

European Snapshot

Who might profit-warn for Q4 '23?

Quantitative Strategy

Screen of the Week: potential profit-warners for Q4'23

The Q3 '23 earnings season finished with 34 companies issuing profit warnings, slightly below the 39 in Q2 '23. The Q4 '23 season starts with only 6 firms warning on the back of cautious consumer demand and unfavourable weather conditions, the fewest since Q1 '22. These companies noted an average 10.9% price drop on an issuing day, better than last season when the drop was near 14%. Our Screen of the Week identifies additional companies that could profit-warn during the Q4 '23 earnings season (Exhibit 4).

2nd weekly outflow from Europe-focused funds in 2024

Europe-focused equity funds recorded their 2nd consecutive weekly outflow this year, of \$0.85bn, with a net -26% seeing net inflows. Outflows amounted to \$0.68bn from active funds and \$0.17bn from passive funds. Europe-focused funds have seen \$1.76bn of outflows YTD: \$1.82bn of outflows from active funds and \$0.06bn of inflows into passive funds. Switzerland (\$0.39bn) and Quality stocks (\$0.06bn) had the largest inflows last week, while the UK (\$0.37bn), Discretionary (\$0.16bn) and Risk stocks (\$0.08bn) posted the largest outflows. No sector recorded inflows last week.

BofA ERR: Europe at a 5-week low, USA at a 20-week high

The Global BofA 4-week EPS Revision Ratio improved to 0.80, driven by increases in North America and EM (Exhibit 43). North America remains the only region with a ratio in net upgrade territory (at 1.17, a 20-week high), as USA recorded the highest improvement over the past week among countries. The European ratio decreased to a 5-week low of 0.66 on the back of declines in IT, Switzerland and High Risk. The largest improvements in Europe were seen in Healthcare, Italy and Cheap Value.

Exhibit 1: Q3 '23 season finished with a total of 34 companies announcing profit warnings, while Q4 '23 starts with only 6, the lowest number since Q1 '22

Historical number of companies that have issued profit warnings



Source: BofA European Equity Quant Strategy, Bloomberg, Google News, Factset

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17 January 2024

Quant Strategy
Europe

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Refer to important disclosures on page 17 to 19.

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Timestamp: 17 January 2024 03:12AM EST

Screen of the week

Exhibit 2: 6 companies have already announced profit warnings

Q4 '23 profit warnings so far within Europe Stoxx 600 and MSCI Europe Small caps indices

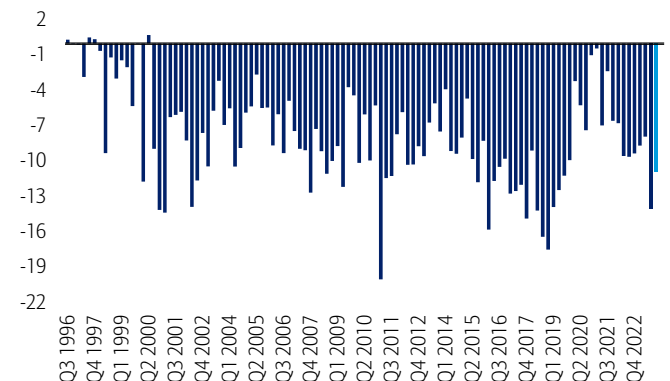
| BBG Ticker | Name | Date of profit warning | Mcap (EUR, on day of profit warning) | Size group |
|------------|------------------------|------------------------|--------------------------------------|------------|
| SY1 GR | Symrise | 15/12/2023 | 13.7 | Mid |
| SDRY LN | Superdry | 19/12/2023 | 0.04 | Micro |
| MEX LN | Tortilla Mexican Grill | 20/12/2023 | 0.02 | Micro |
| JD/ LN | JD Sports Fashion | 04/01/2024 | 7.2 | Mid |
| HAS LN | Hays | 09/01/2024 | 2.2 | Small |
| ELUXB SS | Electrolux | 12/01/2024 | 2.5 | Small |

Source: BofA European Equity Quant Strategy, Bloomberg, Google News, Factset. For UK companies we also consider negative outcomes of trading update calls.

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Exhibit 3: Q4 '23 profit-warners have recorded so far on average 10.9% price drop on the day of profit warning

Historical average price impact on profit-warners on the day of a profit warning (absolute, in EUR)



Source: BofA European Equity Quant Strategy, Bloomberg. Note: Stock universe is Europe Stoxx 600 index + MSCI Europe Small cap index constituents

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Exhibit 4: Potential earnings warners for Q4 '23

Companies within the Europe Stoxx 600 which a) do not have BofA fundamental analyst rating "Buy", b) have below market median Growth Rank, c) have below market Momentum Rank and d) have higher revenue exposure to Developed Europe as per 2022 reported data

| BBG Ticker | Name | Supersector | Country | Growth Rank (100=High) | Momentum Rank (100=Rising) | 2022 sales from Developed Europe (%) | 2022 sales from North America (%) | 2022 sales from EM (%) |
|------------|-----------------------|---------------------------------------|----------------|------------------------|----------------------------|--------------------------------------|-----------------------------------|------------------------|
| TPK LN | Travis Perkins | Industrial Goods and Services | United Kingdom | 4 | 5 | 100 | 0 | 0 |
| ITV LN | ITV | Media | United Kingdom | 6 | 6 | 64 | 18 | 0 |
| KESKOB FH | Kesko | Personal Care Drug and Grocery Stores | Finland | 11 | 13 | 96 | 0 | 4 |
| BWY LN | Bellway | Consumer Products and Services | United Kingdom | 3 | 14 | 100 | 0 | 0 |
| KGF LN | Kingfisher | Retail | United Kingdom | 14 | 8 | 82 | 0 | 13 |
| BARC LN | Barclays | Banks | United Kingdom | 17 | 8 | 69 | 25 | 6 |
| VOE AV | voestalpine | Basic Resources | Austria | 5 | 20 | 62 | 17 | 12 |
| LGEM LN | Legal & General | Insurance | United Kingdom | 5 | 13 | 42 | 6 | 3 |
| TIETO FH | TietoEVRY | Technology | Finland | 22 | 4 | 89 | 0 | 0 |
| GFTU LN | Grafton | Industrial Goods and Services | United Kingdom | 10 | 19 | 100 | 0 | 0 |
| EVK GR | Evonik Industries | Chemicals | Germany | 3 | 26 | 51 | 24 | 23 |
| SKAB SS | Skanska | Construction and Materials | Sweden | 18 | 9 | 44 | 42 | 0 |
| WIE AV | Wienerberger | Construction and Materials | Austria | 19 | 33 | 53 | 17 | 16 |
| BAER SW | Julius Baer | Financial Services | Switzerland | 26 | 4 | 73 | 2 | 0 |
| BDEV LN | Barratt Developments | Consumer Products and Services | United Kingdom | 3 | 44 | 100 | 0 | 0 |
| BUCN SW | Bucher Industries | Industrial Goods and Services | Switzerland | 23 | 19 | 57 | 20 | 16 |
| OMV AV | OMV | Energy | Austria | 2 | 26 | 63 | 0 | 31 |
| MT NA | ArcelorMittal | Basic Resources | Luxembourg | 19 | 13 | 43 | 18 | 39 |
| BALN SW | Baloise-Holding | Insurance | Switzerland | 8 | 16 | 98 | 0 | 0 |
| LLOY LN | Lloyds Banking | Banks | United Kingdom | 23 | 20 | 100 | 0 | 0 |
| SLHN SW | Swiss Life | Insurance | Switzerland | 21 | 18 | 96 | 0 | 0 |
| TIT IM | Telecom Italia | Telecommunications | Italy | 6 | 38 | 69 | 0 | 25 |
| AALB NA | Aalberts | Industrial Goods and Services | Netherlands | 33 | 33 | 59 | 24 | 17 |
| IGG LN | IG | Financial Services | United Kingdom | 43 | 11 | 55 | 13 | 4 |
| TELIA SS | Telia | Telecommunications | Sweden | 26 | 30 | 87 | 0 | 13 |
| VMUK LN | Virgin Money UK | Banks | United Kingdom | 34 | 18 | 100 | 0 | 0 |
| FORTUM FH | Fortum | Utilities | Finland | 9 | 48 | 73 | 0 | 24 |
| NDA GR | Aurubis | Basic Resources | Germany | 22 | 29 | 80 | 4 | 10 |
| HELN SW | Helvetia | Insurance | Switzerland | 13 | 24 | 83 | 0 | 0 |
| DLG LN | Direct Line Insurance | Insurance | United Kingdom | 35 | 29 | 100 | 0 | 0 |

