Earnings Tracker

Week 4: Another strong quarter with a broad-based beat

12 February 2024

Equity and Quant Strategy
United States

Ohsung Kwon, CFA
Equity & Quant Strategist
BofAS
+1 646 855 1683
ohsung.kwon@bofa.com

Savita Subramanian
Equity & Quant Strategist
BofAS
+1 646 855 3878
savita.subramanian@bofa.com

See Team Page for List of Analysts

80% done, another strong quarter with a 4% beat

334 S&P 500 companies (79% of index earnings) are in. Consensus 4Q EPS (actuals + estimates) is tracking a 4% beat, with reported EPS coming in 7% above consensus. EPS is tracking +7% YoY, accelerating from +4% in 3Q. We expect continued acceleration at least through 1H24 and see consensus 1Q EPS at +4% YoY as too conservative. Only Materials and Utilities are trailing consensus. Reactions to beats (+150bps) have been in line with history, and misses have been punished (-400bps vs. -220bps historical avg.).

Was it a Magnificent 7 led earnings beat? No...

The Magnificent 7 (ex. NVDA that hasn't reported yet) beat EPS by 7%, in line with the other 493. Mega caps ($100B+ in market cap) also beat by the same amount, while small caps are posting the biggest beat, +10% (Exhibit 12). However, the growth rate is much stronger for the Mag. 7, +59% YoY vs. -3% for the other 493. Earnings breadth (# of earnings growers) also narrowed (Exhibit 11). While a big gap is still expected for 1Q, it is expected to narrow meaningfully in 2Q (+20% for the Mag. 7 vs. +8% for the 493), close in 3Q and reverse for the 493 in 4Q (Exhibit 14). We believe the narrowing growth differential will be the catalyst for the market broadening out (Exhibit 13) – see FAQs.

...but the Mag. 7 is still seeing upward revisions

Although the beat rate has been similar between the Mag. 7 vs. the others, the Mag. 7 saw upward revisions to 2024 consensus EPS (+3% YTD), whereas the others saw estimate cuts (-1%) – see Exhibit 10. Over the past year, the Mag. 7's 2024 EPS was revised up by 22%, while the other 493's was cut by 7%.

Capex slowed in 2H, but new 2024 budgets look strong

4Q capex is tracking just +1% YoY (vs. +2% in 3Q) amid rate pressure. But 55% more companies are guiding above consensus on capex than below so far this earnings season (vs. 39% historical average). The aggregate capex guidance from 81 companies so far suggests healthy 7% growth in capex in 2024 YoY. The nascent AI investment cycle, combined with domestic investments coming from both public and private sectors, should lead to a strong and prolonged capex cycle ahead, in our view.

Guidance is weak (as usual in 1Q), but sentiment improved

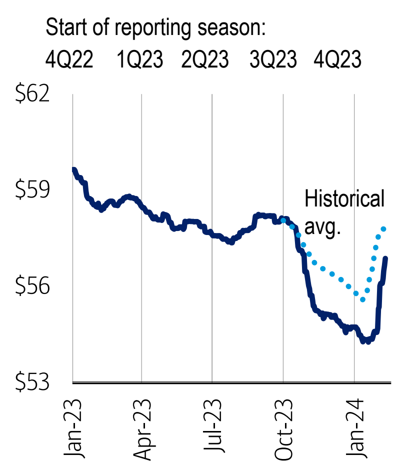
As they usually do in 1Q, companies are guiding conservatively. Our guidance ratio (# of above- vs. below-consensus guides) is tracking at just 0.4x this earnings season, well below the historical average of 0.8x, but just shy of Jan-Feb average of 0.6x (Exhibit 7). But despite weaker guidance, companies are sounding more positive during earnings calls, with our Corporate Sentiment Indicator improving QoQ to near record highs (Exhibit 35). The sentiment indicator has historically led the earnings cycle by a quarter and points to a continued upcycle in earnings.

Rest of earnings spread out over the next three weeks

We will publish a full recap with our 1Q24 earnings preview in April.

Exhibit 1: 4Q EPS is +4% QTD

Revision to consensus S&P 500 4Q EPS



Source: FactSet, BofA US Equity & Quant Strategy
*Note: Historical average indexed to the estimate as of the beginning of last earnings season
BofA GLOBAL RESEARCH

Exhibit 2: S&P 500 qtrly EPS forecasts

Bottom-up consensus vs. our estimates

	Btm-up analysts	YoY	BofA Strategy	YoY
1Q23	53.08	-3%	53.08	-3%
2Q23	54.29	-6%	54.29	-6%
3Q23	58.41	4%	58.41	4%
4Q23E	56.88	7%	56.50	6%
2023E	$221	1%	$222	2%
1Q24E	55.31	4%	57.00	7%
2Q24E	59.35	9%	58.00	7%
3Q24E	63.35	8%	61.00	4%
4Q24E	64.76	14%	59.00	4%
2024E	$243	10%	$235	6%

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

80% done, another strong quarter with a 4% beat

334 S&P 500 companies (79% of index earnings) are in. Consensus 4Q EPS (actuals + estimates) is tracking a 4% beat, with reported EPS coming in 7% above consensus. EPS is tracking +7% YoY, accelerating from +4% in 3Q. We expect continued acceleration at least through 1H24 and see consensus 1Q EPS at +4% YoY too conservative. Only Materials and Utilities are trailing consensus. 72%/63%/50% of reporters beat on EPS/sales/both, better than the historical average of 63%/59%/44%.

Exhibit 3: Consensus expects 7% earnings growth in 4Q
S&P 500 consensus earnings and sales growth expectations by sector based on current constituents

	Earnings		Sales	
Sector	**YoY%**	**QoQ%**	**YoY%**	**QoQ%**
Consumer Disc.	33.3%	(21.5%)	5.8%	5.8%
Consumer Staples	2.0%	(5.1%)	2.7%	1.0%
Energy	(25.4%)	(6.6%)	(9.4%)	(5.0%)
Financials	6.2%	(9.5%)	6.6%	(1.9%)
Health Care	(16.8%)	(5.6%)	7.2%	3.4%
Industrials	4.5%	1.5%	2.6%	1.8%
Technology	19.8%	14.1%	7.0%	11.4%
Materials	(21.9%)	(16.5%)	(5.8%)	(3.0%)
Real Estate	3.8%	0.7%	6.5%	2.0%
Communication Services	50.6%	39.4%	6.5%	7.8%
Utilities	32.5%	(21.8%)	0.5%	2.1%
S&P 500	**6.8%**	**0.5%**	**3.7%**	**2.7%**
ex. Financials	**7.0%**	**2.7%**	**3.4%**	**3.4%**
ex. Energy	**10.4%**	**1.0%**	**5.0%**	**3.4%**
ex. Fins & Energy	**11.4%**	**3.6%**	**4.8%**	**4.3%**

Source: FactSet, BofA US Equity & Quant Strategy

BofA GLOBAL RESEARCH

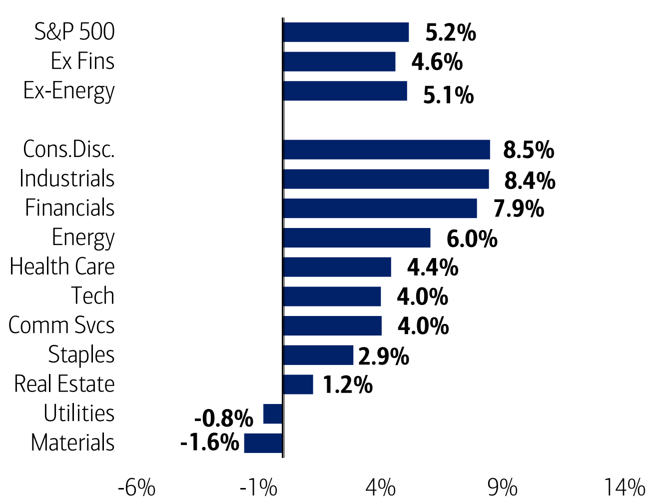
Exhibit 4: % of S&P 500 companies beating consensus expectations on 4Q23 EPS and sales
Results from companies that have reported 4Q earnings

Sector	Total companies	Number Reported	% with EPS beat	% with Sales beat	% EPS & Sales beat
Cons. Disc.	53	31	77%	52%	45%
Cons. Staples	38	23	83%	43%	35%
Energy	23	11	64%	27%	18%
Financials	72	64	73%	63%	50%
Health Care	64	45	73%	89%	67%
Industrials	78	61	72%	67%	56%
Tech	64	41	80%	66%	61%
Materials	28	19	74%	53%	47%
Real Estate	31	15	27%	60%	20%
Comm. Svcs.	19	16	63%	75%	44%
Utilities	30	8	50%	25%	25%
S&P 500	**500**	**334**	**72%**	**63%**	**50%**

Source: FactSet, BofA US Equity & US Quant Strategy

BofA GLOBAL RESEARCH

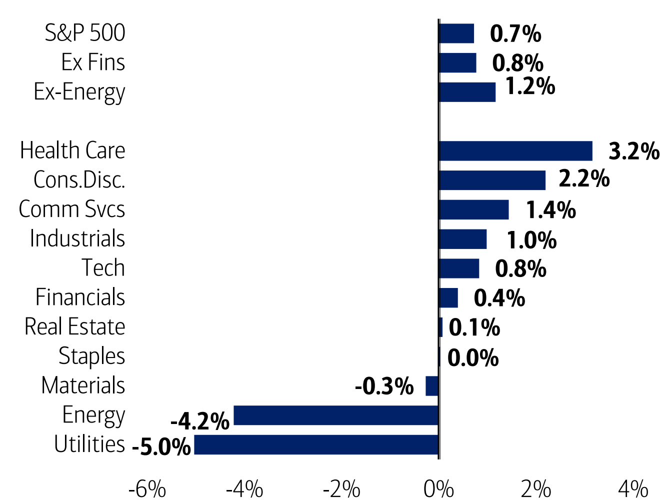
Exhibit 5: Net income is tracking a 5% beat
Revision to consensus 4Q23 earnings since start of January



Source: FactSet, BofA US Equity & Quant Strategy

BofA GLOBAL RESEARCH

Exhibit 6: Sales are tracking a 1% beat
Revision to consensus 4Q23 salebns since the start of January



Source: FactSet, BofA US Equity & Quant Strategy

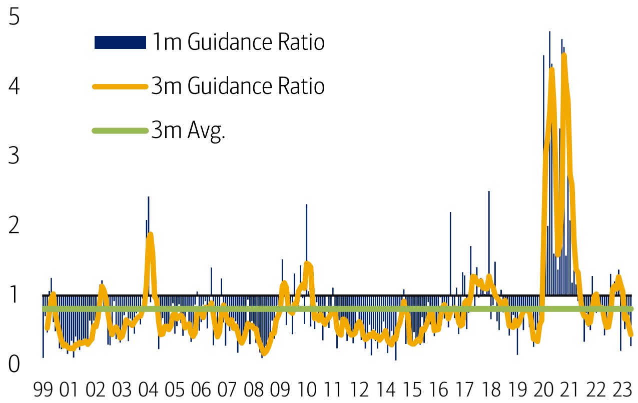
BofA GLOBAL RESEARCH

Guidance is weak, but it's usually weak in Jan-Feb

Our guidance ratio (# of above- vs. below-consensus guides) is tracking at 0.4x so far this earnings season. But this is similar to the seasonal pattern in January-February. We also see no reason for companies to guide aggressively amid macro uncertainty, and don't believe weak guidance and estimate cuts in 1Q are good reasons to sell equities (see preview). 2024 consensus EPS has been cut by just 0.4% YTD, led by Energy and Materials.

