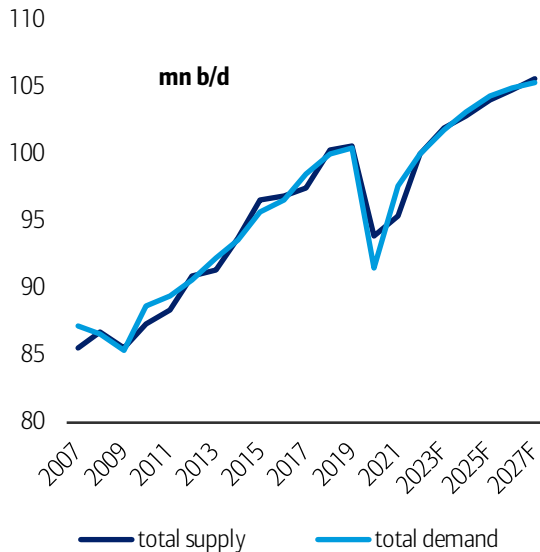


Source: FactSet, BofA US Equity & Quant Strategy

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Exhibit 142: Oil market is likely to stay tight beyond 2024

Global oil demand and supply

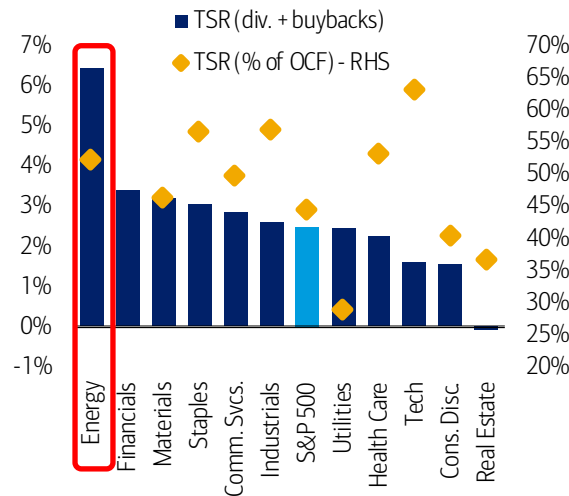


Source: IEA, BofA Global Research estimates

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Exhibit 143: Biggest shareholder returns, with more room for upside

Total shareholder returns (TSR) – % of market cap (as of 9/23) and % of OCF (as of 2Q23)

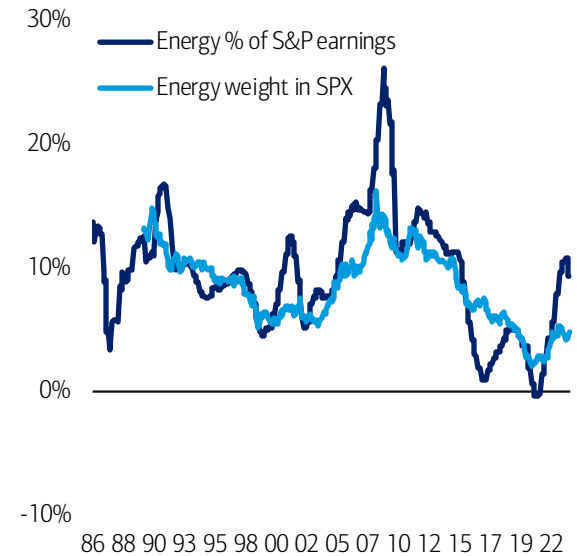


Source: BofA US Equity & Quant Strategy, FactSet

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Exhibit 144: Catchup trade

Energy earnings and weight as % of S&P 500 (80% correlation; 1986-10/23)



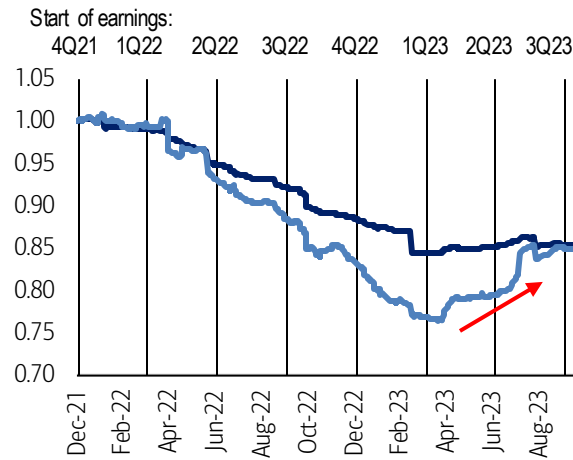
Source: FactSet, BofA US Equity & US Quant Strategy

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Overweight Consumer Discretionary

Exhibit 145: Discretionary outlook catching up to Staples

Consumer Discretionary vs Staples 2023 consensus sales (12/21 = 100; 12/21-10/16/23)

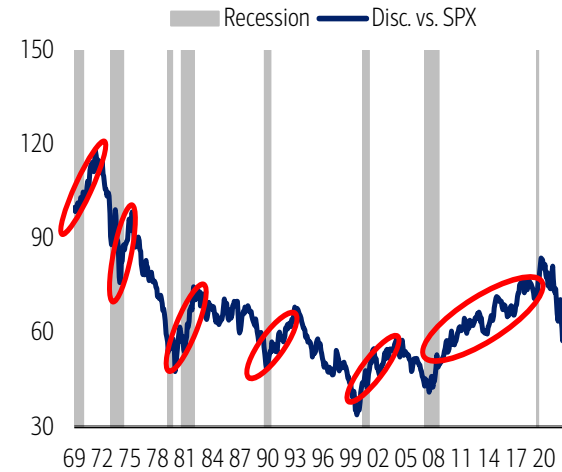


Source: BofA US Equity & Quant Strategy, FactSet

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Exhibit 146: End of tightening cycle = Buy Consumer Discretionary

Consumer Discretionary sector historical relative performance vs S&P 500

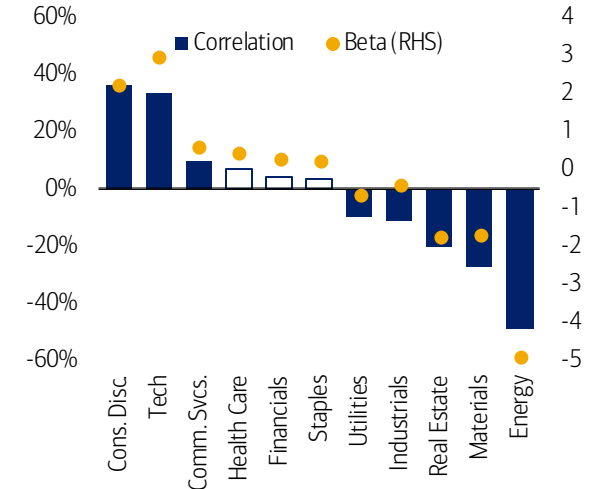


Source: Bloomberg, FactSet, BofA US Equity & Quant Strategy

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Exhibit 147: Consumer Discretionary benefits most from real wage growth

Relationship between real wage growth YoY (Avg. hourly earnings – CPI) vs relative sector performance (1970-present)

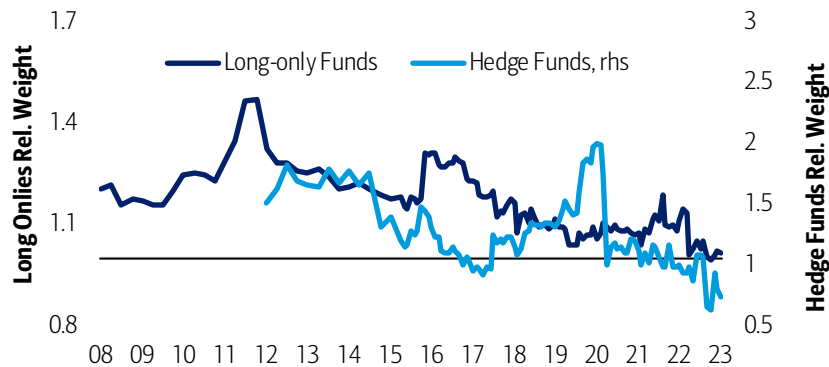


Source: Haver, Bloomberg, FactSet, BofA US Equity & Quant Strategy

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Exhibit 148: Funds have near record low positioning in Discretionary

Funds' relative weight in Discretionary vs S&P 500 (2008-9/23)

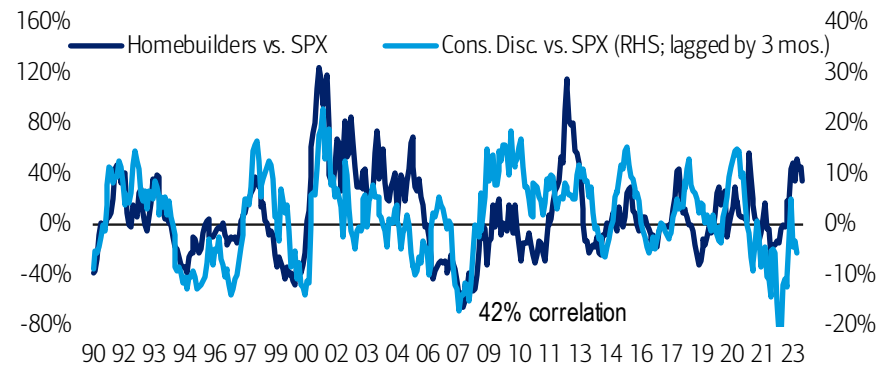


Source: FactSet Ownership, BofA US Equity & US Quant Strategy

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Exhibit 149: Homebuilders lead Discretionary

Relative performance of S&P 500 Homebuilders vs. S&P 500 & Cons. Disc. vs. S&P 500 (3-mo. lag), 1990-9/23



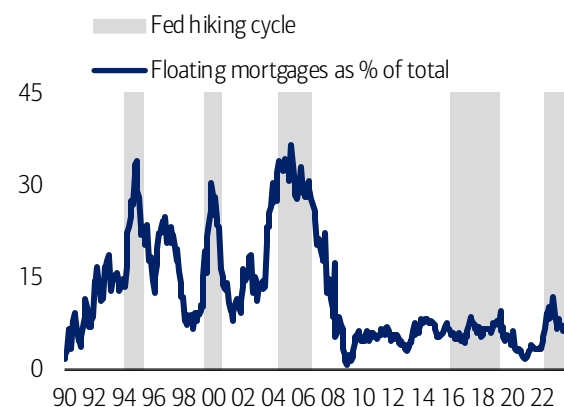
Source: BofA US Equity & Quant Strategy, Bloomberg

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Exhibit 150: US: 85% of homeowners with mortgage loans have fixed rate mortgages

Share of dollar volume of loan applications

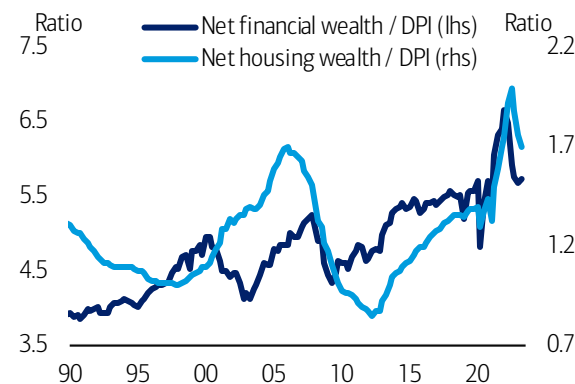


Source: Bloomberg, BofA US Equity & Quant Strategy

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Exhibit 151: Elevated home prices have supported wealth effects on consumer spending

