

European Fund Manager Survey

Immaculate disinflation

High conviction on fading inflation and lower rates

A net 91% of survey respondents expect European core inflation to decline over the coming year, with 76% projecting global core inflation to fade, both close to record highs. At a share of 25%, hawkish central banks are no longer considered the biggest tail-risk by investors for the first time since May, overtaken by worsening geopolitics (at 31%, up from 23% last month). A net 74% see short-term interest rates coming down over the coming twelve months, a 15-year high, while a net 43% think 10-year bond yields will fade, a 23-year high.

Robust growth and lower inflation fuel soft landing hopes

While a plurality of 47% of participants still considers demand destruction and rising recession risks as the main macro theme for the coming months, this marks the lowest reading since July, with the share expecting a soft landing as the key theme up sharply from 8% last month to 29%. Only 21% see a hard landing as the most likely outcome for the global economy over the next twelve months, down from 30% last month.

Yet, the impact of monetary tightening remains a worry

A net 29% of respondents think European monetary policy is too restrictive, the highest level since 2011, while a net 20% think this is the case globally, the second highest reading since 2008. A net 34% judge global fiscal policy to be overly supportive, close to the historical peaks, though only 6% think the same is true for Europe's fiscal stance. 50% think US growth can remain resilient in the near term but will slow next year as the impact of Fed tightening bites (up from 40% last month), while 44% expect immediate downside (down from 55%). 74% think European growth is set to weaken in response to tight monetary policy, unchanged from last month, while 9% expect a reacceleration.

Bullish on equities but doubts on cyclicals persist

50% of investors now see upside for European equities over the coming months on declining bond yields and robust growth (up from 43% last month), with 68% projecting upside over the coming twelve months (up sharply from 53% last month). Reducing equity exposure by too much and thus missing out on a rally is the main portfolio risk for a plurality of 32%. A net 26% see European equities as undervalued, the highest since 2019, though 71% expect downside for European EPS. A plurality of 44% see downside for European cyclicals relative to defensives over the coming months (up from 40% last month), while 15% see upside after the recent weakness (down from 28%). European insurance and tech remain among the top-3 consensus sector overweights, now joined by energy, while autos, retail and chemicals are the least preferred sectors.

Trading ideas and investment strategies discussed herein may give rise to significant risk and are not suitable for all investors. Investors should have experience in relevant markets and the financial resources to absorb any losses arising from applying these ideas or strategies.

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

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

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

Refer to important disclosures on page 20 to 22. Analyst Certification on page 19. 12627548

Timestamp: 14 November 2023 12:30AM EST

14 November 2023

Equity Strategy
Europe

BofA

Data
Analytics



Andreas Bruckner >>
Investment Strategist
MLI (UK)
+44 20 7996 1306
andreas.bruckner@bofa.com

Sebastian Raedler >>
Investment Strategist
MLI (UK)
+44 20 7996 1749
sebastian.raedler@bofa.com

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

Thomas Pearce, CFA >>
Investment Strategist
MLI (UK)
+44 20 7996 2081
tpearce@bofa.com

Notes to readers

An overall total of 265 panellists with \$632bn AUM participated in the survey. 225 participants with \$553bn AUM responded to the global FMS questions and 151 participants with \$268bn AUM responded to the regional FMS questions.

Survey period: 3rd November 2023 to 9th November 2023.

How to join the FMS panel

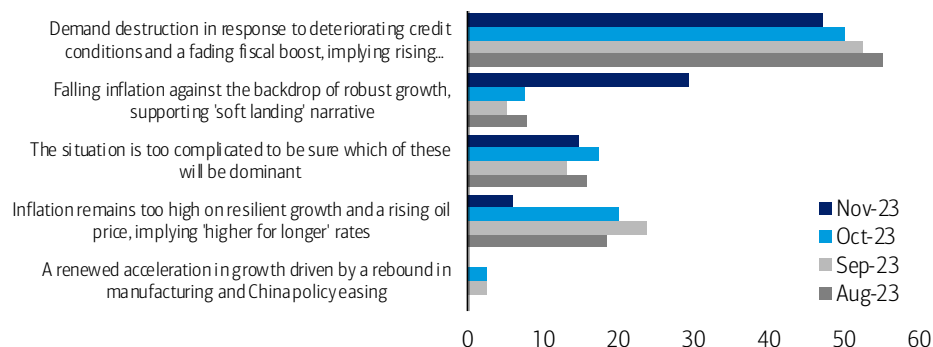
Investors/clients are encouraged to sign up to participate in the Survey. This can be done by contacting [Michael Hartnett](#) or your BofA sales representative.

Participants in the survey receive the full set of results for the months in which they participate.

European macro overview

Exhibit 1: 47% of European investors expect demand destruction to be the dominant macro theme over the coming months (slightly down from 50% last month), while 29% think falling inflation against the backdrop of robust growth will dominate (up sharply from 8%)

What do you think will be the dominant macro theme in the months ahead?

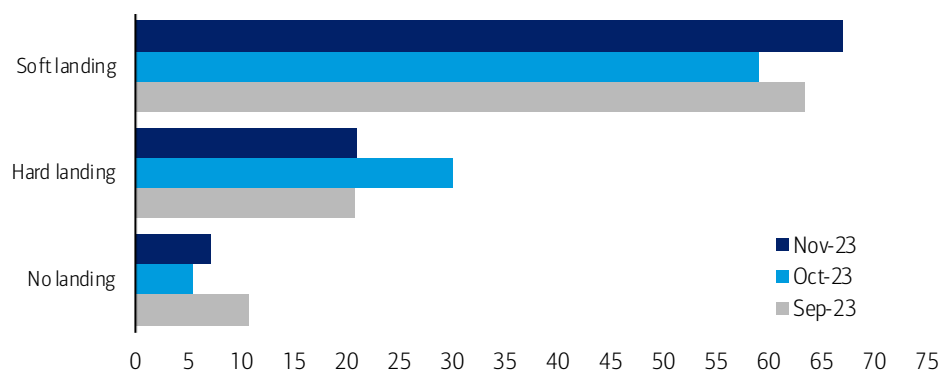


Source: BofA European Fund Manager Survey

BofA GLOBAL RESEARCH

Exhibit 2: 67% see a soft landing as the most likely outcome for the global economy (up from 59% last month), with 21% in the hard landing camp (down from 30%)

What is the most likely outcome for the global economy in the next 12 months?

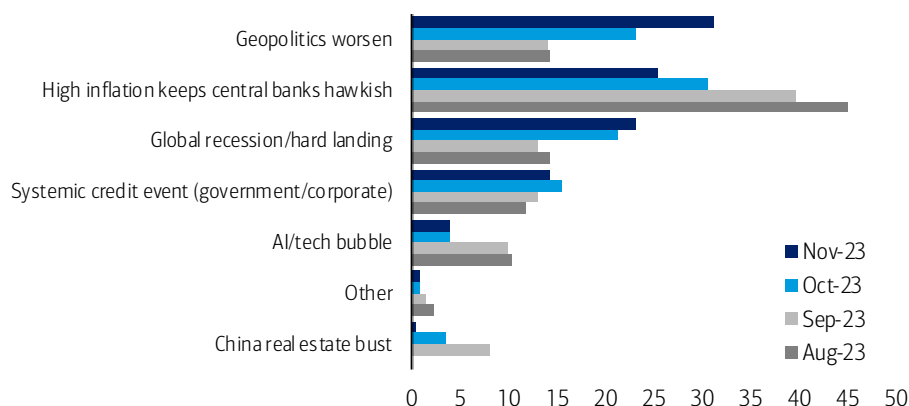


Source: BofA Global Fund Manager Survey

BofA GLOBAL RESEARCH

Exhibit 3: A plurality of 31% of global investors see worsening geopolitics as the biggest tail-risk for markets (up from 23% last month), followed by high inflation, at 25% (down from 31% last month)

What do you consider the biggest 'tail risk'?

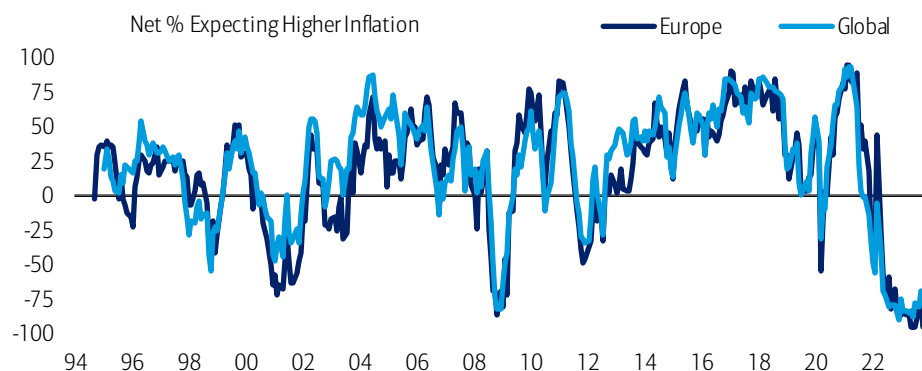


Source: BofA Global Fund Manager Survey

BofA GLOBAL RESEARCH

Exhibit 4: A net 91% of European investors expect European core inflation to fall over the coming twelve months, down from 95% last month. A net 76% of global investors think global core inflation will decline over the coming twelve months, up from 70%

In twelve months' time, do you think core consumer price inflation rate (in y-o-y terms) will be...?

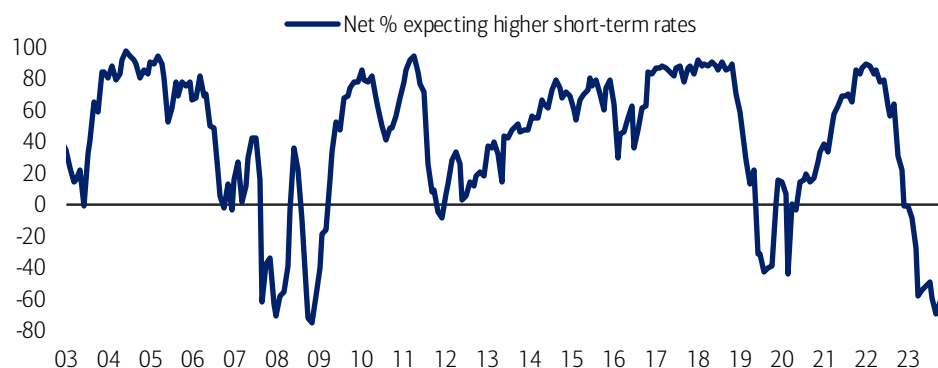


Source: BofA European & Global Fund Manager Survey

BofA GLOBAL RESEARCH

Exhibit 5: A net 74% of global investors expect lower short-term rates over the coming twelve months, the highest level since 2008

In twelve months' time, do you think global short-term interest rates (i.e. 3-month rates) will be...?



