

# Global Quant Panorama

## Earnings-led recovery

### A positive signal for equities and cyclicals

Last week, the [Global Wave](#) signaled a trough in the global cycle, suggesting investors could now position for a sustained upturn. The aggregate earnings estimate of stocks globally typically moves in tandem with the Global Wave (77% correlation) which explains why equity markets and cyclical assets tend to outperform when the Global Wave is rising. In the year after all Global Wave trough signals, on average, [global equities](#) rallied 16.5%, [Emerging Markets](#) outperformed the US by 3.1%, the Boosters outperformed the Bunkers by 18.6%, and the best performing [global sectors](#) were Technology, Diversified Financials, Media, Consumer Discretionary, and Industrials.

### Equity market performance after each trough signal

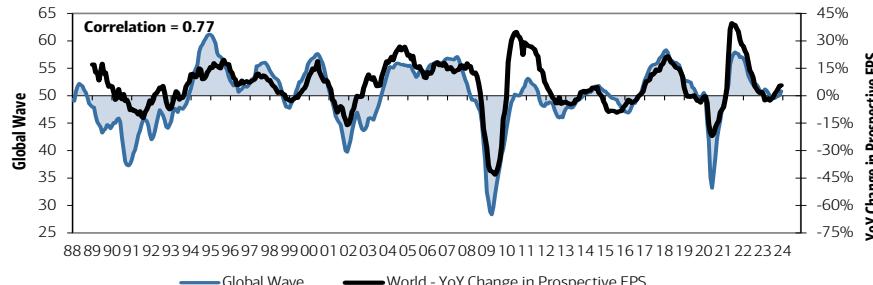
There have been six previous [trough signals](#) in the Global Wave since we first published the monthly analysis in 2008. After these six signals, the median return of the MSCI AC World Index was 9.9% in the next six months and 16.1% in the next 12 months. In every instance, global equities achieved a positive return in the next six months and 12 months.

### Two stock screens: Boosters, Cyclic Triple Momentum

Global and regional [Boosters](#) are stocks with style characteristics for an upturn. We also include [global](#) and [Asia Pac](#) screens of BofA Buy-rated liquid stocks in cyclical sectors with above-average Boosters ranks and Triple Momentum (earnings, price, news) ranks.

**Chart 1: Global Wave and GLOBAL Prospective EPS**

Global earnings estimates tend to move in tandem with the Global Wave



**Source :** BofA Global Quantitative Strategy, MSCI, IBES, Haver, Bloomberg, OECD, IMF, ICE Bond Indices, National Statistics Database

The sentiment indicator identified as Global Wave 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 sentiment indicator was not created to act as a benchmark.

BofA GLOBAL RESEARCH

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

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

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

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

Refer to important disclosures on page 244 to 246.

12653157

31 January 2024

Quant Strategy  
Global

**Nigel Tupper >>**  
Quant Strategist  
Merrill Lynch (Australia)  
+61 2 9226 5735  
nigel.tupper@bofa.com

**Amar Vashi >>**  
Quant Strategist  
Merrill Lynch (Australia)  
amar.vashi@bofa.com

**Sumuhan Shanmugalingam >>**  
Quant Strategist  
Merrill Lynch (Australia)  
sumuhan.shanmugalingam@bofa.com

Unless otherwise noted, all links on the front page of this report refer to sections in this research report.

### Executive Summary

- Top-down: [Global Wave](#)  
[Earnings](#) [Policy](#) [Fed](#)
- Stock: [Contenders & Defenders](#)
- Style: [Performance](#) [Risk vs Quality](#) [Bunkers & Boosters](#)  
[Speculation](#)
- [Global Steady Compounds and By Region](#)
- [Boosters By Investor Type](#)
- [Valuations](#)
- [Regional Allocation](#)
- [Sector Allocation](#)
- [Regional-Sector Allocation](#)
- [Geographic Revenue Exposure](#)
- [Global ProductPaedia](#)
- [NewsAlpha](#)
- [Tactical View](#)

# Contents

---

Executive Summary	5
Global Wave	6
Performance lessons from three decades	12
Global ProductPaedia	14
NewsAlpha	23
Early vs Late	27
Earnings Growth	28
Valuations	32
ROE Aggregates	35
Speculation	38
Four Stages of an upturn	42
Global Inflation & Short Rates	44
Global Quantessential Styles	47
Steady Compounders	60
Global Boosters and Bunkers	73
Regional Boosters and Bunkers	78
Global Boosters by Investor Type	89
Global Contenders & Defenders	90
Geographic Revenue Exposure	91
Global Positioning in Stocks	103
Global Fund Performance	109
Regional Allocation	111
Global Sector Allocation	123
Regional Sector Allocation	127
Most Important Stocks	165
Additional Macro Indicators	167
Cash - Over \$8 trillion	172
Sales Growth	178
Tactical View	180
Cycle Sensitives	181
Interest Rate Sensitivity	185
Yield Curve Slope and Equities Performance	189
FX Sensitivity	191
Oil Price Sensitivity	194
Optimism Aggregates	197
Optimism	199
Performance Opportunity	203

Institutional Investor Universe	205
Seasonality	207
Appendix A: Countries Momentum & Value Charts	214
Global Quant Publications	242



## Notice to Readers:

The various screens identified in this report are intended to be indicative metrics 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. These screens were not created to act as a benchmark.

The screens in this report are not a recommended list either individually or as a group of stocks. Investors should consider the fundamentals of the companies and their own individual circumstances/objectives before making any investment decisions.

**Table 1: Acronyms and Definitions**

Acronyms used in this report and its definitions (full form)

Acronym	Definition (full form)
MSCI	Morgan Stanley Capital International
ACWI	All Country World Index
GEM	Global Emerging Markets
APxJ	Asia Pac ex-Japan
DM	Developed Markets
ex or Ex	Excluding
YoY	Year-on-year
YTD	Year-to-date
1m	1-month
3m	3-months
6m	6-months
12m	12-months
QE	Quantessential
EM	Earnings Momentum
PM	Price Momentum
PE	Price-to-Earnings (Forecast)
PB	Price-to-Book (Trailing)
OW	Overweight
UW	Underweight
Style Indices	Quantessential Value, Small Size and Growth are based on our monthly report on Styles. For more details on how these style indices are calculated please refer to Global Quantessential Style report
TE	Tracking Error = Tracking error (or active risk) quantifies how closely a screen tracks the index to which it is benchmarked. It is measured by the standard deviation of relative returns. The lower the tracking error (standard deviation) the better the screen tracks the returns of the index. Tracking error in this research is based on the monthly returns of the screens and the underlying index.
Name with *	Name with * represents non-benchmark stocks

**Source:** BofA Global Quantitative Strategy

BofA GLOBAL RESEARCH

# Executive Summary

## Key message

The Global Wave signaled a trough. Following a trough signal, cyclical styles, regions and sectors tend to outperform, on average.

- The [Global Wave](#) has signaled a trough in the global cycle, suggesting investors could now position for a sustained upturn.
- The [earnings expectations](#) have a strong relationship with the Global Wave and tends to move in tandem.
- [Valuations](#) shows a positive return in subsequent 12-months at current levels.
- [Funds](#) in our positioning analysis are underweight in Financials, Materials and Energy, but could increase cyclical stocks exposure in 2024.
- [Market leadership](#) has rotated towards cyclical sectors globally.
- [Global Boosters](#) are stocks with style characteristics that tend to outperform when the Global Wave is rising.

## The most interesting charts

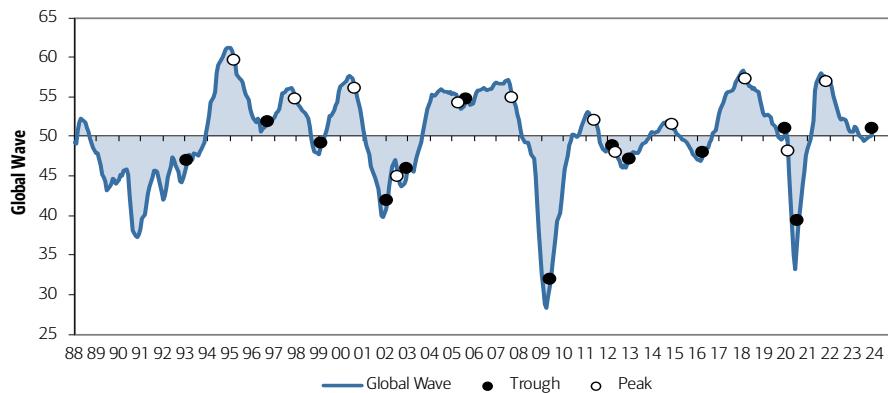
- The trough in the Global Wave suggests rotating into [cyclical regions](#), [cyclical sectors](#) and [cyclical styles](#).
- Our [momentum](#) analysis highlights that the combined earnings and price momentum is currently strongest in the Software sector.
- [Earnings Revisions Ratio](#) moderated in January from 0.82 to 0.73 after rising in December, however it tends to improve when the Global Wave is rising.
- Our [Positioning](#) analysis suggests long-only funds globally reduced cash holdings and added meaningfully to active stock exposures in 2023.
- In 2023, only 37% of [Active funds](#) outperformed their benchmark. Value funds were the best performers with 55% outperforming by a median 0.46%.
- Stock-to-stock [correlations](#) have remained low suggesting an opportunity to add value from stock selection.
- [Buy-Backs](#) are near record highs, while [Capex spending](#) is trending down.
- [Top-line growth](#) forecasts have improved in the last 12-months.
- Global Domestic Plays underperformed [Global Exporters](#) by -4.4% last year.
- [Positive Oil Price Sensitivity](#) stocks have underperformed Negative Oil Price Sensitive stocks by -2.1% in the last twelve months.
- [Broker Optimism](#) continues to remain elevated as analysts are buoyed by earnings resilience in Developed Markets.
- [Steady Compounds](#) are stocks which appear immune to the cycle.
- [The Global Fifty](#) incorporates all aspects of our analysis with the aim of outperforming the MSCI All Country World Index.



# Global Wave

## Chart 2: Global Wave

The Global Wave has troughed



Source : BofA Global Quantitative Strategy, MSCI, IBES, Haver, Bloomberg, OECD, IMF, ICE Bond Indices, National Statistics Database  
The sentiment indicator identified as the Global Wave 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 sentiment indicator was not created to act as a benchmark.

BofA GLOBAL RESEARCH

## Table 2: Components of the Global Wave

The Global Wave is an amalgamation of seven components representing various aspects of the global economy

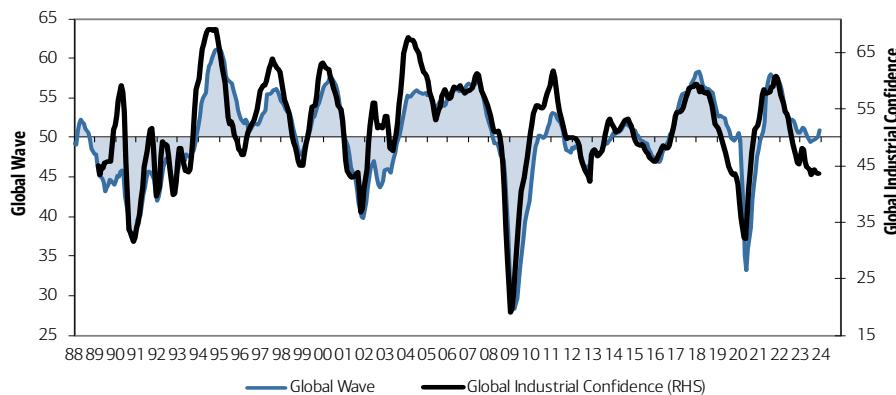
Components	Type
Global Industrial Confidence	Output
Global Consumer Confidence	Demand
Global Capacity Utilisation	Investment
Global Unemployment	Labour Market
Global Producer Prices	Prices
Global Credit Spreads	Bond Market
Global Earnings Revision Ratio	Equity Market

Source : BofA Global Quantitative Strategy

BofA GLOBAL RESEARCH

## Chart 3: Global Industrial Confidence

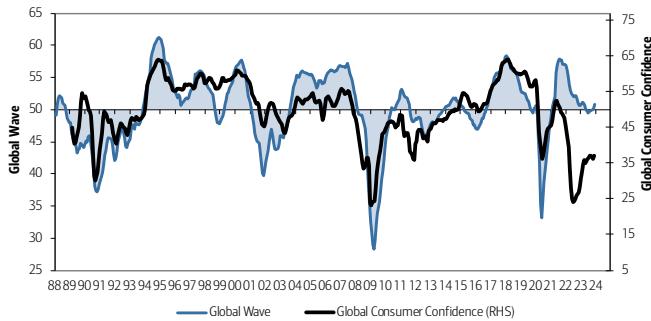
Global Industrial Confidence component improved last month



Source : BofA Global Quantitative Strategy, MSCI, IBES, Haver, Bloomberg, OECD, IMF, ICE Bond Indices, National Statistics Database  
BofA GLOBAL RESEARCH

### Chart 4: Global Consumer Confidence

Global Consumer Confidence indicator contributed positively last month

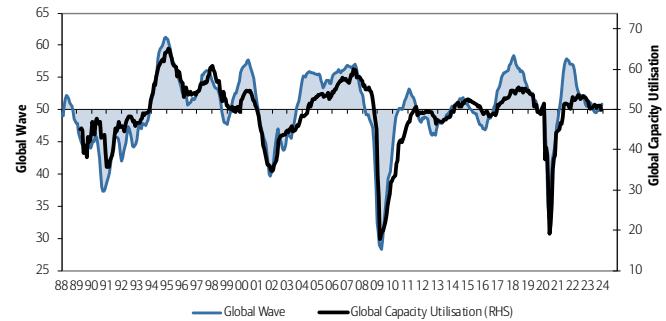


Source : BofA Global Quantitative Strategy, MSCI, IBES, Haver, Bloomberg, OECD, IMF, ICE Bond Indices, National Statistics Database

BofA GLOBAL RESEARCH

### Chart 5: Global Capacity Utilisation

Global Capacity Utilisation indicator contributed negatively last month

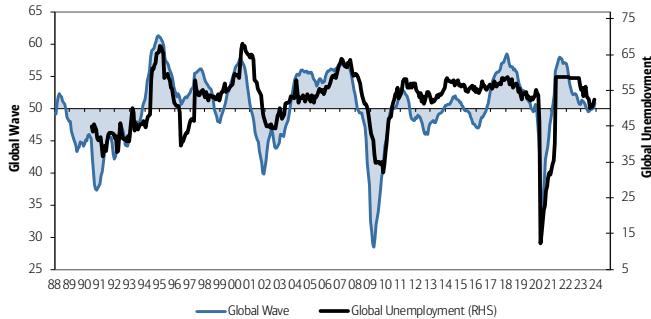


Source : BofA Global Quantitative Strategy, MSCI, IBES, Haver, Bloomberg, OECD, IMF, ICE Bond Indices, National Statistics Database

BofA GLOBAL RESEARCH

### Chart 6: Global Unemployment

Global Unemployment indicator contributed positively last month

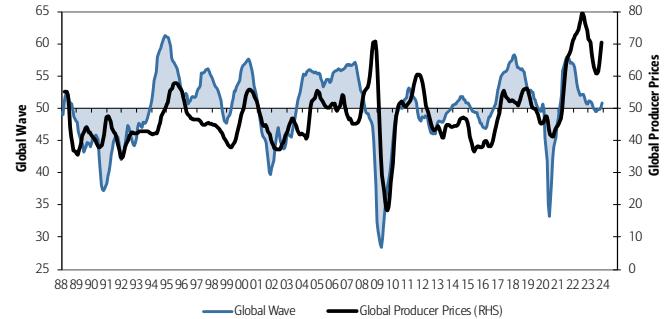


Source : BofA Global Quantitative Strategy, MSCI, IBES, Haver, Bloomberg, OECD, IMF, ICE Bond Indices, National Statistics Database

BofA GLOBAL RESEARCH

### Chart 7: Global Producer Prices

Global Producer Prices component improved last month

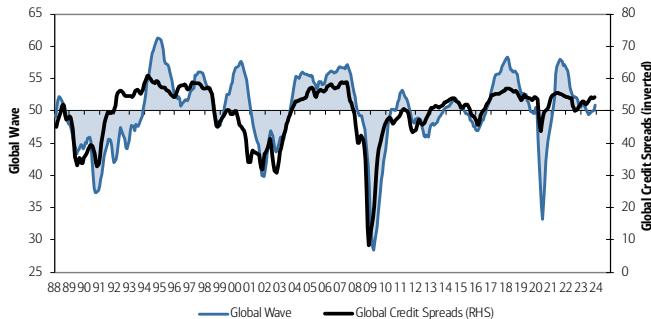


Source : BofA Global Quantitative Strategy, MSCI, IBES, Haver, Bloomberg, OECD, IMF, ICE Bond Indices, National Statistics Database

BofA GLOBAL RESEARCH

### Chart 8: Global Credit Spreads

This component of the Global Wave ticked up last month

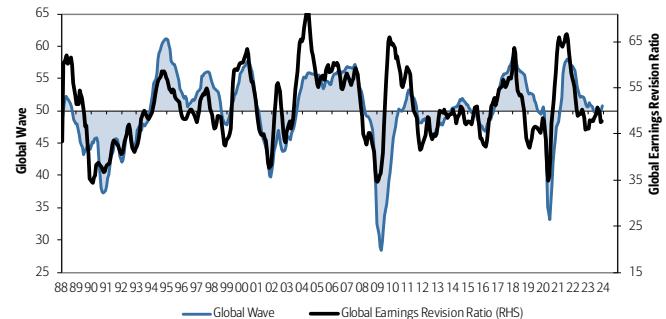


Source : BofA Global Quantitative Strategy, MSCI, IBES, Haver, Bloomberg, OECD, IMF, ICE Bond Indices, National Statistics Database

BofA GLOBAL RESEARCH

### Chart 9: Global Earnings Revision Ratio

The 3M Ratio improved from 0.72 to 0.74 which contributed positively



Source : BofA Global Quantitative Strategy, MSCI, IBES, Haver, Bloomberg, OECD, IMF, ICE Bond Indices, National Statistics Database

BofA GLOBAL RESEARCH



## Performance post Global Wave peaks and troughs

### Chart 10: YoY Global Equity Market Performance versus the Global Wave

Global equities have a positive correlation with the Global Wave

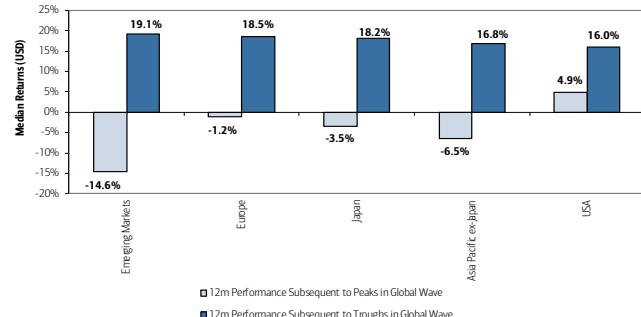


**Source :** BofA Global Quantitative Strategy, MSCI, IBES, Haver, Bloomberg, OECD, IMF, ICE Bond Indices, National Statistics Database

BofA GLOBAL RESEARCH

### Chart 12: Regional performance (USD) post peaks and troughs in the Global Wave

Emerging Markets is the best performing region in the subsequent 12m post trough in the Global Wave

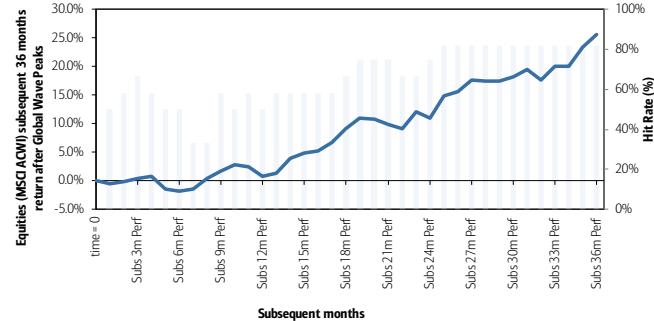


**Source :** BofA Global Quantitative Strategy, MSCI, IBES, Haver, Bloomberg, OECD, IMF, ICE Bond Indices, National Statistics Database

