

European Snapshot

Who may benefit secondarily from increased EU defense spending?

Quantitative Strategy

Screen of the Week: Defense spending beneficiaries

Following December's reforms to increase fiscal Defense spending in EU member states and covid-era supply chain normalization, our European Aerospace & Defense analysts on average expect more than 125bps of operating margin expansion by 2025 for European Defense contractors (see: [Aerospace & Defence Update: 2024 Year Ahead: Multiple re-rating opportunities 04 December 2023](#)). Meanwhile, our European economists believe new fiscal reforms are too restrictive given the breadth of caveats introduced to gain parliamentary approval and expect the policy's full impact to be delayed till 2027 (see: [Europe Economic Weekly: Back to school: it's really never easy 12 January 2024](#)). In our Screen of the Week, we identify suppliers and partners of Aerospace & Defense contractors, with significant revenue exposure in Developed Europe, that may receive a second-hand benefit from this (Exhibit 1).

4th weekly outflow from Europe-focused funds in 2024

Europe-focused equity funds recorded their 4th consecutive weekly outflow this year, of \$1.9bn, with a net -25.8% seeing net inflows. Outflows amounted to \$2.65bn from active funds and \$0.75bn of inflows into passive funds. Europe-focused funds have seen \$4.63bn of outflows YTD: \$5.57bn of outflows from active funds and \$0.94bn of inflows into passive funds. Size stocks (\$0.16bn) and Switzerland (\$0.04bn) had the largest inflows last week, while Financials (\$0.36bn), the UK (\$0.31bn) and Risk stocks (\$0.09bn) posted the largest outflows. No sector recorded inflows last week.

BofA ERR: declines in Europe and North America

The Global BofA 4-week EPS Revision Ratio weakened to 0.78, driven by declines in the North American and European ratios (Exhibit 40). North America remains the only region in net upgrade territory (at 1.13, though registered the greatest weekly drop amongst regions). The European ratio softened to a 6-week low of 0.66 on the back of declines in Healthcare, Sweden and High Risk. The largest improvements in Europe were seen in Energy, Spain and Low Risk.

26 January 2024

Quant Strategy
Europe

Paulina Strzelinska >>
Quant Strategist
MLI (UK)
+44 20 7996 7059
paulina.strzelinska@bofa.com

Samuel Bruce >>
Research Analyst
MLI (UK)
+44 20 7996 2271
samuel.bruce@bofa.com

Latest European Snapshot notes:

[European Snapshot: Who might profit-warn for Q4 '23? 17 January 2024](#)

[European Snapshot: Who outperforms when cutting cycle starts? 10 January 2024](#)

[European Snapshot: Downgrades at the start of the year 04 January 2024](#)

[European Snapshot: Who screens well in 'Recession' and 'Recovery'? 13 December 2023](#)

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.

>> Employed by a non-US affiliate of BofAS and is not registered/qualified as a research analyst under the FINRA rules.

Refer to "Other Important Disclosures" for information on certain BofA Securities entities that take responsibility for the information herein in particular jurisdictions.

BofA Securities does and seeks to do business with issuers covered in its research reports. As a result, investors should be aware that the firm may have a conflict of interest that could affect the objectivity of this report. Investors should consider this report as only a single factor in making their investment decision.

Refer to important disclosures on page 17 to 19.

12651054

Timestamp: 26 January 2024 01:00AM EST

Screen of the week

Exhibit 1: Potential beneficiaries of widening fiscal defense spending policies

European listed companies that 1) supply or partner with at least two Aerospace & Defense companies, 2) have greater than 15% 2022 sales exposure to Developed Europe, and 3) are not a constituent of the Aerospace & Defense sector

BBG Ticker	Company Name	Country	GICS Sub-Industry (Level 4)	Market Cap (EUR, bn)	Number of Aerospace & Defense Companies Supplied/Partnered with	Combined Market Cap of Defense Companies Supplied/Partnered with (EUR, bn)	2022 Sales Exposure to Developed Europe (%)
ATE FP	Alten	France	IT Consulting & Other Services	4.8	7	282.3	73.8
CAP FP	Capgemini	France	IT Consulting & Other Services	34.9	2	160.0	60.4
NESTE FH	Neste Corporation	Finland	Oil & Gas Refining & Marketing	24.0	2	149.0	69.8
SIE GR	Siemens	Germany	Industrial Conglomerates	130.7	2	146.9	46.5
STMPA FP	STMicroelectronics	France	Semiconductors	37.8	2	146.9	29.6
NOKIA FH	Nokia	Finland	Communications Equipment	17.4	2	146.9	26.7
RNO FP	Renault	France	Automobile Manufacturers	10.2	2	146.9	76.9
TKA GR	thyssenkrupp	Germany	Steel	3.6	2	146.9	54.1
JEN GR	JENOPTIK	Germany	Electronic Equipment & Instrum	1.6	2	133.1	51.5
ML FP	Michelin	France	Tires & Rubber	22.1	2	132.6	35.5
SPIE FP	SPIE SA	France	Diversified Support Services	5.0	2	128.1	86.4
AI FP	Air Liquide	France	Industrial Gases	90.6	2	118.8	41.5
GF SW	Georg Fischer	Switzerland	Industrial Machinery & Supplie	5.1	4	115.4	43.3
MTO LN	MITIE	United Kingdom	Environmental & Facilities Ser	1.5	3	100.0	96.1
WKL NA	Wolters Kluwer	Netherlands	Research & Consulting Services	34.3	2	71.7	28.6
EVD GR	CTS Eventim	Germany	Movies & Entertainment	5.7	2	69.6	93.7
DSY FP	Dassault Systemes	France	Application Software	63.0	2	42.3	25.0
O2D GR	Telefonica Deutschland	Germany	Integrated Telecommunication S	7.0	2	28.3	100.0
APPS SM	APPLUS SERVICES	United Kingdom	Research & Consulting Services	1.3	2	17.3	48.9
SOLB BB	Solvay	Belgium	Diversified Chemicals	2.6	2	9.8	27.0

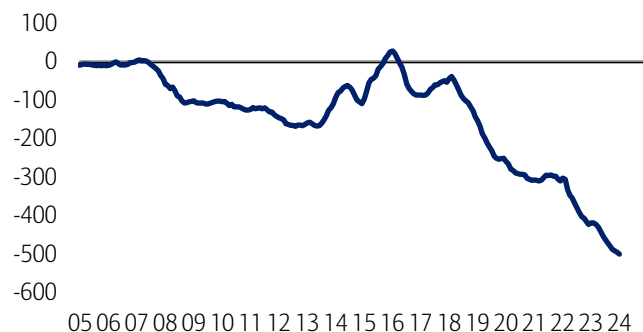
Source: BofA European Equity Quant Strategy, Factset, Company Annual Reports (2022). **Disclaimer:** The screen above is intended to be an indicative metric only and may not be used for reference purposes or as a measure of performance for any financial instrument or contract, or otherwise relied upon by third parties for any other purpose, without the prior written consent of BofA Global Research. This screen was not created to act as a benchmark.

BofA GLOBAL RESEARCH

Flows

Exhibit 2: Europe-focused equity funds have seen \$490bn of outflows since 2005 (active funds: \$-616bn, passive funds: \$126bn)

Long-term cumulative flows into Europe-focused equity funds (\$bn)

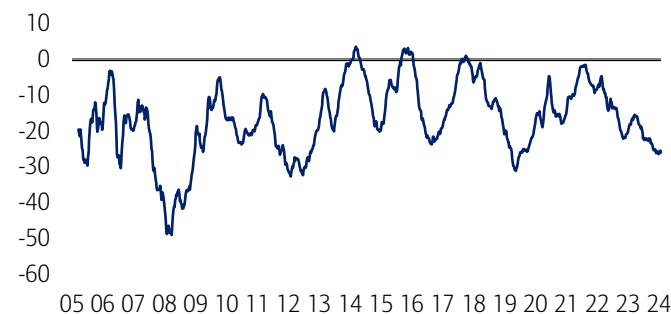


Source: BofA European Equity Quant Strategy, EPFR Global

BofA GLOBAL RESEARCH

Exhibit 3: A net -25.8% of Europe-focused funds saw inflows last week, a small decline over the week

Net % of Europe-focused equity funds seeing inflows on weekly basis (12w mva)

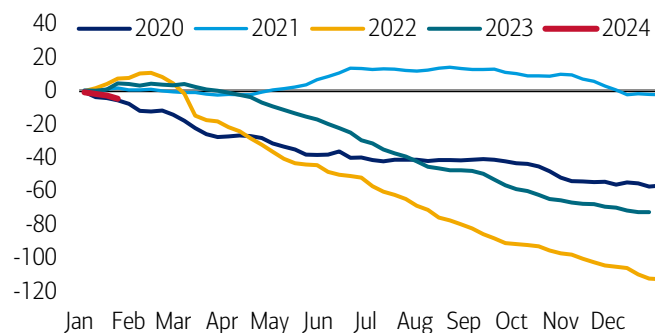


BofA European Equity Quant Strategy, EPFR Global. Note: Net % calculated as % of funds that saw inflows minus % of funds that saw outflows

BofA GLOBAL RESEARCH

Exhibit 4: Europe-focused equity funds have seen \$4.6bn of outflows YTD, with \$4.6bn of outflows from European-domiciled funds and \$0.06bn of outflows from US-domiciled funds

Cumulative annual flows into Europe-focused equity funds (\$bn)