Net housing wealth and net financial wealth (ratio to disposable personal income (DPI))

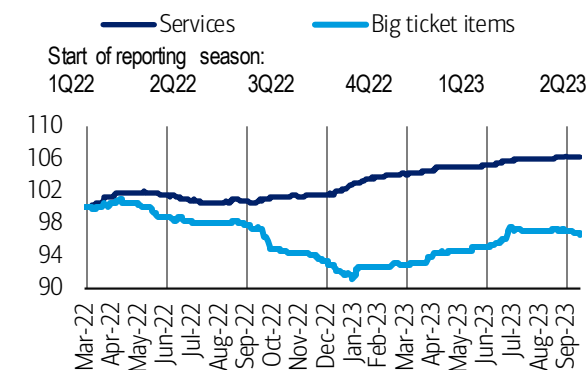


Source: BEA, Federal Reserve, Haver Analytics, BofA Global Research

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Exhibit 152: Goods recovery? Sales estimates for big ticket items troughed in January

2023 consensus sales for services vs. big ticket items (as of 10/16/23)



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

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Exhibit 153: Statistically expensive

% upside/downside of relative valuations vs relative long-term average by sector, 1986-10/23*

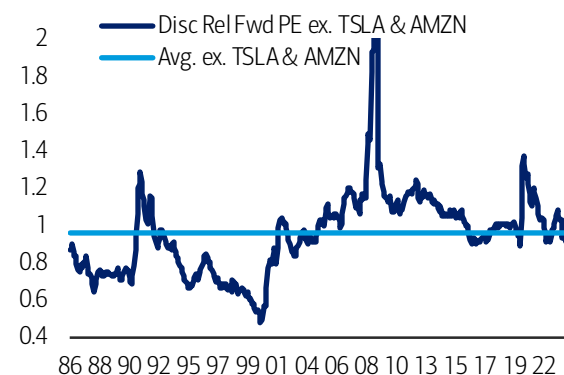
Sector	P/BV	P/OCF	Fwd P/E	EV/Sales
S&P 500 (absolute)	-27%	-25%	-9%	-23%
Comm. Svcs.	14%	19%	29%	1%
Cons. Disc.	-34%	-14%	-20%	-29%
Energy	37%	72%	70%	20%
Financials	34%	N/A	5%	93%
Health Care	53%	39%	16%	88%
Industrials	-6%	6%	4%	3%
Materials	36%	15%	10%	-3%
Real Estate	40%	N/A	84%	-26%
Staples	28%	26%	6%	21%
Technology	-40%	-21%	-18%	-52%
Utilities	33%	-8%	3%	-10%

*Note: Real Estate since 2002. Source: BofA US Equity & Quant Strategy, FactSet

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Exhibit 154: ...but Disc. ex TSLA & AMZN trades slightly below historical avg

Relative forward PE of Consumer Discretionary vs S&P 500 (as of 10/23)

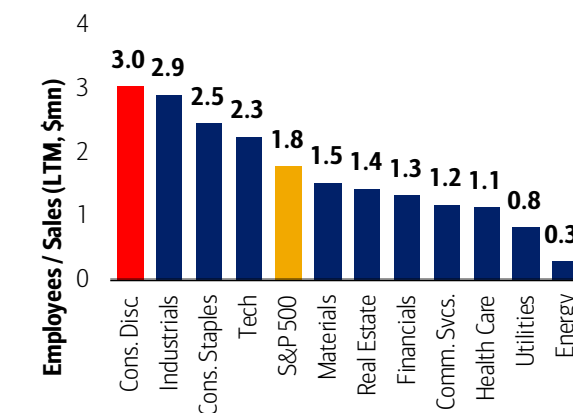


Source: FactSet, BofA US Equity & Quant Strategy

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Exhibit 155: Labor-intensive, tight labor market for services

Employees/sales (LTM; \$mn) by S&P 500 sector as of 10/17/23



Note: Employee data is as of latest fiscal year, sales are latest 12 months

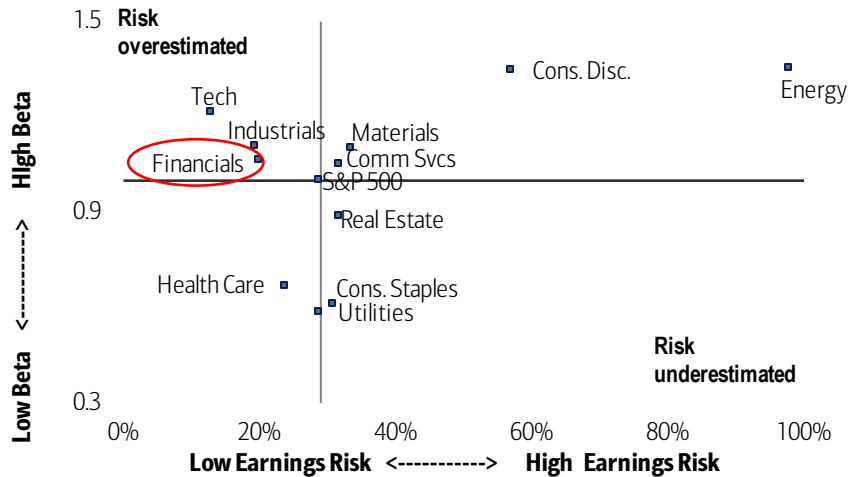
Source: BofA US Equity & Quant Strategy, FactSet

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Overweight Financials

Exhibit 156: Misunderstood risk: high earnings quality but high price beta

S&P Quality rankings (cap-wtd. % of Low Quality B or Worse stocks) vs. 5-yr price beta (as of 9/23)

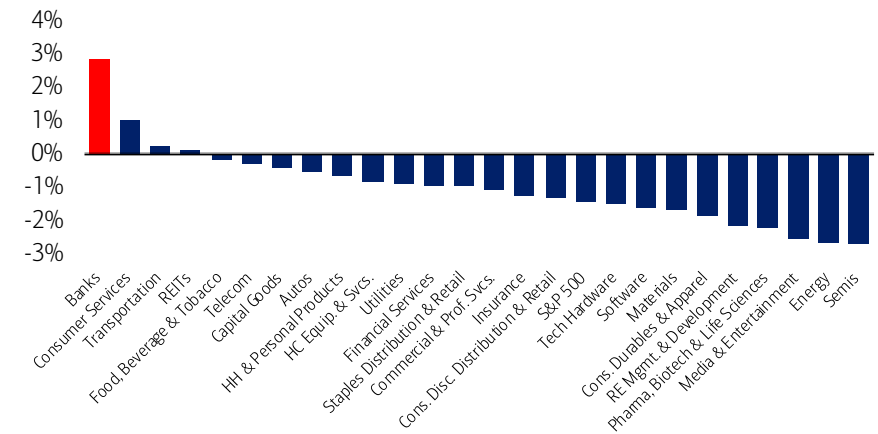


Source: S&P, FactSet, BofA US Equity & Quant Strategy. Note: Financials excludes BRK/B.

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Exhibit 157: S&P 500 big banks risk premia spiked post-SVB

Change in ERP since Feb 2023

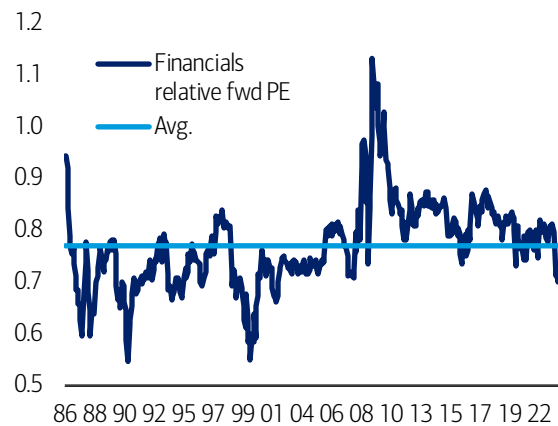


Source: FactSet, Bloomberg, BofA US Equity & Quant Strategy; ERP = trailing earnings yield - 10-yr real rates

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Exhibit 158: Historically inexpensive

Financials relative fwd PE vs. S&P 500 (1986-10/2023)



Source: FactSet, BofA US Equity & Quant Strategy

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Exhibit 159: Structurally lower leverage, thanks to Uncle Sam

S&P 500 Financials: Total Assets/Equity (1987-3Q23)

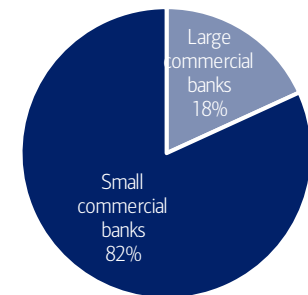


Source: FactSet, BofA US Equity & Quant Strategy

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Exhibit 160: Majority of CRE growth driven by smaller banks

Contribution to total CRE growth since 2012



Source: Federal Reserve

Note: CRE loans comprised of nonfarm/nonresidential, multifamily, and construction loans

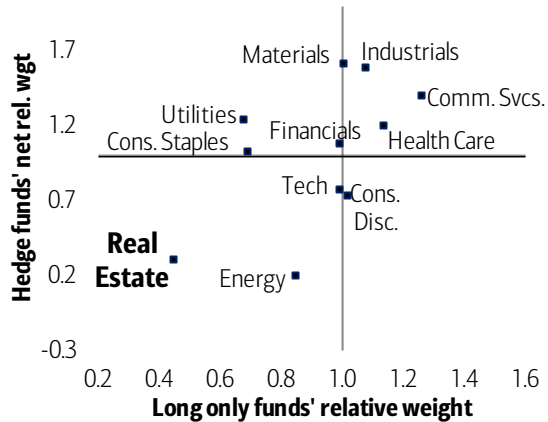
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Overweight Real Estate

Exhibit 161: Deeply underweight by LOs and HF's

LO and HF sector weights relative to the S&P 500 (as of 9/23)

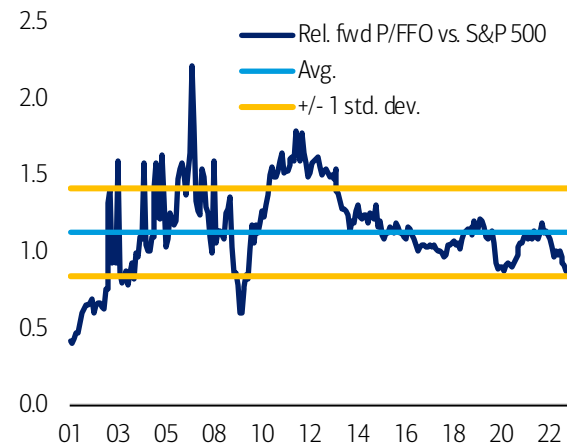


Source: FactSet Ownership, BofA US Equity & Quant Strategy

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Exhibit 162: Real Estate is trading at depressed multiples

S&P 500 Real Estate fwd P/FFO vs. S&P 500's fwd P/E (2001-10/23)

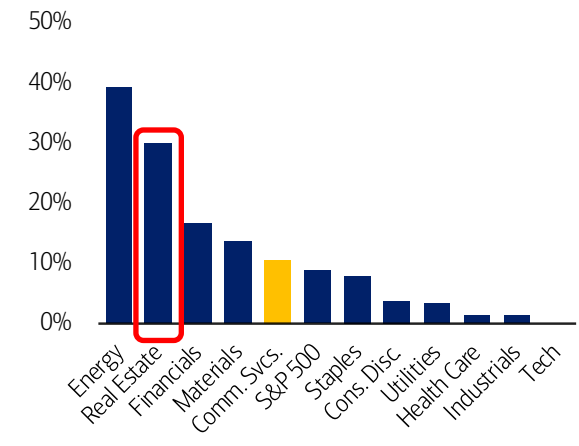


Source: FactSet, BofA US Equity & Quant Strategy

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Exhibit 163: 30% of RE stocks yield higher than 10-yr

% of stocks with a higher dividend yield than the 10-yr yield by sector (as of 10/23)

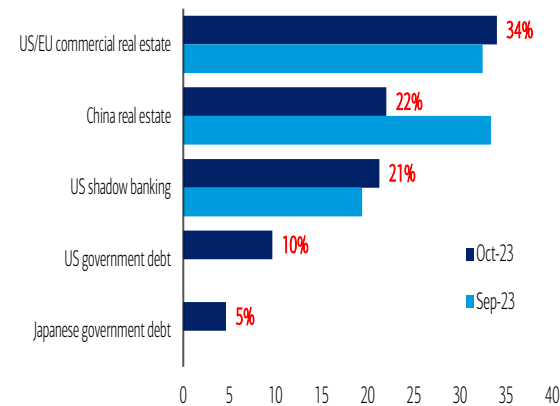


Source: FactSet, BofA US Equity & Quant Strategy

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Exhibit 164: 1 in 3 see US/EU commercial real estate as the most likely source for a credit event

Oct. BofA Global Fund Manager Survey: What is the most likely source for a systemic credit event?

