

## European Snapshot

## Who has high labour costs?

Quantitative Strategy

**Screen of the Week: companies with high labour costs**

Based on consensus estimates, the expected ratio of salaries and benefits to total sales for European companies in 2022 is close to the historical high of 19%. We have seen 34 companies announcing job cuts already this year, mainly from Discretionary/Financials sectors and mostly in the UK/Germany. Our Screen of the Week focuses on European companies with a high share of labour costs (Exhibit 3).

**Momentum Conviction Indicator signals momentum crash**

Our European Momentum Conviction Indicator has declined to 28 (Exhibit 4), below the level at which historically there has been higher likelihood of at least 10% correction in the 12m price momentum long-short (l/s) performance over the next 4-8 weeks. The top 12-month price momentum stocks have a high concentration of Banks (with 17 companies announced buybacks or new/increased dividends year-to-date), while the bottom 12m price momentum stocks are sector-diverse with defensive tilt and saw 2 dividend cuts (Exhibit 10). When analysing the sensitivities of the top and bottom screens to various macro factors, the difference in sensitivities to the European 10-year bond yield and the Global Inflation Surprise index is the most extreme, indicating any news negatively impacting these two is likely to cause the recent positive performance of 12 price momentum l/s to reverse.

**2<sup>nd</sup> consecutive outflow from European equities**

Europe-focused equity funds recorded an outflow of \$0.17bn last week – a second consecutive and 3<sup>rd</sup> outflow in past 4 weeks, with a net -16.8% of funds seeing net inflows. Active funds saw outflows of \$1.27bn and passive funds saw inflows of \$1.1bn. Europe-focused funds had \$5.18bn of inflows YTD: \$9.15bn of outflows from active funds and \$14.3bn of inflows into passive funds. Size stocks (\$0.6bn), Energy (\$0.2bn) and Germany (\$0.1bn) recorded the largest inflows last week, while the Switzerland (\$0.5bn), Healthcare (\$0.1bn) and Risk stocks (\$0.1bn) saw the largest outflows.

**BofA EPS Revision Ratios: largest decline in Europe**

The Global BofA four-week EPS Revision Ratio (ERR) decreased to 0.84, led by declines in the European and North America ratios. The European BofA four-week ERR dropped to 1.28 (the only region in net upgrade territory, but recorded biggest 1 week drop among regions). Ratios for Real Estate, Switzerland and Low Risk increased the most over the past week, while those for IT, Germany and High Size declined the most.

09 March 2023

Quant Strategy  
Europe

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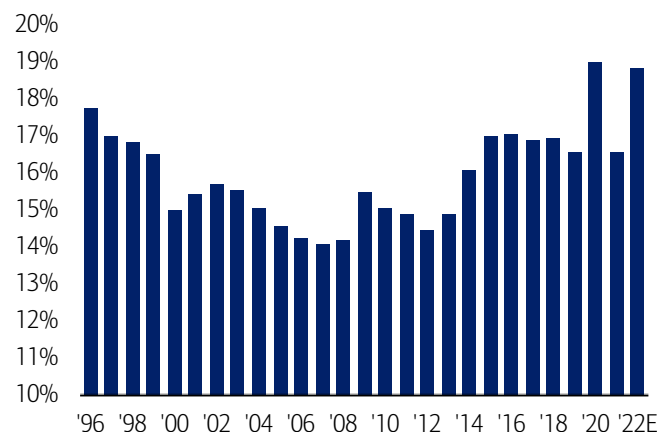
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Timestamp: 09 March 2023 12:30AM EST

# Screen of the week

## Exhibit 1: 2022 expected ratio of salaries & benefits to total sales for European companies is close to historical highs (19%)

Europe Stoxx 600: salaries & benefits as % of sales



Source: BofA European Equity Quant Strategy, Factset

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## Exhibit 2: Most of the announced job cuts so far this year are in Discretionary/Financials and in the UK/Germany

34 companies from Europe Stoxx 600 have announced job cuts so far this year

Ticker	Name	Date	Ticker	Name	Date
HL/ LN	Hargreaves Lansdown	09/01/2023	CSGN SW	Credit Suisse	08/02/2023
NOVN SW	Novartis	12/01/2023	THULE SS	Thule	10/02/2023
STERV FH	Stora Enso Harbour	13/01/2023	WRTV FH	Wartsila	14/02/2023
HBR LN	Energy	18/01/2023	GRF SM	Grifols	16/02/2023
KESKOB FH	Kesko	18/01/2023	ZAL GR	Zalando	22/02/2023
TEL NO	Telenor	24/01/2023	SALM NO	SalMar	23/02/2023
TELIA SS	Telia	26/01/2023	SAP GR	SAP	24/02/2023
KNEBV FH	Kone	26/01/2023	ELE SM	Endesa	24/02/2023
PRX NA	Prosus	26/01/2023	BAS GR	BASF	24/02/2023
DHER GR	Delivery Hero	30/01/2023	ERICB SS	LM Ericsson	24/02/2023
PHIA NA	Philips	31/01/2023	STLAM IM	Stellantis	28/02/2023
TSCO LN	Tesco	31/01/2023	PGHN SW	Partners	01/03/2023
SAN FP	Sanofi	31/01/2023	SBRV LN	Sainsbury	01/03/2023
VOD LN	Vodafone	01/02/2023	TW/ LN	Taylor Wimpey	02/03/2023
UPM FH	Kymmene	02/02/2023	NOVOB DC	Novo Nordisk	02/03/2023
DBK GR	Deutsche Bank	06/02/2023	VTY LN	Vistry	03/03/2023
BNP FP	BNP Paribas	07/02/2023	ABDN LN	Abrdn	06/03/2023

Source: BofA European Equity Quant Strategy, Factset, Bloomberg; Note: Bolded are companies which announced buyback or new/increased dividends.

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## Exhibit 3: European companies with high labour costs

European companies which a) are part of Europe Stoxx 600, b) have salary & benefit expenses that make at least 40% of sales and at least 40% of total costs, and c) have not yet announced job cuts

BBG ticker	Name	Sector	Country	Mcap (EUR bn)	2022 Salaries & Benefits expenses (EUR)	2022 Sales (EUR)	2022 Total costs (EUR)	Salaries & Benefits as % of sales	Salaries & Benefits as % of total costs
RAND NA	Randstad	Industrial Goods and Services	Netherlands	7.6	24483	27568	26287	89	93
CAP FP	Capgemini	Technology	France	31.2	14969	21995	19556	68	77
SWECB SS	SWECO	Construction and Materials	Sweden	2.3	1512.541	2284.372	2082.871	66	73
ISS DC	ISS	Industrial Goods and Services	Denmark	3.1	6512.737	10288.16	9959.2675	63	65
UCG IM	UniCredit	Banks	Italy	38.3	5918	9539	13252	62	45
SOP FP	Sopra Steria	Technology	France	3.1	3150.5	5101.2	4717.9	62	67
BAER SW	Julius Baer	Financial Services	Switzerland	13.4	1679.703	2807.475	3421.1376	60	49
ARCAD NA	Arcadis	Construction and Materials	Netherlands	3.0	2363.129	4028.935	3833.236	59	62
PUB FP	Publicis	Media	France	18.4	8129	14196	12164	57	67
WPP LN	WPP	Media	United Kingdom	12.5	9570.615	16910.96	15338.3973	57	62
NETC DC	Netcompany	Technology	Denmark	1.5	410.7961	745.306	642.5565	55	64
BVI FP	Bureau Veritas	Industrial Goods and Services	France	7.9	2929.4	5650.6	4895.5	52	60
UBSG SW	UBS	Financial Services	Switzerland	65.3	16822.48	32886.62	31317.9777	51	54
SWFP	Sodexo	Travel and Leisure	France	7.3	10395	21125	20193	49	51
SGE LN	Sage	Technology	United Kingdom	8.8	1119.506	2299.175	1940.7075	49	58
CPG LN	Compass	Consumer Products and Services	United Kingdom	38.7	14348.31	30095.72	28293.7208	48	51
SIM DC	SimCorp	Technology	Denmark	2.8	263.022	560.968	432.82	47	61
ALKB DC	ALK-Abello	Health Care	Denmark	1.9	261.9827	606.3643	546.0116	43	48
AMBUB DC	Ambu	Health Care	Denmark	2.6	254.8648	597.3731	554.7633	43	46
DEMANT DC	Demant	Health Care	Denmark	2.8	1116.35	2621.574	2253.4067	43	50
FME GR	Fresenius Medical Care	Health Care	Germany	7.3	7939.397	19395.32	18159.472	41	44
SCHP SW	Schindler	Industrial Goods and Services	Switzerland	8.8	4550.939	11303.62	10321.2733	40	44