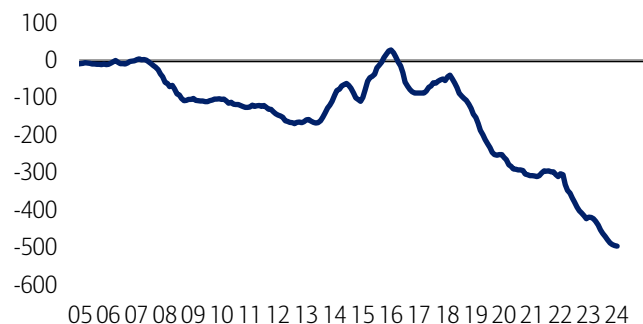
Source: BofA European Equity Quant Strategy, Factset. Disclaimer: The screen above is intended to be an indicative metric only and may not be used for reference purposes or as a measure of performance for any financial instrument or contract, or otherwise relied upon by third parties for any other purpose,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

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Flows

Exhibit 5: Europe-focused equity funds have seen \$486bn of outflows since 2005 (active funds: \$-612bn, passive funds: \$125bn)

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

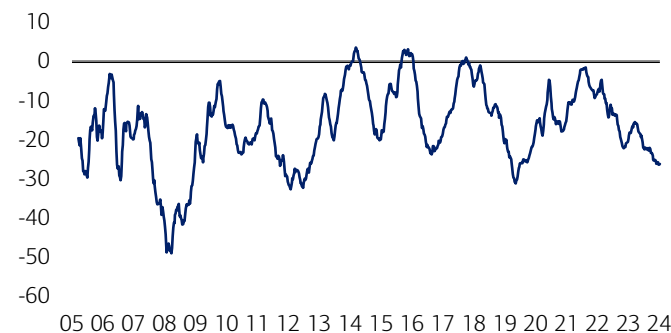


Source: BofA European Equity Quant Strategy, EPFR Global

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Exhibit 6: A net -26% of Europe-focused funds saw inflows last week, a marginal 2nd consecutive rise

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

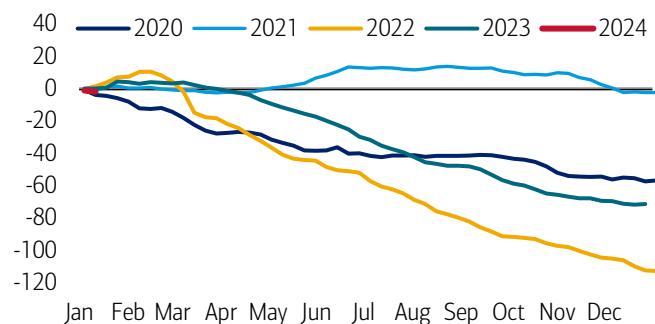


Source: BofA European Equity Quant Strategy, EPFR Global. Note: Net % calculated as % of funds that saw inflows minus % of funds that saw outflows

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Exhibit 7: Europe-focused equity funds have seen \$1.8bn of outflows YTD, with \$1.6bn of outflows from European-domiciled funds and \$0.15bn of outflows from US-domiciled funds

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

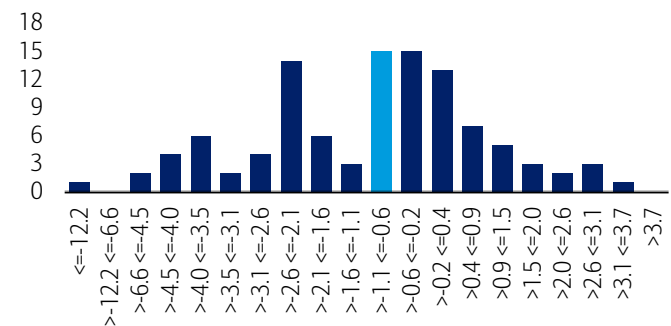


Source: BofA European Equity Quant Strategy, EPFR Global

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Exhibit 8: Europe-focused equity funds saw \$0.85bn of outflows last week

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

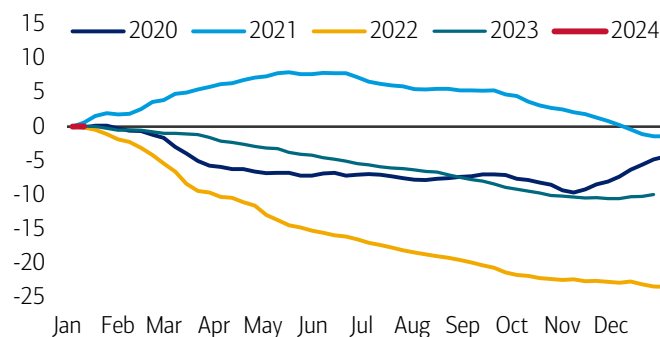


Source: BofA European Equity Quant Strategy, EPFR Global

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Exhibit 9: SMID focused European equity funds have seen \$0.07bn of inflows YTD, \$0.08bn of outflows from active funds and \$0.15bn of inflows into passive funds

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

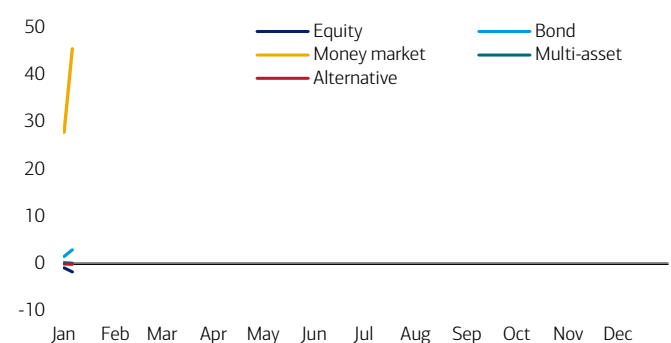


Source: BofA European Equity Quant Strategy, EPFR Global

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Exhibit 10: Equity funds have seen the largest outflows YTD (\$1.8bn), while Money market funds have seen the largest inflows (\$45.5bn)