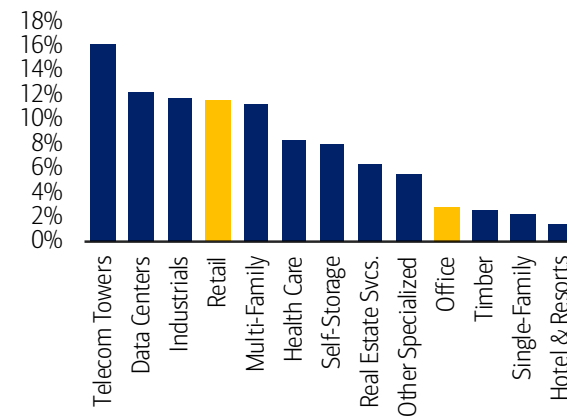


Source: BofA Global Fund Manager Survey

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Exhibit 165: But commercial real estate is only 14% of S&P 500 Real Estate

S&P 500 Real Estate sub-industry weights (as of 10/17/23)

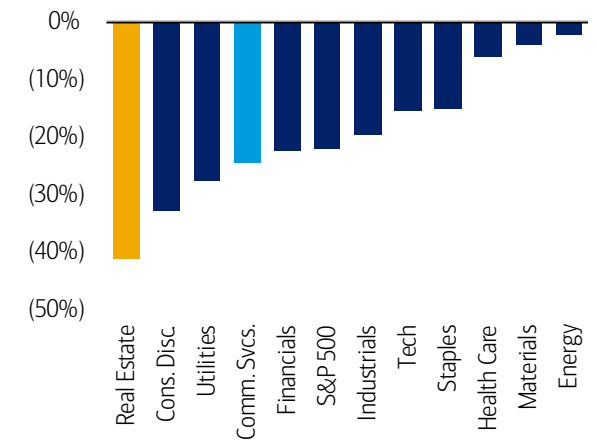


Source: Bloomberg

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Exhibit 166: Biggest de-rating since 2021

Change in fwd P/E (P/FFO for REITs) since Dec. 21 (as of 10/23)



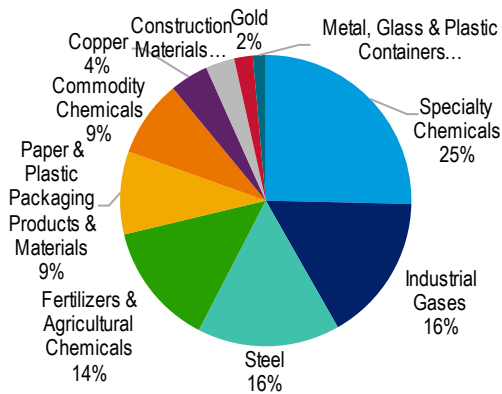
Source: FactSet, BofA US Equity & Quant Strategy

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Marketweight Materials

Exhibit 167: Specialty Chemicals and Industrial Gases are the biggest sub-industries

% LTM earnings contribution from Materials' subindustries (as of 10/17/23)

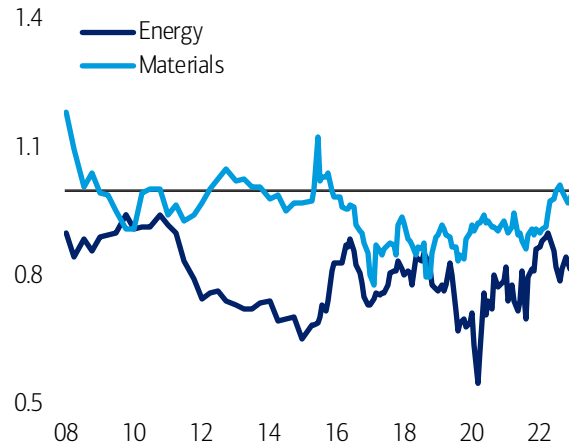


Source: FactSet, BofA US Equity & Quant Strategy

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Exhibit 170: Consensus commodity exposure by LO funds...

Long-only funds relative weight in sector vs. S&P 500 (as of Sep. 2023)

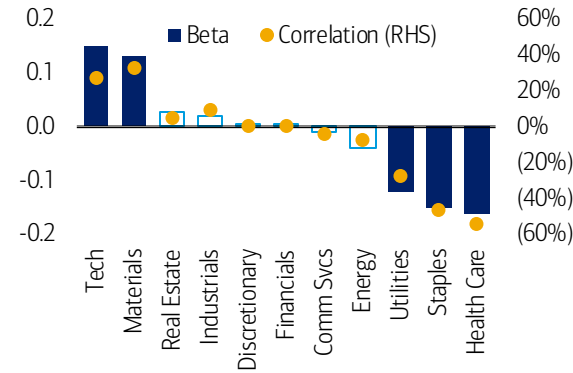


Source: FactSet, BofA US Equity & Quant Strategy

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Exhibit 168: China risk: highest correlation with (and second highest beta to) China

S&P 500 sectors' rel. perf. to MSCI China (May 1996-9/23)



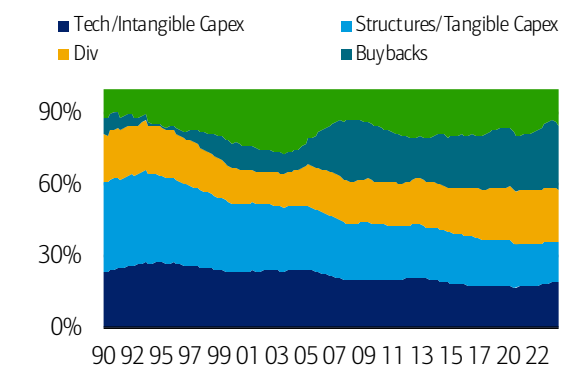
Source: Bloomberg, FactSet, BofA US Equity & Quant Strategy

Note: Based on MSCI China index on a YoY basis; Empty bars indicate not statistically significant

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Exhibit 169: Underinvestment in structure/tangible capex since 1990

Use of rolling 5-yr op cash flow + debt issued (4Q85-2Q2023)

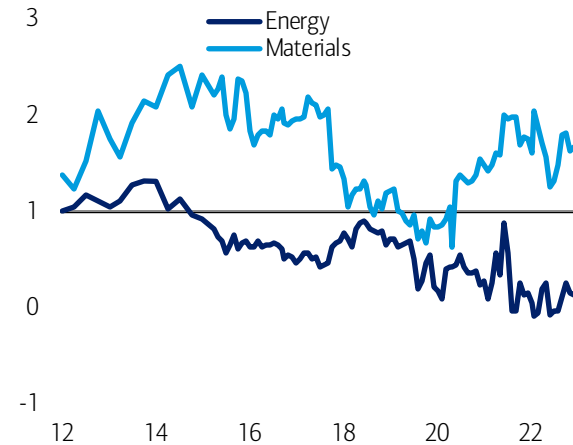


Source: FactSet, BofA US Equity & Quant Strategy *Other uses of cash can include cash build, acquisitions, etc.

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Exhibit 171: ...and hedge funds

Hedge funds relative weight in sector vs. S&P 500 (as of Sep. 2023)

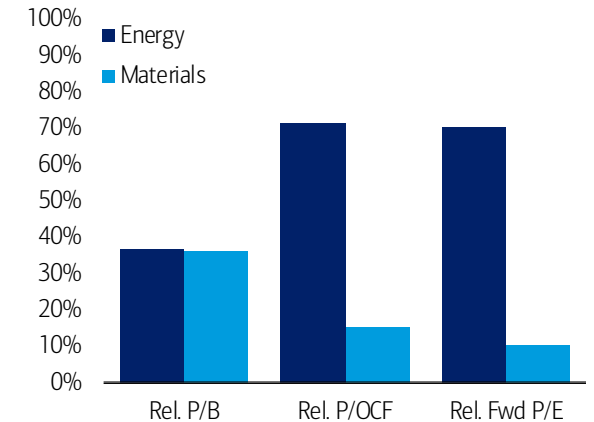


Source: FactSet, BofA US Equity & Quant Strategy

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Exhibit 172: More upside in Energy than Materials

Upside % from historical average for Materials and Energy based on relative valuations (vs. S&P 500) since 1986, as of 10/2023



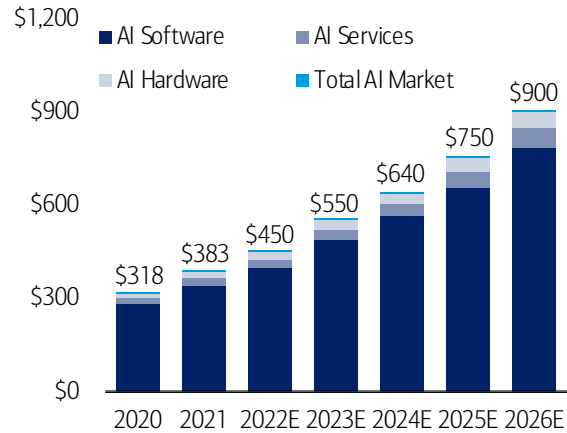
Source: FactSet, BofA US Equity & Quant Strategy

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Marketweight Information Technology

Exhibit 173: AI Software spend to reach ~900bn by 2026E, mostly via software

Global AI market size (US\$ bn)

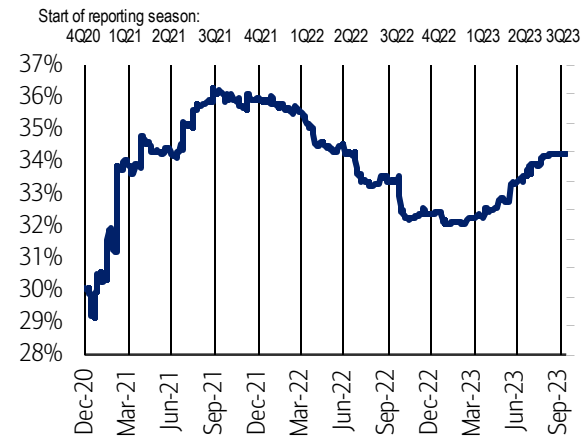


Source: BofA Global Research, IDC

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Exhibit 174: Tech earnings have been outperforming S&P 500 earnings