Source: BofA Global Fund Manager Survey

BofA GLOBAL RESEARCH

Exhibit 6: A net 43% of global investors expect lower 10-year bond yields over the coming twelve months, up from 31% last month and the highest reading on record

In twelve months' time, do you think global long-term interest rates (i.e. 10-year rates) will be...?

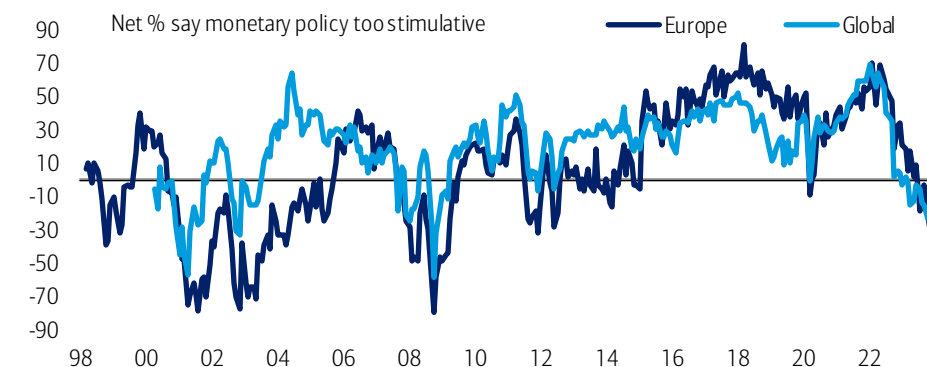


Source: BofA Global Fund Manager Survey

BofA GLOBAL RESEARCH

Exhibit 7: A net 20% of global investors consider global monetary policy to be too restrictive, down from 24% last month but still the second highest reading since 2008, while a net 29% of European investors think this is the case in Europe, the highest level since 2011

Do you think monetary policy in this region is currently...?



Source: BofA European & Global Fund Manager Survey

BofA GLOBAL RESEARCH

Exhibit 8: A net 34% of global investors judge fiscal policy to be too stimulative globally, close to the historical peaks, while a net 6% of European investors think that is the case in Europe

Given where we are in the business cycle, do you think fiscal policy in your region is currently...?

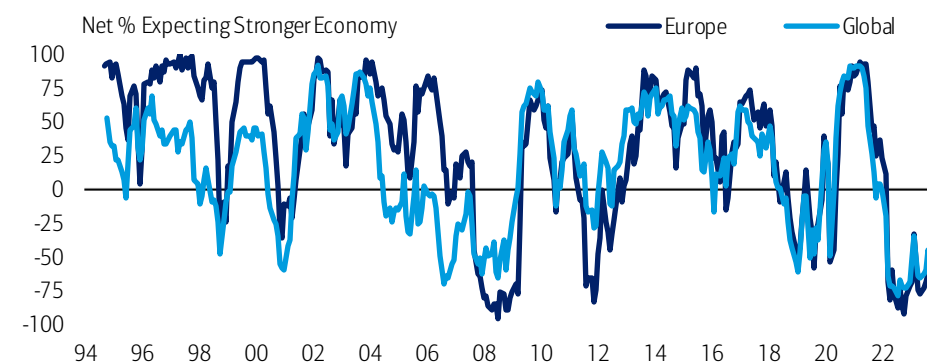


Source: BofA European & Global Fund Manager Survey

BofA GLOBAL RESEARCH

Exhibit 9: A net 44% of European investors think the European economy will weaken over the coming twelve months, down marginally from 45% last month. A net 57% of global investors think global growth is set to slow in the twelve months ahead, up from 50%

How do you think the region's economy will develop over the next twelve months?

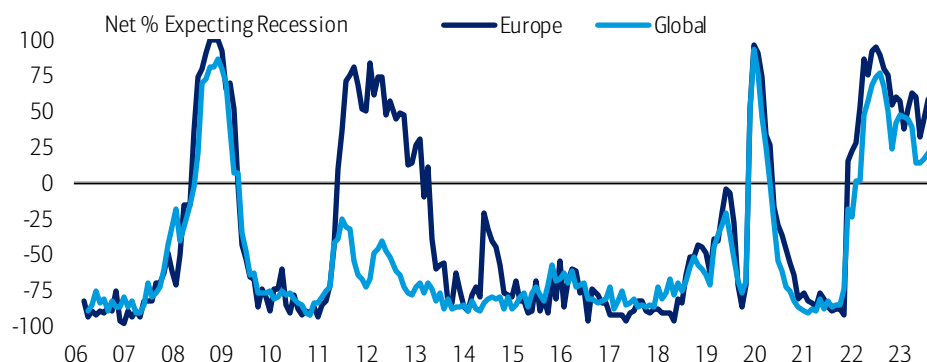


Source: BofA European & Global Fund Manager Survey

BofA GLOBAL RESEARCH

Exhibit 10: A net 59% of European investors expect a recession in Europe over the next twelve months (up from 45% last month), while a net 20% of global investors think the global cycle will enter a recession (up from 17%)

How likely do you think it is that the economy in this region will see a recession over the next 12 months?

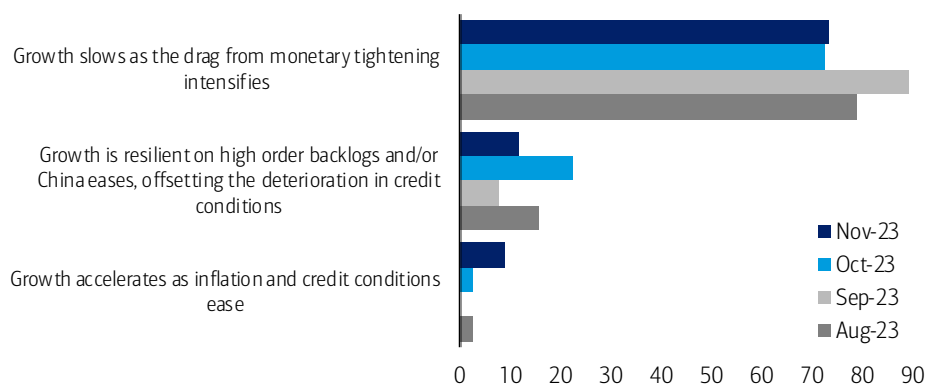


Source: BofA European & Global Fund Manager Survey

BofA GLOBAL RESEARCH

Exhibit 11: 74% of European investors project a slowdown in European growth momentum over the coming six months as monetary tightening kicks in (broadly unchanged from last month), while 12% expect growth to remain resilient on high order backlogs and China easing (down from 23%)

What do you expect to happen to European growth momentum over the coming six months?

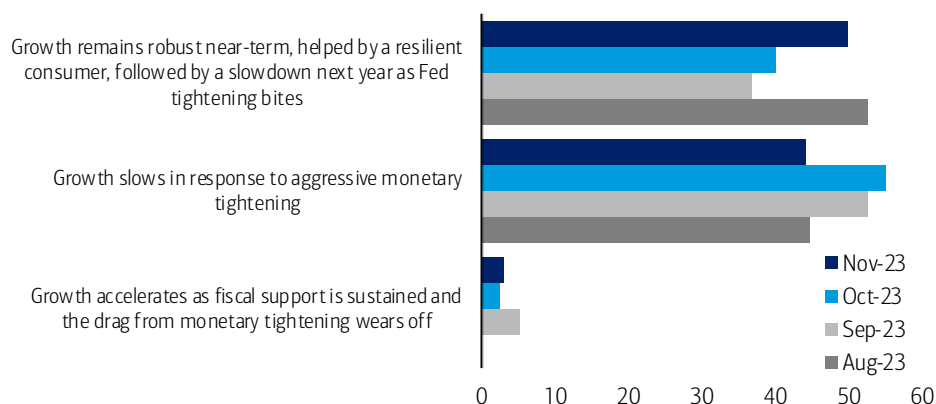


Source: BofA European Fund Manager Survey

BofA GLOBAL RESEARCH

Exhibit 12: 50% of European investors think US growth can remain resilient in the near term but will slow next year as the impact of Fed tightening bites (up from 40% last month), while 44% expect immediate downside (down from 55%)

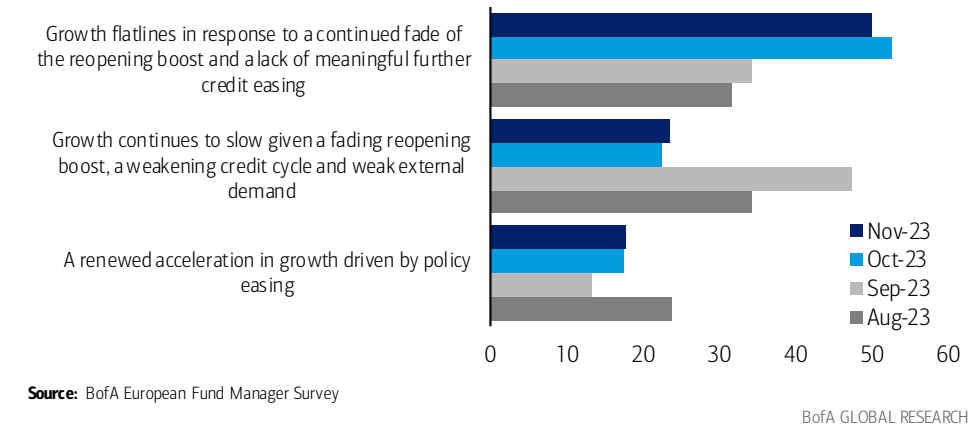
What is the outlook for the US economy over the coming months?