Exhibit 7: Our guidance ratio is tracking weak at just 0.4x this earnings season

S&P 500 guidance ratio (# above vs. below consensus) – 1999-2/8/24

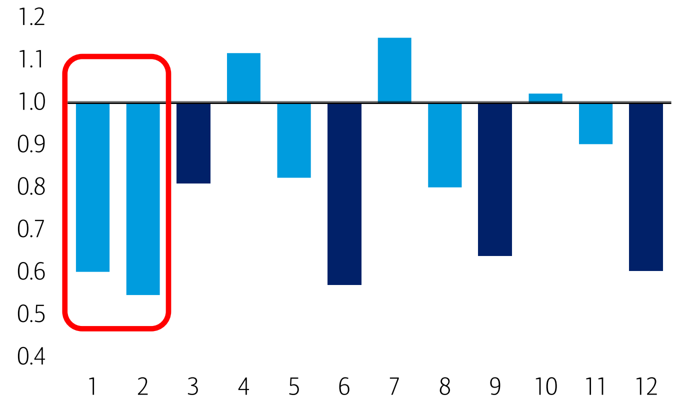


Source: BofA US Equity and Quantitative Strategy

BofA GLOBAL RESEARCH

Exhibit 8: But Jan-Feb is seasonally the weakest period for guidance (light blue = earnings seasons)

Avg. 1-mo. guidance ratio by month (1999-2023)

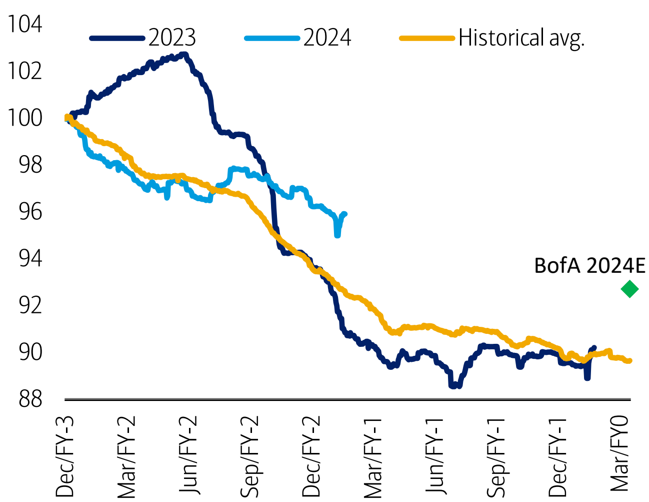


Source: Bloomberg, BofA US Equity & Quant Strategy

BofA GLOBAL RESEARCH

Exhibit 9: 2024 EPS is holding up, bucking the typical cut through March FY-1

S&P 500 historical FY2 EPS revisions vs. 2023-24 consensus EPS (2023-24 as of 2/9/24)

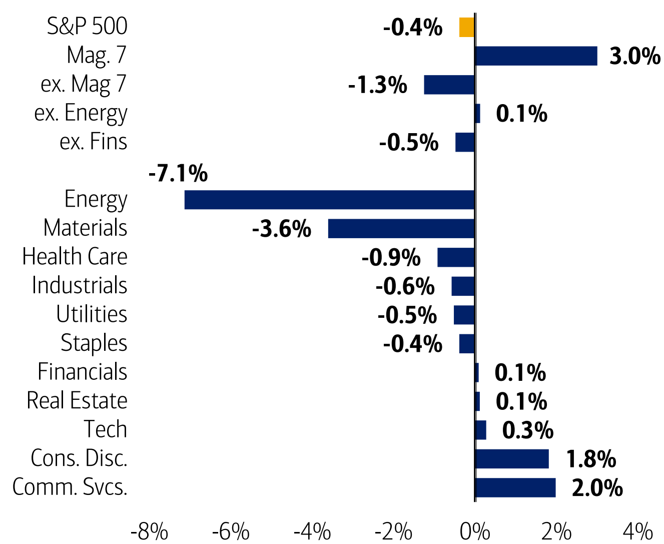


Source: BofA US Equity & Quant Strategy, FactSet; Note: historical average based on 2001-2022

BofA GLOBAL RESEARCH

Exhibit 10: 2024 consensus EPS has been cut by 0.4% YTD, led by Energy and Materials

S&P 500 2024 consensus EPS revision YTD (as of 2/8/24)



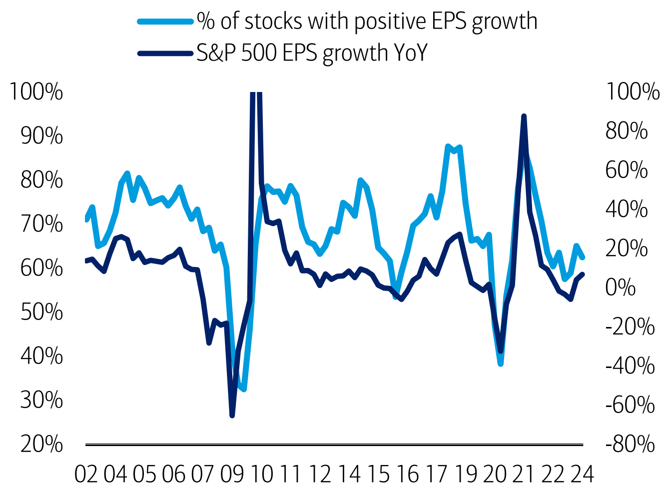
Source: BofA US Equity & Quant Strategy, FactSet

BofA GLOBAL RESEARCH

Was it a Mag. 7 led earnings beat? No

The Magnificent 7 (ex. NVDA that hasn't reported yet) beat earnings by 7%, in line with the other 493. Stocks with $100B in market cap also posted the same beat rate (7%) as other S&P 500 stocks, but small caps are actually posting the biggest beat, +10% (Exhibit 12). The growth rate is much stronger for the Mag. 7, however, tracking +59% YoY vs. -3% for the other 493. Earnings breadth also narrowed QoQ. While a big gap is still expected for 1Q, the growth differential is expected to narrow meaningfully in 2Q (+20% for the Mag. 7 vs. +8% for the 493), close the gap in 3Q and reverse for the 493 in 4Q (Exhibit 14). We believe the narrowing growth differential will be the catalyst for the market broadening out (Exhibit 13).

Exhibit 11: Earnings breadth narrowed a bit in 4Q
S&P 500 % of stocks with positive EPS growth YoY vs. aggregate EPS growth YoY (2002-2/9/24)



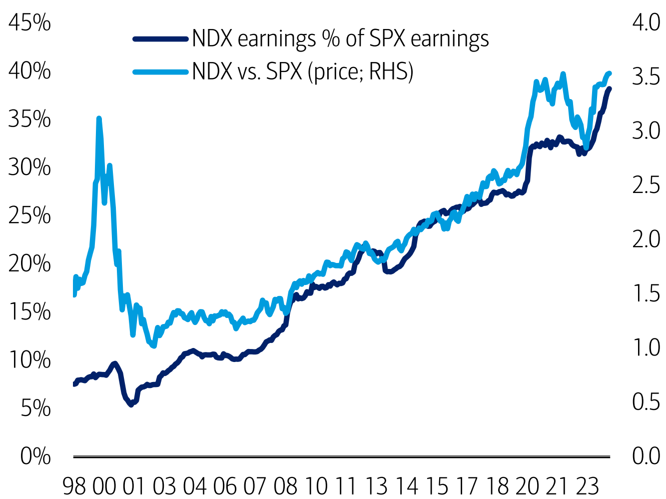
Source: BofA US Equity & Quant Strategy, FactSet
BofA GLOBAL RESEARCH

Exhibit 12: But small cap earnings are beating consensus the most
Actuals vs. consensus from reported companies based on market cap

Sectors	Mega ($100B+)	Large (<$100B)	Mid	Small
Communication Services	4.0%	2.5%	N/A	N/A
Consumer Discretionary	14.4%	10.3%	6.3%	1.9%
Consumer Staples	3.4%	7.3%	12.5%	11.7%
Energy	N/A	12.7%	-5.2%	0.2%
Financials	7.6%	10.9%	-7.2%	20.2%
Health Care	6.0%	2.4%	27.7%	1.1%
Industrials	15.0%	6.2%	-0.2%	22.2%
Information Technology	5.3%	7.6%	16.1%	5.9%
Materials	N/A	0.9%	7.8%	2.3%
Real Estate	N/A	3.5%	37.1%	NM
Utilities	N/A	0.0%	5.2%	N/A
Index total	6.8%	7.1%	1.3%	10.2%

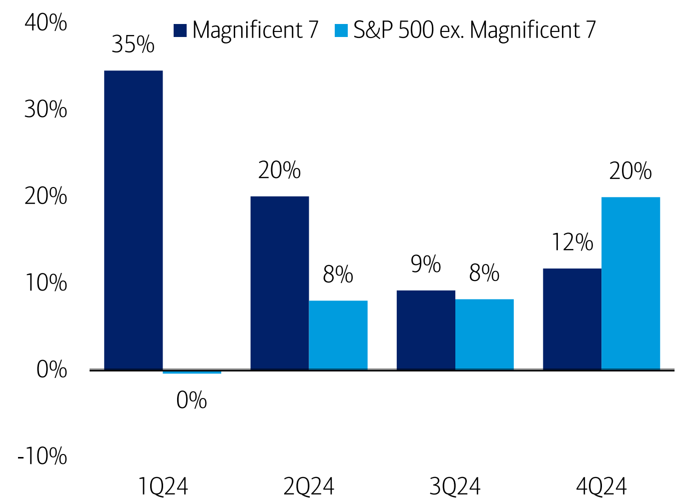
Source: BofA US Equity & Quant Strategy, FactSet
Based on the S&P 500 for Mega and Large caps and Russell indices for Mid and Small
BofA GLOBAL RESEARCH

Exhibit 13: Tech's outperformance has been highly correlated to its earnings vs. S&P 500 since the Tech Bubble
Nasdaq 100 vs. S&P 500 – earnings and performance (1998-1/24)



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

Exhibit 14: The other 493 earnings are expected grow faster than the Mag. 7 earnings by 4Q, potentially driving a rotation into the 493
Magnificent 7 vs. the other 493 quarterly EPS YoY



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

Real-time monitor of the four bear cases

Bear #1: Demand remains weak

Despite the solid EPS recovery (+7% YoY), the top line remains more tepid, especially in real terms (+3.7% nominal, +0.3% real). Mentions of weak demand also ticked up QoQ to the highest level since COVID (Exhibit 16). The main reason for tepid sales despite robust GDP growth was the mix between goods and services. The goods/manufacturing economy remained weak, which represents 50% of S&P 500 earnings but just 20% of GDP.

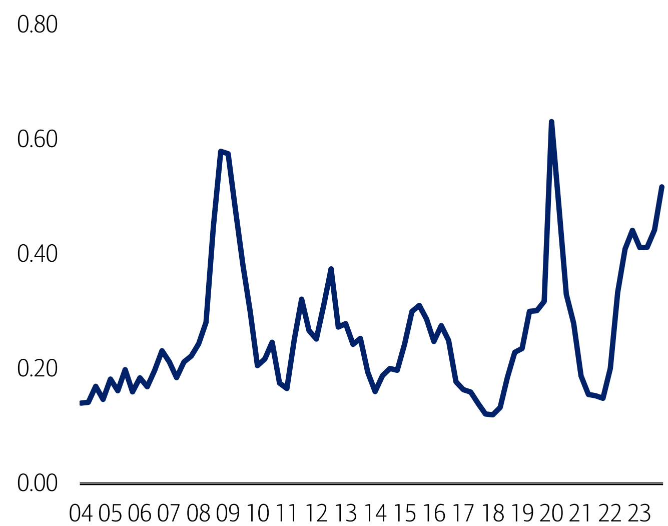
But there are encouraging signs that demand has inflected higher – e.g. Korean exports (Exhibit 19). Manufacturing new orders vs. inventories also suggest we're now in a re-stocking cycle (Exhibit 21). Margins already started improving and we expect even further improvement once demand starts to improve (Exhibit 22).