Ratio of Nasdaq 100 consensus 2023 earnings vs. S&P 500 earnings (12/31/20-10/16/23)

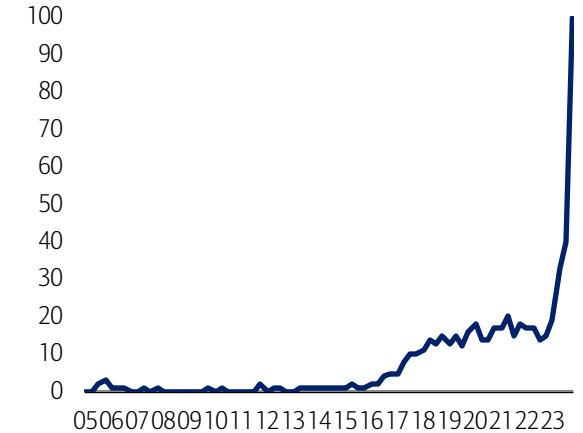


Source: BofA US Equity & Quant Strategy, FactSet

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Exhibit 175: AI spend beneficiary

Mentions of "AI" during earnings calls (max = 100; 1Q05-3Q23, as of 10/20/2023)

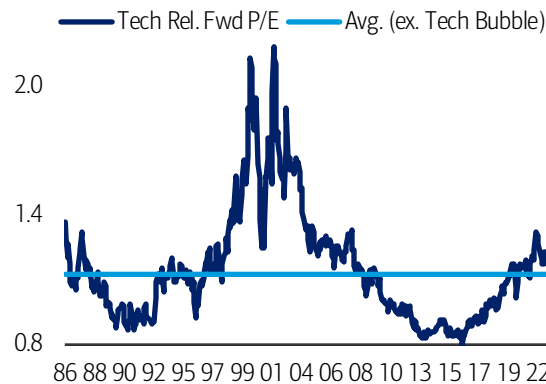


Source: AlphaSense, BofA US Equity & Quant Strategy

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Exhibit 176: Historically expensive vs. ex-Tech Bubble history

Tech relative fwd PE vs. S&P 500 (1986-10/2023)

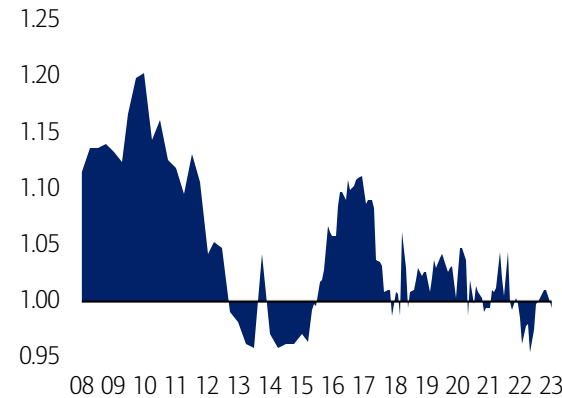


Source: FactSet, BofA US Equity & Quant Strategy

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Exhibit 177: Long-only positioning back to market-weight

Relative weight (versus S&P 500) in Information Technology by long-only funds, 1/2008-9/2023

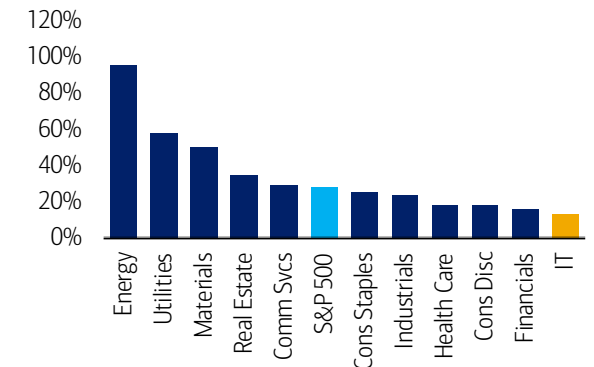


Source: FactSet, BofA US Equity & Quant Strategy

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Exhibit 178: Tech lags the S&P 500 in aligning CEO compensation to ESG metrics

% of S&P 500 companies with ESG metrics as part of CEO short-term compensation plan within the last 3 years, as of 8/2023

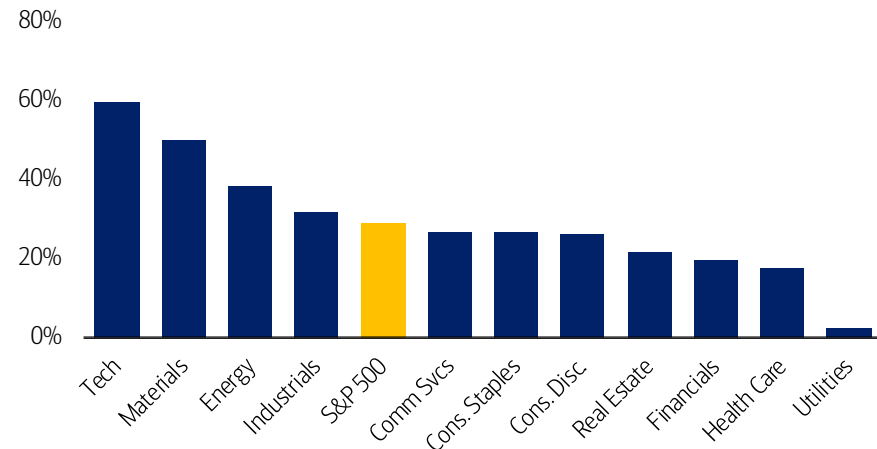


Source: ICE, BofA US Equity and Quant Strategy

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Exhibit 179: Globalization pause is a risk for the sector

S&P 500 foreign exposure by sector

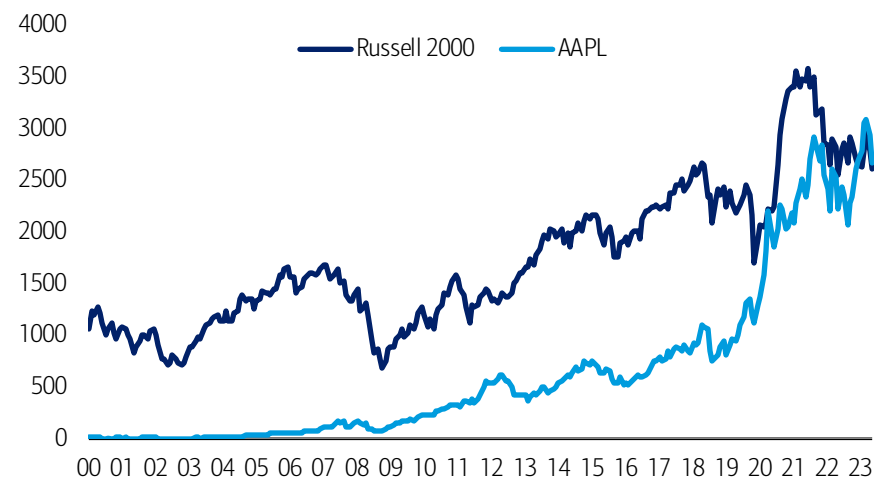


Source: BofA US Equity & Quant Strategy, 2021FY company filings, FactSet, BofA analyst estimates

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Exhibit 181: Risk: ripe for right-sizing (AAPL > Russell 2000)

Market cap of Russell 2000 vs. AAPL (\$B; 2000-9/30/23)

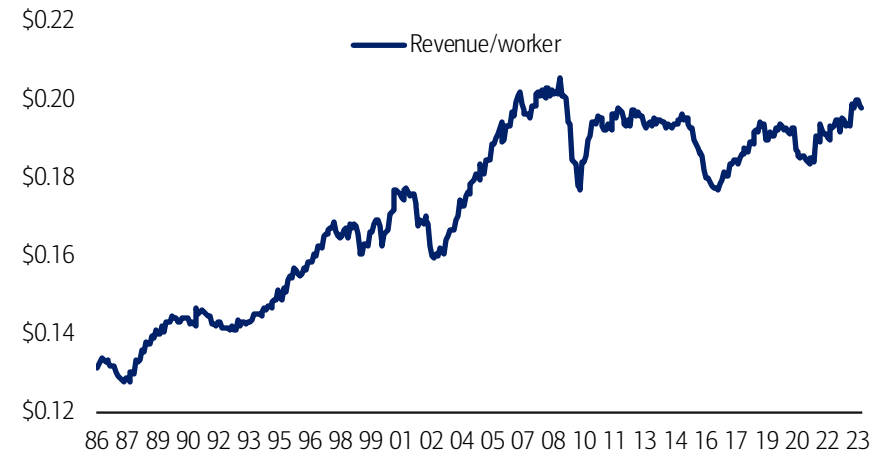


Source: Bloomberg, BofA US Equity & Quant Strategy

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Exhibit 180: Chips at intersection of AI & automation, next secular theme after ZIRP?

S&P 500 companies' revenue per worker (\$M 1986 dollar)

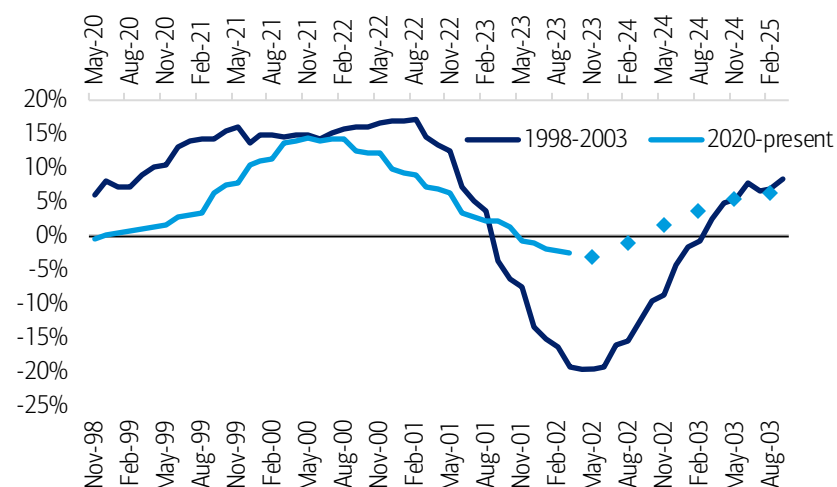


Source: FactSet, Bloomberg, BofA US Equity & Quant Strategy

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Exhibit 182: Risk to Software: Y2K-like pull-forward in COVID could hit harder than expected

S&P 500 Tech YoY sales growth today vs. Tech Bubble (dots = consensus forecast)



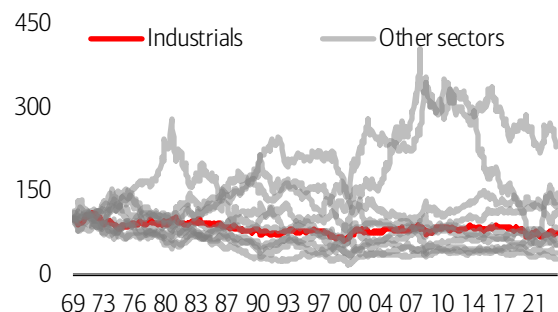
Source: FactSet, BofA US Equity & Quant Strategy

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Marketweight Industrials

Exhibit 183: Perpetual market performer

Sector relative performance (total return) vs. S&P 500 (1969-9/2023)