Source: BofA European Fund Manager Survey

BofA GLOBAL RESEARCH

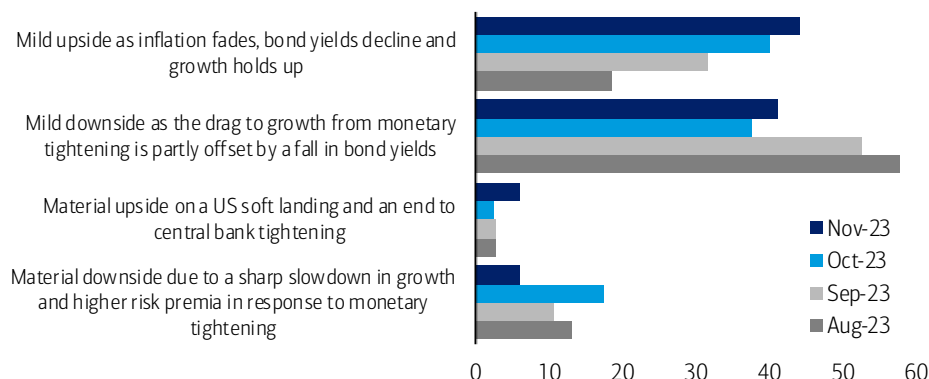
Exhibit 13: 50% of European investors see China growth flatlining over the coming months (down slightly from 53% last month), while 24% think growth will continue slowing (up marginally)
What is your view on the outlook for China's economy over the coming months?



European equities

Exhibit 14: 50% of European investors now see upside for European equities over the coming months on declining bond yields and robust growth (up from 43% last month)

What is the outlook for European equities over the coming months?

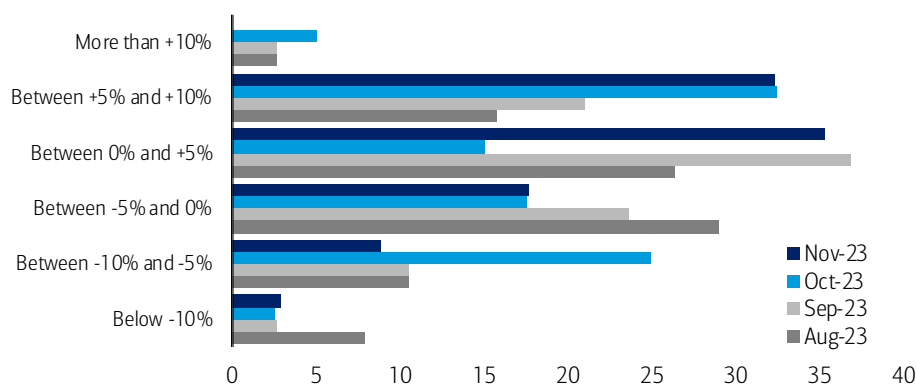


Source: BofA European Fund Manager Survey

BofA GLOBAL RESEARCH

Exhibit 15: 68% of European investors see upside for European equities over the coming twelve months (up from 53% last month), with 35% looking for a gain in the range of 0-5%

How much upside do you expect for European equities over the coming twelve months?

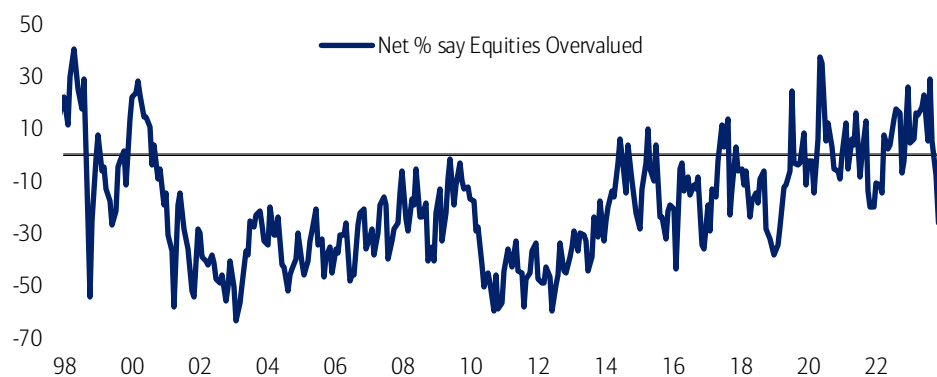


Source: BofA European Fund Manager Survey

BofA GLOBAL RESEARCH

Exhibit 16: A net 26% of European investors see European equities as undervalued, a sharp rise from 8% last month and the highest since 2019

Do you think that the European equity market is currently overvalued, fairly valued or undervalued?

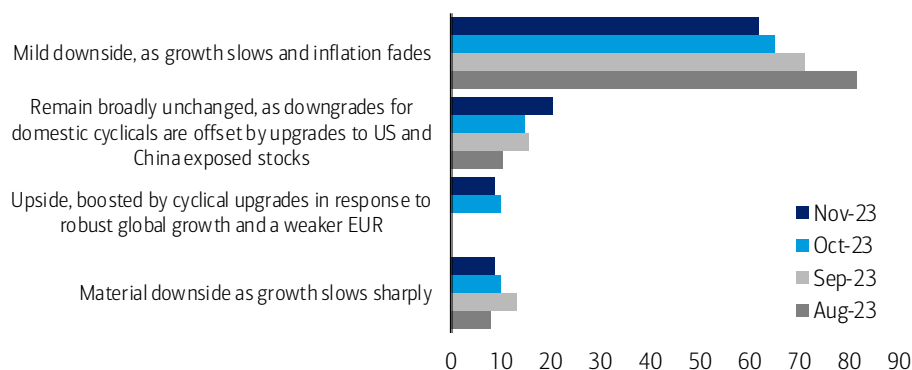


Source: BofA European Fund Manager Survey

BofA GLOBAL RESEARCH

Exhibit 17: 62% of European investors see mild downside for 12-month forward EPS expectations for Europe over the coming months (down from 65% last month), with a further 9% expecting material downside (down from 10%)

How do think 12-month forward EPS expectations for Europe will develop over the coming months?

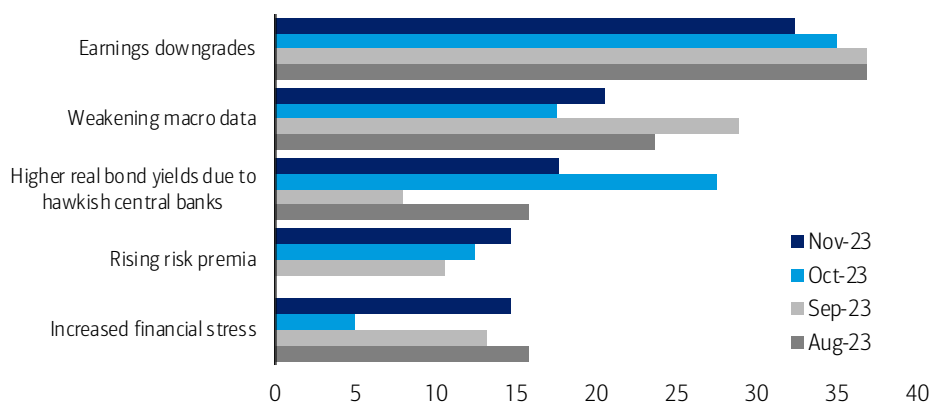


Source: BofA European Fund Manager Survey

BofA GLOBAL RESEARCH

Exhibit 18: A plurality of 32% of European investors see earnings downgrades as the most likely cause for a market correction (down slightly from 35% last month), followed by weakening macro data, at 21% (up from 18%)

What is the most likely catalyst for a correction?

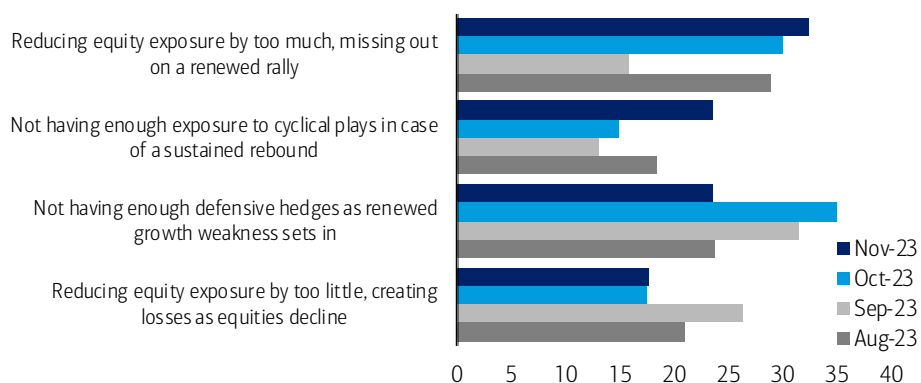


Source: BofA European Fund Manager Survey

BofA GLOBAL RESEARCH

Exhibit 19: A plurality of 32% of European investors judge reducing equity exposure by too much and thus missing out on a rally as the key risk to their portfolios (up slightly from 30% last month)

Which of the following risks are you most worried about when making portfolio decisions?



Source: BofA European Fund Manager Survey

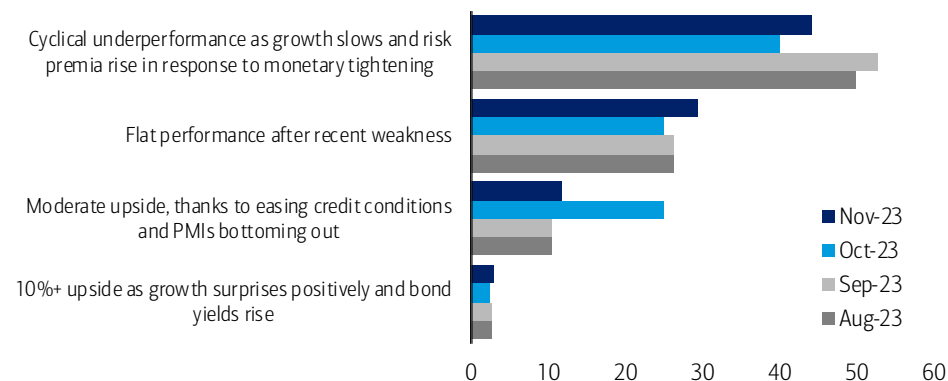
BofA GLOBAL RESEARCH

European styles, sectors and countries

European styles

Exhibit 20: A plurality of 44% of European investors expect further downside for cyclicals versus defensives (up from 40% last month), while 15% look for upside (down from 28%)

What is the likely next move for European cyclicals versus defensives?