Exhibit 15: Real sales growth improved, but remains weak
Quarterly sales growth ex. Fins, nominal vs. real (1986-1/24)

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

BofA GLOBAL RESEARCH

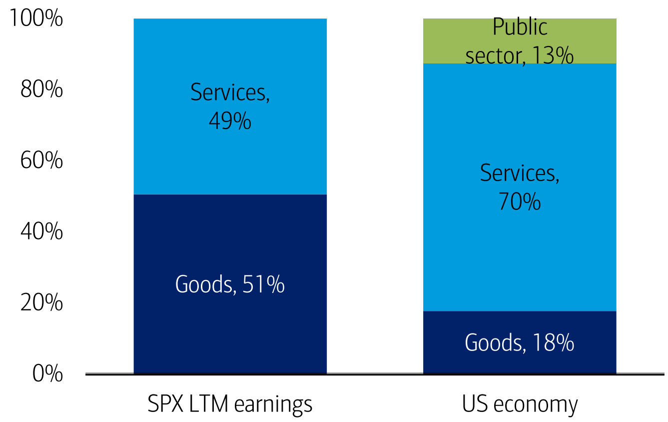
Exhibit 16: Mentions of weak demand remains elevated
Avg. mention of weak demand per co. for Consumer sectors ('03-4Q23 through 2/2/24)



Source: BofA Global Research
Note: mentions include "lower," "softer," "moderating," "weaker"

BofA GLOBAL RESEARCH

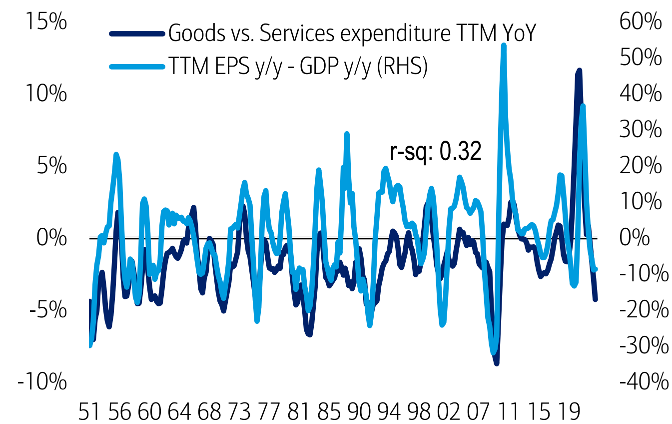
Exhibit 17: S&P 500 is more geared towards goods than the economy
Our estimate for Goods vs. Services exposure of S&P 500 based on industry breakout of 2Q23 earnings vs. % goods/services for US economy (based on gross value added by industry, 2022)



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

BofA GLOBAL RESEARCH

Exhibit 18: Goods outpacing services has historically been a tailwind for earnings vs. GDP
Goods vs. Services consumption TTM YoY vs. EPS vs. GDP TTM YoY (1951-3Q23)



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

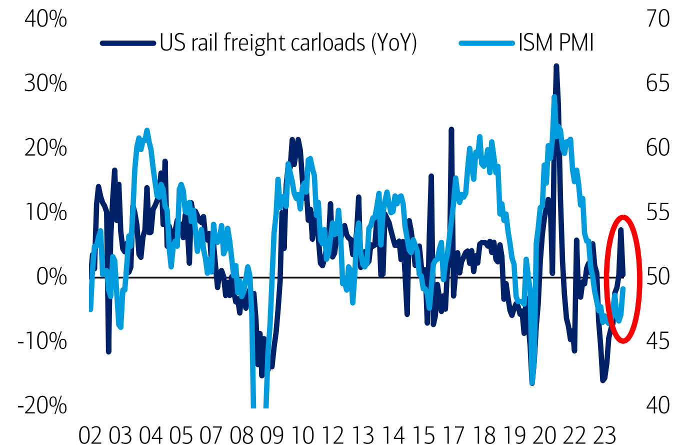
BofA GLOBAL RESEARCH

Exhibit 19: Korea exports soared, pointing to a manufacturing recovery
Korea exports YoY vs. ISM Manufacturing PMI (1997-1/24)

Source: Bloomberg, BofA US Equity & Quant Strategy

BofA GLOBAL RESEARCH

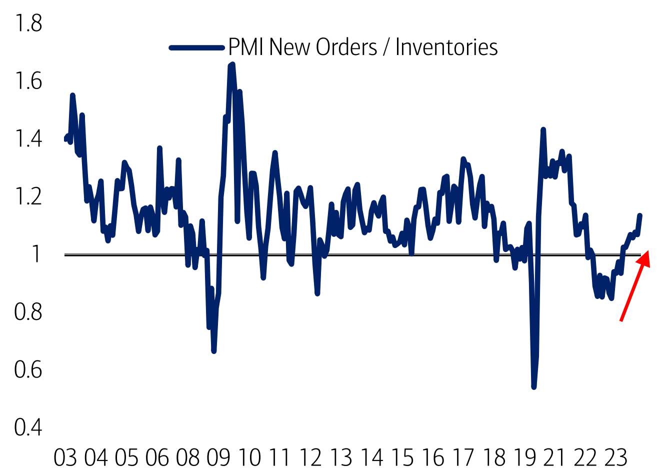
Exhibit 20: Rail freight carload growth moderated in January, but likely due to the cold weather and still points to upside in PMI
US rail freight carloads YoY vs. ISM Manufacturing PMI (2002-1/24)



Source: Bloomberg, BofA US Equity & Quant Strategy

BofA GLOBAL RESEARCH

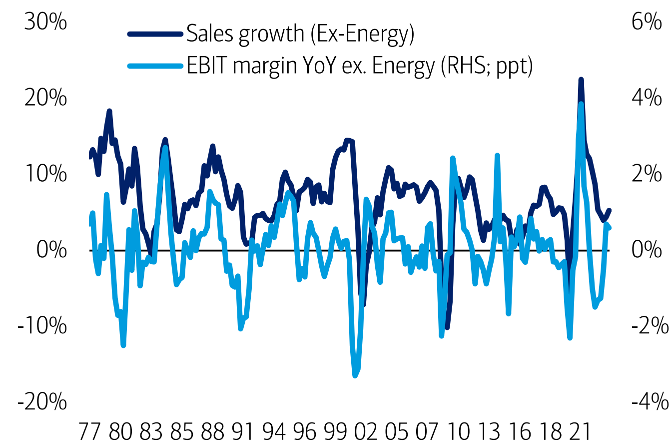
Exhibit 21: We're now in a re-stocking cycle
ISM Manufacturing PMI new orders / inventories (2003-1/24)



Source: Bloomberg, BofA US Equity & Quant Strategy

BofA GLOBAL RESEARCH

Exhibit 22: Margins already inflected higher even without sales boost
S&P 500 ex. Energy & Financials sales growth YoY vs. EBIT margin YoY (1977-4Q23E)



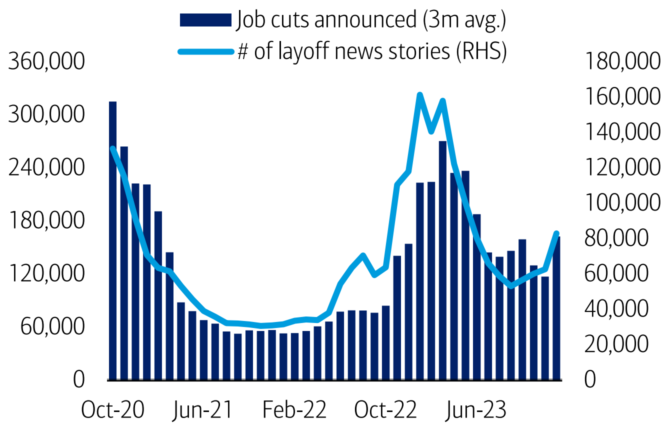
Source: FactSet, BofA US Equity & Quant Strategy

BofA GLOBAL RESEARCH

Bear #2: Companies are laying off workers

Layoff headlines have picked up, but it's mostly due to seasonality and the magnitude is much smaller vs. last year (-20% YoY in January). Historically, layoffs and earnings cycles have shown a strong inverse correlation (0.43 r-sq) – Exhibit 24. The earnings upcycle that we expect in 2024 suggests that the peak corporate layoff cycle is likely behind us. The job market remains robust.

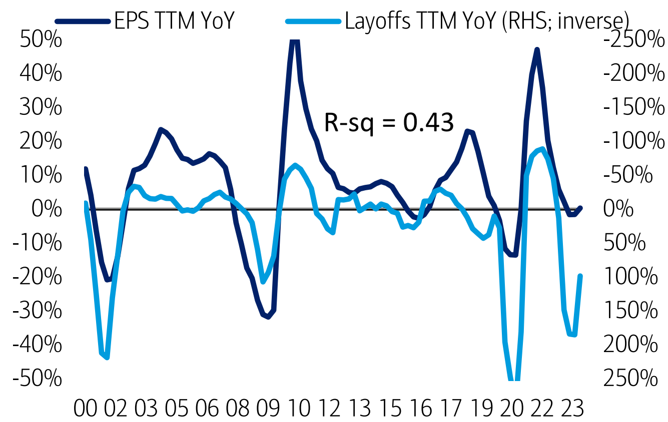
Exhibit 23: Size and frequency of layoff announcements are well off the peak
Challenger job cuts announced (3-mo. avg.) vs. # of layoff news stories on Bloomberg (2020-1/24)



Source: BofA US Equity & Quant Strategy, Bloomberg

BofA GLOBAL RESEARCH

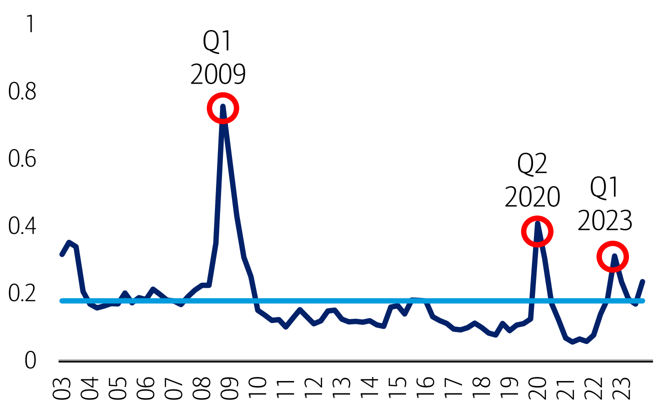
Exhibit 24: Earnings upcycle should translate to fewer layoffs ahead
S&P 500 trailing 12-mo. EPS YoY vs. Challenger job cuts TTM YoY (2000-12/23)



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

BofA GLOBAL RESEARCH

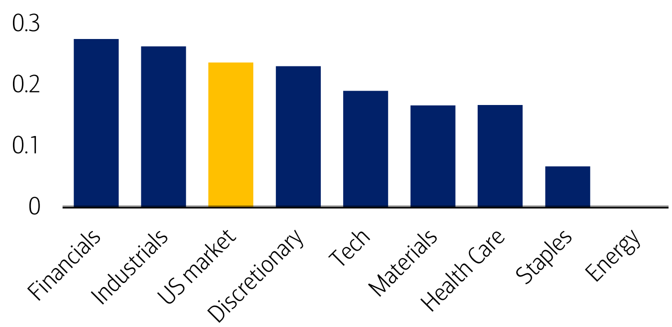
Exhibit 25: Mentions of "layoffs" in earnings transcript ticked up
Earnings transcript mentions of "layoffs" (as of 1/30/2024)



Source: BofA Global Research, FactSet

BofA GLOBAL RESEARCH

Exhibit 26: "Layoff" mentions most acute in Financials so far this earnings season
Earnings transcript mentions of "layoffs" in 2024; sectors with sample size <10 were excluded



Source: BofA Global Research, FactSet

BofA GLOBAL RESEARCH

Is this a good signal? "Layoff" mentions on earnings calls don't provide a clear signal for short-term returns (Exhibit 27). However, over a longer-time period, we have found that labor-light companies tend to outperform peers (Exhibit 28).

Exhibit 27: A few "layoff" mentions aren't a negative catalyst, but many mentions (7+) are associated with short-term underperformance

Fwd. returns of stock with "layoff" mentioned in earnings transcript, relative to industry group (2003-present)

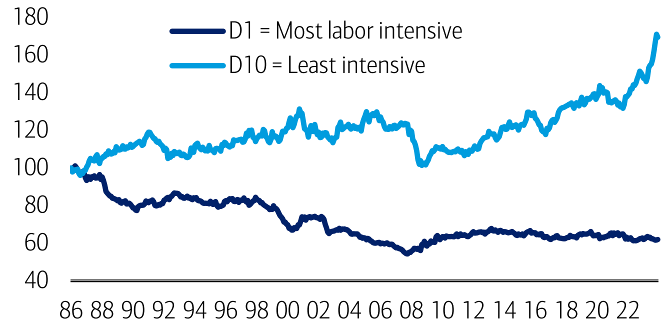
	Fwd. returns of stock with "layoff" mentioned in earnings transcript, relative to industry group	
At least...	**+1 day**	**+5 days**
1 mention	0.0%	0.1%
2 mentions	0.0%	0.0%
3 mentions	-0.1%	0.2%
4 mentions	0.1%	0.5%
5 mentions	0.0%	0.2%
6 mentions	-0.1%	0.6%
7 mentions	-0.8%	0.4%
8 mentions	-1.3%	0.1%
9 mentions	-1.5%	-0.2%
10 mentions	-1.7%	-0.5%

Source: BofA US Equity & Quant Strategy, FactSet

BofA GLOBAL RESEARCH

Exhibit 28: Labor-light companies tend to outperform their labor-intensive peers

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



Source: BofA US Equity & Quant Strategy, FactSet

BofA GLOBAL RESEARCH

Bear #3: Capital cost is going to hurt capex and dividends

With another bank cutting its dividend on negative real asset marks, bears argue that corporate cash return and capex are potentially at risk, unless the Fed cuts aggressively. But NYCB was likely idiosyncratic, not systematic (see NYCB note). While capex slowed in 4Q as expected (-1% YoY), our capex guidance remains solid at 1.55x, better than the historical average at 1.4x. We believe a domestic investment cycle, combined with an AI investment cycle, will result in a prolonged capex cycle. META's dividend issuance also indicates we are in a total return world with a greater focus on dividends (see dividend note).