BofA GLOBAL RESEARCH

### Chart 14: MSCI ACWI subsequent returns (USD) post peaks in the Global Wave

Global equities have muted returns in 12m post peaks in the Global Wave

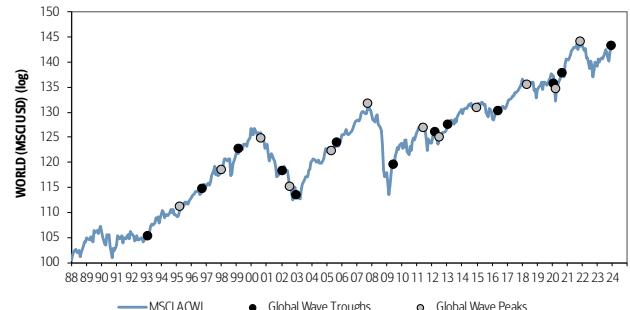


**Source :** BofA Global Quantitative Strategy, MSCI, IBES, Haver, Bloomberg, OECD, IMF, ICE Bond Indices, National Statistics Database

BofA GLOBAL RESEARCH

### Chart 11: MSCI ACWI and Troughs and Peaks in Global Wave

MSCI AC World Index Level and troughs and peaks in the Global Wave

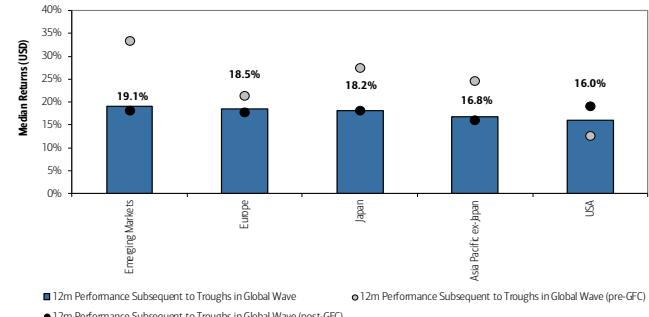


**Source :** BofA Global Quantitative Strategy, MSCI, IBES, Haver, Bloomberg, OECD, IMF, ICE Bond Indices, National Statistics Database

BofA GLOBAL RESEARCH

### Chart 13: Regional performance (USD) post troughs in the Global Wave (pre and post GFC)

Pre-GFC, EM had the best returns in 12m following troughs in the Global Wave, however post-GFC, the USA has the best returns

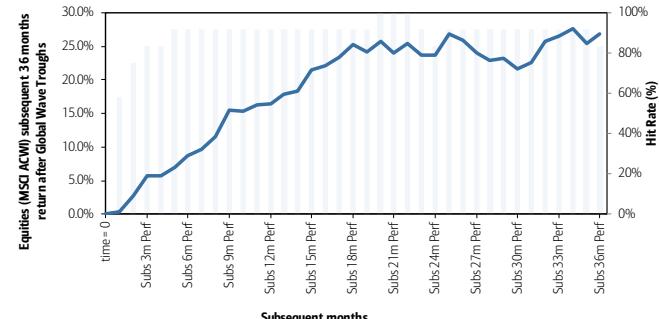


**Source :** BofA Global Quantitative Strategy, MSCI, IBES, Haver, Bloomberg, OECD, IMF, ICE Bond Indices, National Statistics Database

BofA GLOBAL RESEARCH

### Chart 15: MSCI ACWI subsequent returns (USD) post troughs in the Global Wave

Global equities averaged 16.5% returns in 12m post troughs in the Global Wave

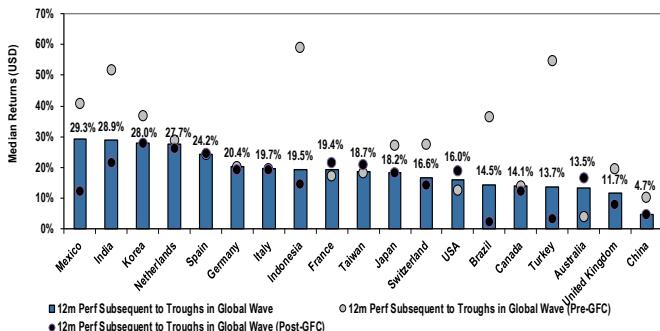


**Source :** BofA Global Quantitative Strategy, MSCI, IBES, Haver, Bloomberg, OECD, IMF, ICE Bond Indices, National Statistics Database

BofA GLOBAL RESEARCH

### Chart 16: Country performance (USD) post troughs in the Global Wave

India and Korea have the best returns in 12m post troughs in the Global Wave, China has the worst returns

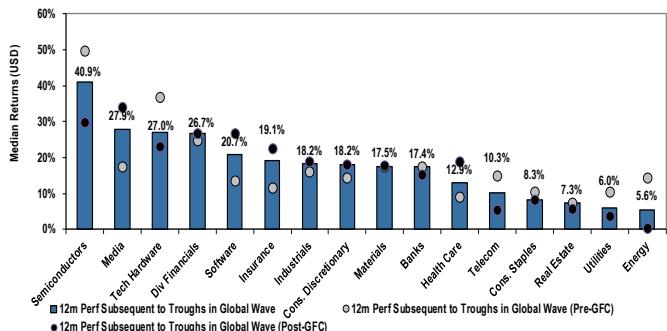


**Source :** BofA Global Quantitative Strategy, MSCI, IBES, Haver, Bloomberg, OECD, IMF, ICE Bond Indices, National Statistics Database

BofA GLOBAL RESEARCH

### Chart 17: Sector performance (USD) post troughs in the Global Wave

Semiconductors has the best returns in 12m post troughs in the Global Wave, Energy has the worst returns

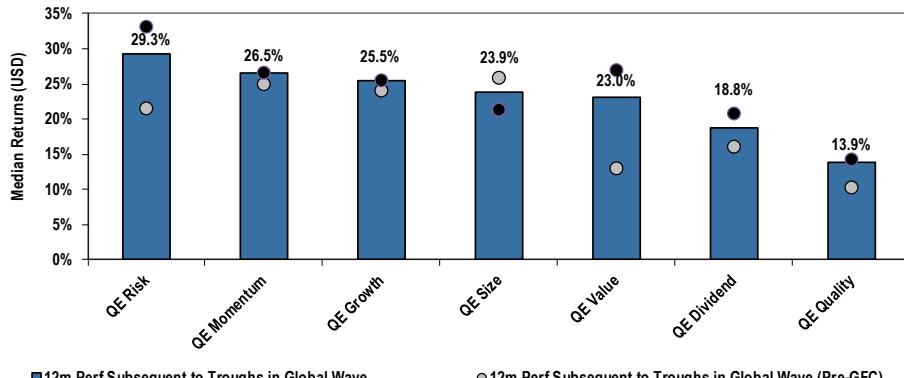


**Source :** BofA Global Quantitative Strategy, MSCI, IBES, Haver, Bloomberg, OECD, IMF, ICE Bond Indices, National Statistics Database

BofA GLOBAL RESEARCH

### Chart 18: Style performance (USD) post troughs in the Global Wave

Risk has the best returns in 12m post troughs in the Global Wave



**Source :** BofA Global Quantitative Strategy, MSCI, IBES, Haver, Bloomberg, OECD, IMF, ICE Bond Indices, National Statistics Database

BofA GLOBAL RESEARCH



**Table 3: MSCI AC World Subsequent Performance and Global Wave Trough Signals**

Global equities averaged 16.5% returns in 12m post troughs in the Global Wave

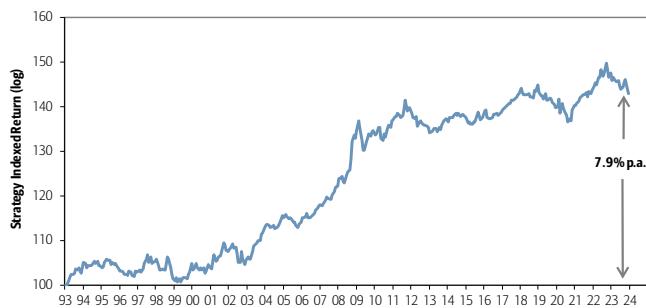
Global Wave Trough Dates	Subs 1-month MSCI AC World Index returns	Subs 3-months MSCI AC World Index returns	Subs 6-months MSCI AC World Index returns	Subs 1-year MSCI AC World Index returns
Feb-93	6%	12%	19%	25%
Oct-96	5%	5%	7%	14%
Mar-99	4%	5%	3%	22%
Feb-02	5%	1%	-14%	-22%
Jan-03	-2%	6%	16%	38%
Sep-05	-3%	3%	10%	13%
Jun-09	9%	17%	22%	10%
Apr-12	-9%	-4%	0%	12%
Feb-13	2%	4%	3%	16%
Jun-16	4%	5%	6%	16%
Feb-20	-14%	-1%	14%	28%
Sep-20	-3%	14%	19%	26%
<b>Median</b>	<b>2.9%</b>	<b>4.9%</b>	<b>8.4%</b>	<b>16.5%</b>
<b>Hit Rate</b>	<b>58%</b>	<b>83%</b>	<b>92%</b>	<b>92%</b>
<b>Pre-GFC</b>	<b>4.3%</b>	<b>5.2%</b>	<b>8.4%</b>	<b>17.8%</b>
<b>Post-GFC</b>	<b>-0.5%</b>	<b>4.2%</b>	<b>9.9%</b>	<b>16.1%</b>

Source : BofA Global Quantitative Strategy, MSCI, IBES, Haver, Bloomberg, OECD, IMF, ICE Bond Indices, National Statistics Database

BofA GLOBAL RESEARCH

**Chart 19: Cumulative Perf (logged) of Market Strategy vs Global Wave**

This strategy averages 7.9% p.a. with a hit rate of 58%

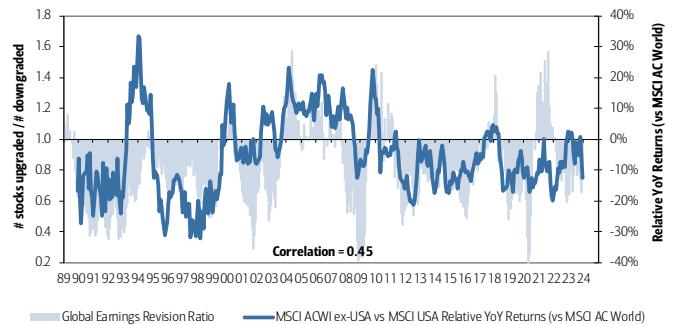


Source : BofA Global Quantitative Strategy, MSCI, IBES, Haver, Bloomberg, OECD, IMF, ICE Bond Indices, National Statistics Database

BofA GLOBAL RESEARCH

**Chart 20: YoY Perf of Non-USA vs USA and Trends in Global Profit Expectations**

MSCI USA outperforms, on average when profits cycle is slowing

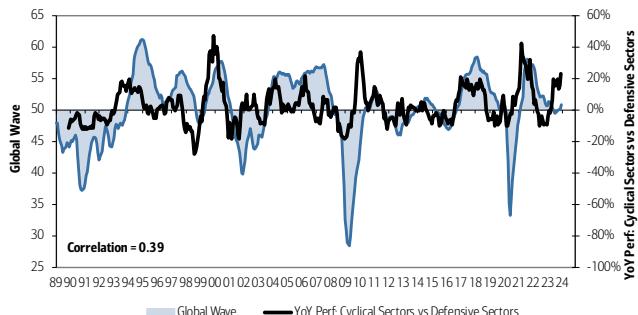


Source : BofA Global Quantitative Strategy, MSCI

BofA GLOBAL RESEARCH

### Chart 21: Global Wave and YoY Perf of Sector Rotation Strategy

Cyclical sectors tend to outperform when the Global Wave is rising

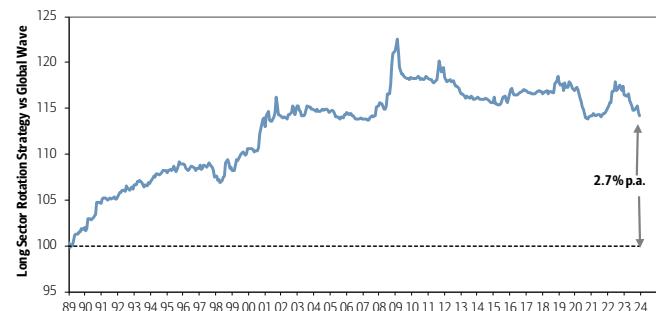


**Source :** BofA Global Quantitative Strategy, MSCI, IBES, Haver, Bloomberg, OECD, IMF, ICE Bond Indices, National Statistics Database

BofA GLOBAL RESEARCH

### Chart 22: Relative Cumulative Perf of Sector Rotation Strategy (Long-only)

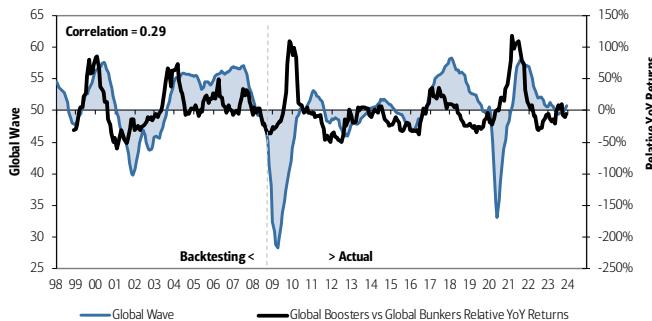
Rotating into Cyclical or Defensive Sectors based on Global Wave direction averages 2.7% p.a.



**Source :** BofA Global Quantitative Strategy, MSCI, IBES, Worldscope, ExShare, Bloomberg  
BofA GLOBAL RESEARCH

### Chart 23: Global Boosters and Bunkers: YoY Returns vs Global Wave

Global Boosters have underperformed Bunkers by -6.1% in the last 12m



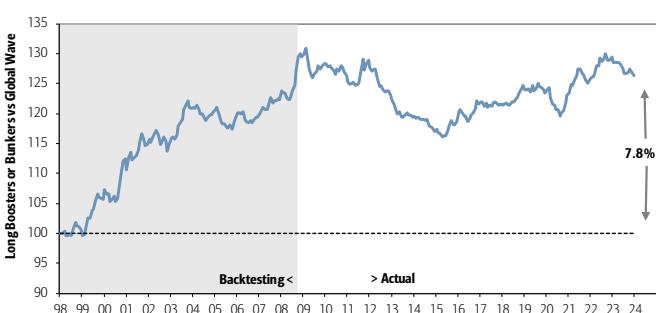
**Source :** BofA Global Quantitative Strategy, MSCI, IBES, Haver, Bloomberg, OECD, IMF, ICE Bond Indices, National Statistics Database, S&P, Worldscope

Back-tested results are from Jan-89 to Feb-12. Actual performance is from Mar-12. Back-tested 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.

BofA GLOBAL RESEARCH

### Chart 24: Relative Cumulative Perf of Style Rotation Strategy (Long-only)

Rotating into Boosters or Bunkers based on Global Wave direction averages 5.3% p.a.



**Source :** BofA Global Quantitative Strategy, MSCI, IBES, Worldscope, ExShare, Bloomberg  
The shaded area shows back-tested results during the period from Jan-89 to Feb-12. The unshaded portion represents actual performance since Mar-12. Back-tested 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.

BofA GLOBAL RESEARCH

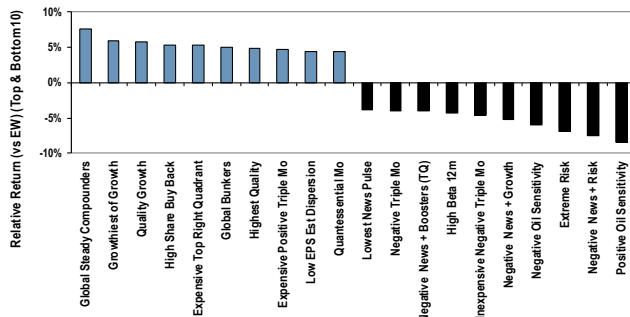


# Performance lessons from three decades

## Last 15 Years

### Chart 25: Annualized Relative Returns of strategies in the last 15 years (Top & Bottom 10)

The best factor in the last 15 years is Global Steady Compounders



Source : BofA Global Quantitative Strategy, MSCI, IBES, Bloomberg

Back-tested results are from the start date of a particular strategy to date of inception as indicated in Tables 12-17. Actual performance is from date of inception of a particular strategy. Back-tested 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.

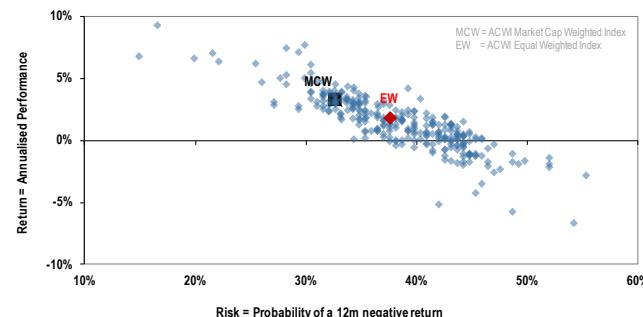
BofA GLOBAL RESEARCH

For the last 15 years, we have data on 289 global investment strategies. This period includes market downturns, bull markets, and an extended period of low growth.

- The best performing strategies in the last 15 years would have been tilted towards Growth and Quality
- The best performing single factor would have been “High Share Buy Back”
- Many of the worst performing strategies would have included a “Negative News” component.

### Chart 26: Risk-Return of all strategies in the last 15 years

All factors with risk and return metrics in the last 15 years



Source : BofA Global Quantitative Strategy, MSCI, IBES, Bloomberg

Back-tested results are from the start date of a particular strategy to date of inception as indicated in Tables 12-17. Actual performance is from date of inception of a particular strategy. Back-tested 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.

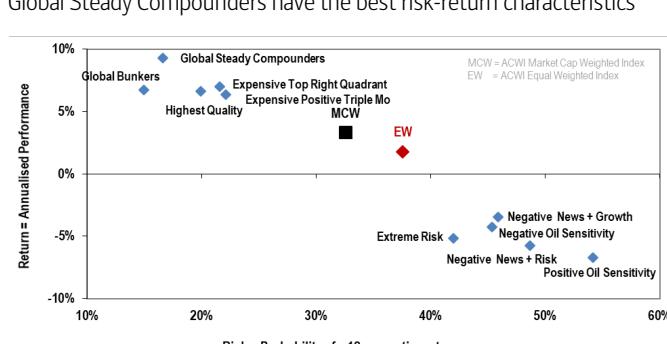
BofA GLOBAL RESEARCH

• There is a huge spread of risk-returns metrics for strategies over this time period, with a few standout strategies.

• Over this period, the Mcap Weighted Index outperformed the Equal Weighted Index as large cap stocks contributed significantly.

### Chart 27: Risk-Return of strategies in the last 15 years (Top & Bottom 5)

Global Steady Compounders have the best risk-return characteristics



Source : BofA Global Quantitative Strategy, MSCI, IBES, Bloomberg

Back-tested results are from the start date of a particular strategy to date of inception as indicated in Tables 12-17. Actual performance is from date of inception of a particular strategy. Back-tested 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.

BofA GLOBAL RESEARCH

This chart shows the Top 5 and Bottom 5 strategies based on Risk-Return metrics over the last 15 years.

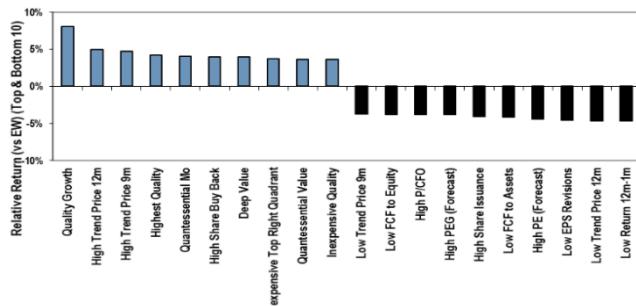
• The high-return and low-risk strategies would have included Global Steady Compounders and Highest Quality. Interestingly, a number of high-return and low-risk strategies include expensive stocks, including “Expensive Triple Momentum” and “Expensive Top-Right Quadrant”.

• The low-return, high-risk strategies include factors relating to the oil price, negative news, and Risk.

## Last 32 Years

### Chart 28: Annualized Relative Returns of strategies in the last 32 years (Top & Bottom 10)

The best factor in the last 32 years would have been Quality Growth



**Source :** BofA Global Quantitative Strategy, MSCI, IBES, Bloomberg

Back-tested results are from the start date of a particular strategy to date of inception as indicated in Tables 12-17. Actual performance is from date of inception of a particular strategy. Back-tested 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.