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

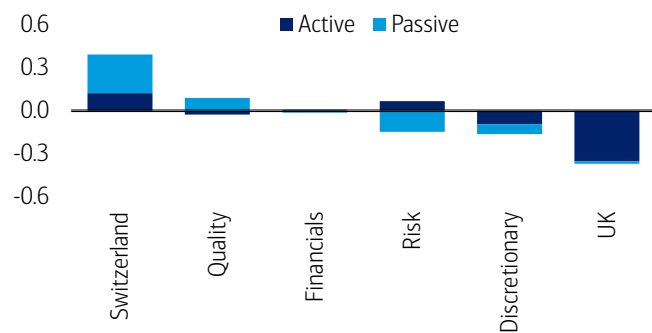


Source: BofA European Equity Quant Strategy, EPFR Global

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Exhibit 11: Switzerland recorded the largest inflows (\$0.39bn), while the UK noted the largest outflows (\$0.37bn) 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)

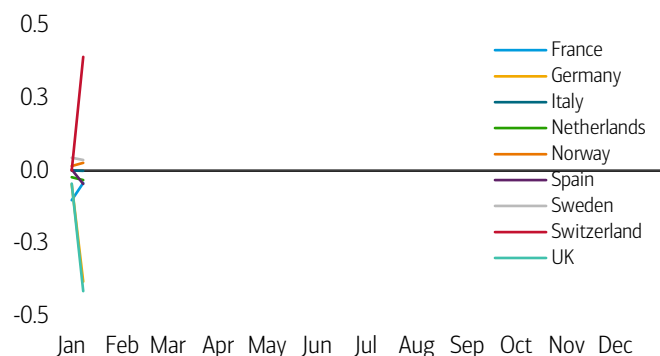


Source: BofA European Equity Quant Strategy, EPFR Global. Note: flows into styles are aggregated from stock level data

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Exhibit 13: Switzerland noted the largest inflows YTD (\$0.4bn), while UK recorded the largest outflows (\$0.4bn)

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

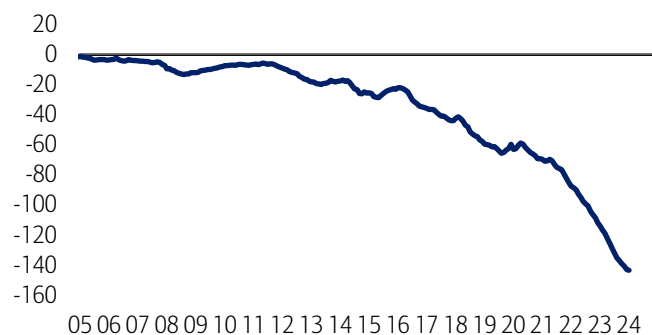


Source: BofA European Equity Quant Strategy, EPFR Global.

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Exhibit 15: UK-focused equity funds have seen \$142bn of outflows since 2005 (active funds: \$-159bn, passive funds: \$18bn)

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

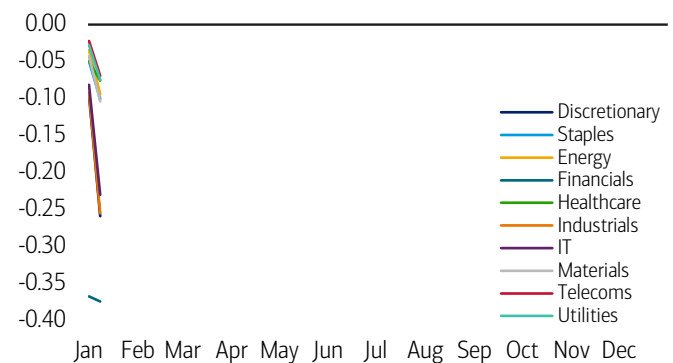


Source: BofA European Equity Quant Strategy, EPFR Global

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Exhibit 12: Telecoms noted the smallest outflows YTD (\$0.1bn), while Financials recorded the largest outflows (\$0.4bn)

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

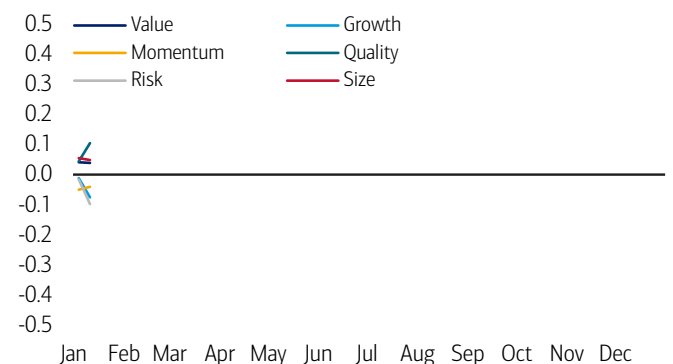


Source: BofA European Equity Quant Strategy, EPFR Global

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Exhibit 14: Quality has seen the largest inflows YTD (\$0.1bn), while Risk has recorded the largest outflows (\$0.1bn)

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

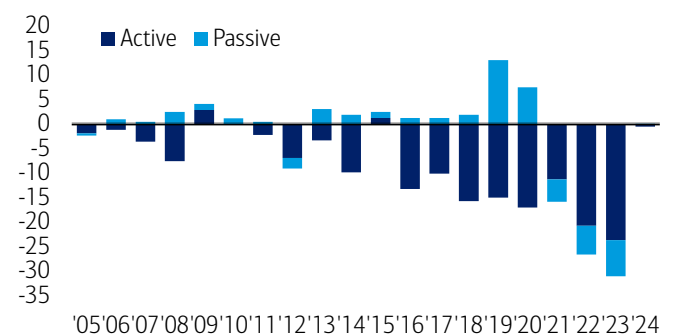


Source: BofA European Equity Quant Strategy, EPFR Global. Note: flows into styles are aggregated from stock level data

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Exhibit 16: YTD, UK-focused equity active funds have seen \$0.5bn of outflows, while passive funds recorded \$0.1bn of inflows

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

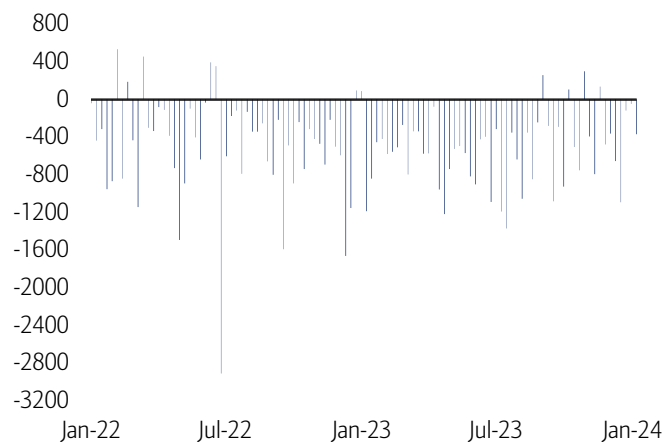


Source: BofA European Equity Quant Strategy, EPFR Global

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Exhibit 17: UK-focused equity funds saw \$0.37bn of outflows last week, the 7th consecutive outflow

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

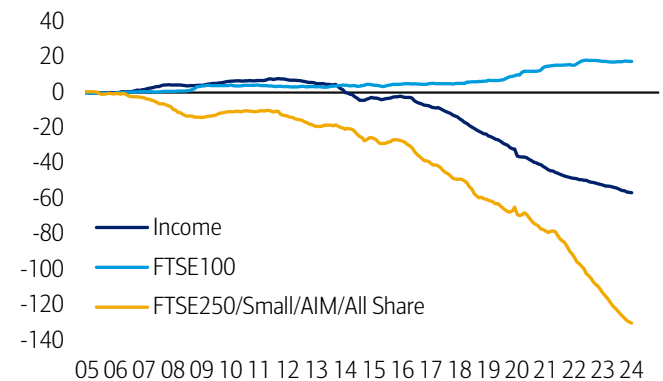


Source: BofA European Equity Quant Strategy, EPFR Global.