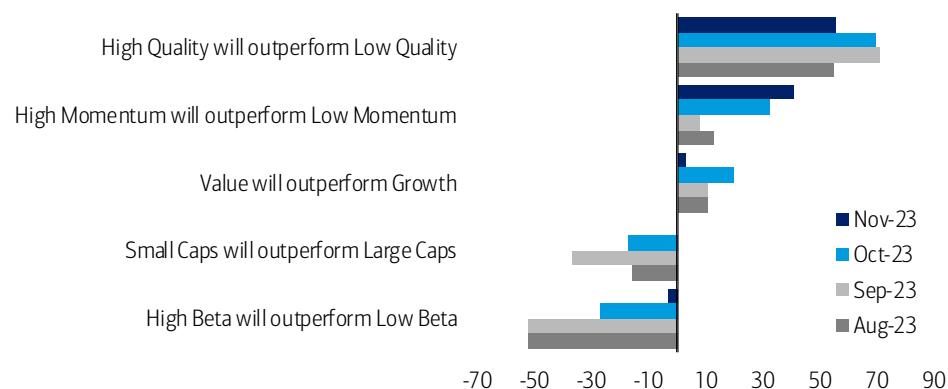


Source: BofA European Fund Manager Survey

BofA GLOBAL RESEARCH

Exhibit 21: The share of European investors expecting high-quality to outperform low quality stocks over the coming year is at 56% (down from 70%), whereas the share projecting high momentum to outperform low momentum is at 41% (up from 33%)

How do you see investment style performance in Europe over the next twelve months?



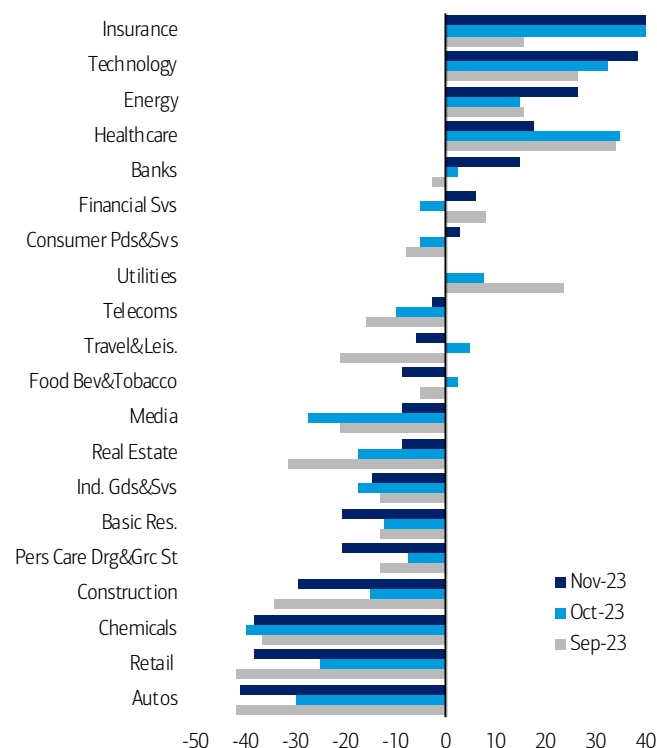
Source: BofA European Fund Manager Survey

BofA GLOBAL RESEARCH

European sectors

Exhibit 22: European insurance, tech and energy are the largest sector overweights, while autos, retail and chemicals are the largest underweights

European sector positioning (% saying overweight-% saying underweight)

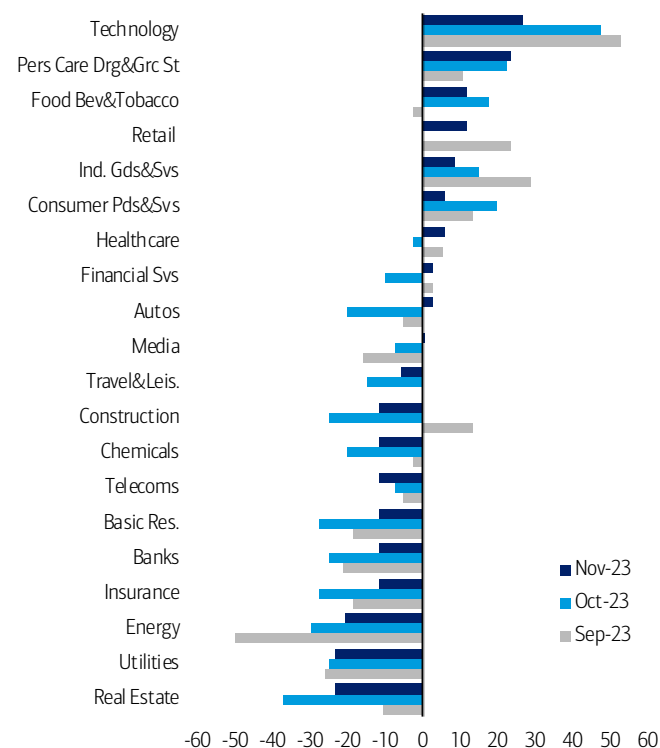


Source: BofA European Fund Manager Survey

BofA GLOBAL RESEARCH

Exhibit 23: European tech, personal care and food & beverages are seen as the most overvalued sectors, while real estate, utilities and energy are seen as the most undervalued

European sector valuation (% saying overvalued-% saying undervalued)

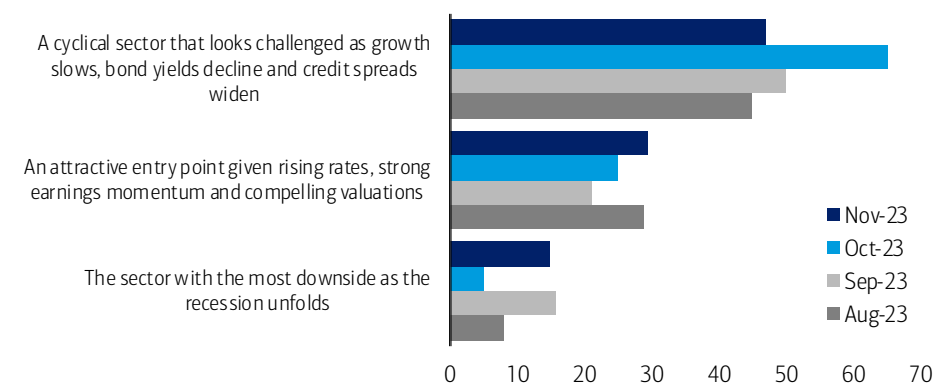


Source: BofA European Fund Manager Survey

BofA GLOBAL RESEARCH

Exhibit 24: 47% of European investors think slowing growth, declining bond yields and widening credit spreads will be headwind for European banks, down from 65% last month

What is your view on European banks?

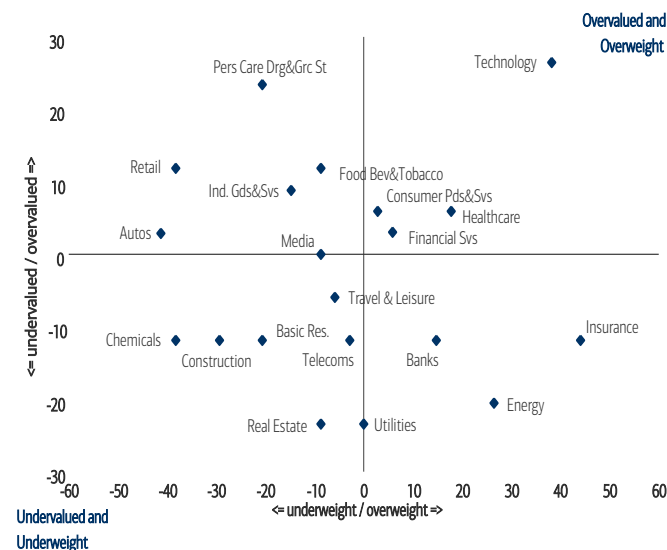


Source: BofA European Fund Manager Survey

BofA GLOBAL RESEARCH

Exhibit 25: European insurance, energy and banks are the sectors most overweight and undervalued, according to European survey respondents

European sectors net valuation versus net positioning



Source: BofA European Fund Manager Survey

BofA GLOBAL RESEARCH

Exhibit 26: Positioning for media, banks and energy has improved the most from last month, while that of healthcare, construction and retail has dropped the most

Month-on-month change in net positioning and valuation

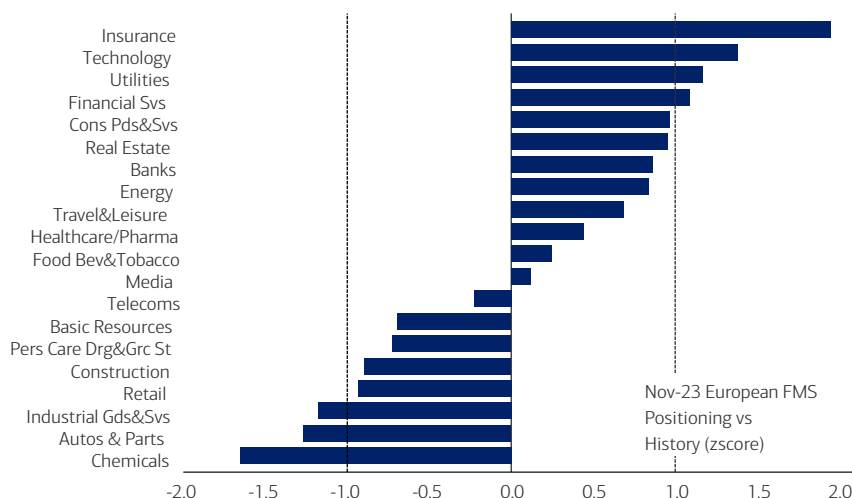
	Positioning	Valuation
Media	19	8
Banks	12	13
Energy	11	9
Financial Svs	11	13
Real Estate	9	14
Consumer Pds&Svs	8	-14
Telecoms	7	-4
Technology	6	-21
Ind. Gds&Svs	3	-6
Chemicals	2	8
Insurance	2	16
Utilities	-8	1
Basic Res.	-8	16
Travel&Leis.	-11	9
Autos	-11	23
Food Bev&Tobacco	-11	-6
Pers Care Drg&Grc St	-13	1
Retail	-13	12
Construction	-14	13
Healthcare	-17	8