Exhibit 29: Capex slowed to +1% YoY in 4Q (as expected), vs. +2% in 3Q

S&P 500 4Q capex YoY (sample size = 254)

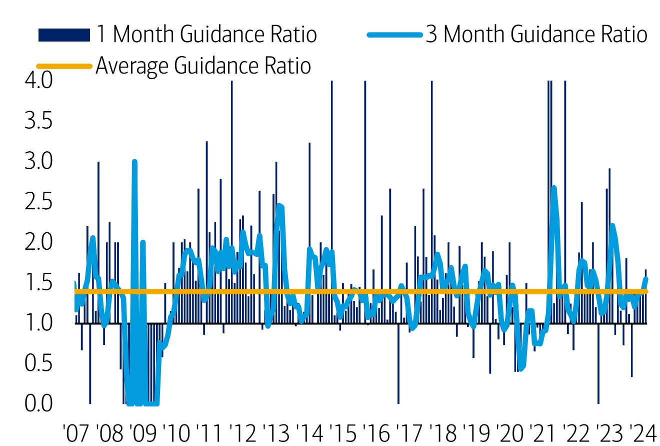
Sector	4Q23 Capex	4Q22 Capex	Aggregate YoY
Consumer Discretionary	34,007	31,900	7%
Consumer Staples	6,001	5,778	4%
Energy	17,374	15,452	12%
Financials	1,712	1,691	1%
Health Care	7,590	7,242	5%
Industrials	20,834	23,656	-12%
Information Technology	26,324	25,440	3%
Materials	8,578	7,140	20%
Real Estate	716	621	15%
Communication Services	37,412	39,773	-6%
Utilities	5,356	6,192	-13%
S&P 500	**165,904**	**164,886**	**1%**
ex. Tech + Mag. 7	**104,001**	**104,357**	**0%**

Source: FactSet, BofA US Equity & Quant Strategy

BofA GLOBAL RESEARCH

Exhibit 30: Our capex guidance is tracking strong at 1.55x this earnings season, better than the historical avg.

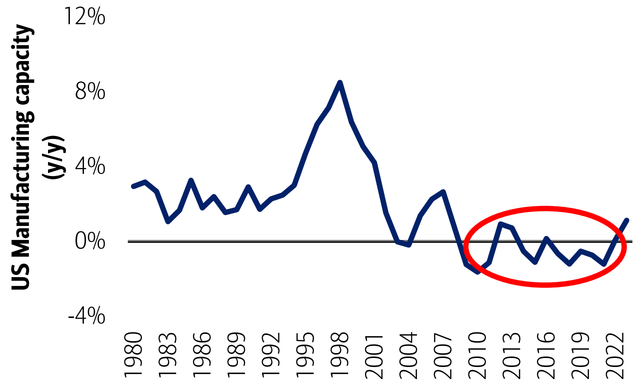
Capex guidance ratio (# above vs. below-consensus capex guides); 2007-2/8/24



Source: Bloomberg, BofA US Equity & Quant Strategy

BofA GLOBAL RESEARCH

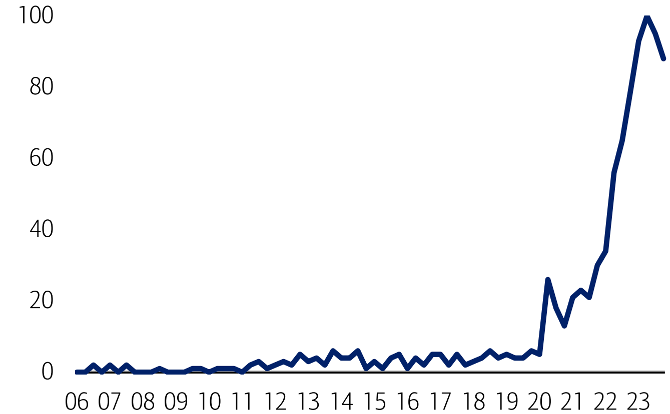
Exhibit 31: Coming out of 10+ years of underinvestment in US manufacturing
US manufacturing capacity YoY (1980-12/2023)



Source: Federal Reserve, BofA Global Research

BofA GLOBAL RESEARCH

Exhibit 32: Mentions of re-shoring skyrocketed over past year
Companies mentions of re-/near-/on-shoring (100=max; 2006-12/23)



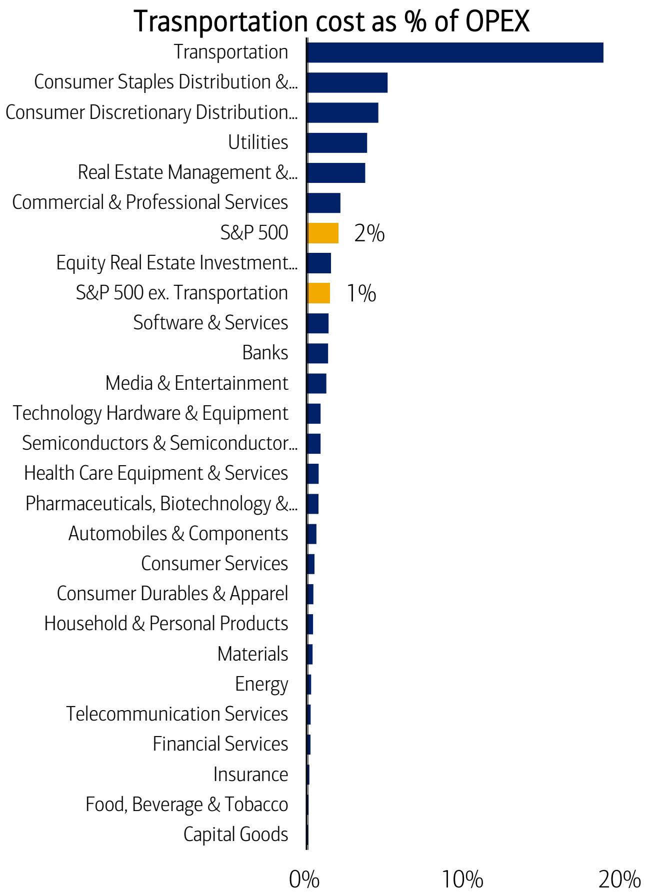
Source: AlphaSense, BofA Global Research

BofA GLOBAL RESEARCH

Bear #4: Red Sea/Panama Canal supply chain disruptions

We estimate that transportation costs are only 2% of total OPEX for the S&P 500 (Exhibit 33) and water transportation is just 0.0008%. Consumer industries are more exposed to transportation, at 5%, where BofA Retail analysts see potential margin headwinds – also see Red Sea research compilation. Despite concerns, we believe this could be a tailwind to manufacturing, where the inventory cycle already started to inflect and demand is rising to rebuild inventories ahead of longer lead times and Chinese New Year, similar to the just-in-case inventory mgmt. post-COVID (Exhibit 34).

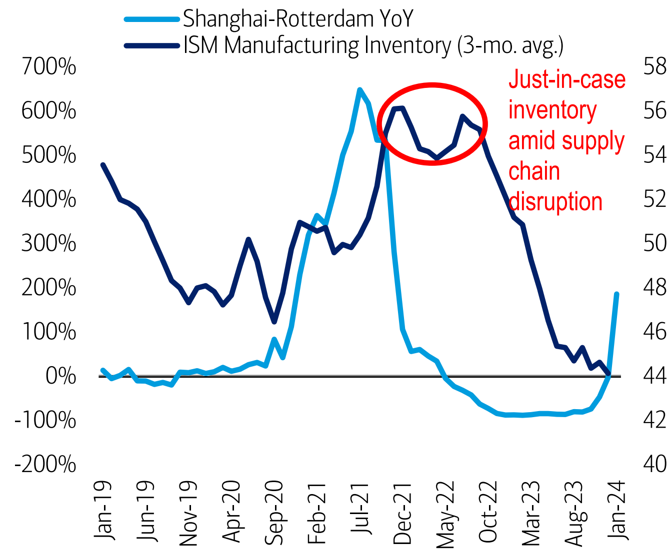
Exhibit 33: Transportation costs represent just 2% of total OPEX for the S&P 500
Transportation cost as % of total OPEX by industry group (as of 2022)



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

BofA GLOBAL RESEARCH

Exhibit 34: Supply chain disruptions post-COVID led to just-in-case inventory management. Red Sea disruptions could fuel re-stocking
Shanghai-Rotterdam freight rate YoY vs. ISM Manufacturing inventory (1/19-1/24)



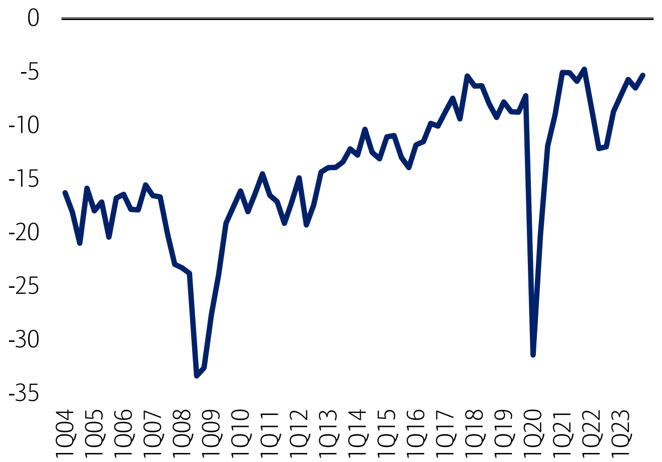
Source: Bloomberg, BofA US Equity & Quant Strategy

BofA GLOBAL RESEARCH

Corporate sentiment improves to near-record highs

BofA's Predictive Analytics team helped analyze earnings transcripts using Loughran McDonald's financial dictionary to calculate sentiment scores (see Appendix for full methodology). Our Corporate Sentiment Indicator improved QoQ to near its record high from 4Q21. The YoY change in corporate sentiment has been highly correlated with quarterly EPS YoY with a one quarter lead, pointing to a continued earnings recovery ahead.

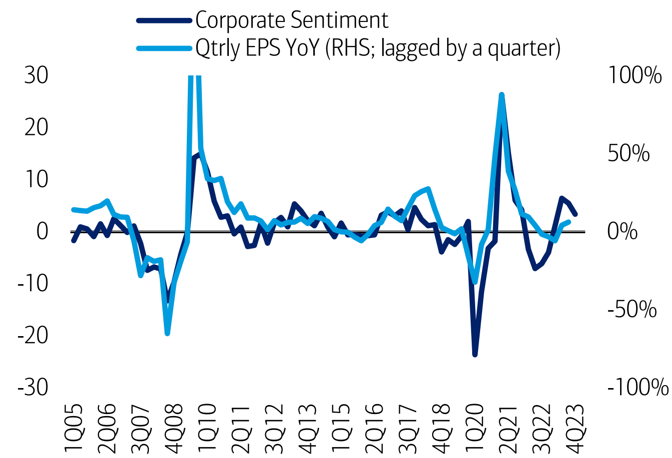
Exhibit 35: Corporate sentiment improved to a near-record high
Avg. negative sentiment score for S&P 500 companies (2004-4Q23 as of 2/8/24)



Source: BofA Global Research, FactSet

BofA GLOBAL RESEARCH

Exhibit 36: YoY change in Corporate Sentiment is slowing but still positive
S&P 500 avg. negative sentiment score YoY vs. quarterly EPS YoY with a quarter lag (r-sq=50%; 1Q05-4Q23 as of 2/8/24)



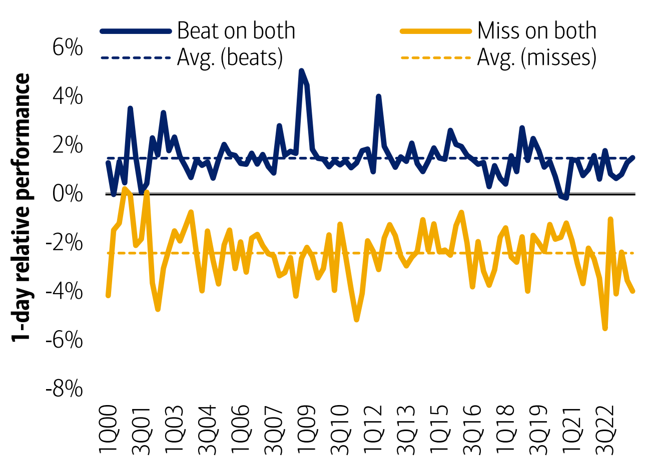
Source: BofA Global Research, FactSet

BofA GLOBAL RESEARCH

Average reactions to beats, but misses got punished

Companies that beat on both sales and EPS outperformed the S&P 500 by 150bps the next day, largely in line with the historical average. But misses were penalized more than usual, underperforming by 400bps vs. a typical -240bps.