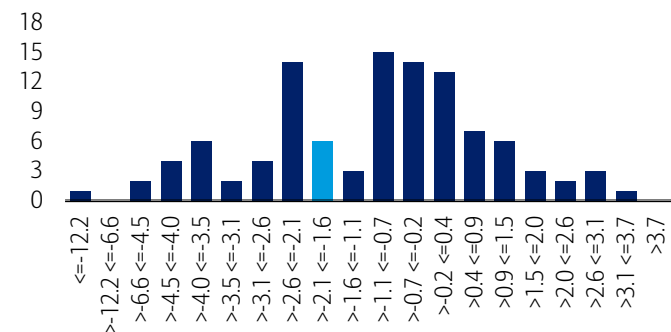


Source: BofA European Equity Quant Strategy, EPFR Global

BofA GLOBAL RESEARCH

Exhibit 5: Europe-focused equity funds saw \$1.9bn of outflows last week; 4th consecutive outflow since the beginning of 2024

Distribution of weekly flows into Europe-focused equity funds over the last two years (\$bn)

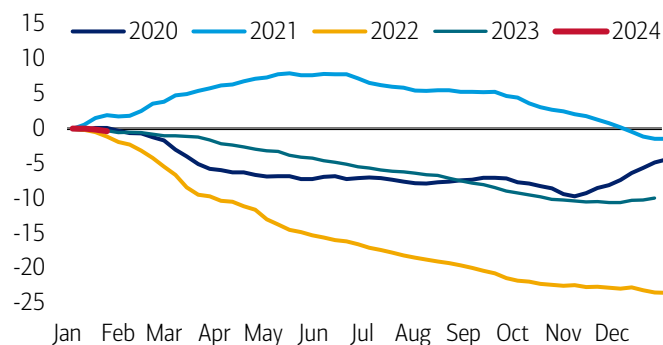


Source: BofA European Equity Quant Strategy, EPFR Global

BofA GLOBAL RESEARCH

Exhibit 6: SMID focused European equity funds have seen \$0.33bn of outflows YTD, \$0.5bn of outflows from active funds and \$0.17bn of inflows into passive funds

Cumulative annual flows into SMID-focused European equity funds (\$bn)

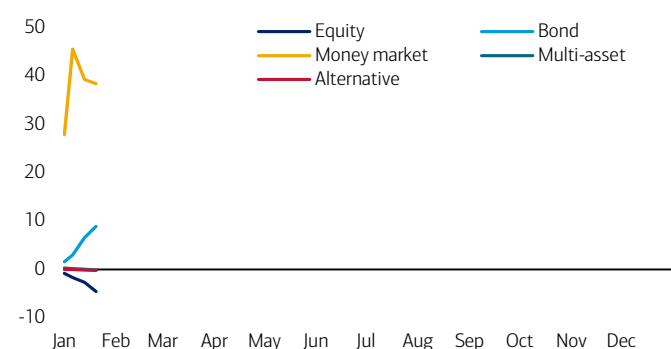


Source: BofA European Equity Quant Strategy, EPFR Global

BofA GLOBAL RESEARCH

Exhibit 7: Equity funds have seen the largest outflows YTD (\$4.6bn), while Money market funds have seen the largest inflows (\$38.4bn)

YTD cumulative flows into Europe-focused funds by asset-class (\$bn)



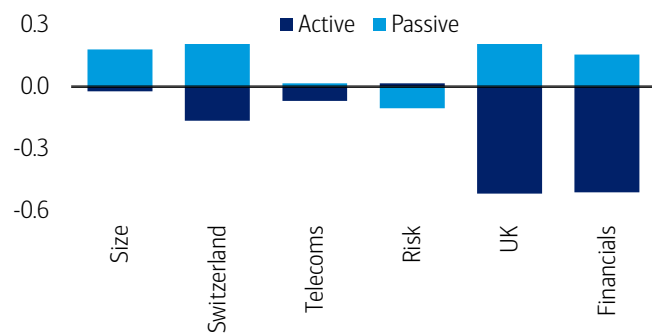
Source: BofA European Equity Quant Strategy, EPFR Global

BofA GLOBAL RESEARCH



Exhibit 8: Size stocks recorded the largest inflows (\$0.16bn), while Financials noted the largest outflows (\$0.36bn) last week

Top and bottom inflows/outflows last week into Europe-focused equity funds/stocks by country, sector, style split into active and passive (\$bn)

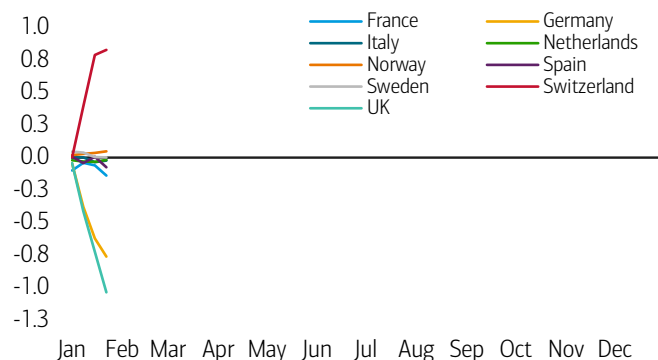


Source: BofA European Equity Quant Strategy, EPFR Global. Note: flows into styles are aggregated from stock level data

BofA GLOBAL RESEARCH

Exhibit 10: Switzerland noted the largest inflows YTD (\$0.83bn), while the UK recorded the largest outflows (\$1.04bn)

YTD cumulative flows into Europe-focused equity funds by country (\$bn)

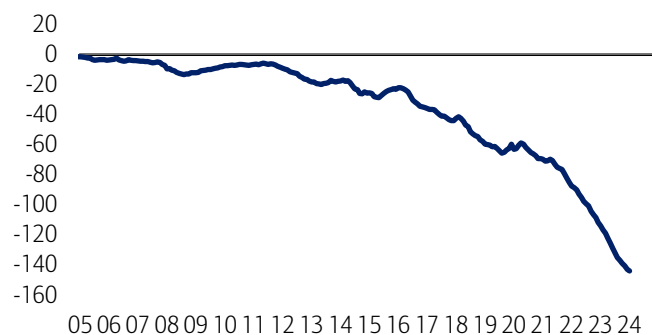


Source: BofA European Equity Quant Strategy, EPFR Global.

BofA GLOBAL RESEARCH

Exhibit 12: UK-focused equity funds have seen \$142bn of outflows since 2005 (active funds: \$-161bn, passive funds: \$18bn)

Long-term cumulative flows into UK-focused equity funds (\$bn)

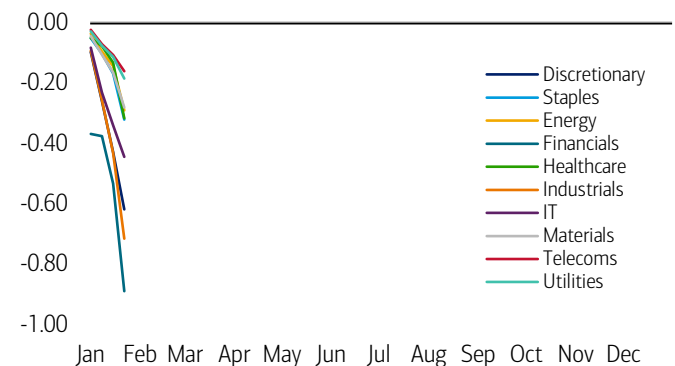


Source: BofA European Equity Quant Strategy, EPFR Global

BofA GLOBAL RESEARCH

Exhibit 9: Telecoms noted the smallest outflows YTD (\$0.16bn), while Financials recorded the largest outflows (\$0.89bn)

YTD cumulative flows into Europe-focused equity funds by sector (\$bn)

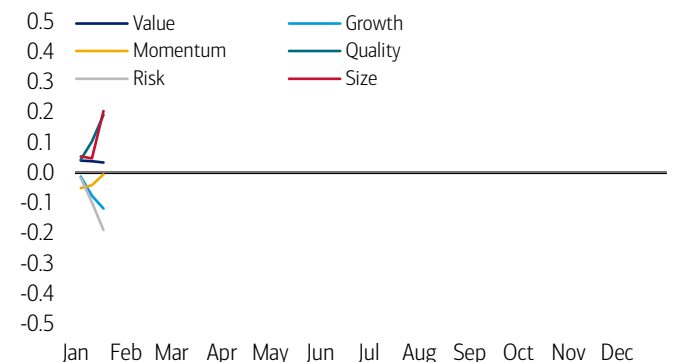


Source: BofA European Equity Quant Strategy, EPFR Global

BofA GLOBAL RESEARCH

Exhibit 11: Size and Quality have seen the largest inflows YTD (\$0.2bn), while Risk has recorded the largest outflows (\$0.2bn)

YTD cumulative flows into European equities by style (long-short, \$bn)

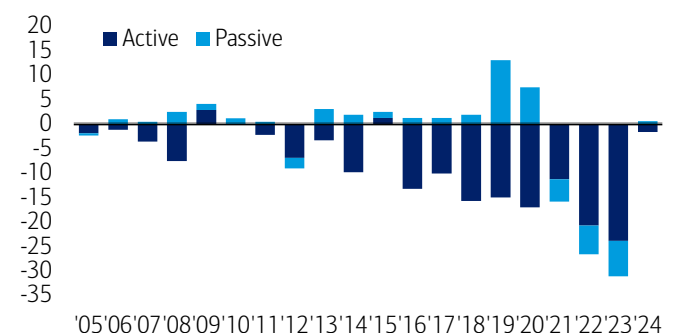


Source: BofA European Equity Quant Strategy, EPFR Global. Note: flows into styles are aggregated from stock level data

BofA GLOBAL RESEARCH

Exhibit 13: YTD, UK-focused equity active funds have seen \$1.6bn of outflows, while passive funds recorded \$0.6bn of inflows

Yearly flows into UK-focused equity funds (\$bn) split between active and passive funds