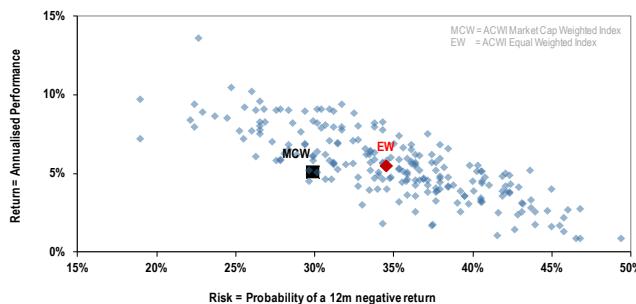
BofA GLOBAL RESEARCH

The longest time span in our analysis is 32 years, for which we have data on 220 global investment strategies. This period includes a number of global recessions, bull markets, extended periods of strong growth, and periods of low growth.

- The best performing strategies over the full 32-years would have been tilted towards Growth and Momentum. “Quality Growth” would have been the best performer (and is also in the Top 5 over the last 30, 25, 20, 15, 10, and 5-year periods).
- The top-10 would also have included “High Share Buy Back”, Deep Value, and The Global Contenders (Inexpensive stocks in the Top-Right Quadrant - above earnings and price momentum)
- The worst performing strategies would have been tilted towards weak momentum and expensive valuations. High Share Issuance also makes the list.

### Chart 29: Risk-Return of all strategies in the last 32 years

All factors with risk and return metrics in the last 32 years



**Source :** BofA Global Quantitative Strategy, MSCI, IBES, Bloomberg

Back-tested results are from the start date of a particular strategy to date of inception as indicated in Tables 12-17. Actual performance is from date of inception of a particular strategy. Back-tested 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.

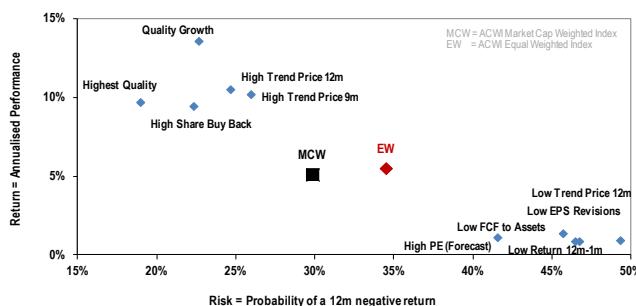
BofA GLOBAL RESEARCH

- There is a large spread of risk-returns metrics for strategies over this time period, with one strategy appearing considerably more consistent than others.

- Over this period, the Mcap Weighted Index and Equal Weighted Index would have performed reasonably similarly.

### Chart 30: Risk-Return of strategies in the last 32 years (Top & Bottom 5)

Quality Growth had the best risk-return characteristics



**Source :** BofA Global Quantitative Strategy, MSCI, IBES, Bloomberg

Back-tested results are from the start date of a particular strategy to date of inception as indicated in Tables 12-17. Actual performance is from date of inception of a particular strategy. Back-tested 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.

BofA GLOBAL RESEARCH

This chart shows the Top 5 and Bottom 5 strategies based on Risk-Return metrics over the last 32 years.

- The high-return, low-risk strategies would have included positive price momentum factors (High Trend Price 12m, High Trend Price 9m, Quantessential Momentum), and also quality factors (Quality Growth, Highest Quality).
- The low-return, high-risk strategies would have included factors relating to expensive valuations, weak price momentum, and negative earnings revisions to consensus estimates.



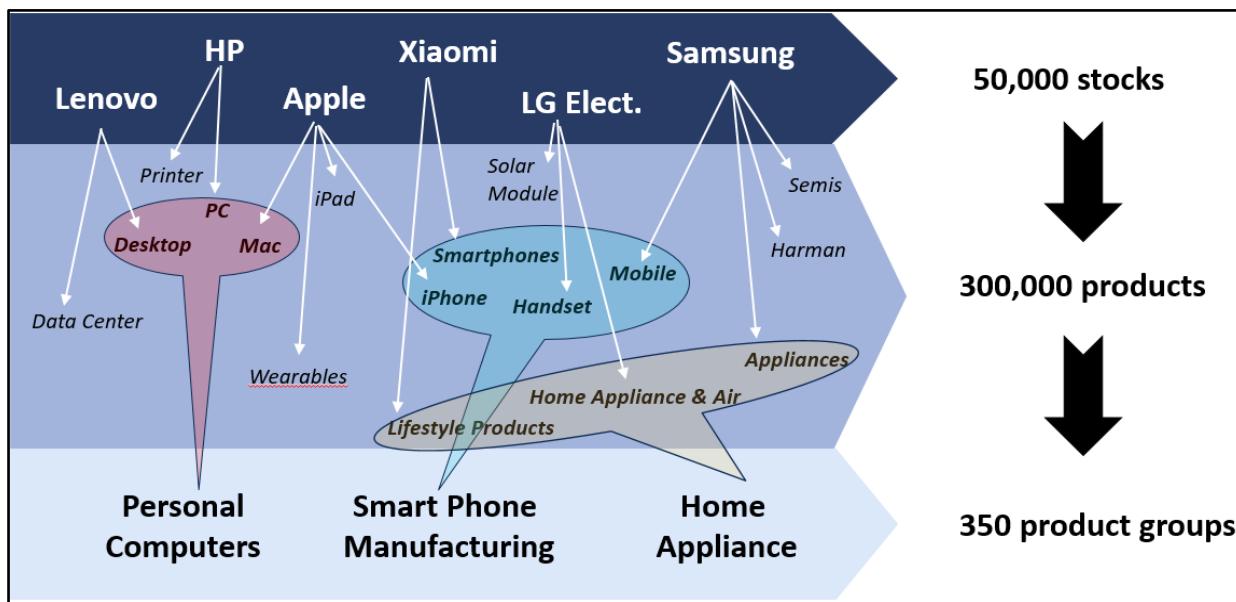
# Global ProductPaedia

In this new monthly “Global ProductPaedia” report, we identify investment trends based on products as an alternative approach to analysing equity markets by sector, industry, country, region, or style. The popular and widely used GICS classification divides stocks into 11 major sectors, 24 industry groups, 69 industries, and 158 sub-industries, but even the most granular level isn’t detailed enough to pinpoint revenue by product. Using data since 2012, we have categorized 50,000 stocks globally into 298 Product Groups based on product revenue exposure.

We calculate the performance of each product group and identify associated stocks in order to help investors identify opportunities. Using our analysis, we screen for investment ideas including Emerging Products, Market Share Gainers, and Pure Product Exposure. For each product group, we monitor historical trends in earnings expectations, calculate style characteristics, determine the News Pulse hotspots, calculate fund manager positioning, map supply chains dynamics, and determine whether stock exposure would have been best gained through the product, customers or suppliers. In addition, an analysis of suppliers and customers facilitates a deeper understanding of supply-chain dynamics.

**Chart 31: Traditional Segmentation vs Global ProductPaedia**

Global ProductPaedia associates stocks with every product from which the company derives revenue



Source : BofA Global Quantitative Strategy

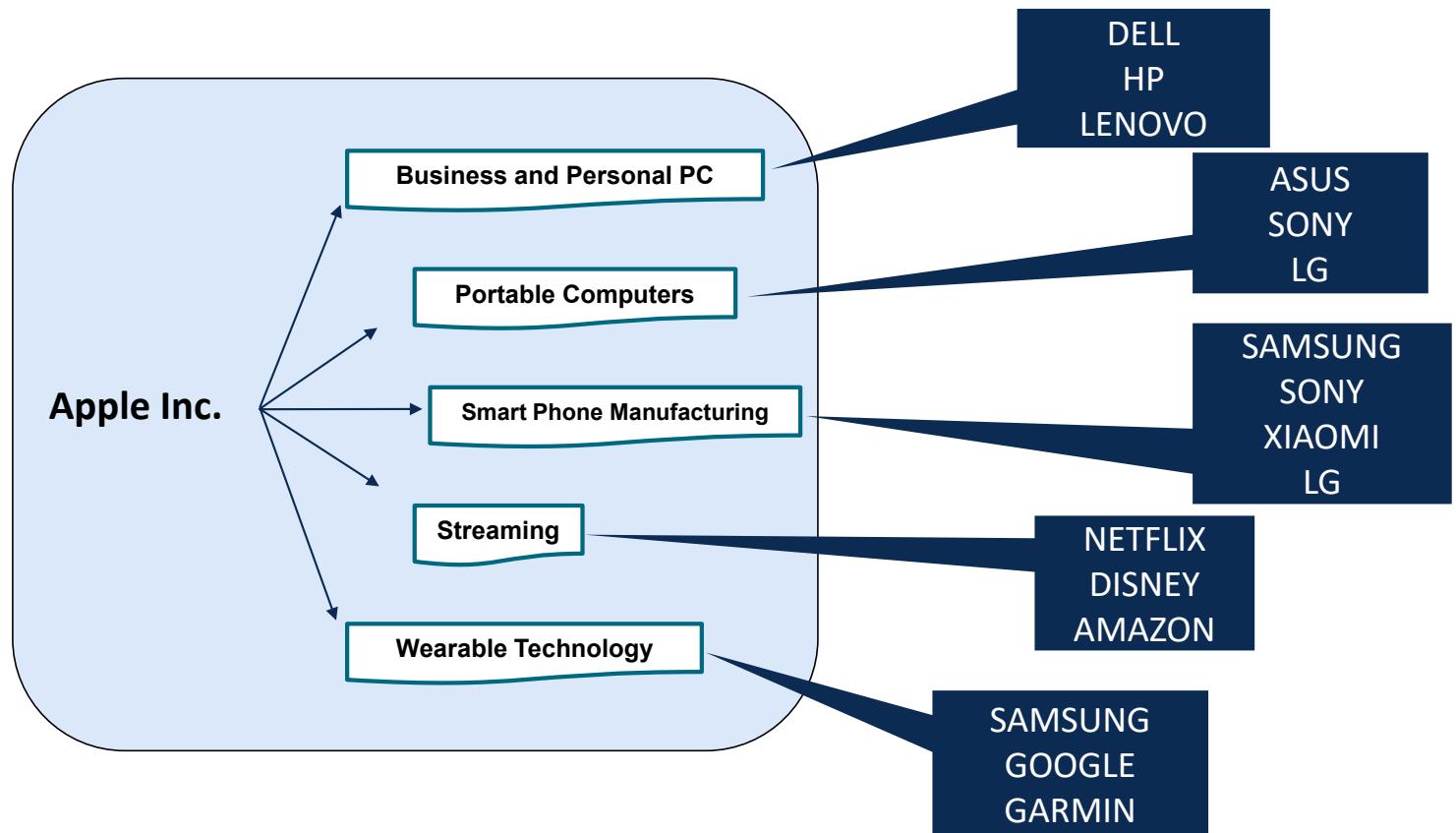
BofA GLOBAL RESEARCH

In addition to being more granular, this Product analysis associates each stock to all Products from which it generates revenue (rather than just one GICS sector).

For example, Apple generates revenue from multiple Products including Smart Phone Manufacturing, Streaming, and Wearable Technology, Portable Computers and Business and Personal PC's. In Global ProductPaedia, we identify all market players associated with the same products as Apple. For example, Dell and HP in Business and Personal PC, Samsung and Xiaomi in Smart Phone Manufacturing, or Samsung and Garmin in Wearable Technology.

### Chart 32: Practical use of ProductPaedia

Identify all market players by Products



Source : BofA Global Quantitative Strategy

BofA GLOBAL RESEARCH

**Table 4: Products and GICS Classification Summary**

Count of Products and GICS Sub-Industry across each Sector

Sector	Sub-Industry Count	ProductPaedia Products
Communication Services	11	17
Consumer Discretionary	27	63
Consumer Staples	12	20
Energy	7	23
Financials	18	24
Health Care	10	33
Industrials	27	63
Information Technology	12	55
Materials	17	32
Real Estate	18	4
Utilities	6	11

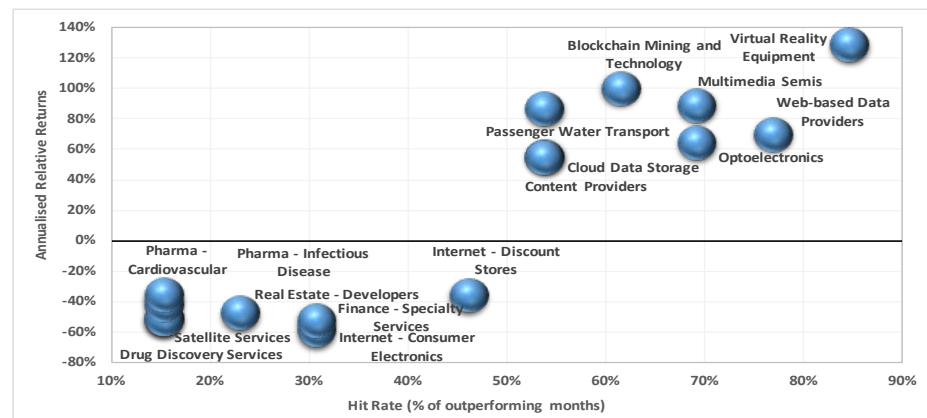
Source : BofA Global Quantitative Strategy, MSCI, IBES, Factset

BofA GLOBAL RESEARCH

- The GICS classification divides stocks into 11 major sectors, 24 industry groups, 69 industries, and 158 sub-industries.
- By comparison, Global ProductPaedia categorizes 50,000 stocks globally into 298 Product Groups based on product revenue exposure.

**Products Performance****Chart 33: Performance and Consistency: Best & Worst Performing Products - Last 12-Months**

Virtual Reality Equipment and Blockchain Mining and Technology have consistently outperformed in the last 12m



Source : BofA Global Quantitative Strategy, Factset

BofA GLOBAL RESEARCH

## Preeminent Plays

**Table 5: Global Preeminent Plays**

Top ranked products globally by Four Pillars Rank and top three stocks by market share in each region (stock Four Pillars Rank in brackets)

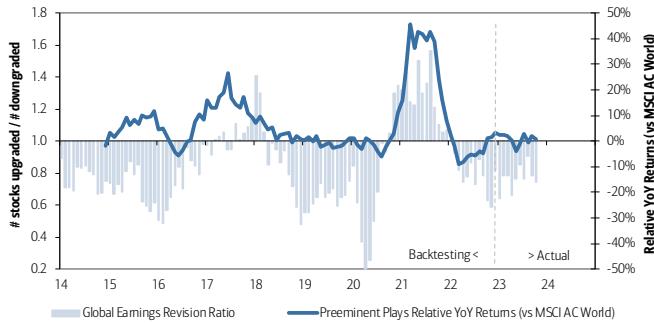
	North America	Europe	Japan	Asia Pac ex-Japan	Emerging Ex-Asia
<b>Petroleum Water Transport</b>	International Seaway (81) Cheniere Energy (52) Dorian Lpg (96)	Torm (80) Euronav Nv (75)	Mitsui OSK (90) Air Water (87)	COSCO Shipping Energy-H (81) Hafnia (95) China Merchants Energy-A (78)	National Shipping (94) Scorpio Tankers (84) Frontline (95)
<b>Transportation Equipment Manufacturer</b>	Winnebago (93) - -	Continental Ag (92) - -	Mitsubishi Corp (90) MHI (73) -	Anhui Jianghuai Auto-A (27) Yantai Yatong Precision (-) Jiangyin Haida Rubber-A (17)	Koc Holding (98) Sabanci (92) Tofas-Turk Otomo (97)
<b>Semis Distributors</b>	Arrow Electronics (87) Avnet (94) -	- - -	Macnica (86) Tokyo Electron (80) Hakuto Co (59)	WPG (74) WT Microelectronics (82) Supreme Electronics (52)	- - -
<b>Manufactured Building Makers</b>	Lennar (100) D.R. Horton (100) PulteGroup (96)	Barratt Dev (76) Taylor Wimpey (78) Persimmon (65)	Sumitomo Forest (99) Iida Group (91) Daiwa House (98)	Shenzhen New Nanshan-A (46) Der Future Science-A (71) Shenzhen Ridge Engg-A (47)	- - -
<b>Oil/Gas Refineries</b>	Exxon Mobil (81) Chevron (77) Valero Energy (88)	BP (75) Equinor (93) TotalEnergies (95)	Idemitsu (88) Cosmo Energy (92) -	China Sinopec-H (90) Indian Oil (98) Reliance Industries (70)	Saudi Arabian Oil (75) ORLEN (92) Petrobras (98)
<b>Health Insurance</b>	AFLAC (90) UnumProvident (86) Cigna (96)	Axa SA (96) Aegon (74) Direct Line Insurance (48)	Sompo (92) Secom (80) H.I.S Co (33)	PICC-H (85) People's Insurance-H (92) Medibank (80)	BUPA Arabia (92) Co For Coop Insurance (88) Porto Seguro (95)
<b>Commercial Insurance</b>	Travelers Cos (83) Berkshire Hathaway (62) -	Allianz (94) Axa SA (96) Zurich Insurance (64)	Tokio Marine (86) MS&AD Insurance (93) Sompo (92)	Ping An Insurance-H (72) China Pacific Insurance-H (68) DB Insurance (99)	Arch Capital (98) Axis Capital (94) Everest Group (97)
<b>Retail - Petrol Stations</b>	Alimentation Couche-Tard (9) Parkland Corp (96) Kroger (86)	TotalEnergies (95) Neste (63) Sainsbury (77)	- - -	PetroChina-H (94) Ampol (93) Hunan Petroleum-A (-)	Raizen (98) Ultramar Participacoes (74) Vibra Energia (91)
<b>Autos - Recreational Vehicle</b>	Thor Industries (83) BRP Inc (96) Polaris (76)	- - -	Yamaha Motor (92) Honda (94) Kawasaki Heavy (81)	Zhejiang Cfmoto Power-A (87) Guangdong New Energ-A (-) Zhejiang Taotao Vehicles-A (-)	- - -
<b>Personal Insurance</b>	Berkshire Hathaway (62) Allstate (86) Progressive (85)	MunichRe (94) Hannover Rueck (91) Talanx (95)	MS&AD Insurance (93) Sompo (92) Zenkoku Hosho (81)	People's Insurance-H (92) PICC-H (85) IAG (54)	Everest Group (97) RenaissanceRe (97) Arch Capital (98)

Source : BofA Global Quantitative Strategy, MSCI, IBES, Factset, S&P, Worldscope, Bloomberg

BofA GLOBAL RESEARCH

**Chart 34: Global Preeminent Plays: YoY relative returns and Trends in Earnings Expectations**

Global Preeminent Plays have a strong correlation with trends in earnings



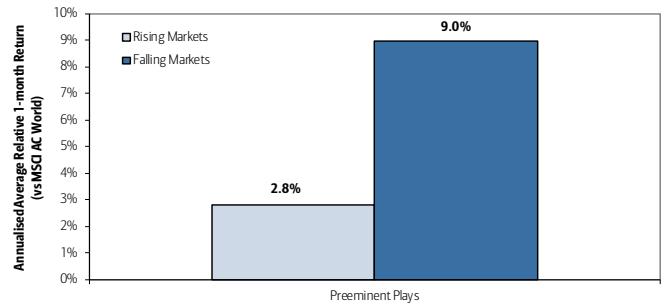
**Source :** BofA Global Quantitative Strategy, Factset

The back-tested performance is for the period from Jan-14 to Feb-22. The actual performance is from Mar-22. Back-tested 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.

BofA GLOBAL RESEARCH

**Chart 35: Global Preeminent Plays: Relative Performance in Rising and Falling Markets**

Global Preeminent Plays outperform in rising and falling markets



**Source :** BofA Global Quantitative Strategy, Factset

The back-tested performance is for the period from Jan-14 to Feb-22. The actual performance is from Mar-22. Back-tested 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.