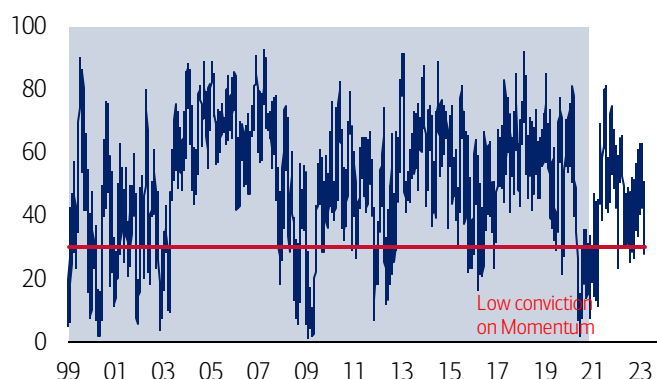
Source: BofA European Equity Quant Strategy, Factset, Bloomberg. Disclaimer: The screen above is intended to be an indicative metric only and may not be used for reference purposes or as a measure of performance for any financial instrument or contract, or otherwise relied upon by third parties for any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

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# European Momentum Conviction Indicator

## Exhibit 4: BofA European Momentum Conviction Indicator (MCI) stands at 28, below the threshold of 30 which signals a potential crash in the Momentum style

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

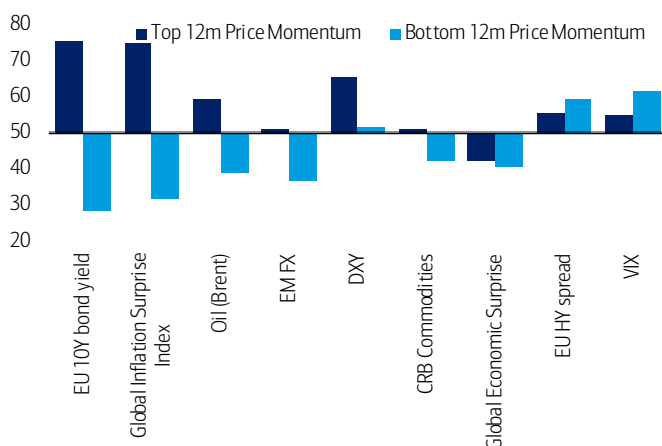


**Source:** BofA European Equity Quant Strategy, FactSet. Disclaimer: Performance through 06 October 2020 (shaded on the chart above) is backtested and does not represent the actual performance of any account or fund. Backtested performance depicts the theoretical (not actual) performance of a particular 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

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## Exhibit 6: The 12m Price Momentum L/S basket is sensitive the most to European bond yield and global inflation surprise index

Market cap weighted average x-asset and macro factors ranks (100=outperform when factor is rising, 1=outperform when factor is falling)

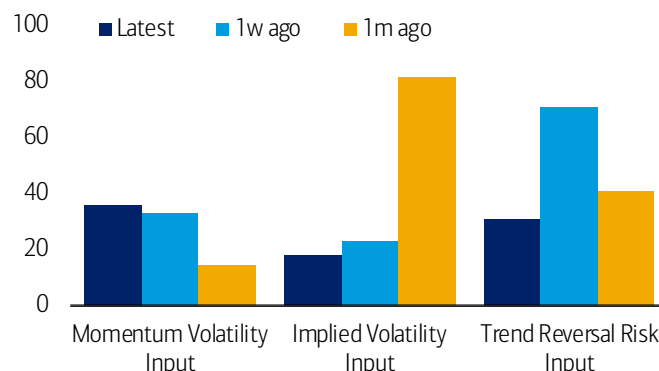


**Source:** BofA European Equity Quant Strategy, FactSet. Note: The exposure are market cap weighted average factor ranks aggregated from the stock level, 100 indicates the highest positive exposure to the factor rising, 50 is equal to market cap weighted average, while 1 indicates the highest negative exposure to the factor rising.

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## Exhibit 5: Declines in Implied Volatility and Trend Reversal Risk inputs pushed the overall indicator down over the week

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

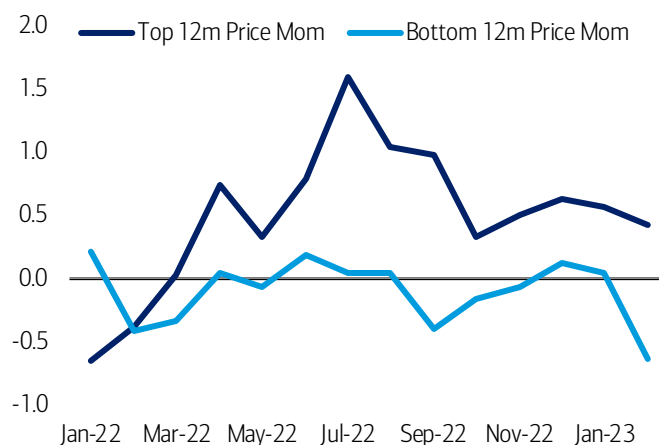


**Source:** BofA European Equity Quant Strategy, FactSet. For definitions of the inputs please see European Momentum Conviction Indicator section.

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## Exhibit 7: 50 largest European funds remain overweight top 12m Price Momentum stocks and have turned underweight on the bottom 12m Price Momentum stocks

Relative weight of 50 largest European-domiciled funds vs all funds' holdings (%) in the largest 250 European stocks

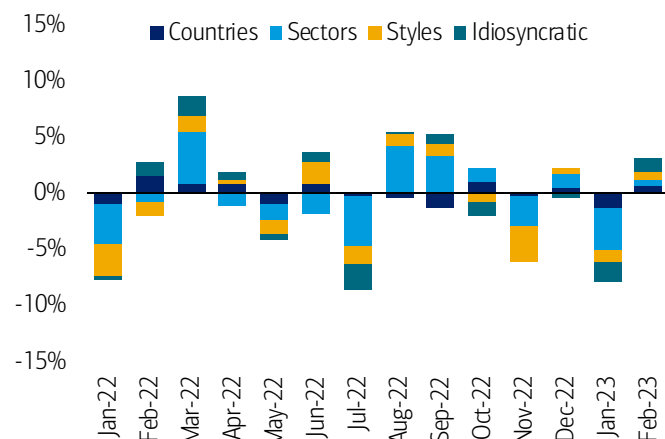


**Source:** BofA European Equity Quant Strategy; Factset Ownership

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### Exhibit 8: In February, idiosyncratic returns contributed the largest share of the overall return in the performance of top vs bottom 12 price momentum factor

Performance attribution to performance of top 12m price momentum vs bottom 12m price momentum since 2022