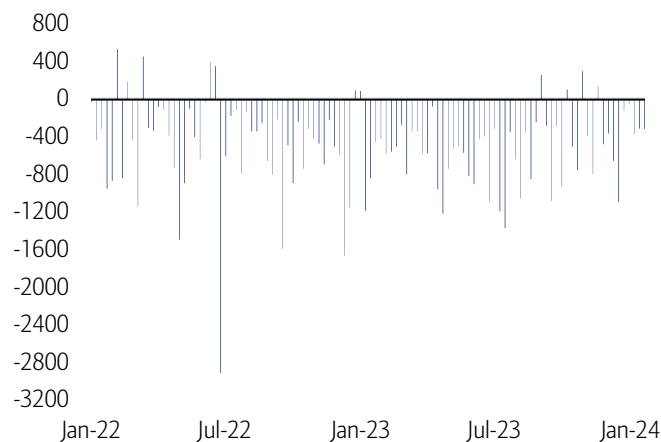


Source: BofA European Equity Quant Strategy, EPFR Global

BofA GLOBAL RESEARCH

Exhibit 14: UK-focused equity funds saw \$0.31bn of outflows last week, the 9th consecutive outflow

UK-focused equity funds weekly flows (\$mn)

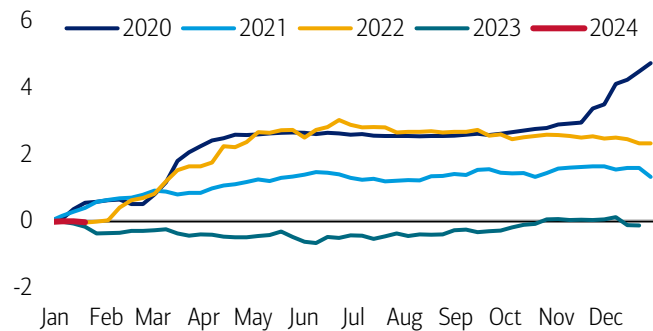


Source: BofA European Equity Quant Strategy, EPFR Global.

BofA GLOBAL RESEARCH

Exhibit 16: UK-focused equity funds benchmarked to FTSE 100 have seen \$0.03bn of outflows YTD

Cumulative annual flows into UK-focused equity funds benchmarked to FTSE 100 index (\$bn)

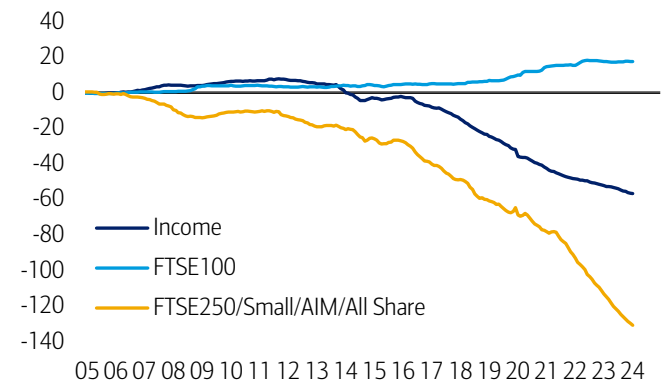


Source: BofA European Equity Quant Strategy, EPFR Global.

BofA GLOBAL RESEARCH

Exhibit 15: Since 2005, UK equity-focused income funds saw \$57bn of outflows, \$18bn of inflows into FTSE100 benchmarked funds and \$131bn of outflows from FTSE250/AIM/All Share/Small caps

Long-term cumulative flows into UK-focused equity funds (\$bn) split by focus

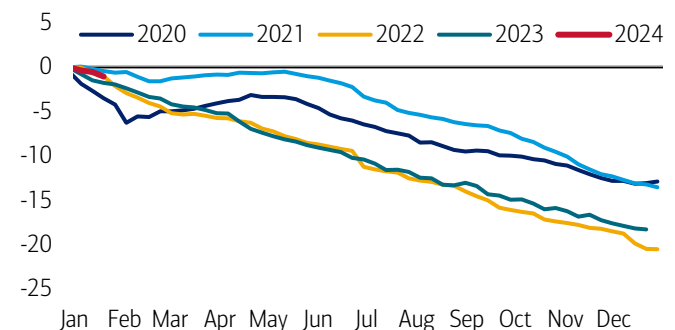


Source: BofA European Equity Quant Strategy, EPFR Global.

BofA GLOBAL RESEARCH

Exhibit 17: UK-focused equity funds benchmarked to FTSE 250/Small/AIM/All Share indices have seen \$1.04bn of outflows YTD

Cumulative annual flows into UK-focused equity funds benchmarked to FTSE 250/AIM/Small/ALL Share indices (\$bn)



Source: BofA European Equity Quant Strategy, EPFR Global.

BofA GLOBAL RESEARCH

Exhibit 18: Inmobiliaria Colonial has seen the largest inflows last week as % of mcap, while Encavis largest outflows across funds

Top 5 and bottom 5 European companies that are part of Europe Stoxx 600 index and saw the largest inflow/outflow from different types of funds last week as % of market capitalisation

Stocks that saw the highest inflows last week

BBG		Flow as % of			
Ticker	Name	Sector	Country	mcap	Group
BPE IM	Bper Banca	Banks	Italy	0.03	Active
LAGRB SS	Lagercrantz	Technology	Sweden	0.03	Active
THULE SS	Thule	Consumer Pds & Svs	Sweden	0.03	Active
AIBG ID	Aib	Banks	Ireland	0.03	Active
SECTB SS	Sectra	Health Care	Sweden	0.03	Active
COL SM	Inmobiliaria Colonial	Real Estate	Spain	0.05	Passive
GFC FP	Gecina	Real Estate	France	0.04	Passive
MRL SM	Merlin Properties	Real Estate	Spain	0.04	Passive
NDA GR	Aurubis	Basic Resources	Germany	0.04	Passive
KOJAMO FH	Kojamo	Real Estate	Finland	0.04	Passive

Stocks that saw the highest outflows last week

BBG Ticker Name		Sector	Country	mcap	Group
CTEC LN	Convatec	Health Care	UK	-0.10	Active
BEZ LN	Beazley	Insurance	UK	-0.10	Active
INW IM	Inwit	Telecoms	Italy	-0.07	Active
ALLFG NA	Allfunds	Financial Svs	Netherlands	-0.07	Active
IGG LN	Ig	Financial Svs	UK	-0.06	Active
ECV GR	Encavis	Utilities	Germany	-0.13	Passive
LHA GR	Lufthansa	Travel & Leisure	Germany	-0.06	Passive
ORSTED DC	Orsted	Utilities	Denmark	-0.05	Passive
HOT GR	Hochtief	Construction & Materials	Germany	-0.05	Passive
BKW SW	Bkw	Utilities	Switzerland	-0.05	Passive

Source: BofA European Equity Quant Strategy, EPFR Global. Disclaimer: The screen 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 screen was not created to act as a benchmark.

BofA GLOBAL RESEARCH

Performances

Exhibit 19: The SXXP index typically registers a 1.4% gain in Q1, while the current quarter-to-date return stands at a 0.1% loss

Historical average performance of Europe Stoxx 600 index (EUR, price return)



Source: BofA European Equity Quant Strategy, Refinitiv. Note: historical average performance calculated over 1992-2023

BofA GLOBAL RESEARCH

Exhibit 20: Q1 '24 so far notes stronger gains in Netherlands, IT and Momentum compared to historical trends

Current QTD and YTD performance in comparison with historical average relative performance of MSCI sectors/countries indices (vs MSCI Europe, local currency, price return) and styles (long/short, EUR, price return)

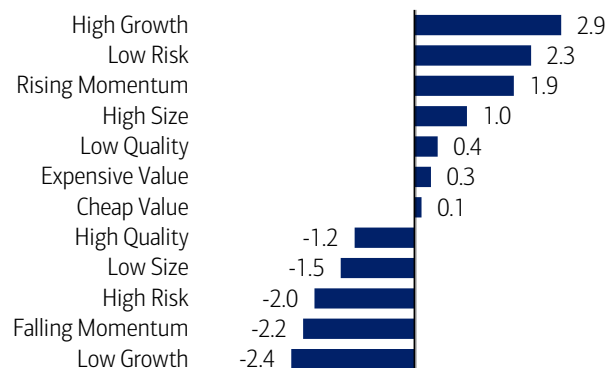
	QTD (%)	Diff vs historical	YTD (%)	Diff vs historical
Germany	1.0	0.9	1.0	0.9
France	-0.7	-0.4	-0.7	-0.4
Italy	0.1	-2.4	0.1	-2.4
Netherlands	6.8	6.5	6.8	6.5
Spain	-1.0	-2.4	-1.0	-2.4
Sweden	-2.0	-3.2	-2.0	-3.2
Switzerland	0.5	0.6	0.5	0.6
UK	-2.4	-1.6	-2.4	-1.6
Materials	-5.5	-4.7	-5.5	-4.7
Communication Svs	3.9	2.1	3.9	2.1
Discretionary	-2.4	-3.0	-2.4	-3.0
Staples	-1.6	0.1	-1.6	0.1
Energy	-5.0	-4.2	-5.0	-4.2
Financials	0.4	0.5	0.4	0.5
Healthcare	2.6	2.8	2.6	2.8
Industrials	0.5	0.0	0.5	0.0
IT	9.1	7.2	9.1	7.2
Utilities	-3.5	-3.3	-3.5	-3.3
Real Estate	-4.4	-3.3	-4.4	-3.3
Value	0.8	0.2	0.8	0.2
Growth	5.6	2.2	5.6	2.2
Momentum	4.7	3.1	4.7	3.1
Quality	-2.0	0.2	-2.0	0.2
Risk	-4.1	-6.9	-4.1	-6.9
Size	-2.4	-3.6	-2.4	-3.6

Source: BofA European Equity Quant Strategy, Refinitiv, MSCI. Note: historical average performance calculated over 1993-2023

BofA GLOBAL RESEARCH

Exhibit 21: January sees largest gains in High Growth so far, while Low Growth experiences the largest losses

% MTD returns for styles in the largest 250 European stocks (relative price return equally weighted in EUR)