BofA GLOBAL RESEARCH



## Steady Compounder Products

**Table 6: Steady Compounder Products: Top Market Share Stocks Screen**

Top 3 market share stocks within Steady Compounder Products

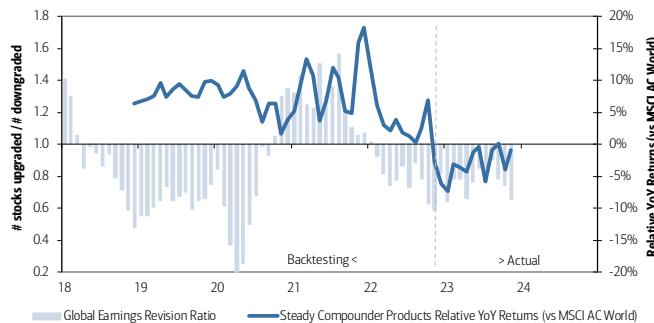
	North America	Europe	Japan	Asia Pac ex-Japan	Emerging Ex-Asia
<b>Diversified Electronic Components</b>	-	STMicroelectronics (80)	-	China Zhenhua Sci & Tech-A (-)	-
	-	-	-	Yageo Corp (70)	-
	-	-	-	LG Innotek (63)	-
<b>Environmental Control Equipment</b>	Carrier Global (94)	Johnson Controls (47)	Daikin (55)	Gree Electric-A (93)	Dubai Electricity & Water (72)
	Lennox Int'l (83)	Trane Tech (78)	Aisin (93)	Haier Smart Home-H (94)	Saudi Ceramic (32)
	A.O. Smith (77)	Nibe Industries (35)	Fujitsu General (32)	Sichuan Changhong-A (56)	-
<b>Finance - Brokerage Services</b>	StoneX (94)	BNP Paribas (92)	Nomura (71)	Meritz Financial (98)	Piraeus Financial (91)
	JPMorgan Chase (95)	Deutsche Boerse (59)	Daiwa Securities (83)	Citic Securities-H (65)	Itau Unibanco (87)
	Charles Schwab (29)	IG Group (68)	Mebuki Fin (75)	KIWOOM Securities (89)	Saudi Tadawul (30)
<b>Grain-based Products</b>	General Mills (58)	-	Yamazaki Baking (78)	Toly Bread-A (32)	Bimbo (58)
	Kellanova (47)	-	Nisshin Seifun (80)	Jiangsu Provinci (48)	Gruma, S.A.B. (89)
	Flowers Foods (43)	-	Calbee Inc (61)	Adani Wilmar (11)	Ulusoy Un Sanayi (71)
<b>Health Plan Providers</b>	UnitedHealth (81)	EssilorLuxottica (54)	-	-	-
	Centene Corp (86)	-	-	-	-
	Elevance Health (86)	-	-	-	-

Source : BofA Global Quantitative Strategy, Factset

BofA GLOBAL RESEARCH

**Chart 36: Steady Compounder Products: YoY relative returns and Trends in Earnings Expectations**

Steady Compounder Products have a low correlation with EPS cycle



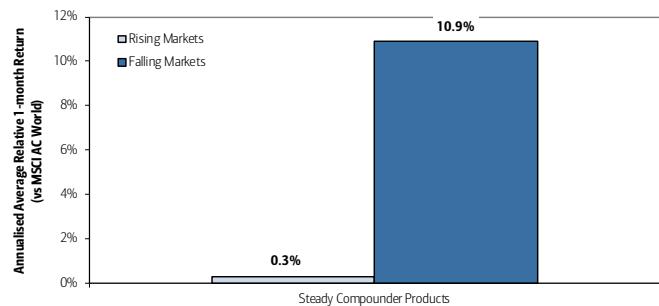
Source : BofA Global Quantitative Strategy, Factset

The shaded area shows back-tested results during the period from Jan-13 to Feb-22. The unshaded portion represents actual performance since Mar-22. Back-tested 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.

BofA GLOBAL RESEARCH

**Chart 37: Steady Compounder Products: Relative Performance in Rising and Falling Markets**

Steady Compounder Products outperform in rising and falling markets



Source : BofA Global Quantitative Strategy, Factset

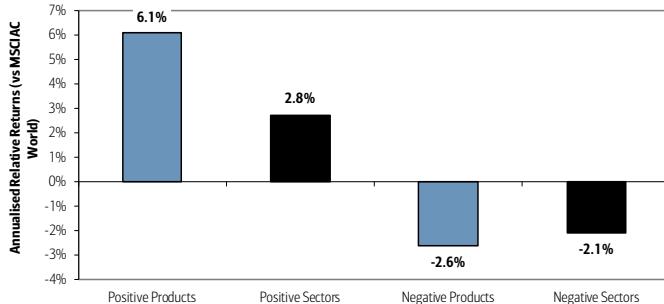
The shaded area shows back-tested results during the period from Jan-13 to Feb-22. The unshaded portion represents actual performance since Mar-22. Back-tested performance depicts the theoretical (not actual) performance of a particular strategy over the time period indicated. No representation is being made that any actual portfolio is likely to have achieved returns similar to those shown herein.

BofA GLOBAL RESEARCH

## Products Four Pillars

### Chart 38: Performance of Product Allocation vs Sector Allocation based on Four Pillars

Since inception, Product Allocation would have added 8.7%. Sector Allocation would have added 4.9% p.a.



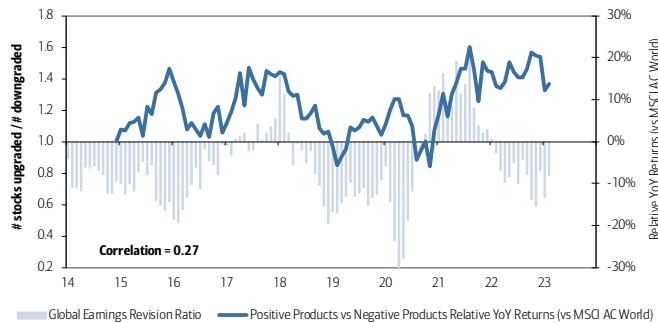
**Source :** BofA Global Quantitative Strategy, Factset

This performance is back-tested for period from Jan-14 to Feb-23. Back-tested 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.

BofA GLOBAL RESEARCH

### Chart 39: Positive versus Negative Products YoY Performance Vs Trends in Earnings Expectations (back-tested)

Products performance by Four Pillars Rank (top vs bottom decile) is positively correlated to EPS cycle



**Source :** BofA Global Quantitative Strategy, Factset

This performance is back-tested for period from Jan-14 to Feb-23. Back-tested 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.

BofA GLOBAL RESEARCH

### Table 7: GICS Classification and Top and Bottom Products by Four Pillars Rank

GICS Sector classification and top 2 and bottom 2 Products by Four Pillars Rank

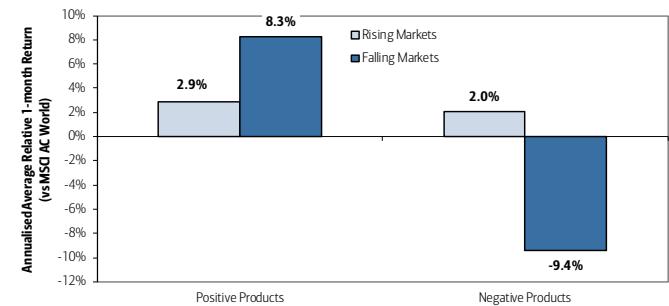
Sector	Top Ranked Products	Bottom Ranked Products
<b>Communication Services</b>	Telecom Services Telecom Carrier/Wireless	Telecom Equipment Internet - Online Marketing
<b>Consumer Discretionary</b>	Manufactured Building Makers Retail - Petrol Stations	Sunglasses Makers Internet - Fashion
<b>Consumer Staples</b>	Retail Distributors Non-alcoholic Beverage	Electronic Cigarette Personal Care Products
<b>Energy</b>	Petroleum Water Transport Oil/Gas Refineries	Power Supply Products Power Generation Products
<b>Financials</b>	Health Insurance Commercial Insurance	Blockchain Mining and Technology FinTech
<b>Health Care</b>	Health Plan Providers Acute Care Services	Drug Discovery Services Pharma - Infectious Disease
<b>Industrials</b>	Petroleum Water Transport Transportation Equipment Manufacturing	Power Supply Products Hazardous Waste Services
<b>Information Technology</b>	Semis Distributors Computer Servers	Programmable Semis Memory Semis
<b>Materials</b>	Diversified Metals Processing Infrastructure Component Manufacturing	Additives Manufacturing Electronics Materials Manufacturing
<b>Real Estate</b>	Real Estate Investment and Services Real Estate - Developers	Property Owners REITS
<b>Utilities</b>	Utilities - Electric Power Distributors	Environmental Climate Change Power Generation Products

**Source :** BofA Global Quantitative Strategy, MSCI, IBES, Factset

BofA GLOBAL RESEARCH

### Chart 40: Positive versus Negative Products Relative Performance in Rising & Falling Markets (back-tested)

Products with highest Four Pillars Rank (top decile) outperforms in both the rising and falling markets



**Source :** BofA Global Quantitative Strategy, Factset

This performance is back-tested for period from Jan-14 to Feb-23. Back-tested 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.

BofA GLOBAL RESEARCH



## Market Share and Market Breadth Screens

**Table 8: Market Share Leaders Screen (top 30)**

List of thirty stocks with the highest market share within Product Groups

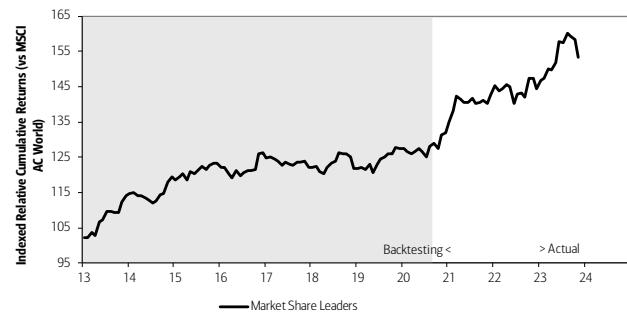
BBG Code	Name	Product Group	Market Share (%)
8053 JP	Sumitomo Corp	Diversified Metal Mining	95%
AAPL US	Apple	Wearable Technology	94%
EL FP	EssilorLuxottica	Sunglasses Makers	82%
META US	Meta	Virtual Reality Equipment	78%
DELL US	Dell	Cloud Data Storage	77%
9618 HK	JD.com	Internet - Consumer Electronics	75%
QCOM US	Qualcomm	Communications Semis	67%
AAPL US	Apple	Smart Phone Manufacturing	61%
JNJ US	Johnson & Johnson	Pharma - Allergies	59%
601138 CH	Foxconn Indus Intern	Tech Hardware - Wireless/Wi-Fi Equ	59%
BN CN	Brookfield	Alternative Investment Managers	58%
VIPS US	Vipshop-ADR	Internet - Discount Stores	54%
DISH US	DISH Network	Satellite Services	52%
2330 TT	TSMC	General Semis	50%
8031 JP	Mitsui & Co	Diversified Metals Processing	49%
AMZN US	Amazon	Internet - Department Stores	48%
INTC US	Intel	Programmable Semis	47%
GOOGL US	Alphabet-A	Web-based Data Providers	46%
992 HK	Lenovo	Portable Computers	45%
WMT US	Walmart	Retail Warehouse/Superstores	44%
005930 KS	Samsung Electronics	Memory Semis	44%
CVNA US	Carvana	Internet - Auto Sales	44%
FLTR LN	Flutter Entertain(UK)	Internet - Online Casinos	42%
AIR FP	Airbus	Aircraft Manufacturing	41%
SQ US	Block	Blockchain Mining and Technology	40%
8001 JP	Itochu	Retail Distributors	39%
ENEL IM	Enel	Utilities - Electric+Natural Gas	37%
DOLE US	Dole	Nut and Vegetable	37%
ABBV US	AbbVie	Pharma - Autoimmune Disorders	37%
2317 TT	Hon Hai	Third Party Electronics Maker	36%

Source : BofA Global Quantitative Strategy, Factset

BofA GLOBAL RESEARCH

**Chart 41: Market Share Leaders: Indexed Relative Cumulative Performance**

Market Leaders have outperformed by 1.0% in the last 6 Months



Source : BofA Global Quantitative Strategy, Factset

The shaded area shows back-tested results during the period from Jan-13 to Aug-20. The unshaded portion represents actual performance since Sep-20. Back-tested 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.

BofA GLOBAL RESEARCH

**Table 9: Market Share Laggards Screen (top 30)**

List of thirty stocks with the smallest market share within Product Groups

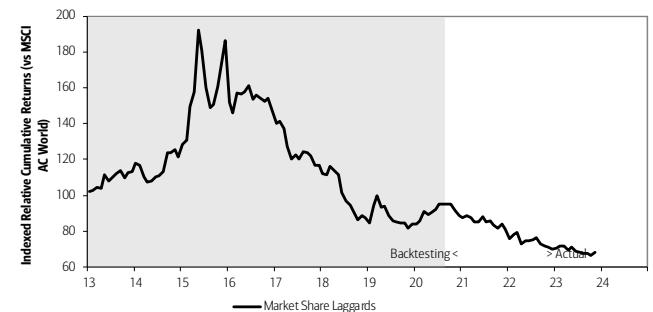
BBG Code	Name	Product Group	Share
603172 CH	Zhejiang Wanfeng Chemica	Environmental Climate Change	< 1%
600318 CH	Anhui Xinli Finance-A	FinTech	< 1%
000533 CH	Guangdong Macro	Industrial Machinery Distributors	< 1%
600125 CH	China Railway Tielong-A	Real Estate - Developers	< 1%
603075 CH	Hangzhou Heatwell Elec-A	Auto Parts Manufacturing	< 1%
603025 CH	Beijing Dahao Technology C	Leasing Services	< 1%
MAADEN AB	Saudi Arabian Mining	Construction Companies	< 1%
601028 CH	Jiangsu Yulong-A	Oil/Gas Distributors	< 1%
ALGT US	Alliant	Experience Providers	< 1%
GUBRF TI	Gubre Fabrikalar	Precious Metal Mining	< 1%
002992 CH	Shenzhen Baoming Technic	Energy Transition Commodities	< 1%
KRDMD TI	Kardemir	Multi-Industry / Unallocated	< 1%
046970 KS	Wooriro	Telecom Equipment	< 1%
CDIO US	Cardio Diagnostics	Clinical Diagnostics Devices	< 1%
GSDHO TI	Gsd As	Shipping Services	< 1%
688620 CH	Guangzhou Microelec	Programmable Semis	< 1%
301382 CH	Fengzhushou-A	Software - Telecom	< 1%
002058 CH	Shanghai Welltech Auto -A	Property Owners	< 1%
600079 CH	Humanwell Health-A	Pharma - Contract Manufacturing	< 1%
688176 CH	Jiangsu Yahong Meditech C	Medical Devices - Specialized	< 1%
301428 CH	Shijihengtong Technology-.	Information Technology Consulting	< 1%
4908 TT	Apac Opto Electronics	Interconnect Components	< 1%
115610 KS	Imagis	General Semis	< 1%
300397 CH	Xi'an Tian He Defense Tech	Electronics Materials Manufacturing	< 1%
301519 CH	Anhui Shunyu Water-A	Control Equipment Manufacturing	< 1%
002591 CH	Jiangxi Hengda Hi-Tech Co -	Building Materials	< 1%
600307 CH	Gansu Jiu Steel-A	Coal Mining	< 1%
IEX IN	Indian Energy Exch	Environmental Services	< 1%
000899 CH	Jiangxi Ganneng Co-A	Power Distributors	< 1%
301325 CH	Shenzhen Manst Technolo	Factory Automation Equipment	< 1%

Source : BofA Global Quantitative Strategy, Factset

BofA GLOBAL RESEARCH

**Chart 42: Market Share Laggards: Indexed Relative Cumulative Performance**

Market Laggards have outperformed by 1.1% in the last 3 Months



Source : BofA Global Quantitative Strategy, Factset

The shaded area shows back-tested results during the period from Jan-13 to Aug-20. The unshaded portion represents actual performance since Sep-20. Back-tested 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.

BofA GLOBAL RESEARCH

**Table 10: Gaining Market Share Screen (top 30)**

List of thirty stocks with the largest increase in market share (YoY) by Products

BBG Code	Name	Product Group	Market Share Chg (%)
BN CN	Brookfield	Alternative Investment Managers	37.3%
SHEL LN	Shell	Organic and Petrochemicals	13.3%
VIE FP	Veolia	Waste - Collection	13.0%
POWF IN	Power Finance	Diversified Loan Services	12.5%
000733 CH	China Zhenhua Sci & Tec	Diversified Electronic Components	12.4%
267250 KS	HD Hyundai	Ship Builders	11.0%
GOOGL US	Alphabet-A	Web-based Data Providers	10.8%
CCL US	Carnival Corp	Passenger Water Transport	10.7%
PFE US	Pfizer	Pharma - Infectious Disease	10.0%
CVS US	CVS Health Corp	Healthcare Support Services	9.3%
DTE GR	Deutsche Telekom	Telecom Services	9.2%
CFR SW	Richemont	Watch/Clock Makers	8.8%
OPEN US	Opendoor Technologies	Content Providers	8.6%
VYX US	NCR Voyix	Electronics - Commercial	8.4%
FRE GR	Fresenius	Drug Delivery Devices	8.3%
CMCSA US	Comcast Corp	Telecom Wireline/Landline	8.2%
INTC US	Intel	Communications Semis	7.7%
PDCO US	Patterson Cos	Veterinary Services	7.4%
DIS US	Disney	Amusement Centres	7.2%
ENEL IM	Enel	Traditional/Fossil Fuel Wholesale	7.1%
MU US	Micron Tech	Memory Semis	6.8%
DOLE US	Dole	Nut and Vegetable	6.7%
RCL US	Royal Caribbean	Passenger Water Transport	6.7%
MRVL US	Marvell Tech	Specialised Semis	6.5%
BKR US	Baker Hughes	Oil/Gas Field Equipment	6.4%
090460 KS	BH Co	Flexible Circuit	5.8%
ZTS US	Zoetis	Veterinary Products	5.8%
ON US	ON Semiconductor	Discrete Semis	5.5%
TSLA US	Tesla	Auto Repair Services	5.5%
ALO FP	Alstom	Rail Equipment Manufacturing	5.4%

Source : BofA Global Quantitative Strategy, Factset

BBG Code	Name	Product Group	Market Share Chg (%)
----------	------	---------------	----------------------

**Table 11: Losing Market Share Screen (top 30)**

List of thirty stocks with the largest decrease in market share (YoY) by Products

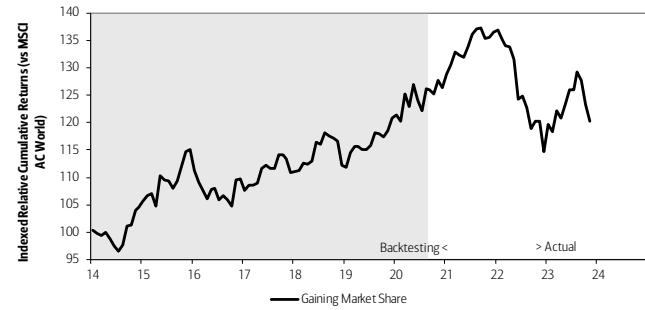
BBG Code	Name	Product Group	Market Share Chg (%)
8267 JP	Aeon	Retail General Merchandise	-28.5%
INTC US	Intel	Programmable Semis	-23.6%
ITX SM	Inditex	Retail Fashion/Apparel/Accessories	-16.2%
COIN US	Coinbase Global -Class A	Blockchain Mining and Technology	-15.3%
ORCL US	Oracle	Software - IT Infrastructure	-15.3%
600100 CH	Tsinghua Tong-A	Electronics - Security Equipment	-15.2%
7011 JP	MHI	Transportation Equipment Manufact	-14.6%
SMIN LN	Smiths Grp	Electronics - Security Equipment	-14.4%
META US	Meta	Virtual Reality Equipment	-11.9%
T US	AT&T	Telecom Services	-11.7%
CON GR	Continental Ag	Auto Tires Manufacturing	-11.2%
AMZN US	Amazon	Data Centres	-10.1%
601921 CH	Zhejiang Publishing & Medi	Publishing Services	-9.9%
002241 CH	GoerTek-A	Electronics - Audio	-9.1%
3690 HK	Meituan	Travel Services	-8.3%
NOVN SW	Novartis	Pharma - Ophthalmology	-7.7%
BKR US	Baker Hughes	Oil/Gas Support Services	-7.6%
Z US	Zillow-C	Content Providers	-7.5%
9983 JP	Fast Retailing	Young Adults Apparel Retail	-7.4%
6981 JP	Murata	Passive Components	-6.4%
INVEB SS	Investor Ab-B Shs	Investment Holding Companies	-6.4%
EDR US	Endeavor Group Hold-Class	Spectator Sports and Performing Ar	-6.3%
RJEX IN	Rajesh Exports	Jewellery and Accessories Makers	-6.0%
000069 CH	Shenzhen Overseas-A	Amusement Centres	-6.0%
BMY US	Bristol-Myers	Pharma - Hematology	-5.9%
8002 JP	Marubeni	Retail Distributors	-5.7%
386 HK	China Sinopec-H	Integrated Exploration and Productic	-5.6%
TOPG MK	Top Glove	Medical Supplies	-5.5%
RKT US	Rocket Companies	Finance - Retail Mortgage	-5.5%
2681 JP	Geo Hldgs	Retail Books/Movies/Music	-5.4%

Source : BofA Global Quantitative Strategy, Factset

BofA GLOBAL RESEARCH

**Chart 43: Gaining Market Share: Indexed Relative Cumulative Performance**

Gaining Market Share have outperformed by 5.0% Year-to-Date



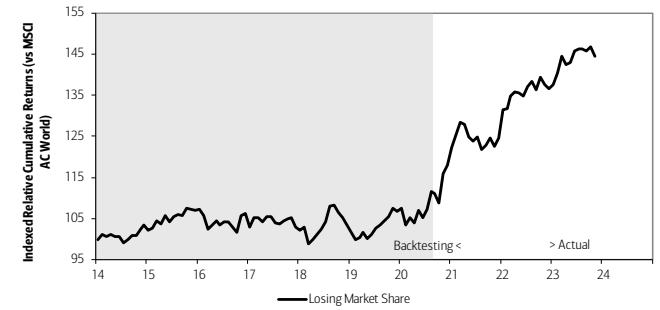
Source : BofA Global Quantitative Strategy, Factset

The shaded area shows back-tested results during the period from Jan-13 to Aug-20. The unshaded portion represents actual performance since Sep-20. Back-tested 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.