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Exhibit 18: Since 2005, UK equity-focused income funds saw \$56bn of outflows, \$18bn of inflows into FTSE100 benchmarked funds and \$130bn of outflows from FTSE250/AIM/All Share/Small caps

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

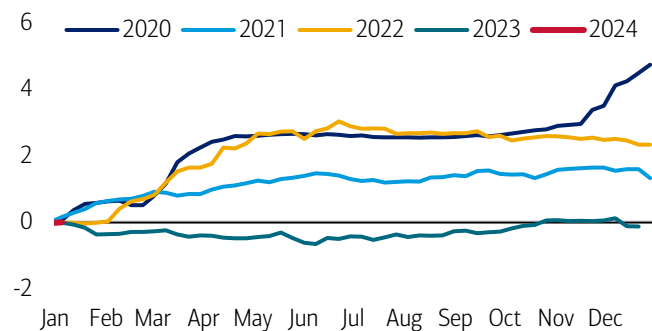


Source: BofA European Equity Quant Strategy, EPFR Global.

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Exhibit 19: UK-focused equity funds benchmarked to FTSE 100 have seen \$0.01bn of outflows YTD

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

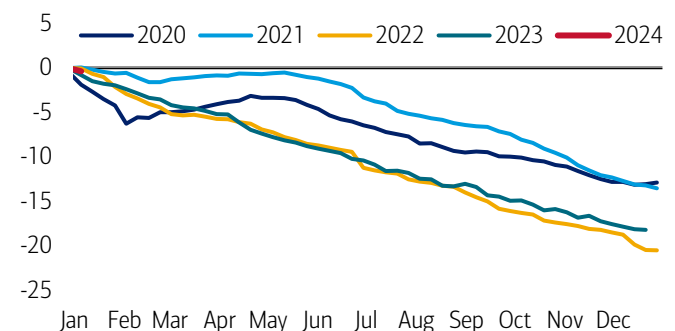


Source: BofA European Equity Quant Strategy, EPFR Global.

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Exhibit 20: UK-focused equity funds benchmarked to FTSE 250/Small/AIM/All Share indices have seen \$0.38bn 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.

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Exhibit 21: International Distributions Services has seen the largest inflows last week as % of mcap, while Lufthansa 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 Ticker | Name | Sector | Country | Flow as % of | |
|------------|--------------------------------------|----------------------|-------------|--------------|---------|
| | | | | mcap | Group |
| IDS LN | International Distributions Services | Industrial Gds & Svs | UK | 0.07 | Active |
| TEL NO | Telenor | Telecommunications | Norway | 0.03 | Active |
| SUBC NO | Subsea7 | Energy | Norway | 0.03 | Active |
| YAR NO | Yara | Chemicals | Norway | 0.03 | Active |
| STB NO | Storebrand | Insurance | Norway | 0.03 | Active |
| SQN SW | Swissquote R | Financial Services | Switzerland | 0.03 | Passive |
| PSPN SW | Psp Swiss Property | Real Estate | Switzerland | 0.03 | Passive |
| VK FP | Vallourec | Energy | France | 0.03 | Passive |
| CMBN SW | Cembra Money Bank | Banks | Switzerland | 0.03 | Passive |
| BKT SM | Bankinter | Banks | Spain | 0.03 | Passive |

Stocks that saw the highest outflows last week

| | | | Flow as % of | | |
|-----------------|-----------------|--------------------|--------------|-------|---------|
| BBG Ticker Name | | Sector | Country | mcap | Group |
| CTEC LN | Convatec | Health Care | UK | -0.10 | Active |
| JMAT LN | Johnson Matthey | Chemicals | UK | -0.05 | Active |
| BEZ LN | Beazley | Insurance | UK | -0.04 | Active |
| CWK LN | Cranswick | Food, Bev, Tobacco | UK | -0.04 | Active |
| DWL LN | Dowlais | Autos & Parts | UK | -0.04 | Active |
| LHA GR | Lufthansa | Travel & Leisure | Germany | -0.20 | Passive |
| ECV GR | Encavis | Utilities | Germany | -0.16 | Passive |
| PUM GR | Puma | Consumer Pds & Svs | Germany | -0.12 | Passive |
| NDA GR | Aurubis | Basic Resources | Germany | -0.12 | Passive |
| DHER GR | Delivery Hero | Consumer Pds & Svs | Germanv | -0.12 | 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.

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Performances

Exhibit 22: The SXXP index typically registers a 1.4% gain in Q1, while the current quarter-to-date return stands at a 1.4% 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

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Exhibit 23: Q1 '24 so far notes stronger gains in Switzerland, Healthcare 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)

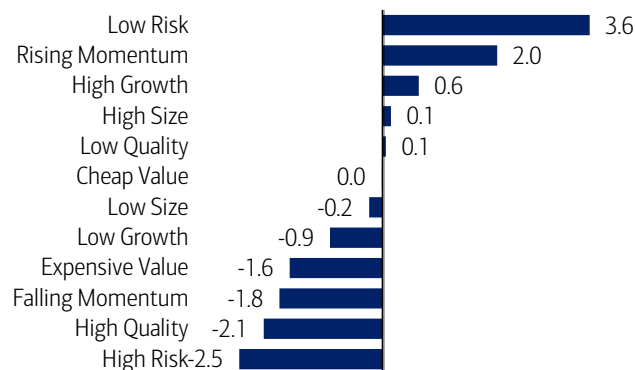
| | QTD (%) | Diff vs historical | YTD (%) | Diff vs historical |
|-------------------|---------|--------------------|---------|--------------------|
| Germany | -0.3 | -0.6 | -0.3 | -0.6 |
| France | -0.8 | -0.8 | -0.8 | -0.8 |
| Italy | 1.5 | -0.3 | 1.5 | -0.3 |
| Netherlands | -1.2 | -1.3 | -1.2 | -1.3 |
| Spain | 1.0 | -0.3 | 1.0 | -0.3 |
| Sweden | -1.9 | -2.4 | -1.9 | -2.4 |
| Switzerland | 1.2 | 1.3 | 1.2 | 1.3 |
| UK | -0.7 | -0.2 | -0.7 | -0.2 |
| Materials | -3.7 | -3.1 | -3.7 | -3.1 |
| Communication Svs | 3.1 | 1.6 | 3.1 | 1.6 |
| Discretionary | -3.2 | -3.5 | -3.2 | -3.5 |
| Staples | 0.7 | 2.7 | 0.7 | 2.7 |
| Energy | -2.3 | -2.0 | -2.3 | -2.0 |
| Financials | -0.2 | -0.8 | -0.2 | -0.8 |
| Healthcare | 4.3 | 4.4 | 4.3 | 4.4 |
| Industrials | 0.2 | -0.1 | 0.2 | -0.1 |
| IT | -1.7 | -3.1 | -1.7 | -3.1 |
| Utilities | 1.4 | 2.0 | 1.4 | 2.0 |
| Real Estate | -2.3 | -0.7 | -2.3 | -0.7 |
| Value | 2.0 | 0.0 | 2.0 | 0.0 |
| Growth | 2.5 | 0.9 | 2.5 | 0.9 |
| Momentum | 4.0 | 2.8 | 4.0 | 2.8 |
| Quality | -2.5 | 0.6 | -2.5 | 0.6 |
| Risk | -5.5 | -9.7 | -5.5 | -9.7 |
| Size | -0.2 | -1.2 | -0.2 | -1.2 |