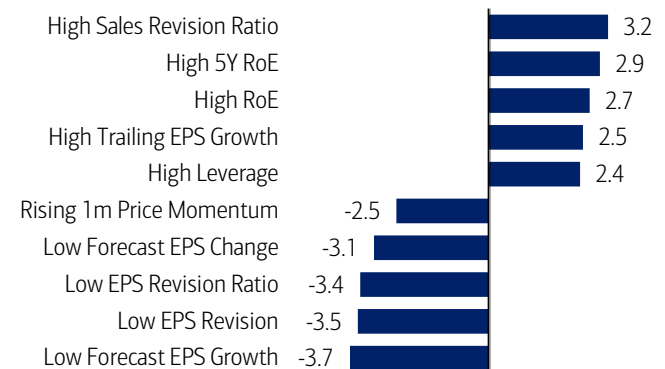


Source: BofA European Equity Quant Strategy, Factset

BofA GLOBAL RESEARCH

Exhibit 22: High Sales Revision Ratio have seen the strongest gains MTD, while Low Forecast EPS Growth records the largest losses

% MTD best and worst factor in styles in the largest 250 European stocks (relative price return equally weighted in EUR)

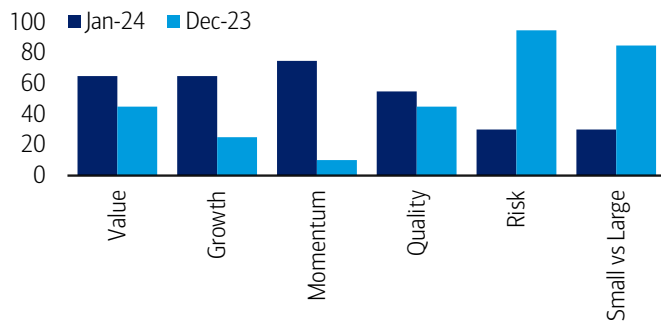


Source: BofA European Equity Quant Strategy, Factset

BofA GLOBAL RESEARCH

Exhibit 23: Momentum has outperformed in 15 out of 20 sectors so far in January

% of SXXP index super-sectors in which styles (L/S) are outperforming in Jan

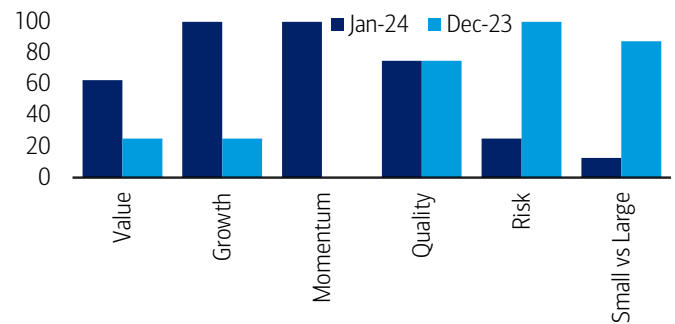


Source: BofA European Equity Quant Strategy, FactSet

BofA GLOBAL RESEARCH

Exhibit 24: Growth and Momentum have outperformed in 8 out of 8 countries so far in January

% of SXXP index countries* in which styles (L/S) are outperforming in Jan

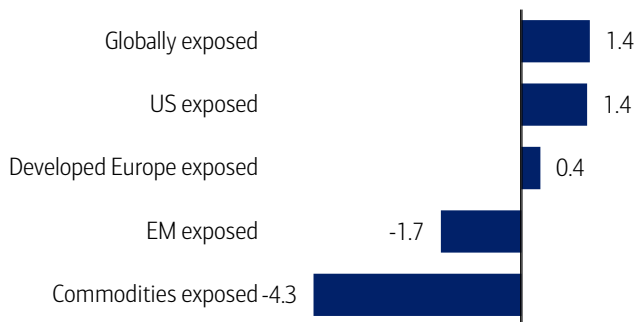


Source: BofA European Equity Quant Strategy, FactSet. Note: * countries included: France, Germany, Italy, Netherlands, Spain, Sweden, Switzerland, UK

BofA GLOBAL RESEARCH

Exhibit 25: Globally exposed stocks have gained the most MTD, while Commodities exposed stocks have noted the largest losses

% MTD returns for revenue exposure baskets (relative price return equally weighted in EUR)

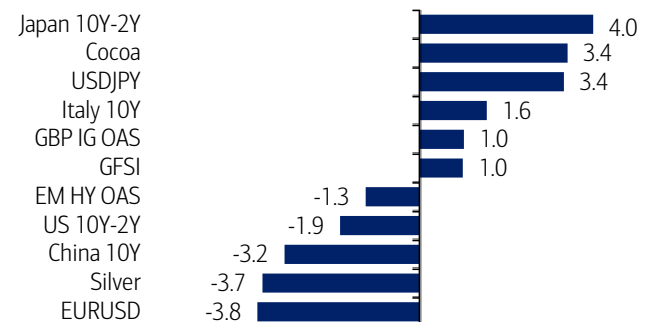


Source: BofA European Equity Quant Strategy, Factset

BofA GLOBAL RESEARCH

Exhibit 26: Stocks sensitive to rising Japan 10Y-2Y have gained the most MTD, while these sensitive to rising EURUSD lost the most

% MTD returns for stocks with specific cross-asset sensitivities (relative price return equally weighted in EUR)



Source: BofA European Equity Quant Strategy, Factset

BofA GLOBAL RESEARCH

Exhibit 27: Q1 has been historically the strongest for Sweden, IT and Low vs High Size

Historical average returns for countries, sectors, styles (L/S) in each quarter

Quarter	Germany	France	Italy	Netherlands	Spain	Sweden	Switzerland	UK			
Q1	-0.1%	1.8%	1.5%	1.5%	0.6%	3.2%	-0.3%	-2.0%			
Q2	0.2%	-0.1%	-2.3%	1.2%	0.2%	0.9%	1.1%	-0.3%			
Q3	-2.3%	-1.2%	-0.1%	-0.6%	0.1%	1.0%	0.5%	0.9%			
Q4	2.5%	0.2%	-1.0%	0.8%	0.7%	0.7%	-0.3%	-1.0%			
Quarter	Materials	Communication Svs	Discretionary	Staples	Energy	Financials	Healthcare	Industrials	IT	Utilities	Real Estate
Q1	0.9%	-1.0%	1.5%	0.8%	0.8%	-2.4%	-0.7%	1.7%	2.3%	-0.7%	-7.4%
Q2	0.6%	-4.0%	-0.4%	1.8%	2.2%	-1.4%	2.8%	0.2%	-0.4%	0.6%	-6.5%
Q3	-2.2%	-0.4%	-1.8%	2.2%	-0.3%	0.2%	2.9%	-1.0%	-1.2%	0.8%	-1.8%
Q4	1.6%	2.1%	1.2%	-2.1%	-2.4%	0.2%	-2.4%	0.8%	2.0%	-0.7%	3.2%
Size (Low vs High)											
Quarter	Value	Growth	Momentum	Quality	Risk	High)					
Q1	-1.1%	3.4%	3.1%	-0.2%	0.0%	4.5%					
Q2	-1.3%	0.7%	5.9%	2.1%	-2.5%	0.0%					
Q3	0.7%	0.5%	5.1%	2.4%	-3.6%	0.8%					
Q4	0.2%	0.4%	1.6%	0.9%	3.3%	0.1%					

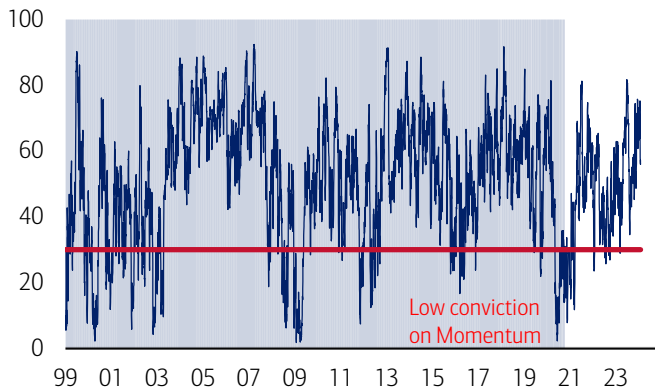
Source: BofA European Equity Quant Strategy, Refinitiv, MSCI. Note: historical average performance calculated over 1993-2023

BofA GLOBAL RESEARCH

European Momentum Conviction Indicator

Exhibit 28: BofA European Momentum Conviction Indicator (MCI) stands at 57, above the threshold of 30 which signals a potential crash in the Momentum style

BofA European Momentum Conviction Indicator (100=High, 0 = Low)

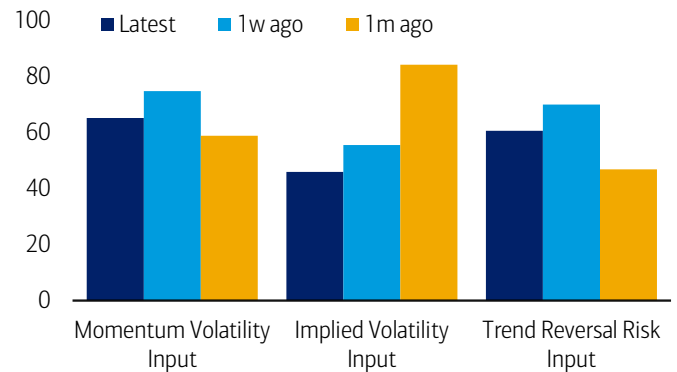


Source: BofA European Equity Quant Strategy, FactSet. Disclaimer: Performance through 06 October 2020 (shaded on the chart above) is backtested and does not represent the actual performance of any account or fund. Backtested performance depicts the theoretical (not actual) performance of a particular strategy over the time period indicated. No representation is being made that any actual portfolio is likely to have achieved returns similar to those shown herein. The indicator identified as the BofA European Conviction 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 purpose, without the prior written consent of BofA European Equity Quant Strategy. This indicator was not created to act as a benchmark