Exhibit 37: Beats were rewarded, but misses got punished more than usual
Rel. 1-day post-reporting performance (vs. S&P 500) on EPS & sales surprise (1Q00-4Q23 as of 2/9/24)



Source: FactSet, BofA US Equity & Quant Strategy

BofA GLOBAL RESEARCH

Exhibit 38: Relative performance of reported companies vs. S&P 500
4Q23 earnings reactions based on surprise

	1 day	5 day	Start of reporting season to 1 day after reporting	Start of reporting season to 5 days after reporting
EPS Beat	0.9%	0.4%	-1.0%	-1.2%
EPS Miss	-3.3%	-3.5%	-5.7%	-5.1%
EPS In-Line	-0.8%	-2.1%	-3.7%	-4.2%
Sales Beat	1.0%	0.3%	-0.5%	-0.9%
Sales Miss	-1.6%	-2.1%	-4.8%	-4.5%
Sales In-Line	-2.7%	-2.7%	-5.9%	-11.2%
Both Beat	**1.5%**	**0.9%**	**-0.2%**	**-0.4%**
Both Miss	**-4.0%**	**-4.2%**	**-8.3%**	**-6.3%**

Source: FactSet, BofA US Equity & Quant Strategy

BofA GLOBAL RESEARCH

Exhibit 39: Relative performance by sector vs. S&P 500
4Q23 earnings reactions based on surprise by sector

	At the open (+1D)		Intraday (+1D)		1 day after reporting		5 days after reporting	
Sector	**Beat on both**	**Missed on both**	**Beat on both**	**Missed on both**	**Beat on both**	**Missed on both**	**Beat on both**	**Missed on both**
Cons. Disc.	1.0%	-3.5%	1.40%	-1.9%	2.4%	-5.4%	0.4%	-4.2%
Staples	3.2%	-4.7%	-0.28%	-1.0%	2.7%	-5.6%	1.0%	-3.8%
Energy	1.5%	-0.6%	2.0%	0.1%	3.6%	-0.5%	6.1%	-6.5%
Financials	1.2%	-1.9%	-0.9%	-0.4%	0.3%	-2.3%	0.0%	-1.1%
Health Care	1.2%	-1.9%	-0.2%	-2.3%	0.9%	-4.2%	1.5%	-8.7%
Industrials	1.4%	-7.0%	0.4%	-0.7%	1.8%	-7.6%	1.2%	-6.7%
Tech	0.8%	3.0%	0.1%	-1.0%	1.0%	1.9%	-0.7%	-2.6%
Materials	3.2%	-9.0%	0.5%	-1.3%	3.6%	-10.3%	2.6%	-3.9%
Real Estate	1.1%	NA	1.7%	NA	2.8%	N.A.	3.0%	N.A.
Comm. Svcs.	3.8%	NA	-1.7%	NA	2.1%	N.A.	3.3%	N.A.
Utilities	1.7%	-0.5%	0.7%	-1.5%	2.4%	-2.0%	3.3%	N.A.
S&P 500	**1.5%**	**-3.0%**	**0.0%**	**-1.0%**	**1.5%**	**-4.0%**	**0.9%**	**-4.2%**

Source: FactSet, BofA US Equity & Quant Strategy

BofA GLOBAL RESEARCH

S&P 500 companies reporting in Week 5

Below we list confirmed/tentative dates for S&P 500 companies reporting this week.

Exhibit 40: S&P 500 companies slated to report 4Q results in Week 5 ($100B+ in market cap highlighted in blue)

Week 5 schedule

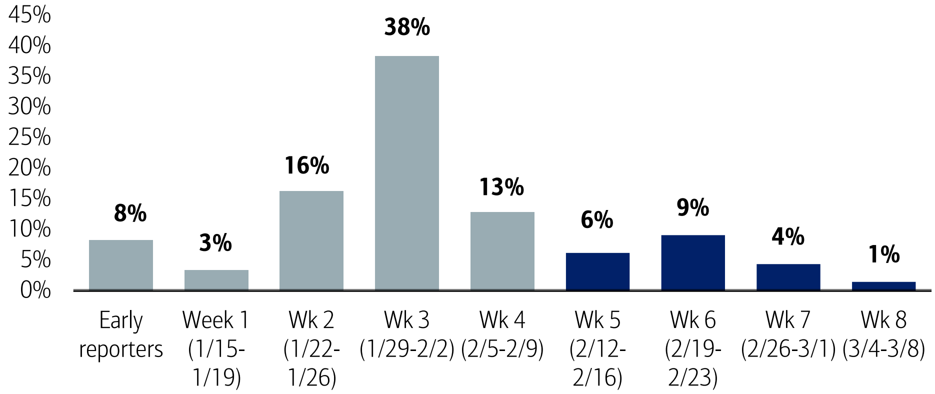
Report Date	Ticker	Company Name	Sector	Market Cap ($B)	Status	Week
2/12/2024	ANET	ARISTA NETWORKS INC	Information Technology	88	Confirmed	5
2/12/2024	CDNS	CADENCE DESIGN SYS INC	Information Technology	85	Tentative	5
2/12/2024	WM	WASTE MANAGEMENT INC	Industrials	76	Confirmed	5
2/12/2024	PFG	PRINCIPAL FINANCIAL GROUP	Financials	19	Confirmed	5
2/12/2024	TRMB	TRIMBLE INC	Information Technology	13	Confirmed	5
2/12/2024	FRT	FEDERAL REALTY INVS TRUST	Real Estate	8	Confirmed	5
2/13/2024	KO	COCA-COLA CO/THE	Consumer Staples	257	Confirmed	5
2/13/2024	ABNB	AIRBNB INC-CLASS A	Consumer Discretionary	96	Confirmed	5
2/13/2024	ZTS	ZOETIS INC	Health Care	91	Confirmed	5
2/13/2024	MCO	MOODY'S CORP	Financials	74	Confirmed	5
2/13/2024	MAR	MARRIOTT INTERNATIONAL -CL A	Consumer Discretionary	72	Confirmed	5
2/13/2024	ECL	ECOLAB INC	Materials	57	Confirmed	5
2/13/2024	WELL	WELLTOWER INC	Real Estate	49	Confirmed	5
2/13/2024	AIG	AMERICAN INTERNATIONAL GROUP	Financials	49	Confirmed	5
2/13/2024	BIIB	BIOGEN INC	Health Care	35	Confirmed	5
2/13/2024	HWM	HOWMET AEROSPACE INC	Industrials	24	Confirmed	5
2/13/2024	INVH	INVITATION HOMES INC	Real Estate	20	Confirmed	5
2/13/2024	AKAM	AKAMAI TECHNOLOGIES INC	Information Technology	19	Confirmed	5
2/13/2024	MGM	MGM RESORTS INTERNATIONAL	Consumer Discretionary	16	Confirmed	5
2/13/2024	LDOS	LEIDOS HOLDINGS INC	Industrials	16	Confirmed	5
2/13/2024	EQT	EQT CORP	Energy	14	Confirmed	5
2/13/2024	TAP	MOLSON COORS BEVERAGE CO - B	Consumer Staples	13	Confirmed	5
2/13/2024	INCY	INCYTE CORP	Health Care	13	Confirmed	5
2/13/2024	DVA	DAVITA INC	Health Care	10	Confirmed	5
2/13/2024	HAS	HASBRO INC	Consumer Discretionary	7	Confirmed	5
2/14/2024	CSCO	CISCO SYSTEMS INC	Information Technology	204	Confirmed	5
2/14/2024	EQIX	EQUINIX INC	Real Estate	80	Tentative	5
2/14/2024	CME	CME GROUP INC	Financials	74	Confirmed	5
2/14/2024	OXY	OCCIDENTAL PETROLEUM CORP	Energy	50	Confirmed	5
2/14/2024	KHC	KRAFT HEINZ CO/THE	Consumer Staples	44	Confirmed	5
2/14/2024	WMB	WILLIAMS COS INC	Energy	41	Confirmed	5
2/14/2024	IQV	IQVIA HOLDINGS INC	Health Care	40	Confirmed	5
2/14/2024	GPN	GLOBAL PAYMENTS INC	Financials	35	Confirmed	5
2/14/2024	MLM	MARTIN MARIETTA MATERIALS	Materials	33	Confirmed	5
2/14/2024	ACGL	ARCH CAPITAL GROUP LTD	Financials	31	Confirmed	5
2/14/2024	WAB	WABTEC CORP	Industrials	24	Confirmed	5
2/14/2024	AWK	AMERICAN WATER WORKS CO INC	Utilities	24	Confirmed	5
2/14/2024	ROL	ROLLINS INC	Industrials	21	Confirmed	5
2/14/2024	ES	EVERSOURCE ENERGY	Utilities	19	Confirmed	5
2/14/2024	TYL	TYLER TECHNOLOGIES INC	Information Technology	19	Confirmed	5
2/14/2024	VTR	VENTAS INC	Real Estate	18	Confirmed	5
2/14/2024	CF	CF INDUSTRIES HOLDINGS INC	Materials	15	Confirmed	5
2/14/2024	ALB	ALBEMARLE CORP	Materials	14	Confirmed	5
2/14/2024	CRL	CHARLES RIVER LABORATORIES	Health Care	11	Confirmed	5
2/14/2024	GNRC	GENERAC HOLDINGS INC	Industrials	8	Confirmed	5
2/15/2024	AMAT	APPLIED MATERIALS INC	Information Technology	154	Tentative	5
2/15/2024	DE	DEERE & CO	Industrials	107	Confirmed	5
2/15/2024	SO	SOUTHERN CO/THE	Utilities	73	Confirmed	5
2/15/2024	DLR	DIGITAL REALTY TRUST INC	Real Estate	45	Confirmed	5
2/15/2024	IR	INGERSOLL-RAND INC	Industrials	35	Confirmed	5
2/15/2024	ED	CONSOLIDATED EDISON INC	Utilities	31	Confirmed	5
2/15/2024	WST	WEST PHARMACEUTICAL SERVICES	Health Care	30	Confirmed	5
2/15/2024	CBRE	CBRE GROUP INC - A	Real Estate	26	Confirmed	5
2/15/2024	GPC	GENUINE PARTS CO	Consumer Discretionary	20	Confirmed	5
2/15/2024	TRGP	TARGA RESOURCES CORP	Energy	19	Confirmed	5
2/15/2024	LH	LABORATORY CRP OF AMER HLDGS	Health Care	19	Confirmed	5
2/15/2024	EPAM	EPAM SYSTEMS INC	Information Technology	17	Confirmed	5
2/15/2024	ZBRA	ZEBRA TECHNOLOGIES CORP-CL A	Information Technology	13	Confirmed	5
2/15/2024	LNT	ALLIANT ENERGY CORP	Utilities	12	Confirmed	5
2/15/2024	BIO	BIO-RAD LABORATORIES-A	Health Care	9	Confirmed	5
2/16/2024	VMC	VULCAN MATERIALS CO	Materials	32	Confirmed	5
2/16/2024	PPL	PPL CORP	Utilities	19	Confirmed	5

Source: Bloomberg, BofA US Equity & Quant Strategy

BofA GLOBAL RESEARCH

4Q23 Reporting by Week

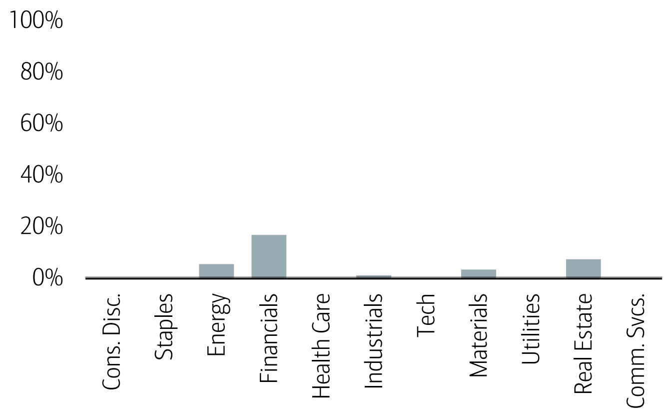
Exhibit 41: S&P 500 4Q23 Earnings Reporting by Week
% of earnings by sector



