

US Equity Strategy in Pictures

Five more reasons to be bullish on US large cap stocks

Investment Strategy

Index attrition has left the S&P 500 in good shape

Stocks that grow up into large caps generally take share from peers that drift into small caps. But since 2021, 50% more large caps have become small caps than small caps becoming large caps (the reverse of prior decades), suggesting a purge of weaklings. Since rates began to rise, a record proportion of one in three Russell 2000 companies loses money vs. roughly one in 20 for the S&P 500.

OK boomer, \$77T ain't bad

Since 1980, US debt to GDP rose 90%, lining Baby Boomers' pockets with \$77T net worth/\$60T financial assets. Today's higher cash return of 5% translates to an annual \$4T, or 14% of US GDP. Moreover, years of refinancing opportunities at ultra-low rates drove the effective mortgage rate (3.6%) below pre-COVID levels (3.9%). Boomers' extra returns help spending and a massive wealth/real asset transfer to Gen X / Z. See higher rates aren't all bad, 02 March 2023.

It's the economy, stupid

The Fed just told us the economy is still too hot to stop hiking, bad news for bonds but good news for cyclicals and stocks. US companies continue to rebuild closer to home despite higher capital costs; manufacturing is necessitated by a decade of underinvestment and is bolstered by stimulus. Cyclical stocks should lead.

"ERP is 0%" is false. In fact, the ERP is likely to fall further

We hear, "The equity risk premium (ERP) is zero. Buy bonds." comparing the earnings yield based on the S&P 500 PE of 20x to nominal Tsy yields of 5%. But earnings are nominal; fixed income is fixed. Real rates vs. ERP is more apples to apples, and 2% real rates suggests ~300bps in ERP – low vs. the last decade but high vs. '85 to '05's labor efficiency boom, where real rates were 3.5% and S&P 500 returns were 15% per year.

Equal-weighted stocks are cheap despite negative earnings growth

The eq-wtd. S&P 500 ERP is 50bp+ higher than the cap-wtd. S&P, and trades at 17x on trough earnings. Our Regime Indicator flipped to a "Recovery", typically associated with an earnings pickup; we forecast +8% EPS growth in '24. The eq-wtd. S&P also almost always beat the cap-wtd. S&P in past "Recovery" cycles.

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 82 to 84.

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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

Market outlook

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

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

S&P 500 2023 Target Models

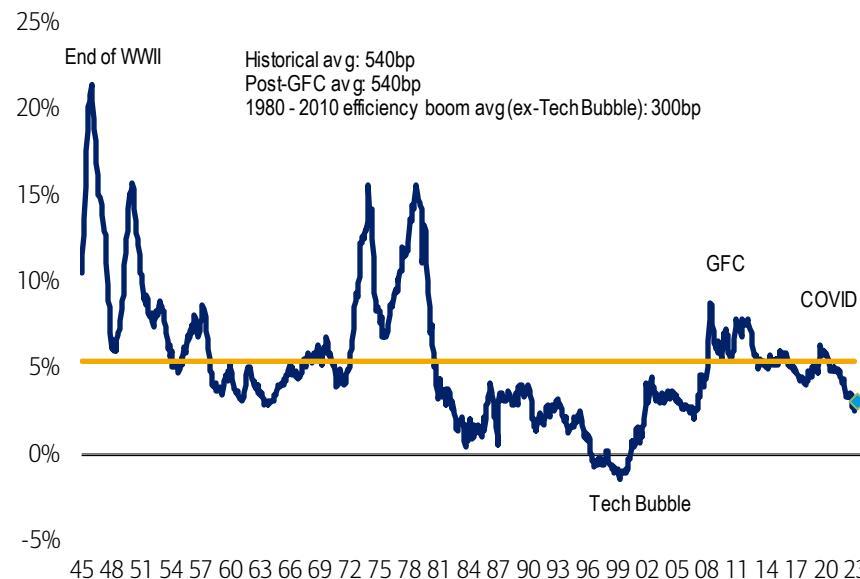
Model	Category	Time Horizon	2023 Target	Current Weight in Forecast
BofA Fair Value Model	Fundamental/Valuation	Medium Term	4,108	15%
Sell Side Indicator	Sentiment	Medium Term	4,725	40%
Earnings Surprise Indicator	Fundamental/Sentiment	Short-term	4,640	15%
Long-term Valuation Model	Valuation	Long-term	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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Exhibit 2: ERP should be lower than post-Global Financial Crisis average of 540bp

Normalized equity risk premium (ERP) with BofA normalized ERP forecast (300bp), 1945-8/23



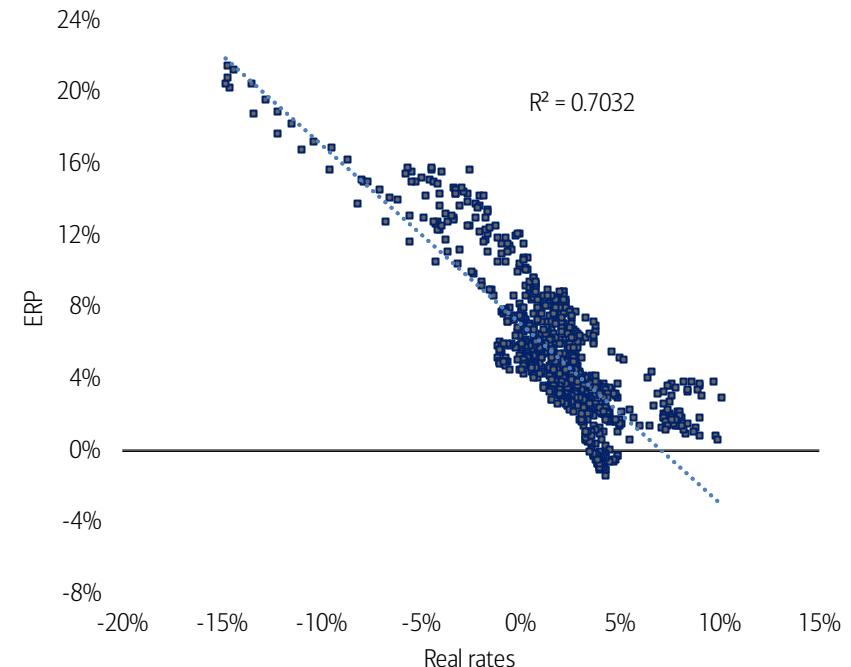
Source: BofA US Equity & Quant Strategy, Global Financial Data, Bloomberg

Note: Nominal ERP is calculated as the spread between the normalized earnings yield and real risk-free rate, where normalized EPS is based on a log linear regression of a blend of S&P 500 pro-forma EPS and operating EPS. The real rate is the difference between 1) 10-yr Tsy yield and 2) 10-yr breakeven, where prior to 1998, fwd 1-yr CPI was used as a proxy, which showed the strongest correlation to the 10-yr breakeven.

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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 (1945-8/23)



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

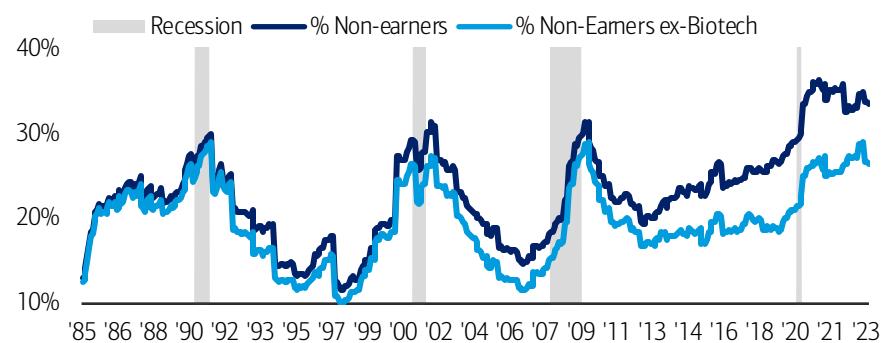


Source: FactSet, BofA US Equity & US Quant Strategy

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Exhibit 6: One third of Russell 2000 stocks (~20% of mkt. cap) are non-earners

% of Russell 2000 stocks that are non-earners, 1985-8/31/23

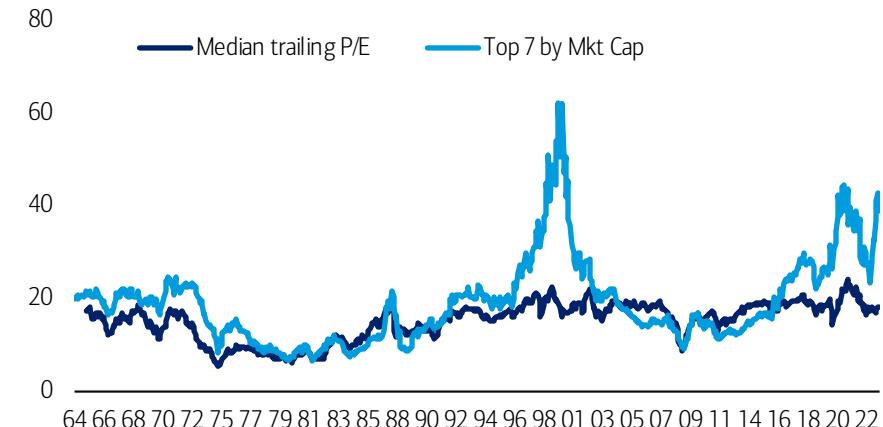


Source: FactSet, BofA US Equity & US Quant Strategy

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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 (1986-8/23)



Source: FactSet, BofA US Equity & Quant Strategy

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Exhibit 7: Large cap fundamentals more attractive and shorter duration than small caps

Index characteristics

	Russell 1000	Russell 1000 Growth	Russell 1000 Value	Russell 2000	Russell 2000 Growth	Russell 2000 Value
Dividend Yield	1.5%	0.9%	2.22%	1.7%	0.90%	2.3%
Payout Ratio	30%	24%	34%	41%	40%	43%
Long-term Growth expectations	11.3	13.6	7.8	13.8	18.3	7.3
Percentage of non-earners	7%	9%	6%	31%	36%	30%

Source: FactSet, BofA US Equity & Quant Strategy

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The thawing of the bears

Exhibit 8: Equity sentiment was unchanged in August after ticking up the prior two months (Sell Side Indicator)

Sell Side Indicator (SSI), as of 8/2023



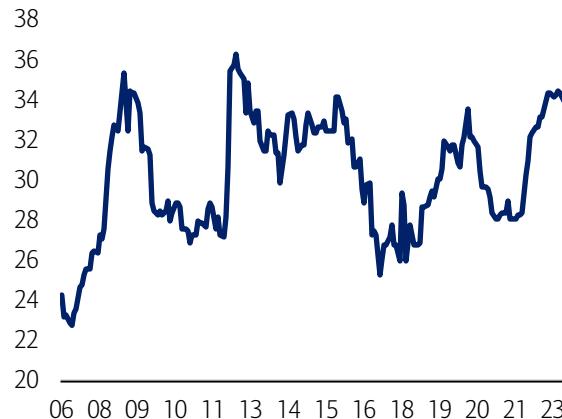
Source: BofA US Equity & Quant Strategy. The Sell Side Indicator above is intended to be an indicative metric only and may not be used for reference purposes or as a measure of performance for any financial instrument or contract, or otherwise relied upon by third parties for any other purpose, without 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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Positioning is as defensive as during the GFC

Exhibit 9: Sell Side survey: Asset allocators love bonds

Average recommended allocation to bonds by Wall Street strategists (2006-8/2023)

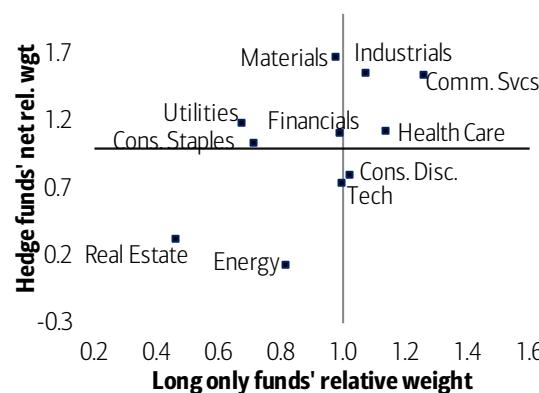


Source: BofA US Equity & Quant Strategy

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Exhibit 12: Industrials = only consensus cyclical long...

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

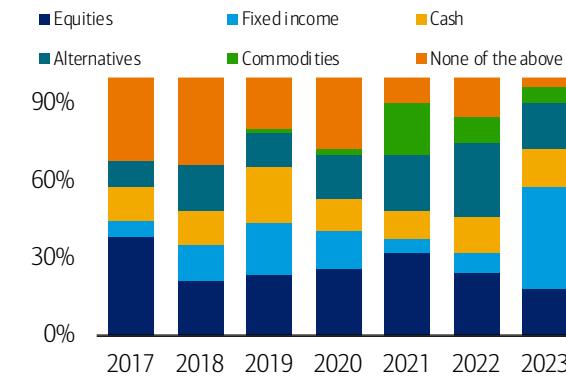


Source: BofA US Equity & Quant Strategy, FactSet Ownership

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Exhibit 10: GWIM survey: Advisors love bonds

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

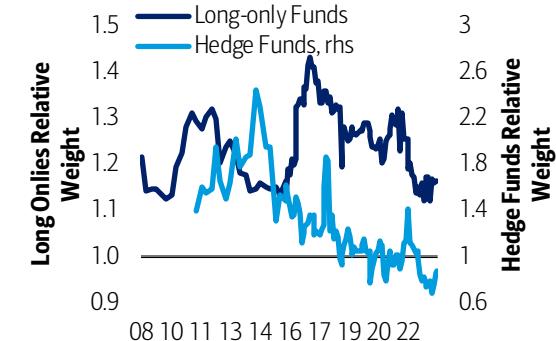


Source: Wealth Management Marketing Research, BofA US Equity & US Quant Strategy. GWIM = Global Wealth & Investment Management.

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Exhibit 11: Cyclical vs. defensive sector exposure near all-time lows

Long only fund (LO) and hedge fund (HF) relative exposure to cyclical vs. defensive* sectors within S&P 500 as of 8/31/2023



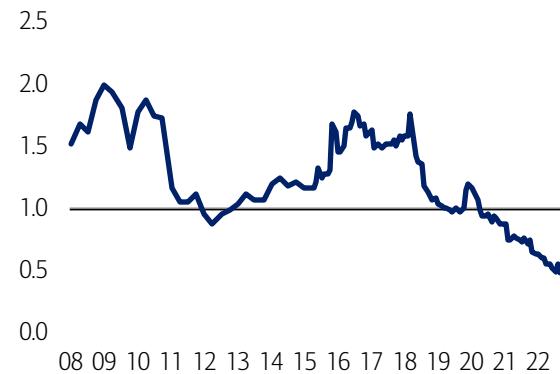
Source: FactSet Ownership, BofA US Equity & US Quant Strategy

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

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Exhibit 13: ...but defensive Conglomerates favored over cyclical Machinery

LO relative exposure to Machinery (cyclical) vs. Industrial Conglomerates (defensive) within S&P 500 as of 8/31/2023



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

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Exhibit 14: Growth PMs sold Tech, bought Health Care

LO relative exposure to Information Technology (cyclical) vs. Health Care (defensive) within S&P 500 as of 8/31/2023



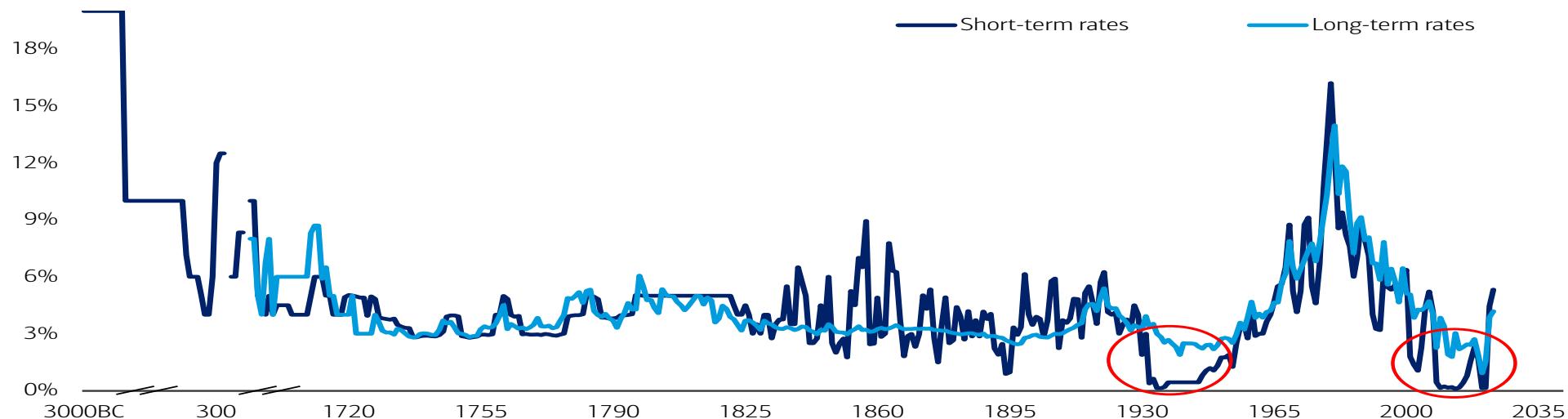
Source: FactSet Ownership, BofA US Equity & US Quant Strategy

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Just coming off 5000-year lows in rates

Exhibit 15: Rates to mean revert lower from last year? Rates are just off a 5000yr low
Interest rates since 3000 BC



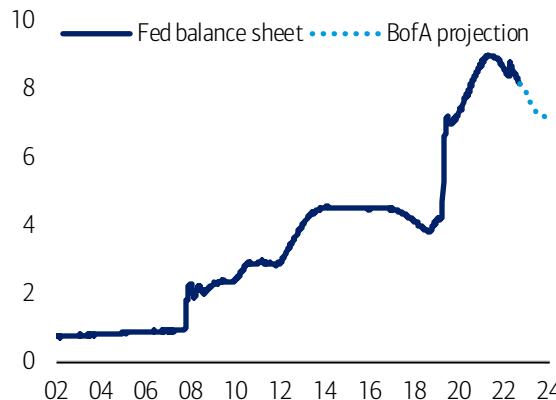
Source: Global Investment Strategy, Bank of England, Global Financial Data, Homer and Sylla "A History of Interest Rates" (2005)

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Supply/demand shift: buyers (Fed, China, Japan)

Exhibit 16: Fed normalization, T-bill supply on steroids

Fed balance sheet + BofA projection (\$T)

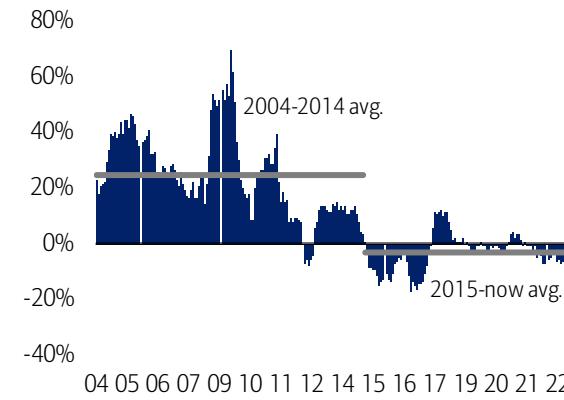


Source: Bloomberg, BofA Global Research

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Exhibit 17: China has been a net seller since 2015

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

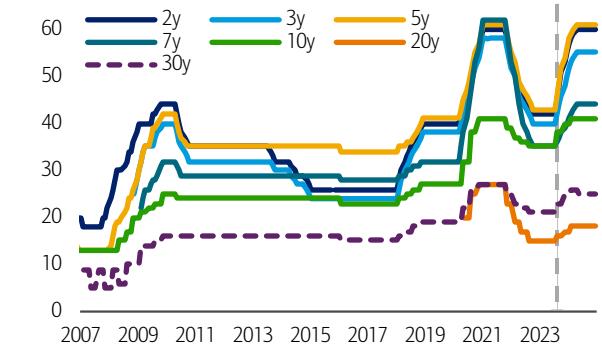


Source: Bloomberg, BofA Global Research

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Exhibit 18: 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

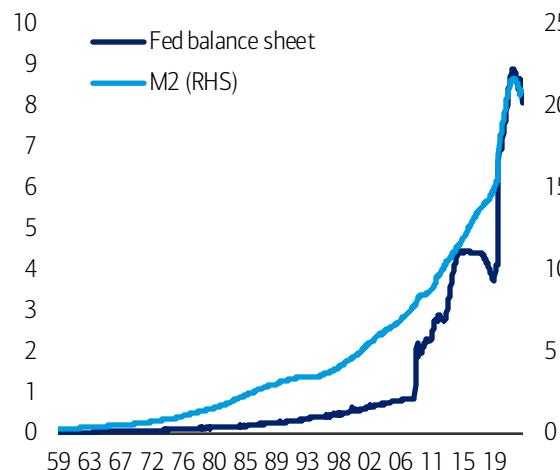
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Risks shifted from private to public sector

Exhibit 19: +\$4.0T in Fed balance sheet & +5.6T in M2 since 2019

Fed balance sheet and M2 money supply (\$T; 1959-8/2023)

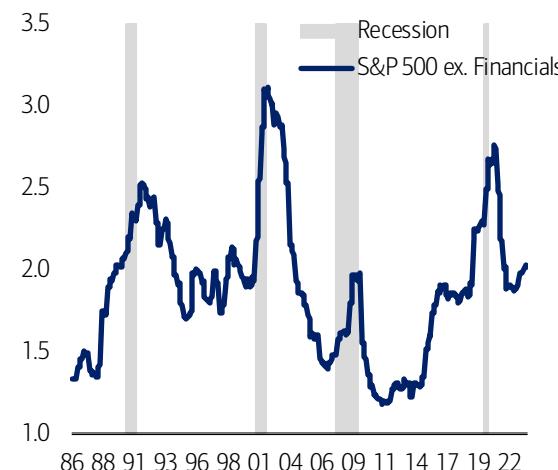


Source: Haver Analytics, Bloomberg, BofA US Equity & Quant Strategy

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Exhibit 20: S&P 500 leverage ex. Financials below COVID levels

S&P 500 ex-Financials Net Debt/EBITDA (1986-8/2023)



Source: FactSet, BofA US Equity & Quant Strategy

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Exhibit 21: Consumer balance sheets healthier than pre-COVID

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

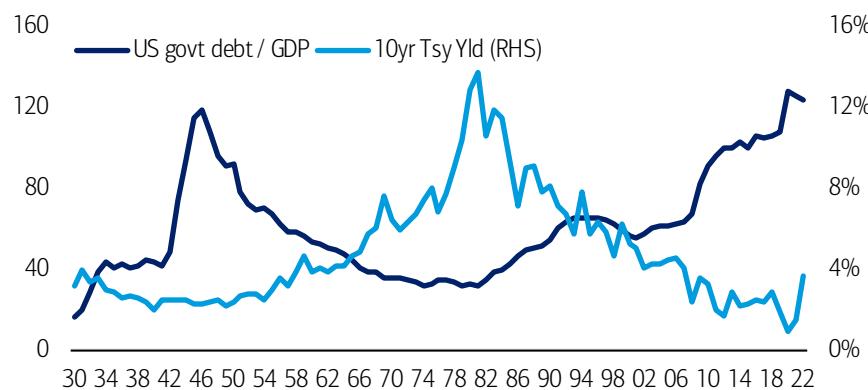


Source: Bloomberg, BofA US Equity & US Quant Strategy

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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 5yr	Next 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%
Following 1946 peak (118)	-7%	1%	55%	203%
Following 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

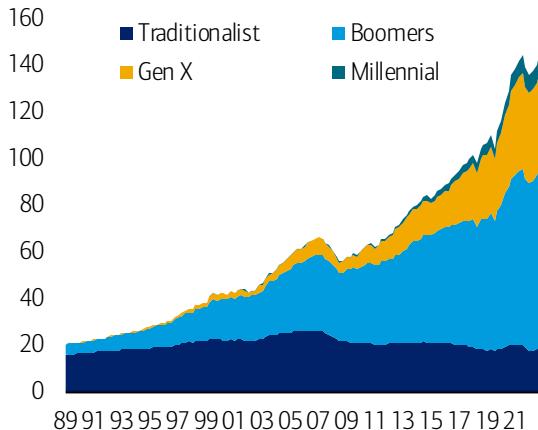
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Boomers vs. Millennials – Opposite impact from higher rates

Exhibit 30: Household net worth = \$146T (540% of GDP)
Boomers + Traditionalists = 2/3 of total net worth
Higher rates = higher interest income for older generations

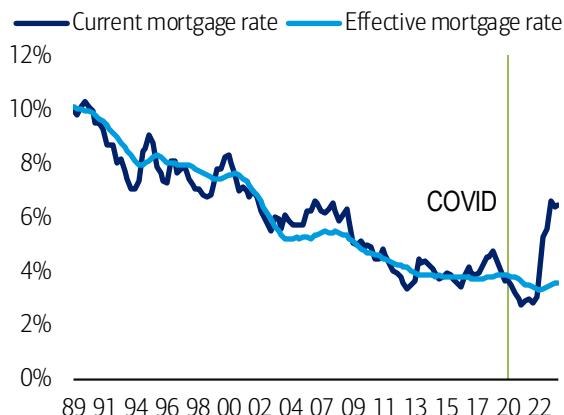
Household net worth by generation (1989-2Q23)



Source: Haver Analytics, BofA US Equity & Quant Strategy

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Exhibit 31: 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 (1989-2Q23)

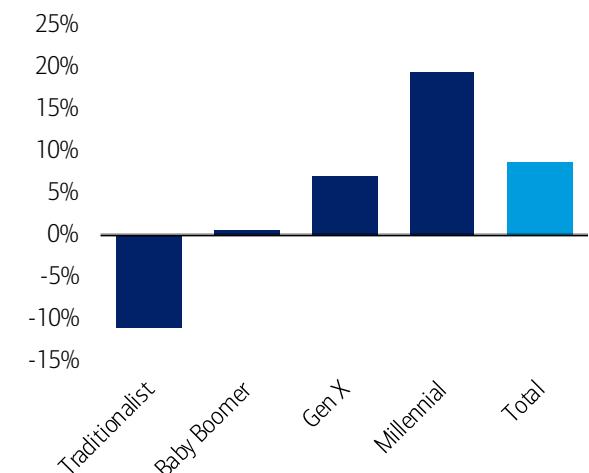


Source: Bloomberg, BofA US Equity & Quant Strategy

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Exhibit 32: ...except Millennials

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

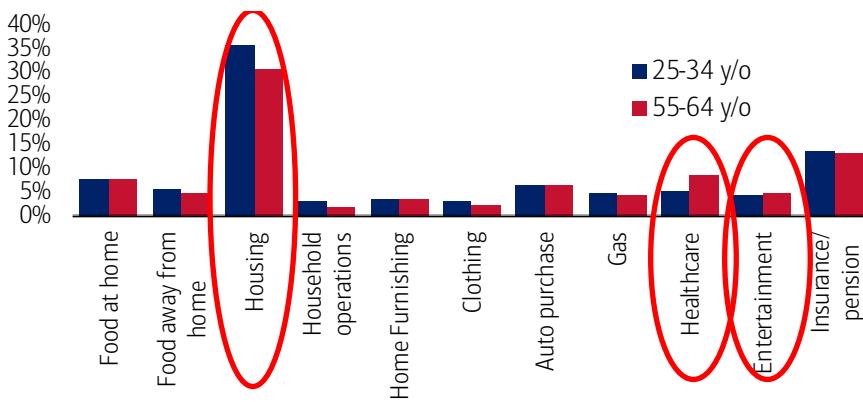


Source: Haver Analytics, BofA US Equity & Quant Strategy

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Exhibit 33: Millennials spend significantly more on housing, while Boomers spend more on health care and entertainment

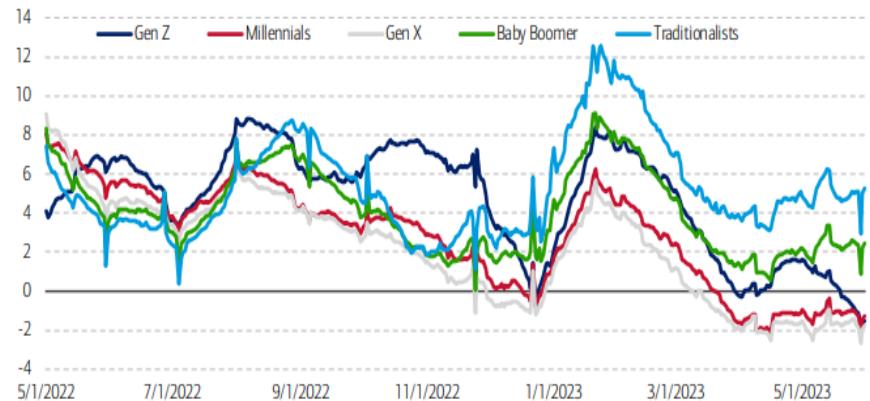
% share of expenditure by category (as of 2022)



Source: Haver Analytics, BofA Global Research

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Exhibit 34: A significant gap has opened up between younger and older generations' spending
Total credit and debit card spending per household, based on Bank of America card data, by age generation (daily data to May 31, 28-day moving average, % YoY)



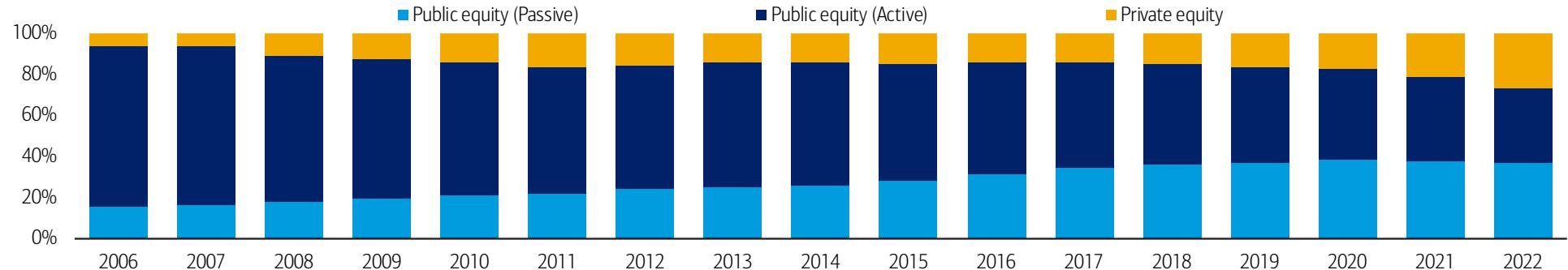
Source: Bank of America internal data, Bank of America Institute. Note the latest dip in the daily data is due to Memorial Day timing distortions.



Duration risks in new equity barbell: passive and private

Exhibit 35: Active public equity supplanted by passive & private equity

Pension Plan Asset Allocation: Public equity (Active)*, Public equity (Passive)* and 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.

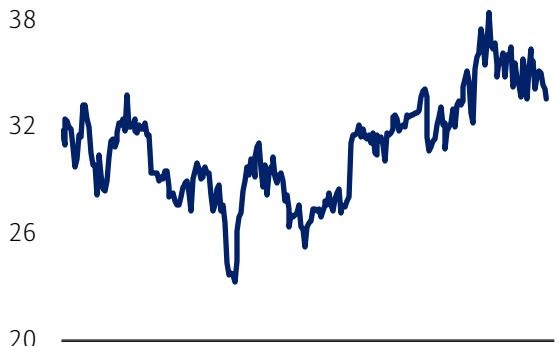
*We make assumptions on mix shift based on SimFund US AUM tracked in passive vs active.

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Exhibit 36: Near record duration risk in S&P 500

S&P 500 duration based on our DDM framework (as of 8/2023)

44

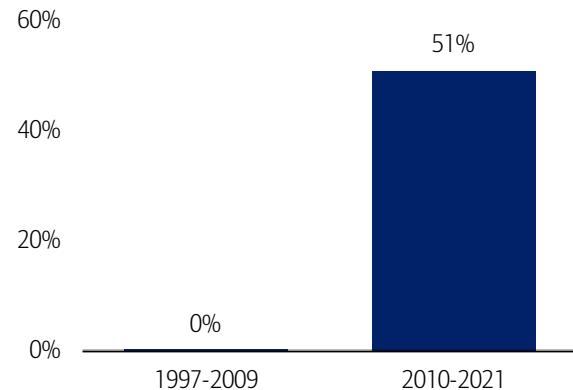


Source: BofA US Equity & Quant Strategy

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Exhibit 37: Over half of PE explained by QE, mostly in Tech, TMT, Consumer Disc (long duration)

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)



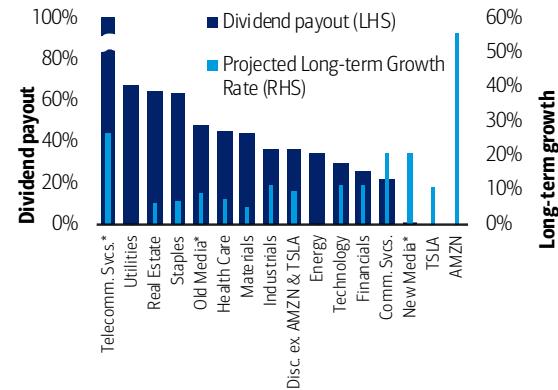
Source: FactSet, BofA US Equity & Quant Strategy

*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 38: 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 9/6/23



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.

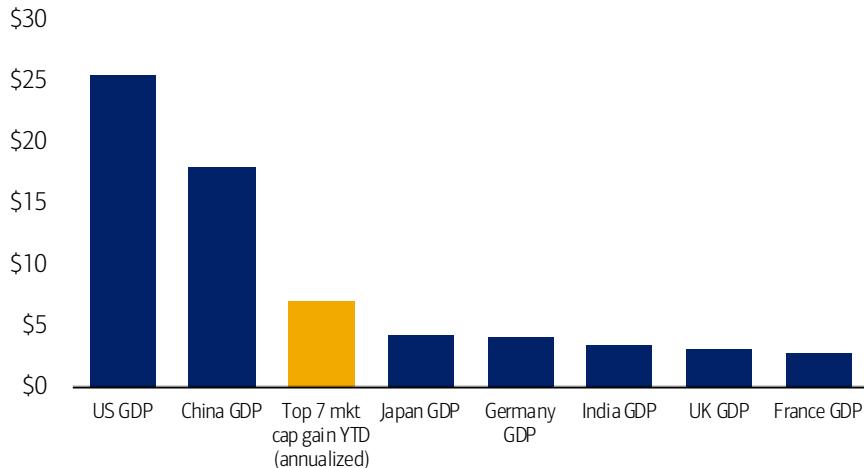
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Magnificent 7 drove returns in 1H, but crowding risk is rising

Exhibit 39: Top 7 YTD gains = 3rd largest economy

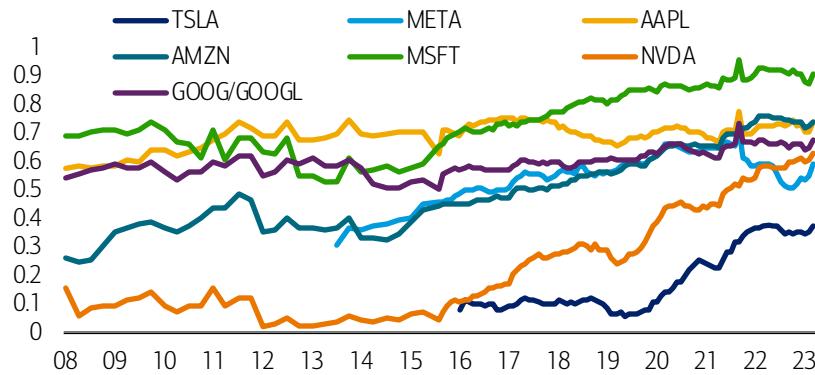
Top 7 market cap gain YTD (as of 9/6/2023) vs. 7 biggest economies (\$tn)



Source: BofA US Equity & Quant Strategy, Bloomberg

Exhibit 41: Critical mass: fewer funds left to buy biggest stocks

% of large cap long only active funds owning each ticker as of 8/31/2023



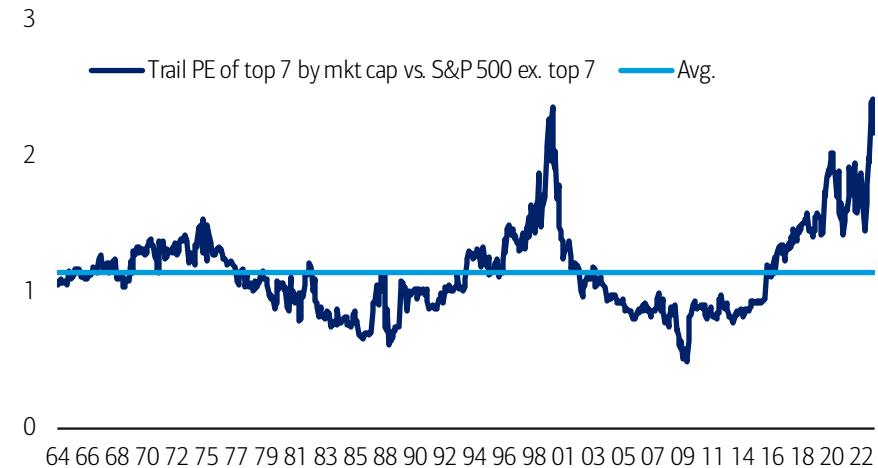
TSLA: Tesla, AMZN: Amazon, GOOG / GOOGL: Alphabet C / Alphabet A, META: Meta Platforms, MSFT: Microsoft, AAPL: Apple, NVDA: Nvidia

Source: FactSet Ownership, BofA US Equity & Quant Strategy

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Exhibit 40: 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 (1970-8/2023)

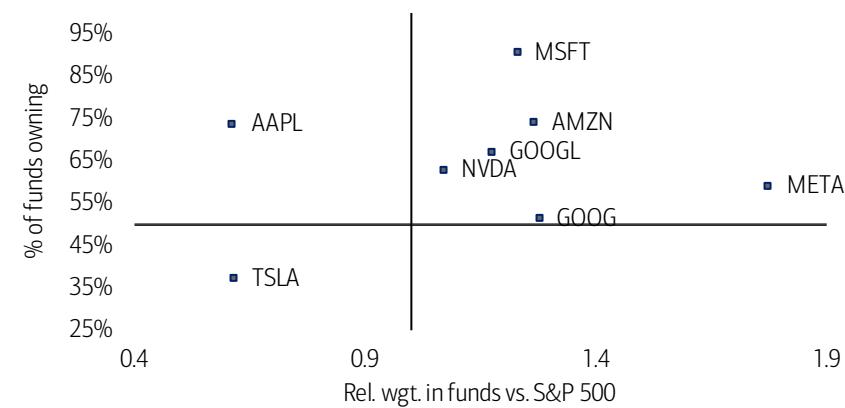


Source: BofA US Equity & Quant Strategy, FactSet

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Exhibit 42: Just AAPL and TSLA are overweight by active funds

Large cap long only funds holdings in magnificant 7 (as of 8/31/2023)



TSLA: Tesla, AMZN: Amazon, GOOG / GOOGL: Alphabet C / Alphabet A, META: Meta Platforms, MSFT: Microsoft, AAPL: Apple, NVDA: Nvidia

Source: FactSet Ownership, BofA US Equity & Quant Strategy

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The S&P 500 is statistically expensive on most measures

Exhibit 43: S&P 500 Valuations – shading indicates that metric is statistically expensive relative to history (as of 8/31/23)

S&P 500 valuation metrics

Metric	Current	Average	Avg. ex. Tech Bubble	Min	Max	% Above (below) avg	Z-Score	History
Trailing PE	20.5	14.8	14.5	5.2	30.5	38.3%	1.2	1960-present
Trailing GAAP PE	24.9	15.1	14.8	4.2	122.4	64.7%	1.1	1832-present
Forward Consensus PE	19.6	15.8	15.0	9.8	25.1	24.2%	1.1	1986-present
Trailing Normalized PE	22.6	19.1	17.8	9.2	34.5	18.8%	0.7	9/1987-present
Median Forward P/E	17.6	15.5	15.3	10.0	21.9	13.5%	0.9	1986-present
Shiller PE	30.8	17.4	16.8	4.8	44.2	77.2%	1.9	1881-present
P/BV	4.37	2.66	2.48	0.98	5.34	64.5%	1.7	1978-present
EV/EBITDA	13.8	10.5	10.2	6.0	17.1	31.1%	1.4	1986-present
Trailing PEG	2.79	1.67	1.64	1.05	3.24	67.6%	3.2	1986-present
Forward PEG	2.67	1.43	1.40	0.93	3.50	86.5%	3.4	1986-present
P/OCF	16.5	11.3	10.7	5.4	19.3	46.6%	1.6	1986-present
P/FCF	28.8	27.8	25.0	12.9	65.7	3.5%	0.1	1986-present
EV/Sales	2.78	1.97	1.91	0.86	3.40	40.8%	1.4	1986-present
ERP (Market-Based)	584	504	521	136	880	15.8%	-0.4	11/1980-present
Normalized ERP	276	348	395	-143	880	-20.9%	0.3	1987-present
S&P 500 Div. Yld. vs. 10yr Tsy. Yld.	0.35	1.23	1.25	0.17	4.20	-71.5%	1.4	1792-present
S&P 500 in WTI terms	55.4	26.7	24.4	2.7	175.3	107.4%	1.5	1960-present
S&P 500 in Gold terms	2.32	1.64	1.42	0.17	5.48	41.4%	0.6	1968-present
S&P 500 vs. R2000 Fwd. P/E	1.44	1.03	0.99	0.76	1.70	39.8%	2.1	1986-present
S&P 500 Market Cap/GDP	1.41	0.66	0.63	0.22	1.66	113.5%	2.2	1964-present

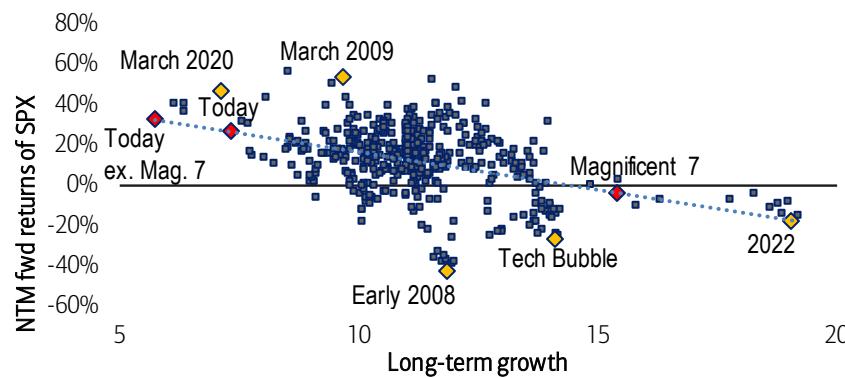
*Above average implied equities are attractive relative to bonds. Note: Trailing P/E based on GAAP EPS from 1960-77, Operating EPS from 1978-87, Pro forma EPS 1988-now. Trailing GAAP P/E based on GAAP P/E for entire series. Market-based ERP based on DDM-implied S&P 500 return less AAA corp bond yield. 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 44: 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 45: 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 8/23)