BofA GLOBAL RESEARCH

**Chart 44: Losing Market Share: Indexed Relative Cumulative Performance**

Losing Market Share have underperformed by -1.3% in the last 3 Months



Source : BofA Global Quantitative Strategy, Factset

The shaded area shows back-tested results during the period from Jan-13 to Aug-20. The unshaded portion represents actual performance since Sep-20. Back-tested 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.

BofA GLOBAL RESEARCH



**Table 12: Pure Product Plays Screen (top 30)**

List of thirty stocks with exposure to least number of Products

BBG Code	Name	Country	Product Group Count
COST US	Costco	United States	1
2317 TT	Hon Hai	Taiwan	1
TGT US	Target	United States	1
1288 HK	Agricultural Bank-H	China	1
1800 HK	China Comm Const-H	China	1
LOW US	Lowe's	United States	1
BN CN	Brookfield	Canada	1
2628 HK	China Life-H	China	1
CA FP	Carrefour	France	1
TMUS US	T-Mobile	United States	1
600057 CH	Xiamen Xiangyu-A	China	1
2330 TT	TSMC	Taiwan	1
JBSS3 BZ	JBS SA	Brazil	1
000270 KS	Kia	South Korea	1
HCA US	HCA	United States	1
EPD US	Enterprise Products	United States	1
1919 HK	COSCO Shipping-H	China	1
600019 CH	Baoshan Iron-A	China	1
600019 CH	Baoshan Iron-A	China	1
600019 CH	Baoshan Iron-A	China	1
HSBA LN	HSBC Plc	United Kingdom	1
TJX US	TJX	United States	1
3968 HK	China Merchants Bank-H	China	1
7181 JP	Japan Post Insurance	Japan	1
EXO NA	Exor Nv	Netherlands	1
KO US	Coca-Cola	United States	1
4938 TT	Pegatron Corp	Taiwan	1
2382 TT	Quanta	Taiwan	1
012330 KS	Hyundai Mobis	South Korea	1
ORFP	L'oreal	France	1

**Source :** BofA Global Quantitative Strategy, Factset

BofA GLOBAL RESEARCH

**Table 13: Diversified Product Plays Screen (top 30)**

List of thirty stocks with exposure to most number of Products

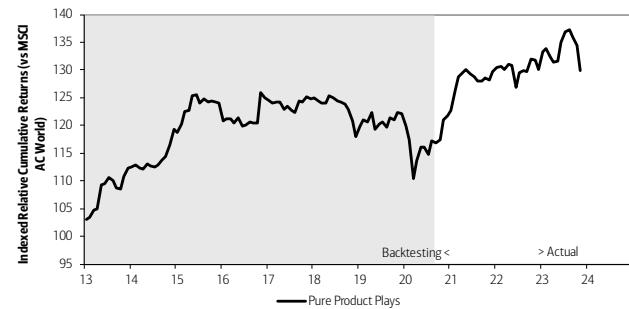
BBG Code	Name	Country	Product Group Count
000880 KS	Hanwha Corp	South Korea	22
MMM US	3M	United States	17
6501 JP	Hitachi	Japan	16
BRK/B US	Berkshire Hathaway	United States	15
4088 JP	Air Water	Japan	14
6502 JP	Toshiba	Japan	14
BAYN GR	Bayer	Germany	14
9041 JP	Kintetsu Group	Japan	14
8002 JP	Marubeni	Japan	14
6758 JP	Sony	Japan	13
7013 JP	IHI Corp	Japan	13
9001 JP	Tobu Railway	Japan	13
9044 JP	Nankai Elec Rail	Japan	13
9008 JP	Keio Electric	Japan	13
6752 JP	Panasonic	Japan	13
006260 KS	LS Corp	South Korea	13
JNJ US	Johnson & Johnson	United States	12
600095 CH	Xiangcai-A	China	12
9006 JP	Keikyu Corp	Japan	12
2371 TT	Tatung	Taiwan	12
NOVN SW	Novartis	Switzerland	11
000100 KS	Yuhan	South Korea	11
DRRD IN	Dr Reddy's	India	11
8058 JP	Mitsubishi Corp	Japan	11
1303 TT	Nan Ya Plastics	Taiwan	11
ROG SW	Roche	Switzerland	11
9005 JP	Tokyu Corp	Japan	11
JM SP	Jardine Matheson	Hong Kong	11
002921 CH	Shandong Liancheng Precisi-A	China	11
ACO/X CN	ATCO	Canada	11

**Source :** BofA Global Quantitative Strategy, Factset

BofA GLOBAL RESEARCH

### Chart 45: Pure Product Plays: Indexed Relative Cumulative Performance

Pure Product Plays have underperformed by -1.3% in the last 12 Months

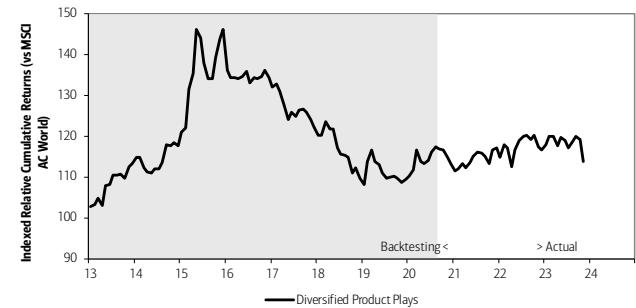
**Source :** BofA Global Quantitative Strategy, Factset

The shaded area shows back-tested results during the period from Jan-13 to Aug-20. The unshaded portion represents actual performance since Sep-20. Back-tested 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.

BofA GLOBAL RESEARCH

### Chart 46: Diversified Product Plays: Indexed Relative Cumulative Performance

Diversified Product Plays have underperformed by -4.7% in the last 1 Month

**Source :** BofA Global Quantitative Strategy, Factset

The shaded area shows back-tested results during the period from Jan-13 to Aug-20. The unshaded portion represents actual performance since Sep-20. Back-tested 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.

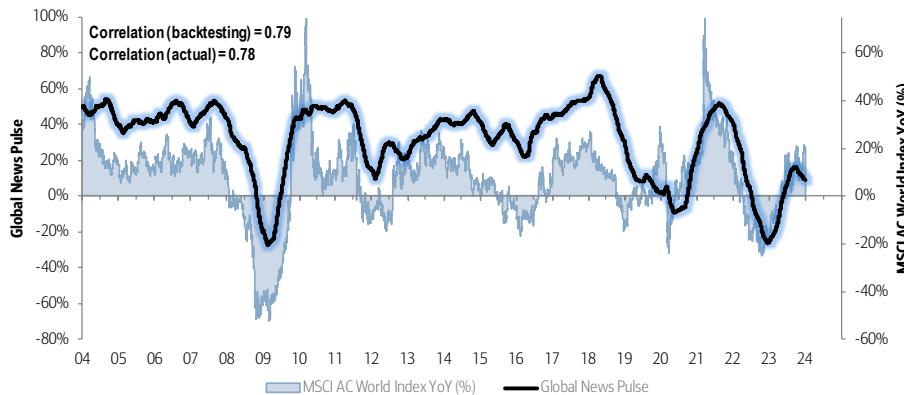
BofA GLOBAL RESEARCH



# NewsAlpha

## Chart 47: Global News Pulse and YoY Change in MSCI AC World Index

News trend fell in the last 3m, however in aggregate it remains positive

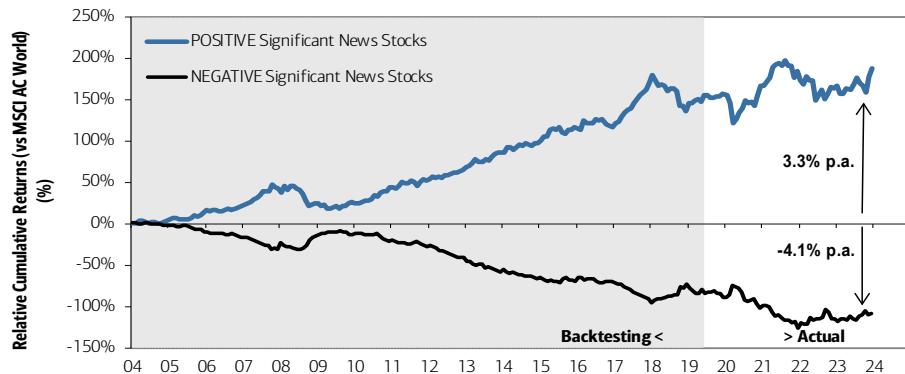


Source : BofA Global Quantitative Strategy, MSCI, ExShare, RavenPack

BofA GLOBAL RESEARCH

## Chart 48: Relative cumulative returns of Global POSITIVE Significant & NEGATIVE Significant News Stocks

Positive Significant News outperformed ACWI by 3.3% p.a.



Source : BofA Global Quantitative Strategy, MSCI, ExShare, RavenPack

This performance is back-tested and does not represent the actual performance of any account or fund. Back-tested 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.

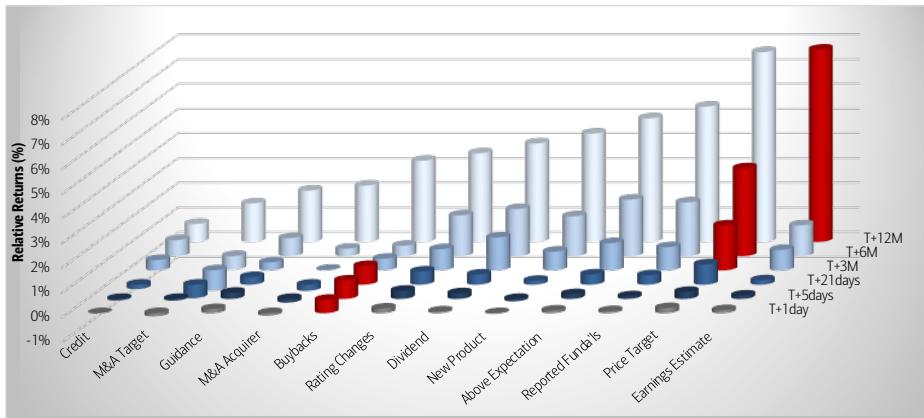
BofA GLOBAL RESEARCH



### Chart 49: Average Relative Returns of POSITIVE Significant News Events by different holding period

(back-tested 2000-2019)

News around fundamentals have performed best on a long-term horizon



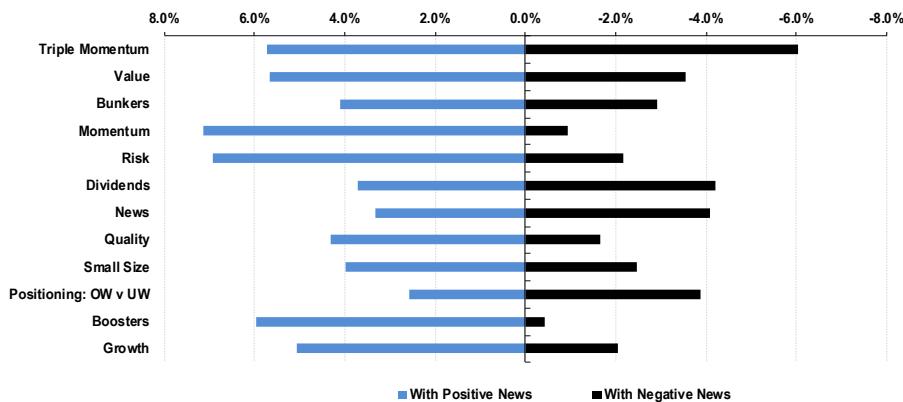
Source : BofA Global Quantitative Strategy, MSCI, ExShare, RavenPack

This performance is back-tested and does not represent the actual performance of any account or fund. Back-tested 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.

BofA GLOBAL RESEARCH

### Chart 50: News + Screen Performance: Annualised Relative Returns (sorted by largest diff in returns)

News enhances Alpha in all types of analysis



Source : BofA Global Quantitative Strategy, MSCI, ExShare, RavenPack

Back-tested results are from Jan-04 to May-20. Actual performance is from Jun-20. Back-tested 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.

BofA GLOBAL RESEARCH

**Table 14: Global Region-Sectors - Triple Momentum**

Triple Momentum is currently strongest for Software, Div Financials, and Insurance

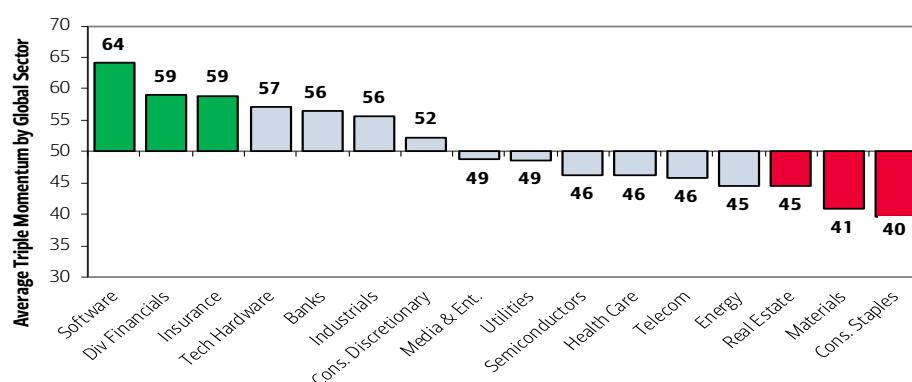
Average Triple Momentum Rank	Banks	Cons. Discretionary	Cons. Staples	Div/Financials	Energy	Health Care	Industrials	Insurance	Materials	Media&Ent.	Real Estate	Semiconductors	Software	Tech Hardware	Telecom	Utilities	Region
Canada	34	44	45	47	41		37	65	14		49		72		35	28	40
USA																	
Belgium	32		53	67		42		56	1							83	47
Denmark	97	97	47			47	49		65						23	56	
Finland		43			7		45	10	85					22	35	27	36
France	73	50	27	62	62	33	66	75	65	89	57	7	76		50	46	56
Germany	91	34	49	93		34	47	87	32	79	46	39	58		55	45	49
Italy	68	39			30	51	66	57						80	89	62	
Netherlands	30	79	17	73		48	56	87	21	40		63			33		50
Spain	71	69			6	17	95								46	33	48
Sweden	54	37		63		4	51		16					18	40		42
Switzerland		18	38	32		45	53	54	37				79	85	26		44
UK																	
Australia	54	58	28	31	29	56	33	56	45	32	33		88		12	28	42
Hong Kong	20	49	66	13		79	45	68		31	13	100			30	40	
Japan	75	61	41	73	81	54	57	77	52	36	62	62	69	58	45	81	58
Singapore	56	72	29	45			78			14	40				42	100	54
China	40	47	35	69	50	60	55	13	51	46	14	18	34	63		56	46
India	62	75	51	73	72	81	75	51	51	81	92		62		49	72	67
Korea																	
Taiwan		30	13	64	37		53	53	26			60		73	42		58
Brazil	59	60	47		78	20	48	74	56					77	65		59
Mexico	81		55						55						51		52
Poland	80				17		100		31	28						75	51
South Africa	73	58	38	92	73			40	52		98				25		57
Asia Pac ex-Japan	55	56	39	57	52	64	56	39	44	48	36	44	63	64	46	56	52
Emerging ex-Asia	71	66	48	85	58	68	56	64	44	28	95				56	61	60
Europe	51	44	41	61	23	40	56	59	36	56	58	50	64	38	44	50	48
Japan	75	61	41	73	81	54	57	77	52	36	62	62	69	58	45	81	58
United States	31	50	36	57	40	39	54	69	37	54	42	43	64	51	29	34	48
Global	56	52	40	59	45	46	56	59	41	49	45	46	64	57	46	49	

Source : BofA Global Quantitative Strategy, MSCI, IBES, FactSet, RavenPack

BofA GLOBAL RESEARCH

**Chart 51: Global Sectors - Average Triple Momentum Rank**

Triple Momentum is currently strongest for Software, Div Financials, and Insurance



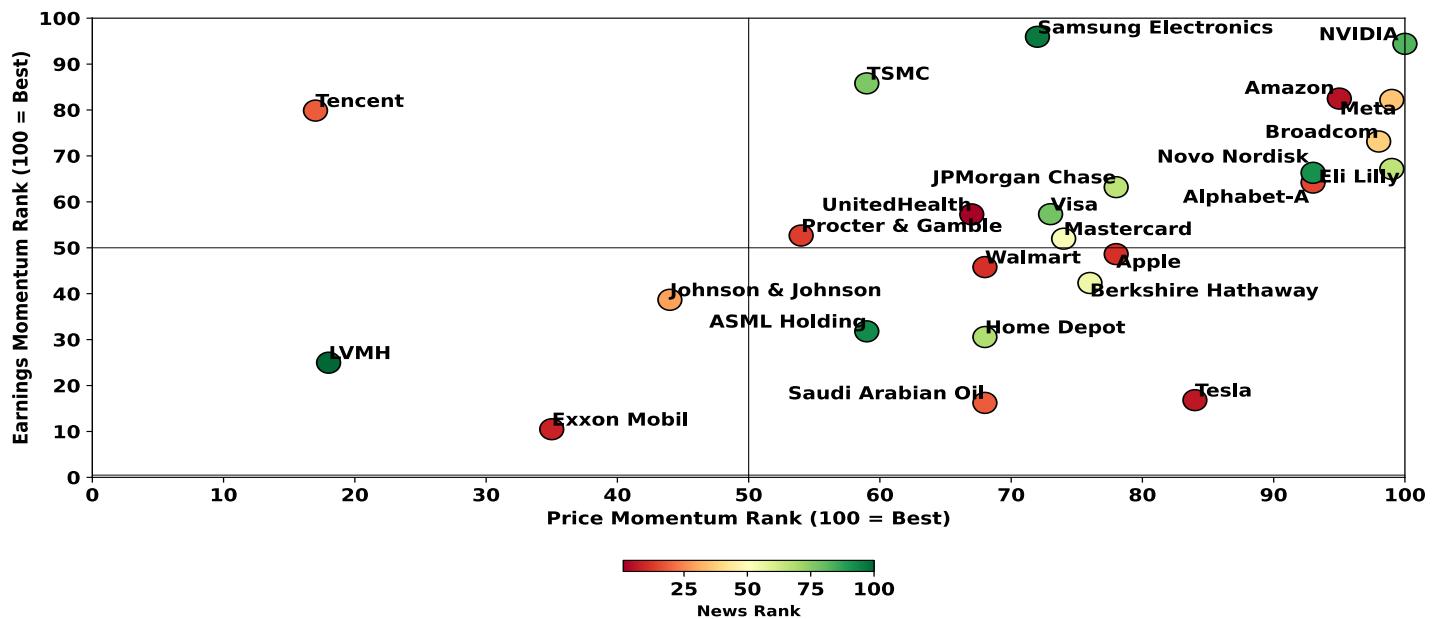
Source : BofA Global Quantitative Strategy, MSCI, IBES, FactSet, RavenPack

BofA GLOBAL RESEARCH



### Chart 52: Global: Earnings Momentum (vertical axis), Price Momentum (horizontal axis), News Momentum (colour)

Triple Momentum is most positive for Samsung Electronics, NVIDIA and Novo Nordisk