Source: Bloomberg, BofA US Equity & Quant Strategy

BofA GLOBAL RESEARCH

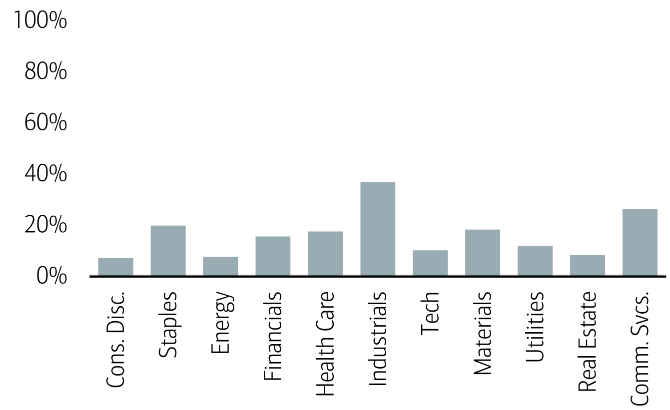
Exhibit 42: Week 1: % 4Q earnings reported by sector
% of earnings by sector



Source: Bloomberg, BofA US Equity & Quant Strategy

BofA GLOBAL RESEARCH

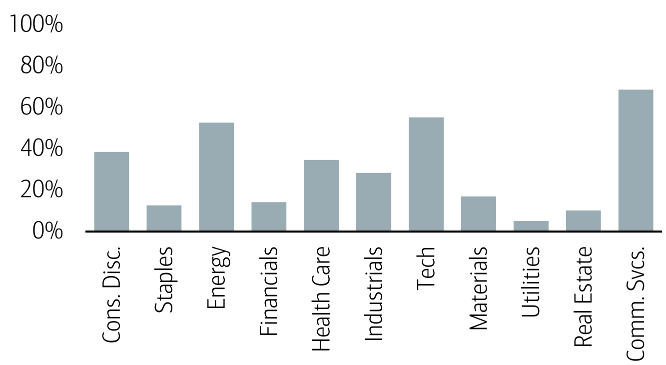
Exhibit 43: Week 2: % 4Q earnings reported by sector
% of earnings by sector



Source: Bloomberg, BofA US Equity & Quant Strategy

BofA GLOBAL RESEARCH

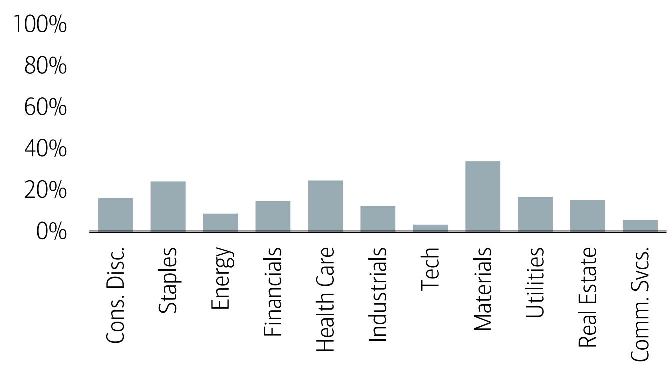
Exhibit 44: Week 3: % 4Q earnings reported by sector
% of earnings by sector



Source: Bloomberg, BofA US Equity & Quant Strategy

BofA GLOBAL RESEARCH

Exhibit 45: Week 4: % 4Q earnings reported by sector
% of earnings by sector



Source: Bloomberg, BofA US Equity & Quant Strategy

BofA GLOBAL RESEARCH

Small cap 4Q23 earnings update

- So far, 247 S&P 600 companies have reported. 4Q consensus earnings are 3.9% above where they stood at the start of January while sales are 1.1% lower than at the start of January.
- Communication Services and Financials are the sectors that have seen the most positive earnings revisions while Energy has seen the largest downward revisions since the start of January.
- 65% of companies beat on EPS, 38% beat on sales, and 27% beat on both.
- Analysts are forecasting 4Q small cap earnings to be -12% YoY (-11% for the median company) on sales -3% YoY (-0.4% median).

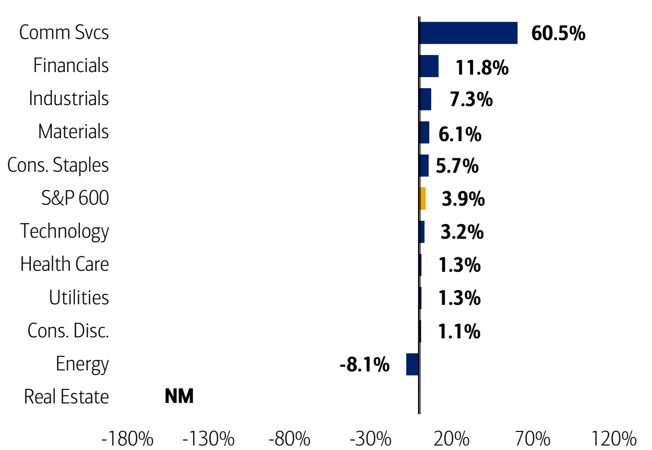
Exhibit 46: Small cap 4Q23 growth expectations and proportion of beats so far
S&P 600 consensus 4Q23 earnings and sales growth and % positive surprises

Sector	Total Companies	Number Reported	Earnings YoY%	Median earnings YoY%	Sales YoY%	Median sales YoY%	% With EPS Beat	% With Sales Beat	Both Beat %
Comm Svcs	22	5	-60.1%	-42.6%	-7.3%	-6.0%	60%	60%	40%
Cons. Disc.	85	21	3.7%	-7.2%	-1.4%	-0.6%	58%	58%	38%
Cons. Staples	30	15	-36.7%	-6.2%	-2.3%	0.4%	73%	64%	47%
Energy	28	8	-18.9%	-9.8%	-6.7%	-0.2%	38%	25%	13%
Financials	118	86	-0.1%	-14.1%	-2.3%	-3.1%	66%	25%	21%
Health Care	67	11	13.1%	-0.1%	0.7%	5.5%	29%	43%	9%
Industrials	95	41	-17.5%	-2.5%	-1.4%	0.2%	83%	39%	34%
Technology	62	35	-25.2%	-14.8%	-7.8%	-3.4%	64%	39%	29%
Materials	32	12	-10.9%	-12.7%	-3.7%	-3.2%	60%	40%	25%
Real Estate	50	12	NM	NM	-2.2%	0.5%	50%	83%	17%
Utilities	11	1	21.8%	5.8%	7.5%	6.5%	N.A.	N.A.	0%
S&P 600	**600**	**247**	**-11.5%**	**-10.5%**	**-2.9%**	**-0.4%**	**65%**	**38%**	**27%**
Ex-Financials	482	161	-15.5%	-8.9%	-2.9%	0.2%	64%	46%	30%
Ex-Energy	572	239	-10.8%	-10.5%	-2.4%	-0.4%	66%	39%	27%
Ex-Energy&Financials	454	153	-15.1%	-8.9%	-2.4%	0.2%	66%	47%	31%

Source: FactSet, BofA US Equity & Quant Strategy

BofA GLOBAL RESEARCH

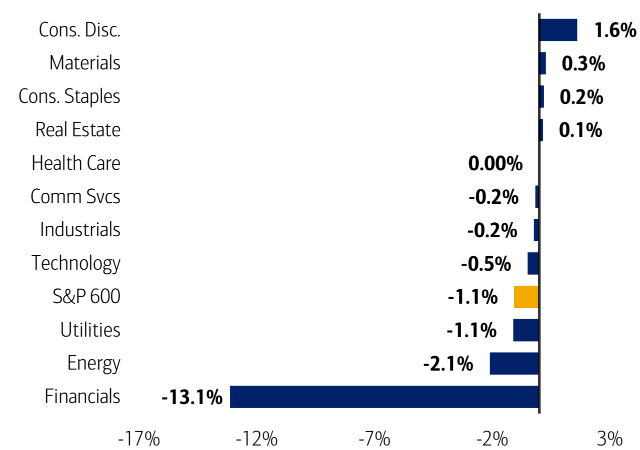
Exhibit 47: Earnings tracking +3.9% better than estimates at start of January
4Q23 earnings revisions since the start of reporting on 1/1/24



Source: FactSet, BofA US Equity & Quant Strategy

BofA GLOBAL RESEARCH

Exhibit 48: Sales tracking -1.1% worse than the estimates at start of January
4Q23 sales revisions since the start of reporting on 1/1/24



Source: FactSet, BofA US Equity & Quant Strategy

BofA GLOBAL RESEARCH

Mid cap 4Q23 earnings update

- So far, 210 S&P 400 companies have reported. Earnings estimates are 1.1% lower since the start of January and sales forecasts are 0.4% better.
- Tech and Health Care have seen the biggest upward EPS revisions since the start of January, while Energy and Utilities have seen the most negative earnings revisions.
- So far, 61% of companies beat on EPS, 51% beat on sales and 31% beat on both, better than in small caps.
- Earnings are expected to be -6% YoY (-1% for the median company) while sales are expected to be -1% YoY (+1% for the median company).

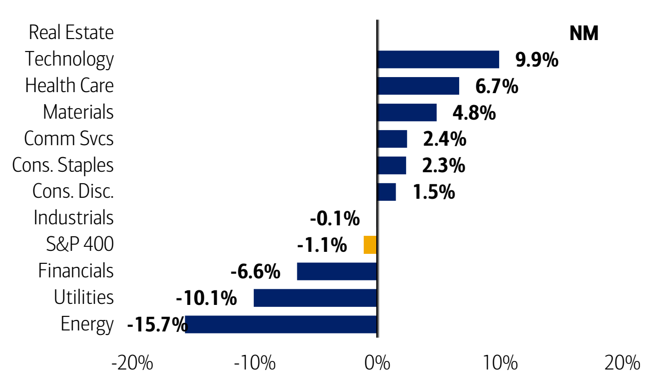
Exhibit 49: Mid cap 4Q23 growth expectations and proportion of beats so far
S&P 400 consensus 4Q23 earnings and sales growth and % positive surprises

Sector	Total Companies	Number Reported	Earnings YoY%	Median earnings YoY%	Sales YoY%	Median sales YoY%	% With EPS Beat	% With Sales Beat	Both Beat %
Comm Svcs	9	1	-18.6%	-5.3%	-0.7%	0.2%	100%	0%	0%
Cons. Disc.	65	24	5.9%	5.8%	1.0%	0.7%	53%	59%	29%
Cons. Staples	17	8	14.5%	8.4%	5.6%	6.2%	83%	67%	38%
Energy	20	5	-38.2%	-9.4%	-18.8%	-3.8%	40%	60%	40%
Financials	65	58	-5.1%	-8.1%	3.5%	1.2%	56%	49%	29%
Health Care	36	10	28.9%	4.7%	8.2%	8.9%	71%	29%	20%
Industrials	74	41	-7.4%	2.4%	3.4%	5.5%	64%	55%	37%
Technology	41	28	-13.8%	-16.4%	-9.0%	-7.6%	67%	62%	36%
Materials	27	16	-10.4%	-16.6%	-5.0%	-4.8%	62%	38%	31%
Real Estate	31	12	NM	NM	37.6%	2.3%	70%	50%	25%
Utilities	16	7	11.0%	3.1%	-15.8%	-8.5%	60%	20%	14%
S&P 400	401	210	-5.5%	-0.9%	-0.7%	1.1%	61%	51%	31%
Ex-Financials	336	152	-5.6%	1.0%	-1.2%	1.1%	64%	52%	32%
Ex-Energy	381	205	-1.4%	-0.4%	1.0%	1.3%	62%	51%	31%
Ex-Energy&Financials	316	147	0.0%	1.8%	0.6%	1.3%	65%	51%	31%

Source: FactSet, BofA US Equity & US Quant Strategy

BofA GLOBAL RESEARCH

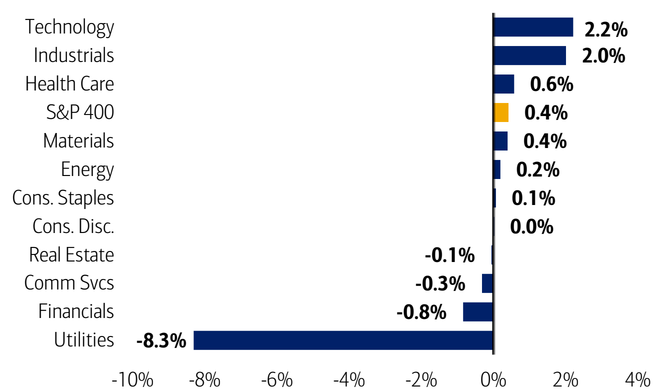
Exhibit 50: Earnings estimates are tracking -1.1% worse than the estimates at start of January
4Q23 earnings revisions since the start of reporting on 1/1/24