	Trailing 5-yr growth	Long-term growth (LTG) expected	LTG expected 1 yr ago
Energy	40%	-7%	20%
Materials	17%	-1%	3%
Utilities	3%	3%	6%
Health Care	13%	4%	4%
Staples	7%	6%	7%
Real Estate	6%	6%	7%
S&P 500	12%	7%	11%
Financials	10%	9%	10%
Tech	15%	10%	12%
Cons. Disc.	8%	12%	28%
Industrials	6%	14%	19%
Comm. Svcs.	7%	15%	8%

Source: BofA US Equity & Quant Strategy, FactSet

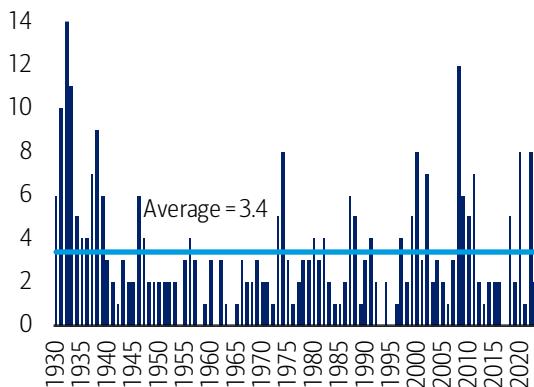
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Pullbacks are normal, time is on your side for equities

Exhibit 46: 5%+ pullbacks occur more than three times a year on average

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

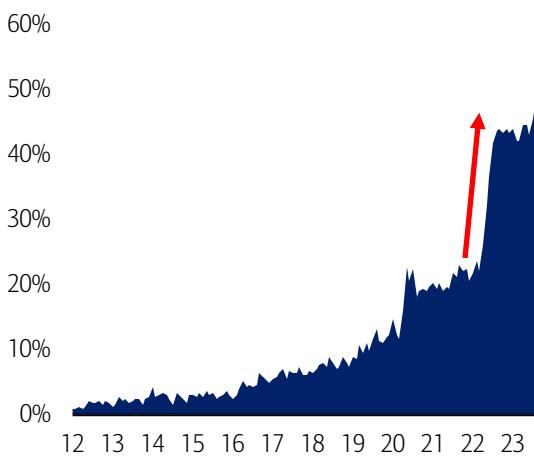


Source: BofA US Equity & Quant Strategy, Bloomberg

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Exhibit 49: Massive shift in focus to short-term trading

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

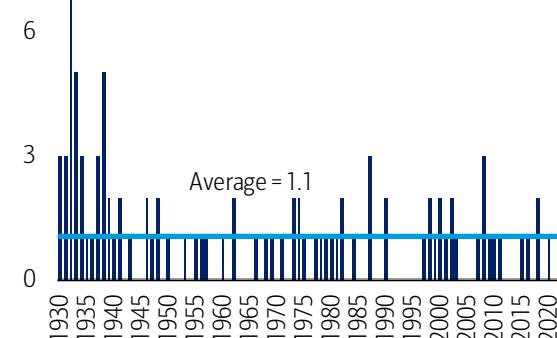


Source: BofA Global Research, Bloomberg

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Exhibit 47: 10%+ corrections occur once a year on average

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

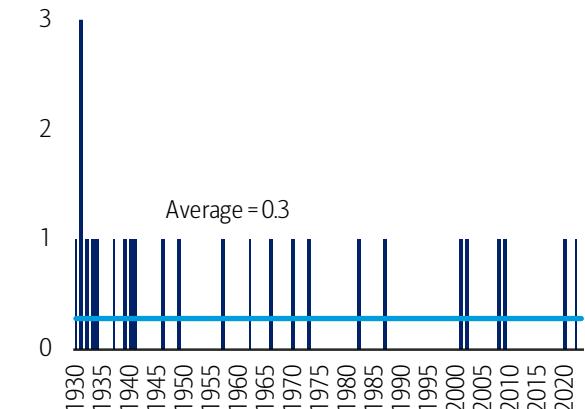


Source: BofA US Equity & Quant Strategy, Bloomberg

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Exhibit 48: 20%+ pullbacks occur every 3-4 years on average

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

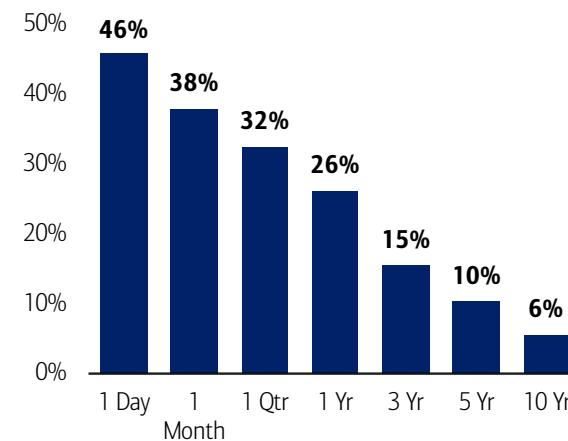


Source: BofA US Equity & Quant Strategy, Bloomberg

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Exhibit 50: But as time horizons grow, equity losses plummet

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

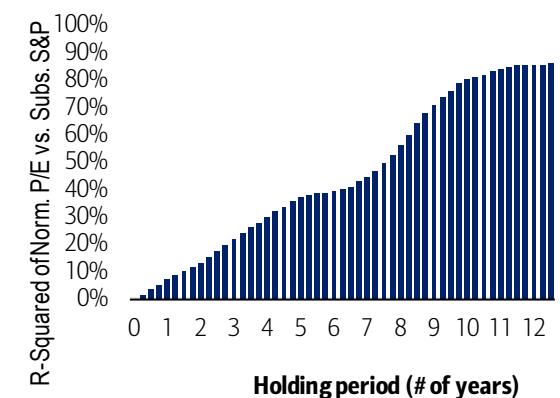


Source: S&P, Bloomberg, BofA US Equity & Quant Strategy

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Exhibit 51: Valuation is almost all that matters for long-term stock returns, and suggests 4-5% 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

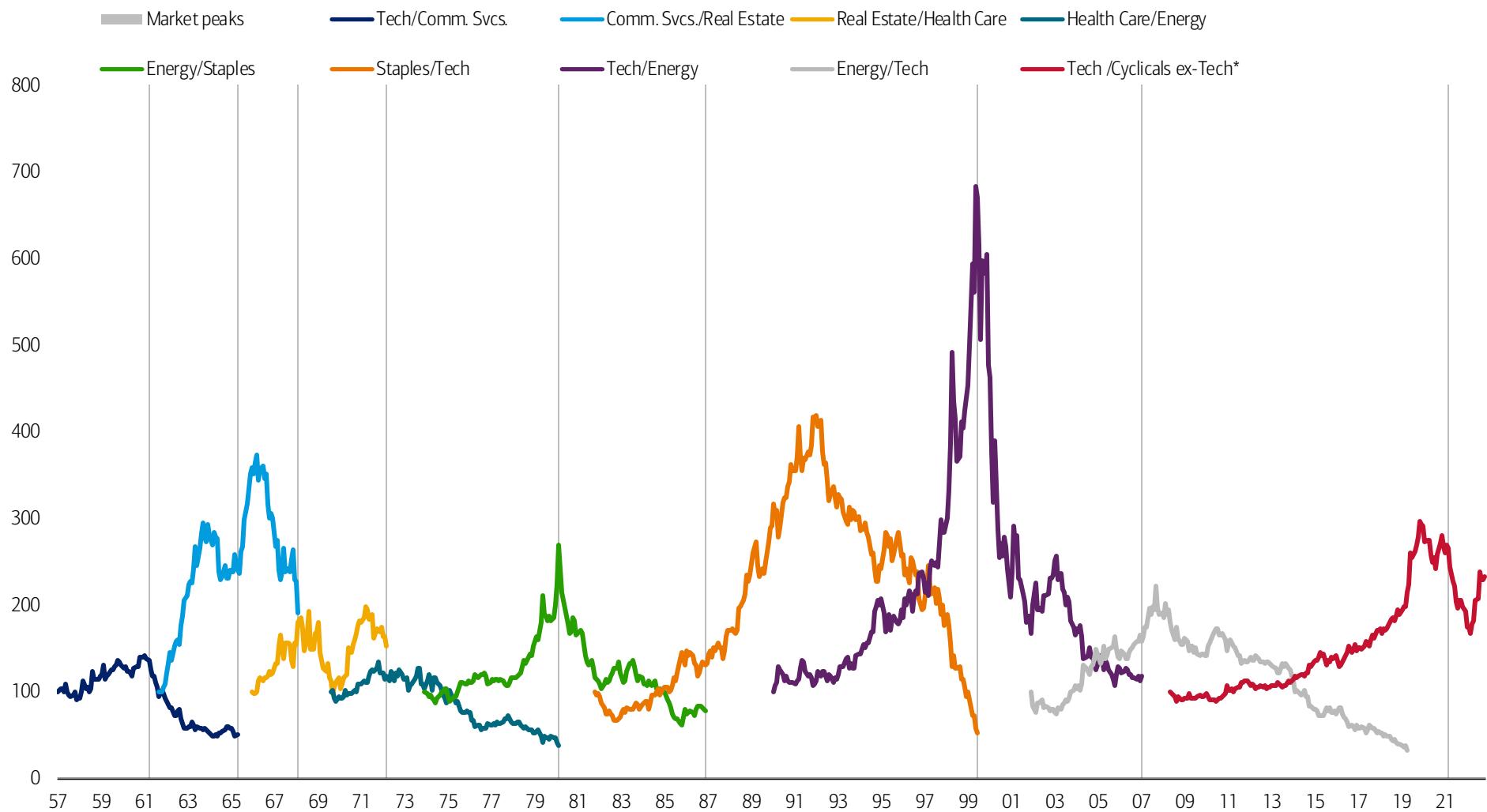
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Leadership changes far from over

Exhibit 52: 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 *Cyclicals ex-Tech include Energy, Materials, Financials, Industrials.

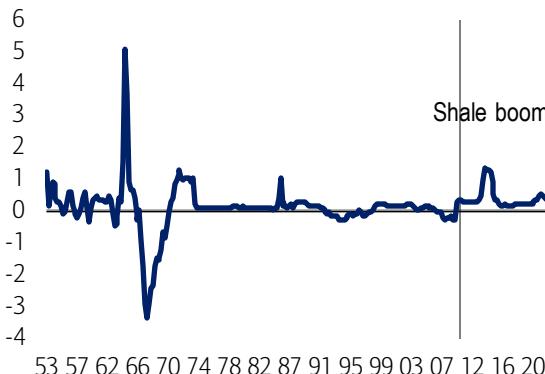
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Higher oil, but not a shock to the system

Exhibit 53: 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)

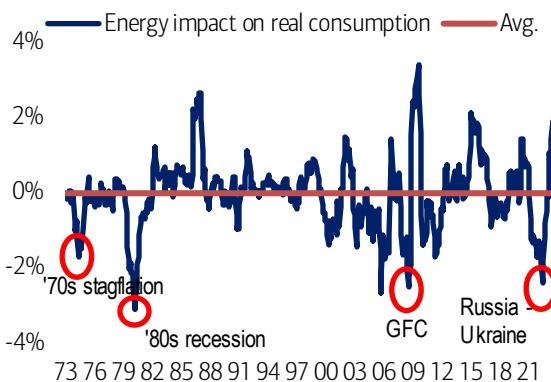


Source: Haver, FactSet, BofA US Equity & Quant Strategy

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Exhibit 54: The recent jump in oil (+6% YoY) is not a ‘shock’ – lower energy prices added 70bps 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 55: 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)

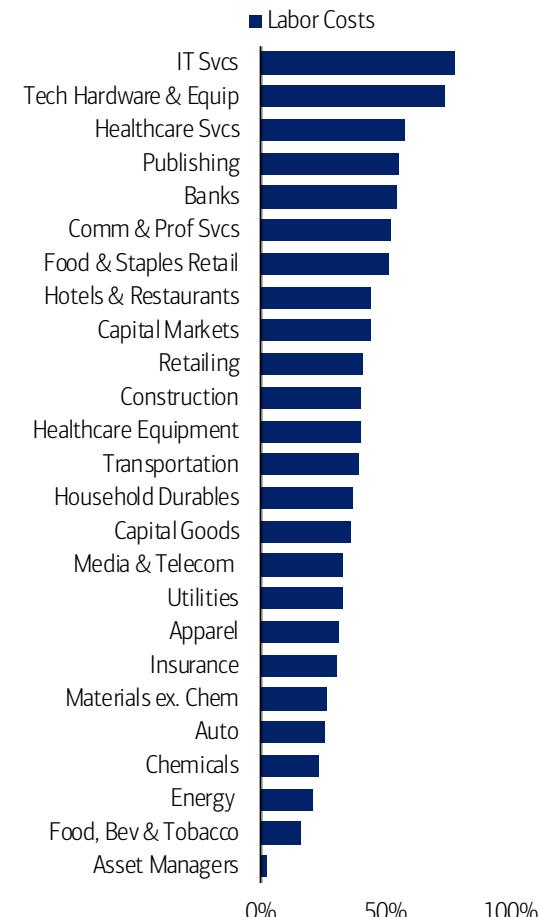


Source: BEA, BofA US Equity & Quant Strategy

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Exhibit 56: 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

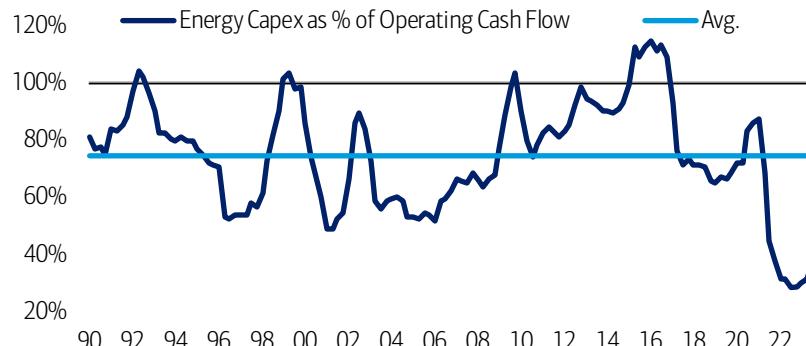
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Bad actors of the last crisis, capital-starved since GFC, are higher quality

Exhibit 57: Minimal supply response in Energy...

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

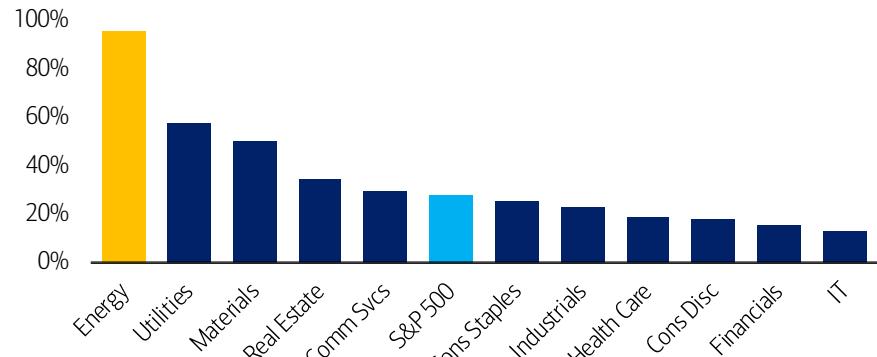


Source: BofA US Equity & Quant Strategy, FactSet

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Exhibit 58: ...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

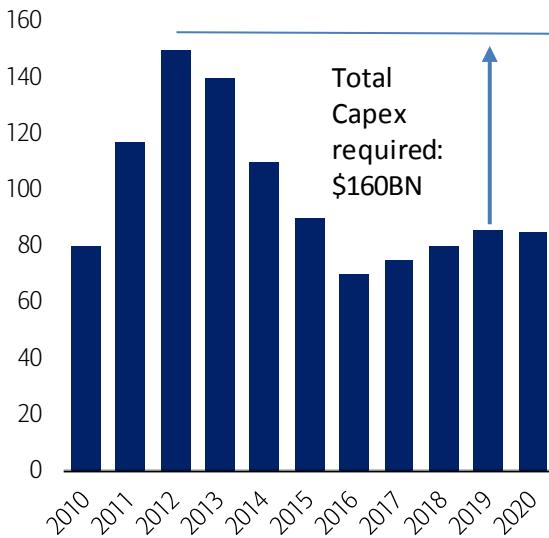


Source: ICE Data Indices, LLC, BofA US Equity and Quant Strategy

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Exhibit 59: Mining capacity needs to double to get to net zero

Global Metals and Mining capex (\$bn)

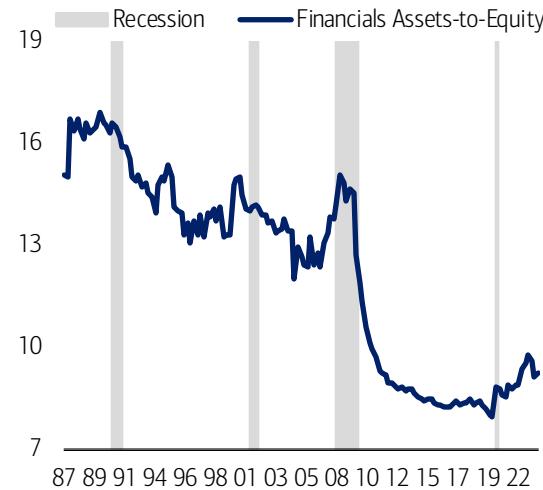


Source: S&P, BofA Global Research

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Exhibit 60: Financials leverage is still near record lows

Financials Assets-to-Equity (1987-2Q23)



Source: FactSet, BofA US Equity & Quant Strategy

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Exhibit 61: Media & Health Care lead in default risk

High yield sector default estimates

Sector	Face	DC Face	DR	DPx
Media	73,634	9,012	12.2%	67
Healthcare	119,504	11,808	9.9%	65
Technology	64,934	5,882	9.1%	55
Cable	99,281	7,679	7.7%	68
Retail	74,819	4,753	6.4%	69
Telecoms	68,145	3,169	4.7%	59
Autos	87,538	3,950	4.5%	73
Food Producers	24,779	682	2.8%	79
Chemicals	44,077	785	1.8%	68
Utilities	33,334	502	1.5%	87
Financials	115,296	1,399	1.2%	51
Travel	88,421	1,007	1.1%	86
Energy	170,492	352	0.2%	78
Capital Goods	63,910	0	0.0%	0
Transportation	38,497	0	0.0%	0
Packaging/Paper	39,516	0	0.0%	0
Real Estate	61,331	0	0.0%	0
Gaming	44,335	0	0.0%	0
Metals	30,219	0	0.0%	0
Services	48,632	0	0.0%	0

Source: BofA Global Research

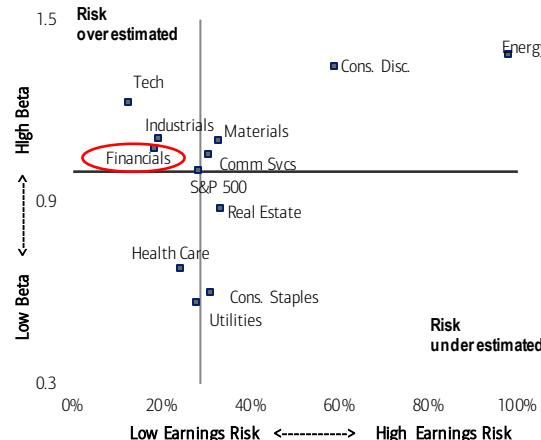
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Mispriced risk in equities

Exhibit 62: 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 8/23)

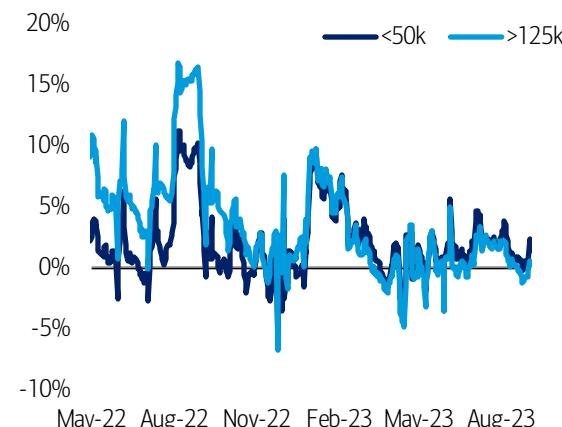


Source: S&P, FactSet, BofA US Equity & Quant Strategy. Note: Financials excludes BRK/B.

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Exhibit 63: Luxury defensive? Higher-income consumer spend has been lagging...

Total spending ex grocery 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 64: ...while the lower income cohort has seen stronger real wage growth

Real wage growth in highest vs. lowest income group (ppt) (as of 7/2023)

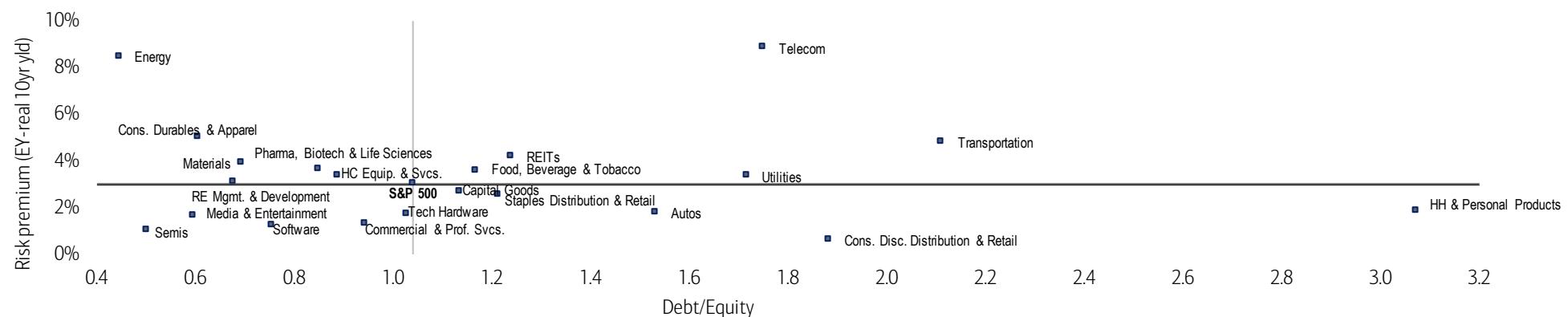


Source: Current Population Survey, Bureau of Labor Statistics, and Federal Reserve Bank of Atlanta Calculations, BofA US Equity & Quant Strategy

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Exhibit 65: 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

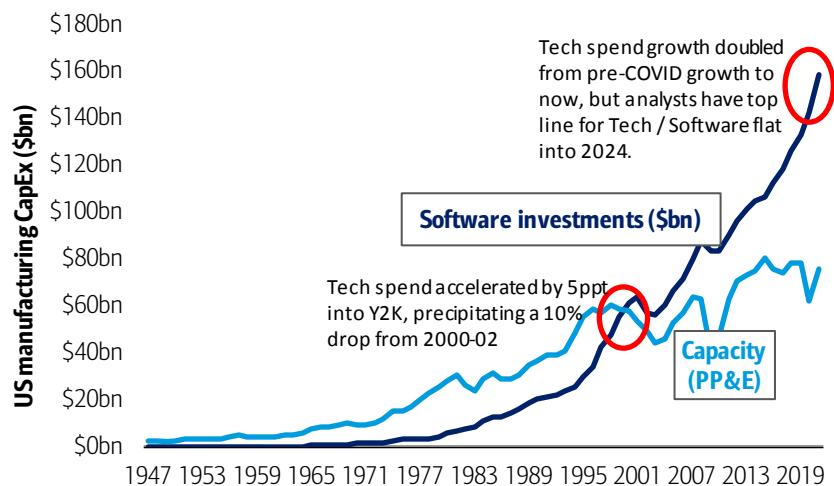
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Risks to software: demand pull forward, AI won't float all boats

Exhibit 66: Secular shift afoot?

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

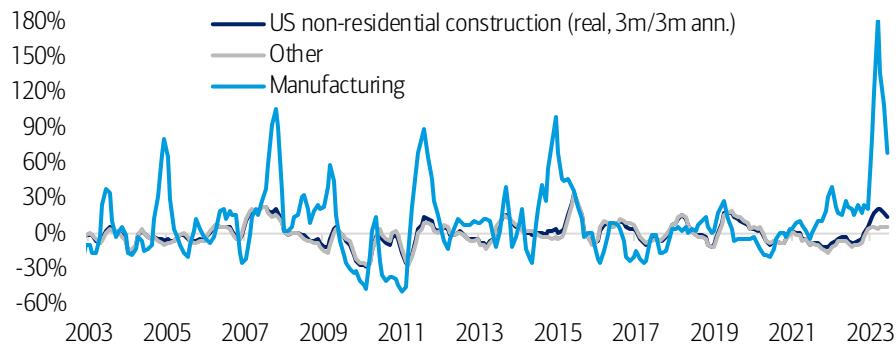


Source: BofA Global Research, BEA. Software investments include both third-party purchased and custom software. Equipment investments include industrial and transportation equipment and exclude information processing equipment (e.g., computers, communication equipment, etc.)

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Exhibit 68: Strength within non-residential investment has come from manufacturing structures on the back of fiscal support and reshoring

US non-residential construction growth

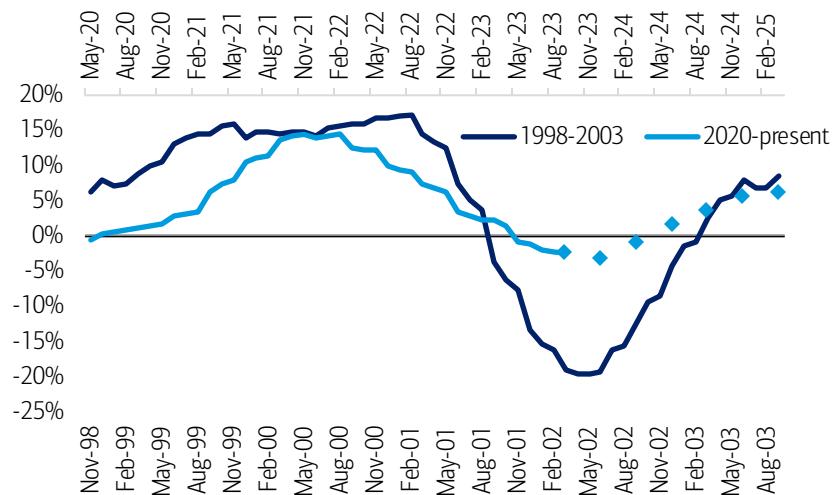


Source: BofA Global Research

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Exhibit 67: 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 69: 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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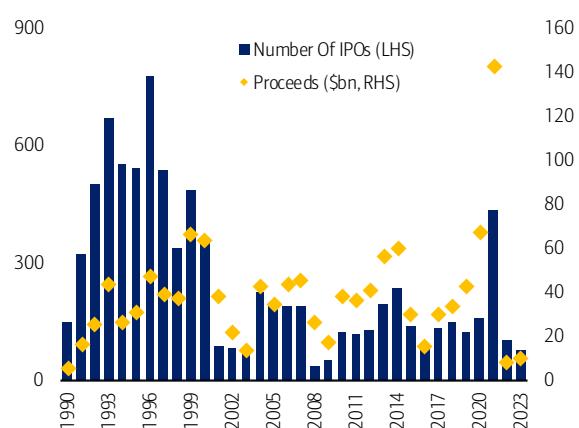


Supply / demand equity backdrop

Bad appetite for new issuance

Exhibit 70: Still tepid activity; low deal values

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



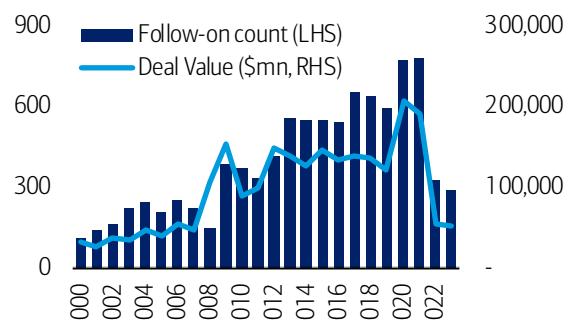
Note: IPOs of US companies on major US exchanges

Source: Dealogic data historically, FactSet data for 2021, BofA US Equity & US Quant Strategy

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Exhibit 73: Follow-ons drying up, valuations dropping

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

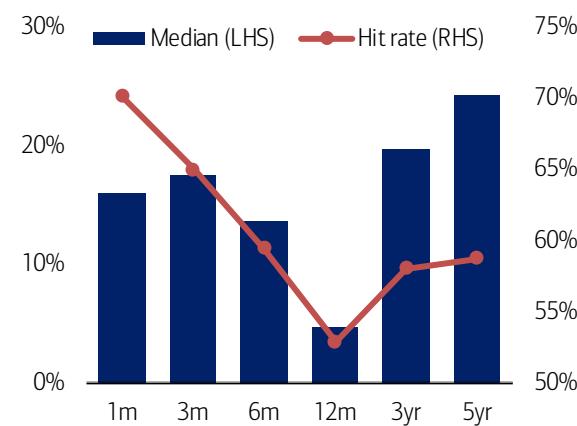


Source: FactSet, BofA US Equity & US Quant Strategy

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Exhibit 71: 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'21)

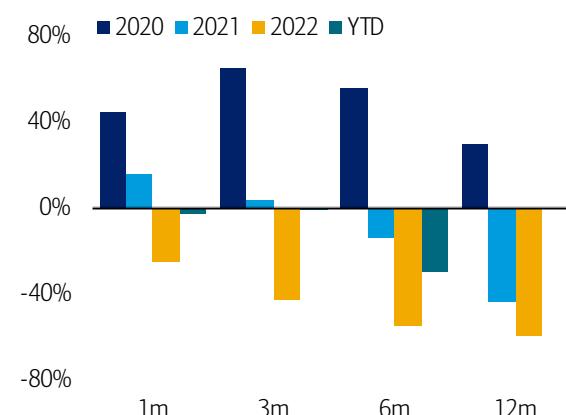


Source: FactSet, BofA US Equity & US Quant Strategy

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Exhibit 72: 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)

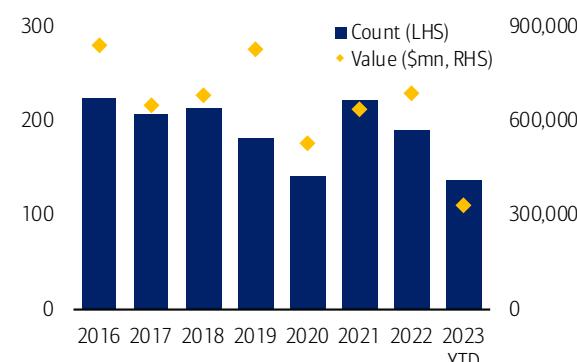


Source: FactSet, BofA US Equity & US Quant Strategy

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Exhibit 74: 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)

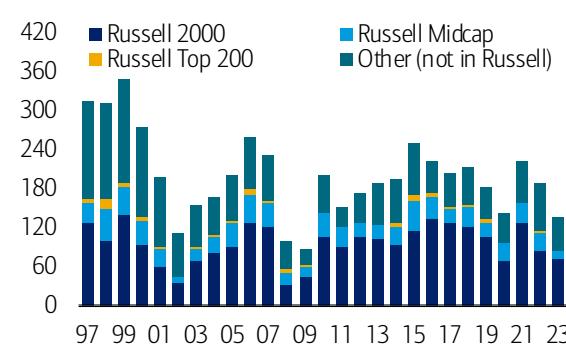


Source: FactSet, BofA US Equity & US Quant Strategy

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Exhibit 75: 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)



Source: FactSet, BofA US Equity & US Quant Strategy

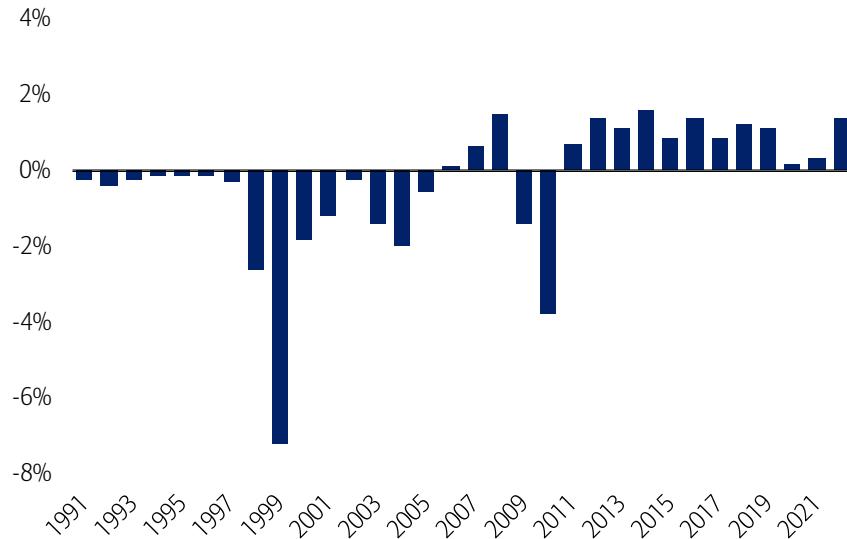
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Demand: Buybacks dwindling as cost of capital increases

Exhibit 76: 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 78: 2Q buybacks are -26% YoY

2Q23 buyback growth by sector

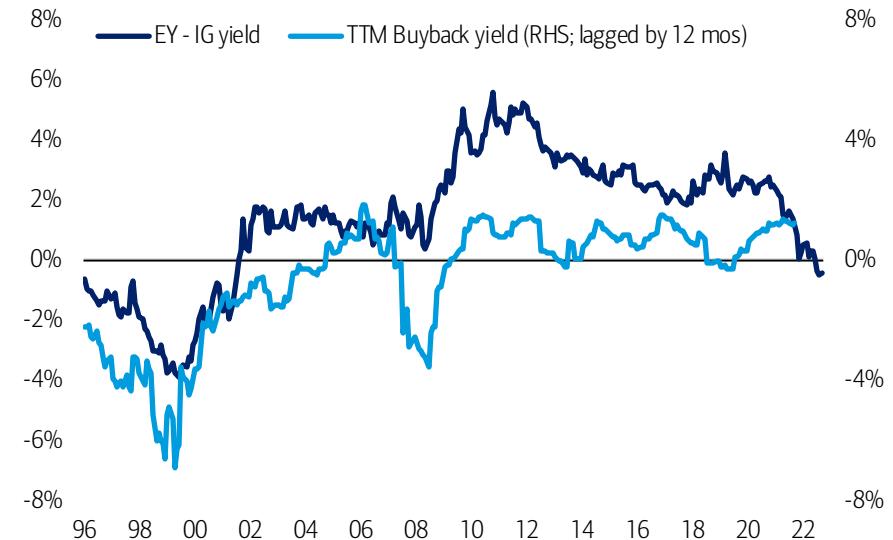
Sector	Aggregate YoY	Contribution to Agg. Change
Consumer Discretionary	-41%	17%
Consumer Staples	-66%	12%
Energy	10%	-3%
Financials	2%	-1%
Health Care	-50%	14%
Industrials	-37%	12%
Information Technology	-29%	33%
Materials	-67%	11%
Real Estate	6%	0%
Communication Services	-13%	8%
Utilities	-121%	-3%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

Source: FactSet, BofA US Equity & US Quant Strategy

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Exhibit 77: Higher borrow cost likely to pressure buybacks

S&P 500 EPS yield - IG yield vs. TTM buyback yld with 12-mo lag (1996-8/23)

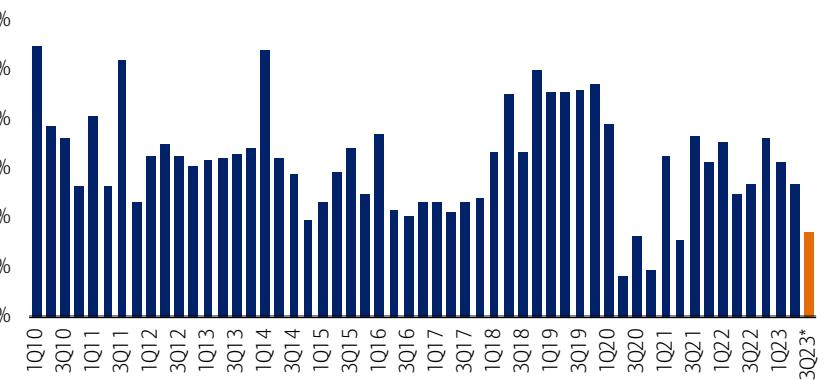


Source: FactSet, Bloomberg, BofA US Equity & Quant Strategy

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Exhibit 79: Buyback slowdown: on track for the weakest quarter in 2+ years

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



Source: BofA Securities, Bloomberg. *3Q23 based on data through Sept. 22, annualized for the full quarter.

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Earnings outlook

Exhibit 80: We forecast flat earnings growth in 2023, followed by 8% 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	-1%	\$247.9	12%	\$222.3	0%	\$244.1	10%	\$218.0	-2%	\$235.0	8%
Sector (\$billions)													
Consumer Discretionary	110.5	146.0	32%	165.4	13%	165.7	50%	192.8	16%	126.9	15%	143.4	13%
Consumer Staples	116.7	120.9	4%	129.5	7%	121.1	4%	128.6	6%	117.9	1%	126.2	7%
Energy	202.9	140.4	-31%	140.0	0%	138.9	-32%	132.5	-5%	134.2	-34%	153.4	14%
Financials	304.4	310.8	2%	331.4	7%	308.4	1%	324.8	5%	305.9	1%	320.3	5%
Health Care	309.2	260.6	-16%	291.9	12%	260.2	-16%	293.9	13%	266.6	-14%	294.0	10%
Industrials	141.4	158.5	12%	177.0	12%	158.0	12%	174.8	11%	152.1	8%	169.5	11%
Information Technology	354.0	363.7	3%	422.1	16%	363.2	3%	414.1	14%	338.2	-4%	375.3	11%
Materials	64.1	49.8	-22%	52.5	5%	50.0	-22%	52.5	5%	52.5	-18%	53.0	1%
Real Estate	50.4	52.7	5%	55.3	5%	53.3	6%	56.7	6%	50.7	1%	52.4	3%
Communication Services	148.9	173.0	16%	201.1	16%	183.3	23%	209.3	14%	170.6	15%	190.5	12%
Utilities	51.0	54.5	7%	59.2	9%	55.3	8%	59.6	8%	53.7	5%	56.8	6%
S&P 500	1,853.4	1,830.9	-1%	2,025.4	17%	1,857.5	0%	2,039.6	10%	1,769.3	-5%	1,934.8	9%
S&P 500 ex. Financials	1,549.0	1,520.0	-2%	1,694.0	11%	1,549.0	0%	1,714.8	11%	1,463.4	-6%	1,614.5	10%
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%	1,329.2	-1%	1,461.1	10%
S&P 500 ex. Energy	1,650.5	1,690.5	2%	1,885.4	12%	1,718.6	4%	1,907.0	11%	1,635.1	-1%	1,781.4	9%
Energy Sector (\$bn)	202.9	140.4	-31%	140.0	0%	138.9	-32%	132.5	-5%	134.2	-34%	153.4	14%
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

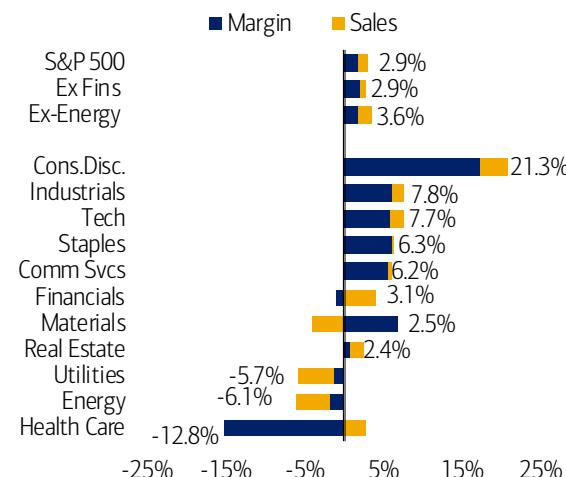
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2Q results: solid beat & raise quarter, muted reactions

Exhibit 81: Margins did the work in 2Q

S&P 500 2Q23 earnings beat by sector, decomposed into sales vs. margin beat

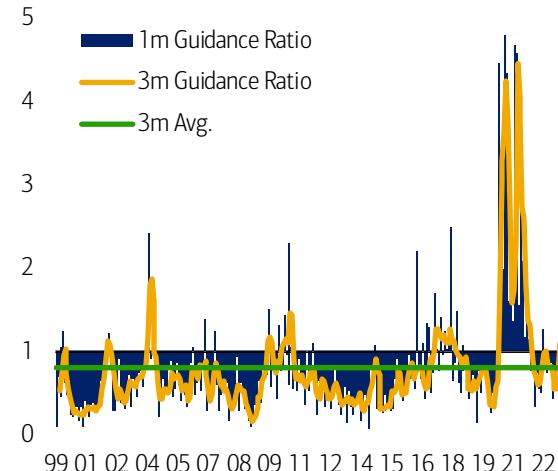


Source: FactSet, BofA US Equity & Quant Strategy

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Exhibit 82: Our 3m guidance ratio remains strong at 1.2x

S&P 500 Management Guidance Ratio (# Above vs. Below Consensus) – as of 9/22/23

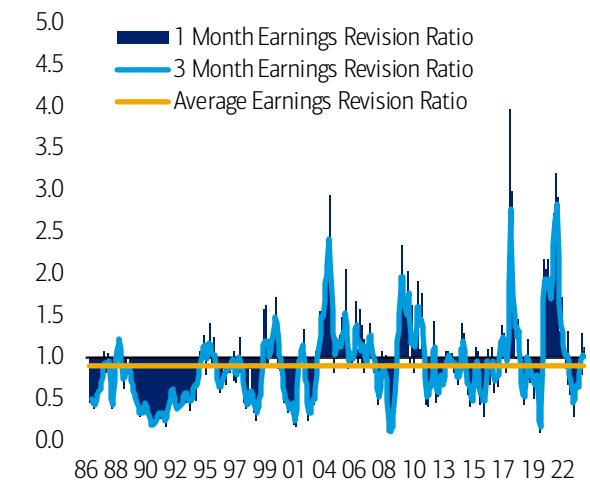


Source: BofA US Equity and Quantitative Strategy

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Exhibit 83: Our 3m earnings revision ratio is above average at 1x

S&P 500 earnings estimate revision ratio, 1/86-8/23

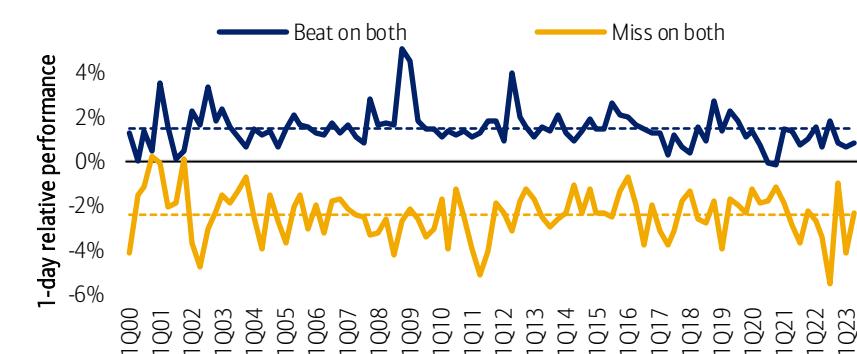


Source: BofA US Equity and Quant. Strategy, I/B/E/S

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Exhibit 84: Earnings reactions were skewed to the downside

Rel. 1-day post-reporting performance (vs. S&P 500) on EPS & sales surprise (1Q00-2Q23)

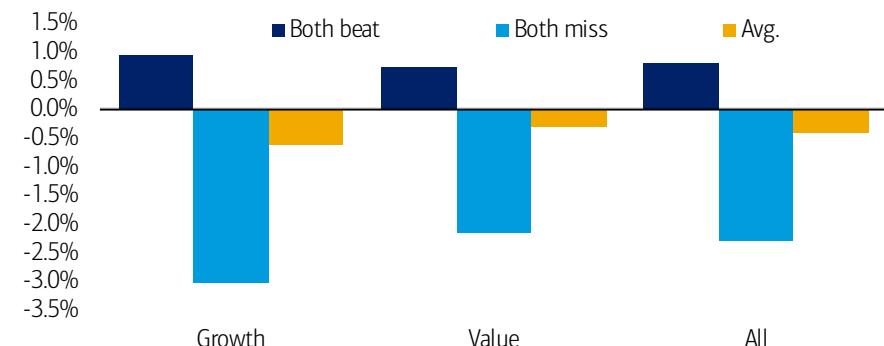


Source: FactSet, BofA US Equity & Quant Strategy

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Exhibit 85: Reactions to misses were particularly negative for Growth stocks

Rel. 1-day post-reporting performance (vs. S&P 500) by Russell styles



Source: FactSet, BofA US Equity & Quant Strategy

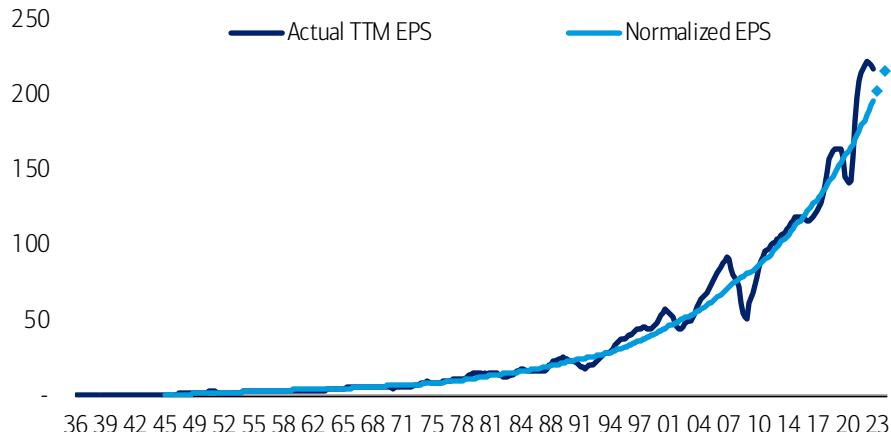
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Exiting a great earnings era for MNCs, hyper-growth stocks...