Source: BofA European Fund Manager Survey

BofA GLOBAL RESEARCH

Exhibit 27: European insurance, tech, utilities and financial services are the most over-owned sectors relative to history

Current European sectors positioning relative to history (z-scores)

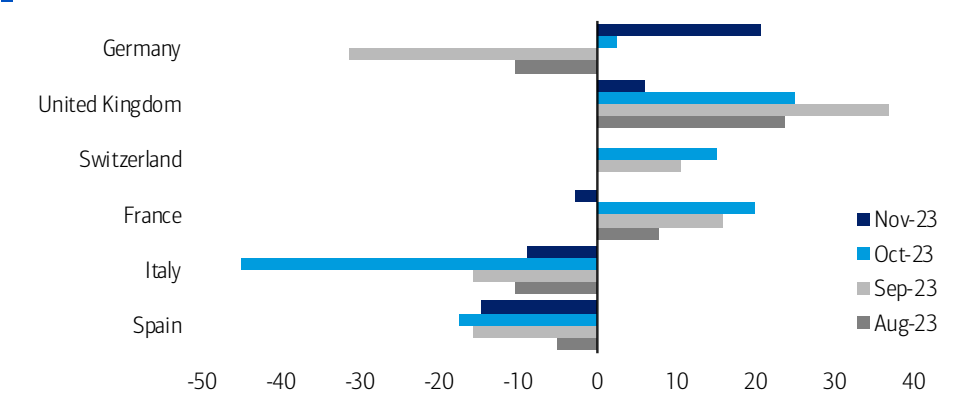


Source: BofA European Fund Manager Survey. Note: z-score based on full time series. Sector history since 2003, except: Consumer Gds & Svs (Personal& HH Gds), Chemicals, Construction, Financial Svs, Travel & Leisure since 2006, Real estate since 2008, Personal care, drug & grocery stores since Oct 2020

BofA GLOBAL RESEARCH

European countries

Exhibit 28: Germany is the favourite equity market in Europe, followed by the UK, while Spain is the least preferred, followed by Italy
Which equity markets would you overweight or underweight over the coming twelve months?



Source: BofA European Fund Manager Survey

BofA GLOBAL RESEARCH

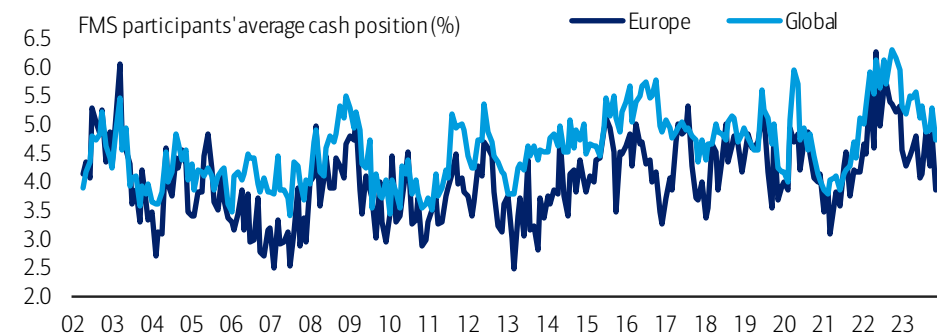


Appendix

Cash levels

Exhibit 29: The average cash position among European investors stands at 3.9% (down sharply from 4.8% last month), while cash levels among global investors are at 4.7% (down from 5.3%)

What comes closest to your current cash position in your portfolio?



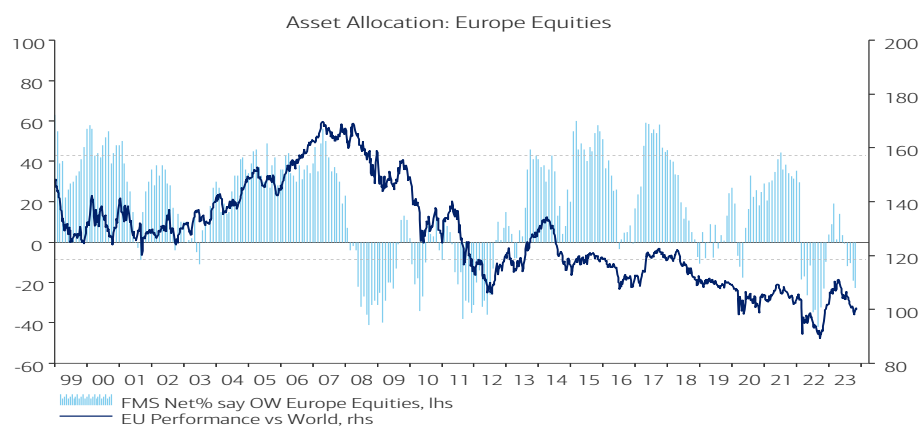
Source: BofA European & Global Fund Manager Survey

BofA GLOBAL RESEARCH

Europe in the global context

Exhibit 30: A net 23% of global investors say they are underweight European equities, up from 19% last month and the highest proportion since November 2022

Please indicate for each of the following equity markets, how overweight or underweight you consider your position to be relative to your internal benchmark

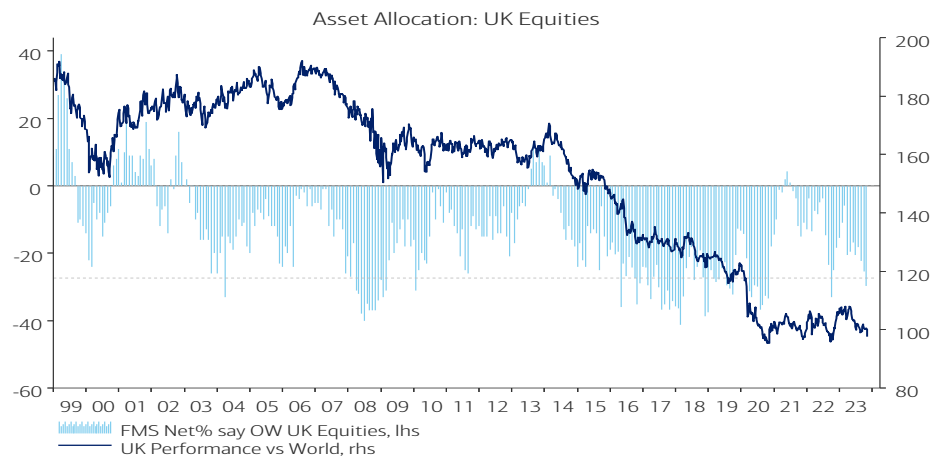


Source: BofA Global Fund Manager Survey

BofA GLOBAL RESEARCH

Exhibit 31: A net 30% of global investors say they are underweight UK equities, up from 25% last month and the highest in a year

Please indicate for each of the following equity markets, how overweight or underweight you consider your position to be relative to your internal benchmark

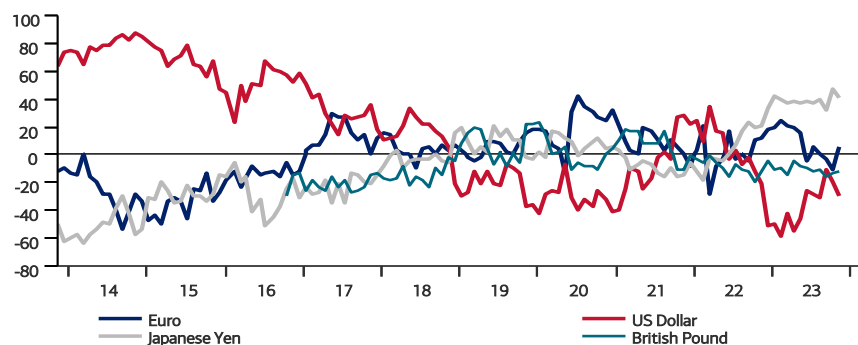


Source: BofA Global Fund Manager Survey

BofA GLOBAL RESEARCH

Exhibit 32: Bearish USD sentiment has built up again, with a net 30% of global investors expecting the USD to weaken over the coming year, up from 20% last month

Over the next twelve months, which FX do you expect to appreciate / depreciate the most on a TWI basis?