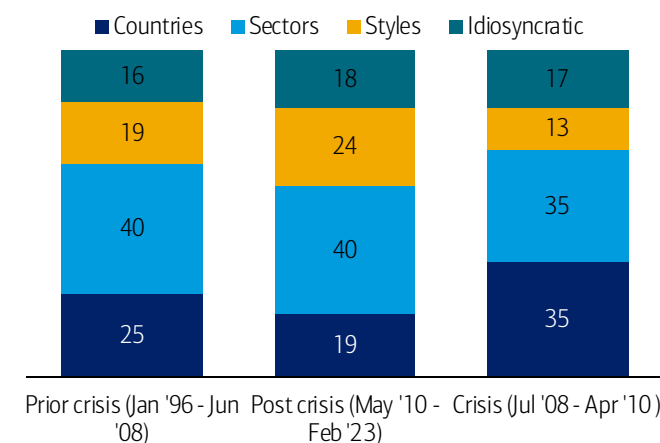


Source: BofA European Equity Quant Strategy, Factset. Note: Performance is equally weighted average of price stocks returns in EUR

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### Exhibit 9: Since the Global Financial Crisis (GFC), importance of styles has increased the most, while declined the most for countries for 12m price momentum l/s performance

% of months when the biggest contributor to performance of top 12m price momentum vs bottom 12m price momentum is country /sector /style /selection



Source: BofA European Equity Quant Strategy, Factset

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### Exhibit 10: The best performing stocks over the past 12m are dominated by Banks names, while the worst performing ones are mainly from Materials and Healthcare sectors

Top and bottom 25 European stocks which show the largest/lowest 12m price return in local currency as of 28<sup>th</sup> February '23 within the largest 250 European companies

Top 12m price momentum stocks						Bottom 12m price momentum stocks					
BBG Ticker	Name	Sector	Country	12m Price Momentum (%loc)	Price (as of 28 <sup>th</sup> Feb 23)	BBG Ticker	Name	Sector	Country	12m Price Momentum (%loc)	Price (as of 28 <sup>th</sup> Feb 23)
RHM GR	Rheinmetall	Industrials	Germany	80.1	240.6	CSGN SW	Credit Suisse	Financials	Switzerland	-61.2	2.9
BIRG ID	Bank of Ireland	Financials	Ireland	76.5	10.4	VNA GR	Vonovia	Real Estate	Germany	-49.8	23.9
UCG IM	UniCredit	Financials	Italy	69.9	19.3	PHIA NA	Philips	Health Care	Netherlands	-49.1	15.5
CBK GR	Commerzbank	Financials	Germany	53.0	11.5	PAH3 GR	Porsche	Discretionary	Germany	-40.8	53.8
BP/ LN	BP	Energy	UK	51.4	5.5	ZAL GR	Zalando	Discretionary	Germany	-36.9	37.6
RNO FP	Renault	Discretionary	France	48.8	42.5	SGRO LN	SEGRO	Real Estate	UK	-36.7	8.2
STAN LN	Standard Chartered	Financials	UK	47.2	7.8	SOON SW	Sonova	Health Care	Switzerland	-35.2	231.2
NOVOB DC	Novo Nordisk	Health Care	Denmark	46.0	996.2	ERICB SS	LM Ericsson	Technology	Sweden	-33.9	58.1
DANSKE DC	Danske Bank	Financials	Denmark	45.0	163.5	ADS GR	adidas	Discretionary	Germany	-33.2	141.7
RR/ LN	Rolls-Royce	Industrials	UK	40.0	1.4	DSM NA	DSM	Materials	Netherlands	-30.2	116.7
BBVA SM	BBVA	Financials	Spain	39.4	7.4	KSP ID	Kingspan	Industrials	Ireland	-29.1	61.6
SWEDA SS	Swedbank	Financials	Sweden	39.3	213.8	ORSTED DC	Orsted	Utilities	Denmark	-28.6	615.2
RMS FP	Hermes	Discretionary	France	38.1	1715.5	PGHN SW	Partners	Financials	Switzerland	-28.3	893.6
CABK SM	CaixaBank	Financials	Spain	37.8	4.1	ADYEN NA	Adyen	Technology	Netherlands	-27.8	1345.2
ARGX BB	argenx	Health Care	Belgium	33.6	342.2	ERF FP	Eurofins Scientific	Health Care	France	-27.1	66.0
DTE GR	Deutsche Telekom	Communication Svs	Germany	32.5	21.2	GIVN SW	Givaudan	Materials	Switzerland	-26.2	2841.0
HOLN SW	Holcim	Materials	Switzerland	32.2	58.1	TEP FP	Teleperformance	Industrials	France	-25.9	246.0
MUV2 GR	Munich Re	Financials	Germany	31.9	326.1	LOGN SW	Logitech	Technology	Switzerland	-25.3	51.5
EDEN FP	Edenred	Technology	France	30.4	53.3	BT/A LN	BT Group	Communication Svs	UK	-25.2	1.4
NESTE FH	Neste	Energy	Finland	29.9	45.7	AAL LN	Anglo American	Materials	UK	-24.5	28.8
REP SM	Repsol	Energy	Spain	29.1	15.0	VOD LN	Vodafone	Communication Svs	UK	-24.1	1.0
HO FP	Thales	Industrials	France	28.5	132.2	ROG SW	Rochie	Health Care	Switzerland	-22.3	271.8
TTE FP	TotalEnergies	Energy	France	28.5	58.6	NZYM DC	Novozymes	Materials	Denmark	-22.1	339.2
SHEL LN	Shell	Energy	UK	28.1	25.3	MAERSKB	A.P. Moller - Maersk	Industrials	Denmark	-21.9	16410.0
NIBEB SS	NIBE Industrier	Industrials	Sweden	27.6	108.4	DC	Smurfit Kappa	Materials	Ireland	-20.7	35.4

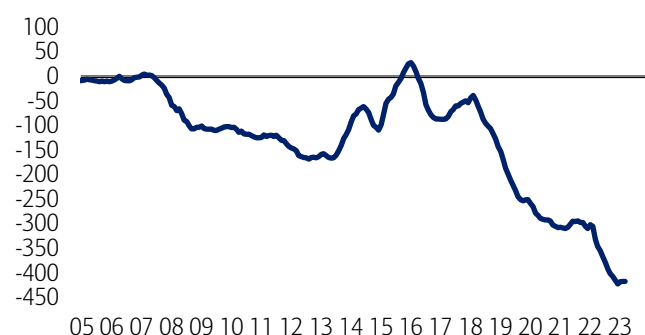
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# Flows

## Exhibit 11: Europe-focused equity funds have seen \$408bn of outflows since 2005, (active funds: \$-542bn, passive funds: \$134bn)

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

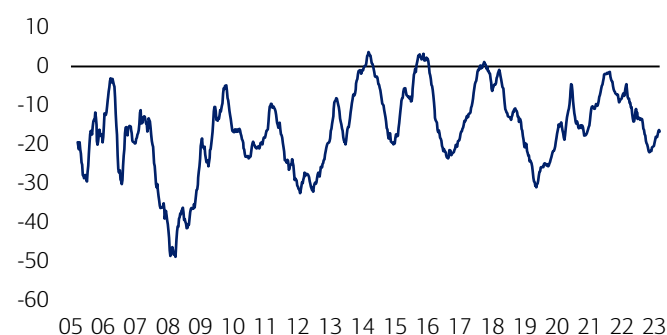


Source: BofA European Equity Quant Strategy, EPFR Global

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## Exhibit 12: A net -16.8% of Europe-focused funds saw inflows last week, first decline in 4 weeks