Exhibit 86: Cyclical peak: Normalized earnings suggests flat earnings growth through 2024

Trailing 12-mo. actual EPS vs. normalized EPS (1936-4Q22; dots = 2023 and 2024 normalized EPS)

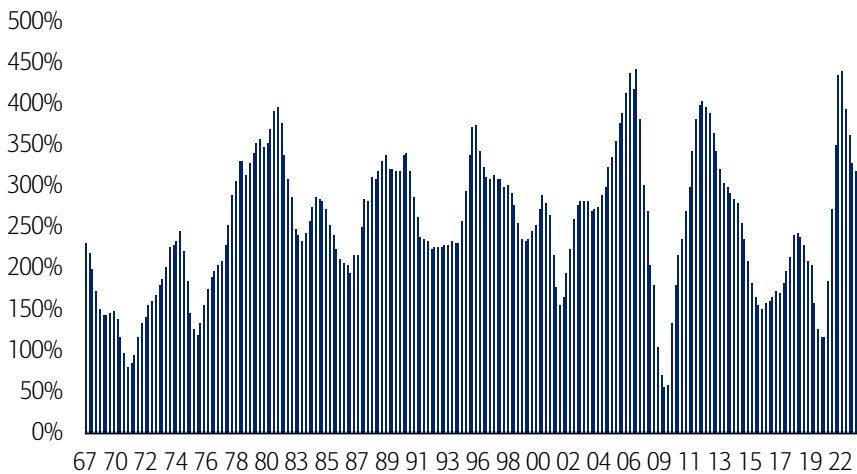


Source: BofA US Equity & Quant Strategy, Haver Analytics, FactSet. Pro-forma EPS used since 1988, Operating EPS used between 1977-1988, GAAP EPS (adjusted for write-offs) used from 1936-1977.

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Exhibit 88: Secular peak: record 20-yr growth since World War II

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

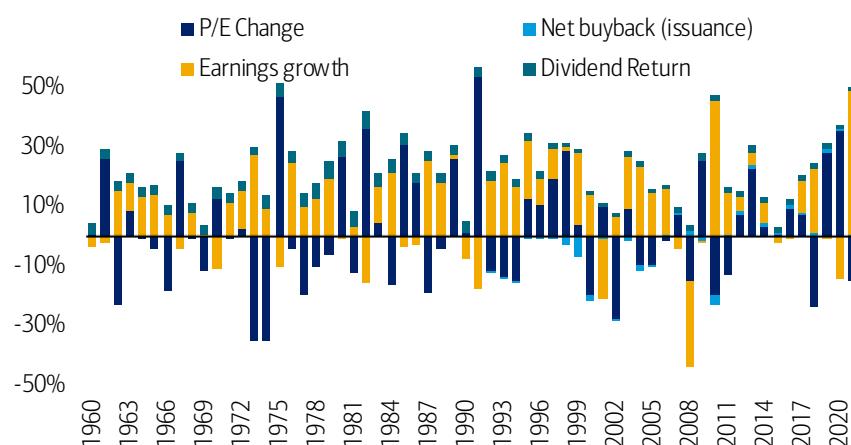


Source: Haver Analytics, BofA US Equity & Quant Strategy. GAAP EPS used prior to 1977, operating EPS used after.

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Exhibit 87: Buybacks have added 1ppt/yr of EPS over the past decade

S&P 500 total return decomposition, 1960-2022

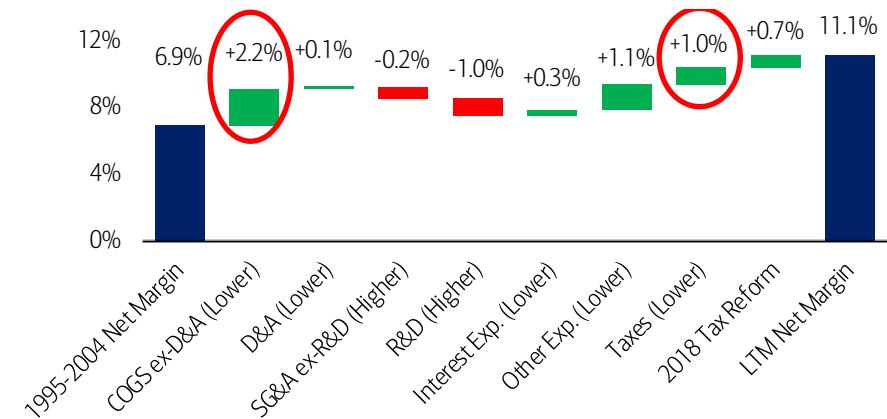


Source: BofA US Equity & Quant Strategy, FactSet, Bloomberg

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Exhibit 89: 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

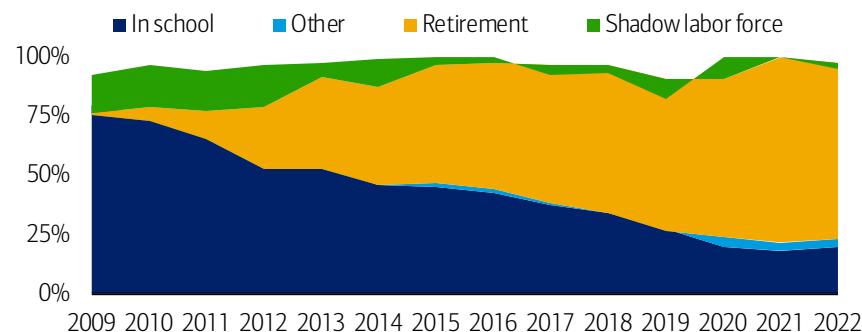
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Next bull case for margins & multiples: productivity & efficiency

Exhibit 90: Structural drivers for tight labor market: aging demographics, early retirees

% contribution to the total change in LFP since '98

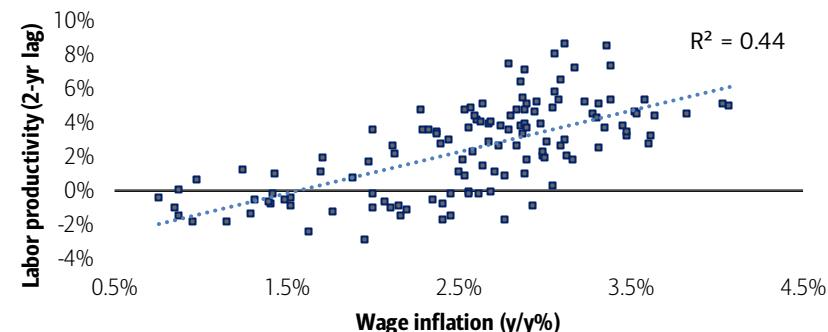


Source: FRB Atlanta, BofA US Equity & Quant Strategy. Note: Disability/Illness and Family Responsibilities are not included.

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Exhibit 91: Wage inflation has driven labor productivity growth with a multi-year lag

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

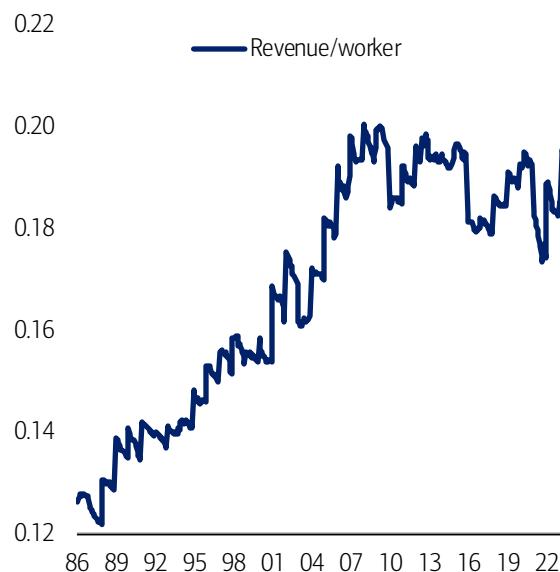


Source: Bureau of Labor Statistics, BofA Global Research. Note: Quarterly data of US manufacturing labor productivity versus average hourly earnings of production & nonsupervisory employees

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Exhibit 92: Labor efficiency improvements stalled amid ZIRP

S&P 500 \$M revenue per year per worker (1986-present)

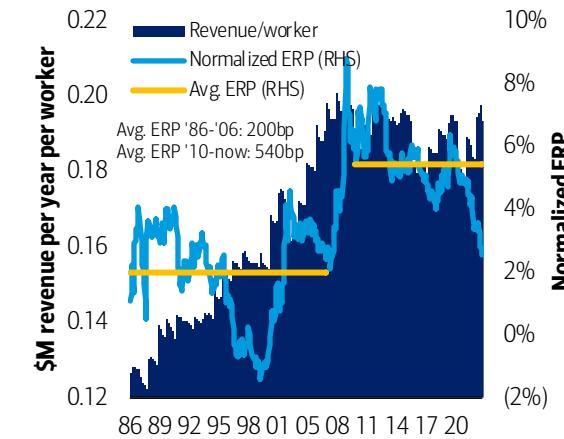


Source: BofA US Equity & Quant Strategy, Bloomberg, FactSet

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Exhibit 93: Higher ERP amid stalled productivity

S&P 500 \$M revenue per year per worker (CPI adjusted) vs. Normalized ERP (1986-8/2023)

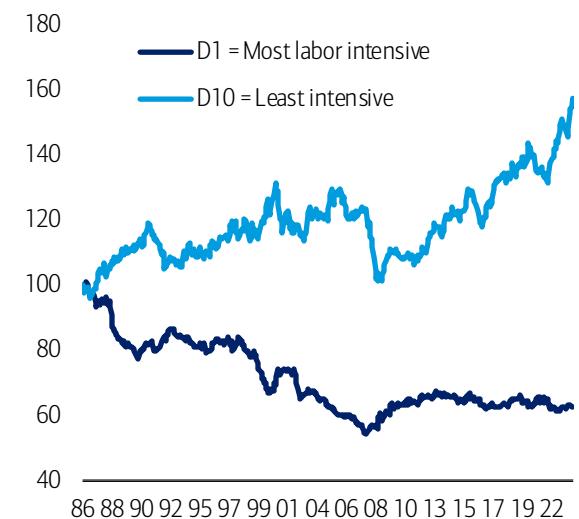


Source: BofA US Equity & Quant Strategy, Bloomberg, Haver Analytics, FactSet.
Norm. ERP = norm. earnings yield - real risk-free rate, where norm. EPS is based on a log linear regression of a blend of S&P 500 pro-forma EPS and operating EPS. The real rate is the difference between 1) 10-yr Tsy yield and 2) 10-yr breakeven, where prior to 1998, fwd-1yr CPI was used as a proxy, which showed the strongest correlation to the 10-yr breakeven

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Exhibit 94: Labor lightness chronically outperforms

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



Source: BofA US Equity & Quant Strategy, FactSet

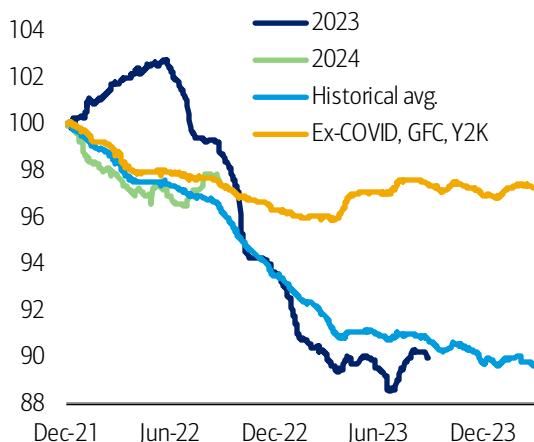
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Don't underestimate Corporate America

Exhibit 95: 2023 expectations have stabilized

S&P 500 historical FY2 EPS revisions vs. 2023 consensus EPS (2023 as of 9/22/23)

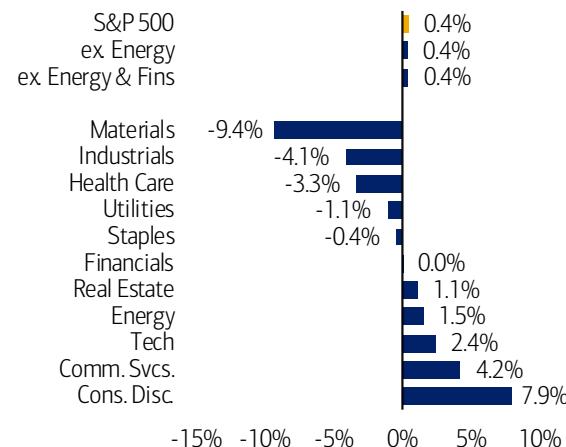


Source: FactSet, BofA US Equity & Quant Strategy

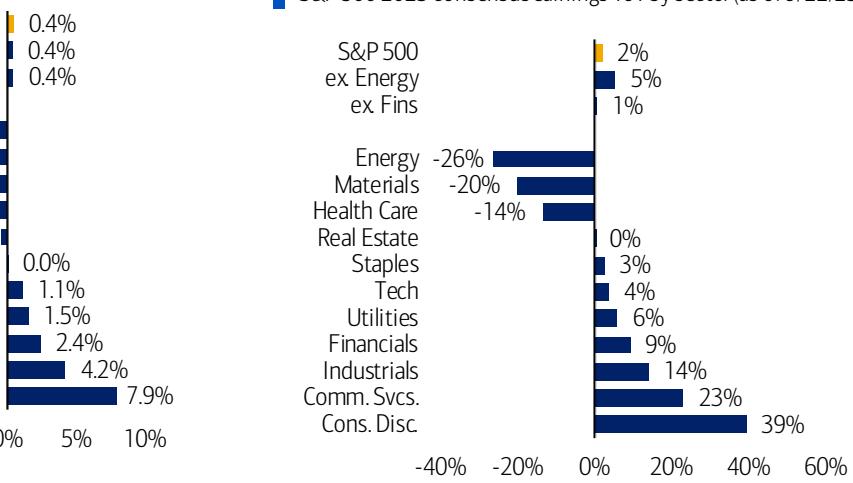
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Exhibit 96: 2H EPS is up 0.4% since June

S&P 500 2H earnings revision since 6/30/23 (as of 9/22/23)



Source: BofA US Equity & Quant Strategy, FactSet

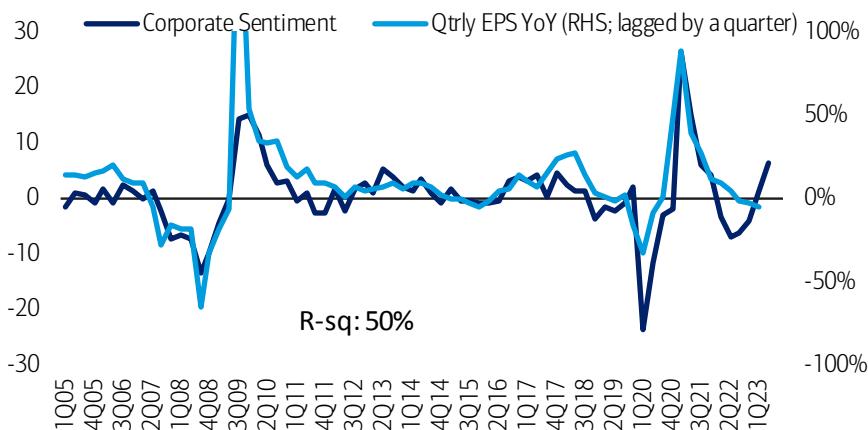


Source: FactSet, BofA US Equity & Quant Strategy

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Exhibit 98: Corporate sentiment improved, pointing to an earnings recovery

S&P 500 avg. sentiment YoY vs. 4Q EPS YoY with 1Q lag 1Q05-8/28/23

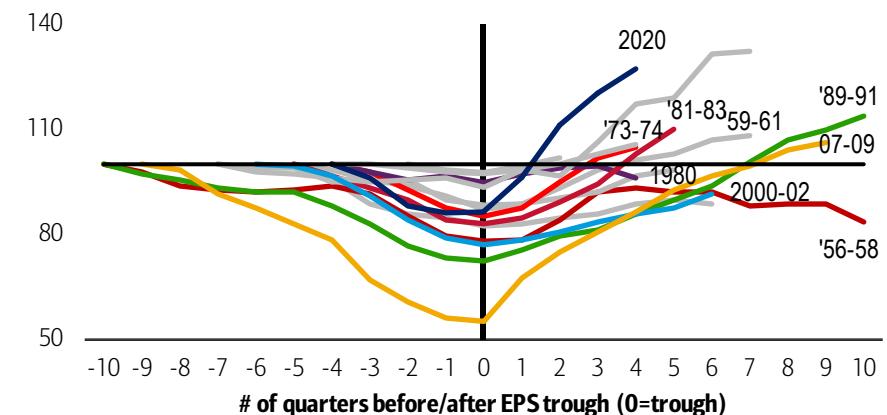


Source: BofA Global Research, FactSet

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Exhibit 99: 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

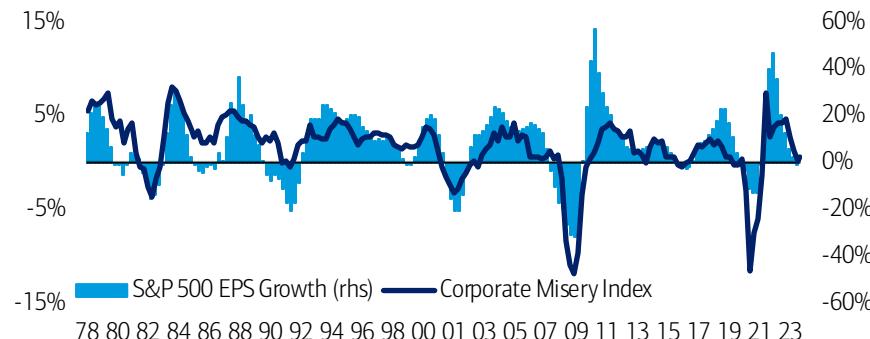
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Corporate Misery building but should improve from here

Exhibit 100: Our BofA Corporate Misery has been falling over the past year

BofA Corporate Misery Indicator (lower=more miserable) 4Q78-3Q23 (as of 8/31/2023)



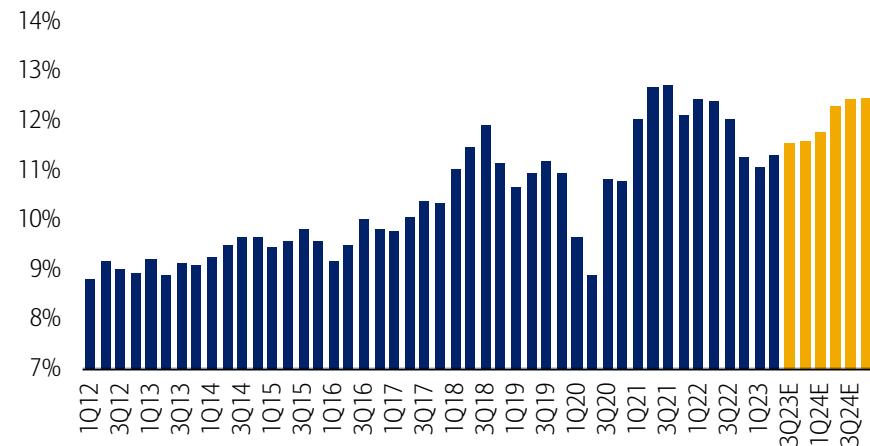
Disclaimer: The indicator identified as BofA Corporate Misery Indicator above is intended to be an indicative metric only and may not be used for reference purposes or as a measure of performance for any financial instrument or contract, or otherwise relied upon by third parties for any other purpose, 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 101: Analysts expect that margins already troughed

S&P 500 quarterly net margins ex-Financials (2012-4Q23E)



Source: FactSet, BofA US Equity & Quant Strategy

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Exhibit 102: Biggest margin improvement expected in Communication Services and 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%	8.3%	7.2%	7.4%	8.6%	9.0%	8.0%	
Consumer Staples	6.9%	7.2%	7.1%	6.6%	6.7%	6.7%	6.6%	6.3%	6.1%	6.5%	6.1%	6.0%	6.4%	6.7%	6.5%	6.3%	
Energy	4.5%	6.5%	9.0%	11.1%	10.7%	14.7%	14.4%	13.0%	12.6%	10.0%	10.8%	10.5%	10.5%	10.9%	11.1%	10.9%	
Financials	23.0%	21.1%	19.6%	17.5%	18.3%	17.0%	15.0%	15.9%	18.4%	17.6%	17.5%	17.5%	18.7%	18.2%	18.3%	19.0%	
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%	9.5%	9.2%	9.6%	9.5%	
Industrials	7.0%	9.4%	9.4%	8.2%	8.1%	10.3%	9.6%	9.8%	9.5%	11.3%	10.5%	10.3%	10.2%	12.1%	11.5%	11.1%	
Information Technology	25.0%	25.7%	25.9%	24.5%	25.2%	23.9%	24.0%	24.4%	22.8%	23.9%	23.9%	23.9%	25.1%	24.8%	25.0%	25.5%	26.7%
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%	10.5%	12.0%	11.1%	11.2%	
Real Estate	36.3%	37.5%	36.0%	35.3%	37.1%	36.1%	37.1%	36.1%	37.1%	37.1%	34.9%	35.0%	34.9%	35.4%	35.3%	35.1%	
Communication Services	18.7%	18.8%	17.8%	16.2%	16.8%	14.3%	12.9%	12.1%	13.9%	16.1%	16.5%	16.8%	17.1%	18.2%	17.9%	18.2%	
Utilities	13.0%	15.0%	18.1%	14.2%	15.2%	11.9%	13.5%	9.1%	10.4%	12.2%	14.5%	12.3%	14.2%	13.3%	17.3%	13.4%	
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%	11.8%	12.3%	12.4%	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%	13.2%	
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%	12.4%	12.6%	12.6%	
ex. Energy	14.0%	14.3%	13.9%	12.9%	13.4%	12.7%	12.1%	11.6%	12.0%	12.3%	12.4%	12.5%	12.8%	13.2%	13.3%	13.4%	

Source: FactSet, BofA US Equity & Quant Strategy

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Capex cycle afoot

Exhibit 103: Capex remains strong at +9% YoY

2Q23 capex growth by sector

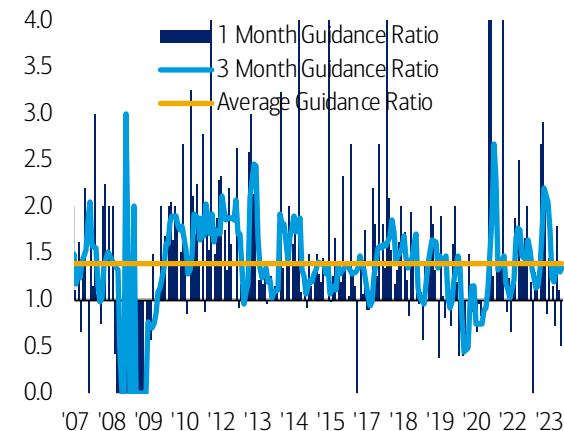
Sector	Aggregate YoY	Contribution to Aggregate Change
Consumer Discretionary	-4%	-7%
Consumer Staples	15%	11%
Energy	35%	35%
Financials	6%	4%
Health Care	9%	6%
Industrials	15%	14%
Information Technology	3%	4%
Materials	20%	8%
Real Estate	8%	1%
Communication Services	-7%	-13%
Utilities	23%	36%
S&P 500	9%	
ex. AMZN & META	13%	

Source: FactSet, BofA US Equity & Quant Strategy

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Exhibit 104: 35% more above than below capex guides

S&P 500 capex guidance ratio (number above vs. below consensus) - as of 9/22/23

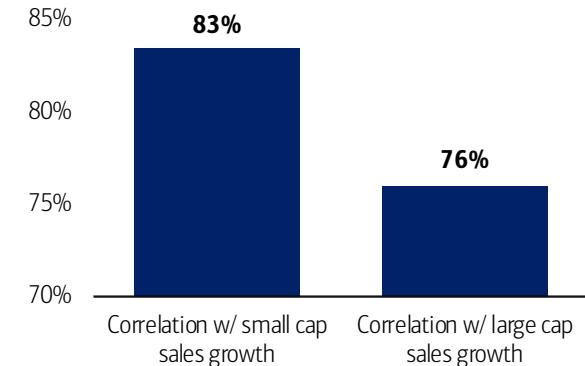


Source: BofA US Equity and Quantitative Strategy, Bloomberg

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Exhibit 105: Capex resilience could benefit SMID

Correlation of US capex growth with small cap (Russell 2000) and large cap (S&P500) sales growth, 1985-present



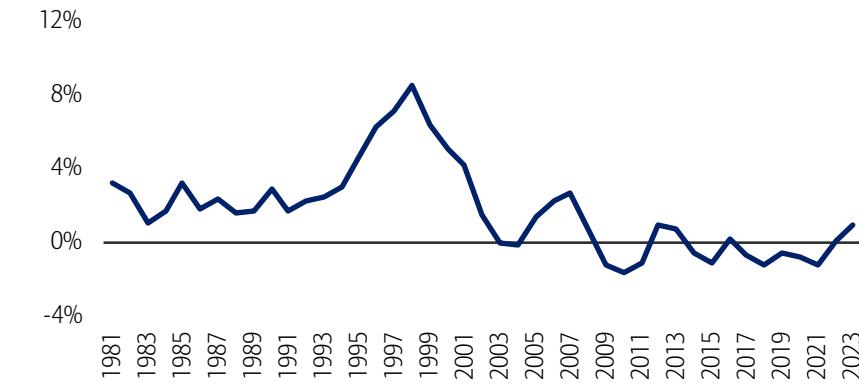
Correlation w/ small-large cap sales growth spread: 36%

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

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Exhibit 106: Limited manufacturing capacity additions since 2008 recession

US manufacturing capacity (1957-7/2023)

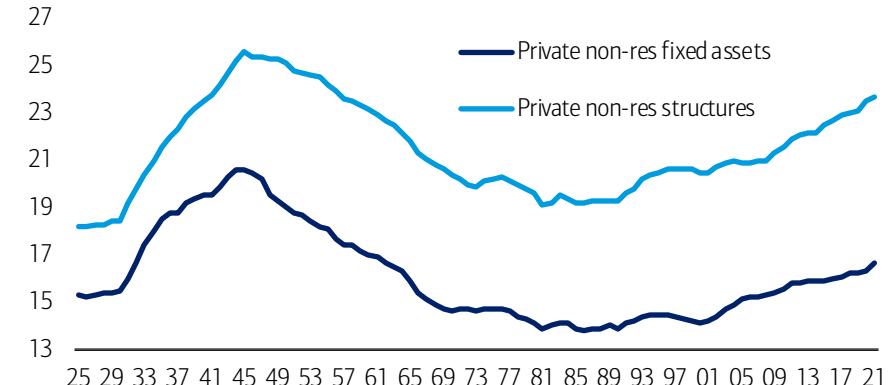


Source: Federal Reserve, BofA Global Research

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Exhibit 107: Stuff is old

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



Source: Haver Analytics, BofA US Equity & Quant Strategy

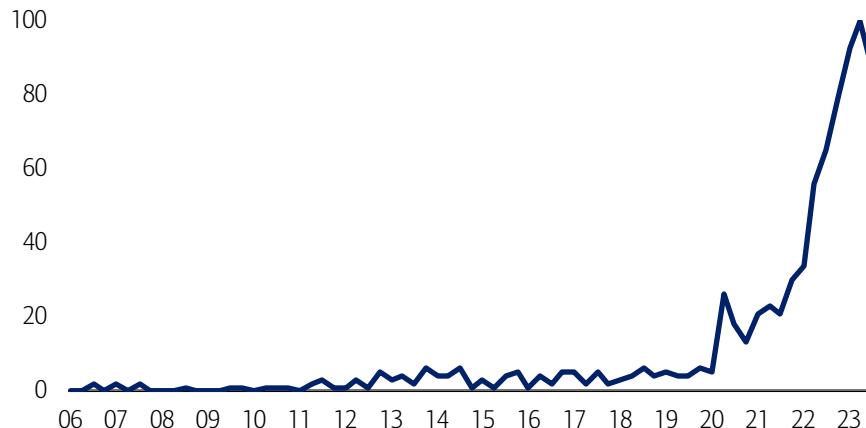
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Reshoring: from theory to practice

Exhibit 108: Companies are talking the talk: Mentions of re-shoring increased sharply over the past year

Companies mentions of re-/near-/on-shoring (100=max; 2006-8/31/23)

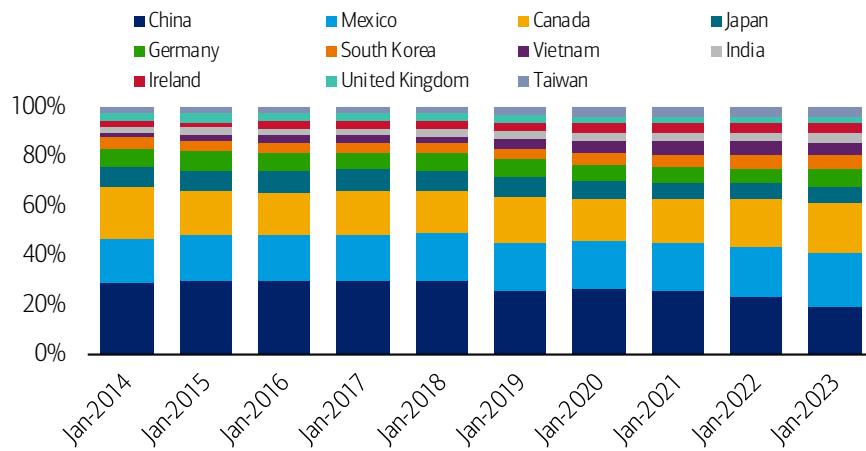


Source: AlphaSense, BofA Global Research

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Exhibit 110: China, Mexico, Canada account for >40% of US imports...

Imports of everything to the United States by major trade partners

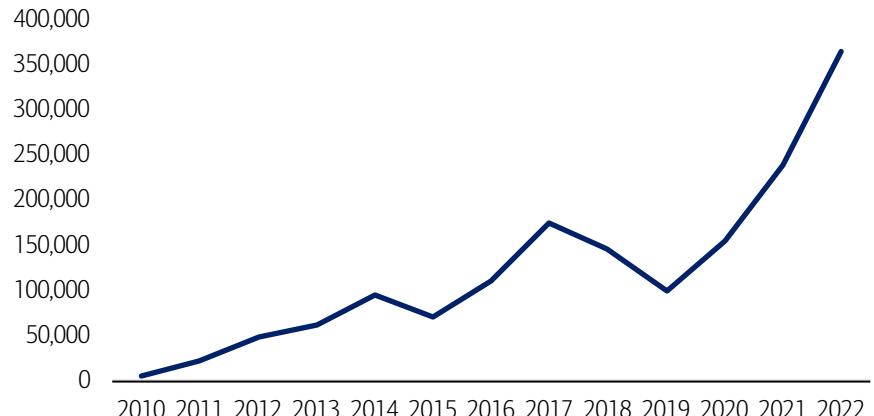


Source: Panjiva

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Exhibit 109: Reshoring in practice: Reshoring/FDI jobs in 2022 at an all-time high

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

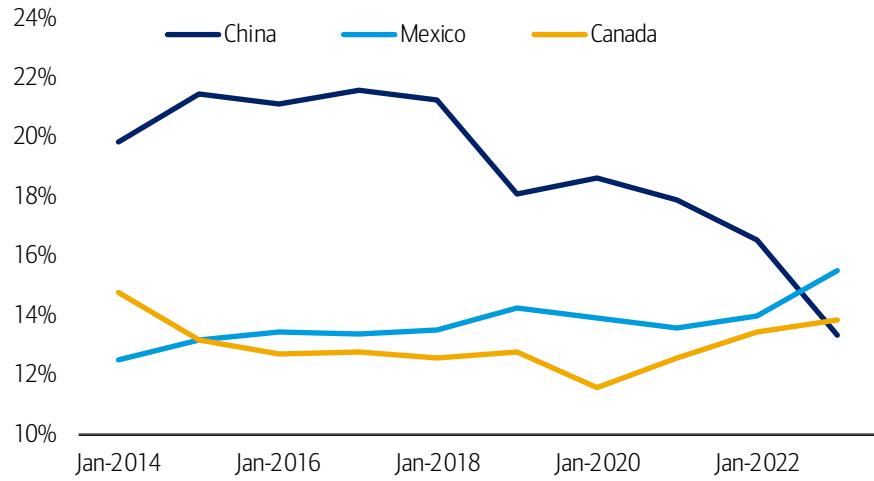


Source: Reshoring Initiative Library data

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Exhibit 111: China's share of US imports now < Mexico + 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 112: 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

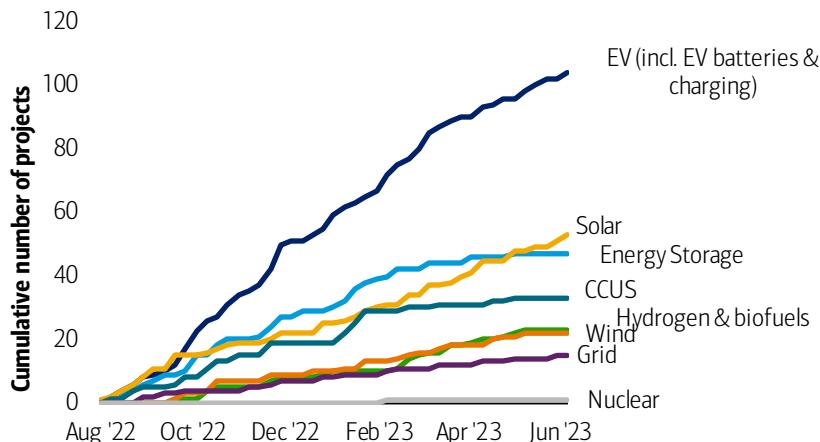
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IRA: bullish for capex, for jobs, for renewables and for oil

Exhibit 113: 270+ projects related to clean economy announced

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

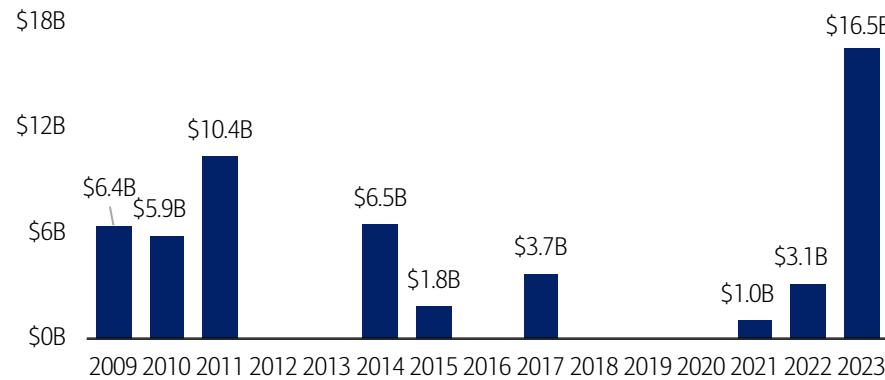


Source: BofA US ESG Research, E2 Clean Economy Works project tracker, The White House (invest.gov), IEA CCUS Projects Database. Note that some projects are associated with more than 1 category.

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Exhibit 115: 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

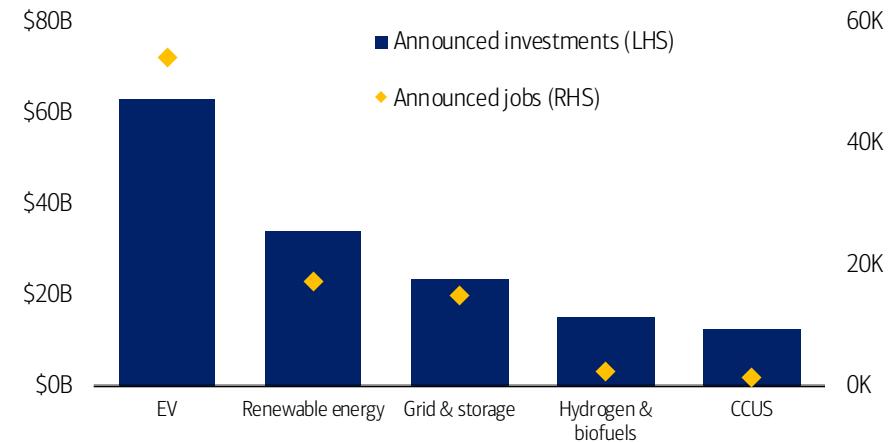


Source: US Department of Energy Loan Programs Office

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Exhibit 114: 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

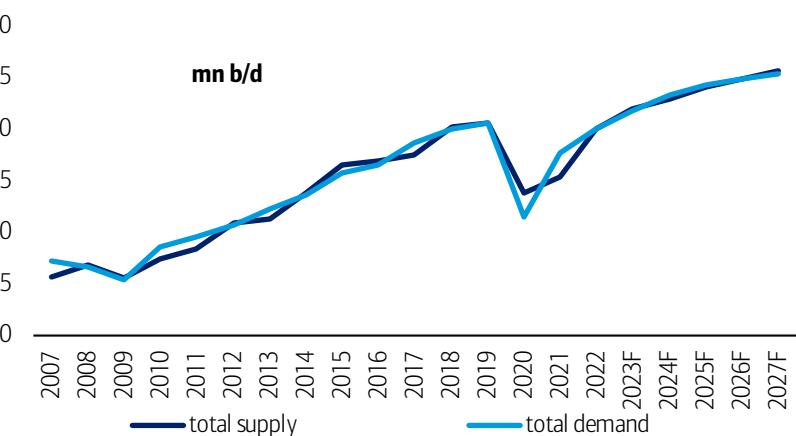


Source: BofA US ESG Research, E2 Clean Economy Works project tracker, The White House (invest.gov), IEA CCUS Projects Database. Renewable energy includes solar, wind, and nuclear. Some projects are associated with more than 1 category. Not all projects disclosed the investment or job amount. CCUS = Carbon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

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Exhibit 116: Floor on oil likely to remain high from tight supply

Global oil demand and supply



Source: IEA, BofA Global Research estimates

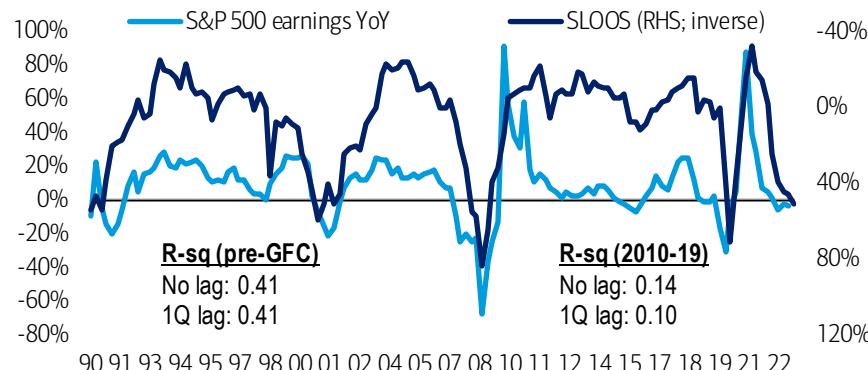
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Not your parents' credit cycle

Exhibit 117: Earnings sensitivity to SLOOS weakened post-GFC

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

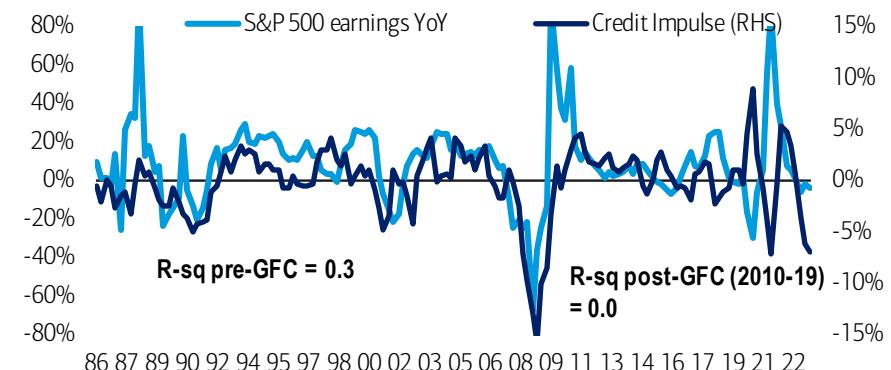


Source: Bloomberg, FactSet, BofA US Equity & Quant Strategy

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Exhibit 118: Earnings had no correlation to credit impulse post-GFC

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



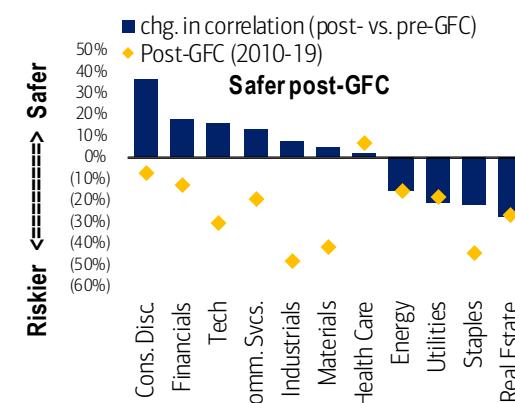
Source: Haver Analytics, FactSet, BofA US Equity & Quant Strategy

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

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Exhibit 119: 6 of 11 sectors show lower sensitivity to SLOOS

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

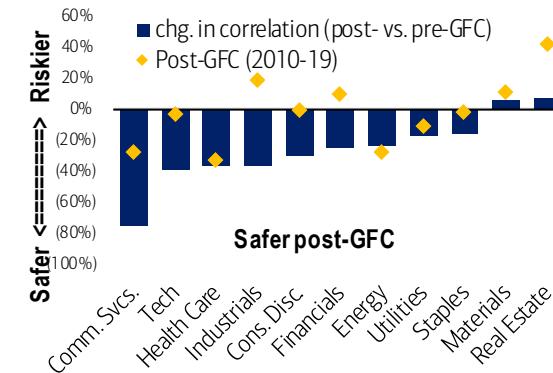


Source: Bloomberg, FactSet, BofA US Equity & Quant Strategy

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Exhibit 120: 9 of 11 sectors show lower sensitivity to CI

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



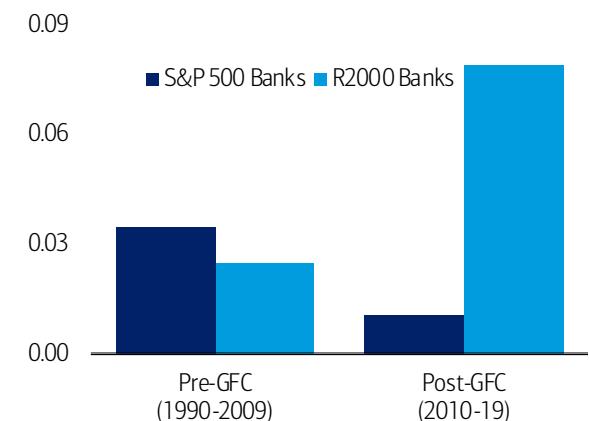
Source: Haver Analytics, FactSet, BofA US Equity & Quant Strategy

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

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Exhibit 121: 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

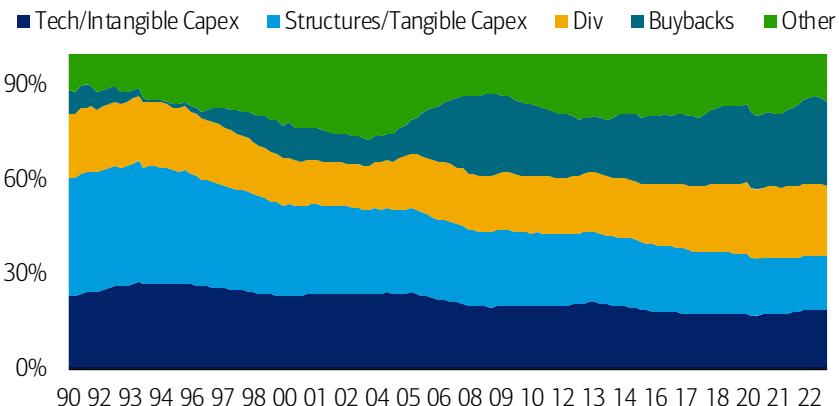
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Uses of capital have been different

Exhibit 122: 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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Private equity can offset liquidity withdrawal

Exhibit 124: Significant privatization during 2022 downturn...