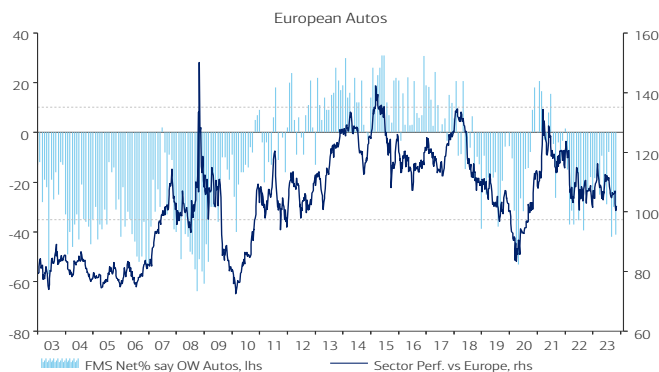
Source: BofA Global Fund Manager Survey

BofA GLOBAL RESEARCH

European sector details

Exhibit 33: European autos & parts

Net 41% of European participants say they are underweight the sector

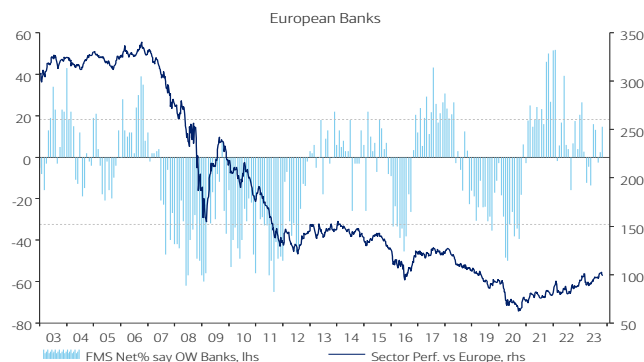


Source: BofA European Fund Manager Survey, Datastream

BofA GLOBAL RESEARCH

Exhibit 34: European banks

Net 15% of European participants say they are overweight the sector

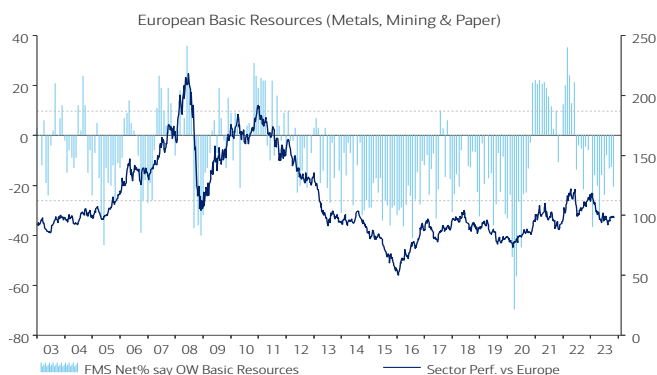


Source: BofA European Fund Manager Survey, Datastream

BofA GLOBAL RESEARCH

Exhibit 35: European basic resources

Net 21% of European participants say they are underweight the sector

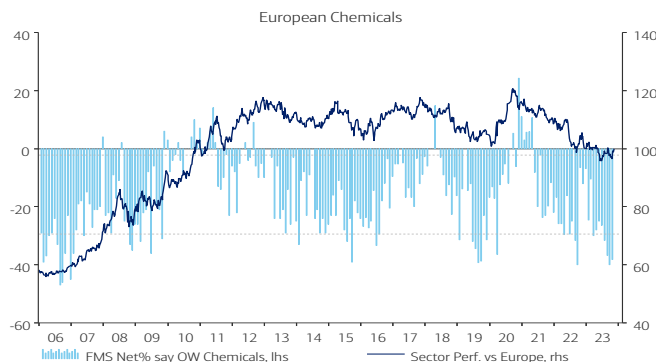


Source: BofA European Fund Manager Survey, Datastream

BofA GLOBAL RESEARCH

Exhibit 36: European chemicals

Net 38% of European participants say they are underweight the sector

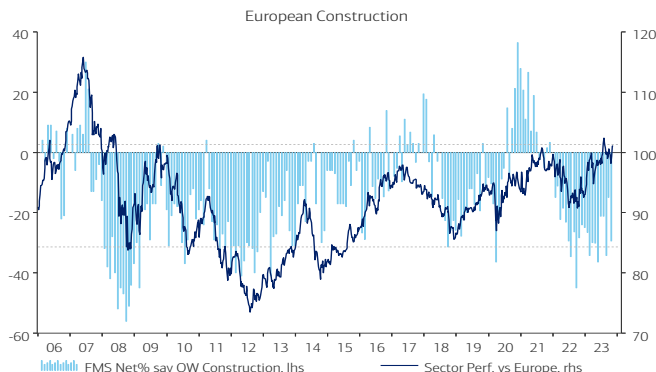


Source: BofA European Fund Manager Survey, Datastream

BofA GLOBAL RESEARCH

Exhibit 37: European construction

Net 29% of European participants say they are underweight the sector

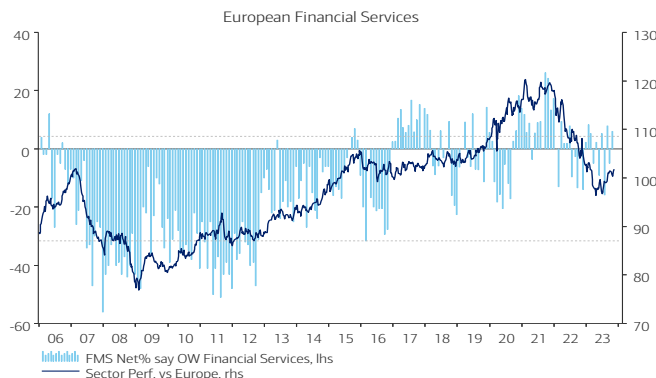


Source: BofA European Fund Manager Survey, Datastream

BofA GLOBAL RESEARCH

Exhibit 38: European financial services

Net 6% of European participants say they are overweight the sector

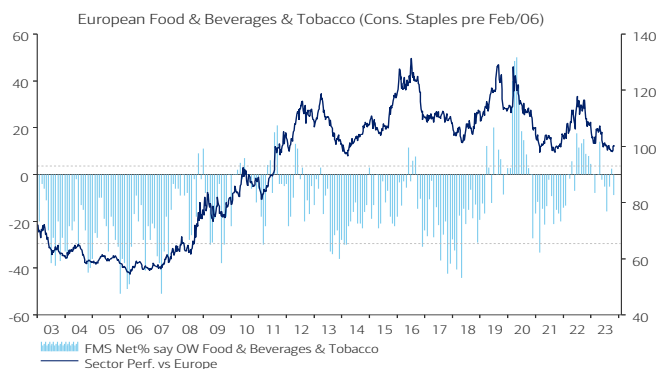


Source: BofA European Fund Manager Survey, Datastream

BofA GLOBAL RESEARCH

Exhibit 39: European food & beverages & tobacco

Net 9% of European participants say they are underweight the sector

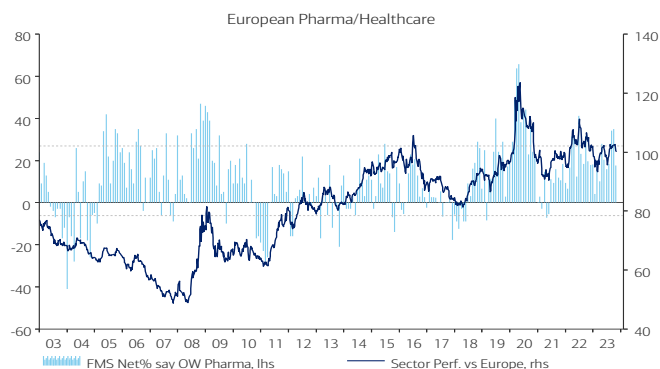


Source: BofA European Fund Manager Survey, Datastream

BofA GLOBAL RESEARCH

Exhibit 40: European healthcare

Net 18% of European participants say they are overweight the sector

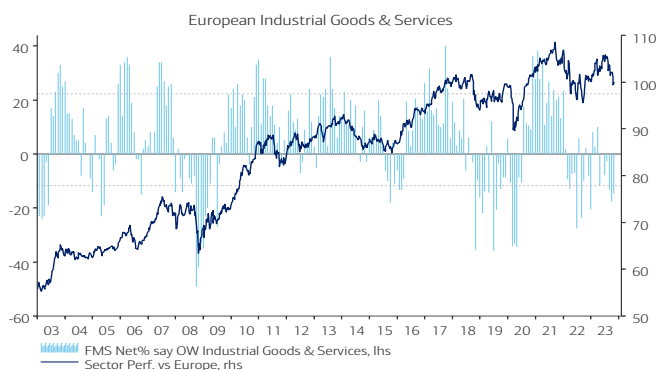


Source: BofA European Fund Manager Survey, Datastream

BofA GLOBAL RESEARCH

Exhibit 41: European industrial goods & services

Net 15% of European participants say they are underweight the sector

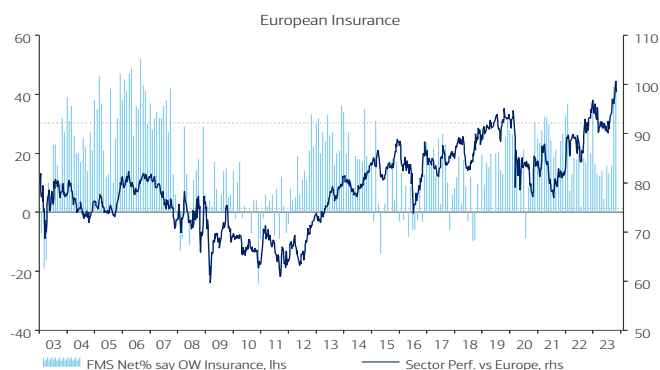


Source: BofA European Fund Manager Survey, Datastream

BofA GLOBAL RESEARCH

Exhibit 42: European insurance

Net 44% of European participants say they are overweight the sector

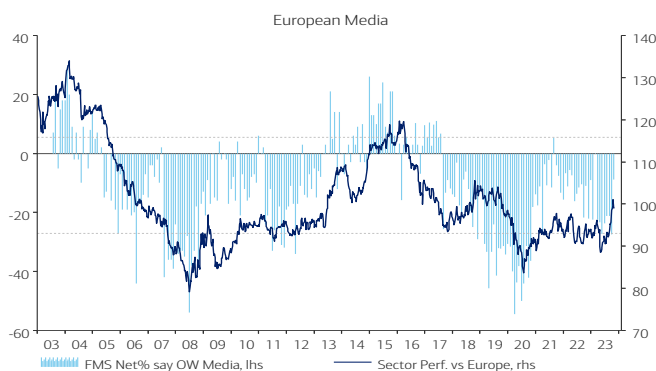


Source: BofA European Fund Manager Survey, Datastream

BofA GLOBAL RESEARCH

Exhibit 43: European media

Net 9% of European participants say they are underweight the sector

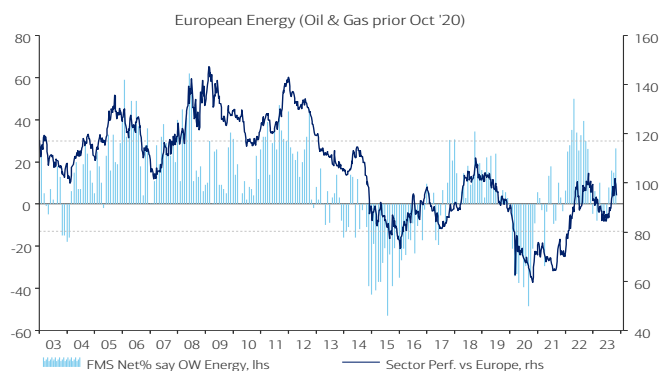


Source: BofA European Fund Manager Survey, Datastream

BofA GLOBAL RESEARCH

Exhibit 44: European energy

Net 26% of European participants say they are overweight the sector

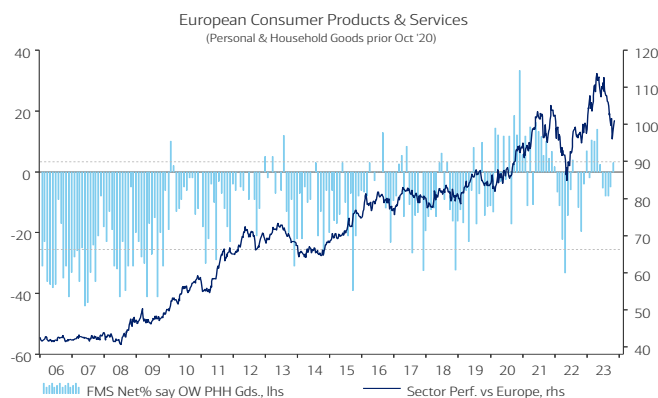


Source: BofA European Fund Manager Survey, Datastream

BofA GLOBAL RESEARCH

Exhibit 45: European consumer products & services

Net 3% of European participants say they are overweight the sector

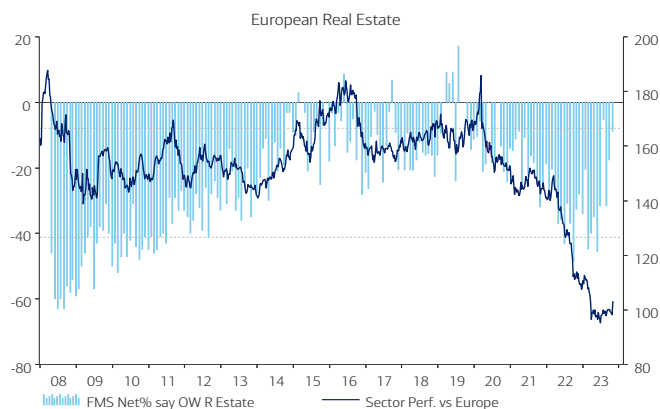


Source: BofA European Fund Manager Survey, Datastream

BofA GLOBAL RESEARCH

Exhibit 46: European real estate

Net 9% of European participants say they are overweight the sector

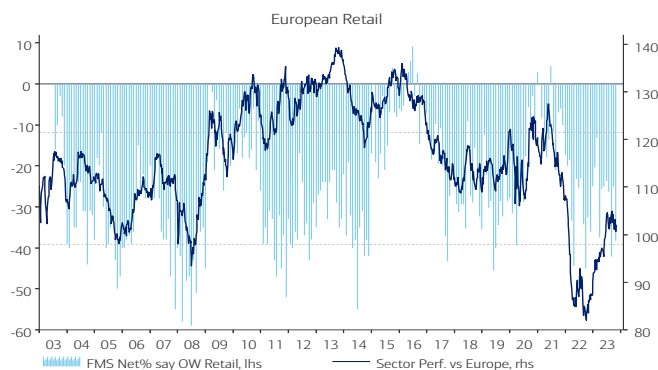


Source: BofA European Fund Manager Survey, Datastream

BofA GLOBAL RESEARCH

Exhibit 47: European retail

Net 38% of European participants say they are overweight the sector

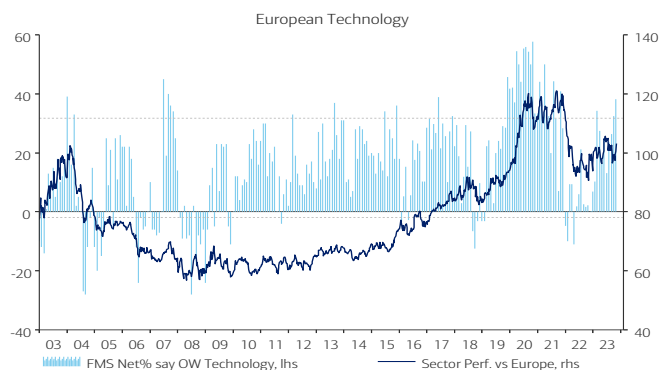


Source: BofA European Fund Manager Survey, Datastream

BofA GLOBAL RESEARCH