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

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Exhibit 24: January sees largest gains in Low Risk so far, while High Risk experiences the largest losses

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

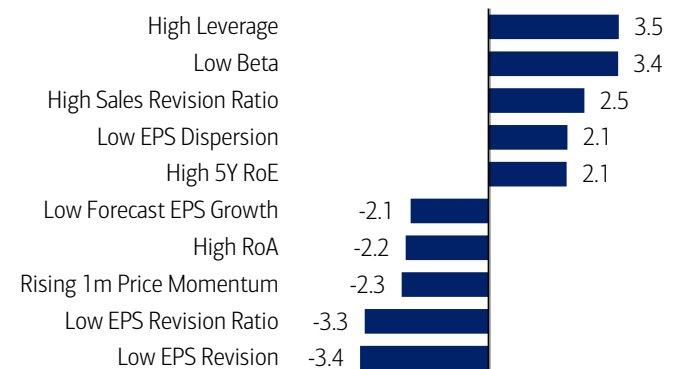


Source: BofA European Equity Quant Strategy, Factset

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Exhibit 25: High Leverage have seen the strongest gains MTD, while Low EPS Revision records the largest losses

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

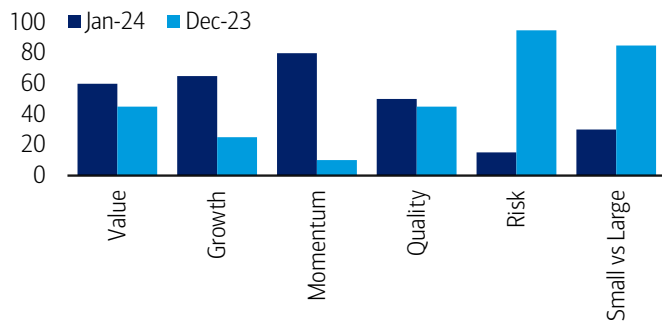


Source: BofA European Equity Quant Strategy, Factset

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Exhibit 26: Momentum has outperformed in 16 out of 20 sectors so far in January

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

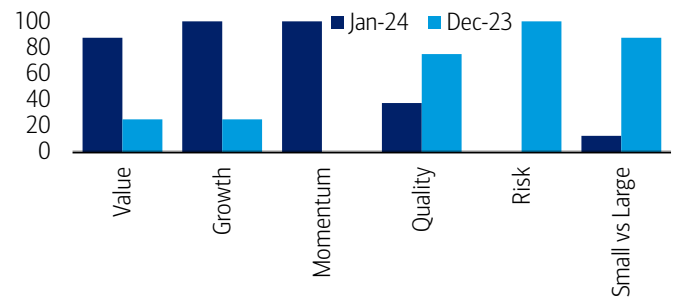


Source: BofA European Equity Quant Strategy, FactSet

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Exhibit 27: 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

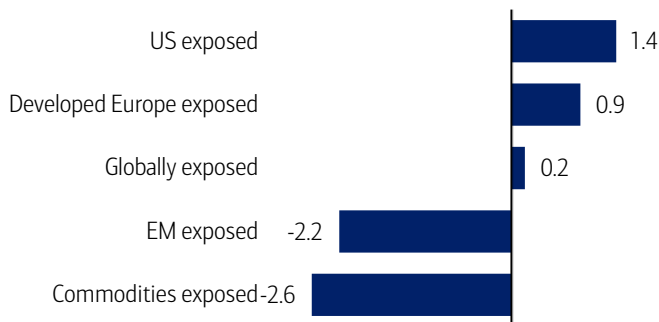


Source: BofA European Equity Quant Strategy, FactSet. Note: * countries included: France, Germany, Italy, Netherlands, Spain, Sweden, Switzerland, UK

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Exhibit 28: US 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)

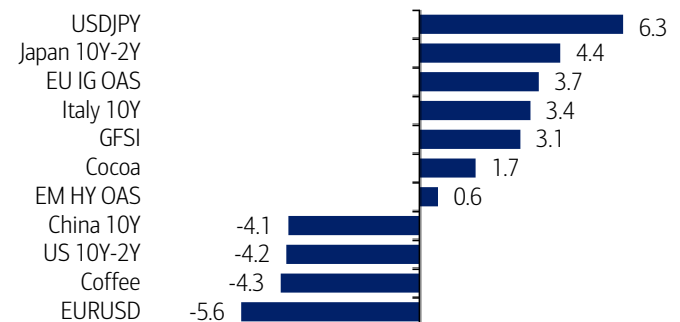


Source: BofA European Equity Quant Strategy, Factset

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Exhibit 29: Stocks sensitive to rising USDJPY 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

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Exhibit 30: 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 | | | | | | |
| 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% | | | | | |

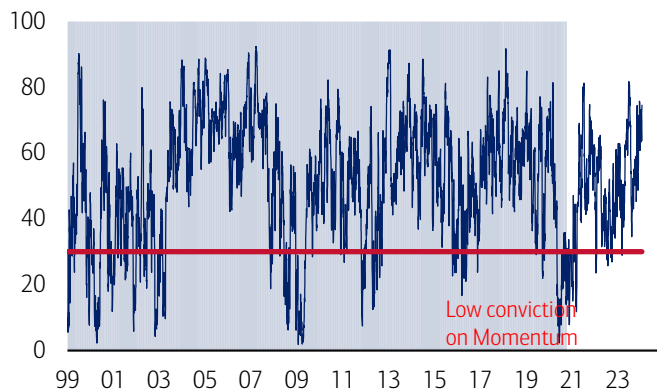
Source: BofA European Equity Quant Strategy, Refinitiv, MSCI. Note: historical average performance calculated over 1993-2023

BofA GLOBAL RESEARCH

European Momentum Conviction Indicator

Exhibit 31: BofA European Momentum Conviction Indicator (MCI) stands at 75, above the threshold of 30 which signals a potential crash in the Momentum style