Number of privatization of US public companies (TTM; 1998-8/23)

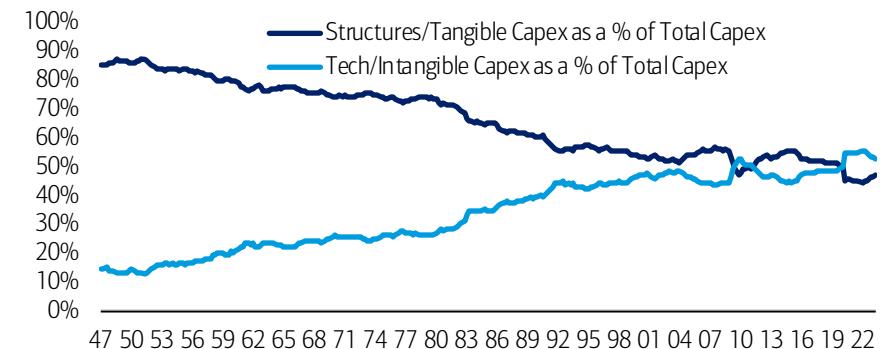


Source: Bloomberg, BofA US Equity & Quant Strategy

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Exhibit 123: 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)

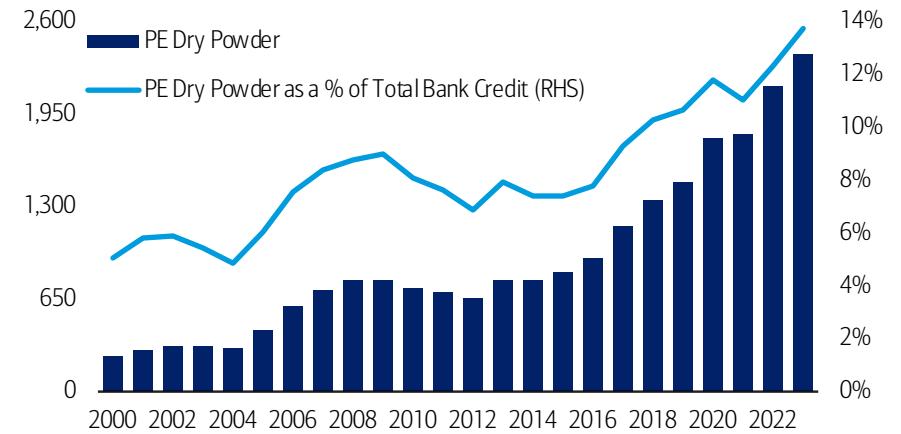


Source: "Structures/Tangible Capex" includes structures capex and equipment capex, excluding information processing equipment.
"Tech/Intangible Capex" includes information processing equipment and intellectual property capex. Total capex reflects nonresidential fixed investment.

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Exhibit 125: ...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 126: BofA US Equity Strategy sector views

Bull & bear case by sector

Sector	Weight in S&P 500	BofA View	Bull case	Bear case
Energy	4.5%	O/W	Commodity cycles end w/ oversupply; not likely if CEO pay is on ESG /div targets, not production. Avg. \$85/bbl Brent in 2023, \$90 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 (but Low Quality typically outperforms in Recovery regimes) High GHG direct emissions profile + secular headwinds from renewables, green capex Russia / Ukraine ceasefire
Consumer Discretionary	10.8%	O/W	Housing (leading indicator) benefits from structural shortages Positioning: long-only fund and hedge fund positioning near historical lows Real wage growth now positive, #3 in Quant model, Recovery regime beneficiary Secular shift into e-commerce / EVs (AMZN + TSLA: ~50% of the sector) Consumer still resilient - 85% of US mortgages are fixed	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	12.5%	O/W	Contagion risk largely 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	2.4%	O/W	Dividend yield (~50% of stocks yielding higher than the 10yr) 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 hurt by rising real rates
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 sector to China (along with Tech) Overweight by hedge funds, long-only positioning is near a 7-yr high Ranks poorly in Quant model (#9) Commodity chemicals may be near a bottom but recovery could be slow (Chemicals note)
Industrials	8.3%	M/W	Capex, automation, 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 / loss of diversification
Technology	27.9%	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	2.5%	M/W	Stable fundamentals / defensive hedge / Quality IRA / energy transition beneficiary Disinflation and lower rates	Positioning risk: HF's are overweight, long only positioning near decade highs Dividend yield vs. 10-yr yield below post-GFC avg. Underperforms in Recovery regimes with a 100% hit rate
Communication Services	8.9%	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	13.2%	U/W	Inexpensive defensive sector offering secular growth Strong fundamentals Social factors of ESG could drive increased corporate HC spending	Crowded (overweight by both long-only funds and hedge funds) after a year of preparing for a recession Government sales exposure ahead of fiscal cuts, overhang from drug pricing pressure Labor tightness not likely to be automated or AI'd away Floating rate risk
Consumer Staples	6.6%	U/W	No matter what, we still have to eat - defensive hedge Benefits from consumers trading down	Elevated positioning: funds have been preparing for recession but soft landing more likely Typically underperforms in Recovery regime Ranks last in Quant model; lower quality vs. history

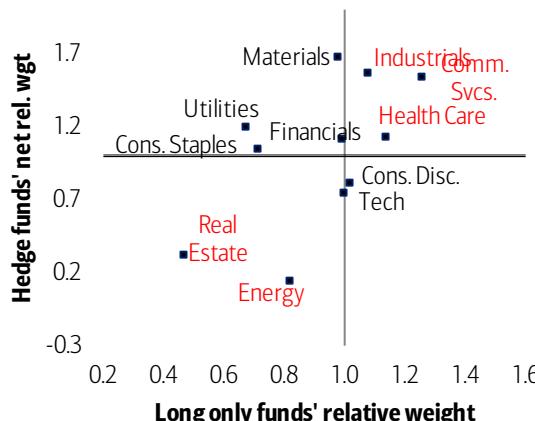
Note: O/W = overweight, M/W = market weight, U/W = underweight. Weights in S&P 500 as of 9/11/2023 and may not add to 100% due to rounding. Source: BofA US Equity & Quant Strategy

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Macro matters for sectors

Exhibit 127: Industrials, Comm. Svcs, Health Care = consensus longs; Real Estate & Energy = consensus shorts
 LO and HF sector weights relative to the S&P 500 (as of 8/23) (red = agreement; black = disagreement)

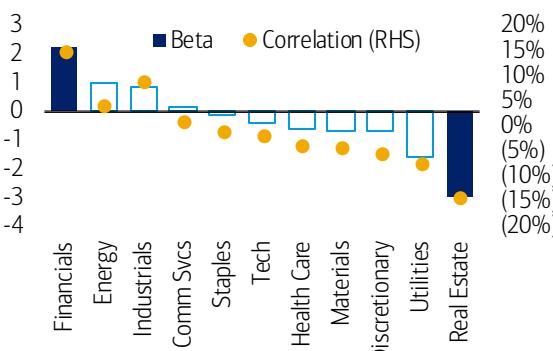


Source: FactSet Ownership, BofA US Equity & Quant Strategy

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Exhibit 130: Real rates: Financials has most positive beta, Real Estate most negative beta

S&P 500 sectors' relative performance sensitivity to real rates (1997-8/23)

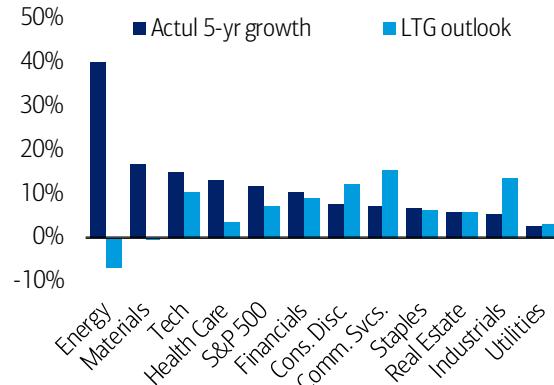


Source: Bloomberg, FactSet, BofA US Equity & Quant Strategy

Note: Empty bars indicate not statistically significant

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Exhibit 128: Commodities have the widest gap between trailing 5-yr earnings growth and forward 5-yr growth
 Actual 5-yr earnings CAGR vs. consensus long-term growth outlook (as of 8/23)

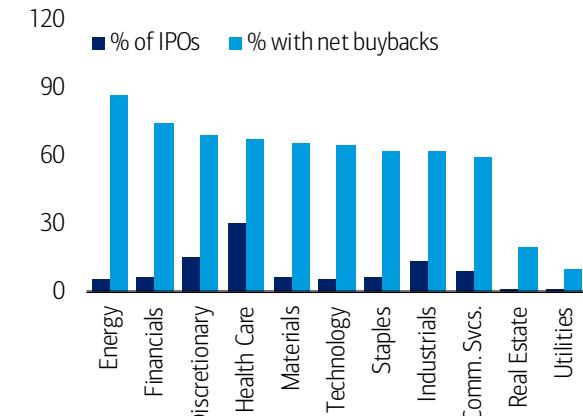


Source: FactSet, BofA US Equity & Quant Strategy

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Exhibit 129: Supply & demand dynamics by sector

% of IPOs over the last 12 months by sector vs. % of sector doing net buybacks (as of 8/2023)

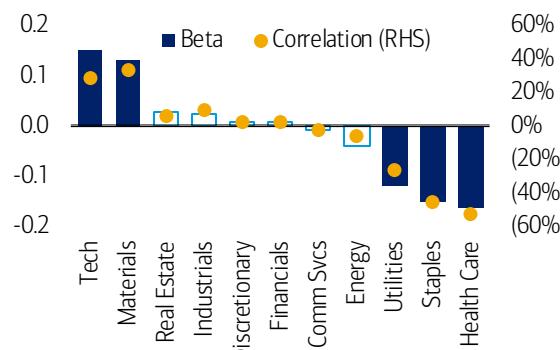


Source: FactSet, BofA US Equity & Quant Strategy

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Exhibit 131: China: Tech and Materials have highest betas

S&P 500 sectors' rel. perf. to MSCI China (May 1996-8/23)



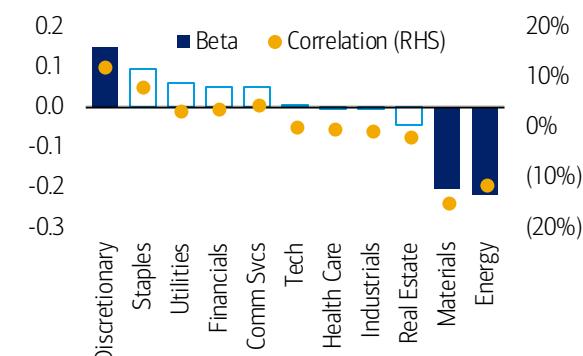
Source: Bloomberg, FactSet, BofA US Equity & Quant Strategy

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

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Exhibit 132: Strong USD: Commodities hurt, Consumer Discretionary helped

S&P 500 sectors' relative performance sensitivity to USD since '97



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

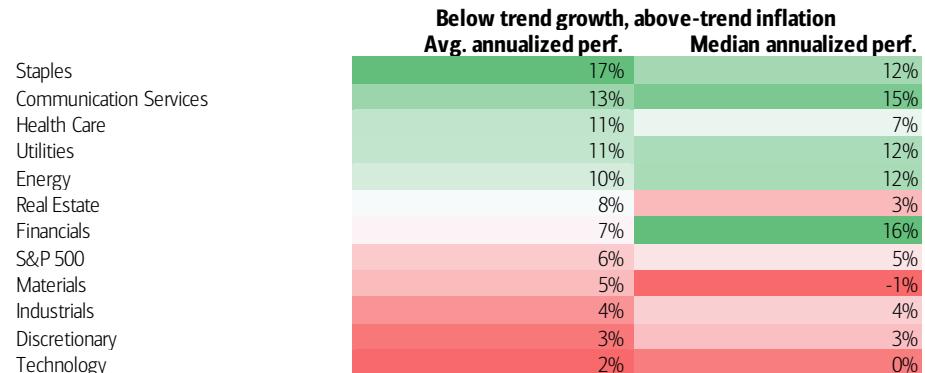
Note: Empty bars indicate not statistically significant

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Exhibit 133: Stagflation: Discretionary, Industrials, Materials and Tech lagged

S&P 500 sector performance during historical stagflation (data since 1957)



Source: Bloomberg, Haver Analytics, FactSet, Global Financial Data, BofA US Equity & Quant Strategy. Global Financial Data (used from 1957-1969) combines Utilities and Telecom into one sector.

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What's cheap, what's expensive, what's changed?

Exhibit 135: Energy is the most attractive sector from a valuation standpoint vs. history; Cons. Disc. and Tech are the most historically expensive

Relative price to book, price to operating cash flow, price to earnings by sector, as of 8/23

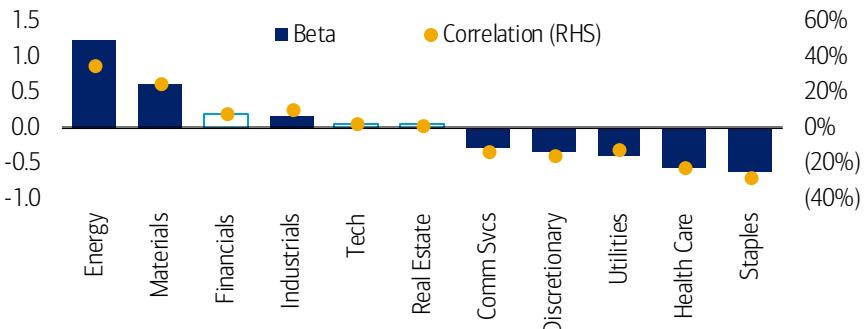
Sector	Price to Book (Relative)			Price to Operating Cash Flow (Relative)			Forward P/E (Relative)		
	Curr.	Avg	Impl Ups	Curr.	Avg	Impl Ups	Curr.	Avg	Impl Ups
S&P 500 (abs. metrics)	4.37	2.95	-33%	16.50	11.24	-32%	19.07	15.78	-17%
Consumer Discretionary	2.18	1.36	-38%	1.14	0.91	-20%	1.35	1.05	-22%
Consumer Staples	1.33	1.69	27%	1.01	1.27	26%	1.03	1.13	10%
Energy	0.55	0.77	40%	0.38	0.73	90%	0.62	1.05	69%
Financials	0.43	0.59	37%	N/A	N/A	N/A	0.72	0.77	8%
Health Care	1.10	1.70	54%	0.96	1.57	63%	0.92	1.09	19%
Industrials	1.24	1.16	-7%	0.97	1.01	5%	0.98	1.01	4%
Information Technology	2.52	1.49	-41%	1.55	1.23	-21%	1.41	1.12	-21%
Materials	0.67	0.90	35%	0.78	0.89	14%	0.93	1.04	11%
Real Estate	0.64	0.87	36%	N/A	N/A	N/A	0.85	1.54	81%
Communication Services	0.87	1.00	14%	0.73	0.84	15%	0.90	1.18	31%
Utilities	0.44	0.60	37%	0.71	0.65	-10%	0.83	0.89	7%

Note: Averages for Tech exclude the Tech Bubble (7/98-10/00 excluded). Financials excludes Real Estate historically. Relative Fwd. P/E for Real Estate uses P/FFO for REITs and Fwd P/E for Real Estate Management & Development, relative to the S&P 500 Fwd. P/E over time. Real Estate valuations from 2001-present. Source: FactSet/FirstCall, Compustat, BofA US Equity & Quant Strategy

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Exhibit 134: Inflation playbook: own commodities/cyclicals, avoid consumer/defensives

Sectors' rel. perf. correlation (since '74) with our BofA Inflation Composite (as of 8/23)



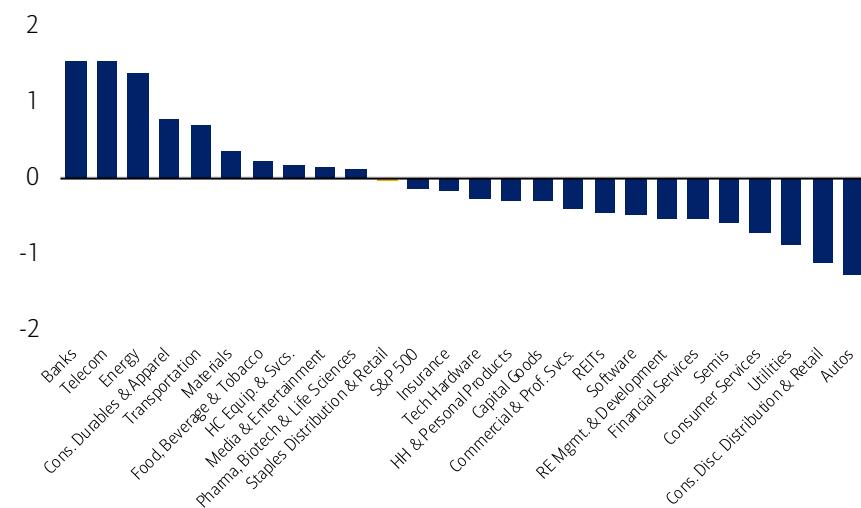
Source: Bloomberg, FactSet, BofA US Equity & Quant Strategy

Note: Empty bars indicate not statistically significant

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Exhibit 136: Old economy cyclicals are pricing in more risk, new economy less risk

Z-score of equity risk premium by S&P 500 industry groups (as of 8/23; history since 1986)



Source: FactSet, Bloomberg, BofA US Equity & Quant Strategy; 50%+ of Consumer Discretionary Distribution & Retail is AMZN

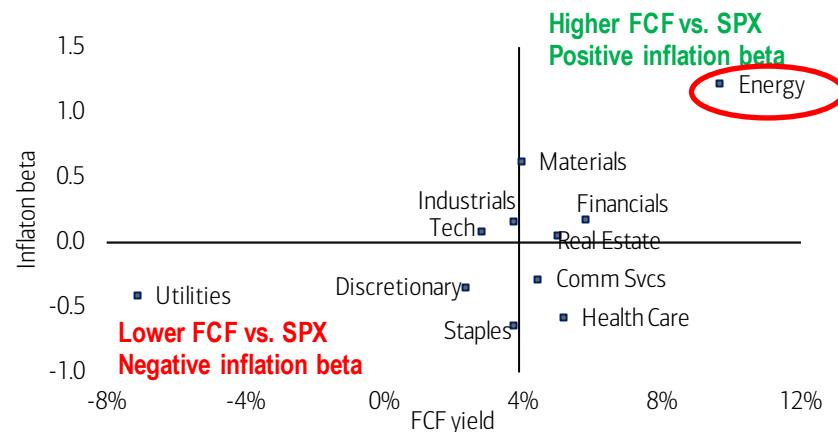
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Overweight Energy

Exhibit 137: Inflation beneficiary/hedge, high real yield

Free Cash Flow yield vs. inflation beta (based on relative performance vs. SPX), as of 8/23

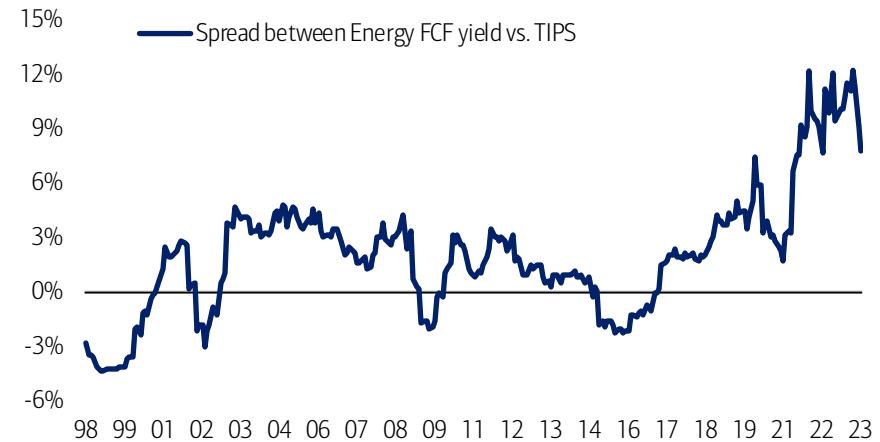


Source: FactSet, BofA US Equity & Quant Strategy

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Exhibit 138: TIPS + 8ppt

Spread between Energy FCF yield vs. TIPS (1998-8/2023)

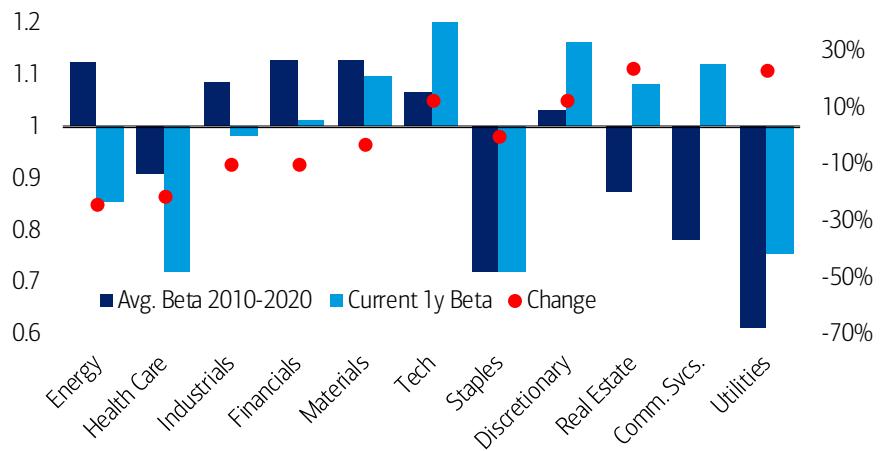


Source: BofA US Equity & Quant Strategy, FactSet, Bloomberg

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Exhibit 139: Energy shift: risky to safe

Current sector betas (as of 8/23) vs. average betas in prior decade and change (RHS)

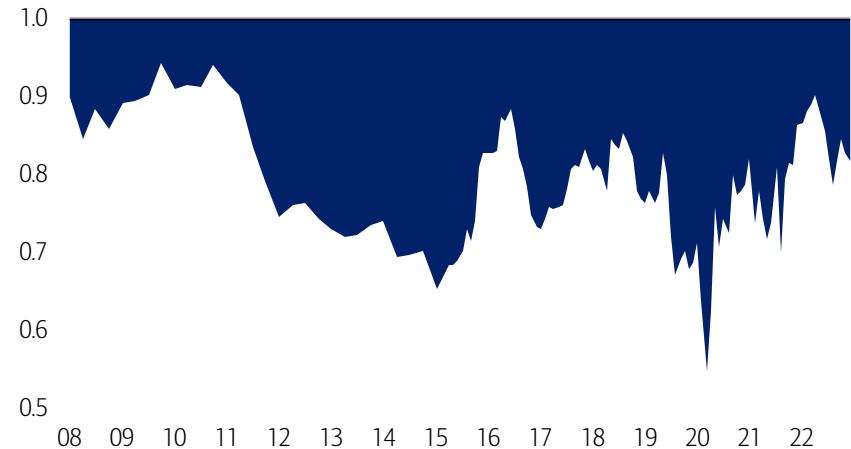


Source: BofA US Equity & Quant Strategy, FactSet

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Exhibit 140: Long onlies still underweight Energy

Long-only funds' Energy weight relative to the S&P 500 (9/2008-8/2023)



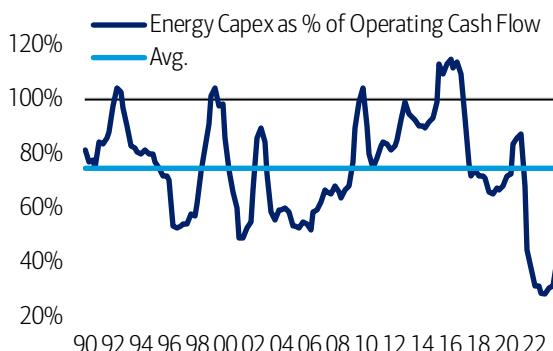
Source: FactSet, BofA US Equity & Quant Strategy

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Exhibit 141: Supply discipline > production goals

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

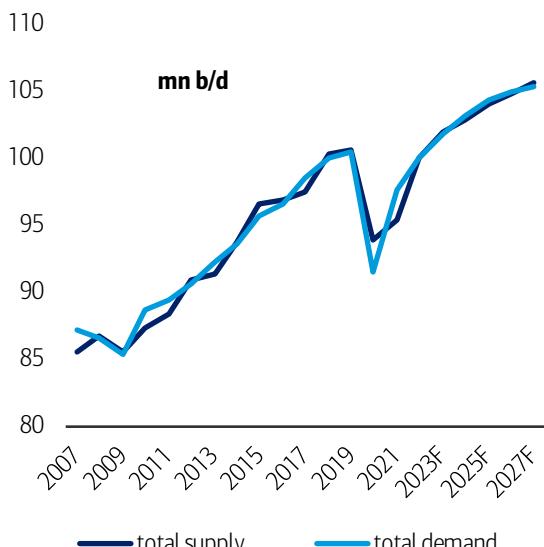


Source: BofA US Equity & Quant Strategy, FactSet

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Exhibit 144: Oil market is likely to stay tight beyond 2024

Global oil demand and supply

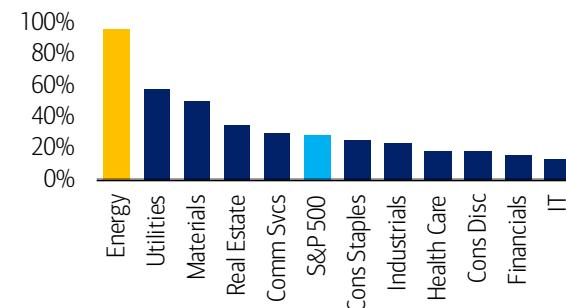


Source: IEA, BofA Global Research estimates

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Exhibit 142: 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

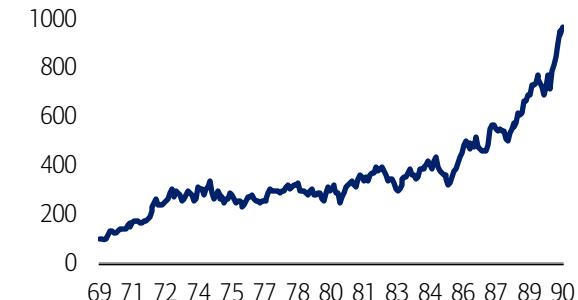


Source: ICE, BofA US Equity and Quant Strategy

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Exhibit 143: 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)

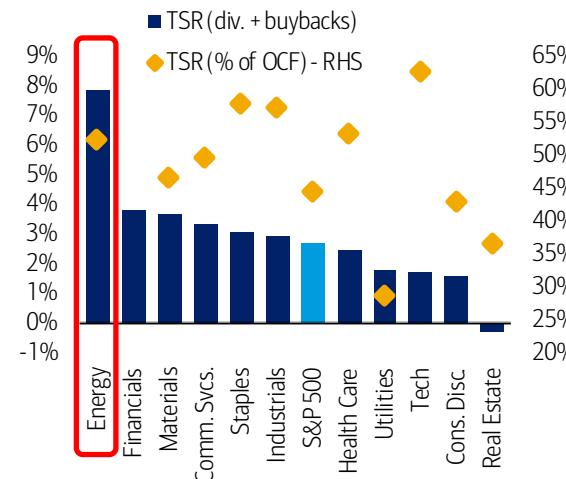


Source: FactSet, BofA US Equity & Quant Strategy

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Exhibit 145: Biggest shareholder returns, with more room for upside

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

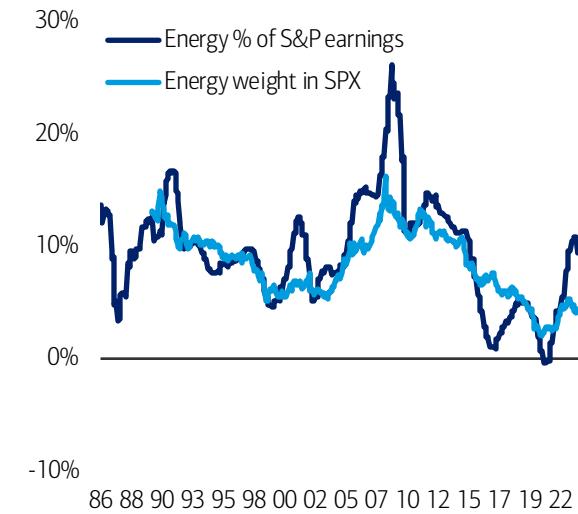


Source: BofA US Equity & Quant Strategy, FactSet

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Exhibit 146: Catchup trade

Energy earnings and weight as % of S&P 500 (82% correlation; 1986-8/23)



Source: FactSet, BofA US Equity & US Quant Strategy

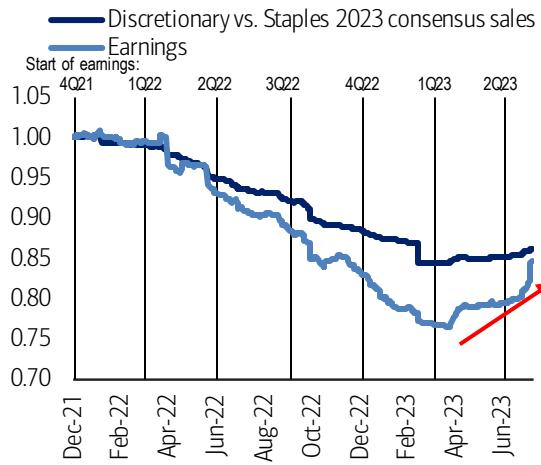
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Overweight Consumer Discretionary

Exhibit 147: Discretionary outlook catching up to Staples

Consumer Discretionary vs Staples 2023 consensus sales (12/21 = 100; 12/21-9/7/23)

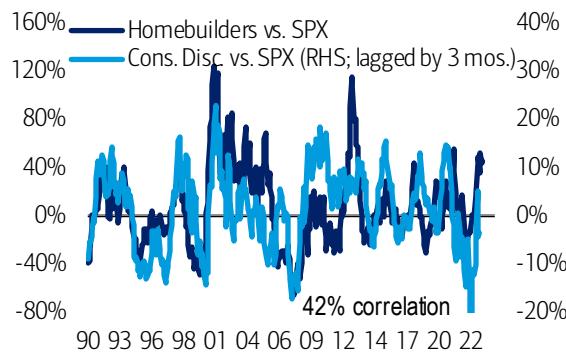


Source: BofA US Equity & Quant Strategy, FactSet

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Exhibit 150: Homebuilders lead Discretionary

Relative performance of S&P 500 Homebuilders vs. S&P 500 & Cons. Disc. vs. S&P 500 (3-mo. lag), 1990-8/23

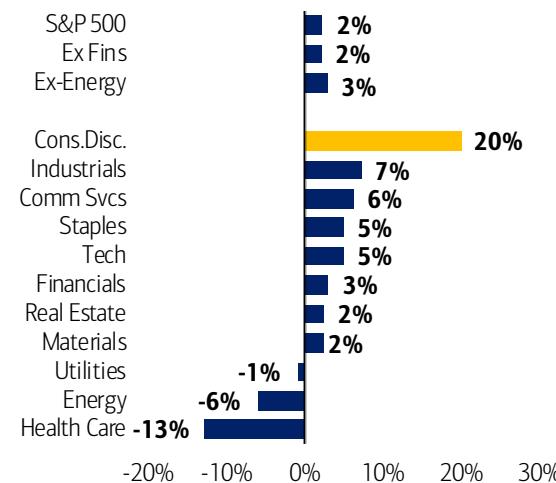


Source: BofA US Equity & Quant Strategy, Bloomberg

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Exhibit 148: Consumer Discretionary led the beat in 2Q

Revision to consensus 2Q23 earnings since start of July

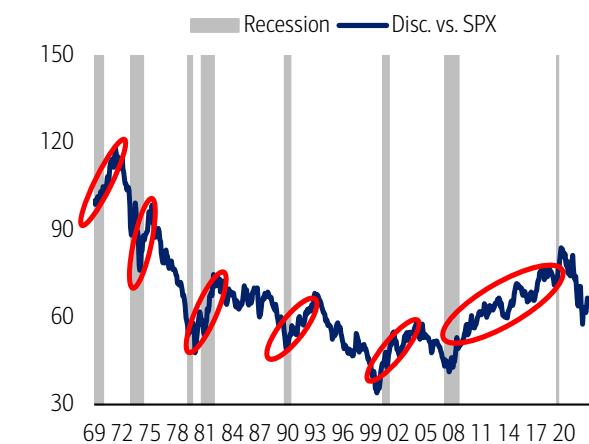


Source: FactSet, BofA US Equity & Quant Strategy

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Exhibit 149: End of tightening cycle = Buy Consumer Discretionary

Consumer Discretionary sector historical relative performance vs S&P 500

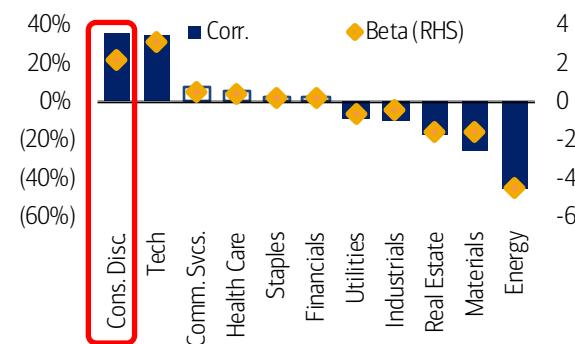


Source: Bloomberg, FactSet, BofA US Equity & Quant Strategy

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Exhibit 151: Consumer Discretionary benefits most from real wage growth

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

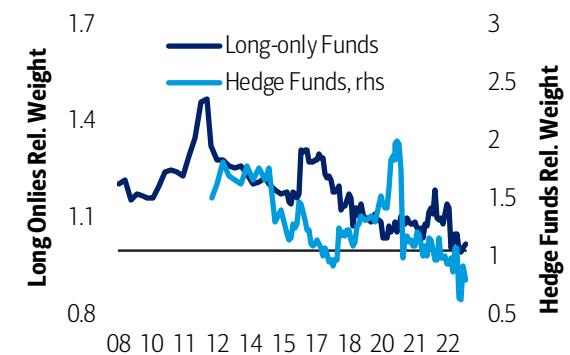


Source: Bloomberg, FactSet, BofA US Equity & Quant Strategy

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Exhibit 152: Funds have near record low positioning in Discretionary

Funds' relative weight in Discretionary vs S&P 500 (2008-8/23)



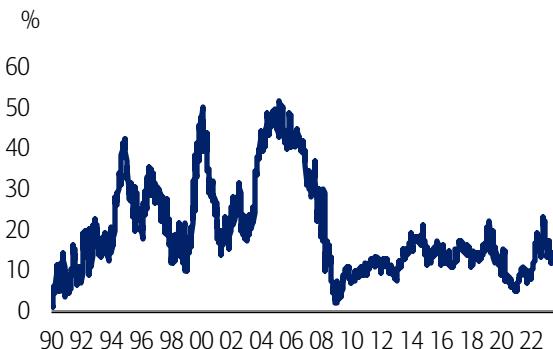
Source: FactSet Ownership, BofA US Equity & US Quant Strategy

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Exhibit 153: US: 85% of homeowners with mortgage loans have fixed rate mortgages

Share of dollar volume of loan applications



Source: MBA, Haver Analytics, BofA Global Research

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Exhibit 156: Statistically expensive

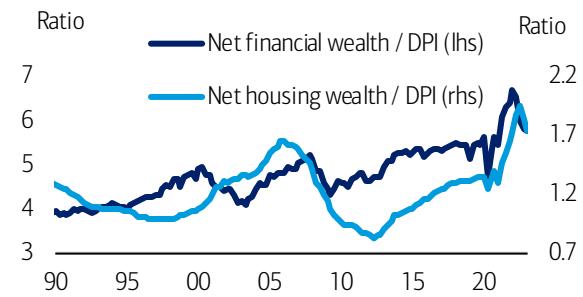
% upside/downside of relative valuations vs relative long-term average by sector, 1986-8/23*

Sector	P/BV	P/OCF	Fwd P/E	EV/Sales
S&P 500 (absolute)	-33%	-32%	-17%	-29%
Comm. Svcs.	14%	15%	31%	2%
Cons. Disc.	-38%	-20%	-22%	-31%
Energy	40%	90%	69%	28%
Financials	37%	N/A	8%	89%
Health Care	54%	63%	19%	83%
Industrials	-7%	5%	4%	2%
Materials	35%	14%	11%	-2%
Real Estate	36%	N/A	81%	-26%
Staples	27%	26%	10%	23%
Technology	-41%	-21%	-21%	-52%
Utilities	37%	-10%	7%	-6%

*Note: Real Estate since 2002. Source: BofA US Equity & Quant Strategy, FactSet
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Exhibit 154: Elevated home prices have supported wealth effects on consumer spending

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

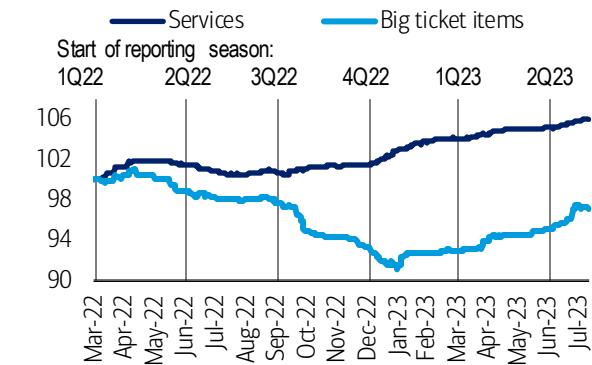


Source: BEA, Federal Reserve, Haver Analytics, BofA Global Research

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Exhibit 155: Goods recovery? Sales estimate revisions for big ticket items have been improving since January

2023 consensus sales for services vs. big ticket items (as of 8/31/23)

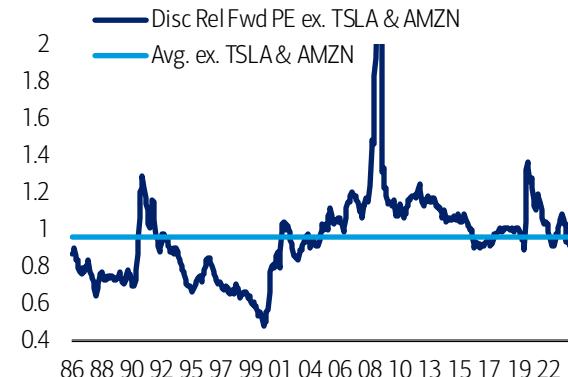


Source: Bloomberg, FactSet, BofA US Equity & Quant Strategy

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Exhibit 157: ...but Disc. ex TSLA & AMZN trades in line with historical avg

Relative forward PE of Consumer Discretionary vs S&P 500 (as of 8/23)

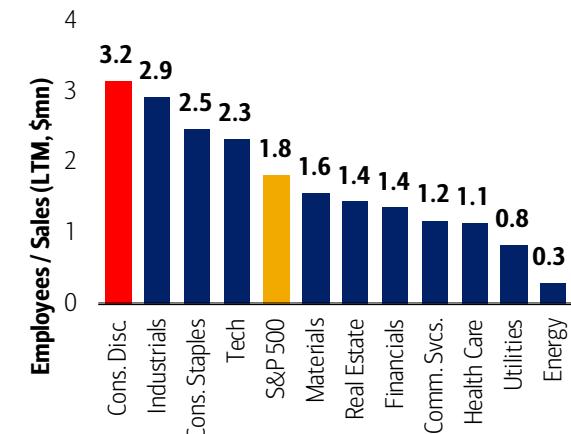


Source: FactSet, BofA US Equity & Quant Strategy

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Exhibit 158: Labor-intensive, tight labor market for services

Employees/sales (LTM; \$mn) by S&P 500 sector as of 9/21/23



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

Source: BofA US Equity & Quant Strategy, FactSet

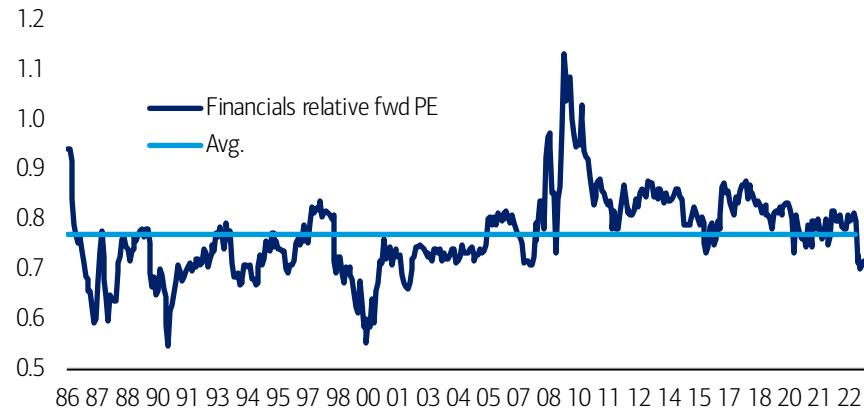
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Overweight Financials

Exhibit 159: Historically inexpensive

Financials relative fwd PE vs. S&P 500 (1986-8/2023)

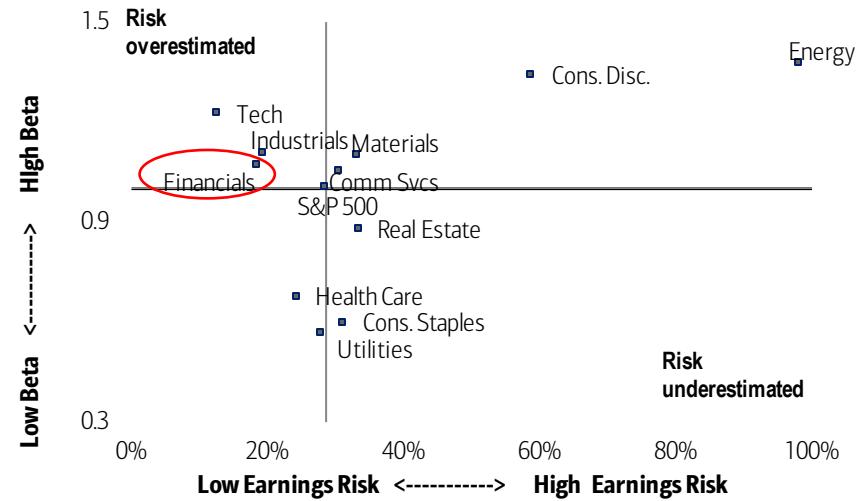


Source: FactSet, BofA US Equity & Quant Strategy

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Exhibit 161: 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 8/23)

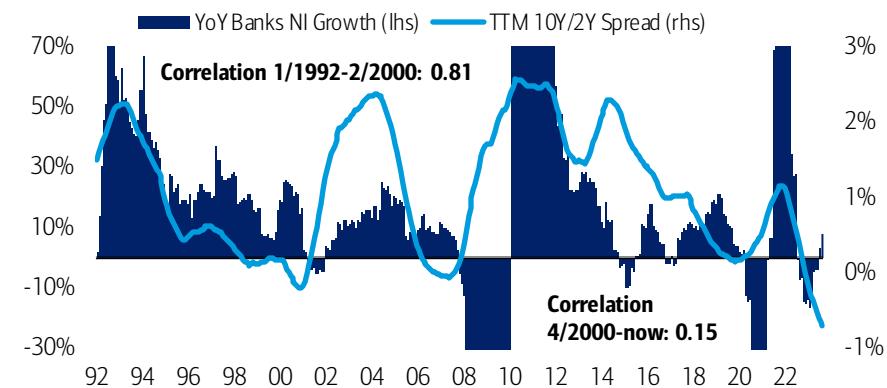


Source: S&P, FactSet, BofA US Equity & Quant Strategy. Note: Financials excludes BRK/B.