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

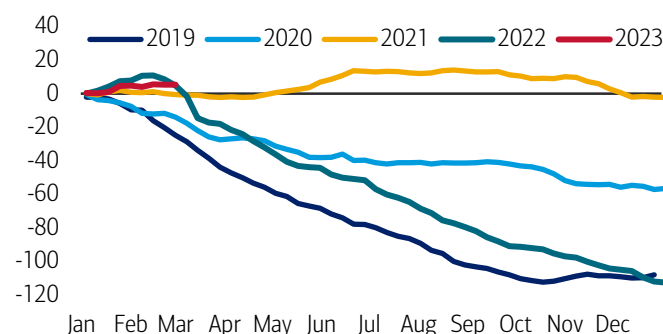


Source: BofA European Equity Quant Strategy, EPFR Global. Note: Net % calculated as % of funds that saw inflows minus % of funds that saw outflows

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## Exhibit 13: Europe-focused equity funds have seen \$5.18bn of inflows YTD, with \$3.3bn of outflows from European-domiciled funds and \$9.2bn of inflows into US-domiciled funds

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

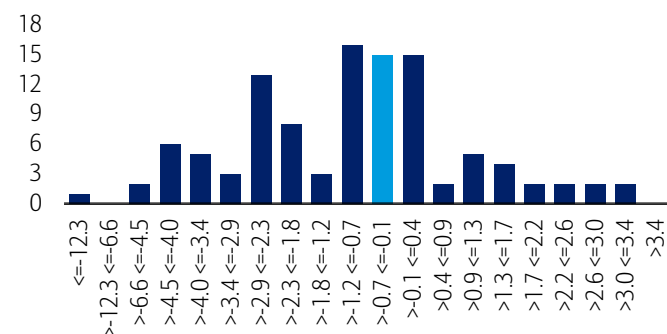


Source: BofA European Equity Quant Strategy, EPFR Global

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## Exhibit 14: Europe-focused equity funds saw \$0.17bn of outflows last week, 2<sup>nd</sup> consecutive outflow

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

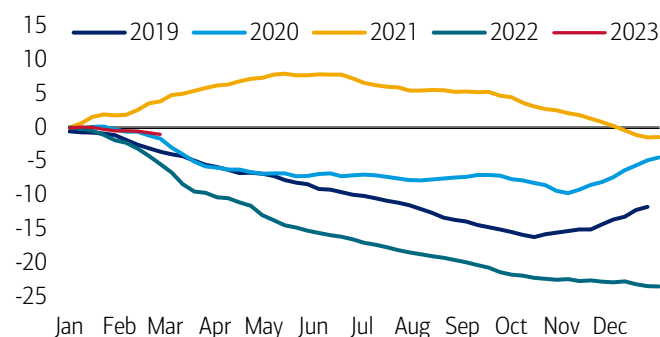


Source: BofA European Equity Quant Strategy, EPFR Global

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## Exhibit 15: SMID focused European equity funds have seen \$1.02bn of outflows YTD

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

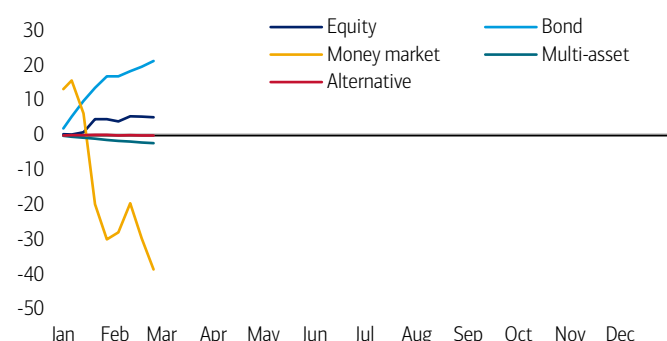


Source: BofA European Equity Quant Strategy, EPFR Global

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## Exhibit 16: Money market funds have seen the largest outflows YTD (\$38.5bn) while bond funds have seen the largest inflows YTD (\$21.3bn)

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

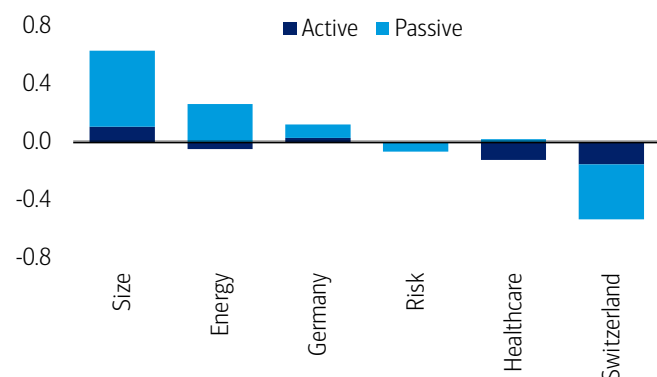


Source: BofA European Equity Quant Strategy, EPFR Global

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### Exhibit 17: Size stocks recorded the largest inflows (\$0.6bn) and Switzerland saw the largest outflows (\$0.5bn) 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)

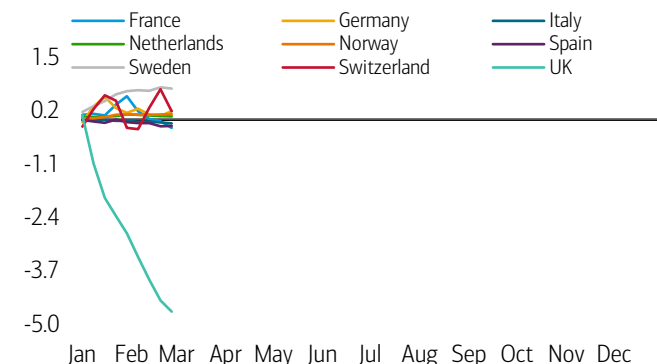


Source: BofA European Equity Quant Strategy, EPFR Global. Note: flows into styles are aggregated from stock level data

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### Exhibit 19: Sweden note the largest inflows YTD (\$0.8bn), while the UK has recorded the largest outflows (\$4.7bn)

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

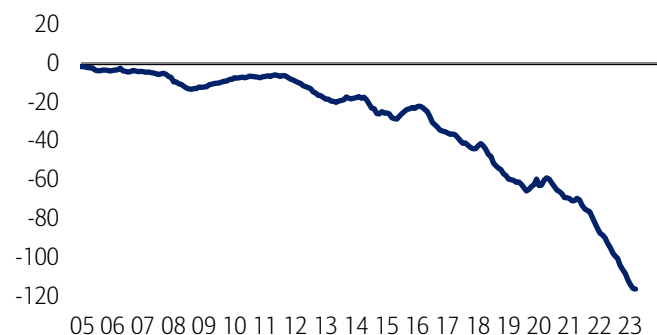


Source: BofA European Equity Quant Strategy, EPFR Global.