Exhibit 48: European technology

Net 38% of European participants say they are overweight the sector

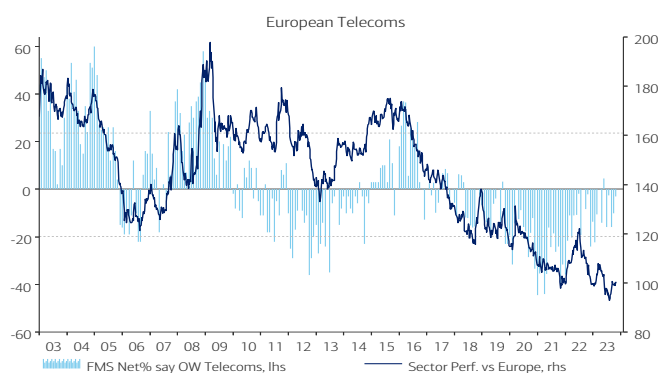


Source: BofA European Fund Manager Survey, Datastream

BofA GLOBAL RESEARCH

Exhibit 49: European telecoms

Net 3% of European participants say they are overweight the sector

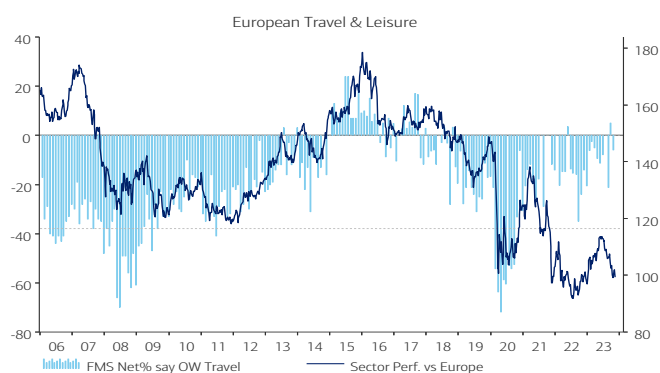


Source: BofA European Fund Manager Survey, Datastream

BofA GLOBAL RESEARCH

Exhibit 50: European travel & leisure

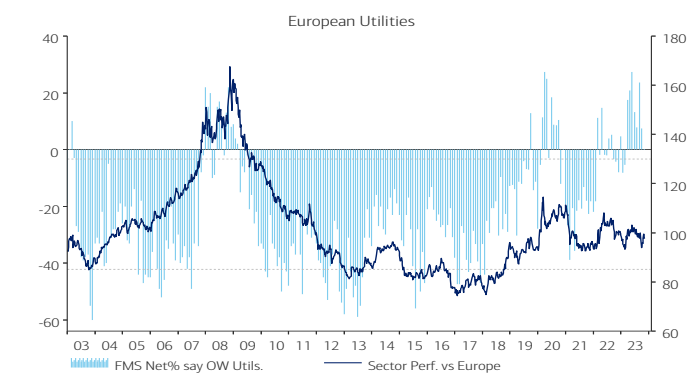
Net 6% of European participants say they are overweight the sector



Source: BofA European Fund Manager Survey, Datastream

BofA GLOBAL RESEARCH

Exhibit 51: European utilities
Net 0% of European participants say they are overweight the sector



Source: BofA European Fund Manager Survey, Datastream
BofA GLOBAL RESEARCH



Regional survey demographics data

Exhibit 52: Position / institution / approach of participants in the regional survey

Demographics details for regional Fund Manager Survey participants

	Nov-23	Oct-23	Sep-23
Structure of the panel - by position			
Chief Investment Officer	15	15	13
Asset Allocator / Strategist / Economist	28	31	24
Portfolio Manager	91	104	87
Other	17	15	17
Structure of the panel - by expertise			
Regional specialists + EM specialists only	40	36	36
Regional specialists with a global view	111	129	105
Total # of respondents to regional questions	151	165	141
Which of the following best describes the type of money you are running?			
Institutional funds (e.g. pension funds / insurance companies)	45	52	41
Hedge funds / proprietary trading desks	32	32	29
Mutual funds / unit trusts / investment trusts	57	63	58
None of the above	17	18	13
What do you estimate to be the total current value of assets under your direct control?			
Up to \$250mn	39	29	30
Around \$500mn	23	26	20
Around \$1bn	27	34	26
Around \$2.5bn	23	32	26
Around \$5bn	8	10	9
Around \$7.5bn	3	4	3
Around \$10bn or more	10	12	10
No funds under my direct control	18	18	17
Total (USD bn)	268	334	276
What best describes your investment time horizon at this moment?			
3 months or less	44	48	38
6 months	41	49	42
9 months	16	9	11
12 months or more	47	56	47
Weighted average	7.3	7.4	7.5
Don't know	3	3	3
Which region do you specialise in?			
US / North America	38	35	31
Europe / Continental Europe / Eurozone / UK	34	40	38
Asia Pacific / Asia Pacific ex Japan / Japan	55	60	39
South Africa	14	18	11
MENA (Middle East and North Africa)	7	8	10
None of the above	3	4	5

Source: BofA European Fund Manager Survey

BofA GLOBAL RESEARCH

Analyst Certification

I, Sebastian Raedler, hereby certify that the views expressed in this research report accurately reflect my personal views about the subject securities and issuers. I also certify that no part of my compensation was, is, or will be, directly or indirectly, related to the specific recommendations or view expressed in this research report.

Disclosures

Important Disclosures

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

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

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

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

Due to the nature of strategic analysis, the issuers or securities recommended or discussed in this report are not continuously followed. Accordingly, investors must regard this report as providing stand-alone analysis and should not expect continuing analysis or additional reports relating to such issuers and/or securities.