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Exhibit 160: Bank earnings and yield curve: steepening should help

YoY NI growth for S&P 500 Banks vs. TTM 10Y/2Y Spread (1/92-8/2023)

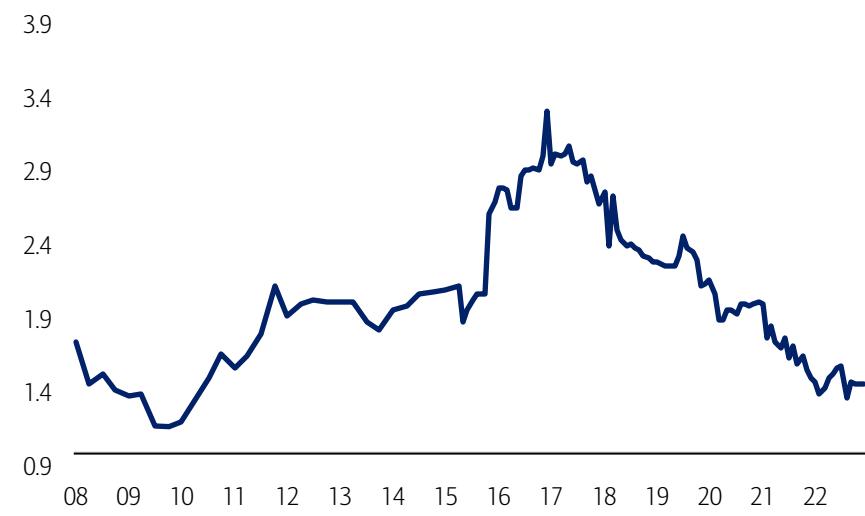


Source: BofA US Equity & Quant Strategy, Bloomberg, FactSet

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Exhibit 162: Among US regulated sectors, Financials hated vs. Utilities

LO relative exposure to Financials (cyclical) vs. Utilities (defensive) within S&P 500 (as of 8/2023)



Source: FactSet Ownership, BofA US Equity & Quant Strategy

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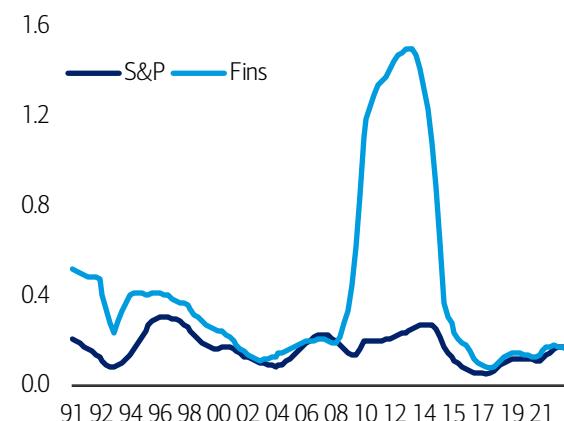
Exhibit 163: Structurally lower leverage, thanks to Uncle Sam
S&P 500 Financials: Total Assets/Equity (1987-2Q23)



Source: FactSet, BofA US Equity & Quant Strategy

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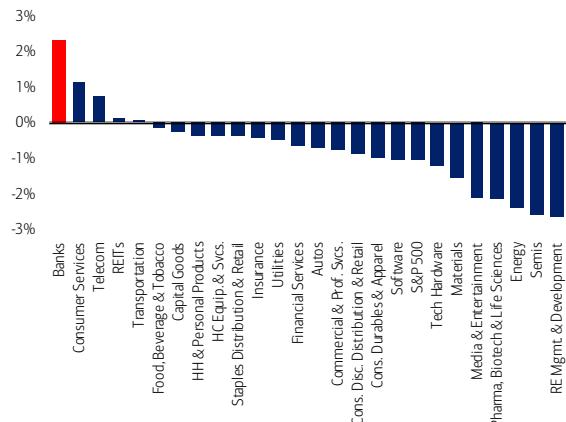
Exhibit 164: Earnings stability now lower than S&P 500
Rolling 5yr trailing earnings vol for S&P 500 and Financials (std dev of trailing net income divided by mean trailing net income; 1990-2Q23)



Source: US Equity & Quant Strategy, FactSet

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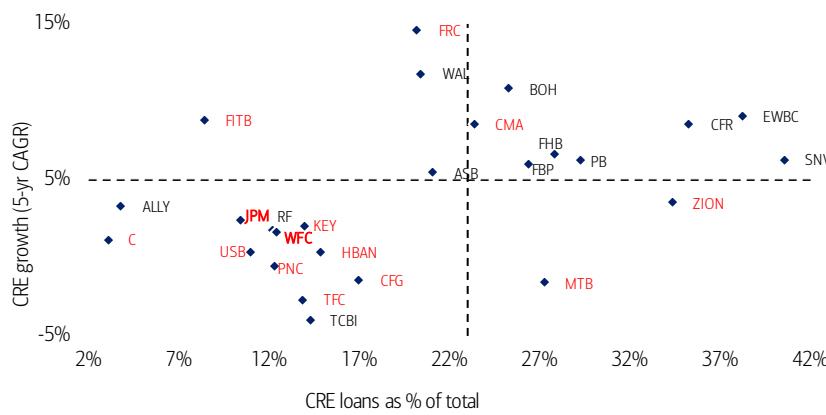
Exhibit 165: S&P 500 banks risk premia spike since SVB
Change in ERP since Feb 2023 (as of 8/23)



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

BofA GLOBAL RESEARCH

Exhibit 166: Few S&P 500 companies (red font) track high CRE risk* (NYCB not charted)
5-yr CRE growth rate vs. CRE exposure; dotted axes represent industry (FDIC) medians



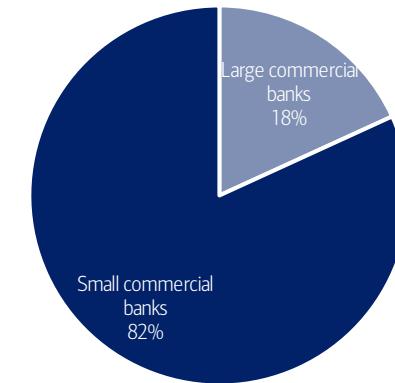
Source: company filings, SNL Financial

*CRE loans include investor owned and owner occupied; include nonfarm/nonresidential C&D and multifamily loans

Note: Growth adjusted for acquisitions; chart excludes outliers: NYCB (67%, 4%)

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Exhibit 167: 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

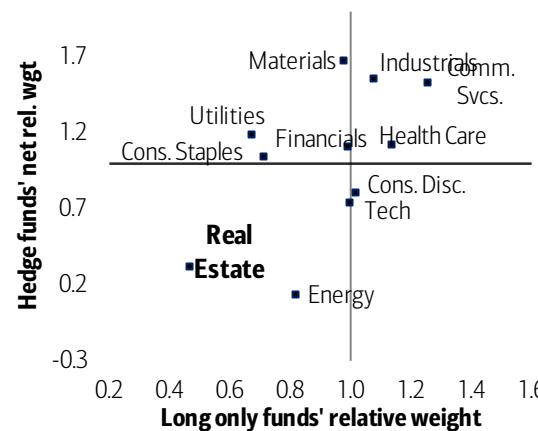
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Overweight Real Estate

Exhibit 168: Deeply underweight by LOs and HF

LO and HF sector weights relative to the S&P 500 (as of 8/23)

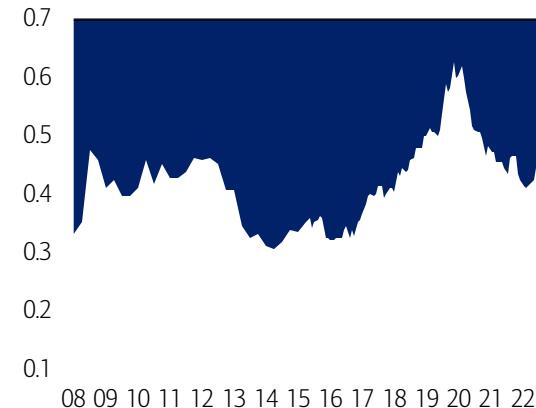


Source: FactSet Ownership, BofA US Equity & Quant Strategy

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Exhibit 169: More unloved than usual by LOs

Large cap active funds' relative weight in Real Estate (vs. S&P 500) as of 8/2023

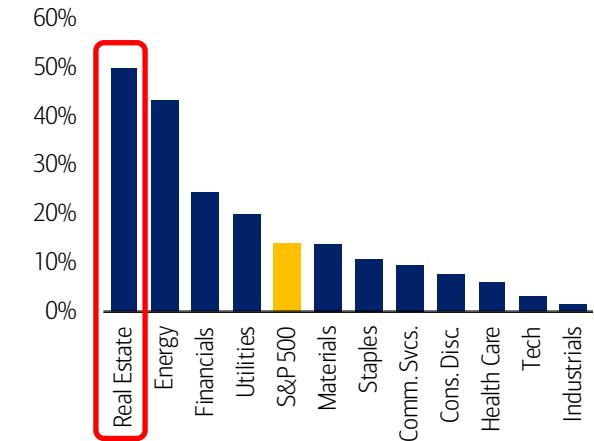


Source: FactSet, S&P, BofA US Equity & Quant Strategy

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Exhibit 170: Half of RE stocks yield higher than 10-yr

% of stocks with a higher dividend yield than the 10-yr yield by sector (as of 8/23)

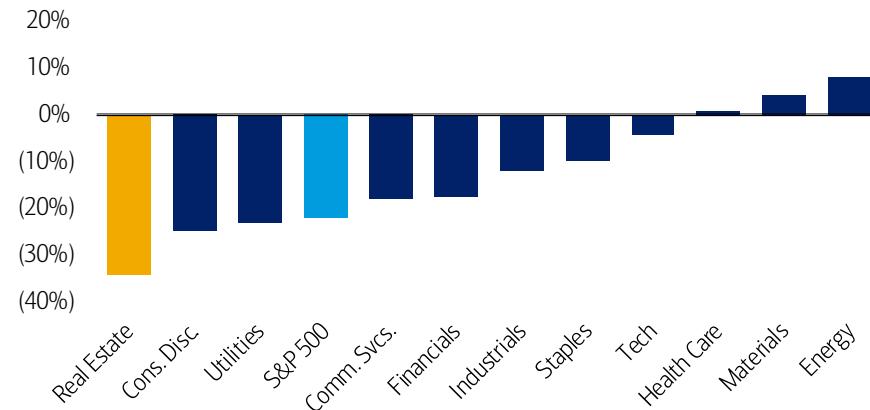


Source: FactSet, BofA US Equity & Quant Strategy

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Exhibit 171: Biggest de-rating since 2021

Change in fwd P/E (P/FFO for REITs) since Dec. 21 (as of 8/23)

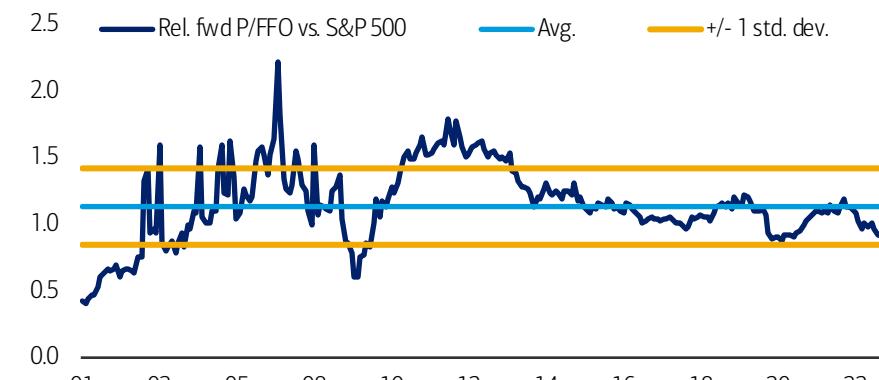


Source: FactSet, BofA US Equity & Quant Strategy

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Exhibit 172: Real Estate is trading at depressed multiples

S&P 500 Real Estate fwd P/FFO vs. S&P 500's fwd P/E (2001-8/23)



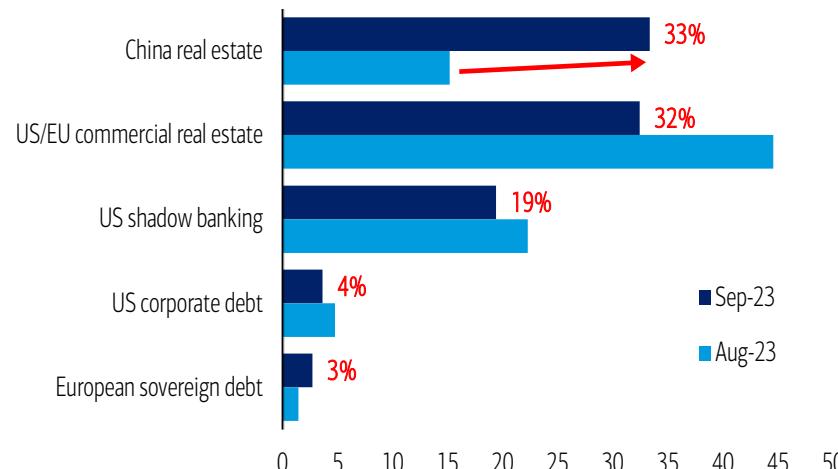
Source: FactSet, BofA US Equity & Quant Strategy

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Exhibit 173: Investors list US/EU commercial real estate as #2 likely source for systemic credit event...

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

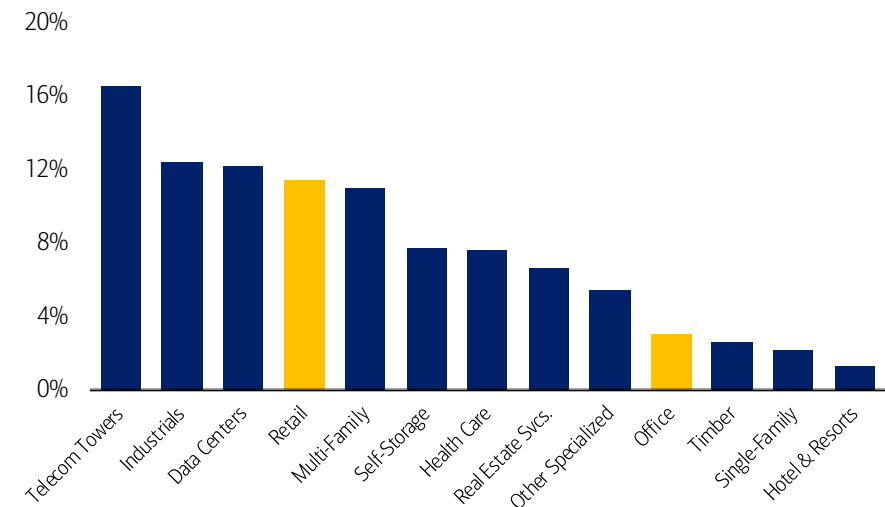


Source: BofA Global Fund Manager Survey

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Exhibit 174: But commercial real estate is only 14% of S&P 500 Real Estate

S&P 500 Real Estate sub-industry weights (as of 9/8/23)



Source: Bloomberg

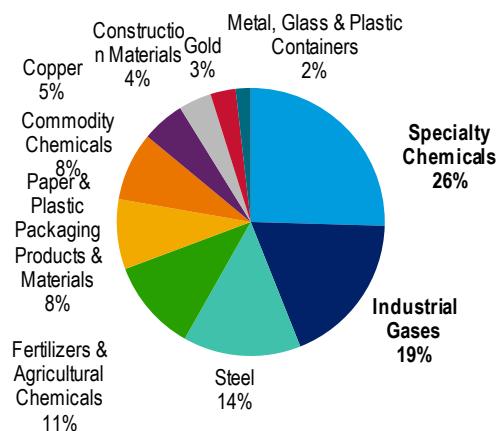
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Marketweight Materials

Exhibit 175: Specialty Chemicals and Industrial Gases are the biggest sub-industries

% earnings contribution from Materials' subindustries (as of 8/23)

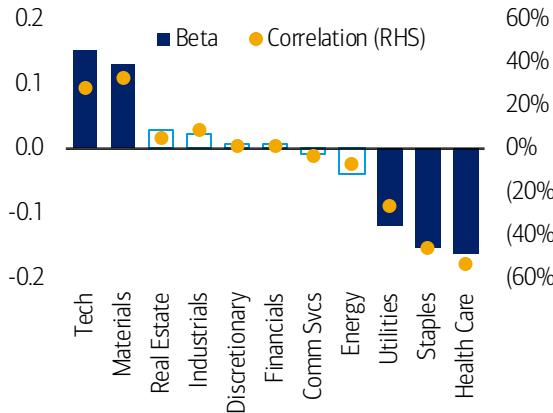


Source: FactSet, BofA US Equity & Quant Strategy

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Exhibit 176: China risk: highest correlation with (and second highest beta to) China

S&P 500 sectors' rel. perf. to MSCI China (May 1996-8/23)



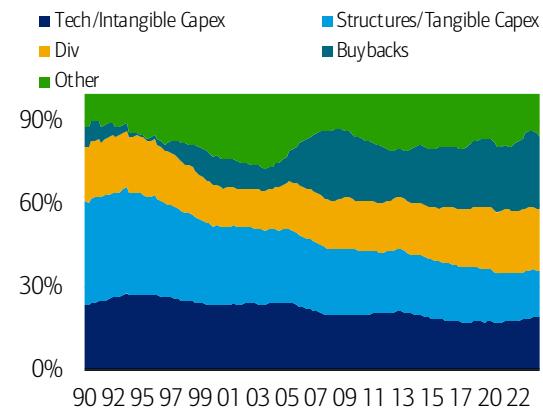
Source: Bloomberg, FactSet, BofA US Equity & Quant Strategy

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

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Exhibit 177: Underinvestment in structure/tangible capex since 1990

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

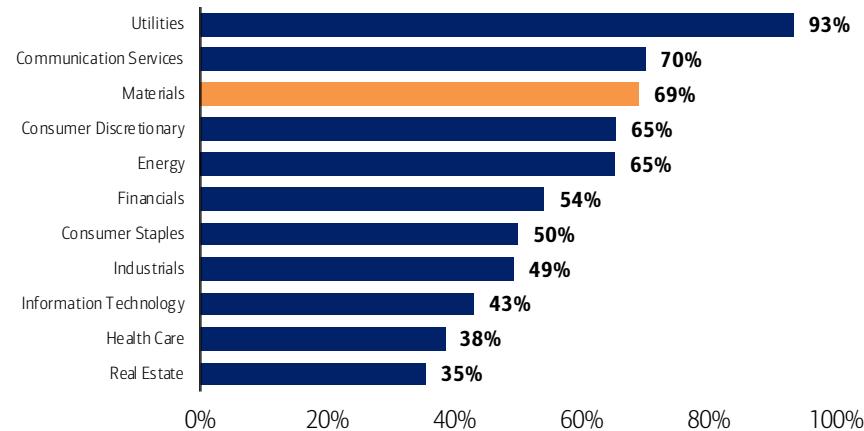


Source: FactSet, BofA US Equity & Quant Strategy *Other uses of cash can include cash build, acquisitions, etc.

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Exhibit 178: Materials has one of the highest % of companies with net-zero targets

Percentage of companies within the S&P 500 universe that have net-zero targets by sector, as of 8/2022:

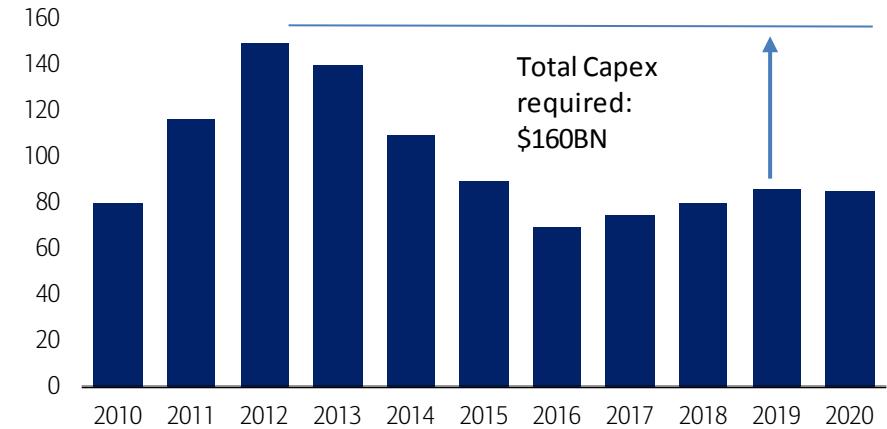


Source: ICE, BofA US ESG Research

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Exhibit 179: Metals & Mining small in S&P 500 Materials, but helped by Net Zero demand

Global Metals and Mining capex (\$bn)



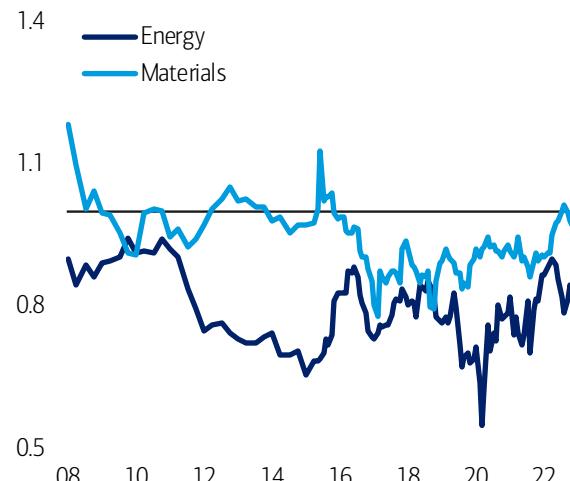
Source: S&P, BofA Global Research

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Exhibit 180: Consensus commodity exposure by both long only funds...

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

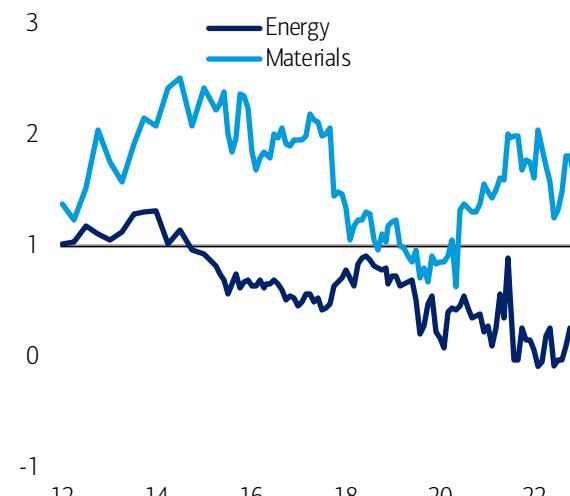


Source: FactSet, BofA US Equity & Quant Strategy

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Exhibit 181: ...and hedge funds

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

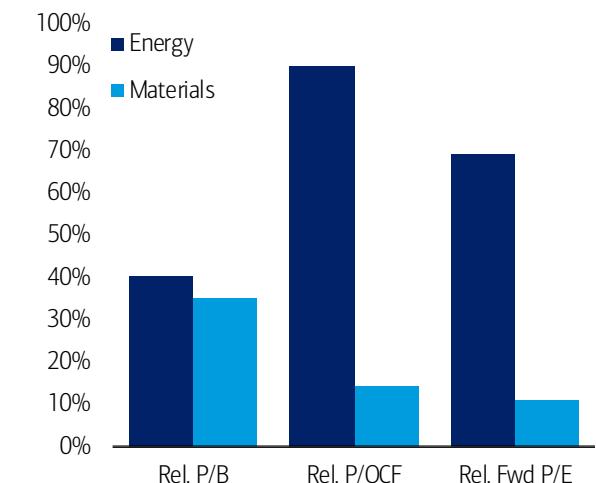


Source: FactSet, BofA US Equity & Quant Strategy

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Exhibit 182: 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 8/2023



Source: FactSet, BofA US Equity & Quant Strategy

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Exhibit 183: Metals & Mining (small) has the most upside on historical valuation

Materials relative price to book, price to operating cash flow, price to earnings by industry as of 8/31/23

Materials (# of co's)	Price to Book (Relative)		Price to Operating Cash Flow (Relative)		Forward P/E (Relative)				
	Curr.	Avg.	Implied upside	Curr.	Avg.	Implied upside	Curr.	Avg.	Implied upside
Chemicals (16)	0.70	1.03	48%	0.93	0.94	1%	0.97	1.07	10%
Construction Materials (2)	0.89	0.75	-16%	1.35	1.27	-6%	1.34	1.60	19%
Containers & Packaging (7)	0.61	0.81	33%	0.59	0.77	29%	0.83	0.88	5%
Metals & Mining (4)	0.54	0.62	15%	0.46	0.72	57%	0.75	0.92	21%

Source: Compustat, First Call, BofA US Equity & US Quant Strategy

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Exhibit 184: Materials = Net Zero/Capex, Oil = Services

Relative performance of Energy vs. Materials YoY and the ISM Services vs. ISM Manufacturing PMI YoY (1997-8/2023)



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

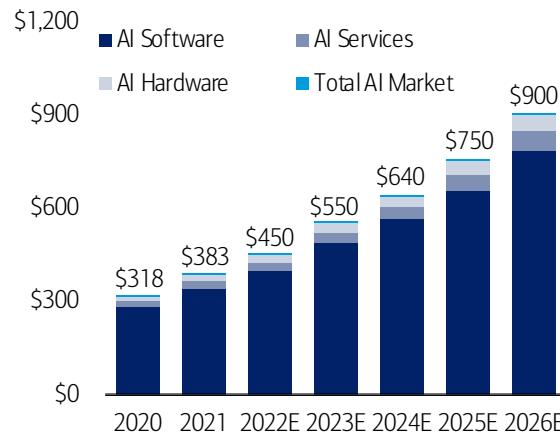
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Marketweight Information Technology

Exhibit 185: AI Software spend to reach ~900bn by 2026E, mostly via software

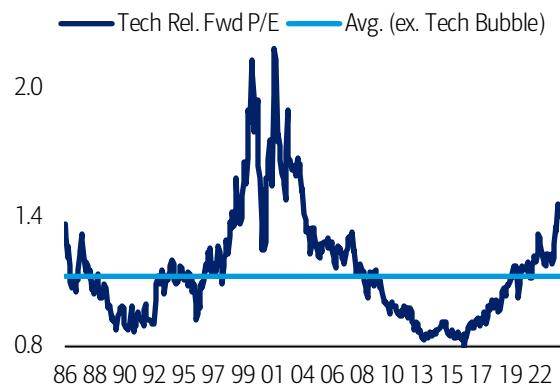
Global AI market size (US\$ bn)



Source: BofA Global Research, IDC

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Exhibit 188: Historically expensive vs. ex-Tech Bubble history
Tech relative fwd P/E vs. S&P 500 (1986-8/2023)

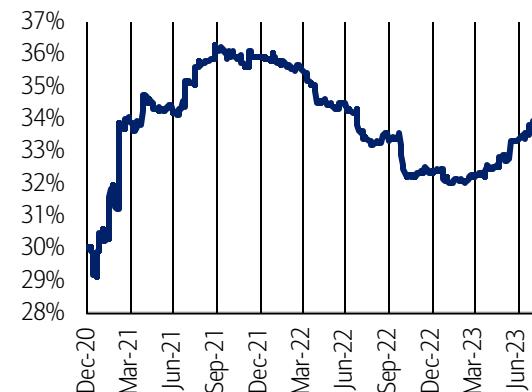


Source: FactSet, BofA US Equity & Quant Strategy

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Exhibit 186: Tech earnings are outperforming S&P 500 earnings

Ratio of Nasdaq 100 consensus 2023 earnings vs. S&P 500 earnings (12/31/20-9/8/23)



Source: BofA US Equity & Quant Strategy, FactSet

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Exhibit 187: AI spend beneficiary

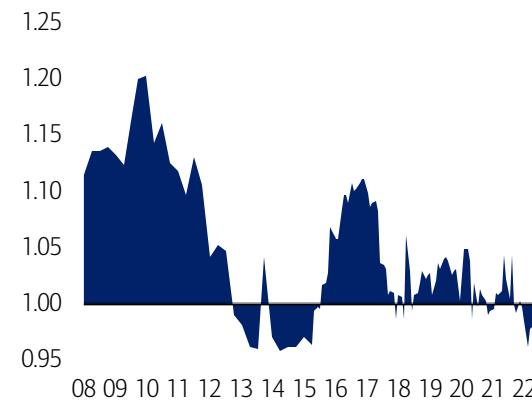
Mentions of "AI" during earnings calls (max = 100; 1Q05-2Q23)



Source: AlphaSense, BofA US Equity & Quant Strategy

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Exhibit 189: Long-only positioning back to market-weight
Relative weight (versus S&P 500) in Information Technology by long-only funds, 1/2008-8/2023

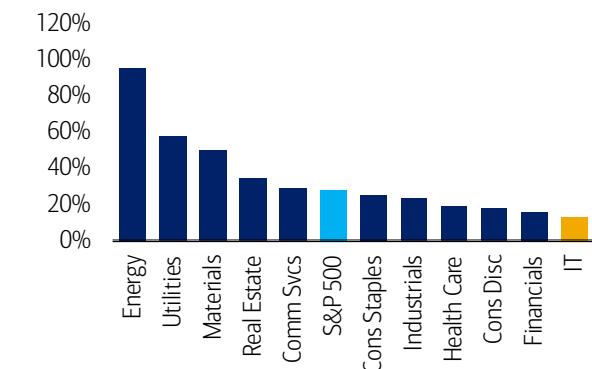


Source: FactSet, BofA US Equity & Quant Strategy

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Exhibit 190: 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



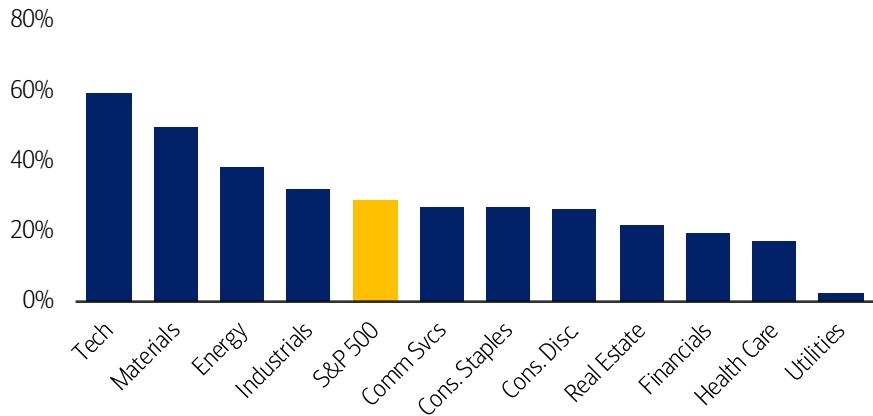
Source: ICE, BofA US Equity and Quant Strategy

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Exhibit 191: Globalization pause is a risk for the sector

S&P 500 foreign exposure by sector

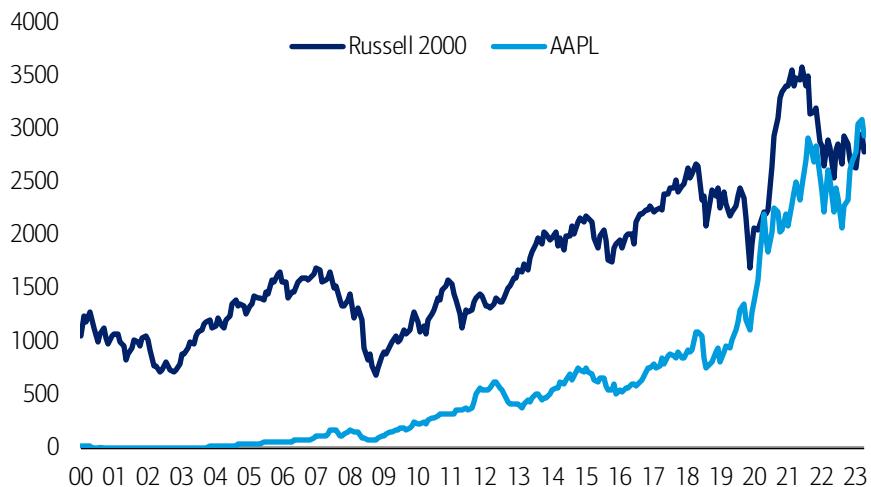


Source: BofA US Equity & Quant Strategy, 2021FY company filings, FactSet, BofA analyst estimates

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Exhibit 193: Risk: ripe for right-sizing (AAPL > Russell 2000)

Market cap of Russell 2000 vs. AAPL (\$B; 2000-8/31/23)

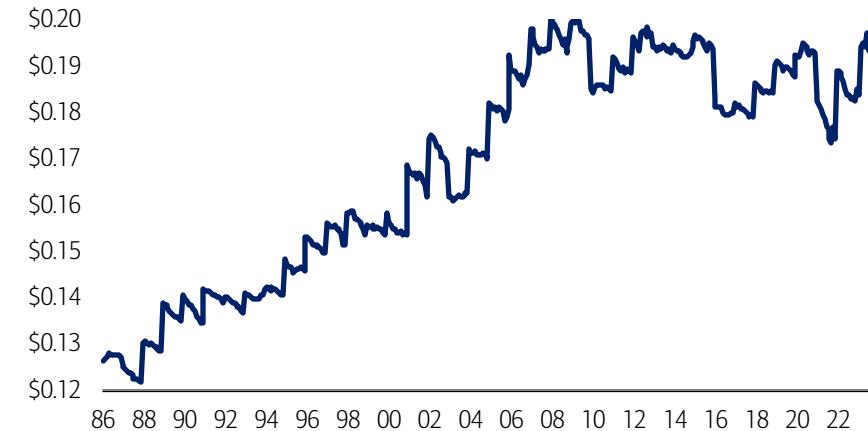


Source: Bloomberg, BofA US Equity & Quant Strategy

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Exhibit 192: Chips at intersection of AI & automation, next secular theme after ZIRP?

S&P 500 \$M revenue per year per worker (1986-8/2023)

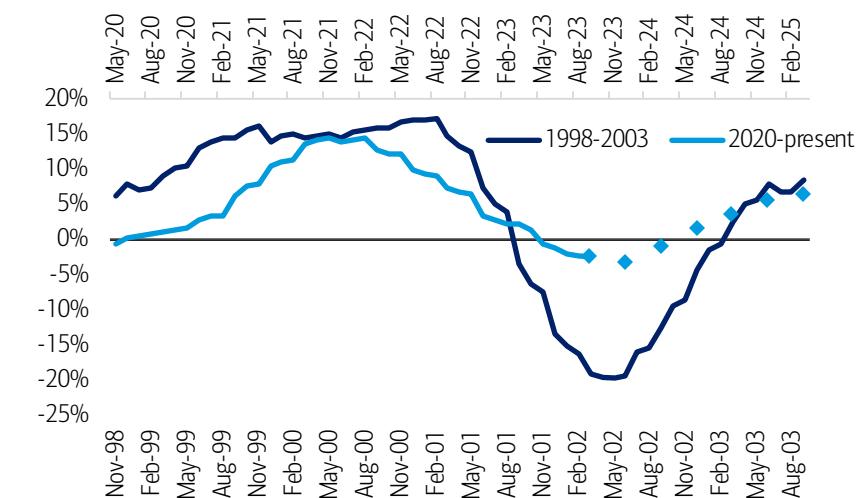


Source: FactSet, Bloomberg, BofA US Equity & Quant Strategy

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Exhibit 194: 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

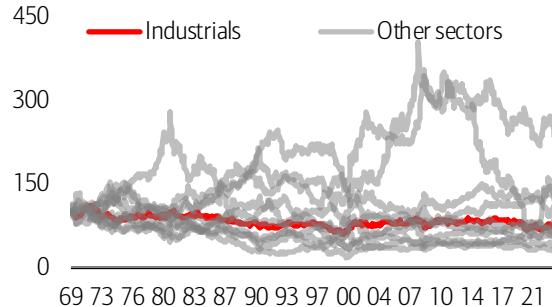
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Marketweight Industrials

Exhibit 195: Perpetual market performer

Sector relative performance (total return) vs. S&P 500 (1969-8/2023)

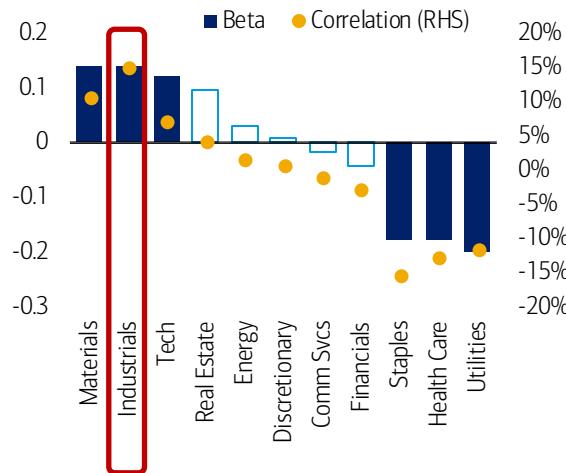


Source: Bloomberg, FactSet, BofA US Equity & Quant Strategy

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Exhibit 198: Most correlated to PMI

S&P 500 sectors' monthly relative performance sensitivity to monthly changes in PMI (1957-8/23)

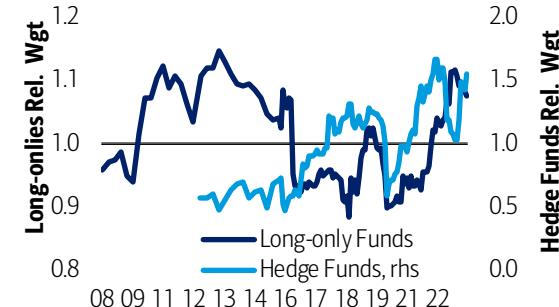


Source: Bloomberg, FactSet, BofA US Equity & Quant Strategy, Global Financial Data
Note: Empty bars indicate not statistically significant. Global Financial Data (used from 1957-1969) combines Utilities and Telecom into one sector.