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### Exhibit 21: UK-focused equity funds have seen \$115bn of outflows since 2005 (active funds: \$-139bn, passive funds: \$25bn)

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

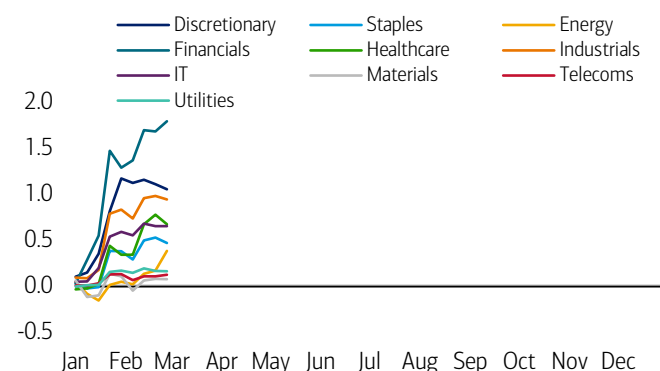


Source: BofA European Equity Quant Strategy, EPFR Global

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### Exhibit 18: Financials note the largest inflows YTD (\$1.8bn), while Materials recorded smallest inflows (\$0.1bn) YTD

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

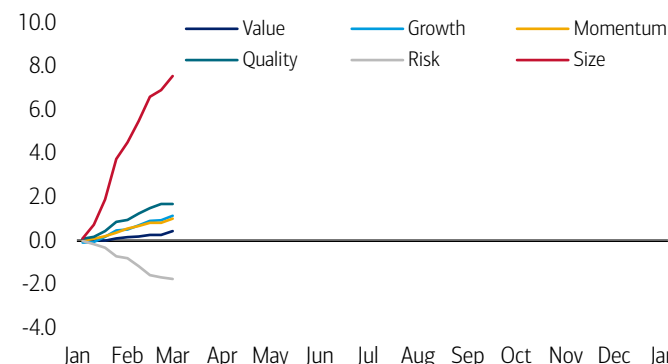


Source: BofA European Equity Quant Strategy, EPFR Global

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### Exhibit 20: Size has seen the largest inflows YTD (\$7.5bn), while Risk has recorded the largest outflows (\$1.7bn)

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

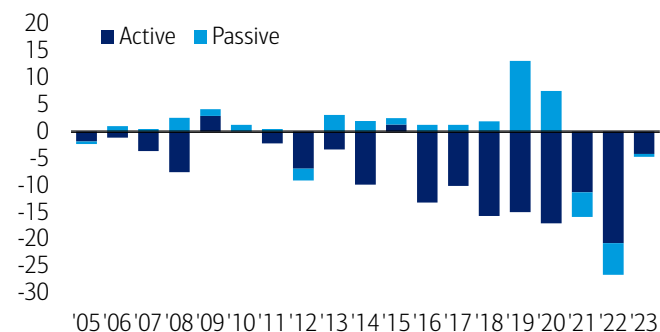


Source: BofA European Equity Quant Strategy, EPFR Global. Note: flows into styles are aggregated from stock level data

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### Exhibit 22: YTD UK-focused equity active funds have seen \$4.2bn of outflows, while passive funds recorded \$0.5bn of outflows

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

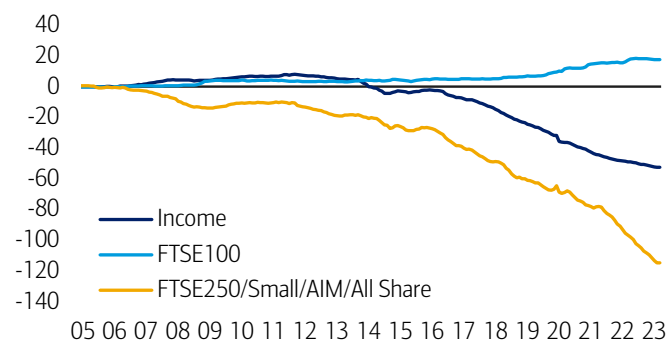


Source: BofA European Equity Quant Strategy, EPFR Global

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**Exhibit 23: Since 2005, UK equity-focused income funds saw \$52bn outflows, \$18bn inflows into FTSE100 benchmarked funds and \$115bn outflows from FTSE250/AIM/All Share/Small caps**

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

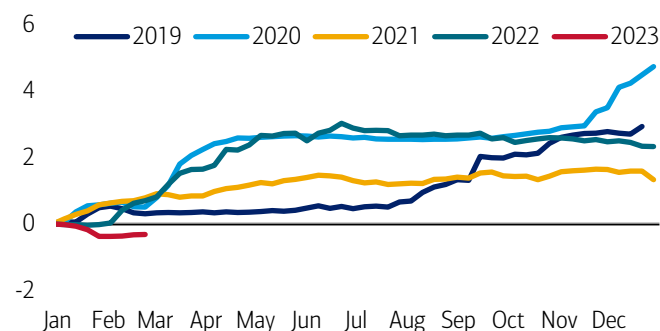


Source: BofA European Equity Quant Strategy, EPFR Global

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**Exhibit 25: UK-focused equity funds benchmarked to FTSE 100 have seen \$0.32bn of outflows YTD**

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

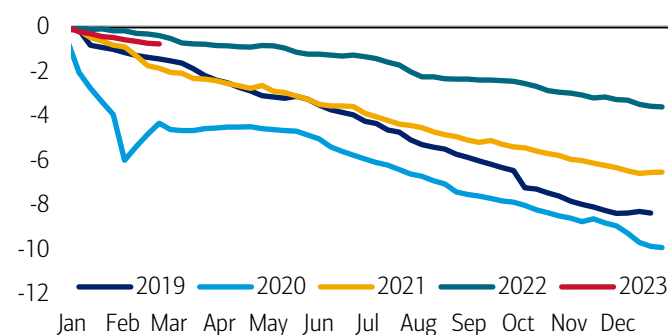


Source: BofA European Equity Quant Strategy, EPFR Global

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**Exhibit 24: UK income-focused equity funds have seen \$0.76bn of outflows YTD**

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

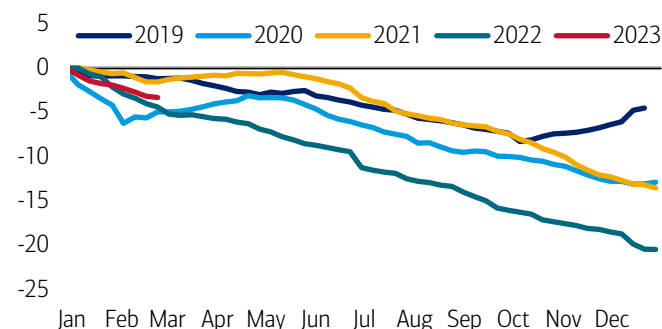


Source: BofA European Equity Quant Strategy, EPFR Global

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**Exhibit 26: UK-focused equity funds benchmarked to FTSE 250/Small/AIM/All Share indices have seen \$3.34bn 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 27: Enagas has seen the largest inflows last week as % of mcap, while Qinetiq the largest outflows across funds**

Top 5 and bottom 5 European companies that are part of EuropeStoxx 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
GRG LN	Greggs	PCDG Stores	UK	0.09
CCC LN	Computacenter	Technology	UK	0.07
INW IM	Inwit	Telecommunications	Italy	0.06
SAFE LN	Safestore	Real Estate	UK	0.06
IGG LN	Ig	Financial Services	UK	0.05
ENG SM	Enagas	Energy	Spain	0.11
ATI GR	Aroundtown	Real Estate	Germany	0.10
PSPN SW	Psp Swiss Property	Real Estate	Switzerland	0.09
SPSN SW	Swiss Prime Site	Real Estate	Switzerland	0.08
REC IM	Recordati	Health Care	Italy	0.08

**Stocks that saw the highest outflows last week**

BBG Ticker	Name	Sector	Country	Flow as % of mcap
QQ/ LN	Qinetiq	Industrial Gds & Svs	UK	-0.07
IMI LN	Imi	Industrial Gds & Svs	UK	-0.06
BESI NA	Be Semiconductor	Technology	Netherlands	-0.06
TPK LN	Travis Perkins	Industrial Gds & Svs	UK	-0.05
RS1 LN	Rs	Industrial Gds & Svs	UK	-0.05
HPOLB SS	Hexpol	Basic Resources	Sweden	-0.02
HOLMB SS	Holmen	Basic Resources	Sweden	-0.02
SKFB SS	Skf	Basic Resources	Sweden	-0.02
IAG LN	IAG	Travel and Leisure	UK	-0.02
SCAB SS	Svenska Cellulosa	Basic Resources	Sweden	-0.01