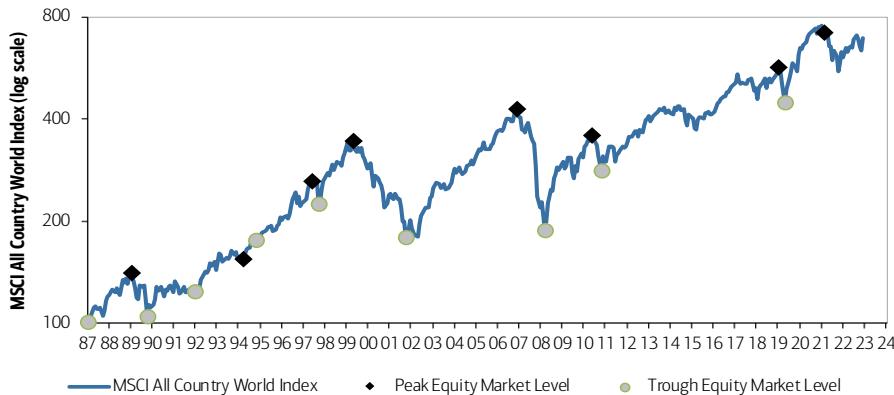
Source : BofA Global Quantitative Strategy, MSCI, IBES, FactSet, RavenPack

BofA GLOBAL RESEARCH

# Early vs Late

## Chart 53: MSCI AC World Index and Peaks and Troughs Level

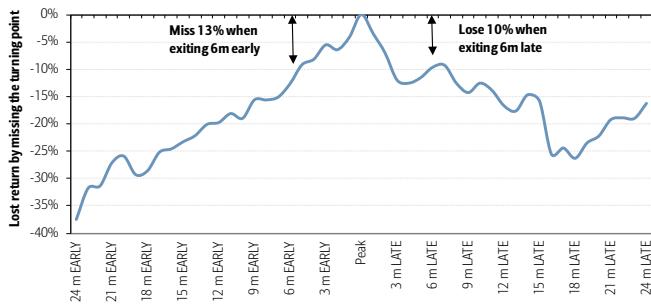
MSCI AC World Index and peaks and troughs in global equities



BofA GLOBAL RESEARCH

## Chart 54: Average equity market performance before and after major peaks in MSCI ACWI

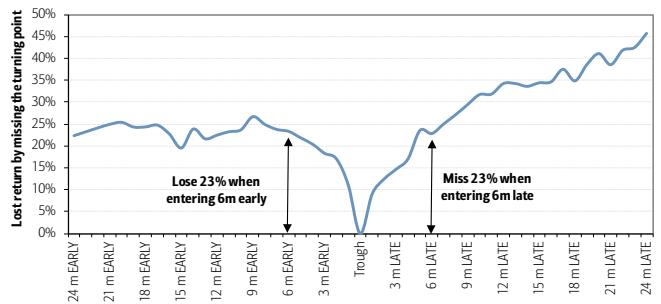
Around peaks in equities, one misses 13% by exiting 6m early vs 10% exiting 6m late



Source : BofA Global Quantitative Strategy, MSCI Major Peaks = Dec-89, Mar-00, Oct-07, Apr-11  
BofA GLOBAL RESEARCH

## Chart 55: Average equity market performance before and after major troughs in MSCI ACWI

Around troughs in equities, one misses 23% by entering 6m early vs 23% exiting 6m late



BofA GLOBAL RESEARCH

## Chart 56: MSCI AC World daily level (logged) and all-time highs

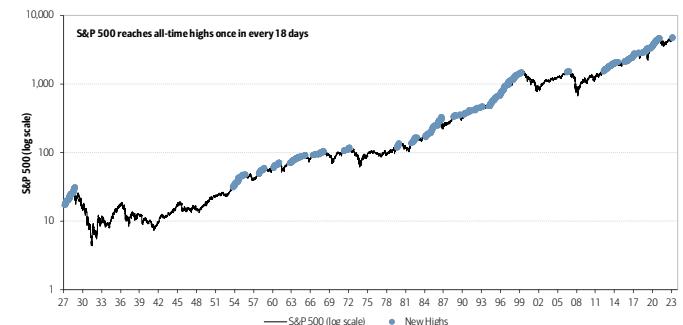
MSCI AC World reaches an all-time high every 16 days



BofA GLOBAL RESEARCH

## Chart 57: S&P 500 daily level (logged) and all-time highs

S&P 500 reaches all-time highs once in every 18 days



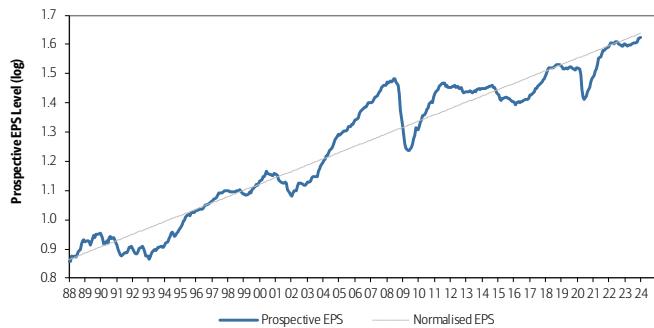
BofA GLOBAL RESEARCH



# Earnings Growth

## Chart 58: Global Prospective EPS and Trend EPS

Earnings expectations have improved in World in last 3m

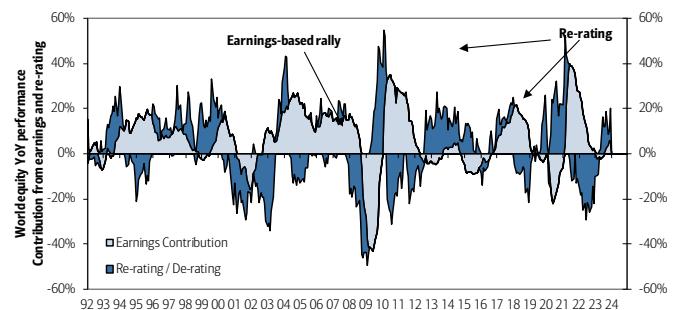


Source : BofA Global Quantitative Strategy, MSCI, IBES

BofA GLOBAL RESEARCH

## Chart 59: Global YoY performance – contribution from earnings and re-rating/de-rating

In the last 12m, re-rating contributed 14.4%, earnings contributed 5.7%

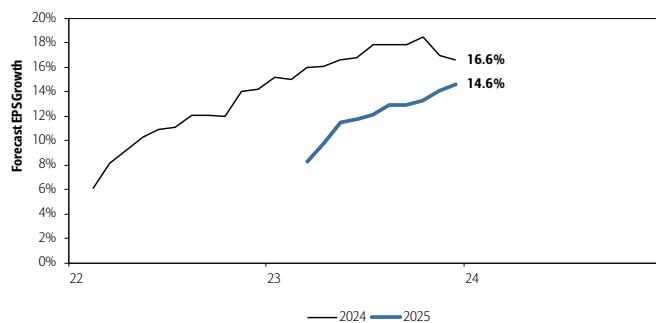


Source : BofA Global Quantitative Strategy, MSCI, IBES

BofA GLOBAL RESEARCH

## Chart 60: Global forecast EPS growth

Global EPS growth forecast is currently at 16.6% for 2024

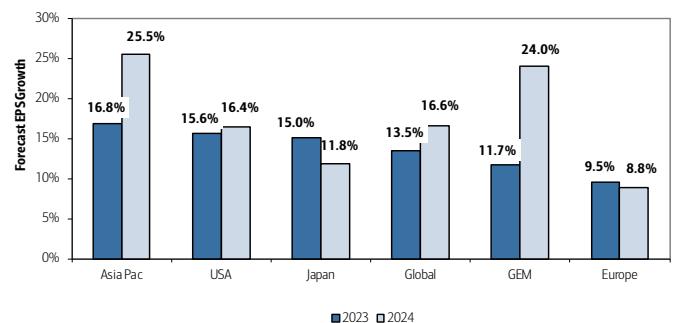


Source : BofA Global Quantitative Strategy, MSCI, IBES

BofA GLOBAL RESEARCH

## Chart 61: Global EPS growth by region

The EPS growth forecast for 2023 is highest in Asia Pac, USA and Japan

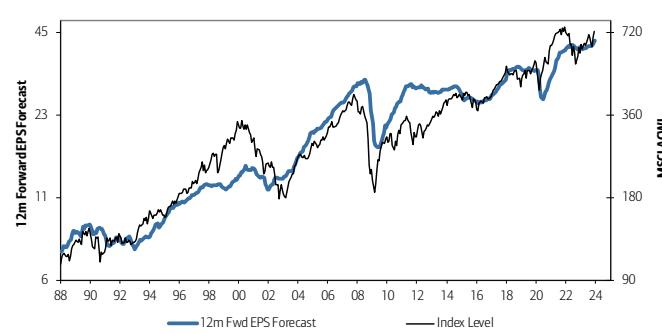


Source : BofA Global Quantitative Strategy, MSCI, IBES

BofA GLOBAL RESEARCH

## Chart 62: MSCI AC World 12m Fwd EPS and Market Level

YoY change in prospective EPS and MSCI ACWI index has a correlation of 53%

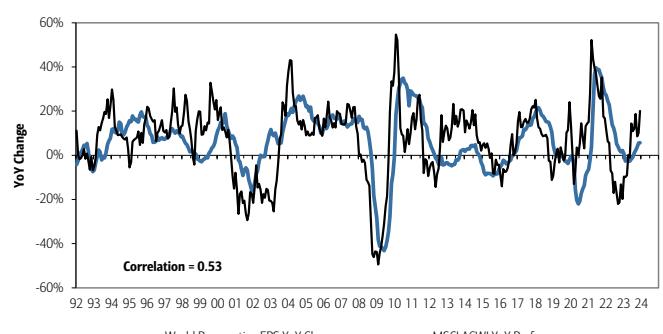


Source : BofA Global Quantitative Strategy, MSCI, IBES

BofA GLOBAL RESEARCH

## Chart 63: Global Prospective EPS and MSCI ACWI YoY Change

Global prospective EPS has improved by 6% in last 12m

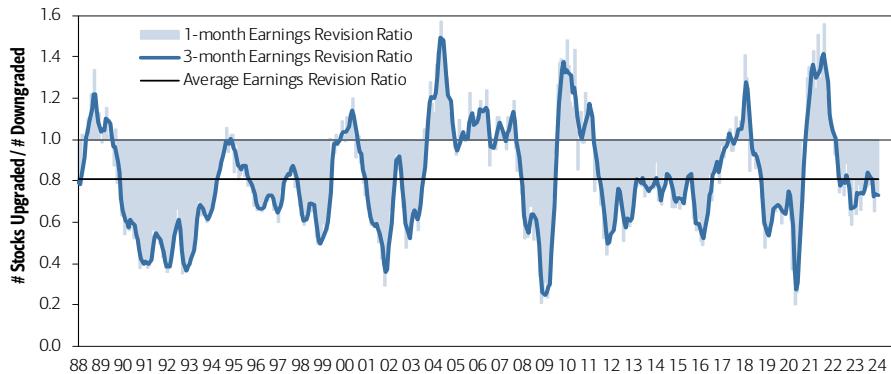


Source : BofA Global Quantitative Strategy, MSCI, IBES

BofA GLOBAL RESEARCH

### Chart 64: Global Earnings Revision Ratio

The Global Earnings Revision Ratio fell from 0.82 to 0.73 in January

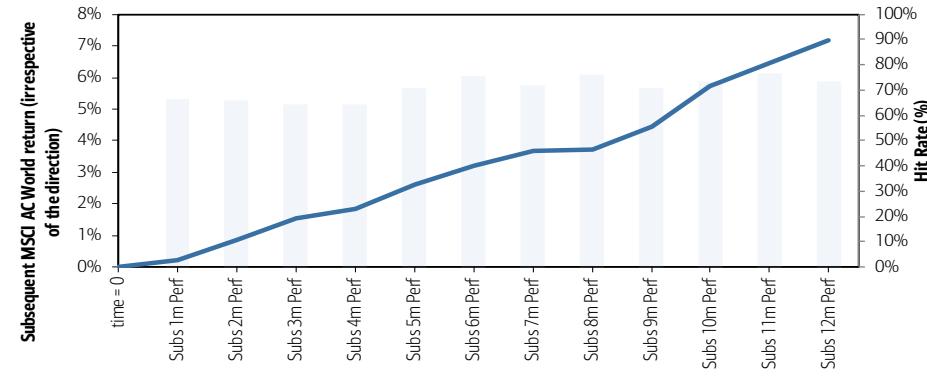


Source : BofA Global Quantitative Strategy, MSCI, IBES

BofA GLOBAL RESEARCH

### Chart 65: Subs 12m MSCI ACWI perf for the current 3m ERR range of 0.70 – 0.80

Subs 12m MSCI ACWI perf for the current 3m ERR range of 0.70 – 0.80 is 7%



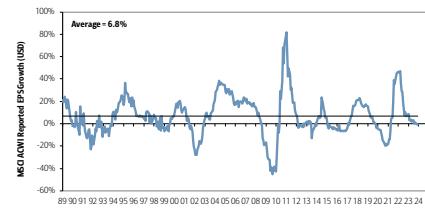
Subs 12m MSCI ACWI perf for the current 3m ERR range of 0.70 – 0.80 is 7%

Source : BofA Global Quantitative Strategy, MSCI, IBES

BofA GLOBAL RESEARCH

### Chart 66: Global Reported Earnings Growth (USD)

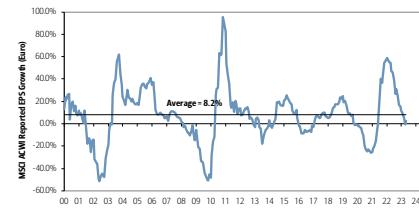
Global reported earnings growth is currently at -0.9%



Source : BofA Global Quantitative Strategy, MSCI, IBES  
BofA GLOBAL RESEARCH

### Chart 67: Global Reported Earnings Growth (Euro)

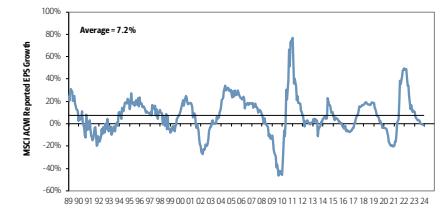
Global reported EPS growth has been trimmed recently



Source : BofA Global Quantitative Strategy, MSCI, IBES  
BofA GLOBAL RESEARCH

### Chart 68: Global Reported Earnings Growth (local)

Global reported earnings growth is currently at -1.4%



Source : BofA Global Quantitative Strategy, MSCI, IBES  
BofA GLOBAL RESEARCH



**Table 15: EPS Growth and EPS Revisions Levels & Average Performance**

At current level of EPS revisions and EPS growth, global equities average +12% in the next 12m

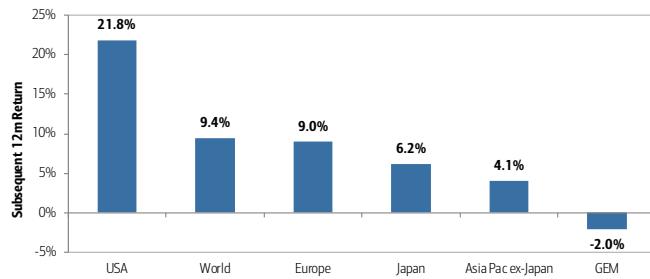
Average	EPS Growth Forecast									EROnly
	-15% to -10%	-10% to -5%	-5% to 0%	0% to 5%	5% to 10%	10% to 15%	15% to 20%	20% to 25%	25% to 30%	
ERR (3m)										
1.40 to 1.60	-	-	-	-	-	-	7%	9%	-	3%
1.20 to 1.40	8%	16%	8%	7%	-	10%	0%	17%	9%	7%
1.00 to 1.20	19%	-	-	-	7%	-3%	7%	3%	-7%	4%
0.80 to 1.00	35%	-	7%	12%	15%	-1%	0%	-3%	-	5%
0.60 to 0.80	-	-25%	9%	12%	-2%	11%	15%	-	-	9%
0.40 to 0.60	-7%	5%	11%	9%	-9%	14%	-	-	-	7%
0.20 to 0.40	2%	-	14%	-	-	-	-	-	-	18%
0.00 to 0.20	-	-	-	-	-	-	-	-	-	-
Growth Only	1%	2%	10%	11%	2%	4%	5%	6%	-3%	-

Source : BofA Global Quantitative Strategy, MSCI, IBES

BofA GLOBAL RESEARCH

**Chart 69: Next 12m returns\* when EPS growth, EPS Revisions and PB were similar to current levels**

At current levels of EPS Growth, EPS Revisions and PB, equities returns are positive in next 12m



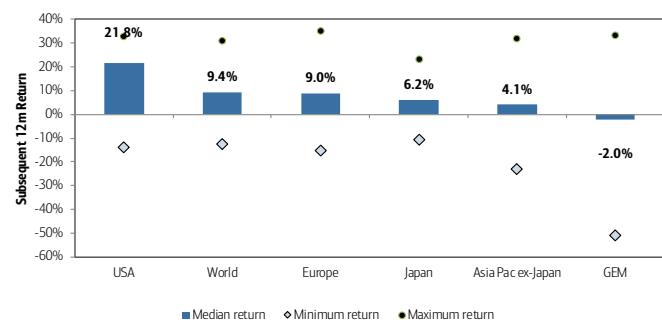
Source : BofA Global Quantitative Strategy, MSCI, IBES

\*Data since 1988

BofA GLOBAL RESEARCH

**Chart 70: Next 12m & Min-Max returns\* when EPS growth, EPS Revisions and PB were similar to current levels**

At current levels of EPS Growth, EPS Revisions and PB, spread of min &amp; max returns is largest for GEM



Source : BofA Global Quantitative Strategy, MSCI, IBES

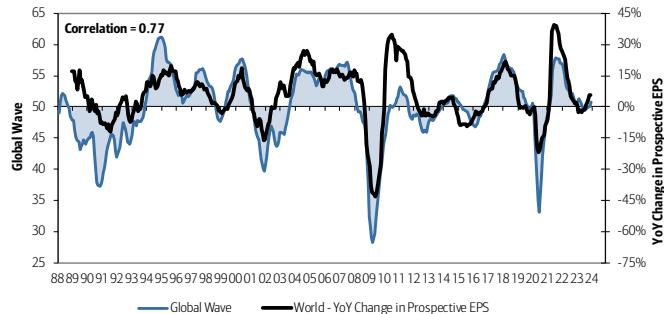
\*Data since 1988

BofA GLOBAL RESEARCH

## Global Wave and Earnings

### Chart 71: Global Wave and GLOBAL Prospective EPS

Global earnings forecasts tend to rise during an upturn

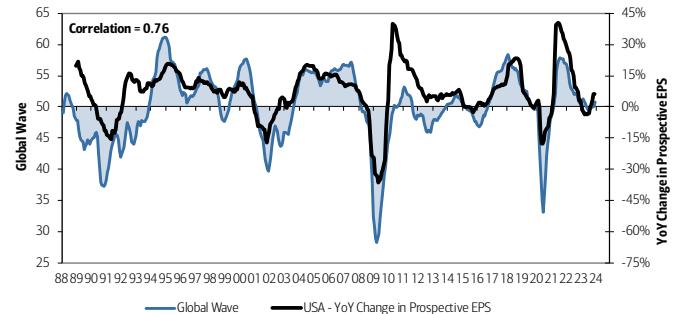


Source : BofA Global Quantitative Strategy, MSCI, IBES, Haver, Bloomberg, OECD, IMF, ICE Bond Indices, National Statistics Database

BofA GLOBAL RESEARCH

### Chart 72: Global Wave and USA Prospective EPS

USA earnings forecasts tend to rise during an upturn

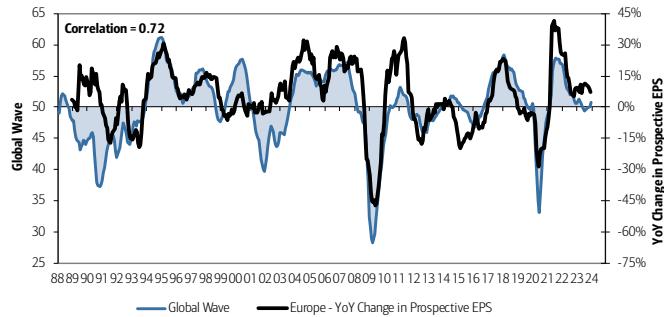


Source : BofA Global Quantitative Strategy, MSCI, IBES, Haver, Bloomberg, OECD, IMF, ICE Bond Indices, National Statistics Database