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Exhibit 196: Loved by both long only funds and hedge funds

Long-only and hedge funds' net relative weight in Industrials (as of 8/2023)

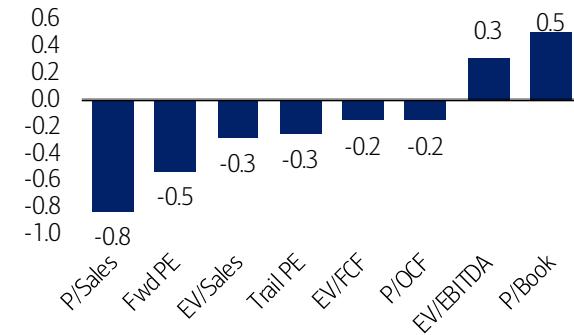


Source: FactSet, BofA US Equity & Quant Strategy

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Exhibit 197: Mixed valuations but generally cheap vs. history

Industrials relative valuations z-score (since 1986), as of 8/2023

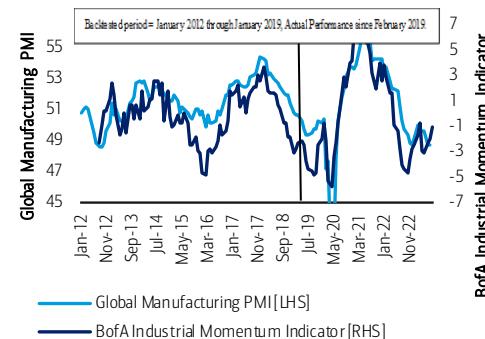


Source: BofA US Equity & Quant Strategy, FactSet

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Exhibit 199: Industrial Momentum Indicator is recovering

BofA Industrial Momentum Indicator typically leads Global Manufacturing PMI



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 200: Industrials: Machinery hated, Conglomerates loved

LO relative exposure to Machinery (cyclical) vs. Industrial Conglomerates (defensive) within S&P 500 (as of 8/2023)



Source: BofA US Equity & Quant Strategy, FactSet Ownership

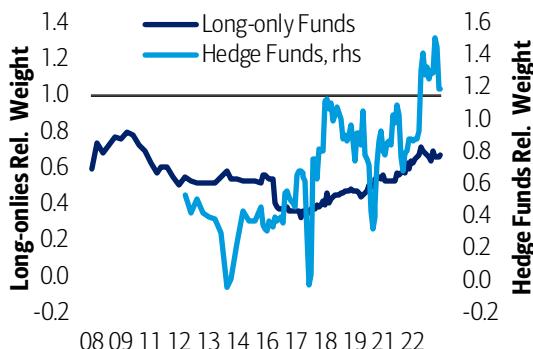
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Marketweight Utilities

Exhibit 201: Still overweight by hedge funds (though down from recent extremes)

Long-only and hedge funds' net relative weight in Utilities (as of 8/2023)

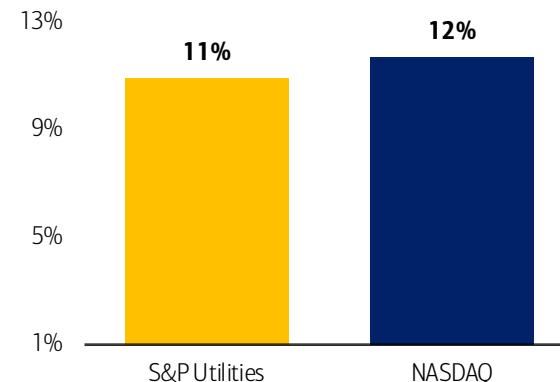


Source: BofA US Equity & Quant Strategy, FactSet Ownership

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Exhibit 202: Close race for the tortoise and the hare

Annualized returns 1980-8/23, S&P Utilities vs. NASDAQ

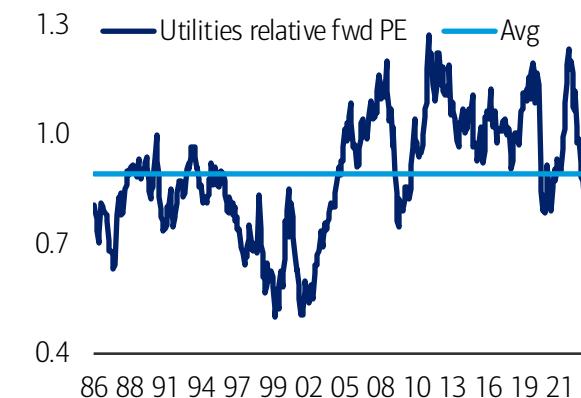


Source: BofA US Equity & Quant Strategy, Datastream, Bloomberg

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Exhibit 203: Cheap vs. history on relative fwd. P/E

Relative (versus S&P 500) forward PE (1/1986-8/2023)

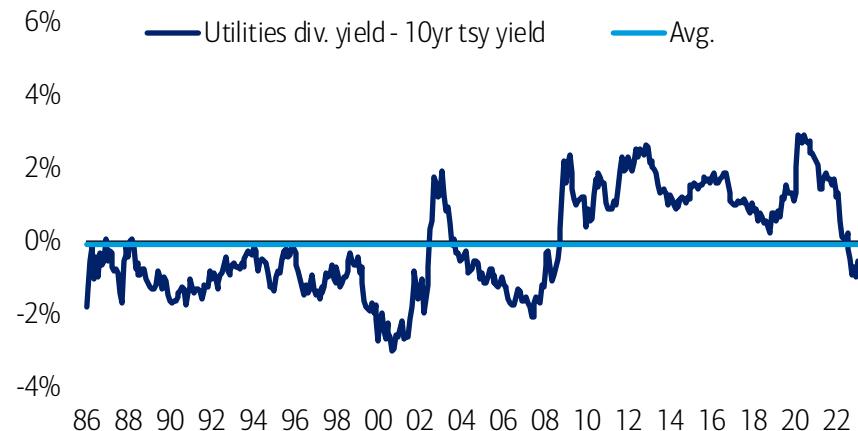


Source: FactSet, Compustat, BofA US Equity & Quant Strategy

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Exhibit 204: But dividend yield is below the 10yr Tsy. yield

Utilities dividend yield vs. 10yr Treasury yield spread, 1986-8/2023



Source: FactSet, BofA US Equity & Quant Strategy

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Exhibit 205: 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%

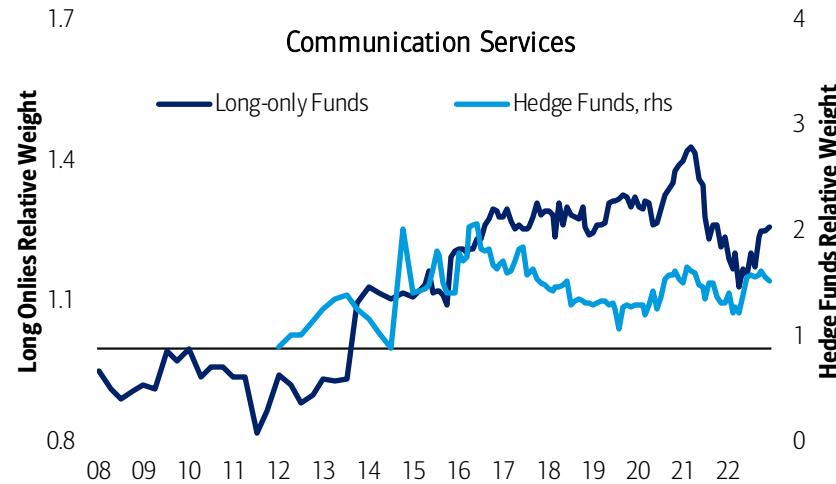
Source: BofA US Equity & Quant Strategy, FactSet

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Underweight Communication Services

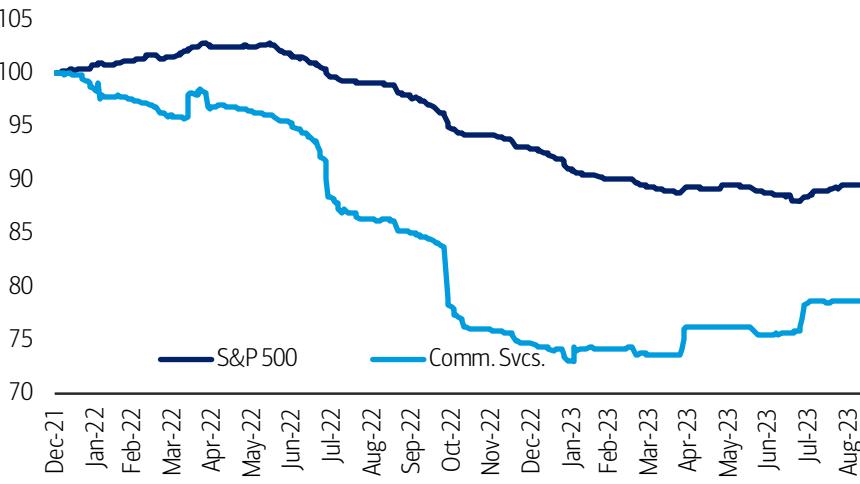
Exhibit 206: Crowds moved back in after 2023 performance momentum
Long-only and hedge funds' net relative weight in Comm. Svcs. (as of 8/2023)



Source: FactSet, BofA US Equity & Quant Strategy

BofA GLOBAL RESEARCH

Exhibit 207: Earnings had lagged S&P 500, but now outperforming
2023 consensus earnings estimates (12/21-9/8/23)



Source: FactSet, BofA US Equity & Quant Strategy

BofA GLOBAL RESEARCH

Exhibit 208: Rising rates hit both short and long duration stocks

S&P 500 dividend payout ratios and projected long-term growth rates as of 9/7/2023



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 209: Extreme concentration risk remains in the market

Top 5 companies' weight in the S&P 500 (1990-8/23)

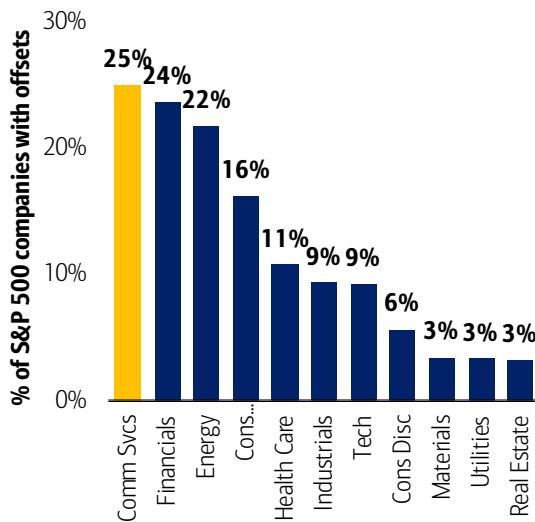


Source: Bloomberg, BofA US Equity & Quant Strategy

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Exhibit 212: Negative E: Highest use of carbon offsets

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

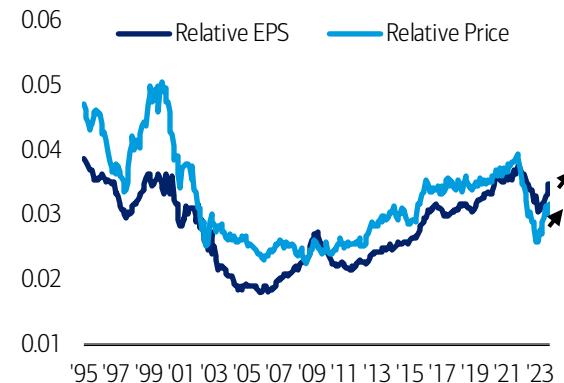


Source: Bloomberg, Refinitiv, BofA US Equity & Quant Strategy

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Exhibit 210: From Value Trap to Opportunity

Comm Svcs. relative EPS vs. relative price (vs. S&P 500), 1995-8/23



Source: FactSet, BofA US Equity & Quant Strategy

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Exhibit 211: Communication Services #1 in tactical model

S&P 500 Momentum & Value Framework Sector Ranks as of 8/2023

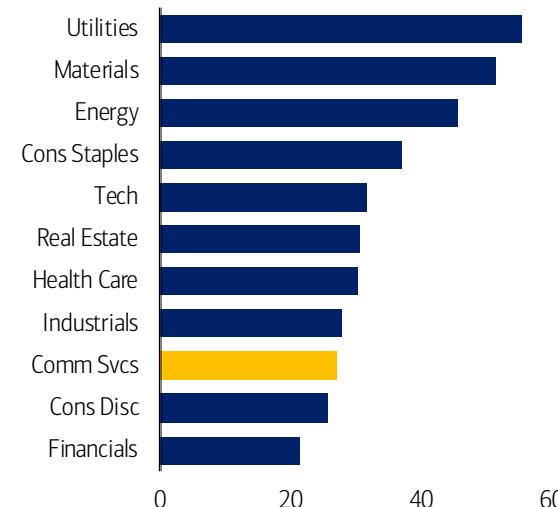
Sector	Combined Rank	Price Momentum Rank	EPS Revision Rank	Valuation Rank
Comm. Svcs.	27	7	10	10
Energy	23	11	1	11
Discretionary	22	10	11	1
Industrials	20	9	8	3
Financials	18	6	6	6
Technology	16	5	9	2
Real Estate	16	3	4	9
Utilities	16	1	7	8
Materials	15	8	2	5
Health Care	14	4	3	7
Staples	11	2	5	4

Source: BofA US Equity & US Quant Strategy

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Exhibit 213: 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]

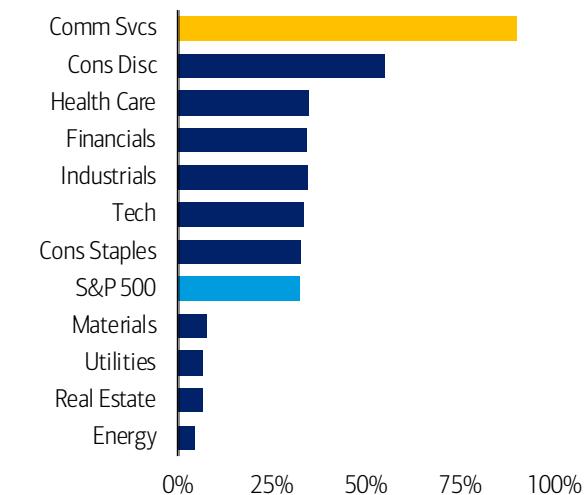


Source: BofA US Equity & Strategy; Bloomberg

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Exhibit 214: 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

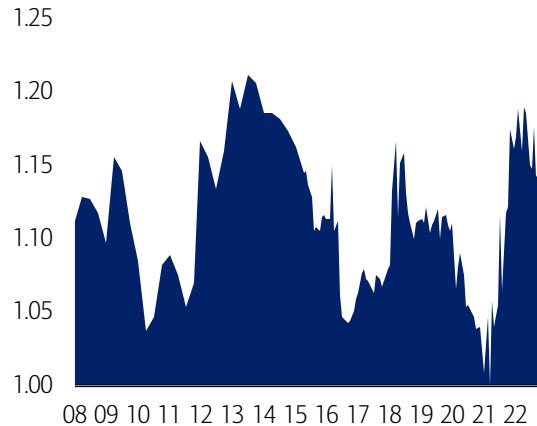
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Underweight Health Care

Exhibit 215: Crowded by active funds

Large cap active managers' relative weight in HC: 2008-8/2023

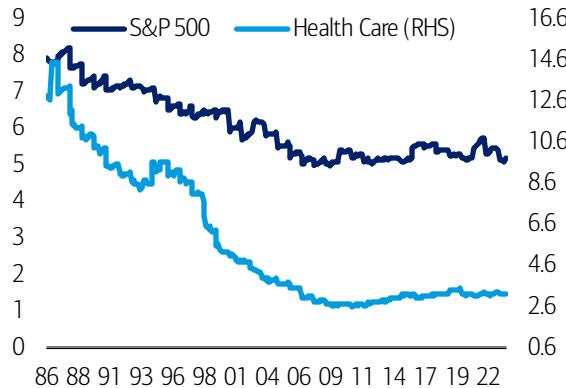


Source: FactSet, BofA US Equity & Quant Strategy

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Exhibit 218: Health Care labor intensity worsened since 2008

Number of employees per dollar of sales (real)

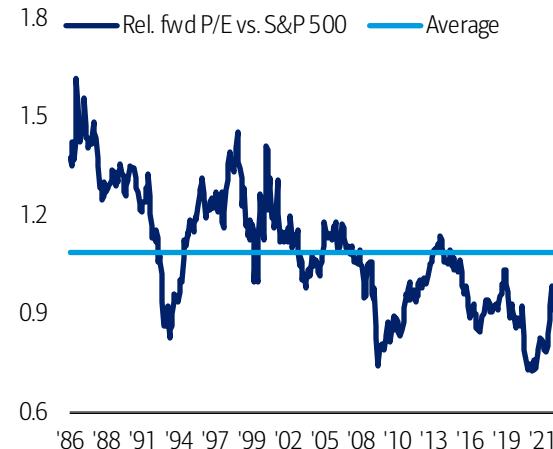


Source: BofA US Equity & Quant Strategy, FactSet

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Exhibit 216: Below average valuations

Health Care relative forward Price/Earnings Ratio (1/1986-8/2023)

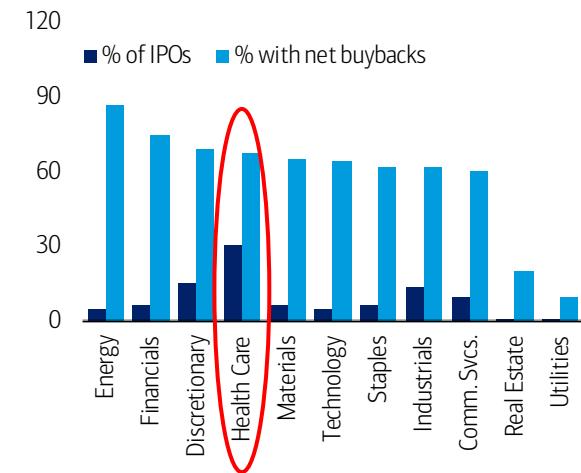


Source: FactSet, BofA US Equity & Quant Strategy

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Exhibit 217: Bad supply & demand dynamics

% of IPOs and % of companies with net share reduction over LTM (as of 8/2023)

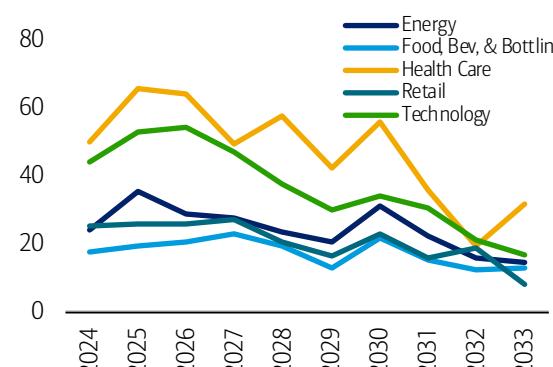


Source: S&P, FactSet, BofA US Equity & Quant Strategy

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Exhibit 219: 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 220: Stealth leverage risks since GFC

Net debt-cap (1986-8/23)



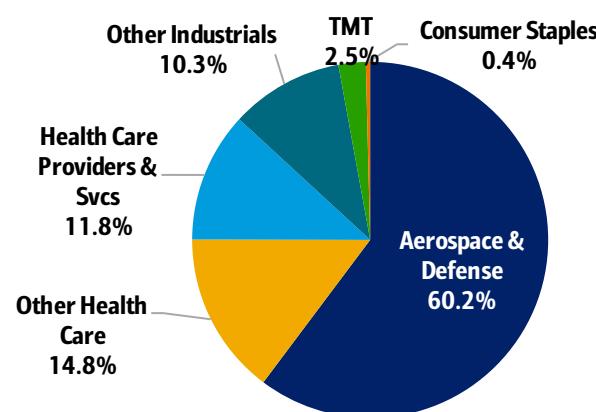
Source: FactSet, BofA US Equity & Quant Strategy

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Exhibit 221: 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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Exhibit 222: Government-exposed stocks underperformed post-prior shutdowns

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

Debt downgrade (8/5/2011)
Shutdown 12/21/2018 to 1/25/2019

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

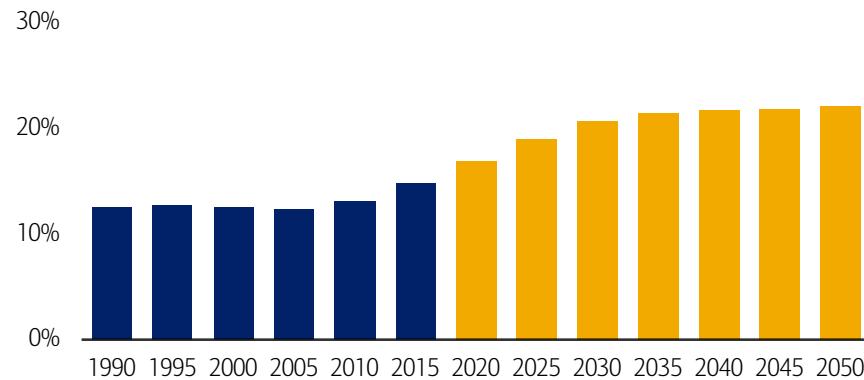
During	6m after
N/A	-12.44%
-7.30%	-14.01%

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But long-term growth case still intact for Health Care

Exhibit 223: 65+ population is expected to grow ~50% over the next 20 years

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



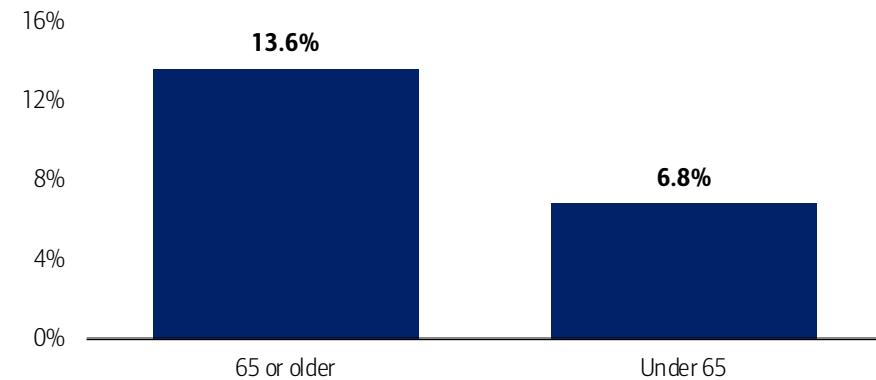
Source: Census Bureau (Population Division), BofA US Equity & Quant Strategy

Note: orange bars denote Census forecasts

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Exhibit 224: 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

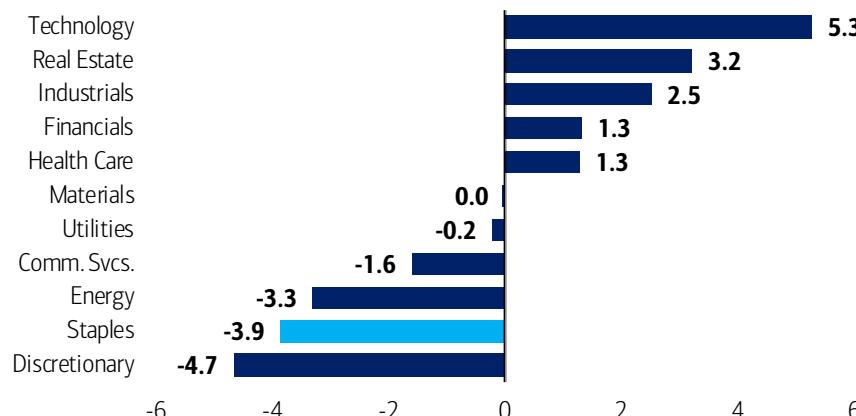
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Underweight Consumer Staples

Exhibit 225: Lower quality vs history

B+ or Better current sector weight vs. historical avg (ppt), as of 8/23

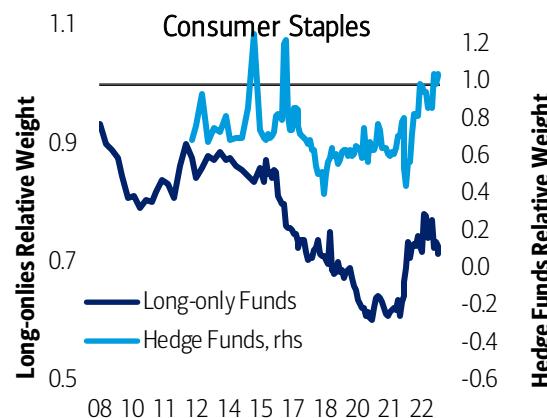


Note: based on equal weight (number of companies). Real Estate since 5/2003, all other sectors since 1986.

Source: BofA US Equity and Quant Strategy, FactSet

Exhibit 227: Positioning risk has increased since 2021

Long-only and hedge funds' net relative weight in Staples. (as of 8/2023)



Source: FactSet Ownership, BofA US Equity & Quant Strategy

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Exhibit 226: Staples ranks last in tactical model

S&P 500 Momentum & Value Framework Sector Ranks as of 8/2023

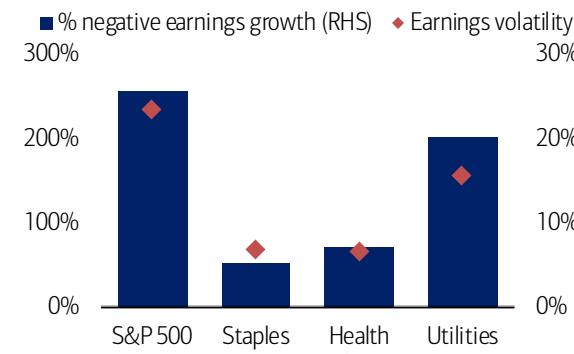
Sector	Combined Rank	Price Momentum Rank	EPS Revision Rank	Valuation Rank
Comm. Svcs.	27	7	10	10
Energy	23	11	1	11
Discretionary	22	10	11	1
Industrials	20	9	8	3
Financials	18	6	6	6
Technology	16	5	9	2
Real Estate	16	3	4	9
Utilities	16	1	7	8
Materials	15	8	2	5
Health Care	14	4	3	7
Staples	11	2	5	4

Source: BofA US Equity & US Quant Strategy

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Exhibit 228: Most defensive of defensive sectors

% of historical negative YoY earnings growth and coefficient of variation of YoY earnings growth (1986-8/23)

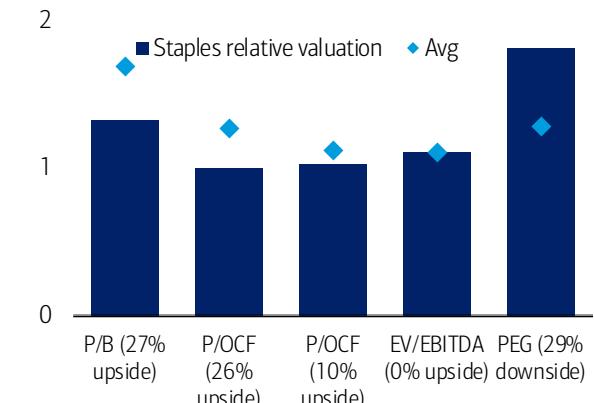


Source: BofA US Equity & Quant Strategy, FactSet

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Exhibit 229: Staples is fairly valued to overvalued

Relative valuations of Staples (vs. S&P 500) percent upside/downside versus historical average as of 8/2023



Source: FactSet, BofA US Equity & Quant Strategy

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Tactical industry rotation framework

Exhibit 230: S&P 500 Momentum & Value Framework - industry ranks as of 8/23

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	27	7	10	10	
Household Durables	Consumer Discretionary	27	8	10	9	
Media	Communication Services	27	9	8	10	
Passenger Airlines	Industrials	25	6	9	10	
Energy Equipment & Services	Energy	25	10	6	9	
Construction Materials	Materials	23	8	10	5	
Machinery	Industrials	23	10	8	5	
Office Reits	Real Estate	23	8	5	10	
Building Products	Industrials	22	10	8	4	
Communications Equipment	Information Technology	21	8	5	8	
Hotels Restaurants & Leisure	Consumer Discretionary	21	5	10	6	
Electrical Equipment	Industrials	21	10	9	2	
Insurance	Financials	21	7	7	7	
Specialized Reits	Real Estate	21	5	8	8	
Semiconductors & Semiconductor Equipment	Information Technology	20	9	10	1	
Broadline Retail	Consumer Discretionary	20	9	10	1	
Trading Companies & Distributors	Industrials	20	9	5	6	
Automobiles	Consumer Discretionary	20	10	9	1	
Entertainment	Communication Services	20	4	9	7	
Construction & Engineering	Industrials	20	10	9	1	
Professional Services	Industrials	20	9	8	3	
Specialty Retail	Consumer Discretionary	20	8	7	5	
Leisure Products	Consumer Discretionary	19	10	3	6	
Industrial Conglomerates	Industrials	19	5	9	5	
Financial Services	Financials	18	7	8	3	
Oil Gas & Consumable Fuels	Energy	18	8	1	9	
Residential Reits	Real Estate	17	3	5	9	
Health Care Providers & Services	Health Care	17	3	6	8	
Metals & Mining	Materials	17	9	1	7	
Auto Components	Consumer Discretionary	16	8	4	4	
Independent Power And Renewable Electricity Producers	Utilities	16	1	5	10	
Biotechnology	Health Care	16	4	4	8	
Banks	Financials	15	4	2	9	
Retail Reits	Real Estate	15	3	3	9	
Beverages	Consumer Staples	15	2	7	6	
Distributors	Consumer Discretionary	15	4	4	7	
Food Products	Consumer Staples	15	1	6	8	
Tobacco	Consumer Staples	15	4	4	7	
Chemicals	Materials	15	7	2	6	
Personal Care Products	Consumer Staples	15	1	10	4	
Hotel & Resort Reits	Real Estate	14	1	3	10	
Electronic Equipment Instruments & Components	Information Technology	14	6	3	5	
Health Care Reits	Real Estate	14	5	5	4	
Diversified Telecommunication Services	Communication Services	14	1	3	10	
Capital Markets	Financials	14	6	4	4	



Exhibit 230: S&P 500 Momentum & Value Framework - industry ranks as of 8/23

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
Consumer Finance	Financials	13	2	3	8	
It Services	Information Technology	13	6	5	2	
Air Freight & Logistics	Industrials	13	5	1	7	
Household Products	Consumer Staples	13	4	6	3	
Multi-Utilities	Utilities	13	2	3	8	
Electric Utilities	Utilities	13	1	7	5	
Pharmaceuticals	Health Care	13	6	1	6	
Aerospace & Defense	Industrials	13	3	8	2	
Software	Information Technology	12	3	7	2	
Technology Hardware Storage & Peripherals	Information Technology	12	5	6	1	
Health Care Equipment & Supplies	Health Care	12	2	7	3	
Containers & Packaging	Materials	12	7	1	4	
Ground Transportation	Industrials	11	7	2	2	
Real Estate Management & Development	Real Estate	11	5	1	5	
Commercial Services & Supplies	Industrials	10	3	6	1	
Life Sciences Tools & Services	Health Care	10	6	2	2	
Industrial Reits	Real Estate	9	2	4	3	
Consumer Staples Distribution & Retail	Consumer Staples	8	3	2	3	
Textiles Apparel & Luxury Goods	Consumer Discretionary	7	2	2	3	

Source: BofA US Equity & US Quant Strategy

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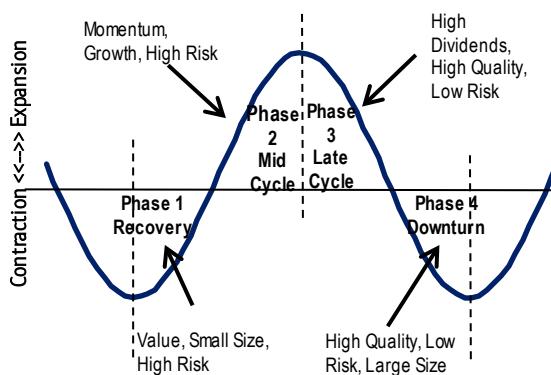


Style outlook

US Regime Indicator moved from “Downturn” to “Recovery”

Exhibit 231: Value, Small Size, and High Risk outperform in Early Cycle

Early Cycle, Mid Cycle, Late Cycle and Recessions/Downturn regimes

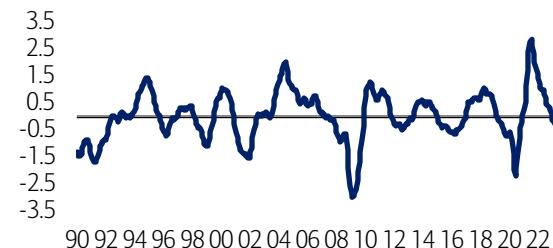


Source: BofA US Equity & Quant Strategy

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Exhibit 232: US Regime Indicator improved in August

US Regime Indicator (January 1990-August 2023)

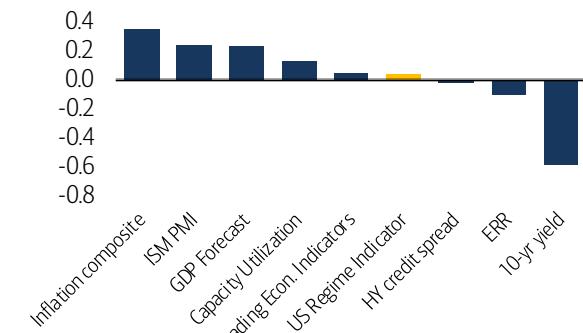


Source: BofA US Equity & Quant Strategy, Refinitiv, ICE Data Indices, LLC, Institute for Supply Management, BLS, Federal Reserve. Note: Phase 1 – Early Cycle; Phase 2 – Mid Cycle; Phase 3 – Late Cycle; Phase 4 – Recessions; Disclaimer: The indicator identified as the US Regime Indicator above is intended to be an indicative metric only and may not be used for reference purposes or as a measure of performance for any financial instrument or contract, or otherwise be relied upon by third parties for any other purpose, without the written consent of BofA Global Research. This indicator was not created to act as a benchmark.

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Exhibit 233: US Regime Indicator rose as 5 of 8 inputs improved

m/m change in US Regime Indicator variables (as of 8/23)



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

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Exhibit 234: Style performance in the four US Regime indicator phases

Relative performance vs. equal-weighted S&P 500

	Value	Growth	Momentum	High Quality	Low Quality	High Risk	Low Risk	Large Cap	Small Cap	Low Beta	High Div. Yield
Phase 1	Avg:	19.4%	-7.5%	-5.9%	-6.0%	8.4%	18.4%	-10.7%	-8.4%	19.0%	-12.8% 7.0%
Recovery	Median:	14.9%	-5.3%	-1.7%	-6.5%	10.7%	12.9%	-12.5%	-7.8%	11.2%	-13.4% 7.8%
(Current)	Hit Rate:	100.0%	12.5%	50.0%	25.0%	75.0%	75.0%	25.0%	12.5%	75.0%	12.5% 87.5%
Phase 2	Avg:	3.8%	10.9%	11.2%	0.8%	3.9%	11.0%	-6.6%	-2.1%	6.0%	-12.6% -6.7%
Mid Cycle	Median:	4.3%	2.3%	4.0%	-0.7%	2.2%	10.3%	-4.9%	-6.6%	9.1%	-12.1% -7.1%
	Hit Rate:	77.8%	66.7%	77.8%	44	66.7%	77.8%	22.2%	33.3%	77.8%	0.0% 11.1%
	Hit Rate ex. Tech Bubble:	87.5%	62.5%	75.0%	37.5%	75.0%	75.0%	25.0%	25.0%	87.5%	0.0% 12.5%
Phase 3	Avg:	-0.8%	-6.2%	-3.4%	3.5%	-6.9%	-11.4%	8.4%	-1.2%	-7.6%	7.0% 7.5%
Late Cycle	Median:	-0.9%	-1.8%	2.3%	5.8%	-6.6%	-8.9%	9.8%	2.3%	-8.1%	3.2% 3.5%
	Hit Rate:	44.4%	33.3%	55.6%	66.7%	22.2%	11.1%	77.8%	55.6%	11.1%	55.6% 77.8%
Phase 4	Avg:	-3.2%	1.5%	2.4%	7.5%	-3.1%	-3.7%	2.3%	6.7%	-3.6%	-2.5% -3.9%
Downturn	Median:	-6.9%	1.1%	-0.1%	7.6%	0.0%	0.0%	3.0%	6.6%	-7.7%	-0.3% -6.0%
	Hit Rate:	25.0%	62.5%	50.0%	75.0%	37.5%	50.0%	75.0%	87.5%	12.5%	50.0% 25.0%

Note: Performance is calculated as price return relative to equal-weighted S&P 500, for all styles except High Dividend Yield, where total return for the style and the index are used. Hit rate = % of months in phase where style outperformed equal-weighted S&P 500.

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

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Top factors in Recovery: low P/E, low P/B, small size

Exhibit 235: High EPS Yield (Low P/E), Low Price to Book and Small Size fared best in Recovery...

Factor performance in Recoveries

Best factors for Recovery	Avg:	Median:	Hit Rate:
Earnings Yield	10.9%	9.9%	100.0%
Price/ Book Value	21.8%	17.0%	87.5%
Size	21.7%	11.4%	87.5%
Low Price	21.0%	25.7%	87.5%
Forward Earnings Yield	20.5%	15.0%	87.5%
Price/ Cash Flow	15.3%	6.1%	87.5%
Beta	13.7%	7.8%	87.5%
Dividend Yield	9.2%	9.2%	87.5%
Estimate Dispersion	17.4%	10.4%	75.0%
Price/ Sales	16.9%	8.1%	75.0%
EV/ EBITDA	13.4%	11.8%	75.0%
Free Cash Flow/ EV	5.6%	4.4%	75.0%
Most Active	5.6%	11.0%	75.0%
Foreign Exposure	5.2%	6.4%	75.0%

Source: BofA US Equity & Quant Strategy, FactSet. See Appendix or Quantitative Profiles report for more information on factors.

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Exhibit 236: ...while High Duration, 1-yr and 5-yr Debt Adjusted ROE lagged

Factor performance in Recoveries

Worst factors for Recovery	Avg:	Median:	Hit Rate:
Equity Duration	-6.0%	-7.0%	12.5%
5yr ROE Adj	-5.7%	-6.1%	12.5%
1yr ROE Adj	-5.4%	-5.7%	12.5%
ROA	-5.9%	-5.8%	25.0%
5y ROE	-5.8%	-8.0%	25.0%
Relative Strength - 10wk/40wk MA	-5.7%	-3.5%	25.0%
Neglect - Institutional Ownership	-4.4%	-4.3%	25.0%
1yr ROE	-4.4%	-4.6%	25.0%

Source: BofA US Equity & Quant Strategy, FactSet. See Appendix or Quantitative Profiles report for more information on factors.

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Exhibit 237: Financials led during all Recoveries since 1991, Utilities lagged

Sector performance in Recoveries

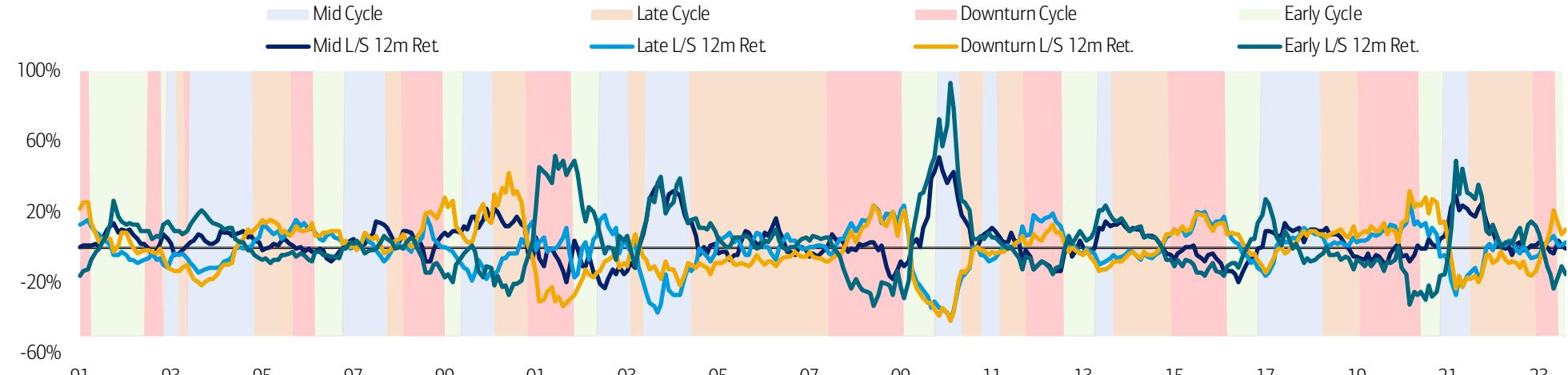
Sector	Avg:	Median:	Hit Rate:
Financials	14.6%	13.5%	100.0%
Industrials	5.1%	3.2%	75.0%
Material	10.1%	8.2%	75.0%
Discretionary	3.3%	5.7%	62.5%
Energy	5.3%	-2.3%	50.0%
Info Tech	-0.2%	2.2%	50.0%
Real Estate	9.1%	3.5%	50.0%
Comm Svcs.	-6.8%	-3.7%	37.5%
Staples	-4.7%	-10.0%	37.5%
Health Care	-7.0%	-6.5%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

Source: BofA US Equity & Quant Strategy, FactSet

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Exhibit 238: Factor behavior has been relatively well behaved during different phases of the US Regime Indicator

Rolling 12m returns of avg. top 5 – avg. bottom 5 factors in each US Regime Indicator phase



Source: FactSet, BofA US Equity & Quant Strategy

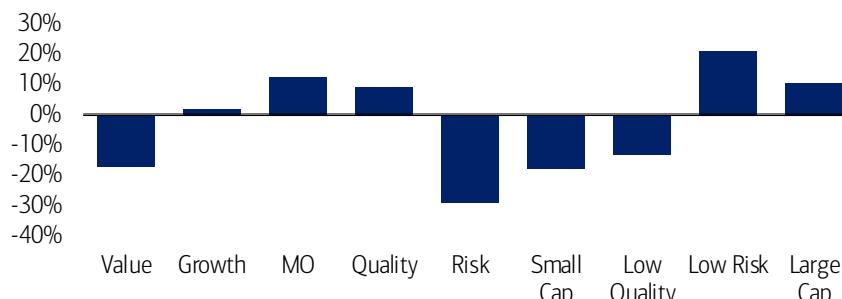
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Whipsaw alert: Style and sector risks are heightened

Exhibit 239: Factor performance: Short-Lived Recoveries before Downturn resumed

Median return across occurrences since 1990

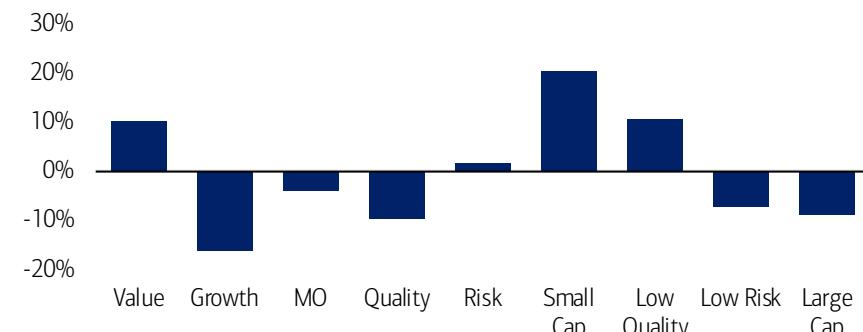


Source: BofA US Equity and Quant Strategy, FactSet. *Short-Lived Recoveries: In the seven Downturns since '90, the last four had short-lived upticks on the way lower: 1) 5/08 – 8/08 (4 mos.), 2) 3/12 – 5/12 (3 mos.), 3) 6/15 – 7/15 (2 mos.) and 4) 12/19 – 1/20 (2 mos.). Factor performance is based on average performance of top decile factors of S&P 500 as tracked in Quantitative Profiles.