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

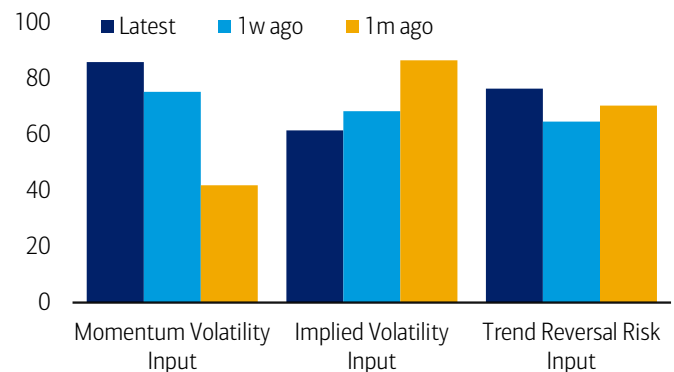


Source: BofA European Equity Quant Strategy, FactSet. Disclaimer: Performance through 06 October 2020 (shaded on the chart above) is backtested and does not represent the actual performance of any account or fund. Backtested performance depicts the theoretical (not actual) performance of a particular 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 32: Increases in Momentum Volatility and Trend Reversal Risk inputs pushed the indicator up by 5 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 33: 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 | -0.1 | 0.1 | 0.3 | 1.8 | 1.9 | 1.9 | 1.8 |
| TTM DY | 3.3 | 0.4 | -0.6 | -0.3 | 0.0 | 3.7 | 3.1 | 3.1 | 3.2 |
| FWD DY | 4.0 | 0.7 | -0.9 | -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 | 11.7 | -0.2 | 0.0 | -0.8 | -0.6 | 12.4 | 11.7 | 12.6 | 12.5 |
| TTM ROE | 13.8 | -0.8 | -1.7 | -1.4 | -2.0 | 12.0 | 13.0 | 11.4 | 10.6 |
| FWD ROE | 14.1 | -0.4 | -0.5 | -1.0 | -1.6 | 13.2 | 14.0 | 12.5 | 12.1 |
| 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 inversed 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 34: Financials currently ranks the most attractive on historical z-score at 6.4%, 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 | 0.9 | 0.1 | -0.4 | 4.7 | 3.9 | 4.0 | 4.2 |
| Discretionary | 3.6 | -0.4 | 1.2 | 0.8 | 0.2 | 4.0 | 3.3 | 3.1 | 3.4 |
| Staples | 4.0 | 0.0 | 1.9 | 1.6 | 0.9 | 4.0 | 3.5 | 3.6 | 3.6 |
| Energy | 5.8 | -0.1 | 1.4 | -0.3 | -0.6 | 6.0 | 5.2 | 6.2 | 6.4 |
| Financials | 6.4 | 0.4 | 1.1 | 0.9 | 1.2 | 5.9 | 5.9 | 5.8 | 5.6 |
| Health Care | 2.9 | -0.9 | 0.8 | -0.6 | -1.1 | 3.8 | 2.8 | 3.0 | 3.3 |
| Industrials | 2.7 | -1.2 | -1.4 | -0.6 | -1.1 | 3.7 | 2.9 | 2.9 | 3.3 |
| Materials | 3.9 | -0.3 | -1.9 | -1.6 | -0.6 | 4.1 | 4.7 | 4.6 | 4.2 |
| Technology | 1.5 | -1.0 | 0.1 | 0.2 | -0.6 | 2.4 | 1.5 | 1.5 | 1.8 |
| Communication Svs | 4.9 | -0.8 | 0.3 | -0.4 | -0.7 | 6.6 | 4.8 | 5.1 | 5.3 |
| Utilities | 5.5 | -0.7 | 0.5 | 0.1 | -0.4 | 6.3 | 5.4 | 5.5 | 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 35: Energy currently ranks the most attractive on historical z-score with a multiple of 6.2x, while Industrials ranks the least attractive at 16.3x

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 | 11.7 | -0.2 | 0.0 | -0.8 | -0.6 | 12.4 | 11.7 | 12.6 | 12.5 |
| Discretionary | 10.7 | -0.5 | -1.2 | -0.9 | -0.6 | 12.7 | 11.7 | 13.3 | 12.2 |
| Staples | 13.9 | -0.1 | -1.5 | -1.9 | -1.1 | 14.3 | 15.5 | 15.5 | 15.7 |
| Energy | 6.2 | -1.1 | 0.7 | -0.7 | -1.2 | 11.1 | 5.8 | 8.5 | 10.2 |
| Financials | 7.9 | -0.6 | -0.5 | -1.1 | -1.3 | 10.0 | 8.2 | 8.8 | 9.2 |
| Health Care | 15.1 | -0.1 | -0.5 | 0.0 | 0.4 | 15.4 | 15.4 | 15.1 | 14.6 |
| Industrials | 16.3 | 0.9 | 1.3 | 0.1 | 0.7 | 13.2 | 15.3 | 16.1 | 14.9 |
| Materials | 12.9 | 0.6 | 1.6 | 0.6 | 0.2 | 11.1 | 10.9 | 11.8 | 12.4 |
| Technology | 20.7 | 0.1 | 0.8 | -0.1 | 0.6 | 20.0 | 19.6 | 21.0 | 18.6 |
| Communication Svs | 12.7 | 0.0 | -0.5 | 0.0 | -0.4 | 21.7 | 13.1 | 12.8 | 13.6 |
| Utilities | 11.8 | -0.1 | -0.9 | -1.5 | -0.8 | 12.0 | 12.7 | 13.2 | 12.7 |
| Real Estate | 13.1 | -0.8 | 0.4 | -0.5 | -0.8 | 14.8 | 12.4 | 14.1 | 14.8 |

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

BoFA GLOBAL RESEARCH

Exhibit 36: 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 | -0.1 | 0.1 | 0.3 | 1.8 | 1.9 | 1.9 | 1.8 |
| Discretionary | 1.8 | -0.7 | -0.9 | -0.8 | -1.2 | 2.3 | 2.0 | 2.1 | 2.2 |
| Staples | 3.0 | -0.9 | -1.0 | -1.2 | -1.3 | 3.5 | 3.2 | 3.3 | 3.5 |
| Energy | 1.2 | -0.9 | -0.9 | 0.2 | 0.1 | 2.0 | 1.3 | 1.2 | 1.2 |
| Financials | 1.0 | -0.7 | 1.0 | 1.2 | 0.6 | 1.4 | 0.9 | 0.9 | 0.9 |
| Health Care | 3.9 | -0.5 | 0.3 | 0.0 | -0.1 | 4.7 | 3.8 | 3.9 | 4.0 |
| Industrials | 3.3 | 1.0 | 0.1 | -0.2 | 0.3 | 2.7 | 3.3 | 3.4 | 3.2 |
| Materials | 1.6 | -0.7 | -0.8 | -0.9 | -1.0 | 1.9 | 1.8 | 1.9 | 1.9 |
| Technology | 4.7 | 0.1 | -0.1 | -0.1 | 0.6 | 4.5 | 4.8 | 4.8 | 4.1 |
| Communication Svs | 1.3 | -0.5 | -0.6 | -1.0 | -1.3 | 2.0 | 1.4 | 1.5 | 1.6 |
| Utilities | 1.7 | -0.5 | -0.8 | -1.0 | -0.1 | 1.9 | 1.8 | 1.8 | 1.7 |
| Real Estate | 0.7 | -1.0 | 0.2 | -0.7 | -1.0 | 0.9 | 0.7 | 0.8 | 0.9 |