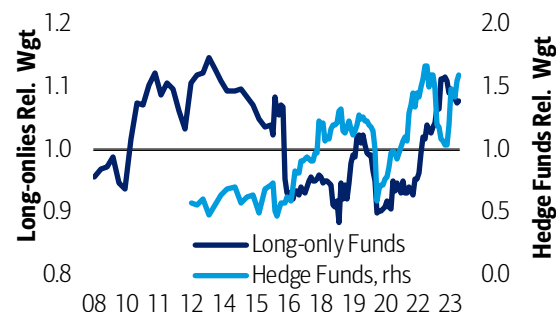


Source: Bloomberg, FactSet, BofA US Equity & Quant Strategy

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Exhibit 184: Loved by both long only funds and hedge funds

Long-only and hedge funds' net relative weight in Industrials (as of 9/2023)

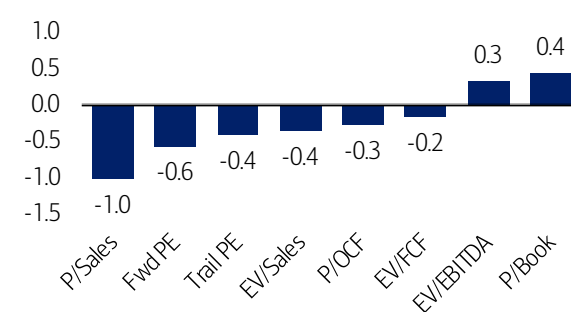


Source: FactSet, BofA US Equity & Quant Strategy

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Exhibit 185: Mixed valuations but generally cheap vs. history

Industrials relative valuations z-score (since 1986), as of 10/2023

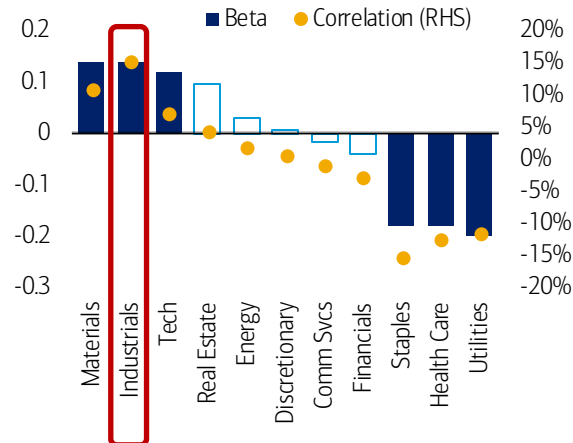


Source: BofA US Equity & Quant Strategy, FactSet

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Exhibit 186: Most correlated to PMI

S&P 500 sectors' monthly relative performance sensitivity to monthly changes in PMI (1957-9/23)



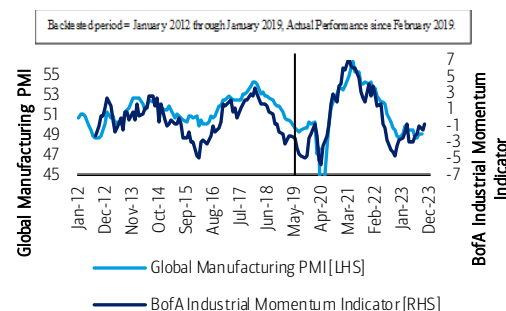
Source: Bloomberg, FactSet, BofA US Equity & Quant Strategy, Global Financial Data

Note: Empty bars indicate not statistically significant. Global Financial Data (used from 1957-1969) combines Utilities and Telecom into one sector.

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Exhibit 187: BofA Industrial Momentum Indicator is recovering

BofA Industrial Momentum Indicator (as of 10/2023)



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. This indicator was not created to act as a benchmark

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Exhibit 188: Industrials: Machinery hated, Conglomerates loved

LO relative exposure to Machinery (cyclical) vs. Industrial Conglomerates (defensive) within S&P 500 (as of 9/2023)



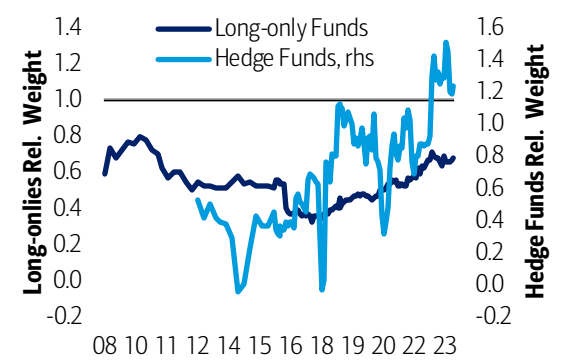
Source: BofA US Equity & Quant Strategy, FactSet Ownership

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Marketweight Utilities

Exhibit 189: Still net long by hedge funds

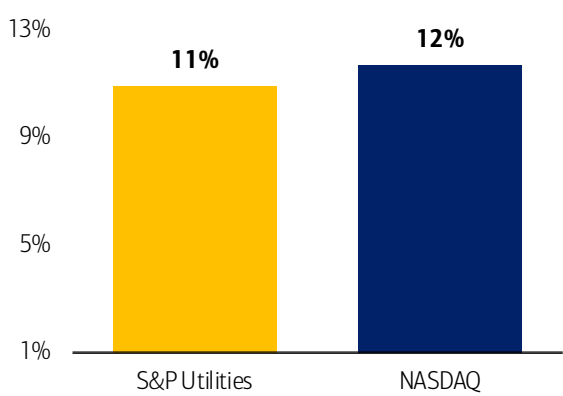
Long-only and hedge funds' net relative weight in Utilities (as of 9/2023)



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

Exhibit 190: Close race for the tortoise and the hare

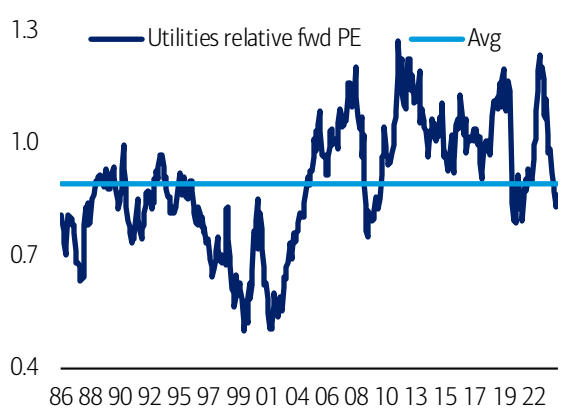
Annualized returns 1980-9/23, S&P Utilities vs. NASDAQ



Source: BofA US Equity & Quant Strategy, Datastream, Bloomberg
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Exhibit 191: Average on relative fwd. P/E

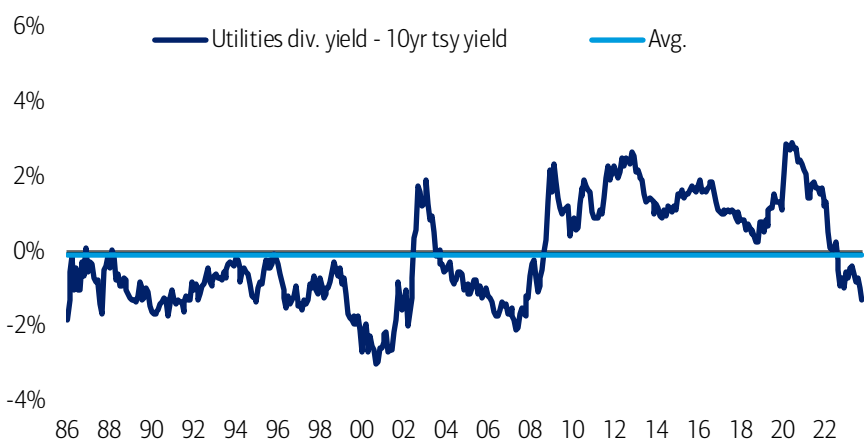
Relative (versus S&P 500) forward PE (1/1986-10/2023)



Source: FactSet, Compustat, BofA US Equity & Quant Strategy
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Exhibit 192: Dividend yield now below the 10yr Tsy. yield

Utilities dividend yield vs. 10yr Treasury yield spread, 1986-10/2023



Source: FactSet, BofA US Equity & Quant Strategy
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Exhibit 193: Utilities has a 0 % hit rate in Recovery regimes

Sector performance in Recoveries

Sector	Avg:	Median:	Hit Rate:
Financials	14.6%	13.5%	100.0%
Industrials	5.1%	3.2%	75.0%
Material	10.1%	8.2%	75.0%
Discretionary	3.3%	5.7%	62.5%
Energy	5.3%	-2.3%	50.0%
Info Tech	-0.2%	2.2%	50.0%
Real Estate	9.1%	3.5%	50.0%
Comm Svcs	-6.8%	-3.7%	37.5%
Staples	-4.7%	-10.0%	37.5%
Health Care	-7.0%	-6.5%	25.0%
Utilities	-12.8%	-12.5%	0.0%

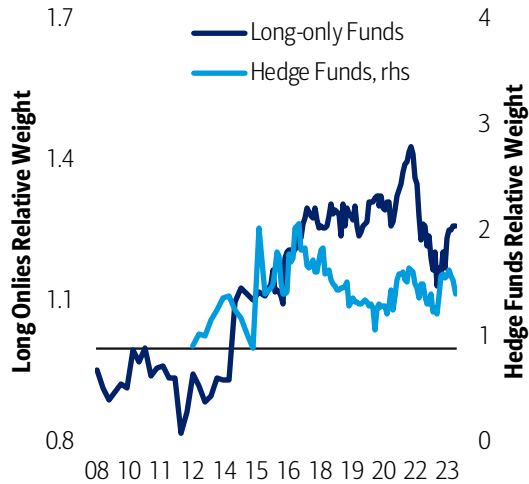
Source: BofA US Equity & Quant Strategy, FactSet
BofA GLOBAL RESEARCH



Underweight Communication Services

Exhibit 194: Consensus overweight by LO and HF

Long-only and hedge funds' net relative weight in Comm. Svcs. (as of 9/2023)

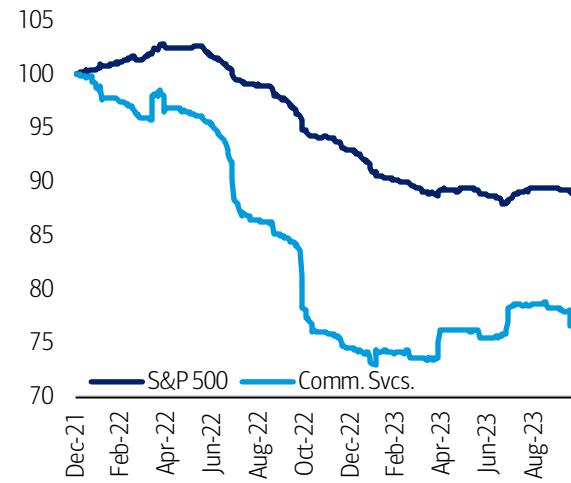


Source: FactSet, BofA US Equity & Quant Strategy

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Exhibit 195: Earnings recovery stalling

2023 consensus earnings estimates (12/21-10/27/23)