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Exhibit 240: Factor performance: Recovery

Median return across occurrences since 1990



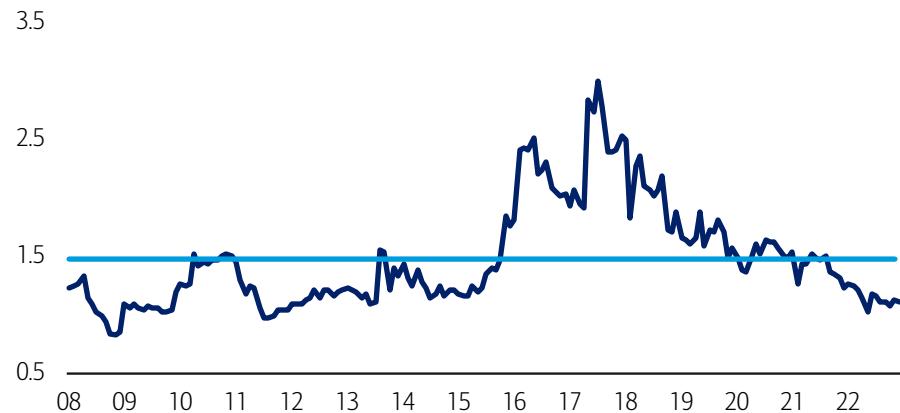
Source: BofA US Equity and Quant Strategy, FactSet. *Early Recovery: initial three months of Recovery phase. Factor performance is based on average performance of top decile factors of S&P 500 as tracked in Quantitative Profiles.

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Inflection in regime could be painful for active funds

Exhibit 241: Funds' beta exposure is near 2009 levels

Long-only relative weight in High Beta (top decile) vs. Low Beta (bottom decile) stocks as of Aug. 2023

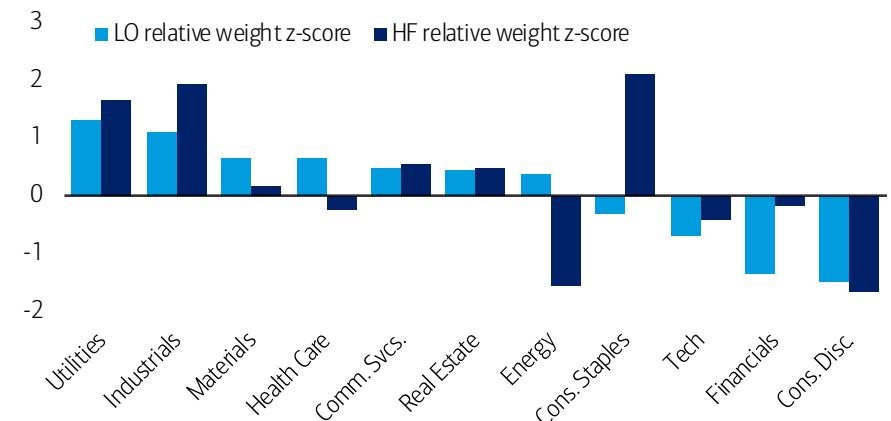


Source: BofA US Equity & Quant Strategy, FactSet

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Exhibit 242: Discretionary & Financials are the most underweight vs. historical avg.

Z-score* of relative weight in sector vs. S&P 500 by long-only & hedge funds (as of Aug. 2023)



Source: BofA US Equity & Quant Strategy, FactSet *data since 2008 for LOs, data since 2011 for HFs

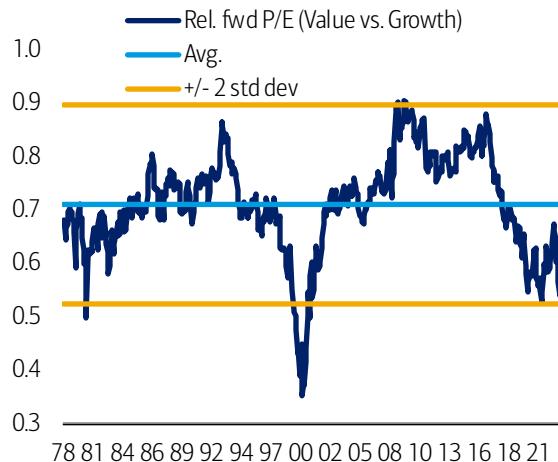
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Value > Growth

Exhibit 243: Growth still expensive

Relative forward P/E of Russell 1000 Growth vs Value style indices as of 8/23

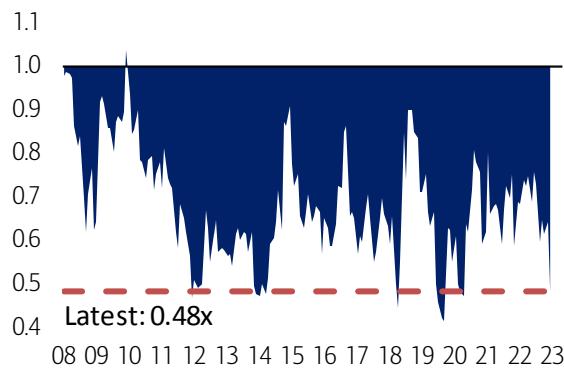


Source: BofA US Equity and Quant Strategy, FactSet

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Exhibit 246: Value is underweight vs. growth by factors

Long only positioning in Value vs Growth proxied by Price to Earnings vs Long-Term Growth of S&P 500 (9/2008-8/2023)

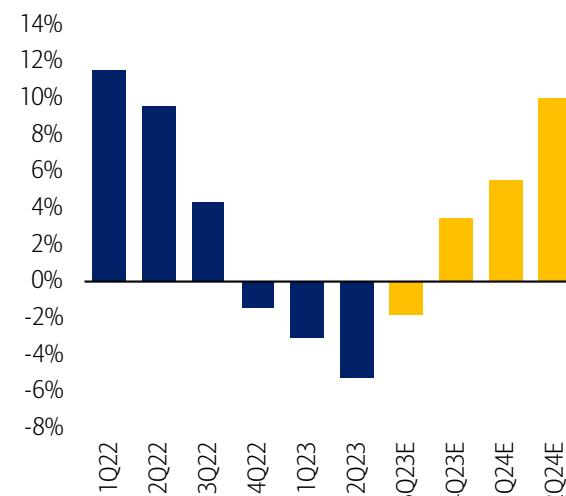


Source: BofA US Equity & Quant Strategy, FactSet Ownership

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Exhibit 244: We expect 2Q to mark the trough in profit cycle

S&P 500 quarterly EPS YoY (orange = BofA estimates)

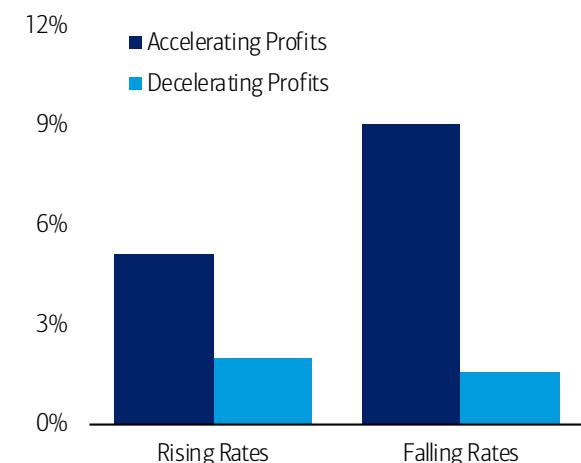


Source: BofA US Equity & Quant Strategy, Haver Analytics

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Exhibit 245: Profit cycle matters more than rates for Value vs. Growth

Value vs. Growth annualized quarterly performance during profit and rates cycles since 1926

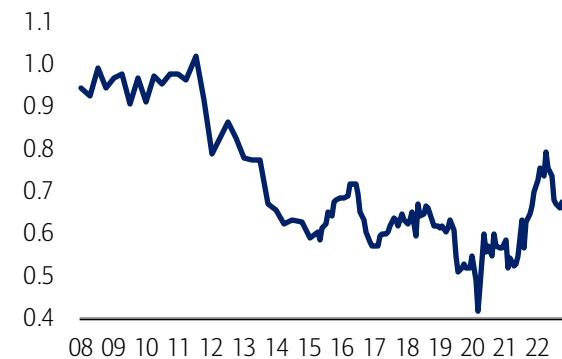


Source: FactSet, BofA US Equity & US Quant Strategy

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Exhibit 247: Value is underweight by sector: Energy vs. TMT

Energy sector vs Communication Services sector relative weight in mutual funds (9/08-8/23)

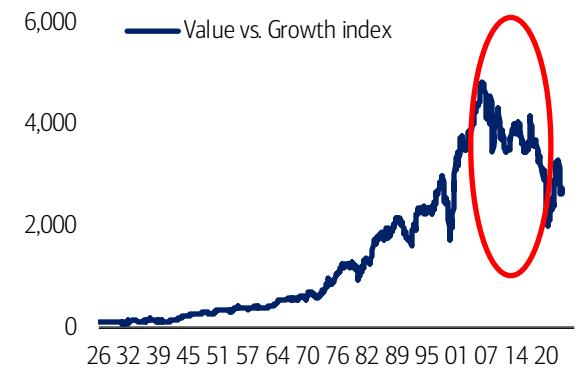


Source: BofA US Equity & Quant Strategy, FactSet Ownership

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Exhibit 248: Growth crushing Value is a recent phenomenon

Cumulative Relative Value vs Growth performance based on Fama/French research factors (as of 8/23)



Source: Tuck School of Business data library, BofA US Equity & Quant Strategy.

Note: August performance is based on the Russell 1000 Value and Growth index

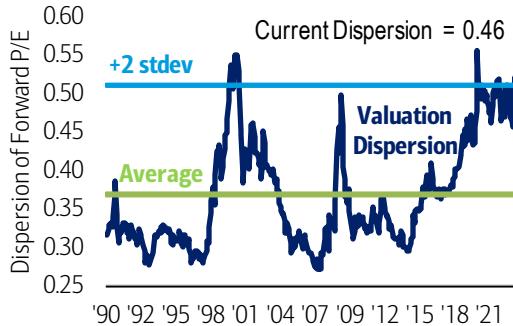
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Alpha opportunities are high

Exhibit 249: Lots of valuation dispersion = high alpha opportunity, bodes well for a value cycle

S&P 500 valuation dispersion of fwd P/E (std. dev / avg) (1990-8/23)

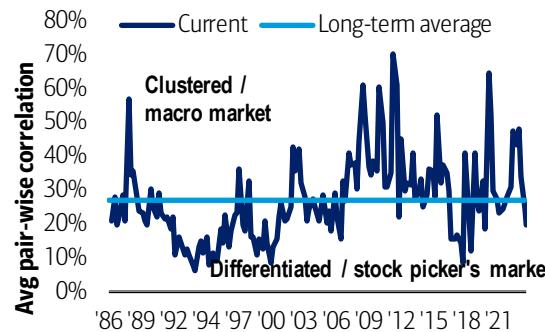


Source: FactSet, BofA US Equity & US Quant Strategy

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Exhibit 250: Pair-wise correlation in the S&P 500 fell below average

Avg. pair-wise stock correl. based on 90-day periods, daily (as of 8/23)

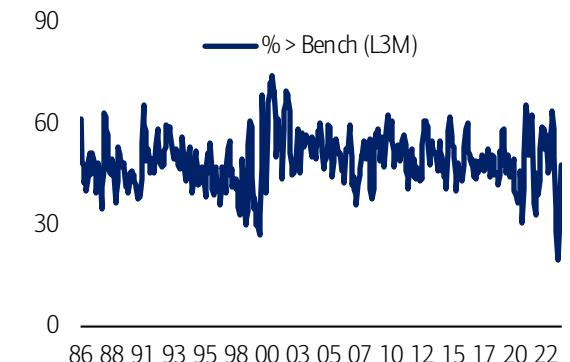


Source: FactSet, BofA US Equity & US Quant Strategy

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Exhibit 251: Breadth improved from all time low

% of stocks outperforming the S&P 500 over the last three months (1986-8/23)

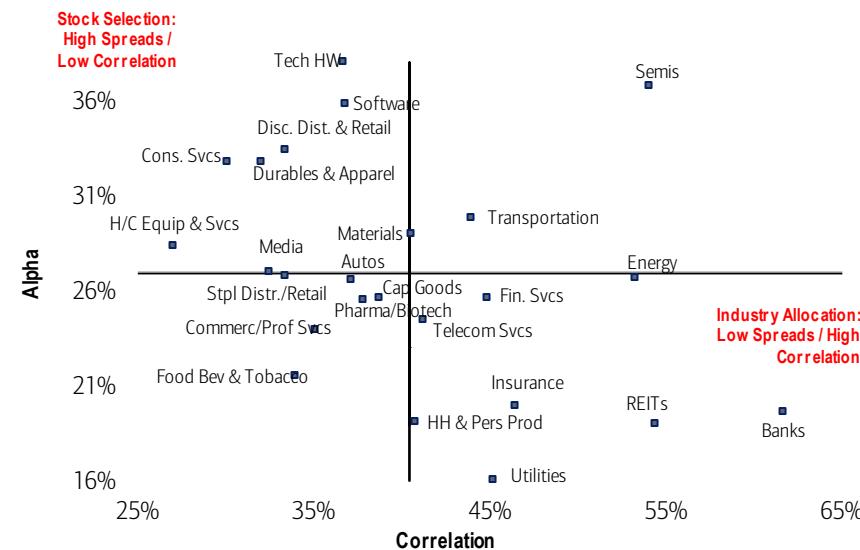


Source: BofA US Equity & Quant Strategy, FactSet

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Exhibit 252: Where to pick stocks? Tech, Consumer & Health Care: more idiosyncratic, less macro

Historical Intra-stock correlation vs. performance spread (3Q86 to 2Q23)

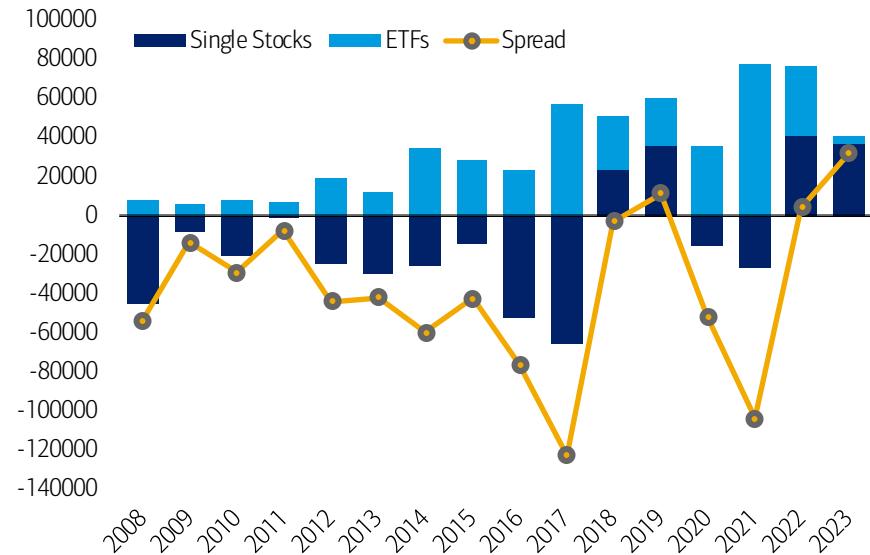


Source: FactSet, BofA US Equity & US Quant Strategy

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Exhibit 253: First sign of stock picking since 2008

Cumulative flows into single stocks vs ETFs by year (and 2023 YTD) by BofA Securities clients, \$mn



Source: BofA Securities

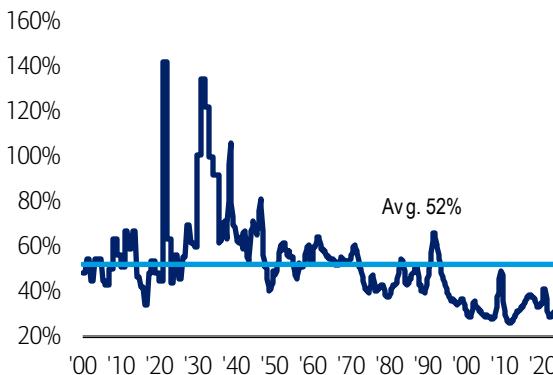
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Welcome to a total return world

Exhibit 254: Room to raise dividends

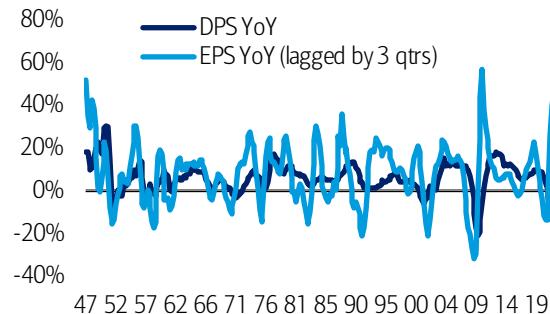
S&P 500 dividend payout ratio 1900-2Q2023



Source: Haver Analytics/S&P, FactSet, BofA US Equity & US Quant Strategy
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Exhibit 255: DPS growth lagged EPS by >40ppt; expect some catch up

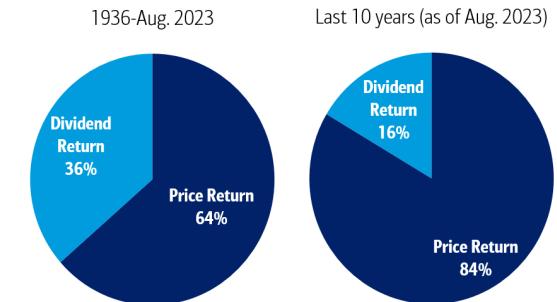
S&P 500 TTM div. per share vs. EPS YoY with a 3-qtr lag (1945-present)



Source: BofA US Equity & Quant Strategy, FactSet, Haver Analytics
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Exhibit 256: Dividends have contributed 36% of total returns (but just 16% in the last decade)

S&P 500 price return and dividend contributions to total return



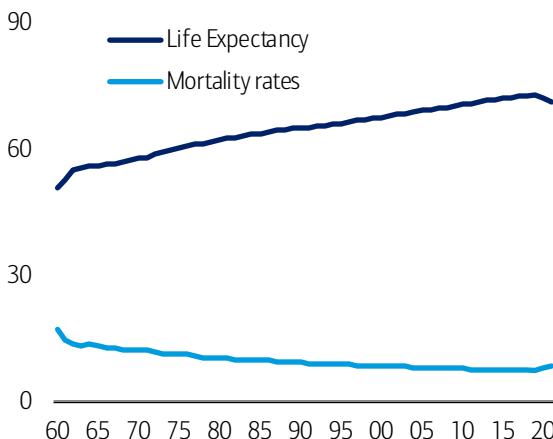
Source: BofA US Equity & Quant Strategy, Bloomberg

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Demand still skews to income over capital appreciation

Exhibit 257: Demographics suggest demand for income will accelerate from here

Life expectancy vs mortality rates, 1960-2021

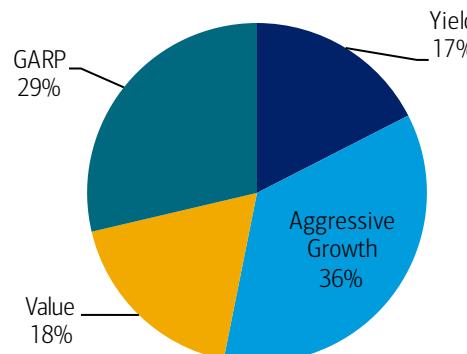


Source: World Bank

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Exhibit 258: Income funds have grown from less than 20% of active AUM in 2010...

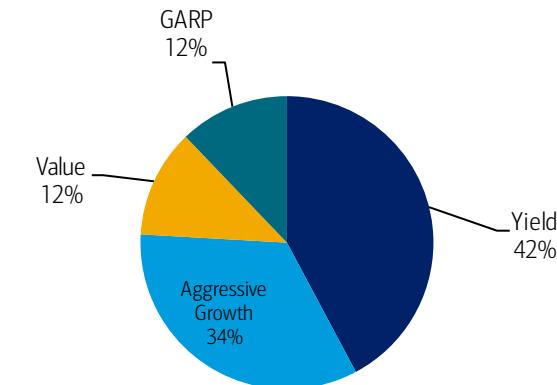
Active equity AUM landscape by fund category – Aug 2010



Source: BofA US Equity & US Quant Strategy, FactSet Ownership
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Exhibit 259: ...To over 40% of active funds today

Active equity AUM landscape by fund category – present



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

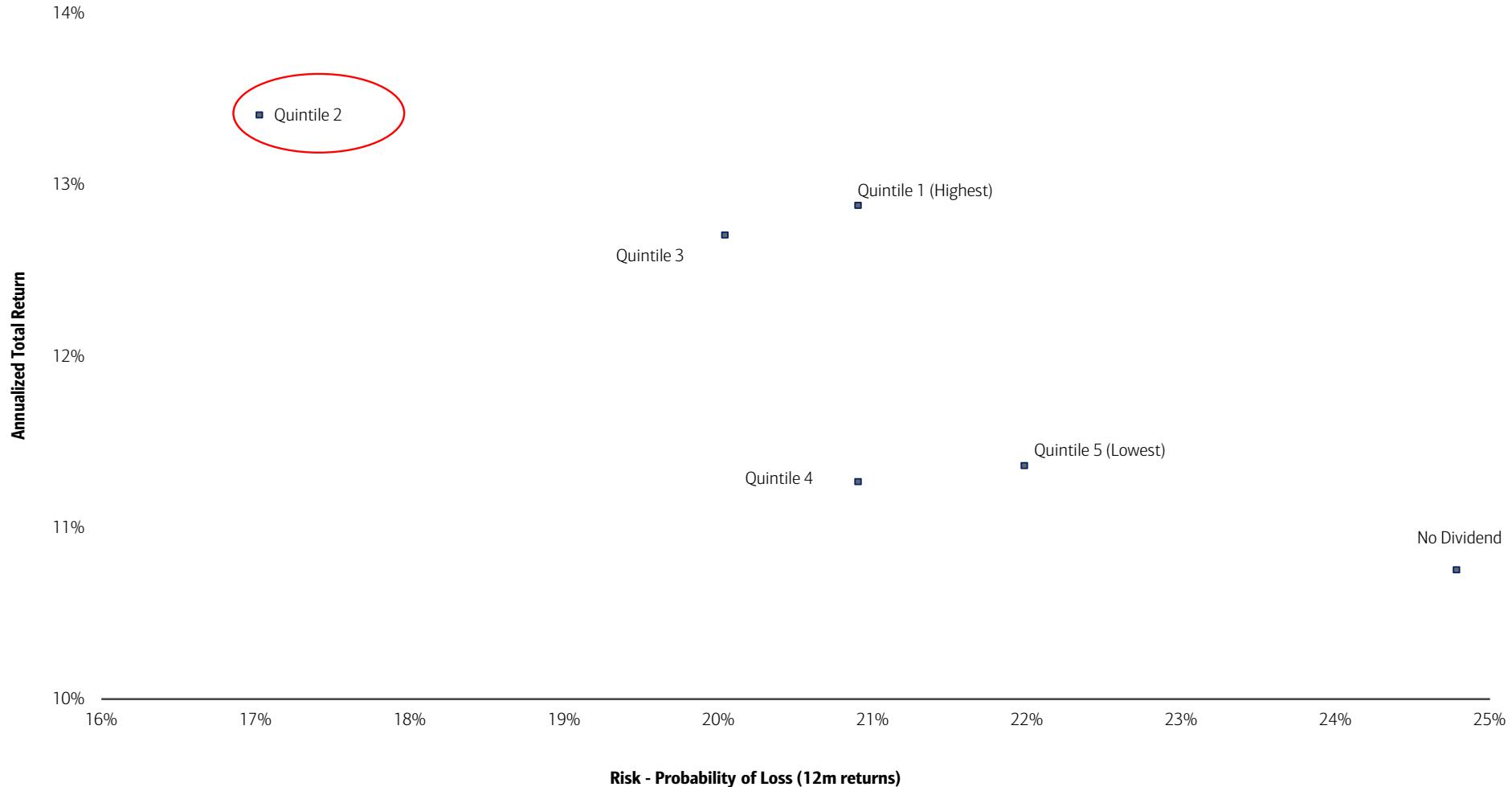
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Quintile 2

Exhibit 260: Quintile 2 has a significantly lower loss ratio than other quintiles and the highest return ([September screen](#))

Annualized total return versus downside risk of Russell 1000 quintiles by dividend yield (1/31/84-8/31/2023)



Note: Performance in the above exhibit is based on back-tested results from 1/31/84 through 9/28/10 and actual performance from 9/28/10 to present. 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 screen identified as Quintile 2 is intended to be an indicative metric only and may not be used for reference purposes or as a measure of performance for any financial instrument or contract, or otherwise relied upon by third parties for any other purpose, without the prior written consent of BofA Global Research. This screen was not created to act as a benchmark.

Source: BofA US Equity & Quant Strategy, FactSet

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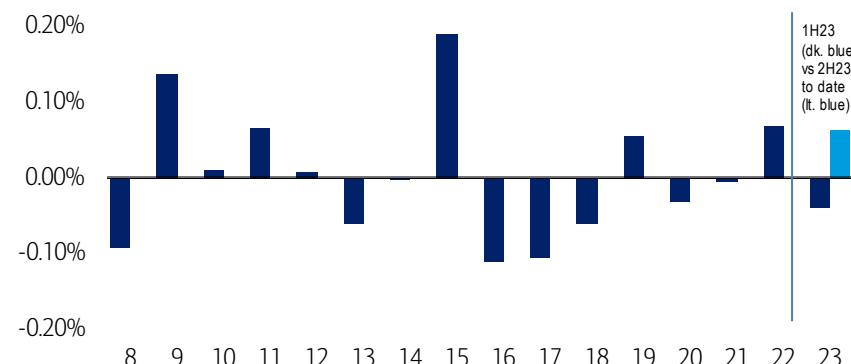
Size outlook

Small>Large: tactical upside potential for small caps

Early signs of flow momentum, positioning still light

Exhibit 261: Very negative 1H flows vs signs of inflows in September

Small cap net flows vs. large cap net flows as a % of mkt. cap, 2008-2023 (Sept. 26)

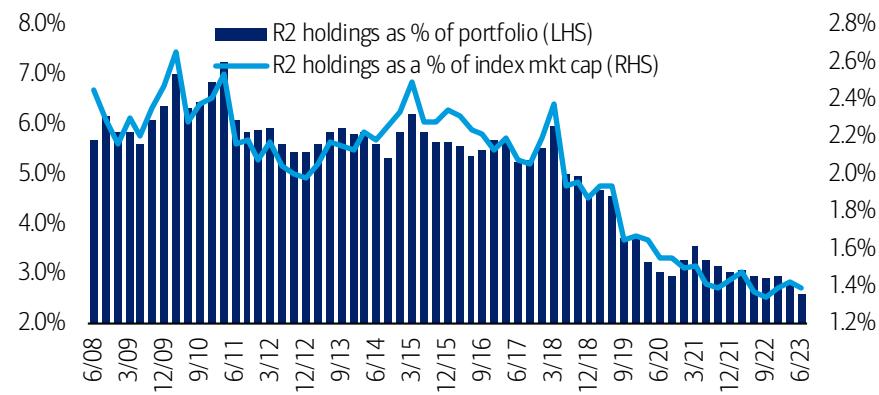


Source: BofA Securities, Bloomberg. Note: Market cap based on Russell 2500 for SMID and Russell 1000 for large.

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Exhibit 263: Multi-cap funds' positioning in small caps is at record lows

Multi-cap managers' holdings of Russell 2000 stocks as a percentage of total portfolio holdings and as a percent of Russell 2000 market cap, 2Q08-2Q23

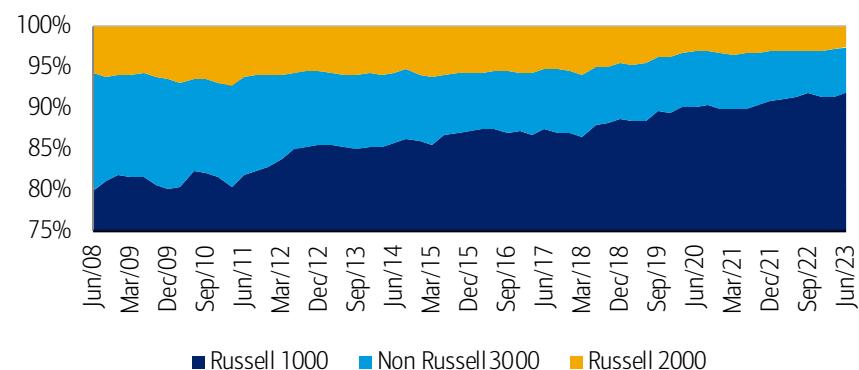


Source: Strategic Insight Simfund, BofA US Equity & US Quant Strategy

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Exhibit 262: Positioning still light: small caps have been a shrinking share of active holdings

% of multi-cap manager holdings by size segment, 2Q08-2Q23

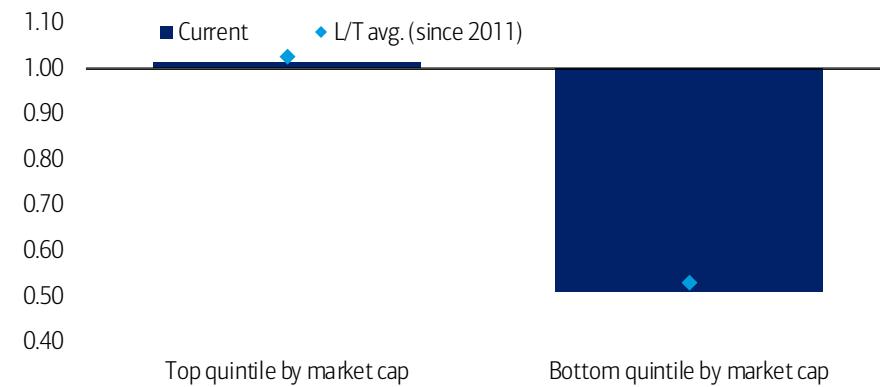


Source: Strategic Insight Simfund, BofA US Equity & US Quant Strategy

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Exhibit 264: Large cap fund managers also remain very underweight the smallest stocks vs. slightly overweight mega caps

Large cap active managers' relative weight (vs. S&P 500) in top vs. bottom quintile of the index by market cap (as of July 2023)



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

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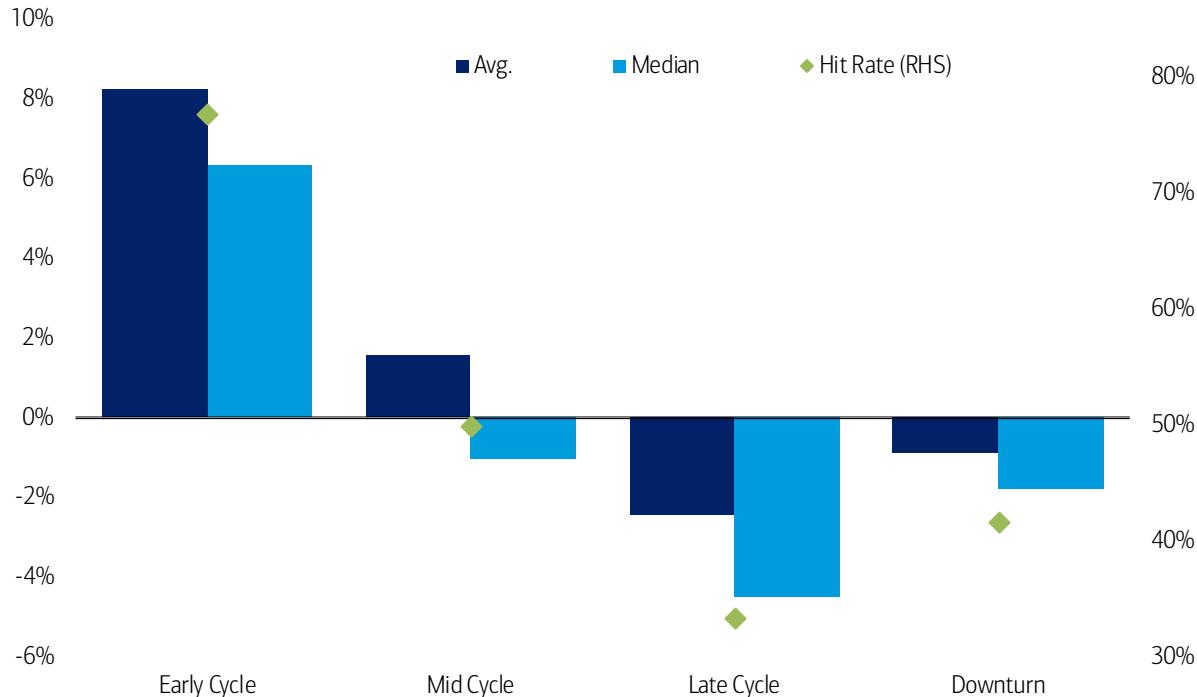


Regime Indicator inflection supports small>large

Shift to Early Cycle/Recovery is typically the best phase for small caps

Exhibit 265: Early Cycle typically best phase for small vs. large caps, with small typically lagging large in Downturns

Average and median relative performance of small vs. large caps during the four phases of our US Regime Indicator (since 1970)



Note: Based on Russell indices from 1979-present; source for historical returns prior to 1979: CRSP®, Center for Research in Security Prices, Graduate School of Business, The University of Chicago. Used with permission. All rights reserved. www.crsp.uchicago.edu Performance has been calculated by BofA US Equity & Quant Strategy. For details on our US Regime Indicator, please see the discussion earlier in this report as well as the Appendix for methodology.

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

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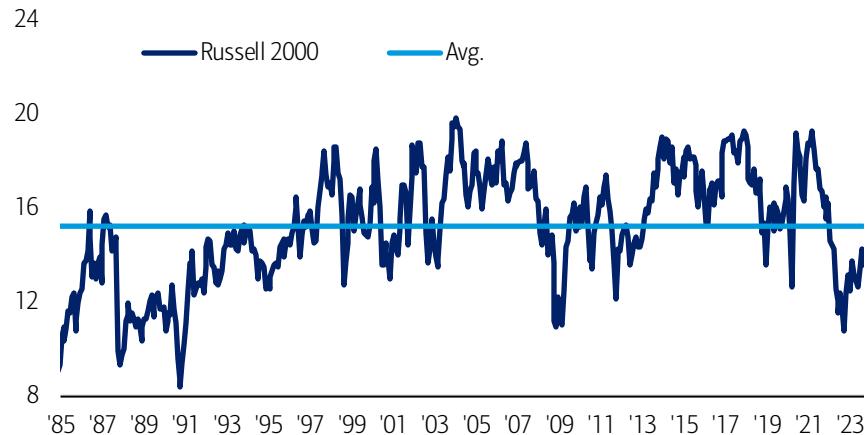


SMID valuations

Small caps are historically cheap (absolute and relative)

Exhibit 266: Small cap fwd P/E below the long-term average

Forward P/E: Russell 2000, 1985-8/31/2023



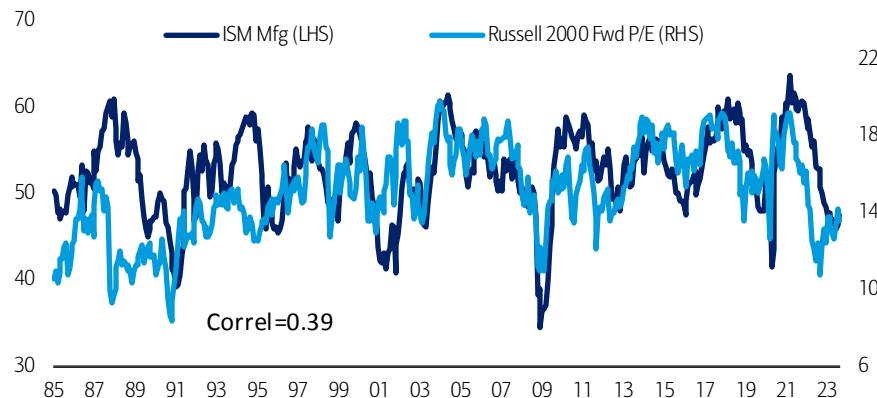
Source: BofA US Equity & Quant Strategy, Russell Investment Group, I/B/E/S, Compustat

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Small caps discounting continued mfg. recession, further tightening of credit

Exhibit 268: Small cap valuations highly correlated with ISM, pricing in further drop (to 44)

Russell 2000 Fw P/E vs. ISM Mfg (1985-8/31/23)



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

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Exhibit 267: Small caps remain historically cheap vs. large caps

Relative Forward P/E: Russell 2000 vs. Russell 1000, 1985-8/31/2023

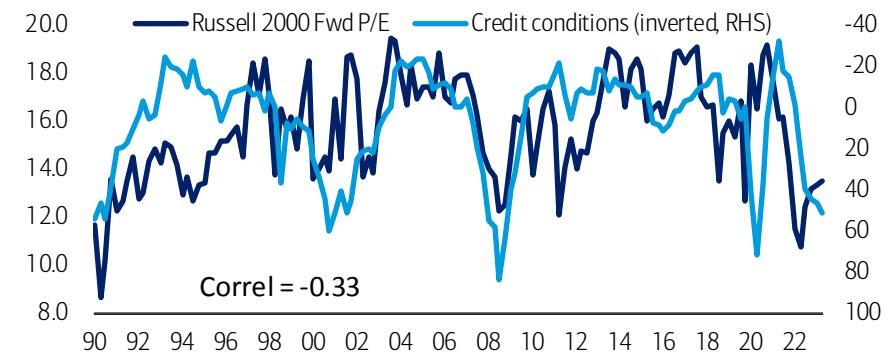


Source: BofA US Equity & Quant Strategy, Russell Investment Group, I/B/E/S, Compustat

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Exhibit 269: Small cap valuations also correlated with credit conditions, discounting further (COVID- and GFC-like) tightening in the SLOOS

Russell 2000 forward P/E vs. Senior Loan Offer Survey credit conditions (net % tightening), 1990-8/2023



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

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Small cap cyclicals broadly inexpensive vs. history & large peers, especially cyclicals

Exhibit 270: Small caps cheap vs. large cap peers within almost every sector, except Utilities and Staples

Relative median valuations for Russell 2000 vs Russell 1000 sectors (as of 8/2023)

	Relative median valuation						Long-term median (since 1985)						% difference from long-term median					
	PEG	P/Sales	P/BV	Trail	Fwd	EV/FCF**	PEG	P/Sales	P/BV	Trail	Fwd	EV/FCF**	PEG	P/Sales	P/BV	Trail	Fwd	EV/FCF**
				P/E*	P/E*					P/E*	P/E*							
R 2000/R. 1000	0.65	0.76	0.57	0.6	0.8	0.74	0.80	0.92	0.78	1.0	1.0	0.88	-18%	-17%	-28%	-35%	-20%	-16%
Comm Svcs	1.67	0.55	0.57	0.52	0.98	0.73	0.86	0.73	0.95	1.05	1.06	0.93	93%	-25%	-40%	-51%	-8%	-21%
Discretionary	1.02	0.45	0.42	0.69	0.79	0.70	0.84	0.66	0.66	0.94	0.92	0.82	21%	-31%	-36%	-27%	-14%	-14%
Energy	0.01	0.83	0.62	0.74	0.77	0.94	0.78	1.01	0.83	1.01	1.00	0.77	-99%	-19%	-25%	-27%	-23%	22%
Financials	1.02	0.97	0.61	0.67	0.90	N/A	1.04	1.12	0.91	1.02	1.03	N/A	-2%	-13%	-33%	-34%	-13%	N/A
Health Care	0.57	2.06	0.63	1.02	1.02	0.79	0.88	1.64	0.88	1.10	1.17	1.02	-36%	25%	-28%	-7%	-12%	-22%
Industrials	0.53	0.57	0.51	0.86	0.78	0.73	0.82	0.69	0.72	0.97	0.98	0.85	-35%	-16%	-29%	-11%	-21%	-14%
Materials	0.66	0.72	0.64	0.69	0.87	0.72	0.79	0.72	0.74	0.93	0.93	0.80	-16%	0%	-13%	-26%	-7%	-11%
Real Estate	0.38	0.49	0.54	0.73	0.74	0.24	0.92	0.75	0.73	0.86	0.86	0.77	-59%	-34%	-26%	-15%	-15%	-68%
Staples	0.95	0.57	0.60	0.84	1.08	0.95	0.79	0.55	0.56	0.97	1.02	0.85	20%	4%	6%	-13%	6%	12%
Technology	0.61	0.53	0.53	0.84	0.93	0.91	0.86	0.74	0.72	0.99	1.01	0.93	-29%	-28%	-27%	-15%	-7%	-2%
Utilities	1.05	1.19	1.19	1.06	0.99	0.66	1.03	0.91	1.01	1.09	1.08	0.96	1%	30%	18%	-3%	-8%	-31%

*Trailing and fwd P/E excludes negative earners; **EV/FCF excludes Financials and Real Estate as well as companies with negative FCF. Note: NA values due to negative median, data since 1985 except for Real Estate (since 2001). FFO is used instead of EPS for REITs.

Source: BofA US Equity & Quant Strategy, FactSet

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Exhibit 271: Small cap equity fear: Russell 2000 equity risk premium ~30% above average

Russell 2000 forward earnings yield – real 10yr Tsy. yield (1985-8/31/2023)

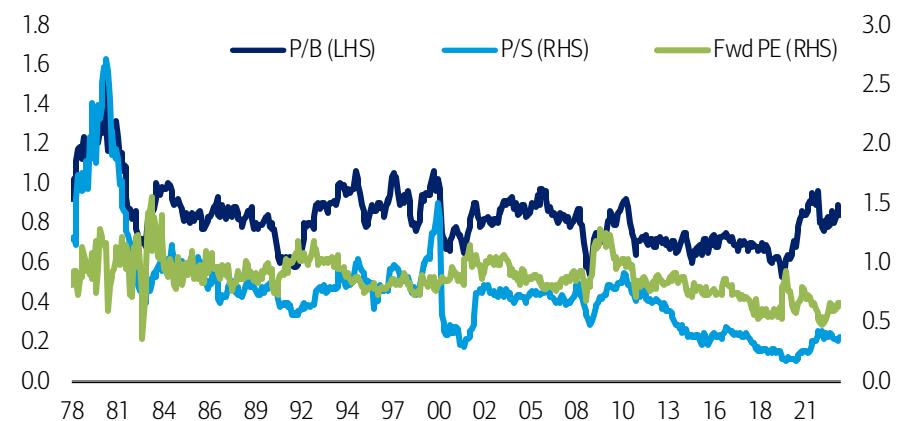


Source: Bloomberg, Haver Analytics, FactSet, BofA US Equity & US Quant Strategy

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Exhibit 272: Small cap cyclicals: very historically cheap vs防守性 on P/E and sales (less so on book)

Relative median valuation of Russell 2000 cyclical vs defensive sectors (1978-8/23)



Source: BofA US Equity & Quant Strategy, FactSet

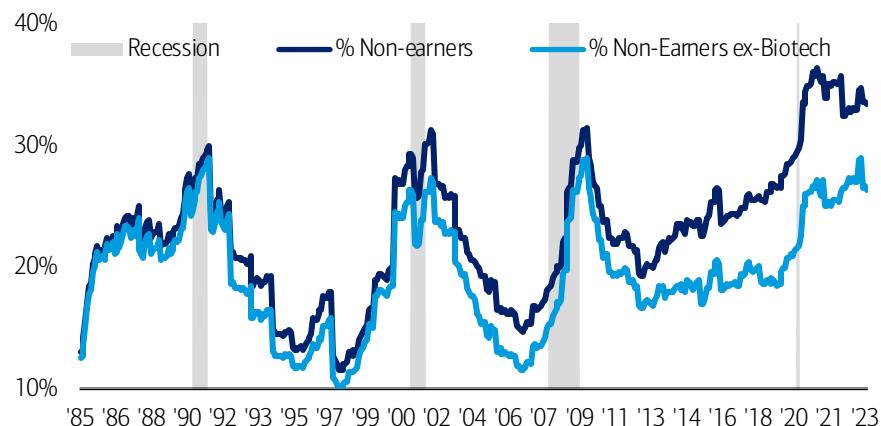
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What about the non-earners?