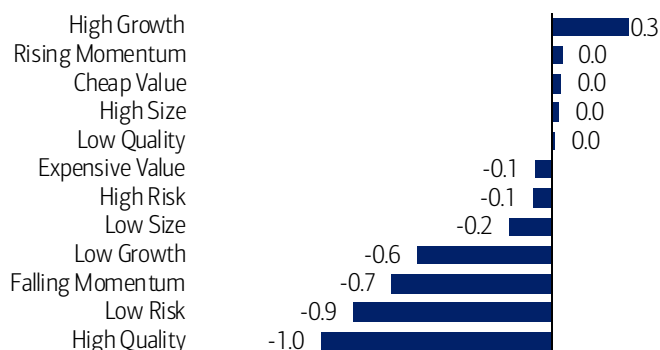
Source: BofA European Equity Quant Strategy, EPFR Global. Disclaimer: The screen above is intended to be an indicative metric only and may not be used for reference purposes or as a measure of performance for any financial instrument or contract, or otherwise relied upon by third parties for any other 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 28: March saw largest gains in High Growth so far, while High Quality experiences the largest losses

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

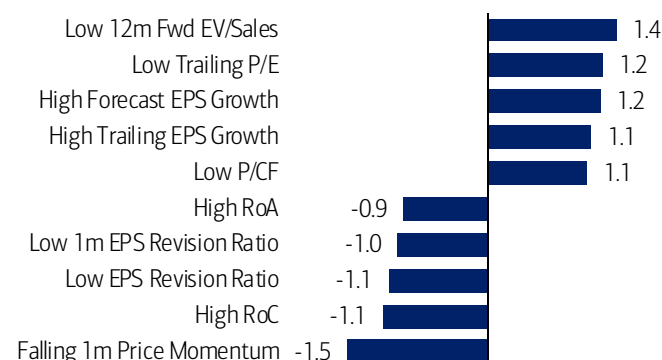


Source: BofA European Equity Quant Strategy, Factset

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### Exhibit 29: Low 12m Fwd EV/Sales have seen the strongest gains MTD, while Falling 1m Price Momentum records the largest losses

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

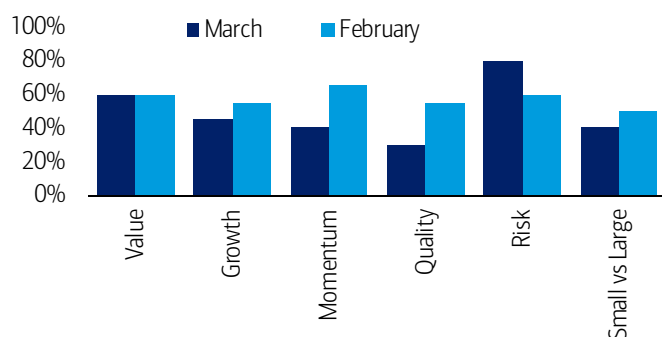


Source: BofA European Equity Quant Strategy, Factset

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### Exhibit 30: Risk has outperformed in 16 out of 20 sectors so far in March

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

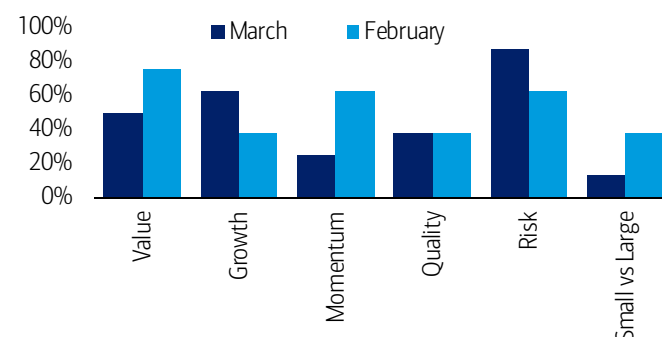


Source: BofA European Equity Quant Strategy, FactSet

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### Exhibit 31: Risk has outperformed in 7 out of 8 countries so far in March

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

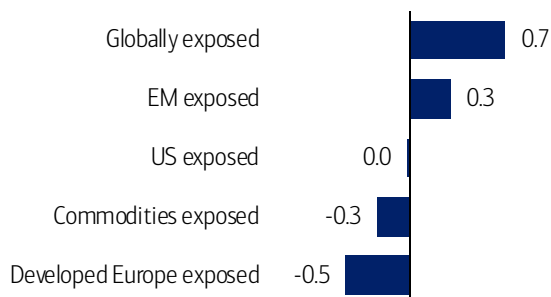


Source: BofA European Equity Quant Strategy, FactSet. Note: \* countries included: France, Germany, Italy, Netherlands, Spain, Sweden, Switzerland, UK

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### Exhibit 32: Globally exposed stocks have gained the most MTD, while Developed Europe exposed stocks have noted the largest losses

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

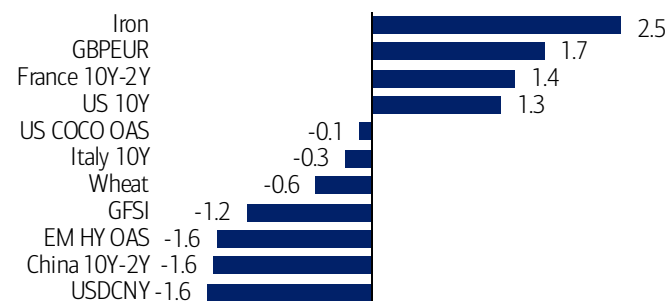


Source: BofA European Equity Quant Strategy, Factset

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### Exhibit 33: Stocks sensitive to rising Iron have gained the most MTD, while these sensitive to rising USDCNY 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

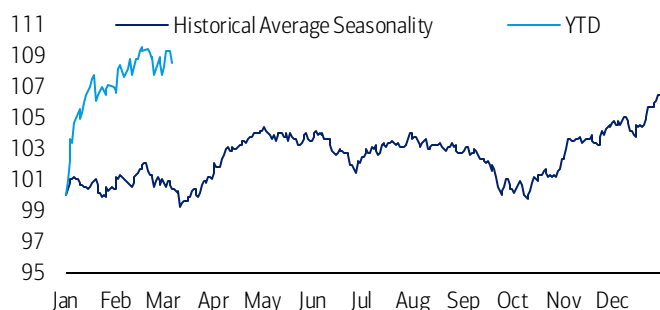
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# Seasonality

## Exhibit 34: The SXXP index typically registers a 1.0% return in Q1, while the current quarter-to-date return stands at 8.5%

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

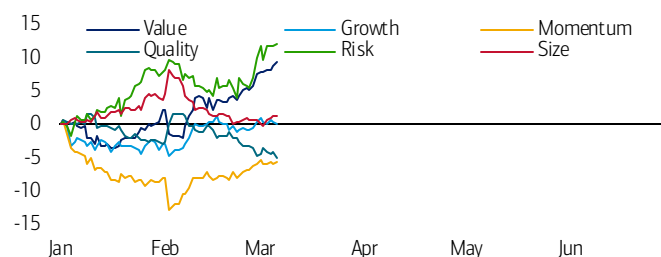


Source: BofA European Equity Quant Strategy, Refinitiv. Note: historical average performance calculated over 1992-2022

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## Exhibit 35: High Risk outperforming Low Risk shows the largest deviation so far in 2023 relative to the typical performance path

% deviation from historical average performance of styles (long/short, EUR, price return)

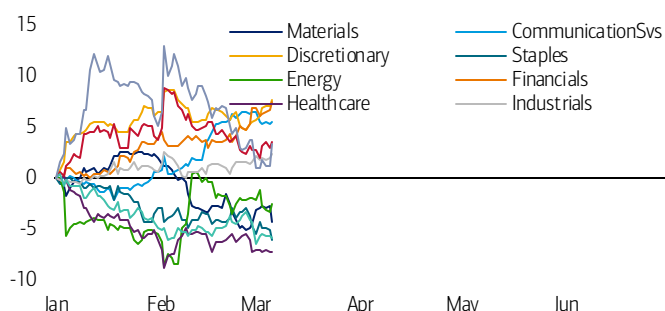


Source: BofA European Equity Quant Strategy, FactSet. Note: historical average performance calculated over 1993-2022