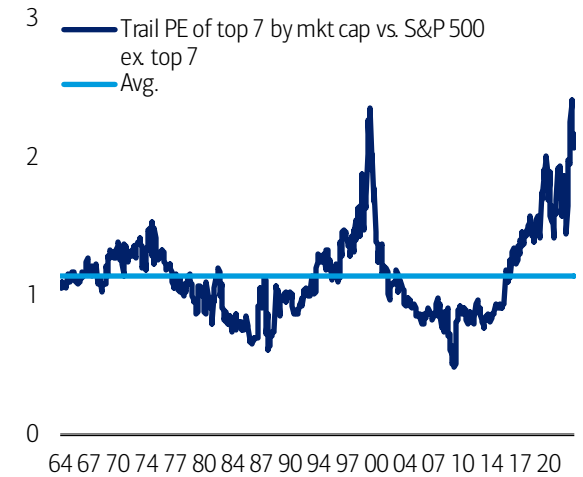


Source: FactSet, BofA US Equity & Quant Strategy

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Exhibit 196: Near record premium vs. the rest of the index

Trailing PE of top 7 S&P 500 stocks by market cap vs. S&P 500 ex. top 7 stocks (1970-10/2023)

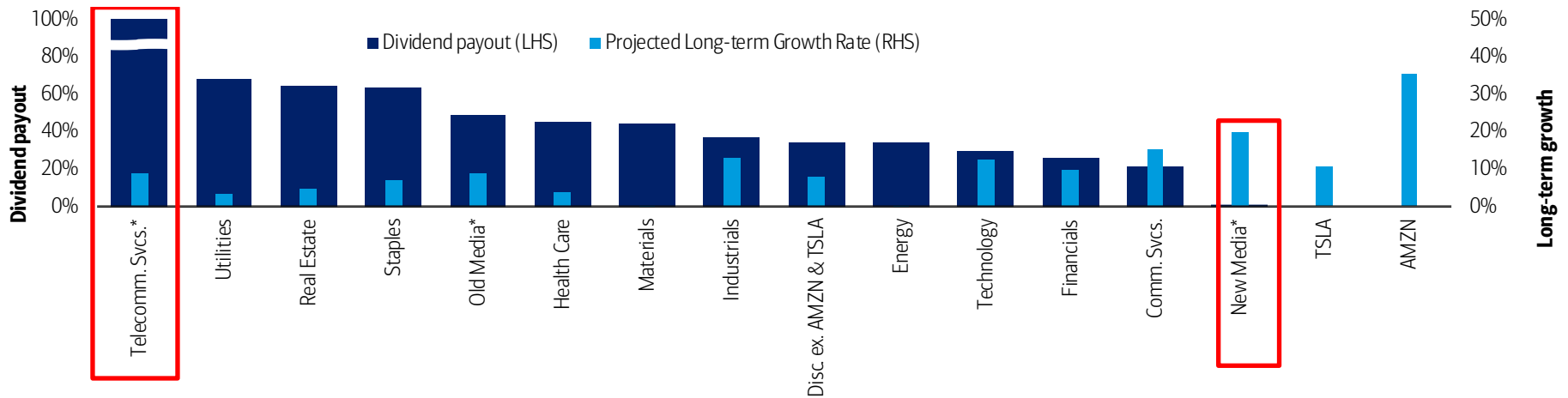


Source: BofA US Equity & Quant Strategy, FactSet

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Exhibit 197: Rising rates hit both short and long duration stocks

S&P 500 dividend payout ratios and projected long-term growth rates as of 10/24/2023



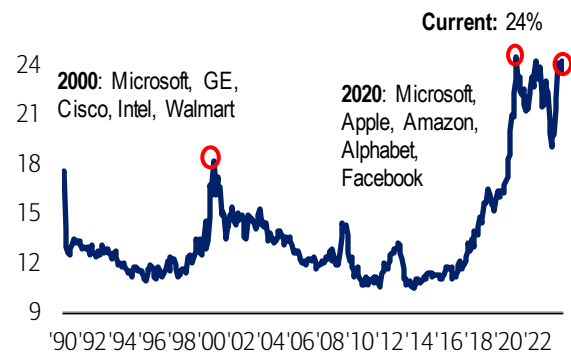
Source: FactSet, BofA US Equity & Quant Strategy. *denotes industry groups/industries in Communication Services; "New Media" includes Entertainment and Interactive Media & Services industries; "Old Media" includes Media industry.

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Exhibit 198: Extreme concentration risk remains in the market

Top 5 companies' weight in the S&P 500

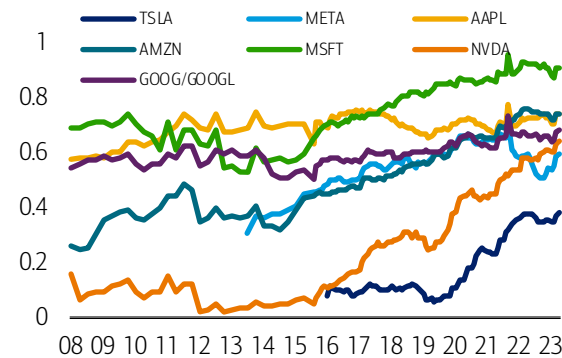


Source: Bloomberg, BofA US Equity & Quant Strategy

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Exhibit 199: Who's left to buy mega-cap Tech?

% of large cap active funds owning as of 9/30/2023



Source: FactSet Ownership, BofA US Equity & Quant Strategy. TSLA: Tesla, AMZN: Amazon, GOOG / GOOGL: Alphabet C / Alphabet A, META: Meta Platforms, MSFT: Microsoft, AAPL: Apple, NVDA: Nvidia

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Exhibit 200: Communication Services #1 in tactical model
 S&P 500 Momentum & Value Framework Sector Ranks as of 9/2023

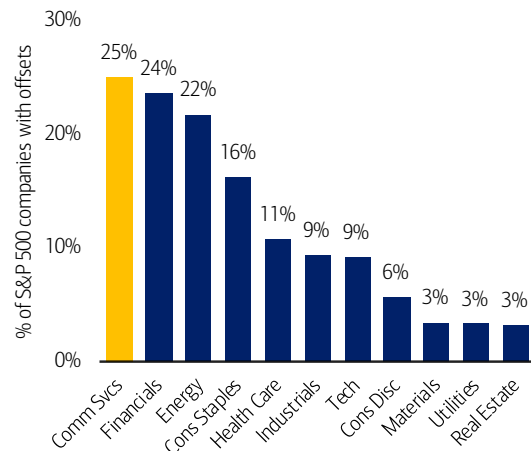
Sector	Combined Rank	Price Momentum Rank	EPS Revision Rank	Valuation Rank
Comm. Services	29	10	10	9
Energy	28	11	6	11
Discretionary	19	7	11	1
Financials	17	9	4	4
Health Care	17	8	2	7
Industrials	16	5	8	3
Utilities	16	1	7	8
Technology	15	4	9	2
Real Estate	15	2	3	10
Materials	13	6	1	6
Staples	13	3	5	5

Source: BofA US Equity & US Quant Strategy

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Exhibit 201: Negative E: Highest use of carbon offsets

Percent of S&P 500 companies that disclose current use of carbon offsets, as of 8/2023

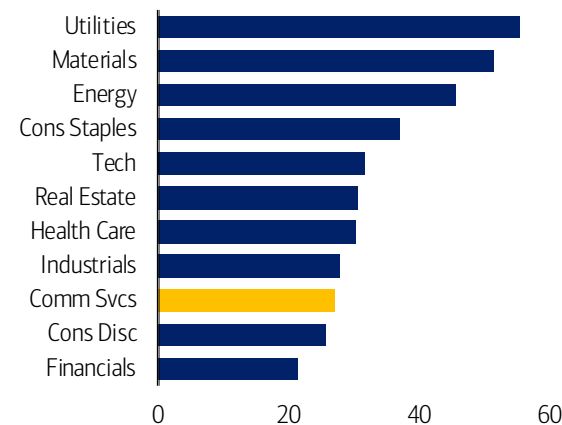


Source: Bloomberg, Refinitiv, BofA US Equity & Quant Strategy

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Exhibit 202: Negative S: Diversity/workforce black box

Avg. Bloomberg Social Disclosure Score by sector for S&P 500, as of 8/2023 [the amount of social data a company reports publicly, score from 0-100]

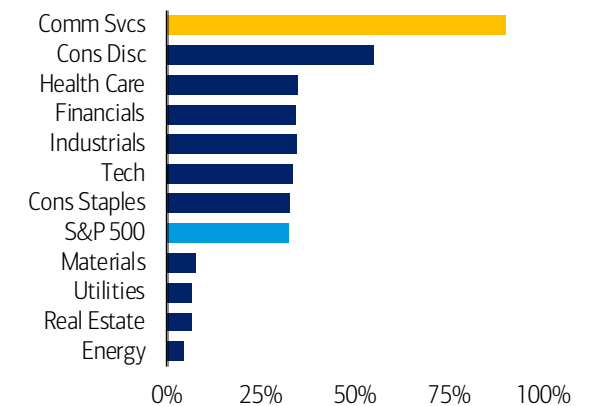


Source: BofA US Equity & Strategy; Bloomberg

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Exhibit 203: 90% of Comm. Svcs. had recent controversies in data privacy & security

% Data Privacy and Security related controversies by sector, as of 8/2023



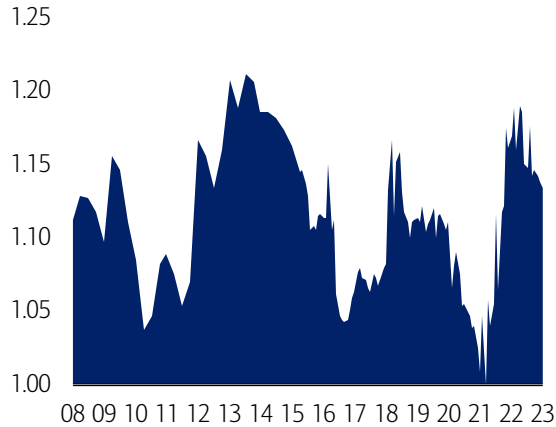
Source: Sustainalytics, BofA US Equity & Quant Strategy

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Underweight Health Care

Exhibit 204: Crowded by active funds

Large cap active managers' relative weight in HC: 2008-9/2023

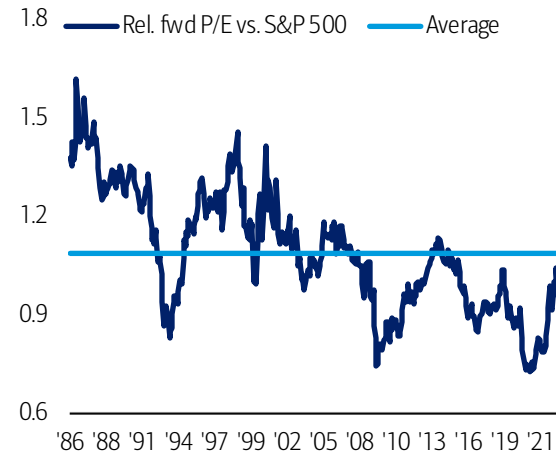


Source: FactSet, BofA US Equity & Quant Strategy

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Exhibit 205: Below average valuations

Health Care relative forward Price/Earnings Ratio (1/1986-10/2023)