BofA GLOBAL RESEARCH

Exhibit 29: Declines in all inputs pushed the indicator down by 18 points over the week

BofA European Momentum Conviction Indicator's inputs latest readings (100=High, 0=Low)



Source: BofA European Equity Quant Strategy, FactSet. For definitions of the inputs please see European Momentum Conviction Indicator

BofA GLOBAL RESEARCH

Valuations

Exhibit 30: The most attractive multiple on z-score is TTM Interest Coverage at 9.1%, while the least attractive is FWD DY at 4.0%

MSCI Europe Market-Level Valuation Multiples

	Latest Value	Historical Z-Score	2-Year Z-Score	5-Year Z-Score	10-Year Z-Score	Historical Average	2-Year Average	5-Year Average	10-Year Average
TTM P/B	1.9	0.1	-0.2	0.0	0.3	1.8	1.9	1.9	1.8
TTM DY	3.3	0.4	-0.6	-0.3	-0.1	3.7	3.1	3.1	3.2
FWD DY	4.0	0.7	-0.8	-0.1	0.4	4.7	3.9	4.0	4.2
TTM P/E	13.7	-0.3	-0.9	-0.9	-1.3	15.3	14.7	16.8	17.8
FWD P/E	11.8	-0.1	0.3	-0.7	-0.6	12.4	11.7	12.6	12.5
TTM ROE	13.8	-0.8	-1.6	-1.4	-2.0	12.0	13.0	11.4	10.6
FWD ROE	14.0	-0.4	0.0	-1.0	-1.5	13.2	14.0	12.5	12.2
TTM EV/EBITDA	8.0	0.0	-0.4	-0.8	-0.7	8.0	8.3	8.9	8.7
FWD EV/EBITDA	7.8	0.2	-0.2	-0.8	-0.7	7.5	7.9	8.3	8.1
TTM Net Debt/EBITDA	1.3	-0.8	0.4	-0.9	-1.2	1.4	1.3	1.5	1.5
FWD Net Debt/EBITDA	1.2	-0.5	1.1	-0.7	-0.9	1.3	1.1	1.3	1.3
TTM Interest Coverage	9.1	-0.9	1.7	-0.1	-0.6	7.5	10.9	9.0	7.9
FWD Interest Coverage	9.4	-0.6	1.5	0.2	-0.4	8.4	11.0	9.7	8.8

Source: BofA European Equity Quant Strategy, Refinitiv Datastream, IBES Consensus Estimates, note: Z-scores have been inverted for 12m Trailing and Forward Return on Equity, Dividend Yield and Interest Coverage. Consequently, for Dividend Yield a Z-score of -0.8 implies that the current level is 0.8 standard deviations higher than the historical average, while for the P/E ratio a Z-score of -0.8 implies that the current level is 0.8 standard deviations below the historical average.

BofA GLOBAL RESEARCH

Exhibit 31: Financials currently ranks the most attractive on historical z-score at 6.3%, while Industrials ranks the least attractive at 2.7%

MSCI Europe 12m FWD Dividend Yield (%) by Sector

	Latest Value	Historical Z-Score	2-Year Z-Score	5-Year Z-Score	10-Year Z-Score	Historical Average	2-Year Average	5-Year Average	10-Year Average
MSCI Europe	4.0	-0.7	0.8	0.1	-0.4	4.7	3.9	4.0	4.2
Discretionary	3.5	-0.4	1.1	0.8	0.2	4.0	3.3	3.1	3.4
Staples	4.0	0.0	2.0	1.7	1.0	4.0	3.5	3.6	3.6
Energy	6.0	0.0	1.8	-0.2	-0.4	6.0	5.3	6.2	6.4
Financials	6.3	0.4	0.9	0.8	1.1	5.9	5.9	5.8	5.6
Health Care	2.9	-0.9	0.7	-0.6	-1.1	3.8	2.8	3.0	3.3
Industrials	2.7	-1.2	-1.6	-0.7	-1.1	3.7	2.9	2.9	3.2
Materials	4.0	-0.1	-1.6	-1.4	-0.4	4.1	4.7	4.6	4.2
Technology	1.4	-1.1	-0.8	-0.2	-0.8	2.4	1.5	1.5	1.8
Communication Svs	4.8	-0.9	-0.1	-0.6	-0.8	6.6	4.8	5.1	5.3
Utilities	5.7	-0.5	1.3	0.8	0.0	6.3	5.4	5.4	5.7
Real Estate	4.7	-0.5	-0.9	-0.4	-0.5	5.1	5.5	5.1	5.1

Source: BofA European Equity Quant Strategy, Refinitiv Datastream, IBES Consensus Estimates

BofA GLOBAL RESEARCH

Exhibit 32: Energy currently ranks the most attractive on historical z-score with a multiple of 6.3x, while Industrials ranks the least attractive at 16.5x

MSCI Europe 12m FWD P/E ratio by Sector

	Latest Value	Historical Z-Score	2-Year Z-Score	5-Year Z-Score	10-Year Z-Score	Historical Average	2-Year Average	5-Year Average	10-Year Average
MSCI Europe	11.8	-0.1	0.3	-0.7	-0.6	12.4	11.7	12.6	12.5
Discretionary	10.8	-0.5	-1.0	-0.9	-0.6	12.7	11.7	13.3	12.2
Staples	13.9	-0.1	-1.5	-1.9	-1.2	14.3	15.4	15.5	15.7
Energy	6.3	-1.1	0.8	-0.7	-1.2	11.1	5.8	8.5	10.2
Financials	8.1	-0.6	-0.3	-0.9	-1.1	10.0	8.2	8.8	9.2
Health Care	15.2	0.0	-0.2	0.2	0.5	15.4	15.4	15.1	14.6
Industrials	16.5	1.0	1.5	0.2	0.7	13.2	15.3	16.1	14.9
Materials	12.6	0.5	1.4	0.5	0.1	11.1	10.9	11.8	12.4
Technology	22.1	0.2	2.0	0.4	1.0	20.0	19.6	21.0	18.7
Communication Svs	13.0	0.0	-0.2	0.2	-0.3	21.7	13.1	12.8	13.6
Utilities	11.4	-0.2	-1.3	-1.9	-1.1	12.0	12.6	13.2	12.7
Real Estate	12.8	-0.9	0.3	-0.6	-0.9	14.8	12.3	14.1	14.8

Source: BofA European Equity Quant Strategy, Refinitiv Datastream, IBES Consensus Estimates

BofA GLOBAL RESEARCH

S

Exhibit 33: Real Estate currently ranks the most attractive on historical z-score with a multiple of 0.7x, while Industrials ranks the least attractive at 3.3x

MSCI Europe 12m Trailing Price/Book ratio by Sector

	Latest Value	Historical Z-Score	2-Year Z-Score	5-Year Z-Score	10-Year Z-Score	Historical Average	2-Year Average	5-Year Average	10-Year Average
MSCI Europe	1.9	0.1	-0.2	0.0	0.3	1.8	1.9	1.9	1.8
Discretionary	1.8	-0.8	-0.9	-0.8	-1.2	2.3	2.0	2.1	2.2
Staples	3.0	-1.0	-1.2	-1.4	-1.4	3.5	3.2	3.3	3.5
Energy	1.2	-1.0	-1.2	0.0	-0.1	2.0	1.3	1.2	1.2
Financials	1.0	-0.6	1.1	1.3	0.7	1.4	0.9	0.9	0.9
Health Care	3.9	-0.5	0.2	-0.1	-0.2	4.7	3.8	3.9	4.0
Industrials	3.3	1.0	0.1	-0.2	0.3	2.7	3.2	3.4	3.2
Materials	1.6	-0.9	-1.0	-1.1	-1.2	1.9	1.8	1.9	1.9
Technology	4.9	0.2	0.3	0.1	0.8	4.5	4.7	4.8	4.1
Communication Svs	1.3	-0.5	-0.4	-0.9	-1.3	2.0	1.4	1.5	1.6
Utilities	1.6	-0.6	-1.1	-1.4	-0.4	1.9	1.8	1.8	1.7
Real Estate	0.7	-1.1	0.1	-0.8	-1.1	0.9	0.7	0.8	0.9

Source: BofA European Equity Quant Strategy, Refinitiv Datastream, IBES Consensus Estimates

BofA GLOBAL RESEARCH

Exhibit 34: Discretionary currently ranks the most attractive on historical z-score with a multiple of 19.8x, while Staples ranks the least attractive at 8.7x

MSCI Europe 12m FWD Interest Coverage by Sector

	Latest Value	Historical Z-Score	2-Year Z-Score	5-Year Z-Score	10-Year Z-Score	Historical Average	2-Year Average	5-Year Average	10-Year Average
MSCI Europe	9.4	0.6	-1.5	-0.2	0.4	8.4	11.0	9.7	8.8
Discretionary	19.8	1.5	0.1	0.8	1.2	13.2	19.6	16.4	14.1
Staples	8.7	-0.9	-0.7	-0.4	-0.8	9.5	9.4	9.0	9.5
Energy	16.1	0.3	-1.3	0.0	0.3	14.6	23.6	16.1	14.1
Health Care	13.1	0.3	-2.1	-0.1	0.2	12.6	14.8	13.4	12.7
Industrials	9.7	0.7	-1.1	-0.1	0.5	8.5	11.1	9.8	8.8
Materials	8.7	-0.1	-1.5	-0.8	-0.2	9.0	13.9	11.5	9.5
Technology	20.2	0.8	-0.4	0.3	0.7	17.5	21.3	19.6	18.7
Communication Svs	4.3	0.3	-1.2	-0.3	0.4	4.1	4.5	4.4	4.1
Utilities	4.3	0.3	-1.1	-1.2	0.1	4.1	4.7	4.8	4.3