Exhibit 273: One third of Russell 2000 stocks (~20% of mkt. cap) are non-earners

% of Russell 2000 stocks that are non-earners, 1985-8/31/23

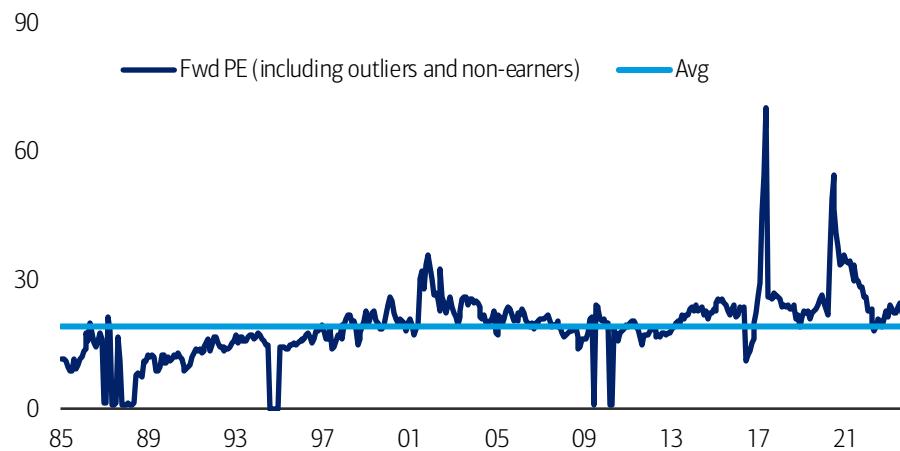


Source: FactSet, BofA US Equity & US Quant Strategy

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Exhibit 275: Small cap fwd. P/E including non-earners is slightly above avg. (but volatile measure)

Russell 2000 forward P/E including outliers & non-earners (1985-8/31/23)

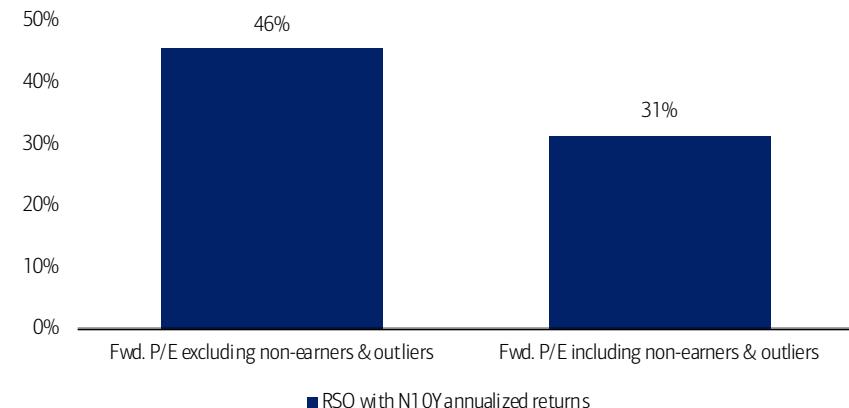


Source: FactSet, BofA US Equity & US Quant Strategy

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Exhibit 274: Higher predictive power on subsequent returns for P/E excluding non-earners & outliers than P/E including them

R-squared: Russell 2000 fwd P/E vs. next 10yrs annualized returns, 1985-8/31/23

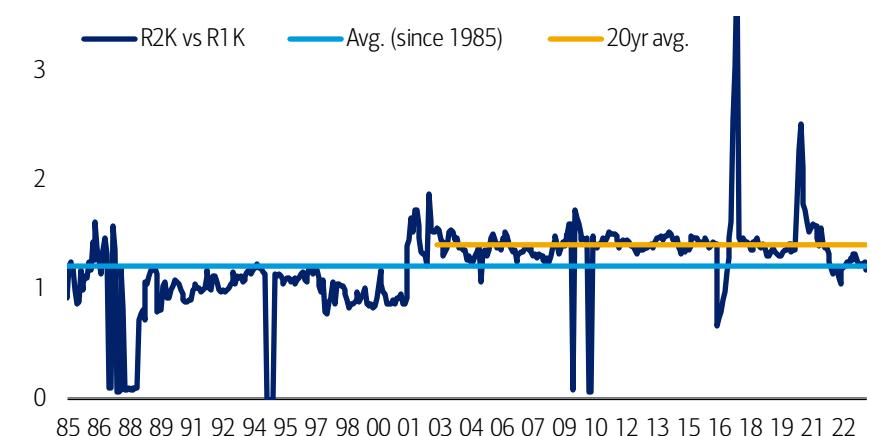


Source: FactSet, BofA US Equity & US Quant Strategy

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Exhibit 276: Small caps trade roughly in-line with long-term avg. vs large caps on Fwd. P/E including outliers & non-earners (and below the 20-yr avg.)

Russell 2000 vs. Russell 1000 relative forward P/E including outliers & non-earners (1985-8/31/23)



Source: FactSet, BofA US Equity & US Quant Strategy

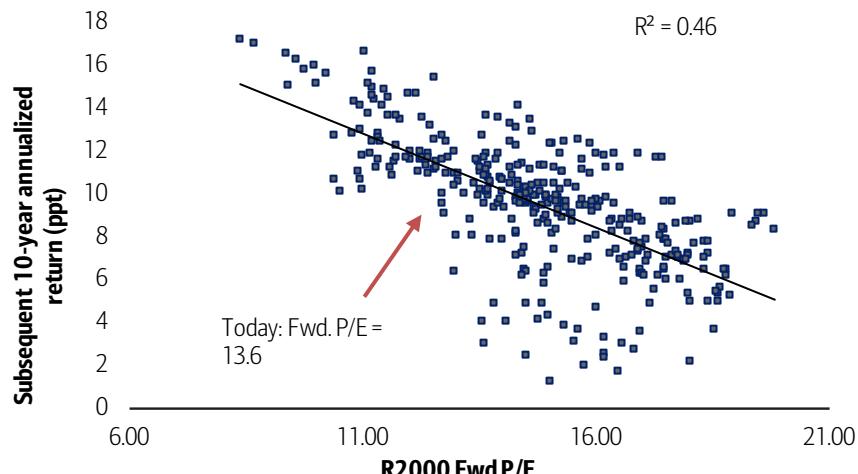
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Small caps for the next decade: better annualized return potential

Exhibit 277: The absolute fwd. P/E for the Russell 2000 suggests double-digit annualized 10yr returns

Russell 2000 fwd P/E vs. subsequent 10y annualized returns, 1985-8/2023

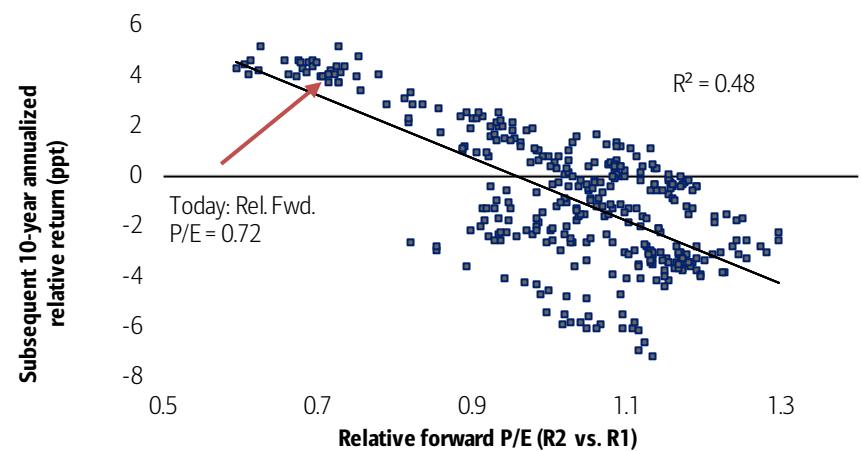


Source: Russell Investment Group, FactSet, BofA US Equity & US Quant Strategy

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Exhibit 278: Relative multiple suggests that small caps could outperform large caps over the next ten years

Relative fwd. P/E of Russell 2000 vs. Russell 1000 and next 10y annualized relative returns, 1985-8/2023



Source: Russell Investment Group, FactSet, BofA US Equity & US Quant Strategy

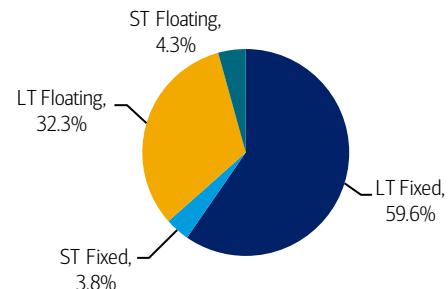
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Key risk for small caps: refinancing risk

Exhibit 279: Today 60% of Russell 2000 debt is long-term fixed

Russell 2000 debt by maturity (Oct 2022)

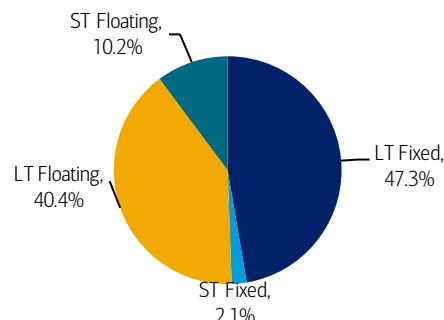


Source: Bloomberg, BofA US Equity & US Quant Strategy

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Exhibit 280: ...up from less than half five years ago

Russell 2000 debt by maturity (12/2017)



Source: Bloomberg, BofA US Equity & US Quant Strategy

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Exhibit 281: Wtd. avg. maturity of Russell 2000 debt = 4 years

Russell 2000 non-Financial debt wtd. avg. maturity (as of 10/2022)

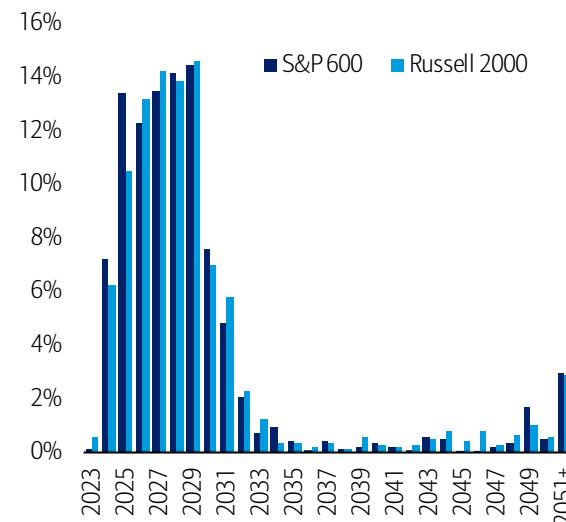
Sector	Overall
Communication Services	5.0
Consumer Discretionary	4.9
Consumer Staples	2.5
Energy	4.0
Health Care	3.5
Industrials	4.5
Information Technology	2.5
Materials	3.1
Real Estate	3.7
Utilities	11.7
Russell 2000	4.5

Source: Bloomberg, BofA US Equity & US Quant Strategy

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Exhibit 282: Lots of small cap debt maturing in 2025+ (with more risk for S&P 600 than Russell 2000 in 2024-25)

S&P 600 & Russell 2000 ex-Financials: % of debt maturing by year



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

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Exhibit 283: Our analysis suggests a 3-4% incremental hit to small cap non-Financials 2022 EBIT from higher net interest expense each of the next 2yrs vs. 2022; higher in 2025+

Increase in Russell 2000 net interest expense relative to current ('22) as a % of '22 EBIT from floating rate date + refi of fixed date

Increase (decrease) in net interest exp. vs. 2022 as a % of 2022 EBIT

Sector	2023	2024	2025	2026	2027
Comm. Svcs.	7.0%	7.6%	4.7%	9.3%	20.9%
Cons. Disc.	4.8%	5.7%	4.6%	6.3%	8.9%
Staples	7.1%	9.8%	9.7%	13.1%	22.3%
Energy	0.1%	0.5%	1.6%	2.7%	4.2%
Health Care	NM	NM	NM	NM	NM
Industrials	4.6%	6.3%	5.3%	7.2%	9.3%
Tech	-3.9%	-3.3%	3.4%	11.5%	17.4%
Materials	3.4%	3.7%	4.5%	5.7%	7.0%
Real Estate	21.5%	30.0%	29.9%	37.5%	48.6%
Utilities	12.4%	16.9%	10.9%	11.6%	15.0%
Russell 2000 ex.					
Fins	2.8%	4.6%	6.0%	9.9%	14.9%
ex. Fins & Utilities	2.5%	4.1%	5.8%	9.8%	14.9%

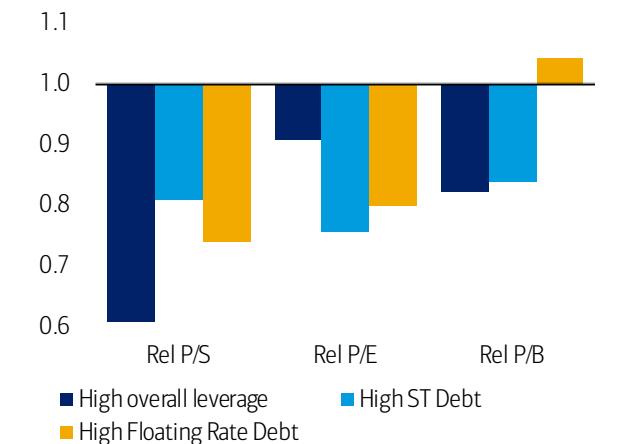
Source: Bloomberg, BofA US Equity & US Quant Strategy

Note: Uses 3m LIBOR + credit spread (where we assume wtd. avg. of HY & IG spreads based on HY vs. IG weight in small cap debt) for interest expense (using BofA forecasts for Fed Funds rate trajectory through '24/holding constant thereafter); BofA cash yield forecasts through 2024 and constant thereafter for interest income.

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Exhibit 284: Some good news: Small caps with high S/T debt, high floating rate debt, and high leverage overall (net debt/EBITDA) are trading at discounts to their industry group peers across metrics

Relative Price/Sales, Fwd. P/E and Price/Book of top 100 stocks in Russell 2000 ex-Financials by high net debt/EBITDA, high S/T debt as a % of total debt, and high floating rate debt as a % of total (as published as of 5/25/23)



Source: Bloomberg, BofA US Equity & US Quant Strategy

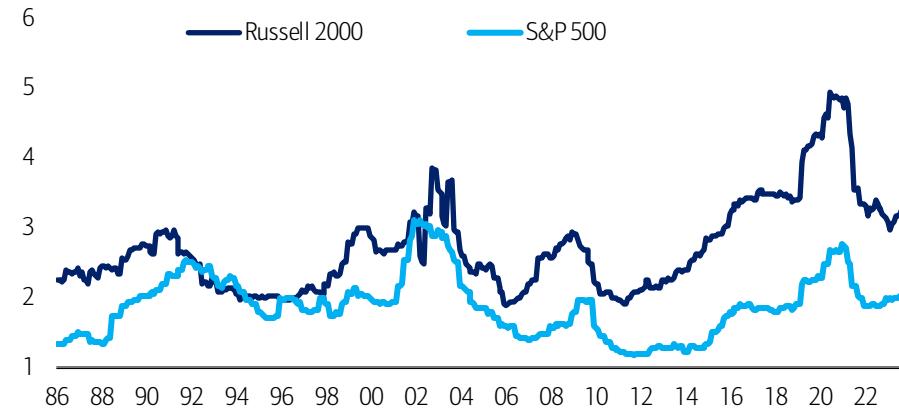
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The state of small cap balance sheets

Exhibit 285: Leverage (Net Debt/EBITDA) is at 2016 levels

Russell 2000 and S&P 500 non-Financials Net Debt/EBITDA, 1986-present

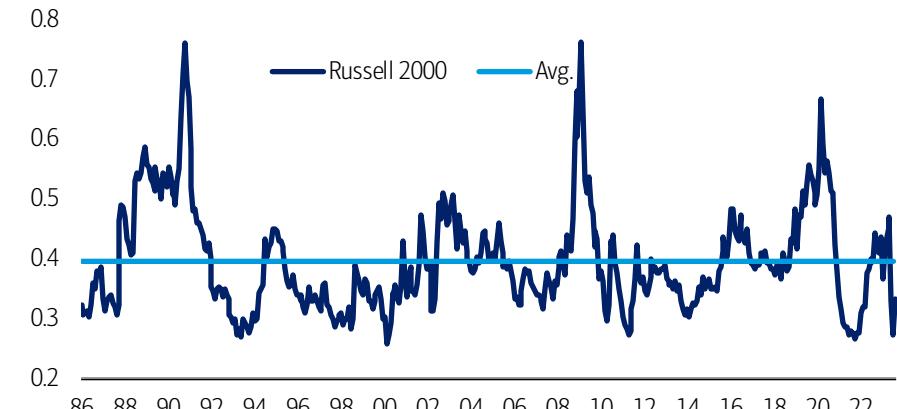


Source: FactSet, BofA US Equity & US Quant Strategy

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Exhibit 286: Net debt to market cap well below its historic average

Russell 2000 non-Financials net debt to market cap, 1986-present

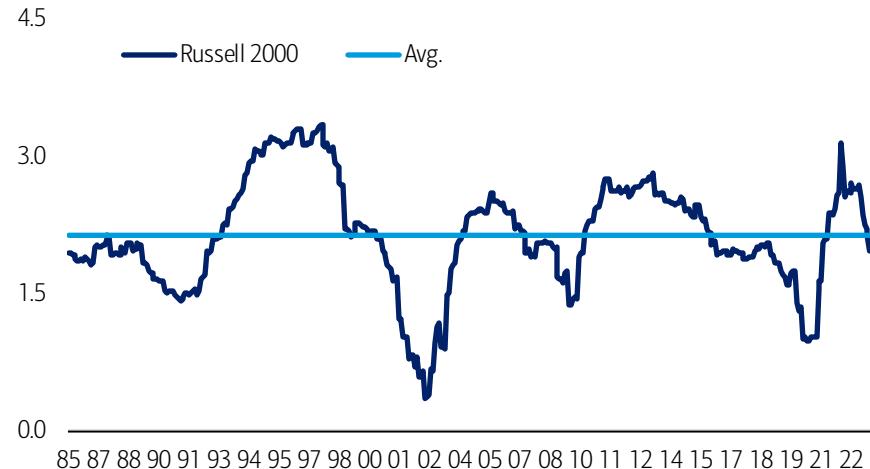


Source: FactSet, BofA US Equity & US Quant Strategy

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Exhibit 287: Interest coverage roughly in line with historical average

Russell 2000 non-Financials interest coverage ratio 1986-present

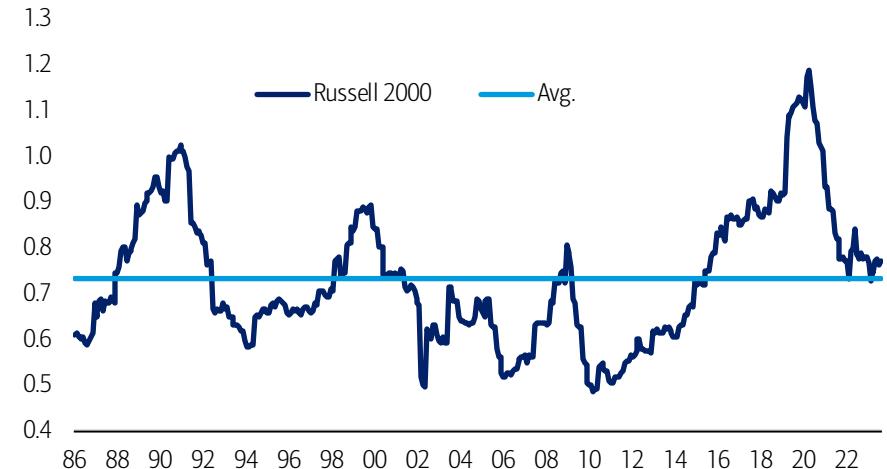


Source: FactSet, BofA US Equity & US Quant Strategy

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Exhibit 288: Net Debt to Equity just slightly above its historic average

Russell 2000 non-Financials Net Debt to Equity 1986-present



Source: FactSet, BofA US Equity & US Quant Strategy

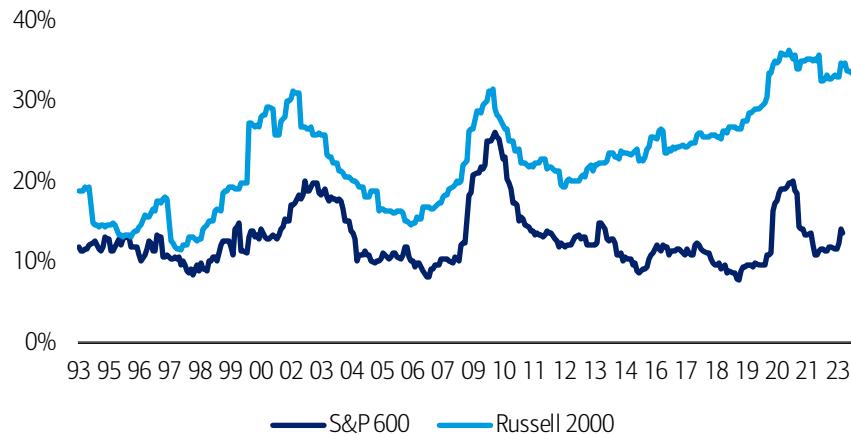
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S&P 600 = higher quality (but more leverage) vs. R2000

Exhibit 289: S&P 600 is higher quality than the Russell 2000: it has fewer non-earners...

% non-earners: S&P 600 vs. Russell 2000 12/1993-present



Source: FactSet, BofA US Equity & Quant Strategy

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Exhibit 290: ...and higher median ROE than Russell 2000

Median ROE: S&P 600 vs. Russell 2000 12/1993-present



Source: FactSet, BofA US Equity & Quant Strategy

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Exhibit 291: S&P 600 Net Debt/Equity is above historical average

&P 600 ex-Financials Net Debt/Equity from 1994-present



Source: FactSet, BofA US Equity & Quant Strategy

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Exhibit 292: S&P 600 Interest Coverage Ratio is below historical average

S&P 600 ex-Financials Interest Coverage Ratio from 1994-present



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

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Small caps and geopolitical risk, inflation

Exhibit 293: Small caps outperformed during the full Cold War period, including the 1970s inflationary era

Small caps vs. large cap relative performance (1926-7/23)



Source: CRSP, The University of Chicago; BofA US Equity & Quant Strategy. Source of historical returns: CRSP®, Center for Research in Security Prices. Graduate School of Business, The University of Chicago. Used with permission. All rights reserved.

www.crsp.uchicago.edu Performance has been calculated by BofA US Equity & Quant Strategy

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Exhibit 295: Labor inflation and CPI inflation have historically been more detrimental to large cap margins than small cap margins

Correlation of inflation vs. YoY change in margins, 1987-present

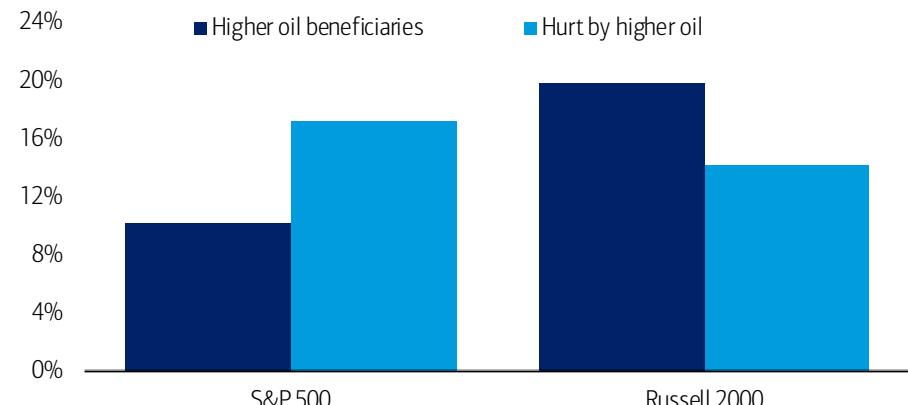
Inflation Type	Correlation with EBIT Margin YoY Change	
	Small Caps	Large Caps
Coincident		
(Avg. Hrly. Earnings YoY)	-3%	12%
Employment Cost Index YoY	19%	23%
CPI YoY	39%	30%
Core CPI YoY	14%	9%
CRB Index YoY	66%	30%
4 qtr lagged impact		
(Avg. Hrly. Earnings YoY)	-3%	-14%
Employment Cost Index YoY	-4%	-5%
CPI YoY	-22%	-10%
Core CPI YoY	-9%	-19%
CRB Index YoY	10%	44%

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

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Exhibit 294: Small caps have greater exposure to sectors that benefit from higher oil & less exposure to those hurt by higher oil

S&P 500 vs. Russell 2000 weights in higher oil beneficiaries (Energy, Capital Goods) vs. sectors hurt by higher oil (Consumer) (as-of 9/11/2023)

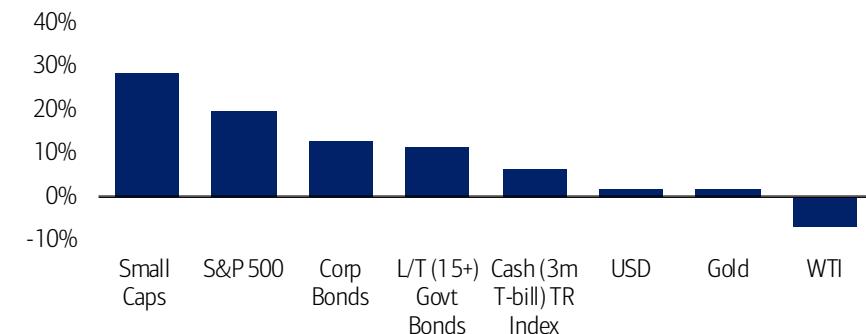


Source: Bloomberg, BofA US Equity & Quant Strategy

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Exhibit 296: Small caps = best performing asset class in periods of high but slowing inflation and below-trend economic growth

Annualized returns of asset classes in periods of below-trend GDP growth and above-trend but decelerating inflation (on a 3m basis), 1947-4Q22



Note: USD since 1967, WTI since 1974, other asset classes since 1947. Russell 2000 for small caps 1979-on. Prior to 1979, source of historical returns: CRSP®, Center for Research in Security Prices. Graduate School of Business, The University of Chicago. Used with permission. All rights reserved. www.crsp.uchicago.edu Performance has been calculated by BofA US Equity & Quant Strategy

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

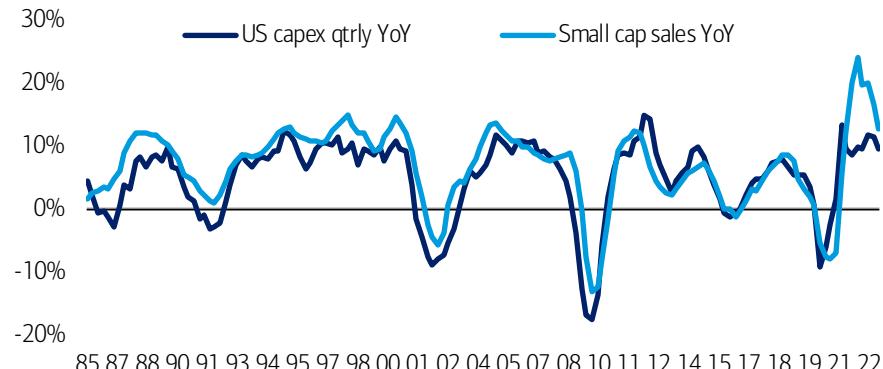
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Small caps benefit from capex resiliency/reshoring...

Exhibit 297: Small caps sales growth is highly correlated with US capex growth....

US qtrly. YoY capex growth vs. Russell 2000 YoY sales growth, 1986-2Q23



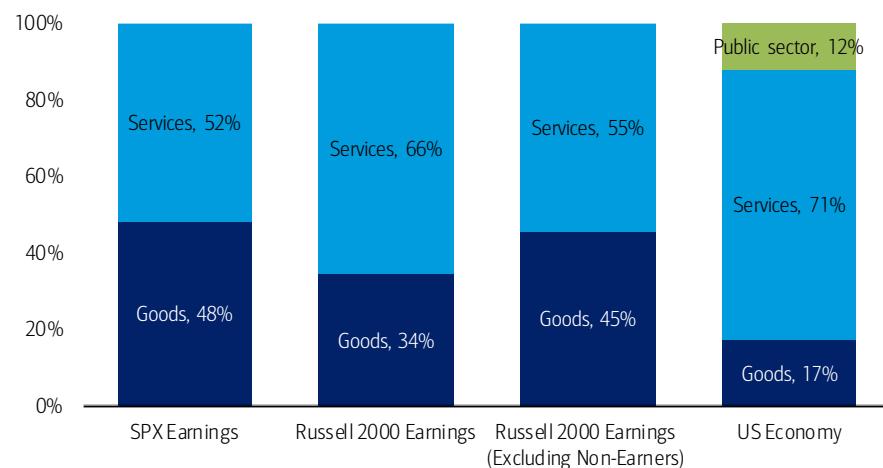
Source: FactSet, Haver Analytics, BofA US Equity & US Quant Strategy

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...and from services spending staying strong

Exhibit 299: Small caps are more geared toward services spending (like GDP)

Russell 2000, S&P 500 & US GDP: estimated goods vs. services exposure

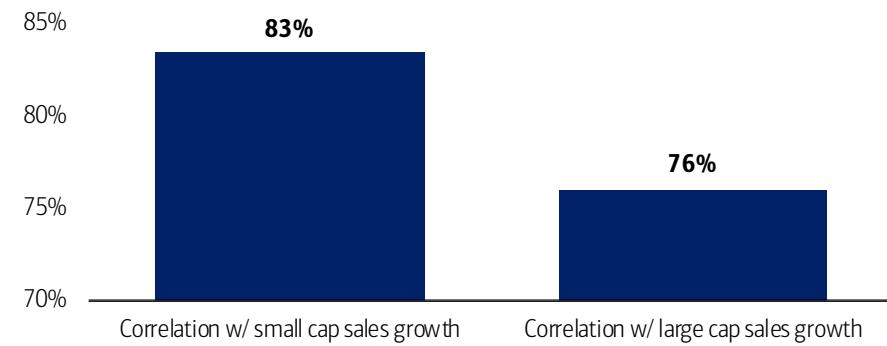


Source: Haver Analytics, FactSet, BofA US Equity & US Quant Strategy. Based on industry breakout of 2021 earnings for Russell 2000 and S&P 500 and gross value added by industry in 2021 for US economy.

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Exhibit 298: ...more so than for large caps

Correlation of US capex growth with small cap (Russell 2000) and large cap (S&P500) sales growth, 1985-present



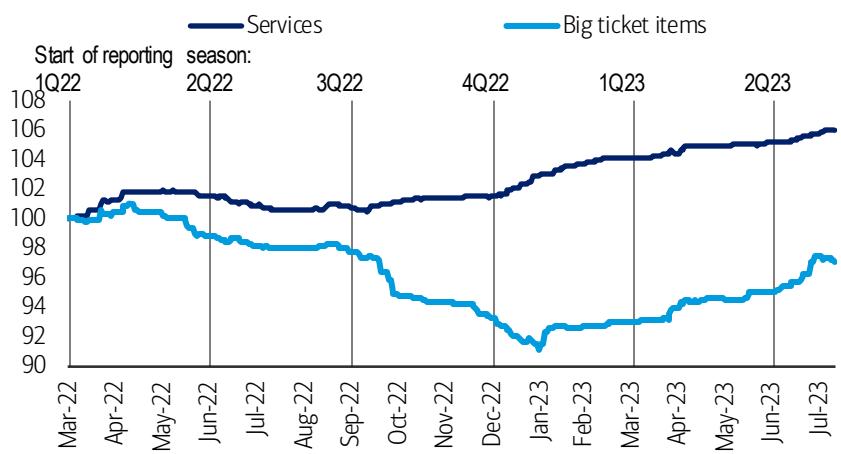
Correlation w/ small-large cap sales growth spread: 36%

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

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Exhibit 300: Services demand still holding up; watching for signs of goods/services rotation

2023 consensus sales for services vs. big ticket items (as of 8/31/23)



Source: Bloomberg, FactSet, BofA US Equity & 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:

$$\text{Corporate Misery Indicator} = \text{CPI (y/y)} - \text{Average Hourly Earnings (y/y)} + \text{Coincident Indicators (y/y)}$$

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.



US Regime Indicator

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

Earnings Revision ratio: The ratio between the number of companies in the S&P 500 for which Thomson Financial consensus earnings estimates have been raised versus those that have been lowered. Rising = improving economic cycle.

ISM PMI: ISM PMI Institute for Supply Management Manufacturing Purchasing Managers Index, represented as the Z-Score. The index monitors activity reported by 300 supply management professionals. Above 50 indicates economic expansion.

Inflation: The 12-month change in the BofA Inflation Composite (see methodology), represented as a Z-Score. Rising inflation indicates improvement.

GDP Forecast: The next 12-month US GDP growth forecast from the Federal Reserve Bank of Philadelphia Survey, represented as a Z-Score.

LEI index: The 12-month change in the Conference Board US Leading Index of Ten Economic Indicators represented as a Z-Score. Rising = improving.

US Capacity Utilization: The 12-month change in US capacity utilization, represented as a Z-score. The capacity utilization rate indicates the percentage of total economic capacity currently used. Rising capacity utilization implies improving economic conditions. Rising capacity utilization suggests expansion and potential inflationary pressure.

10-yr US Treasury Bond Yield: The 12-month change in the bond yield, represented as the Z-Score. Rising yields indicate improving economic conditions.

High Yield corp. bond spread: The 12-month change in the credit spread of the ICE BofA US High Yield Index, represented as a Z-score. Falling = improving.

For the historic period from January 1970 to December 1989, the US Regime Indicator was based on the available inputs listed above, which were:

1/70 to 1/82: 5 inputs: Inflation, 10-yr US Treasury Bond Yield, ISM PMI, Leading Economic Indicators index, US Capacity Utilization;

2/82 to 3/88: 6 inputs: all of the above plus GDP Forecast;

4/88 to 4/89: 7 inputs: all of the above plus the High Yield corporate bond credit spread;

5/89 to 12/89: all 8 inputs: all of the above plus the Earnings Revision Ratio.

Performance of sizes/styles during regimes prior to January 1990 could be impacted by the more limited set of factors used to determine regimes, different definitions for Growth, Value and Size (where we use Fama-French performance data for the 1970-1989 period vs. performance of our S&P 500 top/bottom decile factors over the original history of our indicator from 1990-present), as well as the different macro backdrop in the earlier period marked by high inflation.



Factor definitions

Absolute return: Absolute return is calculated based on monthly returns and reflects simple price appreciation (depreciation) over the stated period. Stocks in each screen are equally weighted. Returns do not reflect dividend or transaction costs.

P/E-to-Growth: Trailing twelve months P/E divided by the five-year EPS growth rate estimated by BofA Fundamental Equity Research. If no BofA estimate exists, then the IBES Mean Long Term Growth Estimate is used.

Dividend Discount Model Alpha: The implied return from the BofA Quantitative Strategy three-stage dividend discount model less the required return from a Capital Asset Pricing Model. Presented as a decile rank.

Earnings Yield: Trailing 12-month EPS divided by month-end price

Forward Earnings Yield: Rolling 12-month forward EPS divided by month-end price

Price/Book Value: Month-end price divided by the most recently reported book value per share.

Price/Cash Flow: Month-end price divided by the most recently reported cash flow. Cash flow is defined as earnings post extraordinary items plus depreciation.

Price/Free Cash Flow: Month-end price divided by most recently reported free cash flow. Starting November 2022, we updated Free Cash Flow (FCF) calculation methodology from (Net Income + Depreciation & Amortization – CapEx) to use (Operating Cash Flow - CapEx) instead.

Price/Sales: Month-end market value divided by most recently reported sales.

EV/EBITDA: Enterprise Value (Equity Market Capitalization + Long Term Debt + Short Term Debt + Preferred Stock + Minority Interest – Cash & Cash Equivalents) divided by EBITDA (Reported Net Income + Special Items – Minority Interest + Interest Expense + Income Tax Expense + Depreciation and Amortization) – most recently reported.

Free Cash Flow/EV: Free Cash Flow divided by Enterprise Value (Equity Market Capitalization + Long Term Debt + Short Term Debt + Preferred Stock + Minority Interest – Cash & Cash Equivalents). Starting November 2022, we updated Free Cash Flow (FCF) calculation methodology from (Net Income + Depreciation & Amortization – CapEx) to use (Operating Cash Flow - CapEx) instead. For our FCF/EV factor, in addition to the methodology change to our FCF calculation (which represents Free Cash Flow to Equity), we also changed to use FCF to the Firm (FCFF) by adding back interest expense: (Operating Cash Flow – CapEx + Interest Expense*(1-tax rate)).

Dividend Yield: Indicated dividend divided by month-end price.

Dividend Growth: The growth between trailing 4-quarter total common dividends and year-ago trailing 4-quarter total common dividends.

Share Repurchase: The year-to-year change in shares outstanding

Rel Str – 30Wk/75Wk MA: The ratio of the 30-week moving average of price to the 75-week moving average.

Rel Str – 5Wk/30Wk MA: The ratio of the 5-week moving average of price to the 30-week moving average.



Rel Str – 10Wk/40Wk MA: The ratio of the 10-week moving average of price to the 40-week moving average.

Price/200-Day Moving Average: A ratio between month-end closing price and average closing price over the last 200 days.

Price Return – 12-Month Performance: Absolute price return over the last twelve months.

Price Return – 9-Month Performance: Absolute price return over the last nine months.

Price Return – 3-Month Performance: Absolute price return over the last three months.

Price Return – 11-Month Performance: Absolute price return from one year ago, ignoring the most recent month.

Price Return – 12-Month and 1-Month Performance: Equal weighted rank of stocks by (1) highest price return over the last twelve months and (2) highest price return over the most recently ended month.

Price Return – 12-Month and 1-Month Reversal: Equal weighted rank of stocks by (1) highest price return over the last twelve months and (2) lowest price return over the last one month.

Most Active: Stocks have the highest monthly share trading volume.

Earnings Momentum: The difference between 12-month trailing EPS and year-ago 12-month trailing EPS divided by year-ago 12-month trailing EPS.

Projected 5-Year EPS Growth: The five-year EPS growth rate estimated by BofA Fundamental Equity Research. If no BofA estimate exist, then I/B/E/S Mean Long Term Growth Estimate is used.

Forecast Earnings Surprise: A forecast earnings surprise variable which compares BofA estimates to those of the consensus after adjusting for the range of estimates. Stocks are ranked from 1 to 10, with 1 being among the most optimistic, relative to the consensus, 10 being among the most pessimistic. Consensus estimated earnings data are courtesy of I/B/E/S. If the projected Surprise is greater than 13 standard deviations, the stock is excluded as an outlier.

Positive (Negative) Forecast Earnings Surprise: The companies ranked 1 or 2 (9 or 10) by Forecast Earnings Surprise.

EPS Estimate Revision: The difference between the I/B/E/S FY1 estimate and that of three months ago divided by the absolute value of I/B/E/S FY1 estimate of three months ago.

Equity Duration: An adaptation of our Dividend Discount Model which measures the interest-rate sensitivity of a stock. Longer durations (higher numbers) suggest more interest-rate sensitivity.

Earnings Torpedo: I/B/E/S FY2 estimate less latest actual annual EPS divided by month-end price.

Return on Equity One-Year Average: Net income divided by average equity provided.

Return on Equity Five-Year Average: Five-year average return on equity.

Return on Equity One-Year Average (Adjusted for Debt): The ROE of companies with higher debt levels are considered lower than those of companies with lower debt levels based on their debt-to-equity ratios.



Return on Equity Five-Year Average (Adjusted for Debt): The average five year ROE of companies with higher debt levels are considered lower than those of companies with lower debt levels based on their debt-to-equity ratios.

Return on Assets: Net income plus interest and taxes as a percent of average total assets.

Return on Capital: The sum of net income, interest expense and minority interest, as a percent of average total invested capital which is inclusive of long-term debt, preferred stock, common equity, and minority interest.

Beta: A measure of non-diversifiable risk. It is calculated using regression Strategy incorporating 60 months of price performance versus that of the S&P 500.

Variability of EPS: The degree of variability in quarterly EPS over the past 5 years. Stocks are ranked from 10 to 1 with 10 being the most variable.

EPS Estimate Dispersion: The coefficient of variation among I/B/E/S FY2 estimates. Presented as a decile rank.

Price: Absolute price level of the stock at month-end.

Neglect-Institutional Ownership: Those companies with the lowest proportions of float-adjusted shares held by institutional owners are considered more neglected.

Neglect-Analyst Coverage: Those companies with the lowest number of analysts submitting ratings to FirstCall.

Firm Size: Month-end market value.

Foreign Exposure: The ratio of foreign sales to total sales.

Short Interest 12-mth Z-Score: (Most recent number of short shares – 12mth average of short shares)/ 12mth standard deviation of short shares.

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 dividend 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: (Current E/P – Historical Avg. E/P) / 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 301: Relative performance of Opportunities, Value Traps and Momentum Breakdowns (as of 8/23)

Relative performance vs. equal-weighted S&P industries

	1m	3m	6m	12m	YTD	2yr	Ann'zed	3yr	Ann'zed	5yr	Ann'zed
Opportunities	0.1%	-5.0%	-4.4%	-1.0%	-3.3%	-6.9%	-3.6%	-0.4%	-0.1%	6.8%	1.0%
Value Traps	-0.7%	-1.7%	0.6%	-1.1%	-0.3%	2.7%	1.4%	-6.5%	-1.8%	-24.0%	-3.8%
Momentum Breakdown	0.0%	-0.9%	12.8%	5.3%	16.9%	-5.0%	-2.6%	-34.9%	-10.6%	-49.5%	-8.5%

Source: BofA US Equity & US Quant Strategy

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