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## Exhibit 36: Discretionary have recorded higher-than-usual returns so far in 2023, while Healthcare has seen lower-than-usual returns

% deviation from historical average relative performance of MSCI sectors indices (vs MSCI Europe, local currency, price return)

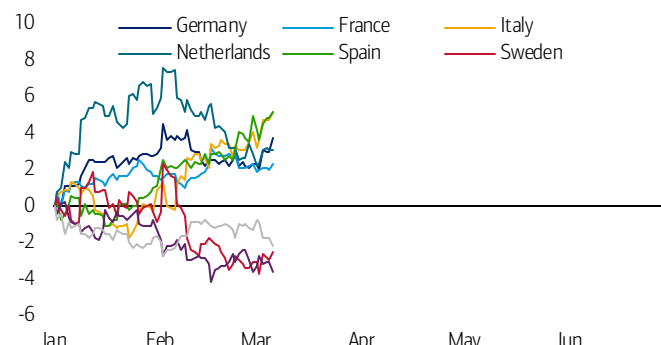


Source: BofA European Equity Quant Strategy, Refinitiv, MSCI. Note: historical average performance calculated over 1995-2022, except Real Estate which is from Sep 2016-2022

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## Exhibit 37: Italy has seen higher-than-usual returns so far in 2023, while Switzerland has recorded lower-than-usual returns

% deviation from historical average relative performance of MSCI country indices (vs MSCI Europe, local currency, price return)



Source: BofA European Equity Quant Strategy, Refinitiv, MSCI. Note: historical average performance calculated over 1993-2022

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## Exhibit 38: Q1 has been historically the strongest for Sweden, IT, Industrials and Low vs High Size

Historical average returns for countries, sectors, styles in each quarter

Quarter	Germany	France	Italy	Netherlands	Spain	Sweden	Switzerland	UK
Q1	-0.3%	1.6%	1.4%	1.3%	0.4%	3.2%	-0.1%	-1.8%
Q2	0.2%	-0.1%	-2.5%	1.1%	0.0%	0.9%	1.1%	-0.2%
Q3	-2.3%	-1.2%	-0.2%	-0.2%	0.0%	1.1%	0.6%	0.8%
Q4	2.4%	0.2%	-1.2%	0.4%	0.6%	0.5%	-0.1%	-0.9%

Quarter	Materials	Communications	Discretionary	Staples	Energy	Financials	Healthcare	Industrials	IT	Utilities	RealEstate
Q1	1.2%	-1.3%	1.1%	1.0%	1.2%	-2.3%	-0.4%	1.5%	1.8%	-0.6%	-5.2%
Q2	0.8%	-3.7%	-0.5%	2.1%	2.5%	-1.5%	2.8%	0.1%	-0.6%	0.7%	-6.8%
Q3	-2.3%	-0.6%	-1.4%	2.4%	-1.0%	0.0%	2.8%	-0.9%	-0.8%	1.2%	-4.6%
Q4	1.6%	2.2%	1.3%	-1.9%	-2.0%	0.2%	-2.1%	0.5%	1.5%	-1.0%	0.1%

Quarter	Value	Growth	Momentum	Quality	Risk	Size
Q1	-0.8%	3.4%	3.6%	-0.5%	-0.1%	4.6%
Q2	-1.6%	0.4%	5.8%	2.2%	-2.6%	0.3%
Q3	0.1%	0.5%	5.1%	2.7%	-4.0%	0.8%
Q4	0.7%	0.4%	1.8%	0.6%	3.3%	-0.1%

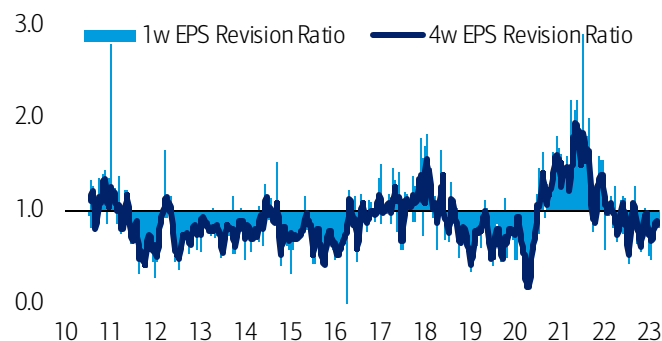
Source: BofA European Equity Quant Strategy, Refinitiv, MSCI, FactSet

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# Revisions

## Exhibit 39: Global 4-week EPS Revision Ratio stands at 0.84, down from last week

Ratio of BofA analysts' EPS upgrades to downgrades

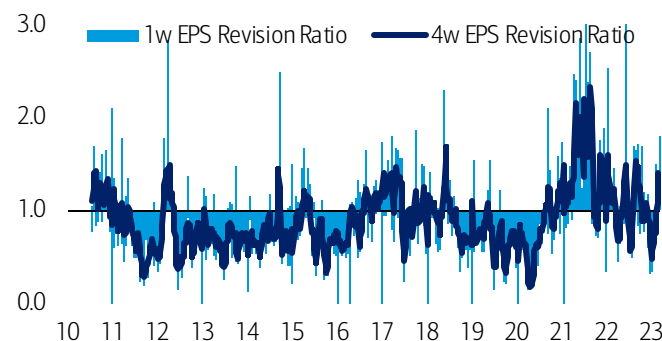


Source: BofA European Equity Quant Strategy, IQDatabase

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## Exhibit 40: European 4-week EPS Revision Ratio stands at 1.28, down from last week

Ratio of BofA analysts' EPS upgrades to downgrades

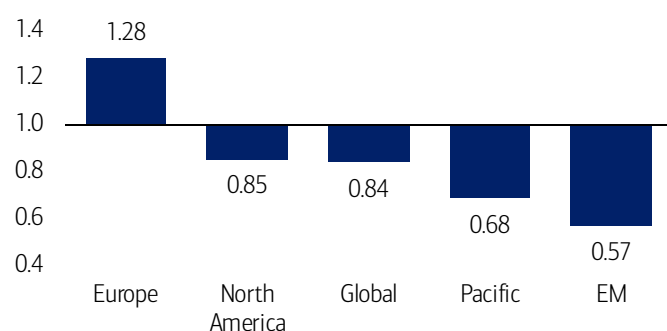


Source: BofA European Equity Quant Strategy, IQDatabase

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## Exhibit 41: Currently, the 4-week EPS Revision Ratio is the strongest in Europe, while it is the weakest in EM

BofA 4w EPS Revision Ratio

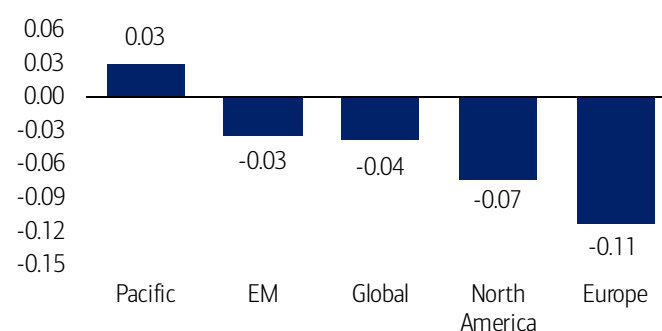


Source: BofA European Equity Quant Strategy, IQDatabase

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## Exhibit 42: Over the past week, the 4-week EPS Revision Ratio improved only in Pacific, while it deteriorated the most in Europe