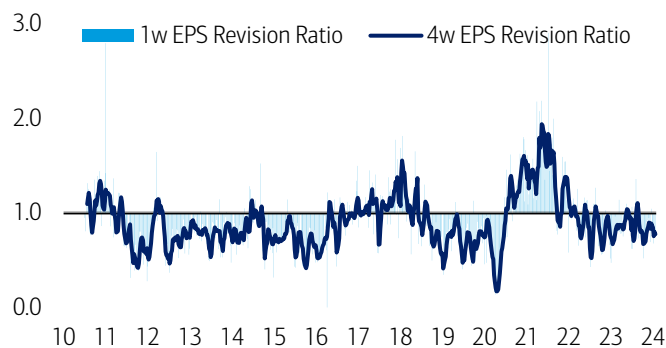
Source: BofA European Equity Quant Strategy, Refinitiv Datastream, IBES Consensus Estimates

BofA GLOBAL RESEARCH

Revisions

Exhibit 35: Global 4-week EPS Revision Ratio stands at 0.78, down from last week

Ratio of BofA analysts' EPS upgrades to downgrades

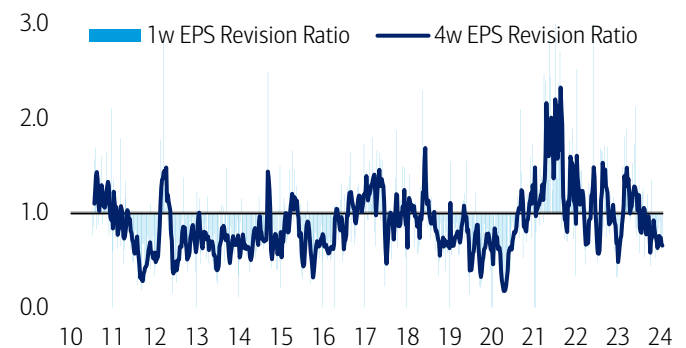


Source: BofA European Equity Quant Strategy, IQDatabase

BofA GLOBAL RESEARCH

Exhibit 36: European 4-week EPS Revision Ratio stands at 0.66, down from last week

Ratio of BofA analysts' EPS upgrades to downgrades

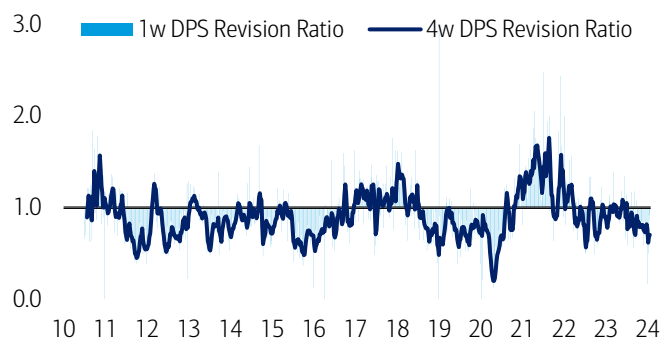


Source: BofA European Equity Quant Strategy, IQDatabase

BofA GLOBAL RESEARCH

Exhibit 37: Global 4-week DPS Revision Ratio stands at 0.70, up from last week

Ratio of BofA analysts' DPS upgrades to downgrades

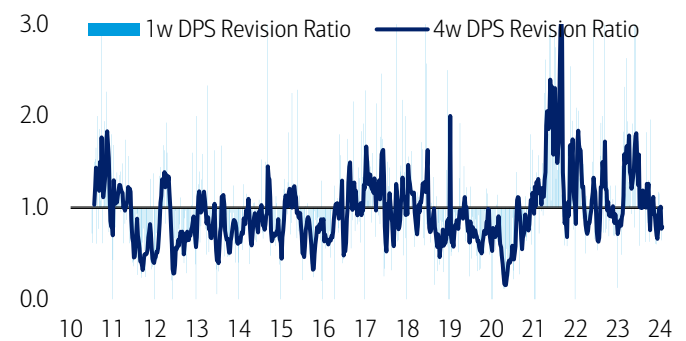


Source: BofA European Equity Quant Strategy, IQDatabase

BofA GLOBAL RESEARCH

Exhibit 38: European 4-week DPS Revision Ratio stands at 0.79, up from last week

Ratio of BofA analysts' DPS upgrades to downgrades

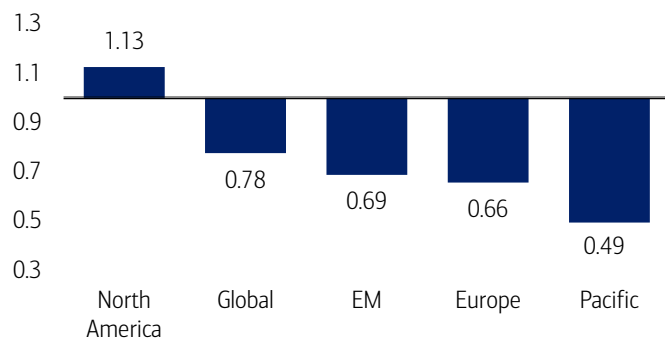


Source: BofA European Equity Quant Strategy, IQDatabase

BofA GLOBAL RESEARCH

Exhibit 39: Currently, the 4-week EPS Revision Ratio is the strongest in North America, while it is the weakest in Pacific

BofA 4w EPS Revision Ratio by region

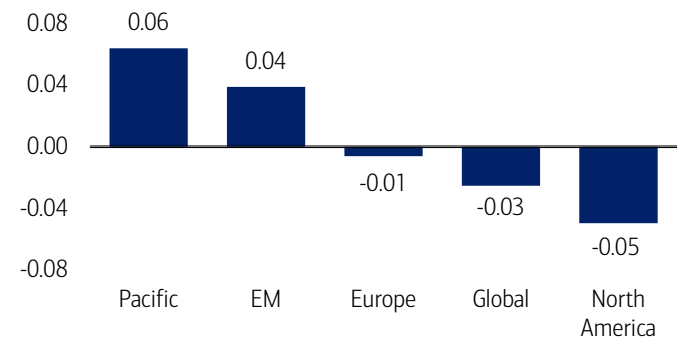


Source: BofA European Equity Quant Strategy, IQDatabase

BofA GLOBAL RESEARCH

Exhibit 40: Over the past week, the 4-week EPS Revision Ratio improved the most in Pacific, while it deteriorated the most in North America

1w change in 4w BofA EPS Revision Ratio by region

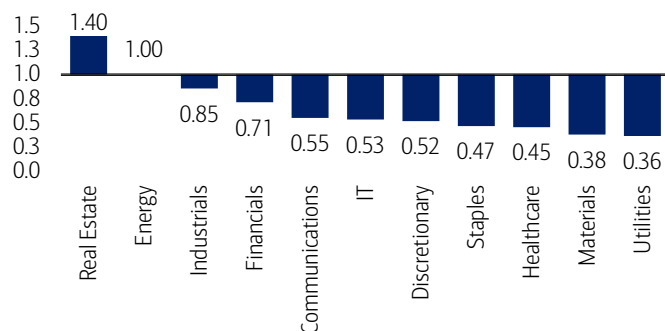


Source: BofA European Equity Quant Strategy, IQDatabase

BofA GLOBAL RESEARCH

Exhibit 41: Currently, the 4-week EPS Revision Ratio is the strongest in Real Estate, while it is the weakest in Utilities

BofA 4w European EPS Revision Ratio by sector

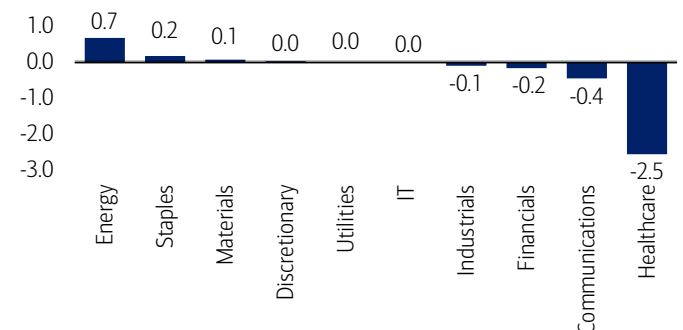


Source: BofA European Equity Quant Strategy, IQDatabase

BofA GLOBAL RESEARCH

Exhibit 42: Over the past week, 4-week EPS Revision Ratio improved the most in Energy, while it deteriorated the most in Healthcare

1w change in 4w BofA European EPS Revision Ratio by sector

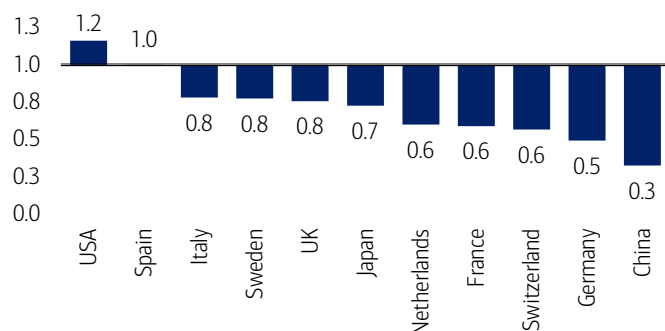


Source: BofA European Equity Quant Strategy, IQDatabase

BofA GLOBAL RESEARCH

Exhibit 43: Currently, the 4-week EPS Revision Ratio is the strongest in USA, while it is the weakest in China

BofA 4w EPS Revision Ratio by country

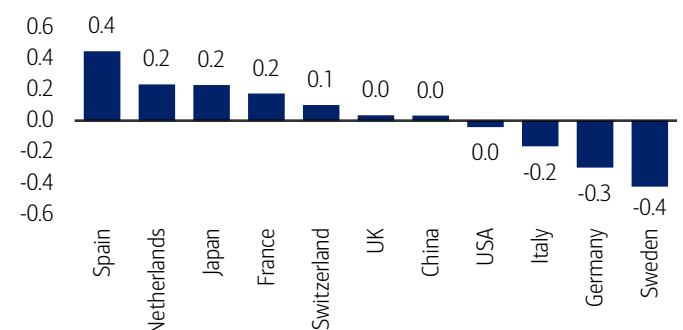


Source: BofA European Equity Quant Strategy, IQDatabase

BofA GLOBAL RESEARCH

Exhibit 44: Over the past week, the 4-week EPS Revision Ratio improved the most in Spain, while it deteriorated the most in Sweden