BofA GLOBAL RESEARCH

### Chart 73: Global Wave and EUROPE Prospective EPS

Europe earnings forecasts tend to rise during an upturn

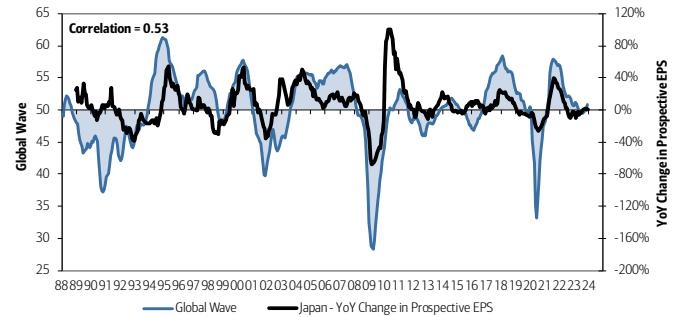


Source : BofA Global Quantitative Strategy, MSCI, IBES, Haver, Bloomberg, OECD, IMF, ICE Bond Indices, National Statistics Database

BofA GLOBAL RESEARCH

### Chart 74: Global Wave and JAPAN Prospective EPS

Japan earnings forecasts tend to rise during an upturn

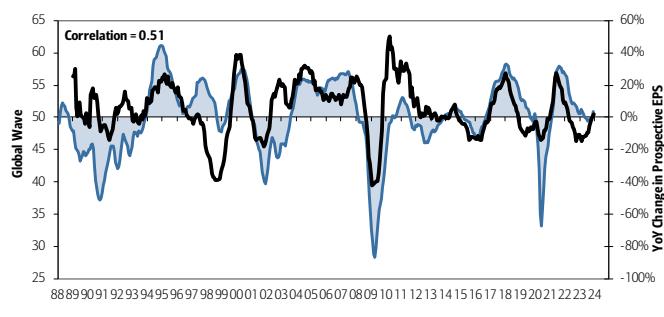


Source : BofA Global Quantitative Strategy, MSCI, IBES, Haver, Bloomberg, OECD, IMF, ICE Bond Indices, National Statistics Database

BofA GLOBAL RESEARCH

### Chart 75: Global Wave and APxJ Prospective EPS

Asia Pac ex-Japan earnings cycle has a strong correlation with the Global Wave

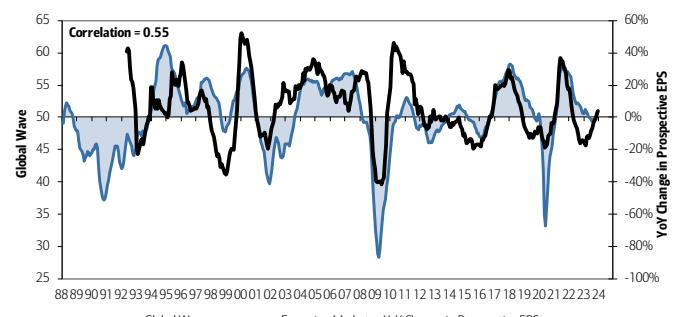


Source : BofA Global Quantitative Strategy, MSCI, IBES, Haver, Bloomberg, OECD, IMF, ICE Bond Indices, National Statistics Database

BofA GLOBAL RESEARCH

### Chart 76: Global Wave and EMERGING MARKETS Prospective EPS

Emerging Markets earnings forecasts have a 55% correlation with the Global Wave



Source : BofA Global Quantitative Strategy, MSCI, IBES, Haver, Bloomberg, OECD, IMF, ICE Bond Indices, National Statistics Database

BofA GLOBAL RESEARCH



# Valuations

## Chart 77: Global Prospective PE

World prospective PE has been re-rated compared to last month

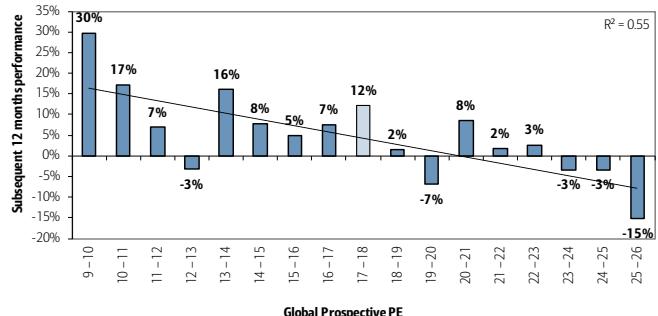


Source : BofA Global Quantitative Strategy, MSCI, IBES

BofA GLOBAL RESEARCH

## Chart 78: Prospective PE and MSCI AC World average subsequent 12m returns

For current PE level, MSCI ACWI returns 12.1% in the subsequent 12m on average

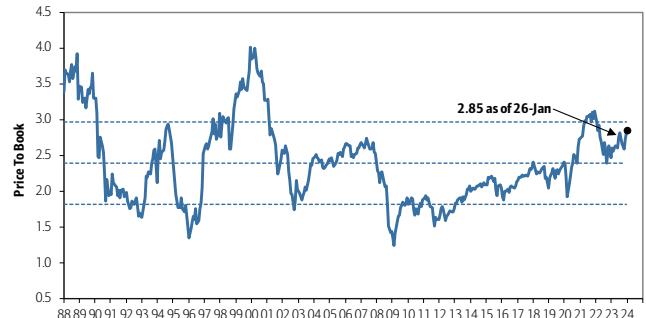


Source : BofA Global Quantitative Strategy, MSCI

BofA GLOBAL RESEARCH

## Chart 79: Global Median Price-to-Book Ratio (Trailing)

Global PB is currently at 2.8

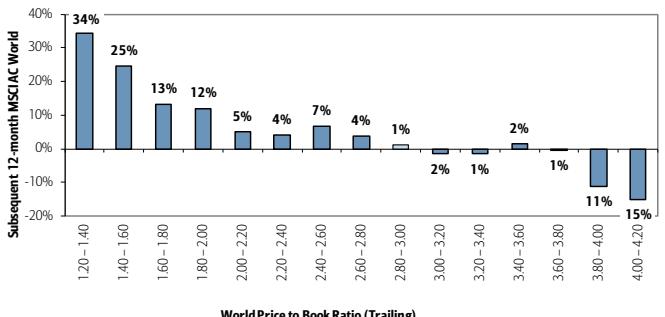


Source : BofA Global Quantitative Strategy, MSCI, IBES

BofA GLOBAL RESEARCH

## Chart 80: Price-to-Book (Trailing) and MSCI AC World subsequent 12m returns

For current PB level, MSCI ACWI returns 1% in the subsequent 12m on average



Source : BofA Global Quantitative Strategy, MSCI

BofA GLOBAL RESEARCH

## Chart 81: Global Median Price-to-Sales (Trailing)

World Price-to-Sales Ratio is currently at 2.0x

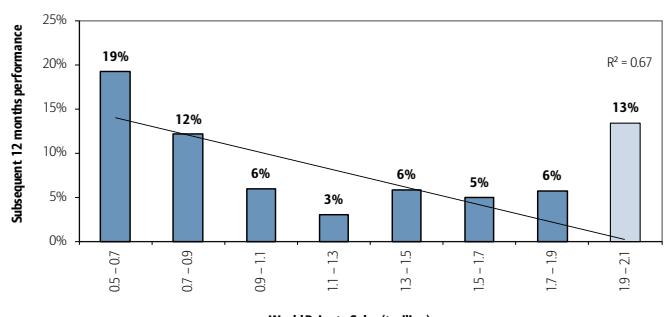


Source : BofA Global Quantitative Strategy, MSCI, Worldscope, Exshare

BofA GLOBAL RESEARCH

## Chart 82: Median Price-to-Sales (Trailing) and MSCI AC World average subsequent 12m returns

For current Price-to-Sales level, MSCI ACWI returns 13.4% in the subsequent 12m on average



Source : BofA Global Quantitative Strategy, MSCI

BofA GLOBAL RESEARCH

**Chart 83: Global Median EV/EBITDA**

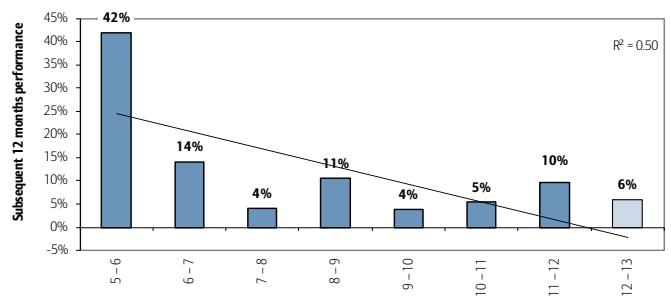
World EV/EBITDA is currently higher compared to 3m ago



BofA GLOBAL RESEARCH

**Chart 84: Median EV/EBITDA and MSCI AC World average subsequent 12m returns**

At current EV/EBITDA level, MSCI ACWI returns 5.9% in the subsequent 12m on average



BofA GLOBAL RESEARCH

**Chart 85: Tobin's Q ( EV / Total Assets ) – Median of stocks globally**

Global Tobin's Q is currently at 1.2x

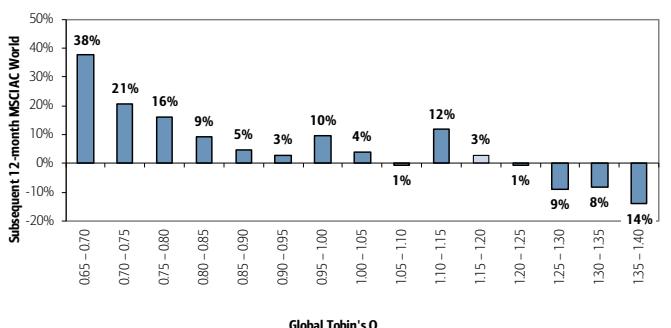


Source : BofA Global Quantitative Strategy, MSCI, Worldscope

BofA GLOBAL RESEARCH

**Chart 86: Median Tobin's Q and MSCI AC World average subsequent 12m returns**

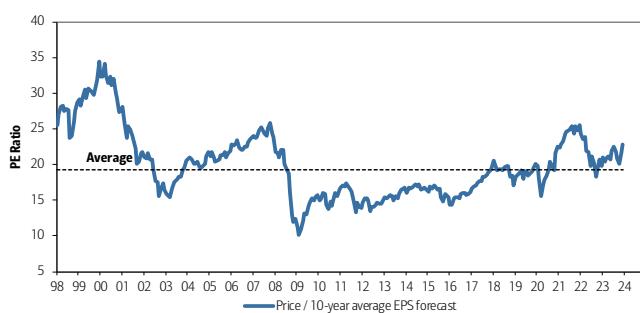
At current Tobin's Q level, MSCI ACWI returns 2.9% in the subsequent 12m on average



BofA GLOBAL RESEARCH

**Chart 87: Global Cyclically-Adjusted PE (10-year average EPS forecast)**

World Cyclically-adjusted PE is currently above the long-term average

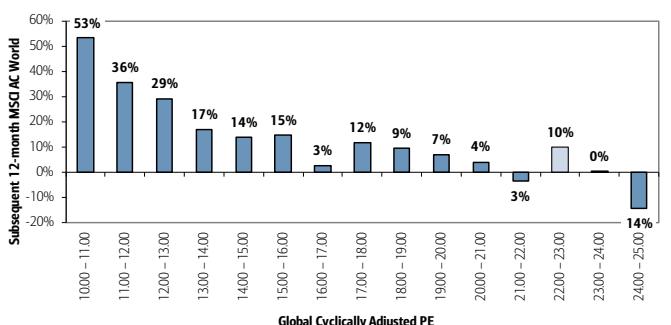


Source : BofA Global Quantitative Strategy, MSCI, IBES

BofA GLOBAL RESEARCH

**Chart 88: Global Cyclically-Adjusted PE and MSCI AC World average subsequent 12m returns**

At current Cyclically-Adjusted PE level, MSCI ACWI returns 9.8% in the subsequent 12m on average

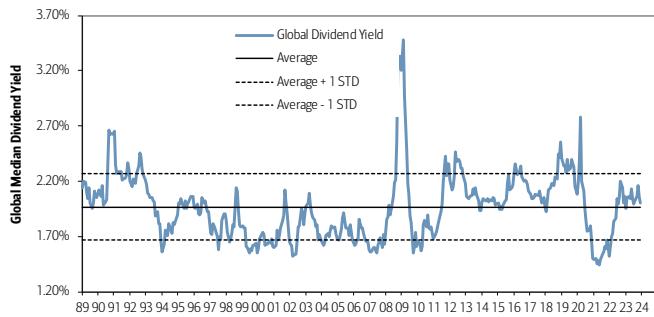


BofA GLOBAL RESEARCH



### Chart 89: Global Median Dividend Yield

Global median Dividend Yield is currently at 2.0%

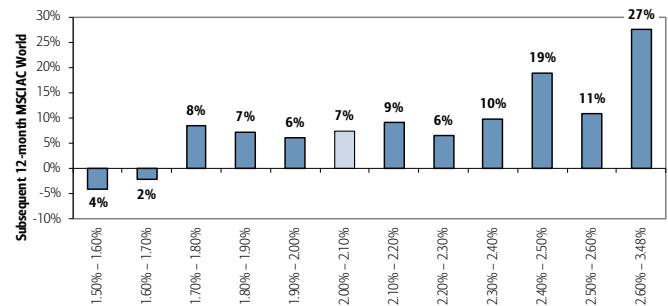


Source : BofA Global Quantitative Strategy, MSCI, Worldscope

BofA GLOBAL RESEARCH

### Chart 90: Global Median Dividend Yield and MSCI AC World average subsequent 12m returns

At current median Dividend Yield, MSCI ACWI returns 7.4% in the subsequent 12m on average

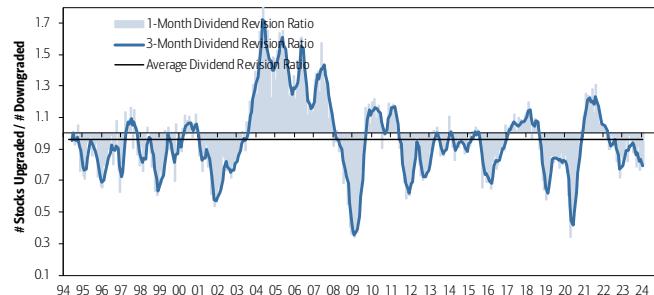


Source : BofA Global Quantitative Strategy, MSCI, Worldscope

BofA GLOBAL RESEARCH

### Chart 91: Global Dividend Revision Ratio

Dividend trends are strongest in Japan

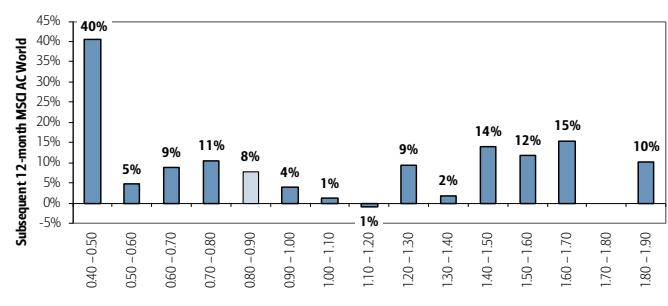


Source : BofA Global Quantitative Strategy, MSCI, Worldscope

BofA GLOBAL RESEARCH

### Chart 92: Global Dividend Revision Ratio and MSCI AC World average subsequent 12m returns

When DRR was at current levels in the past, MSCI ACWI returned 7.7% in the subsequent 12m on average

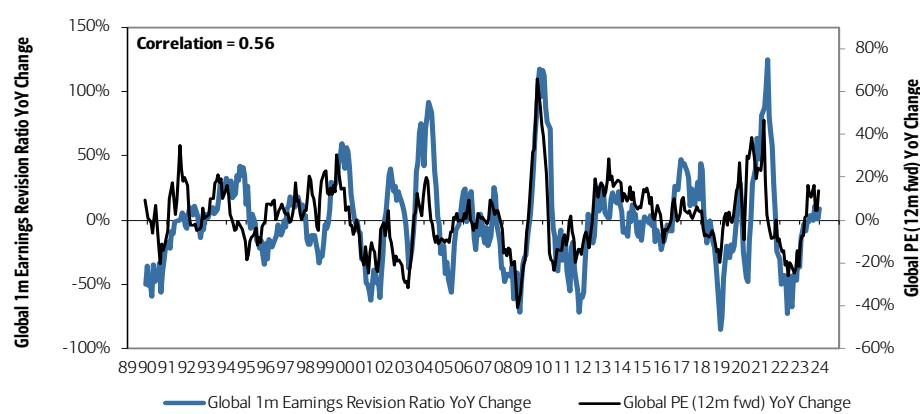


Source : BofA Global Quantitative Strategy, MSCI, Worldscope

BofA GLOBAL RESEARCH

### Chart 93: YoY change in Global Earnings Revision Ratio vs YoY change in Global Forward PE

YoY change in Global ERR vs YoY change in Global PE has correlation of 0.56



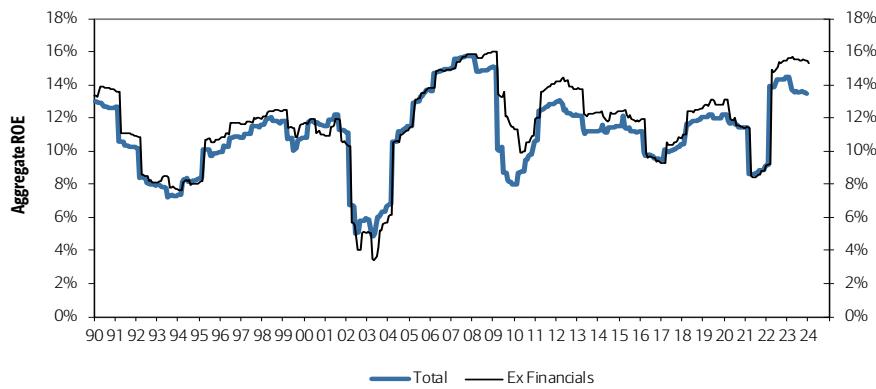
Source : BofA Global Quantitative Strategy, MSCI, IBES

BofA GLOBAL RESEARCH

## ROE Aggregates

### Chart 94: Global Aggregate ROE

Global ROE is currently 13%

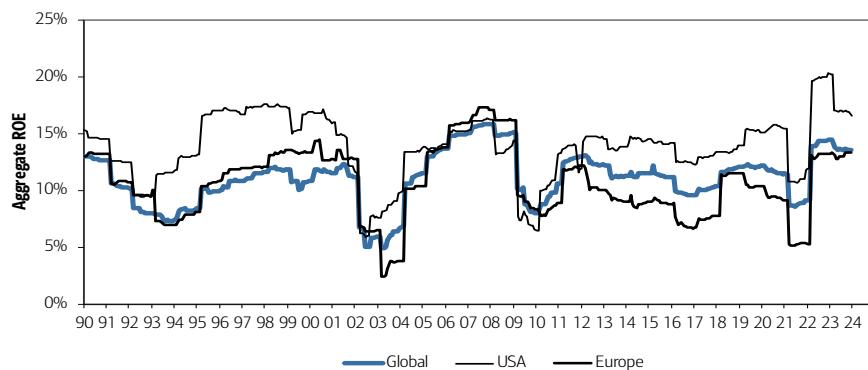


Source : BofA Global Quantitative Strategy, MSCI, World Scope

BofA GLOBAL RESEARCH

### Chart 95: Global / USA / Europe Aggregate ROE

The ROE in US is 17%

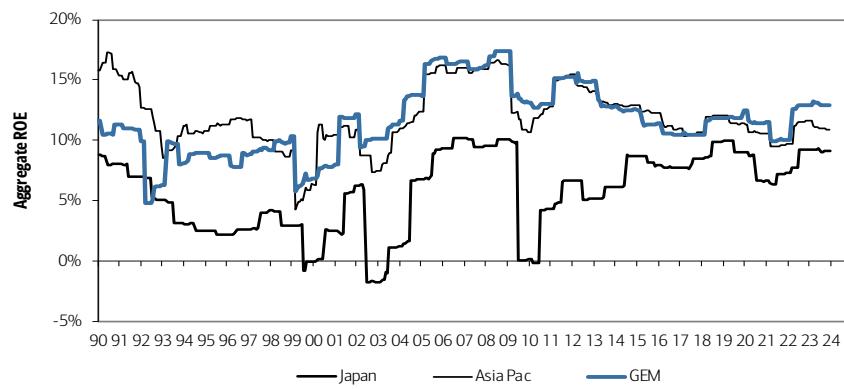


Source : BofA Global Quantitative Strategy, MSCI, World Scope

BofA GLOBAL RESEARCH

### Chart 96: Japan / Asia Pac ex-Japan / Emerging Markets Aggregate ROE

The current GEM ROE is 13%



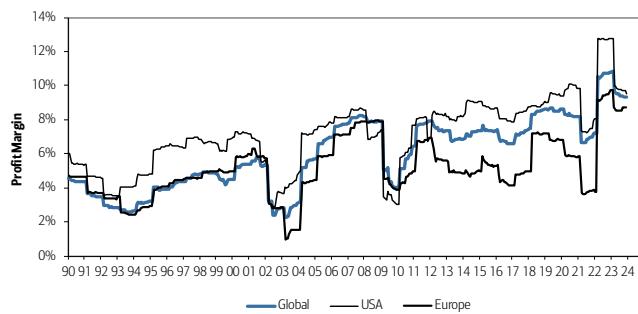
Source : BofA Global Quantitative Strategy, MSCI, World Scope