1w change in 4w BofA EPS Revision Ratio

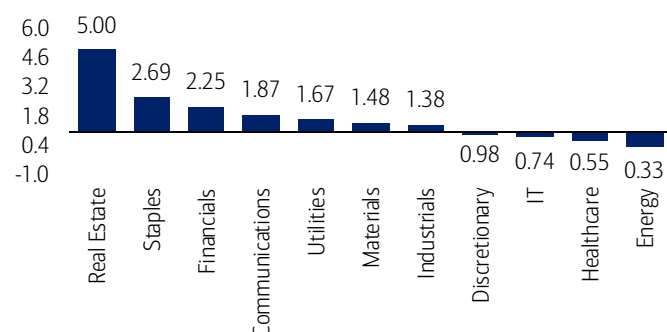


Source: BofA European Equity Quant Strategy, IQDatabase

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## Exhibit 43: Currently, the 4-week EPS Revision Ratio is the strongest in Real Estate, while it is the weakest in Energy

BofA 4w EPS Revision Ratio

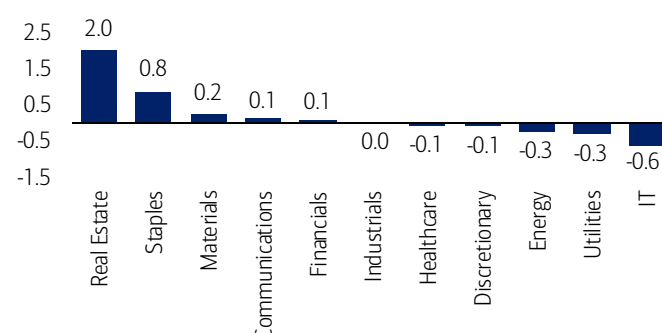


Source: BofA European Equity Quant Strategy, IQDatabase

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## Exhibit 44: Over the past week, 4-week EPS Revision Ratio improved the most in Real Estate, while it deteriorated the most in IT

1w change in 4w BofA EPS Revision Ratio

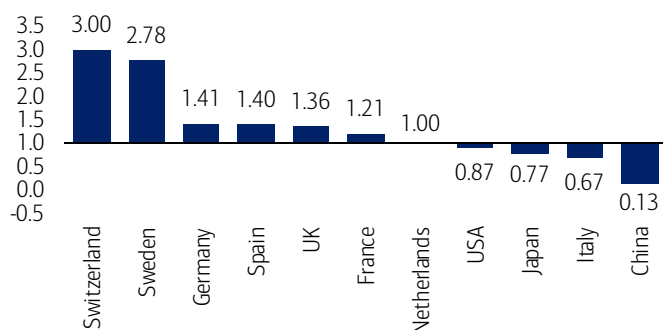


Source: BofA European Equity Quant Strategy, IQDatabase

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**Exhibit 45: Currently, the 4-week EPS Revision Ratio is the strongest in Switzerland, while it is the weakest in China**

BofA 4w EPS Revision Ratio

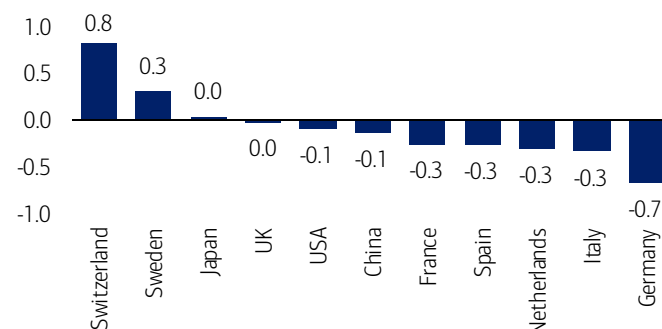


Source: BofA European Equity Quant Strategy, IQDatabase

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**Exhibit 46: Over the past week, the 4-week EPS Revision Ratio improved the most in Switzerland, while it deteriorated the most in Germany**

1w change in 4w BofA EPS Revision Ratio

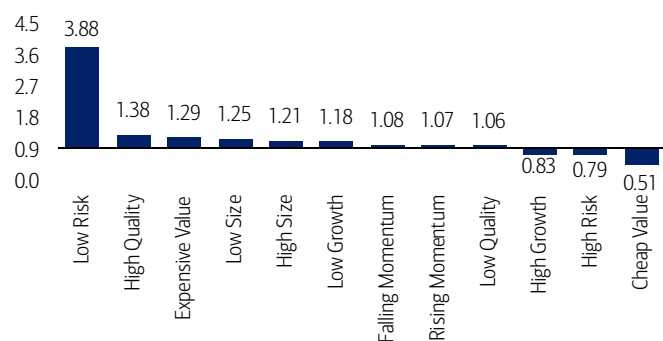


Source: BofA European Equity Quant Strategy, IQDatabase

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**Exhibit 47: Currently, the 4-week EPS Revision Ratio is the strongest in Low Risk, while it is the weakest in Cheap Value**

BofA 4w EPS Revision Ratio

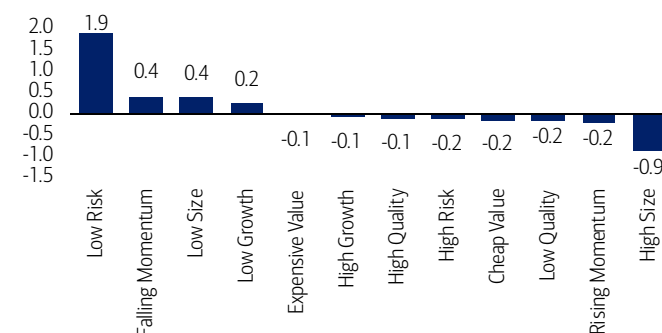


Source: BofA European Equity Quant Strategy, IQDatabase

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**Exhibit 48: Over the past week, 4-week EPS Revision Ratio improved the most in Low Risk, while it deteriorated the most in High Size**

1w change in 4w BofA EPS Revision Ratio



Source: BofA European Equity Quant Strategy, IQDatabase

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**Exhibit 49: 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
IAG LN	IAG	UK	Industrials	8.7	73%	5%	-8%	27/02/2023
GBLB BB	GBL	Belgium	Financials	12.4	59%	29%	-10%	02/03/2023
CLNX SM	Cellnex	Spain	Communications	24.6	27%	-41%	-481%	02/03/2023
RRV LN	Rolls Royce	UK	Industrials	14.4	26%	43%	36%	27/02/2023
ILOA ID	Permanent TSB	Ireland	Financials	1.5	24%	-5%	12%	01/03/2023

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
TMV GR	TeamViewer	Germany	IT	2.9	-18%	-12%	-12%	27/02/2023
EMBRACB SS	Embracer	Sweden	Communications	6.0	-16%	-10%	-6%	01/03/2023
PSG SM	Prosegur SA	Spain	Industrials	1.0	-10%	-8%	0%	02/03/2023
OMV AV	OMV	Austria	Energy	15.1	-8%	4%	20%	03/03/2023
SHA GR	Schaeffler	Germany	Discretionary	4.7	-5%	1%	6%	03/03/2023

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# 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.
- 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 50: 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	1W Forward					Date	4W Forward					Date	8W Forward				
	Momentum Volatility	Implied Volatility	Trend Reversal	EMCI	Momentum Returns		Momentum Volatility	Implied Volatility	Trend Reversal	EMCI	Momentum Returns		Momentum Volatility	Implied Volatility	Trend Reversal	EMCI	Momentum 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%

**Exhibit 50: 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)					
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%
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.

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## 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:** ((# of FY1 and FY2 upward DPS revisions over last 3 months)-(# of FY1 and FY2 downward DPS revisions over last 3 months))/ # 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

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

<sup>R1</sup> 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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