1w change in 4w BofA EPS Revision Ratio by country

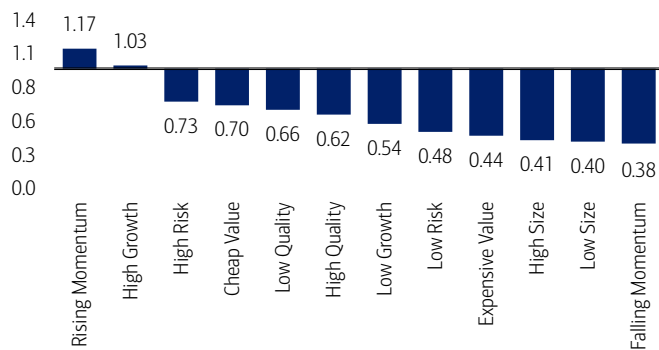


Source: BofA European Equity Quant Strategy, IQDatabase

BofA GLOBAL RESEARCH

Exhibit 45: Currently, the 4-week EPS Revision Ratio is the strongest in Rising Momentum, while it is the weakest in Falling Momentum

BofA 4w European EPS Revision Ratio by style

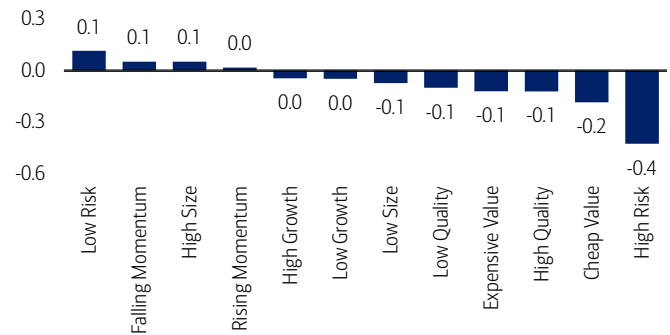


Source: BofA European Equity Quant Strategy, IQDatabase

BofA GLOBAL RESEARCH

Exhibit 46: Over the past week, 4-week EPS Revision Ratio improved the most in Low Risk, while it deteriorated the most in High Risk

1w change in 4w BofA European EPS Revision Ratio by style



Source: BofA European Equity Quant Strategy, IQDatabase

BofA GLOBAL RESEARCH

Exhibit 47: Top 5 and bottom 5 stocks with the largest upgrades in BofA FY1 EPS over last week

BofA European covered stocks with Buy/Underperform rating that saw the largest increase/decrease in BofA FY1 EPS forecast over the past week

Top 5 stocks with the highest upgrade in FY1 EPS

BBG Ticker	Name	Country	Sector	MCap (EUR bn)	FY1 EPS Chg	FY2 EPS Chg	FY3 EPS Chg	ChgDate
ANTO LN	Antofagasta	UK	Materials	18.1	13%	-2%	2%	17/01/2024
ACA FP	Credit Agricole	France	Financials	40.6	10%	2%	4%	15/01/2024
LAND LN	Land Securities	UK	Real Estate	5.6	10%	11%	8%	18/01/2024
VK FP	Valloirec	France	Energy	3.1	7%	2%	9%	16/01/2024
HBR LN	Harbour Energy	UK	Energy	2.7	7%	-16%	-5%	16/01/2024

Source: IQDatabase

Bottom 5 stocks with the highest downgrade in FY1 EPS

BBG Ticker	Name	Country	Sector	MCap (EUR bn)	FY1 EPS Chg	FY2 EPS Chg	FY3 EPS Chg	ChgDate
BOO LN	boohoo Group	UK	Discretionary	0.5	-650%	-173%	-95%	17/01/2024
FME GR	FMC	Germany	Healthcare	10.6	-42%	-41%	-33%	17/01/2024
GN DC	GN Store Nord	Denmark	Discretionary	3.6	-33%	-25%	-21%	17/01/2024
EKTAB SS	Elektro	Sweden	Healthcare	2.5	-7%	-1%	-3%	17/01/2024
ADM LN	Admiral	UK	Financials	9.1	-6%	-4%	0%	18/01/2024

BofA GLOBAL RESEARCH

European Momentum Conviction Indicator

We launched our European Momentum Conviction Indicator on 06 October 2020. This indicator aims to identify episodes where volatility of a cross-sectional approach to Momentum investing is too high to support consistent returns or when trends might break. We use three inputs to construct the indicator, these inputs are equally weighted and form an indicator scaled from 0-100 (100 = highest conviction in positive Momentum performance, 0 = lowest conviction):

- Momentum Volatility Risk:** Volatility of Momentum performance for risk-management is crucial as uncertainty on the economic cycle rises. High levels of volatility can compromise Momentum's performance. Since the strategy's volatility tends to be clustered, we use a GARCH (1, 1) model to forecast 1-step-ahead volatility levels and adjust the exposure to Momentum accordingly (high volatility levels = low confidence in Momentum).
- Implied Volatility for Equities:** Large Momentum drawdowns tend to occur following turning points in market cycles. We use a combination of fast- and slow- moving averages of implied volatility in European markets to detect volatility shocks and retracement. A warning signal against Momentum is given when implied volatility retraces following a volatility shock. This often corresponds to the start of a recovery phase following a recessionary episode.

- c) **Trend Reversal Risk:** This is a contrarian signal monitoring the 2nd derivative of Momentum's short-term performance. This input identifies episodes where Momentum's performance has accelerated near term – signalling the formation of a potential "Momentum bubble" or an episode of potential profit booking. We estimate the risk of trend reversal using the month-on-month difference in trends of the Momentum strategy.

We define a Momentum crash as a drawdown of the 12m price momentum long-short strategy exceeding 10% over 20 trading days. Since the performance of the strategy is computed on a daily basis, we define unique drawdown events as the maximum drawdown of the strategy over a 2-month window (1 month look-back, 1 month look forward). Following this methodology, we identify 30 Momentum crashes from January 1999 to September 2020. A Momentum crash is said to be correctly predicted if any of the input of the European Momentum Conviction Indicator is less than 50 (bearish signal on Momentum) 20 days prior to the drawdown event.

Using the definitions above, our backtested results suggest that the inputs of the European Momentum Conviction Indicator would have correctly identified 28 of these 30 drawdowns (i.e., sending a bearish signal 20 trading days prior to the event).

Exhibit 48: Backtested (shaded) and live results of the European Momentum Conviction Indicator
Momentum Conviction Indicator and its inputs readings 1, 4, 8 weeks before the momentum crashes

1 Week Before the Crash (defined as local minimum of 4W performance)						4 Weeks Before the Crash						8 Weeks Before the Crash (defined as local minimum of 4W performance)					
Date	Momentum	Implied	Trend	1W Forward		Date	Momentum	Implied	Trend	4W Forward		Date	Momentum	Implied	Trend	8W Forward	
	Volatility	Volatility	Reversal	EMCI	Returns		Volatility	Volatility	Reversal	EMCI	Returns		Volatility	Volatility	Reversal	EMCI	Returns
10-Feb-99	37	1	7	15	-3%	20-Jan-99	17	1	6	8	-20%	04-Jan-99	7	38	22	-12%	
29-Apr-99	71	12	51	45	-4%	08-Apr-99	96	3	47	49	-12%	11-Mar-99	98	1	5	35	-14%
28-Mar-00	2	12	13	9	-26%	07-Mar-00	8	15	4	9	-49%	08-Feb-00	0	73	1	24	-31%
04-Aug-00	42	89	27	53	1%	14-Jul-00	38	95	61	65	-14%	16-Jun-00	17	86	43	48	-7%
11-Oct-00	37	6	25	23	0%	20-Sep-00	34	51	95	60	-16%	23-Aug-00	52	83	95	77	-9%
06-Dec-00	23	32	13	23	-6%	15-Nov-00	34	15	40	30	-26%	18-Oct-00	36	35	37	36	-29%
25-Apr-01	10	55	53	39	-9%	03-Apr-01	27	94	38	53	-24%	06-Mar-01	39	36	59	44	-7%
12-Nov-01	13	38	46	33	-15%	22-Oct-01	12	98	32	47	-26%	24-Sep-01	30	100	35	55	-36%
29-Oct-02	5	3	11	6	-10%	08-Oct-02	5	96	58	53	-25%	10-Sep-02	17	91	52	53	-4%
23-Apr-03	28	93	36	52	-6%	01-Apr-03	21	16	32	23	-25%	04-Mar-03	19	2	18	13	-22%
11-Jun-03	47	94	29	56	0%	21-May-03	37	95	38	57	-16%	23-Apr-03	28	93	36	52	-25%
25-Jul-03	79	76	78	78	-4%	04-Jul-03	67	92	25	61	-11%	06-Jun-03	51	94	29	58	-9%
01-Jun-06	31	95	83	70	-7%	11-May-06	71	35	85	64	-13%	12-Apr-06	77	41	76	65	-10%
05-Aug-08	5	9	37	17	-8%	15-Jul-08	19	28	56	34	-36%	17-Jun-08	31	8	57	32	-24%
11-Dec-08	3	79	53	45	4%	20-Nov-08	5	99	13	39	-20%	23-Oct-08	6	100	6	37	-2%
30-Mar-09	2	3	12	6	-16%	09-Mar-09	1	1	23	8	-51%	09-Feb-09	2	0	24	9	-28%
30-Jul-09	49	85	51	62	-7%	09-Jul-09	47	59	53	53	-18%	11-Jun-09	41	92	39	57	-8%
01-Feb-11	28	40	41	36	0%	11-Jan-11	57	29	52	46	-16%	14-Dec-10	30	29	77	45	-8%
03-Oct-11	12	97	36	48	-7%	12-Sep-11	38	98	21	52	-25%	15-Aug-11	17	98	58	58	-8%
27-Jan-12	27	87	24	46	-1%	06-Jan-12	44	23	47	38	-18%	08-Dec-11	23	2	57	27	-9%
14-Aug-12	26	35	34	32	-5%	24-Jul-12	35	67	46	49	-19%	26-Jun-12	27	13	44	28	-14%
08-Apr-14	50	47	81	59	-6%	18-Mar-14	65	68	86	73	-10%	18-Feb-14	76	60	89	75	-9%
19-Oct-15	23	22	48	31	2%	28-Sep-15	49	89	33	57	-12%	31-Aug-15	41	91	67	67	1%
24-Feb-16	16	89	73	59	-9%	03-Feb-16	33	77	61	57	-15%	06-Jan-16	46	10	38	31	-10%
15-Apr-16	11	37	27	25	-7%	24-Mar-16	31	58	66	51	-12%	25-Feb-16	14	88	74	59	-21%
07-Nov-16	49	19	64	44	-5%	17-Oct-16	50	22	67	46	-11%	19-Sep-16	38	38	69	48	-11%
19-Dec-16	35	66	23	41	0%	28-Nov-16	50	9	57	39	-13%	31-Oct-16	50	34	58	48	-14%
12-Apr-19	48	34	55	46	-4%	22-Mar-19	58	59	70	62	-11%	22-Feb-19	46	65	74	62	-9%
09-Sep-19	29	62	59	50	-6%	19-Aug-19	44	89	50	61	-14%	22-Jul-19	70	67	66	68	-10%
01-Jun-20	2	0	49	17	-21%	11-May-20	11	2	48	20	-27%	13-Apr-20	8	99	13	40	-12%
17-Nov-20	2	22	4	9	-8%	27-Oct-20	17	5	19	14	-32%	29-Sep-20	17	3	19	13	-33%
01-Mar-21	14	14	17	15	-9%	08-Feb-21	23	10	46	26	-18%	11-Jan-21	13	15	47	25	-16%
18-Jan-22	28	14	29	24	-1%	28-Dec-21	34	62	65	54	-10%	30-Nov-21	28	83	60	57	-13%