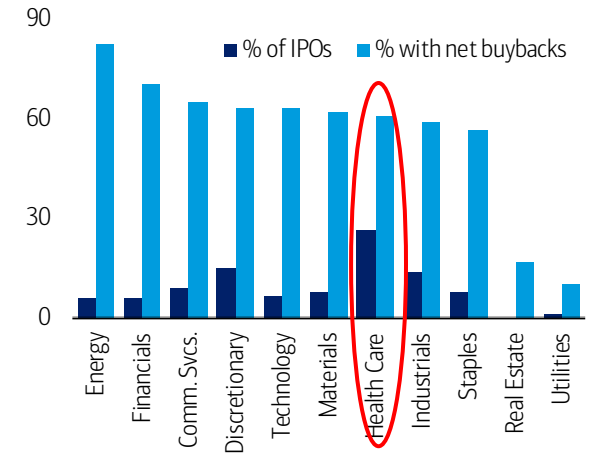


Source: FactSet, BofA US Equity & Quant Strategy

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Exhibit 206: Bad supply & demand dynamics

% of IPOs and % of companies with net share reduction over LTM (as of 9/2023)

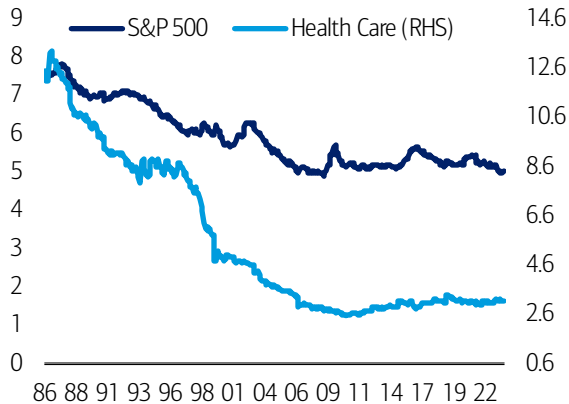


Source: S&P, FactSet, BofA US Equity & Quant Strategy

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Exhibit 207: Health Care labor intensity worsened since 2008

Number of employees per dollar of sales (real)

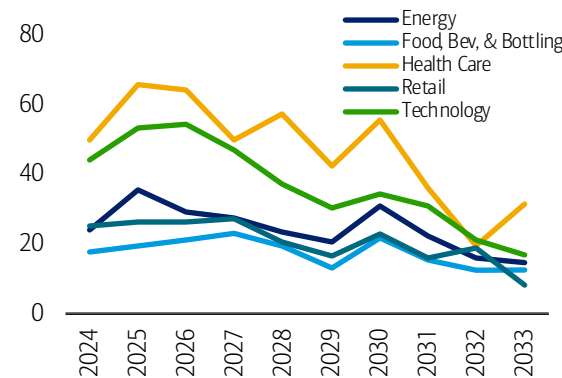


Source: BofA US Equity & Quant Strategy, FactSet

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Exhibit 208: Floating rate risk for Health Care

US-domiciled IG issuer bond maturities in the next 10 years for top 5 sectors with the most debt maturing (\$bn)



Source: BofA Global Research, ICE Data Indices, LLC

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Exhibit 209: Stealth leverage risks since GFC

Net debt to market cap (1986-10/2023)

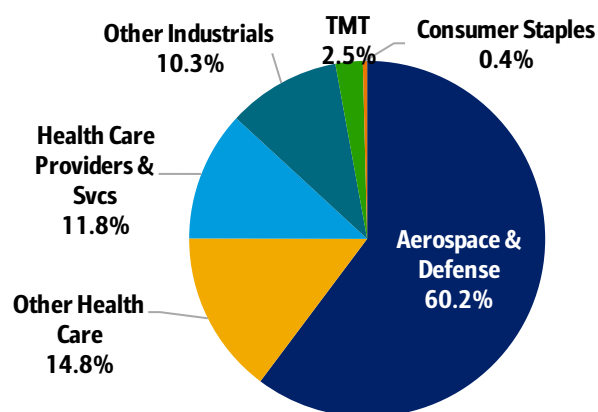


Source: FactSet, BofA US Equity & Quant Strategy

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Exhibit 210: Industrials and Health Care most exposed to government spending

Gov't dollars obligated for industry as a % of dollars obligated for S&P 500 companies (based on top 100 federal contractors in FY2021)

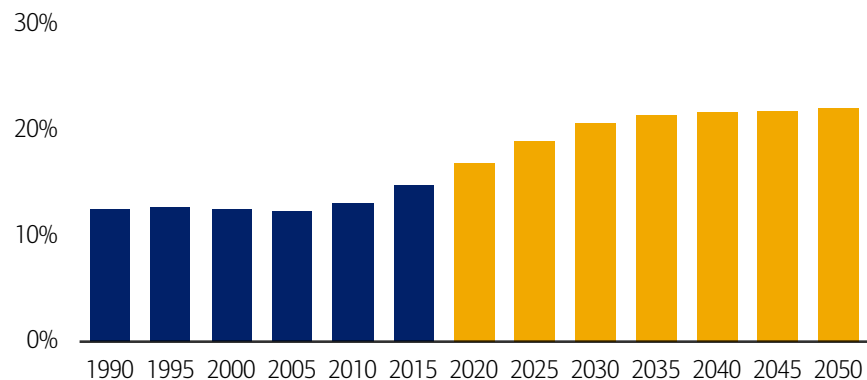


Source: BofA US Equity & Quant Strategy, Top 100 Contractors Report – SAM.gov

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But long-term growth case still intact for Health Care**Exhibit 212: 65+ population is expected to grow ~50% over the next 20 years**

Percentage of US population older than 65 (1990-2050)



Source: Census Bureau (Population Division), BofA US Equity & Quant Strategy

Note: orange bars denote Census forecasts

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Exhibit 211: Government-exposed stocks underperformed post-prior shutdowns

Performance of Government S&P 500 Stocks with non-zero Government Exposure (equal weighted)

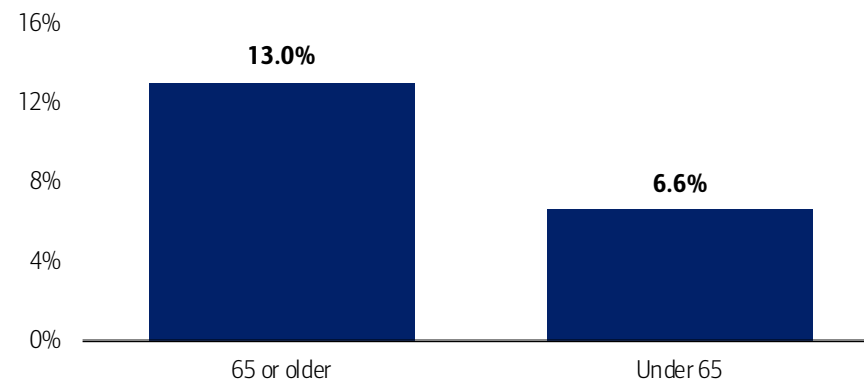
	During	6m after
Debt downgrade (8/5/2011)	N/A	-12.44%
Shutdown 12/21/2018 to 1/25/2019	-7.30%	-14.01%

Source: BofA US Equity & Quant Strategy, Top 100 Contractors Report – SAM.gov

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Exhibit 213: Elderly have larger proportion of total expenditure on Health Care

Health Care expenditure as % of total expenditure



Source: Consumer Expenditure Survey (2019), BofA US Equity & Quant Strategy

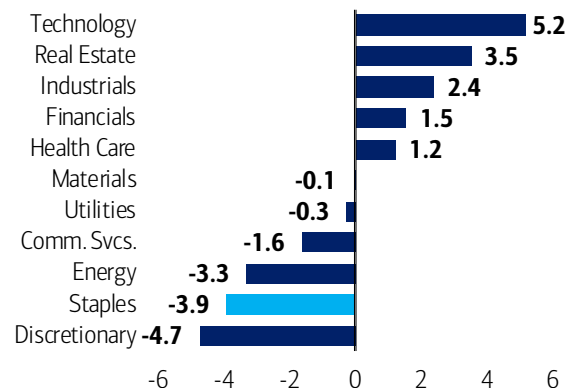
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Underweight Consumer Staples

Exhibit 214: Lower quality vs history

B+ or Better current sector weight vs. historical avg (ppt), as of 9/23



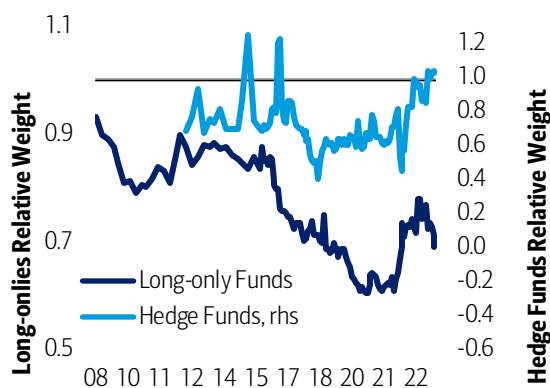
Note: based on equal weight (number of companies), Real Estate since 5/2003, all other sectors since 1986.

Source: BofA US Equity and Quant Strategy, FactSet

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Exhibit 217: Hedge funds are overweight, but long only funds are decreasing exposure

Long-only and hedge funds' net relative weight in Staples (as of 9/2023)



Source: FactSet Ownership, BofA US Equity & Quant Strategy

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Exhibit 215: Staples ranks last in tactical model

S&P 500 Momentum & Value Framework Sector Ranks as of 9/2023

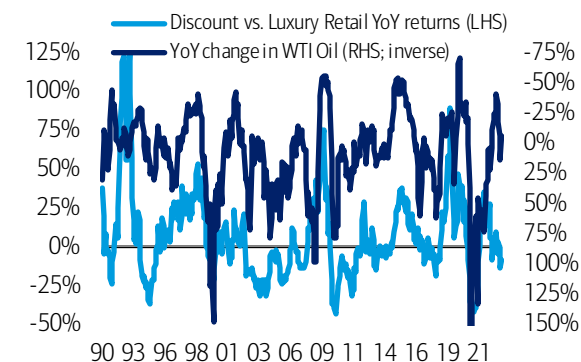
Sector	Combined Rank	Price Momentum Rank	EPS Revision Rank	Valuation Rank
Comm. Svcs.	29	10	10	9
Energy	28	11	6	11
Discretionary	19	7	11	1
Financials	17	9	4	4
Health Care	17	8	2	7
Industrials	16	5	8	3
Utilities	16	1	7	8
Technology	15	4	9	2
Real Estate	15	2	3	10
Materials	13	6	1	6
Staples	13	3	5	5

Source: BofA US Equity & US Quant Strategy

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Exhibit 216: Discount retailers underperform luxury retailers when oil prices rise

Relative 12m returns of discount vs luxury retailers and 12m change in WTI oil since 1990 (-42% correlation)

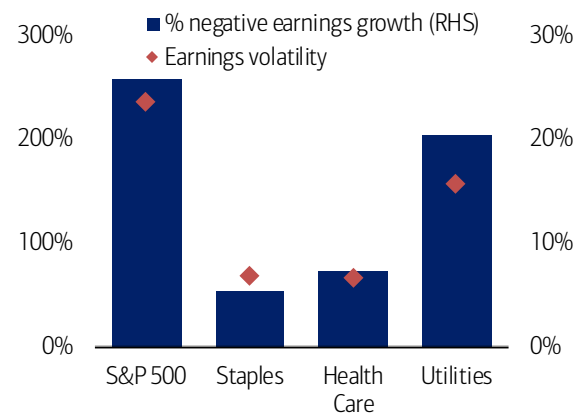


Source: FactSet, Bloomberg, BofA US Equity & Quant Strategy. Note: Discount retailers performance based on equal-weighted monthly returns of YUM, DLTR, DG, TGT, WMT, MCD, KSS, TJX, ROST. Luxury retailers performance based on equal-weighted monthly returns of CPRI, EL, JWN, TIF (through Sept 2020), TPR, RL