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

BoFA GLOBAL RESEARCH

Exhibit 37: 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 |

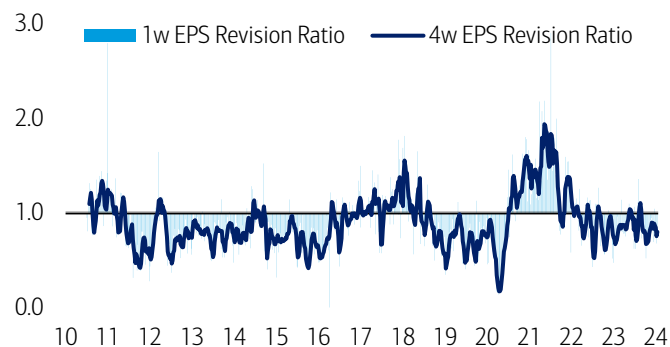
Source: BofA European Equity Quant Strategy, Refinitiv Datastream, IBES Consensus Estimates

BofA GLOBAL RESEARCH

Revisions

Exhibit 38: Global 4-week EPS Revision Ratio stands at 0.80, up from last week

Ratio of BofA analysts' EPS upgrades to downgrades

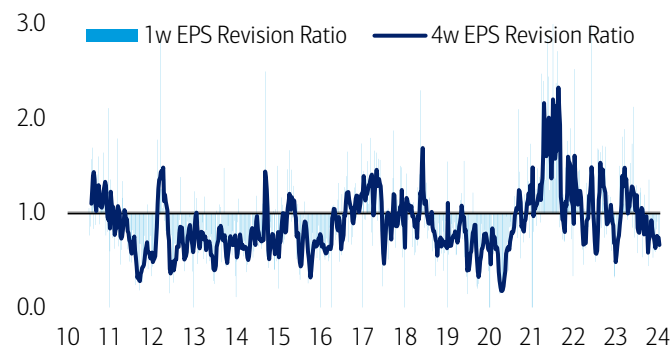


Source: BofA European Equity Quant Strategy, IQDatabase

BofA GLOBAL RESEARCH

Exhibit 39: European 4-week EPS Revision Ratio stands at 0.66, down from last week

Ratio of BofA analysts' EPS upgrades to downgrades

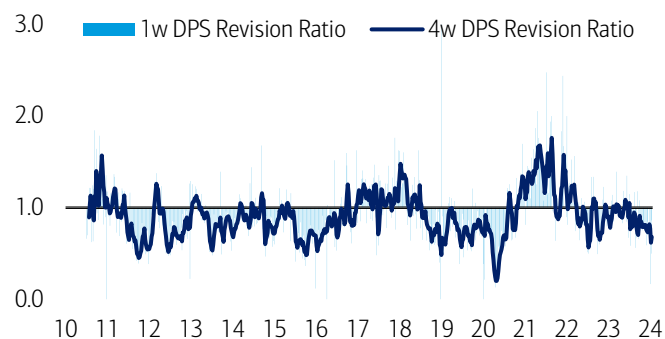


Source: BofA European Equity Quant Strategy, IQDatabase

BofA GLOBAL RESEARCH

Exhibit 40: Global 4-week DPS Revision Ratio stands at 0.68, up from last week

Ratio of BofA analysts' DPS upgrades to downgrades

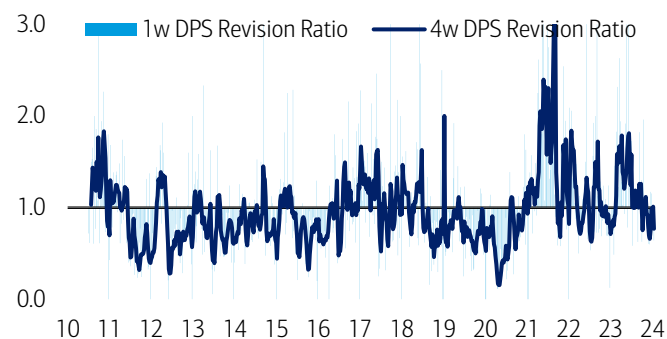


Source: BofA European Equity Quant Strategy, IQDatabase

BofA GLOBAL RESEARCH

Exhibit 41: European 4-week DPS Revision Ratio stands at 0.77, down from last week

Ratio of BofA analysts' DPS upgrades to downgrades

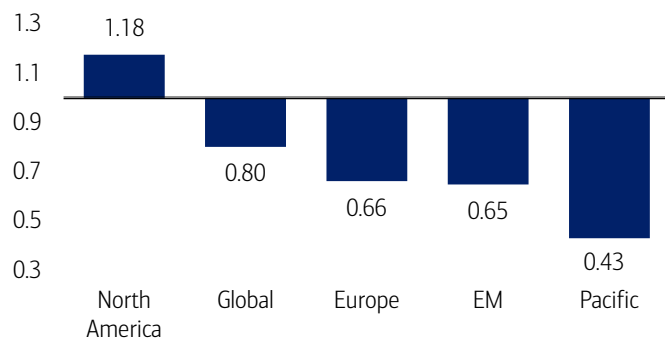


Source: BofA European Equity Quant Strategy, IQDatabase

BofA GLOBAL RESEARCH

Exhibit 42: 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

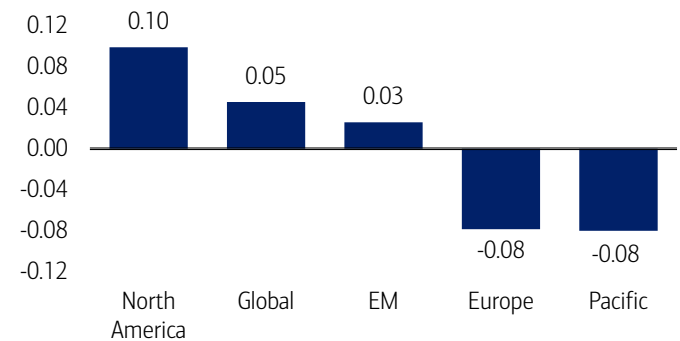


Source: BofA European Equity Quant Strategy, IQDatabase

BofA GLOBAL RESEARCH

Exhibit 43: Over the past week, the 4-week EPS Revision Ratio improved the most in North America, while it deteriorated the most in Pacific

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

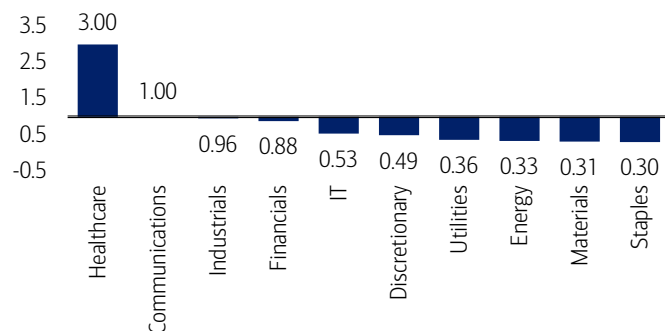


Source: BofA European Equity Quant Strategy, IQDatabase

BofA GLOBAL RESEARCH

Exhibit 44: Currently, the 4-week EPS Revision Ratio is the strongest in Healthcare, while it is the weakest in Staples