BofA Global Research personnel (including the analyst(s) responsible for this report) receive compensation based upon, among other factors, the overall profitability of Bank of America Corporation, including profits derived from investment banking. The analyst(s) responsible for this report may also receive compensation based upon, among other factors, the overall profitability of the Bank's sales and trading businesses relating to the class of securities or financial instruments for which such analyst is responsible.

Other Important Disclosures

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

The date and time of completion of the production of any recommendation in this report shall be the date and time of dissemination of this report as recorded in the report timestamp.

Recipients who are not institutional investors or market professionals should seek the advice of their independent financial advisor before considering information in this report in connection with any investment decision, or for a necessary explanation of its contents.

Officers of BofA or one or more of its affiliates (other than research analysts) may have a financial interest in securities of the issuer(s) or in related investments.

Refer to [BofA Global Research policies relating to conflicts of interest](#).

"BofA Securities" includes BofA Securities, Inc. ("BofAS") and its affiliates. Investors should contact their BofA Securities representative or Merrill Global Wealth Management financial advisor if they have questions concerning this report or concerning the appropriateness of any investment idea described herein for such investor. "BofA Securities" is a global brand for BofA Global Research.

Information relating to Non-US affiliates of BofA Securities and Distribution of Affiliate Research Reports:

BofAS and/or Merrill Lynch, Pierce, Fenner & Smith Incorporated ("MLPF&S") may in the future distribute, information of the following non-US affiliates in the US (short name: legal name, regulator): Merrill Lynch (South Africa): Merrill Lynch South Africa (Pty) Ltd., regulated by The Financial Service Board; MLI (UK): Merrill Lynch International, regulated by the Financial Conduct Authority (FCA) and the Prudential Regulation Authority (PRA); BofASE (France): BofA Securities Europe SA is authorized by the Autorité de Contrôle Prudentiel et de Résolution (ACPR) and regulated by the ACPR and the Autorité des Marchés Financiers (AMF). BofA Securities Europe SA ("BofASE") with registered address at 51, rue La Boétie, 75008 Paris is registered under no. 842 602 690 RCS Paris. In accordance with the provisions of French Code Monétaire et Financier (Monetary and Financial Code), BofASE is an établissement de crédit et d'investissement (credit and investment institution) that is authorised and supervised by the European Central Bank and the Autorité de Contrôle Prudentiel et de Résolution (ACPR) and regulated by the ACPR and the Autorité des Marchés Financiers. BofASE's share capital can be found at www.bofam.com/BofASEdisclaimer; BofA Europe (Milan): Bank of America Europe Designated Activity Company, Milan Branch, regulated by the Bank of Italy, the European Central Bank (ECB) and the Central Bank of Ireland (CBI); BofA Europe (Frankfurt): Bank of America Europe Designated Activity Company, Frankfurt Branch regulated by BaFin, the ECB and the CBI; BofA Europe (Madrid): Bank of America Europe Designated Activity Company, Sucursal en España, regulated by the Bank of Spain, the ECB and the CBI; Merrill Lynch (Australia): Merrill Lynch Equities (Australia) Limited, regulated by the Australian Securities and Investments Commission; Merrill Lynch (Hong Kong): Merrill Lynch (Asia Pacific) Limited, regulated by the Hong Kong Securities and Futures Commission (HKSCF); Merrill Lynch (Singapore): Merrill Lynch (Singapore) Pte Ltd, regulated by the Monetary Authority of Singapore (MAS); Merrill Lynch (Canada): Merrill Lynch Canada Inc, regulated by the Investment Industry Regulatory Organization of Canada; Merrill Lynch (Mexico): Merrill Lynch Mexico, SA de CV, Casa de Bolsa, regulated by the Comisión Nacional Bancaria y de Valores; Merrill Lynch (Argentina): Merrill Lynch Argentina SA, regulated by Comisión Nacional de Valores; BofA Japan: BofA Securities Japan Co., Ltd., regulated by the Financial Services Agency; Merrill Lynch (Seoul): Merrill Lynch International, LLC Seoul Branch, regulated by the Financial Supervisory Service; Merrill Lynch (Taiwan): Merrill Lynch Securities (Taiwan) Ltd., regulated by the Securities and Futures Bureau; BofA India: BofA Securities India Limited, regulated by the Securities and Exchange Board of India (SEBI); Merrill Lynch (Israel): Merrill Lynch Israel Limited, regulated by Israel Securities Authority; Merrill Lynch (DIFC): Merrill Lynch International (DIFC Branch), regulated by the Dubai Financial Services Authority (DFSA); Merrill Lynch (Brazil): Merrill Lynch S.A. Corretora de Títulos e Valores Mobiliários, regulated by Comissão de Valores Mobiliários; Merrill Lynch KSA Company: Merrill Lynch Kingdom of Saudi Arabia Company, regulated by the Capital Market Authority.

This information: has been approved for publication and is distributed in the United Kingdom (UK) to professional clients and eligible counterparties (as each is defined in the rules of the FCA and the PRA) by MLI (UK), which is authorized by the PRA and regulated by the FCA and the PRA - details about the extent of our regulation by the FCA and PRA are available from us on request; has been approved for publication and is distributed in the European Economic Area (EEA) by BofASE (France), which is authorized by the ACPR and regulated by the ACPR and the AMF; has been considered and distributed in Japan by BofA Japan, a registered securities dealer under the Financial Instruments and Exchange Act in Japan, or its permitted affiliates; is issued and distributed in Hong Kong by Merrill Lynch (Hong Kong) which is regulated by HKSCF; is issued and distributed in Taiwan by Merrill Lynch (Taiwan); is issued and distributed in India by BofA India; and is issued and distributed in Singapore to institutional investors and/or accredited investors (each as defined under the Financial Advisers Regulations) by Merrill Lynch (Singapore) (Company Registration No 198602883D). Merrill Lynch (Singapore) is regulated by MAS. Merrill Lynch Equities (Australia) Limited (ABN 65 006 276 795), AFS License 235132 (MLEA) distributes this information in Australia only to 'Wholesale' clients as defined by s.761G of the Corporations Act 2001. With the exception of Bank of America N.A., Australia Branch, neither MLEA nor any of

its affiliates involved in preparing this information is an Authorised Deposit-Taking Institution under the Banking Act 1959 nor regulated by the Australian Prudential Regulation Authority. No approval is required for publication or distribution of this information in Brazil and its local distribution is by Merrill Lynch (Brazil) in accordance with applicable regulations. Merrill Lynch (DIFC) is authorized and regulated by the DFSA. Information prepared and issued by Merrill Lynch (DIFC) is done so in accordance with the requirements of the DFSA conduct of business rules. BofA Europe (Frankfurt) distributes this information in Germany and is regulated by BaFin, the ECB and the CBI. BofA Securities entities, including BofA Europe and BofA SE (France), may outsource/delegate the marketing and/or provision of certain research services or aspects of research services to other branches or members of the BofA Securities group. You may be contacted by a different BofA Securities entity acting for and on behalf of your service provider where permitted by applicable law. This does not change your service provider. Please refer to the [Electronic Communications Disclaimers](#) for further information.

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

General Investment Related Disclosures:

Taiwan Readers: Neither the information nor any opinion expressed herein constitutes an offer or a solicitation of an offer to transact in any securities or other financial instrument. No part of this report may be used or reproduced or quoted in any manner whatsoever in Taiwan by the press or any other person without the express written consent of BofA Securities. This document provides general information only, and has been prepared for, and is intended for general distribution to, BofA Securities clients. Neither the information nor any opinion expressed constitutes an offer or an invitation to make an offer, to buy or sell any securities or other financial instrument or any derivative related to such securities or instruments (e.g., options, futures, warrants, and contracts for differences). This document is not intended to provide personal investment advice and it does not take into account the specific investment objectives, financial situation and the particular needs of, and is not directed to, any specific person(s). This document and its content do not constitute, and should not be considered to constitute, investment advice for purposes of ERISA, the US tax code, the Investment Advisers Act or otherwise. Investors should seek financial advice regarding the appropriateness of investing in financial instruments and implementing investment strategies discussed or recommended in this document and should understand that statements regarding future prospects may not be realized. Any decision to purchase or subscribe for securities in any offering must be based solely on existing public information on such security or the information in the prospectus or other offering document issued in connection with such offering, and not on this document.

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

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

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

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

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

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

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

Copyright and General Information:

Copyright 2023 Bank of America Corporation. All rights reserved. iQdatabase® is a registered service mark of Bank of America Corporation. This information is prepared for the use of BofA Securities clients and may not be redistributed, retransmitted or disclosed, in whole or in part, or in any form or manner, without the express written consent of BofA Securities. BofA Global Research information is distributed simultaneously to internal and client websites and other portals by BofA Securities and is not publicly-available material. Any unauthorized use or disclosure is prohibited. Receipt and review of this information constitutes your agreement not to redistribute, retransmit, or disclose to others the contents, opinions, conclusion, or information contained herein (including any investment recommendations, estimates or price targets) without first obtaining express permission from an authorized officer of BofA Securities.

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

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

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

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

All opinions, projections and estimates constitute the judgment of the author as of the date of publication and are subject to change without notice. Prices also are subject to change without notice. BofA Securities is under no obligation to update this information and BofA Securities ability to publish information on the subject issuer(s) in the future is subject to applicable quiet periods. You should therefore assume that BofA Securities will not update any fact, circumstance or opinion contained herein. Certain outstanding reports or investment opinions relating to securities, financial instruments and/or issuers may no longer be current. Always refer to the most recent research report relating to an issuer prior to making an investment decision.

In some cases, an issuer may be classified as Restricted or may be Under Review or Extended Review. In each case, investors should consider any investment opinion relating to such issuer (or its security and/or financial instruments) to be suspended or withdrawn and should not rely on the analyses and investment opinion(s) pertaining to such issuer (or its securities and/or financial instruments) nor should the analyses or opinion(s) be considered a solicitation of any kind. Sales persons and financial advisors affiliated with BofAS or any of its affiliates may not solicit purchases of securities or financial instruments that are Restricted or Under Review and may only solicit securities under Extended Review in accordance with firm policies. Neither BofA Securities nor any officer or employee of BofA Securities accepts any liability whatsoever for any direct, indirect or consequential damages or losses arising from any use of this information.