Source: FactSet, BofA US Equity & Quant Strategy

BofA GLOBAL RESEARCH

Exhibit 51: Sales estimates are +0.4% better than estimates at start of January
4Q23 sales revisions since the start of reporting on 1/1/24



Source: FactSet, BofA US Equity & Quant Strategy

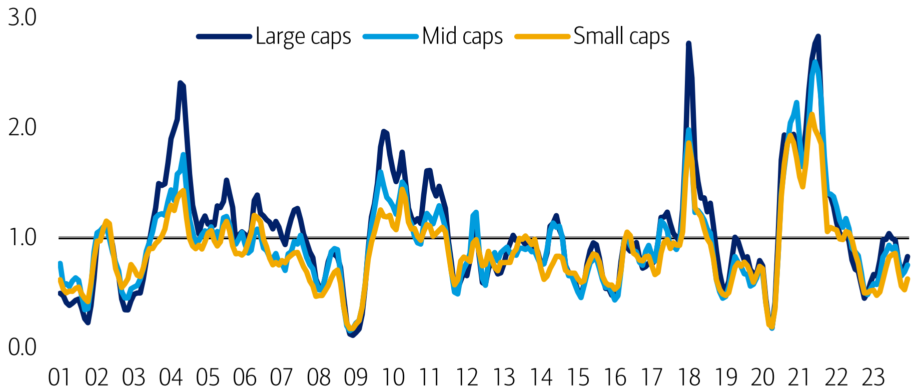
BofA GLOBAL RESEARCH

Revisions better in large, guidance better in SMID

- Earnings revision trends improved across the board over this past month but revision ratios are still below 1.0 (more cuts than raises to estimates) in all three size segments (and weakest in small caps). All size segments saw slight improvements from last month.

- Meanwhile, guidance for all size segments are below average: the 3-month ratio of above- vs. below-consensus guidance is tracking at 0.5x in small and 0.7x in mid, both higher than in large caps (0.4x).

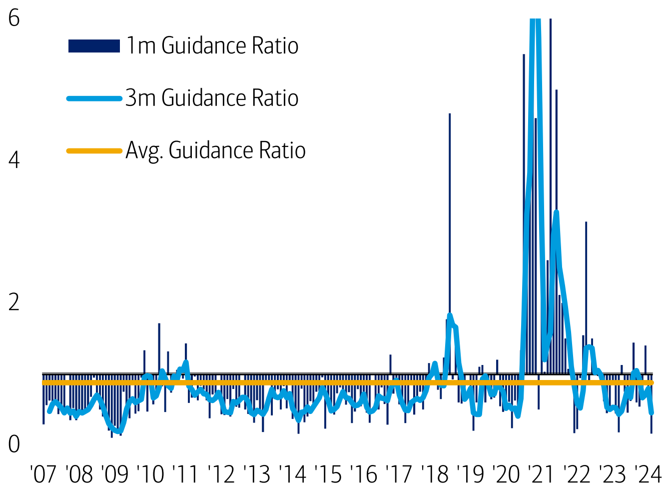
Exhibit 52: Revision trends improved across the board this past month, weakest in small caps
3m earnings revision ratio (ERR) for S&P small, mid and large cap indices as of 1/31/2024



Source: Bloomberg, BofA US Equity & US Quant Strategy

BofA GLOBAL RESEARCH

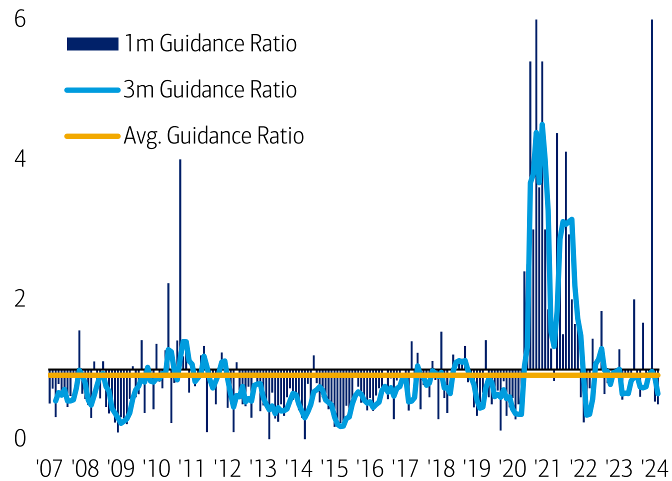
Exhibit 53: Small cap earnings guidance is below average on a 3m basis
S&P 600 management guidance ratio (# above- vs. below-consensus) as of 2/9/24



Source: Bloomberg, BofA US Equity & US Quant Strategy

BofA GLOBAL RESEARCH

Exhibit 54: Mid cap earnings guidance is below its long-term average on a 3m basis
S&P 400 management guidance ratio (# above- vs. below-consensus) as of 2/9/24



Source: Bloomberg, BofA US Equity & US Quant Strategy

BofA GLOBAL RESEARCH

Methodology

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.

Methodology: Earnings Calls Sentiment

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

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

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

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

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

Note that the charts show the sentiment score multiplied by (- 1) and after applying the natural log to normalize the data on the same scale. Our Predictive Analytics team is currently researching more advance modeling approaches including Deep Learning so please stay tuned for future enhancements.

BofA Corporate Misery Indicator methodology

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

We use the YoY 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 YoY change in the CPI and the YoY change in Average Hourly Earnings to approximate margins. When the indicator declines, it implies that profits are being squeezed. This has historically coincided with a decelerating profits cycle.

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

Disclosures

Important Disclosures

FUNDAMENTAL EQUITY OPINION KEY: Opinions include a Volatility Risk Rating, an Investment Rating and an Income Rating. VOLATILITY RISK RATINGS, indicators of potential price fluctuation, are: A - Low, B - Medium and C - High. INVESTMENT RATINGS reflect the analyst's assessment of both a stock's absolute total return potential as well as its attractiveness for investment relative to other stocks within its Coverage Cluster (defined below). Our investment ratings are: 1 - Buy stocks are expected to have a total return of at least 10% and are the most attractive stocks in the coverage cluster; 2 - Neutral stocks are expected to remain flat or increase in value and are less attractive than Buy rated stocks and 3 - Underperform stocks are the least attractive stocks in a coverage cluster. An investment rating of 6 (No Rating) indicates that a stock is no longer trading on the basis of fundamentals. Analysts assign investment ratings considering, among other things, the 0-12 month total return expectation for a stock and the firm's guidelines for ratings dispersions (shown in the table below). The current price objective for a stock should be referenced to better understand the total return expectation at any given time. The price objective reflects the analyst's view of the potential price appreciation (depreciation).

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

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

INCOME RATINGS, indicators of potential cash dividends, are: 7 - same/higher (dividend considered to be secure), 8 - same/lower (dividend not considered to be secure) and 9 - pays no cash dividend. *Coverage Cluster* is comprised of stocks covered by a single analyst or two or more analysts sharing a common industry, sector, region or other classification(s). A stock's coverage cluster is included in the most recent BofA Global Research report referencing the stock.

Due to the nature of strategic analysis, the issuers or securities recommended or discussed in this report are not continuously followed. Accordingly, investors must regard this report as providing stand-alone analysis and should not expect continuing analysis or additional reports relating to such issuers and/or securities.
Due to the nature of quantitative analysis, the issuers or securities recommended or discussed in this report are not continuously followed. Accordingly, investors must regard this report as providing stand-alone analysis and should not expect continuing analysis or additional reports relating to such issuers and/or securities.
BofA Global Research personnel (including the analyst(s) responsible for this report) receive compensation based upon, among other factors, the overall profitability of Bank of America Corporation, including profits derived from investment banking. The analyst(s) responsible for this report may also receive compensation based upon, among other factors, the overall profitability of the Bank's sales and trading businesses relating to the class of securities or financial instruments for which such analyst is responsible.

Other Important Disclosures

Prices are indicative and for information purposes only. Except as otherwise stated in the report, for any recommendation in relation to an equity security, the price referenced is the publicly traded price of the security as of close of business on the day prior to the date of the report or, if the report is published during intraday trading, the price referenced is indicative of the traded price as of the date and time of the report and in relation to a debt security (including equity preferred and CDS), prices are indicative as of the date and time of the report and are from various sources including BofA Securities trading desks.
The date and time of completion of the production of any recommendation in this report shall be the date and time of dissemination of this report as recorded in the report timestamp.

This report may refer to fixed income securities or other financial instruments that may not be offered or sold in one or more states or jurisdictions, or to certain categories of investors, including retail investors. Readers of this report are advised that any discussion, recommendation or other mention of such instruments is not a solicitation or offer to transact in such instruments. Investors should contact their BofA Securities representative or Merrill Global Wealth Management financial advisor for information relating to such instruments.
Recipients who are not institutional investors or market professionals should seek the advice of their independent financial advisor before considering information in this report in connection with any investment decision, or for a necessary explanation of its contents.
Officers of BofAS or one or more of its affiliates (other than research analysts) may have a financial interest in securities of the issuer(s) or in related investments.
Refer to BofA Global Research policies relating to conflicts of interest.
"BofA Securities" includes BofA Securities, Inc. ("BofAS") and its affiliates. Investors should contact their BofA Securities representative or Merrill Global Wealth Management financial advisor if they have questions concerning this report or concerning the appropriateness of any investment idea described herein for such investor. "BofA Securities" is a global brand for BofA Global Research.
Information relating to Non-US affiliates of BofA Securities and Distribution of Affiliate Research Reports:
BofAS and/or Merrill Lynch, Pierce, Fenner & Smith Incorporated ("MLPF&S") may in the future distribute, information of the following non-US affiliates in the US (short name: legal name, regulator): Merrill Lynch (South Africa): Merrill Lynch South Africa (Pty) Ltd., regulated by The Financial Service Board; MLI (UK): Merrill Lynch International, regulated by the Financial Conduct Authority (FCA) and the Prudential Regulation Authority (PRA); BofASE (France): BofA Securities Europe SA is authorized by the Autorité de Contrôle Prudentiel et de Résolution (ACPR) and regulated by the ACPR and the Autorité des Marchés Financiers (AMF). BofA Securities Europe SA ("BofASE") with registered address at 51, rue La Boétie, 75008 Paris is registered under no 842 602 690 RCS Paris. In accordance with the provisions of French Code Monétaire et Financier (Monetary and Financial Code), BofASE is an établissement de crédit et d'investissement (credit and investment institution) that is authorised and supervised by the European Central Bank and the Autorité de Contrôle Prudentiel et de Résolution (ACPR) and regulated by the ACPR and the Autorité des Marchés Financiers. BofASE's share capital can be found at www.bofaml.com/BofASEdisclaimer; BofA Europe (Milan): Bank of America Europe Designated Activity Company, Milan Branch, regulated by the Bank of Italy, the European Central Bank (ECB) and the Central Bank of Ireland (CBI); BofA Europe (Frankfurt): Bank of America Europe Designated Activity Company, Frankfurt Branch regulated by BaFin, the ECB and the CBI; BofA Europe (Madrid): Bank of America Europe Designated Activity Company, Sucursal en España, regulated by the Bank of Spain, the ECB and the CBI; Merrill Lynch (Australia): Merrill Lynch Equities (Australia) Limited, regulated by the Australian Securities and Investments Commission; Merrill Lynch (Hong Kong): Merrill Lynch (Asia Pacific) Limited, regulated by the Hong Kong Securities and Futures Commission (HKSFC); Merrill Lynch (Singapore): Merrill Lynch (Singapore) Pte Ltd, regulated by the Monetary Authority of Singapore (MAS); Merrill Lynch (Canada): Merrill Lynch Canada Inc, regulated by the Canadian Investment Regulatory Organization; Merrill Lynch (Mexico): Merrill Lynch Mexico, SA de CV, Casa de Bolsa, regulated by the Comisión Nacional Bancaria y de Valores; Merrill Lynch (Argentina): Merrill Lynch Argentina SA, regulated by Comisión Nacional de Valores; BofAS Japan: BofA Securities Japan Co., Ltd., regulated by the Financial Services Agency; Merrill Lynch (Seoul): Merrill Lynch International, LLC Seoul Branch, regulated by the Financial Supervisory Service; Merrill Lynch (Taiwan): Merrill Lynch Securities (Taiwan) Ltd., regulated by the Securities and Futures Bureau; BofAS India: BofA Securities India Limited, regulated by the Securities and Exchange Board of India (SEBI); Merrill Lynch (Israel): Merrill Lynch Israel Limited, regulated by Israel Securities Authority; Merrill Lynch (DIFC): Merrill Lynch International (DIFC Branch), regulated by the Dubai Financial Services Authority (DFSA); Merrill Lynch (Brazil): Merrill Lynch S.A. Corretora de Títulos e Valores Mobiliários, regulated by Comissão de Valores Mobiliários; Merrill Lynch KSA Company: Merrill Lynch Kingdom of Saudi Arabia Company, regulated by the Capital Market Authority.
This information: has been approved for publication and is distributed in the United Kingdom (UK) to professional clients and eligible counterparties (as each is defined in the rules of the FCA and the PRA) by MLI (UK), which is authorized by the PRA and regulated by the FCA and the PRA - details about the extent of our regulation by the FCA and PRA are available from us on request;