Exhibit 48: Backtested (shaded) and live results of the European Momentum Conviction Indicator

Momentum Conviction Indicator and its inputs readings 1, 4, 8 weeks before the momentum crashes

1 Week Before the Crash (defined as local minimum of 4W performance)						4 Weeks Before the Crash						8 Weeks Before the Crash (defined as local minimum of 4W performance)					
Date	Momentum	Implied	Trend	1W Forward Momentum		Date	Momentum	Implied	Trend	4W Forward Momentum		Date	Momentum	Implied	Trend	8W Forward Momentum	
	Volatility	Volatility	Reversal	EMCI	Returns		Volatility	Volatility	Reversal	EMCI	Returns		Volatility	Volatility	Reversal	EMCI	Returns
22-Jul-22	35	8	34	26	0%	01-Jul-22	43	5	54	34	-8%	03-Jun-22	43	10	53	35	-8%
04-Nov-22	18	45	56	40	-15%	14-Oct-22	24	70	72	55	-17%	16-Sep-22	28	12	70	36	-13%
26-Jan-23	33	83	67	61	-7%	05-Jan-23	24	81	55	53	-11%	08-Dec-22	20	91	30	47	-13%

Source: BofA European Equity Quant Strategy. 12m Momentum performance is computed from January 1999 using daily price returns in Euro, assuming daily rebalancing and excluding transaction costs. This performance is backtested (shaded) and does not represent the actual performance of any account or fund. Backtested (shaded) 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. The strategy indicated 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 strategy was not created to act as a benchmark.

BofA GLOBAL RESEARCH

Definitions

Value: Equal weighted combination of factors - Forecast/Trailing EPS Yield, Dividend Yield, Cash to Price Yield, Book to Price Yield, Price to Sales and Forecast PEG.

Growth: Equal weighted combination of factors - Forecast/Trailing EPS Growth, Forecast EPS Change and Forecast Long Term Growth.

Momentum: Equal weighted combination of factors - 3m EPS Change, EPS Revision Ratio, Sales Revision Ratio, 1m Price Change and 12m Price Change.

Quality: Equal weighted combination of factors - Return on Assets, Return on Capital, Return on Equity, 5yr Return on Equity and Leverage.

Risk: Equal weighted combination of factors - EPS Estimate Dispersion and Beta.

Size: Month end market capitalisation.

Value Factors

Forecast Earnings Yield: I/B/E/S next twelve month EPS divided by month end Price.

Trailing Earnings Yield: Trailing twelve month EPS divided by month end Price.

Dividend Yield: Trailing twelve month Dividend per share divided by month end Price.

Cash to Price: Trailing 12 month cash earnings per share divided by month end price. Cash Earnings are defined as earnings plus depreciation on fixed assets. (i.e. –not free cash flow).

Book to Price: Trailing twelve month Book Value per share divided by month end price.

Price to Sales: Month End Price divided by last reported Sales per share figure.

Forecast PEG: I/B/E/S FY1 P/E divided by I/B/E/S Long Term Growth Estimate.

Other valuations:

Free Cash Flow Yield: Trailing twelve month difference between operating cash flow and capital expenditures net of fixed assets disposals divided by the month end price

EV/EBITDA: Latest reported divided EV (market capitalisation plus total debt minus cash and cash equivalents) divided by the trailing twelve month EBITDA

Growth Factors

Forecast Earnings Growth: (I/B/E/S FY2 Mean EPS Est. less latest reported EPS) divided by the latest reported EPS.

Trailing Earnings Growth: Difference between Trailing Twelve Month EPS and Trailing Twelve Month EPS a year prior divided by absolute value of Trailing Twelve Month EPS a year prior.

Forecast EPS Change: Difference between I/B/E/S Forecast Twelve Month EPS and I/B/E/S Forecast Twelve Month EPS a year prior divided by I/B/E/S Forecast Twelve Month EPS a year prior.

Long Term Mean EPS Growth: I/B/E/S Mean Long Term Growth Estimate (+5years).

Momentum Factors

3 Month Change in Mean EPS: Difference between I/B/E/S FY1 mean EPS and I/B/E/S FY1 mean EPS 3 months prior, divided by absolute value of I/B/E/S FY1 mean EPS 3 months prior.

Earnings Revision Ratio: ((# of FY1 and FY2 upward EPS revisions over last 3 months)-(# of FY1 and FY2 downward EPS revisions over last 3 months))/ # of FY1 and FY2 estimates over last 3 months.

Sales Revision Ratio: ((# of FY1 and FY2 upward Sales revisions over last 3 months)-(# of FY1 and FY2 downward Sales revisions over last 3 months))/ # of FY1 and FY2 estimates over last 3 months.

1m Price Momentum: Latest month-end price / 1-month ago price.

12m Price Momentum: Latest month-end price / 12-months ago price.

Risk Factors

Beta: Calculated using regression analysis on 60 months of price performance versus the benchmark. High beta stocks have a high correlation to the market, whilst low beta stocks have a low correlation to market movements.

EPS Estimate Dispersion: Coefficient of variation of I/B/E/S FY2 EPS estimates. The coefficient of variation is defined as the Standard Deviation of Estimates divided by the absolute value of the Mean Estimate.

Quality Factors

Return on Assets: Annual Earnings divided by Total Assets.

Return on Capital: Annual Earnings divided by Total Capital.

Return on Equity – 1yr: Trailing Twelve Month EPS divided by Trailing Twelve Month Book value per Share.

Return on Equity – 5yrs: Average RoE over the last 5 years.

Leverage: Annual Long Term Debt/(Annual Long Term Debt +Annual Book Value).

Ownership

Top 50 European Fund Managers Weight: Relative weight of the Top 50 European fund managers in the stock vs their European market holdings. 100=neutral, >100 is overweight and <100 is underweight

% Top 50 European Fund Managers Weight: Based on the above we calculate the percentage of fund managers who are underweight.

Dividend Factors

12m Fwd dividend yield: 12m fwd DPS per share estimate from I/B/E/S divided by month end price

5 Year Dividend Growth: CAGR of trailing FY0, FY1 and FY2 and forecast FY1 and FY2 DPS growth.

Dividend Revision Ratio: $((\# \text{ of FY1 and FY2 upward DPS revisions over last 3 months}) - (\# \text{ of FY1 and FY2 downward DPS revisions over last 3 months})) / \# \text{ of FY1 and FY2 estimates over last 3 months}$.

DPS Estimate Dispersion: Coefficient of variation of I/B/E/S FY2 DPS estimates. The coefficient of variation is defined as the Standard Deviation of Estimates divided by the absolute value of the Mean Estimate.

Payout Ratio: prospective FY1 DPS divided by the prospective FY1 EPS.

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.

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.bofamli.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 (HKSF); 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 HKSF; 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:

Copyright 2024 Bank of America Corporation. All rights reserved. iQdatabase® is a registered service mark of Bank of America Corporation. This information is prepared for the use of BofA Securities clients and may not be redistributed, retransmitted or disclosed, in whole or in part, or in any form or manner, without the express written consent of BofA Securities. BofA Global Research information is distributed simultaneously to internal and client websites and other portals by BofA Securities and is not publicly-available material. Any unauthorized use or disclosure is prohibited. Receipt and review of this information constitutes your agreement not to redistribute, retransmit, or disclose to others the contents, opinions, conclusion, or information contained herein (including any investment recommendations, estimates or price targets) without first obtaining express permission from an authorized officer of BofA Securities.

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.