BofA 4w European EPS Revision Ratio by sector

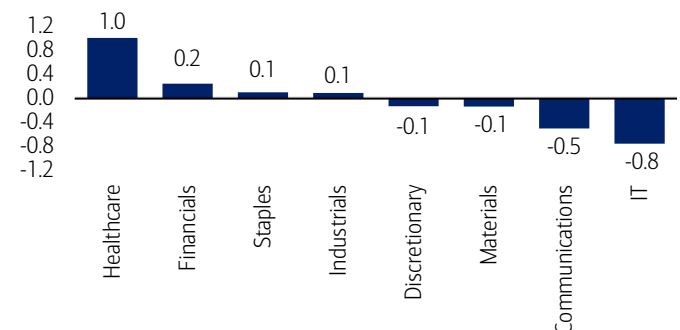


Source: BofA European Equity Quant Strategy, IQDatabase

BofA GLOBAL RESEARCH

Exhibit 45: Over the past week, 4-week EPS Revision Ratio improved the most in Healthcare, while it deteriorated the most in IT

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

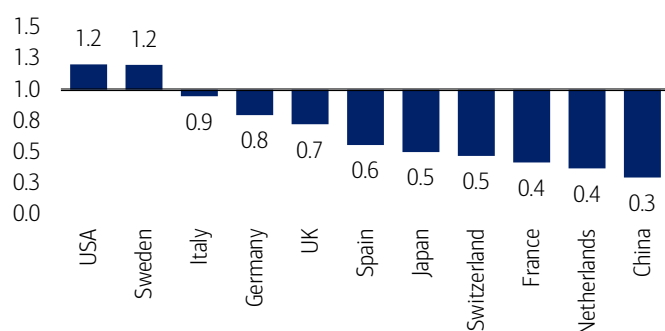


Source: BofA European Equity Quant Strategy, IQDatabase

BofA GLOBAL RESEARCH

Exhibit 46: 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

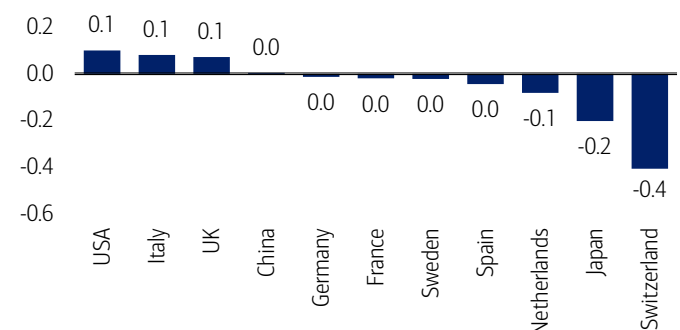


Source: BofA European Equity Quant Strategy, IQDatabase

BofA GLOBAL RESEARCH

Exhibit 47: Over the past week, the 4-week EPS Revision Ratio improved the most in USA, while it deteriorated the most in Switzerland

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

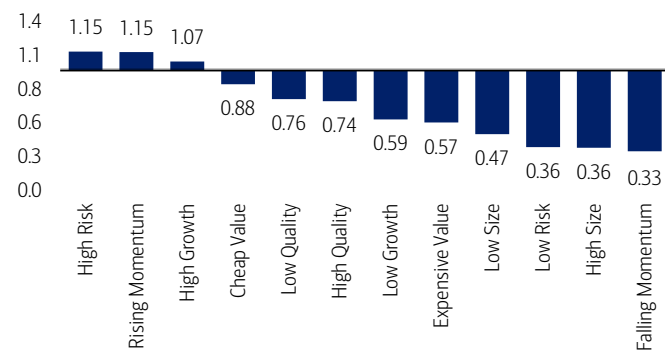


Source: BofA European Equity Quant Strategy, IQDatabase

BofA GLOBAL RESEARCH

Exhibit 48: Currently, the 4-week EPS Revision Ratio is the strongest in High Risk, while it is the weakest in Falling Momentum

BofA 4w European EPS Revision Ratio by style

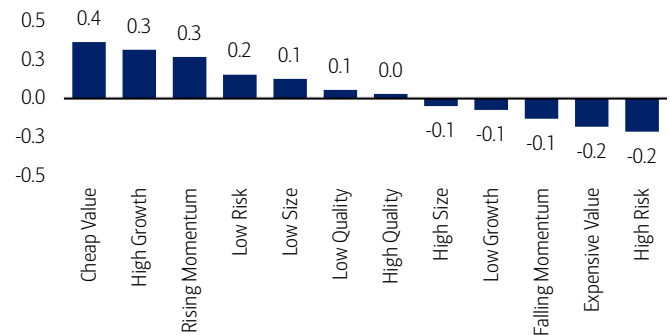


Source: BofA European Equity Quant Strategy, IQDatabase

BofA GLOBAL RESEARCH

Exhibit 49: Over the past week, 4-week EPS Revision Ratio improved the most in Cheap Value, 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 50: 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 Chg | FY2 Chg | FY3 Chg | ChgDate |
|------------|-----------|---------|-------------|---------------|---------|---------|---------|------------|
| EZJ LN | easyjet | UK | Industrials | 4.4 | 14% | 2% | 0% | 11/01/2024 |
| IBE SM | Iberdrola | Spain | Utilities | 75.2 | 9% | -3% | -1% | 12/01/2024 |
| WISE LN | Wise | UK | Financials | 10.4 | 7% | 11% | 13% | 08/01/2024 |
| IAG LN | IAG | UK | Industrials | 8.3 | 5% | 14% | 15% | 11/01/2024 |
| ORSTED DC | Orsted | Denmark | Utilities | 22.3 | 5% | -12% | -10% | 12/01/2024 |

Source: IQDatabase

Bottom 5 stocks with the highest downgrade in FY1 EPS

| BBG Ticker | Name | Country | Sector | MCap (EUR bn) | FY1 Chg | FY2 Chg | FY3 Chg | ChgDate |
|------------|----------|---------|-----------|---------------|---------|---------|---------|------------|
| SINCH SS | Sinch | Sweden | IT | 2.1 | -921% | -42% | -30% | 08/01/2024 |
| FXPO LN | Ferrexpo | UK | Materials | 0.5 | -170% | 0% | -1% | 12/01/2024 |
| OMV AV | OMV | Austria | Energy | 12.7 | -40% | -39% | -7% | 08/01/2024 |
| BRBY LN | Burberry | UK | Discret | 5.1 | -14% | -13% | -16% | 12/01/2024 |
| VER AV | Verbund | Austria | Utilities | 28.1 | -13% | -34% | -29% | 12/01/2024 |

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 51: 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 | EMCI | 1W Forward Momentum | Date | Momentum | Implied | Trend | EMCI | 4W Forward Momentum | Date | Momentum | Implied | Trend | EMCI | 8W Forward Momentum |
| | Volatility | Volatility | Reversal | | Returns | | Volatility | Volatility | Reversal | | Returns | | Volatility | Volatility | Reversal | | 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 51: 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.

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

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

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