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Exhibit 218: Most defensive of defensive sectors

% of historical negative YoY earnings growth and coefficient of variation of YoY earnings growth (1986-9/23)

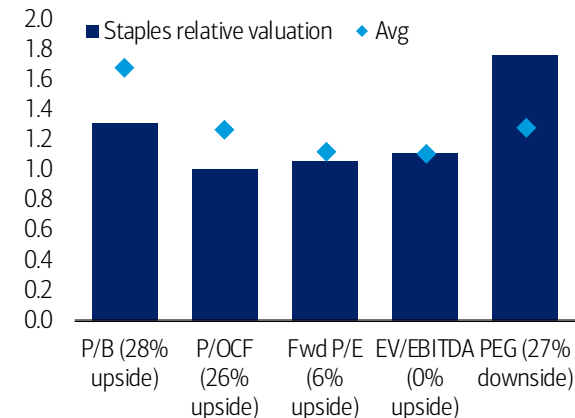


Source: BofA US Equity & Quant Strategy, FactSet

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Exhibit 219: Mixed valuations

Relative valuations of Staples (vs. S&P 500) percent upside/downside versus historical average as of 10/2023



Source: FactSet, BofA US Equity & Quant Strategy

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Tactical industry rotation framework

Exhibit 220: S&P 500 Momentum & Value Framework - industry ranks as of 9/23

Industry ranks based on relative price momentum, EPS revision and valuation

Industry	Sector	Combined Rank	Price Momentum Rank	EPS Revision Rank	Valuation Rank	Style Highlight
Interactive Media & Services	Communication Services	30	10	10	10	Opportunity
Media	Communication Services	28	10	8	10	Opportunity
Energy Equipment & Services	Energy	26	10	8	8	Opportunity
Household Durables	Consumer Discretionary	24	4	10	10	
Specialized Reits	Real Estate	24	7	9	8	Opportunity
Oil Gas & Consumable Fuels	Energy	24	10	5	9	
Communications Equipment	Information Technology	23	10	5	8	
Machinery	Industrials	22	8	9	5	
Health Care Providers & Services	Health Care	22	9	7	6	Opportunity
Biotechnology	Health Care	22	10	4	8	
Insurance	Financials	21	10	6	5	
Professional Services	Industrials	21	9	9	3	
Semiconductors & Semiconductor Equipment	Information Technology	20	8	10	2	
Leisure Products	Consumer Discretionary	20	9	4	7	
Industrial Conglomerates	Industrials	20	5	10	5	
Banks	Financials	20	8	3	9	
Office Reits	Real Estate	19	4	5	10	
Building Products	Industrials	19	7	8	4	
Electrical Equipment	Industrials	19	8	9	2	
Broadline Retail	Consumer Discretionary	19	8	10	1	
Entertainment	Communication Services	19	3	9	7	
Specialty Retail	Consumer Discretionary	19	7	7	5	
Financial Services	Financials	19	9	8	2	
Beverages	Consumer Staples	18	5	7	6	
Construction Materials	Materials	17	2	10	5	
Hotels Restaurants & Leisure	Consumer Discretionary	17	5	8	4	
Trading Companies & Distributors	Industrials	17	5	6	6	
Personal Care Products	Consumer Staples	17	1	10	6	
Hotel & Resort Reits	Real Estate	17	6	2	9	
Health Care Reits	Real Estate	17	7	6	4	
Residential Reits	Real Estate	16	2	5	9	
Food Products	Consumer Staples	16	3	5	8	
Tobacco	Consumer Staples	16	5	4	7	
Diversified Telecommunication Services	Communication Services	16	3	3	10	Value Trap
It Services	Information Technology	16	9	5	2	
Automobiles	Consumer Discretionary	15	5	9	1	
Construction & Engineering	Industrials	15	6	8	1	
Independent Power And Renewable Electricity Producers	Utilities	15	1	4	10	
Retail Reits	Real Estate	15	3	3	9	Value Trap
Capital Markets	Financials	15	8	3	4	
Electric Utilities	Utilities	15	3	7	5	
Pharmaceuticals	Health Care	15	8	1	6	
Software	Information Technology	15	6	8	1	
Distributors	Consumer Discretionary	14	2	4	8	
Chemicals	Materials	14	6	2	6	
Household Products	Consumer Staples	14	5	6	3	



Exhibit 220: S&P 500 Momentum & Value Framework - industry ranks as of 9/23

Industry ranks based on relative price momentum, EPS revision and valuation

Industry	Sector	Combined Rank	Price Momentum Rank	EPS Revision Rank	Valuation Rank	Style Highlight
Multi-Utilities	Utilities	14	3	3	8	Value Trap
Passenger Airlines	Industrials	13	1	2	10	Value Trap
Auto Components	Consumer Discretionary	13	7	3	3	Momentum Breakdown
Consumer Finance	Financials	13	1	3	9	Value Trap
Containers & Packaging	Materials	13	9	1	3	
Metals & Mining	Materials	12	4	1	7	
Air Freight & Logistics	Industrials	12	4	1	7	
Commercial Services & Supplies	Industrials	12	4	7	1	
Electronic Equipment Instruments & Components	Information Technology	11	4	2	5	
Aerospace & Defense	Industrials	11	2	7	2	
Health Care Equipment & Supplies	Health Care	11	1	6	4	
Ground Transportation	Industrials	11	7	2	2	
Industrial Reits	Real Estate	11	3	4	4	
Consumer Staples Distribution & Retail	Consumer Staples	11	6	2	3	
Real Estate Management & Development	Real Estate	10	2	1	7	Value Trap
Life Sciences Tools & Services	Health Care	10	6	1	3	
Technology Hardware Storage & Peripherals	Information Technology	9	2	6	1	
Textiles Apparel & Luxury Goods	Consumer Discretionary	9	1	5	3	

Source: BofA US Equity & US Quant Strategy

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Appendix

Sell Side Indicator

The Sell Side Indicator (SSI) is based on our survey of the Wall Street Strategists that submit their asset allocation recommendations to us (currently, there are nine. Note that post the Global Financial Crisis, the number of respondents has typically ranged between 6 and 11). For this indicator, we use the simple average of the recommended equity weighting for each strategist as of the last business day of each month. The thresholds for the Buy and Sell readings are rolling 15-year +/- 1 standard deviations from the rolling 15-year mean.

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 (y/y) – Average Hourly Earnings (y/y) + Coincident Indicators (y/y)

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

Earnings Revision ratios

Beginning in April 1986 (and January 2006 for Real Estate), we calculate 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. We apply the same calculation to the S&P 500 GICS Sectors (where we use FFO for REITs within Real Estate). One-month revision ratios are computed as the number of companies for which estimates this month are higher than they were last month, divided by the number of companies for which estimates this month are *lower* than they were last month. For example, within a particular subgroup of the market, if consensus estimates have increased for 5 companies and have decreased for 10, the estimate revision ratio will be 0.5 (5 divided by 10).

The three-month revision ratio is similarly defined as the total number of earnings estimate increases divided by total number of earnings estimate decreases during the last *three* months. For example, in February 2002, the three-month revision ratio is computed as the total number of companies with increased monthly estimates, divided by the total number of companies with decreased estimates throughout December 2001, January 2002, and February 2002.

We similarly calculate the S&P 600 (small cap) earnings revision ratios (one-month and three-month) by the same methodology, with data beginning in February 2001.

For earnings/sales estimates, we look at the change in the FY1 estimate (current unreported year) if there's more than 120 days between the current date and the company's fiscal year-end date, otherwise we look at the change in the FY2 estimate (next unreported year).



Guidance Ratios

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

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.

Momentum & Value Model

Our tactical "momentum and value" framework was backtested from January 1997-December 2004, and has been running live since January 2005. We calculate price momentum, earnings momentum and valuation for the S&P 500 GICS sectors and industries relative to the index beginning in January 1997. We exclude industries that have only one company or have less than five years of historical price data. For our backtest, we have used as a market benchmark the portfolio of equal-weighted S&P 500 industries that were eligible for the framework at a given point in time.

Price momentum

The price momentum of an industry is the change in the industry's relative price in the current month vs. three months ago, with relative price defined as the month-end industry price divided by the month-end index level of the S&P 500. Industries are assigned a price momentum rank from 1 to 10, with 10 being the strongest price momentum and 1 being the weakest. Sectors are assigned a price momentum rank from 1 to 11, with 11 being the strongest price momentum and 1 being the weakest.

Earnings momentum

The earnings momentum of an industry is the change in relative forecast EPS between the current month and three months ago. Relative EPS is the ratio of the 12-month rolling forward I/B/E/S consensus earnings forecast of a given industry divided by that of the S&P 500. Industries are assigned an earnings revision rank of 1 to 10, with 10 being the strongest earnings momentum and 1 being the weakest. Sectors are assigned an earnings revision rank of 1 to 11, with 11 being the strongest earnings momentum and 1 being the weakest.

Valuation

We calculate the earnings yield (E/P) of an industry as the ratio of current relative forward (consensus) EPS divided by current relative price. We then calculate the earnings yield relative to its historical average by dividing the current E/P by the average E/P for the industry since the framework's inception in January 1997. For industries introduced after the inception date, at least one year of data is required before an industry is eligible for a rank. Industries are assigned a valuation rank from 1 to 10, with 10 being the highest relative earnings yield (most inexpensive) and 1 being the lowest relative earnings yield (most expensive). Sectors are assigned a valuation rank from 1 to 11, with 11 being the highest relative earnings yield (most inexpensive) and 1 being the lowest relative earnings yield (most expensive). Current data is compared to this average using the following formula: $(\text{Current E/P} - \text{Historical Avg. E/P}) / \text{Abs (Historical Avg. E/P)}$. We calculate both the current and historical average relative to the market because of P/E multiple expansion in the market, and use earnings yield (inverse of P/E) to accommodate industries which have negative aggregate earnings.

Combined rank

The combined rank of an industry is the sum of the three ranks from the price momentum, earnings momentum, and valuation factors above, with 30 ranking the best and 3 ranking the worst. For sectors, 33 ranks the best and 3 ranks the worst.

Opportunities, Value Traps and Momentum Breakdowns

We classify industries based on their framework ranks as follows:

- Opportunities are industries with above avg. (6 or higher) ranks in all three ranks.
- Value Traps are industries that have above avg. ranks in valuation (6 or higher) but are in the bottom tertile in price momentum and earnings momentum (ranks 1-3).
- Momentum Breakdowns are industries with below avg. ranks in valuation (4 or lower), lower price momentum ranks than in the previous month, and below avg. earnings momentum ranks (4 or lower).



Exhibit 221: Relative performance of Opportunities, Value Traps and Momentum Breakdowns (as of 9/23)

Relative performance vs. equal-weighted S&P industries

	1m	3m	6m	12m	YTD	2yr	Ann'zed	3yr	Ann'zed	5yr	Ann'zed
Opportunities	0.0%	-1.1%	-3.4%	-0.9%	-3.2%	-6.7%	-3.4%	-0.1%	0.0%	6.7%	1.0%
Value Traps	0.4%	0.3%	0.8%	0.7%	0.2%	1.5%	0.8%	-5.2%	-1.5%	-19.5%	-3.0%
Momentum Breakdown	-0.5%	0.4%	11.9%	6.5%	16.1%	-3.4%	-1.7%	-33.6%	-10.1%	-47.5%	-8.1%

Source: BofA Us Equity & US Quant Strategy

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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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