has been approved for publication and is distributed in the European Economic Area (EEA) by BofASE (France), which is authorized by the ACPR and regulated by the ACPR and the AMF; has been considered and distributed in Japan by BofAS Japan, a registered securities dealer under the Financial Instruments and Exchange Act in Japan, or its permitted affiliates; is issued and distributed in Hong Kong by Merrill Lynch (Hong Kong) which is regulated by HKSFC; is issued and distributed in Taiwan by Merrill Lynch (Taiwan); is issued and distributed in India by BofAS India; and is issued and distributed in Singapore to institutional investors and/or accredited investors (each as defined under the Financial Advisers Regulations) by Merrill Lynch (Singapore) (Company Registration No 198602883D). Merrill Lynch (Singapore) is regulated by MAS. Merrill Lynch Equities (Australia) Limited (ABN 65 006 276 795), AFS License 235132 (MLEA) distributes this information in Australia only to 'Wholesale' clients as defined by s.761G of the Corporations Act 2001. With the exception of Bank of America N.A., Australia Branch, neither MLEA nor any of its affiliates involved in preparing this information is an Authorised Deposit-Taking Institution under the Banking Act 1959 nor regulated by the Australian Prudential Regulation Authority. No approval is required for publication or distribution of this information in Brazil and its local distribution is by Merrill Lynch (Brazil) in accordance with applicable regulations. Merrill Lynch (DIFC) is authorized and regulated by the DFSA. Information prepared and issued by Merrill Lynch (DIFC) is done so in accordance with the requirements of the DFSA conduct of business rules. BofA Europe (Frankfurt) distributes this information in Germany and is regulated by BaFin, the ECB and the CBI. BofA Securities entities, including BofA Europe and BofASE (France), may outsource/delegate the marketing and/or provision of certain research services or aspects of research services to other branches or members of the BofA Securities group. You may be contacted by a different BofA Securities entity acting for and on behalf of your service provider where permitted by applicable law. This does not change your service provider. Please refer to the Electronic Communications Disclaimers for further information.

This information has been prepared and issued by BofAS and/or one or more of its non-US affiliates. The author(s) of this information may not be licensed to carry on regulated activities in your jurisdiction and, if not licensed, do not hold themselves out as being able to do so. BofAS and/or MLPF&S is the distributor of this information in the US and accepts full responsibility for information distributed to BofAS and/or MLPF&S clients in the US by its non-US affiliates. Any US person receiving this information and wishing to effect any transaction in any security discussed herein should do so through BofAS and/or MLPF&S and not such foreign affiliates. Hong Kong recipients of this information should contact Merrill Lynch (Asia Pacific) Limited in respect of any matters relating to dealing in securities or provision of specific advice on securities or any other matters arising from, or in connection with, this information. Singapore recipients of this information should contact Merrill Lynch (Singapore) Pte Ltd in respect of any matters arising from, or in connection with, this information. For clients that are not accredited investors, expert investors or institutional investors Merrill Lynch (Singapore) Pte Ltd accepts full responsibility for the contents of this information distributed to such clients in Singapore.

General Investment Related Disclosures:

Taiwan Readers: Neither the information nor any opinion expressed herein constitutes an offer or a solicitation of an offer to transact in any securities or other financial instrument. No part of this report may be used or reproduced or quoted in any manner whatsoever in Taiwan by the press or any other person without the express written consent of BofA Securities.

This document provides general information only, and has been prepared for, and is intended for general distribution to, BofA Securities clients. Neither the information nor any opinion expressed constitutes an offer or an invitation to make an offer, to buy or sell any securities or other financial instrument or any derivative related to such securities or instruments (e.g., options, futures, warrants, and contracts for differences). This document is not intended to provide personal investment advice and it does not take into account the specific investment objectives, financial situation and the particular needs of, and is not directed to, any specific person(s). This document and its content do not constitute, and should not be considered to constitute, investment advice for purposes of ERISA, the US tax code, the Investment Advisers Act or otherwise. Investors should seek financial advice regarding the appropriateness of investing in financial instruments and implementing investment strategies discussed or recommended in this document and should understand that statements regarding future prospects may not be realized. Any decision to purchase or subscribe for securities in any offering must be based solely on existing public information on such security or the information in the prospectus or other offering document issued in connection with such offering, and not on this document.

Securities and other financial instruments referred to herein, or recommended, offered or sold by BofA Securities, are not insured by the Federal Deposit Insurance Corporation and are not deposits or other obligations of any insured depository institution (including, Bank of America, N.A.). Investments in general and, derivatives, in particular, involve numerous risks, including, among others, market risk, counterparty default risk and liquidity risk. No security, financial instrument or derivative is suitable for all investors. Digital assets are extremely speculative, volatile and are largely unregulated. In some cases, securities and other financial instruments may be difficult to value or sell and reliable information about the value or risks related to the security or financial instrument may be difficult to obtain. Investors should note that income from such securities and other financial instruments, if any, may fluctuate and that price or value of such securities and instruments may rise or fall and, in some cases, investors may lose their entire principal investment. Past performance is not necessarily a guide to future performance. Levels and basis for taxation may change.

This report may contain a short-term trading idea or recommendation, which highlights a specific near-term catalyst or event impacting the issuer or the market that is anticipated to have a short-term price impact on the equity securities of the issuer. Short-term trading ideas and recommendations are different from and do not affect a stock's fundamental equity rating, which reflects both a longer term total return expectation and attractiveness for investment relative to other stocks within its Coverage Cluster. Short-term trading ideas and recommendations may be more or less positive than a stock's fundamental equity rating.

BofA Securities is aware that the implementation of the ideas expressed in this report may depend upon an investor's ability to "short" securities or other financial instruments and that such action may be limited by regulations prohibiting or restricting "shortselling" in many jurisdictions. Investors are urged to seek advice regarding the applicability of such regulations prior to executing any short idea contained in this report.

Foreign currency rates of exchange may adversely affect the value, price or income of any security or financial instrument mentioned herein. Investors in such securities and instruments, including ADRs, effectively assume currency risk.

BofAS or one of its affiliates is a regular issuer of traded financial instruments linked to securities that may have been recommended in this report. BofAS or one of its affiliates may, at any time, hold a trading position (long or short) in the securities and financial instruments discussed in this report.

BofA Securities, through business units other than BofA Global Research, may have issued and may in the future issue trading ideas or recommendations that are inconsistent with, and reach different conclusions from, the information presented herein. Such ideas or recommendations may reflect different time frames, assumptions, views and analytical methods of the persons who prepared them, and BofA Securities is under no obligation to ensure that such other trading ideas or recommendations are brought to the attention of any recipient of this information.

In the event that the recipient received this information pursuant to a contract between the recipient and BofAS for the provision of research services for a separate fee, and in connection therewith BofAS may be deemed to be acting as an investment adviser, such status relates, if at all, solely to the person with whom BofAS has contracted directly and does not extend beyond the delivery of this report (unless otherwise agreed specifically in writing by BofAS). If such recipient uses the services of BofAS in connection with the sale or purchase of a security referred to herein, BofAS may act as principal for its own account or as agent for another person. BofAS is and continues to act solely as a broker-dealer in connection with the execution of any transactions, including transactions in any securities referred to herein.

Copyright and General Information:

Materials prepared by BofA Global Research personnel are based on public information. Facts and views presented in this material have not been reviewed by, and may not reflect information known to, professionals in other business areas of BofA Securities, including investment banking personnel. BofA Securities has established information barriers between BofA Global Research and certain business groups. As a result, BofA Securities does not disclose certain client relationships with, or compensation received from, such issuers. To the extent this material discusses any legal proceeding or issues, it has not been prepared as nor is it intended to express any legal conclusion, opinion or advice. Investors should consult their own legal advisers as to issues of law relating to the subject matter of this material. BofA Global Research personnel's knowledge of legal proceedings in which any BofA Securities entity and/or its directors, officers and employees may be plaintiffs, defendants, co-defendants or co-plaintiffs with or involving issuers mentioned in this material is based on public information. Facts and views presented in this material that relate to any such proceedings have not been reviewed by, discussed with, and may not reflect information known to, professionals in other business areas of BofA Securities in connection with the legal proceedings or matters relevant to such proceedings.

This information has been prepared independently of any issuer of securities mentioned herein and not in connection with any proposed offering of securities or as agent of any issuer of any securities. None of BofAS any of its affiliates or their research analysts has any authority whatsoever to make any representation or warranty on behalf of the issuer(s). BofA Global Research policy prohibits research personnel from disclosing a recommendation, investment rating, or investment thesis for review by an issuer prior to the publication of a research report containing such rating, recommendation or investment thesis.

Any information relating to the tax status of financial instruments discussed herein is not intended to provide tax advice or to be used by anyone to provide tax advice. Investors are urged to seek tax advice based on their particular circumstances from an independent tax professional.

The information herein (other than disclosure information relating to BofA Securities and its affiliates) was obtained from various sources and we do not guarantee its accuracy. This information may contain links to third-party websites. BofA Securities is not responsible for the content of any third-party website or any linked content contained in a third-party website. Content contained on such third-party websites is not part of this information and is not incorporated by reference. The inclusion of a link does not imply any endorsement by or any affiliation with BofA Securities. Access to any third-party website is at your own risk, and you should always review the terms and privacy policies at third-party websites before submitting any personal information to them. BofA Securities is not responsible for such terms and privacy policies and expressly disclaims any liability for them.

All opinions, projections and estimates constitute the judgment of the author as of the date of publication and are subject to change without notice. Prices also are subject to change without notice. BofA Securities is under no obligation to update this information and BofA Securities ability to publish information on the subject issuer(s) in the future is subject to applicable quiet periods. You should therefore assume that BofA Securities will not update any fact, circumstance or opinion contained herein.

Certain outstanding reports or investment opinions relating to securities, financial instruments and/or issuers may no longer be current. Always refer to the most recent research report relating to an issuer prior to making an investment decision.

In some cases, an issuer may be classified as Restricted or may be Under Review or Extended Review. In each case, investors should consider any investment opinion relating to such issuer (or its security and/or financial instruments) to be suspended or withdrawn and should not rely on the analyses and investment opinion(s) pertaining to such issuer (or its securities and/or financial instruments) nor should the analyses or opinion(s) be considered a solicitation of any kind. Sales persons and financial advisors affiliated with BofAS or any of its affiliates may not solicit purchases of securities or financial instruments that are Restricted or Under Review and may only solicit securities under Extended Review in accordance with firm policies.

Neither BofA Securities nor any officer or employee of BofA Securities accepts any liability whatsoever for any direct, indirect or consequential damages or losses arising from any use of this information.

Research Analysts

Savita Subramanian
Equity & Quant Strategist
BofAS
+1 646 855 3878
savita.subramanian@bofa.com

Ohsung Kwon, CFA
Equity & Quant Strategist
BofAS
+1 646 855 1683
ohsung.kwon@bofa.com

Jill Carey Hall, CFA
Equity & Quant Strategist
BofAS
+1 646 855 3327
jill.carey@bofa.com

Alex Makedon
Equity & Quant Strategist
BofAS
+1 646 855 5982
alex.makedon@bofa.com

Victoria Roloff
Equity & Quant Strategist
BofAS
+1 646 743 6339
victoria.roloff@bofa.com

Nicolas Woods
Equity & Quant Strategist
BofAS
+1 646 556 4179
nicolas.woods_barron@bofa.com