BofA GLOBAL RESEARCH



**Chart 97: Profit Margins: Global, USA, Europe**

Globally profit margins have deteriorated in the last 3m

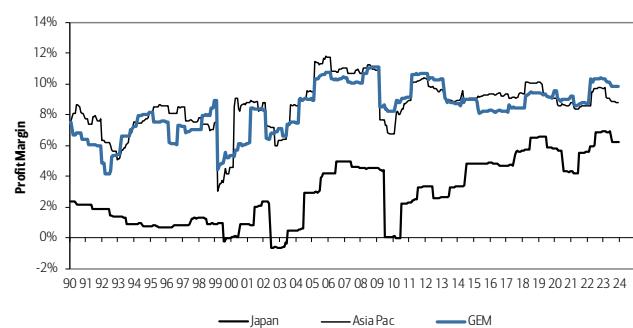


Source : BofA Global Quantitative Strategy, MSCI, World Scope

BofA GLOBAL RESEARCH

**Chart 98: Profit Margins: Japan, Asia Pac ex-Japan, Emerging Markets**

The profit margin in APxJ is 9%

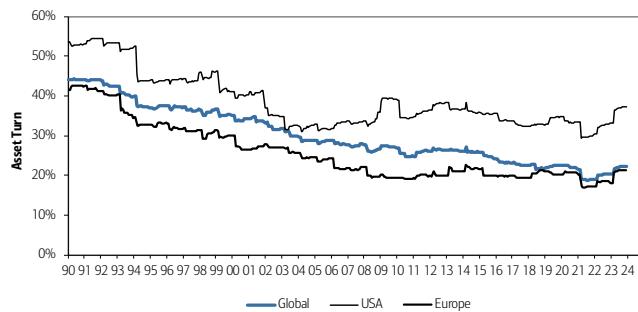


Source : BofA Global Quantitative Strategy, MSCI, World Scope

BofA GLOBAL RESEARCH

**Chart 99: Asset Turn: Global, USA, Europe**

Asset Turn in the US currently is 37%

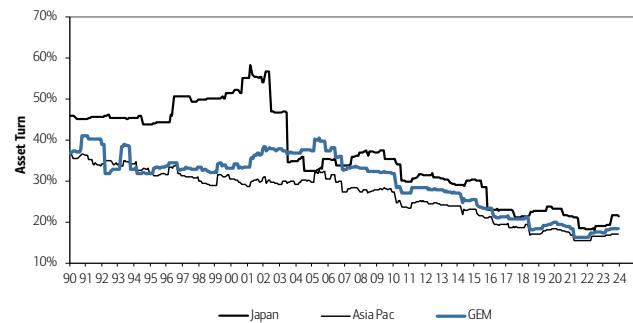


Source : BofA Global Quantitative Strategy, MSCI, World Scope

BofA GLOBAL RESEARCH

**Chart 100: Asset Turn: Japan, Asia Pac ex-Japan, Emerging Markets**

The Asset Turn in APxJ is 17%

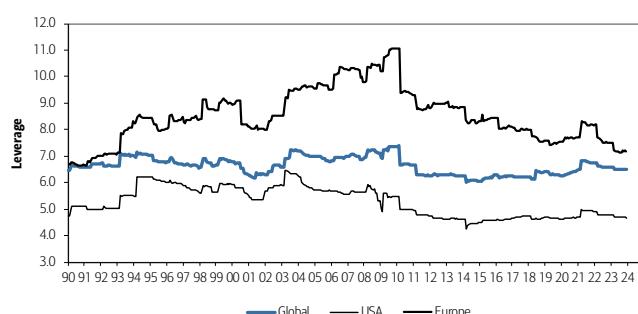


Source : BofA Global Quantitative Strategy, MSCI, World Scope

BofA GLOBAL RESEARCH

**Chart 101: Leverage: Global, USA, Europe**

Operating leverage globally is currently 6.5x

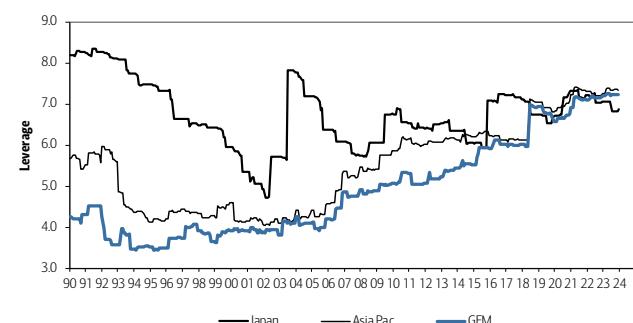


Source : BofA Global Quantitative Strategy, MSCI, World Scope

BofA GLOBAL RESEARCH

**Chart 102: Leverage: Japan, Asia Pac ex-Japan, Emerging Markets**

The current GEM Operating Leverage is 2.8



Source : BofA Global Quantitative Strategy, MSCI, World Scope

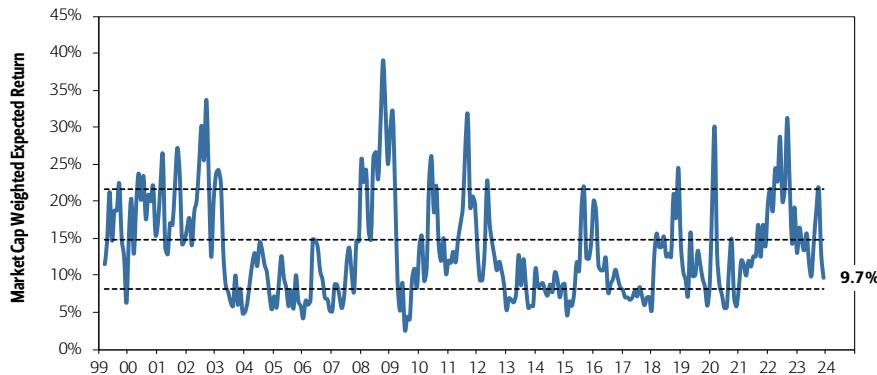
BofA GLOBAL RESEARCH



## Expected Return

### Chart 103: Global expected return

The current Expected Return for World is 9.7%

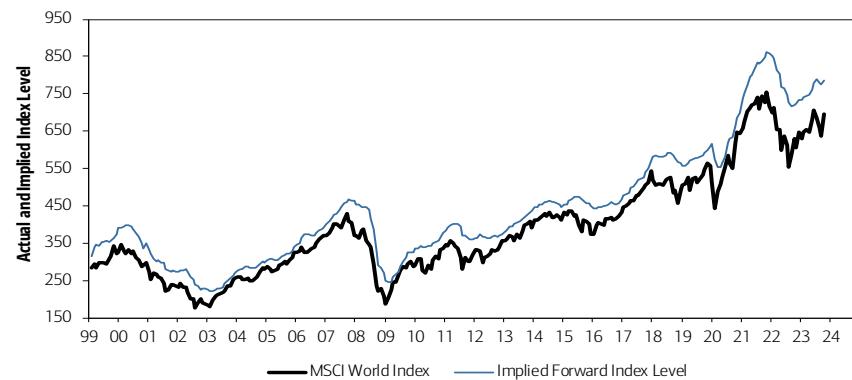


Source : BofA Global Quantitative Strategy

BofA GLOBAL RESEARCH

### Chart 104: MSCI World Index & Implied Index level

The expected return is impacted by changes to price targets and changes to stock prices

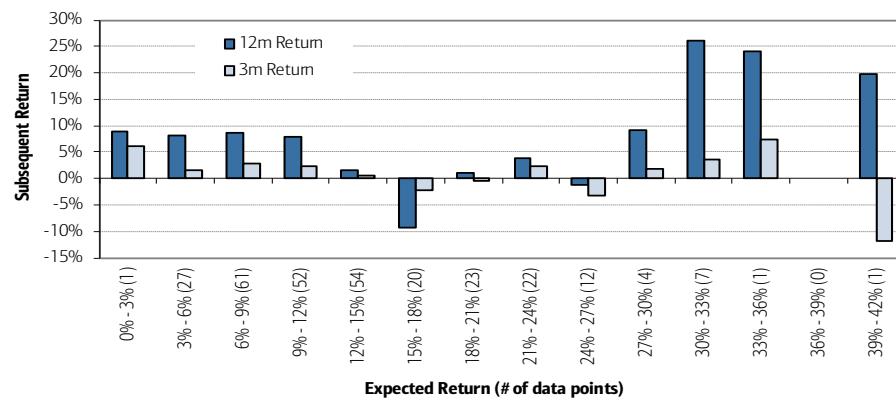


Source : BofA Global Quantitative Strategy

BofA GLOBAL RESEARCH

### Chart 105: Expected return versus actual subsequent return

In Earnings Recovery phase consensus earnings forecasts rise



Source : BofA Global Quantitative Strategy

BofA GLOBAL RESEARCH



# Speculation

One measure of speculation is the valuation premium investors are paying for exposure to high beta stocks. The back-testing in this analysis is from Jan-90 to Sep-09 and we introduced the current version of the analysis in Oct-09.

This analysis includes all stocks in the MSCI AC World Index as at each month-end. We define beta for each stock as the regression coefficient from regressing 60 months of monthly price returns against the monthly price returns of the MSCI AC World Index. The screens are determined at the end of each month using month-end data from MSCI. We divide all the stocks in the analysis into five quintiles by beta. "High Beta" includes the top 20% of stocks in the analysis by beta and "Low Beta" includes the bottom 20%.

High beta acts as a stock screen and not as a recommended stock portfolio. The screens are not a recommended list either individually or as a group of stocks. Investors should consider the fundamentals of the companies and their own individual circumstances/objectives before making any investment decisions.

## Performance Calculation Methodology

Refer to appendix "[Speculation Performance](#)" for detailed performance data.

Rebalancing and performance calculations are conducted each month, using data and closing prices corresponding to the market's close on the last business day of each month. Performance is computed on the basis of price return. The performance is presented relative to the market capitalization-weighted MSCI AC World Index.

The analysis is back-tested and does not represent the actual performance of any account or fund. Back-tested performance depicts the hypothetical back-tested performance of a particular strategy over the time period indicated. In future periods, market and economic conditions will differ and the same strategy will not necessarily produce the same results. No representation is being made that any actual portfolio is likely to have achieved returns similar to those shown herein. In fact, there are frequently sharp differences between back-tested returns and the actual results realized in the actual management of a portfolio. Back-tested performance results are created by applying an investment strategy or methodology to historical data and attempts to give an indication as to how a strategy might have performed during a certain period in the past if the product had been in existence during such time. Back-tested results have inherent limitations including the fact that they are calculated with the full benefit of hindsight, which allows the security selection methodology to be adjusted to maximize the returns. Further, the results shown do not reflect actual trading or the impact that material economic and market factors might have had on a portfolio manager's decision-making under actual circumstances. Back-tested returns do not reflect advisory fees, trading costs, or other fees or expenses.

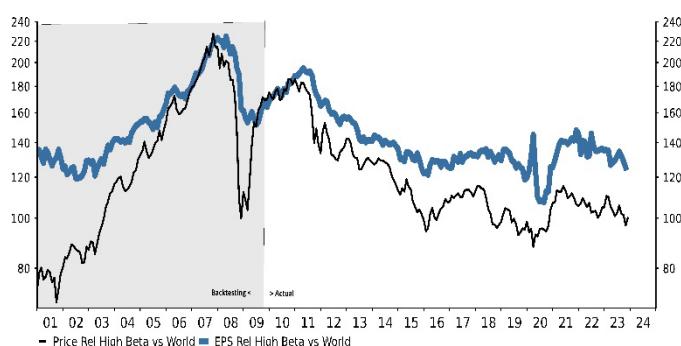
This report includes factors for informational or descriptive purposes, and inclusion here is not equivalent to a recommendation of the factor or portfolio.

Past performance is no guarantee of future results.

A complete performance record is available upon request.

### Chart 106: High Beta (top quintile) Momentum & Value vs Global Index

Earnings momentum has deteriorated for High Beta stocks



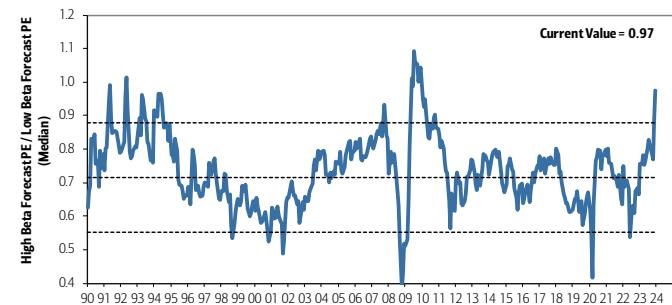
Source : BofA Global Quantitative Strategy, MSCI, IBES

The shaded area shows back-tested results during the period from Jan-90 to Sep-09. The unshaded portion represents actual performance since Oct-09. Back-tested 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.

BofA GLOBAL RESEARCH

### Chart 107: High Beta Forecast PE / Low Beta Forecast PE (median)

High Beta vs Low Beta PE (FORECAST) is currently above the long-term average

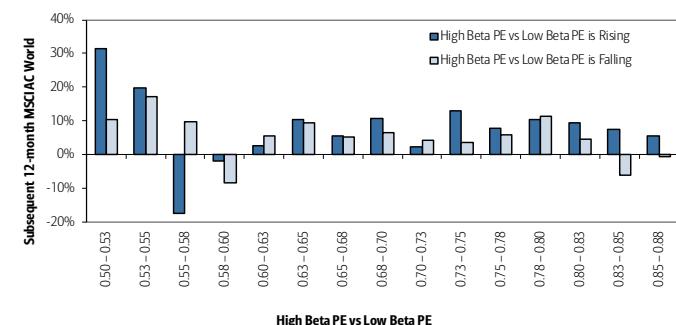


Source : BofA Global Quantitative Strategy, MSCI, IBES

BofA GLOBAL RESEARCH

### Chart 108: Rising/Falling High Beta PE vs. Low Beta PE & subsequent 12-month Performance of MSCI ACWI

High Beta stocks have outperformed by 14.3% in the last 12m

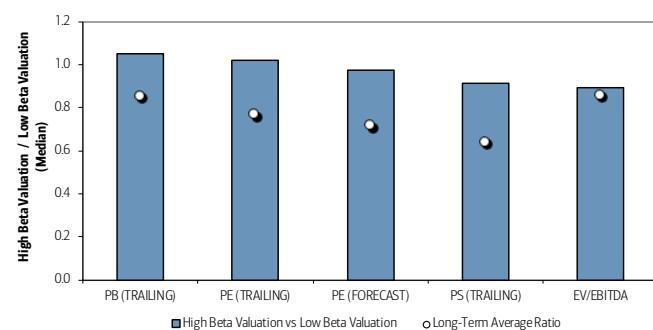


Source : BofA Global Quantitative Strategy, MSCI, IBES

BofA GLOBAL RESEARCH

### Chart 109: High Beta Valuation / Low Beta Valuation – Five valuation methods

Based on PE (FORECAST), High Beta stocks are trading at a discount of 3%

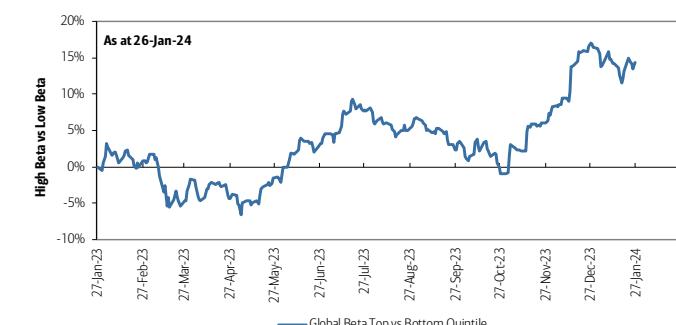


Source : BofA Global Quantitative Strategy, MSCI, IBES

BofA GLOBAL RESEARCH

### Chart 110: Daily relative cumulative performance of high versus low beta

High Beta stocks have outperformed Low Beta in last 12-months

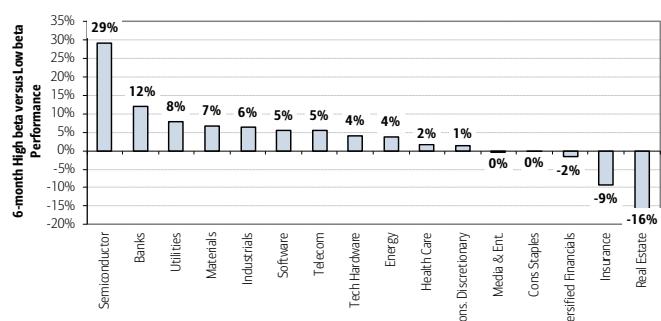


Source : BofA Global Quantitative Strategy, MSCI, IBES

BofA GLOBAL RESEARCH

### Chart 111: High vs Low beta: 6-month performance by global sectors

High Beta outperformed Low Beta the most in Semiconductor, Banks and Utilities sectors



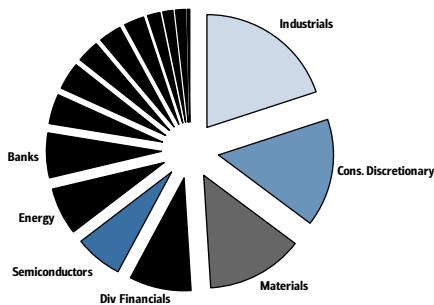
Source : BofA Global Quantitative Strategy, MSCI

BofA GLOBAL RESEARCH



**Chart 112: Sector weights of Global high Beta (top quintile)**

Global High Beta is dominated by stocks from Industrials sector

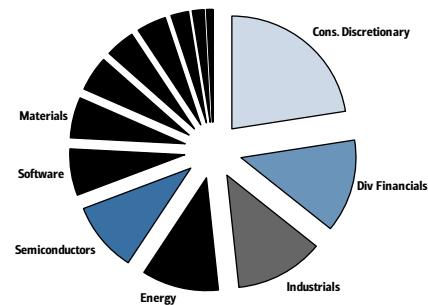


Source : BofA Global Quantitative Strategy, MSCI, Exshare

BofA GLOBAL RESEARCH

**Chart 113: Sector weights of USA high Beta (top quintile)**

USA High Beta is dominated by stocks from Cons. Discretionary

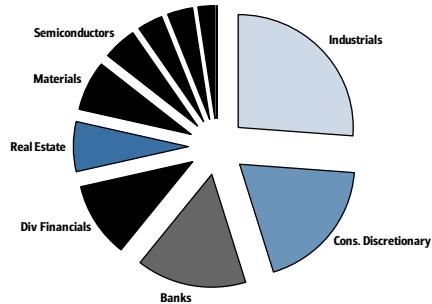


Source : BofA Global Quantitative Strategy, MSCI, Exshare

BofA GLOBAL RESEARCH

**Chart 114: Sector weights of Europe high Beta (top quintile)**

Europe High Beta is dominated by stocks from Industrials sector

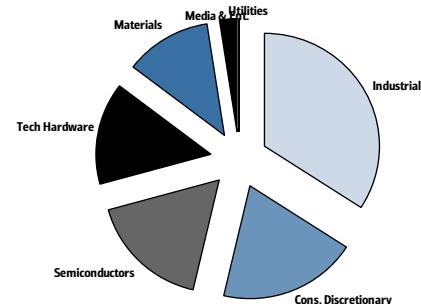


Source : BofA Global Quantitative Strategy, MSCI, Exshare

BofA GLOBAL RESEARCH

**Chart 115: Sector weights of Japan high Beta (top quintile)**

Japan High Beta is dominated by stocks from Industrials sector

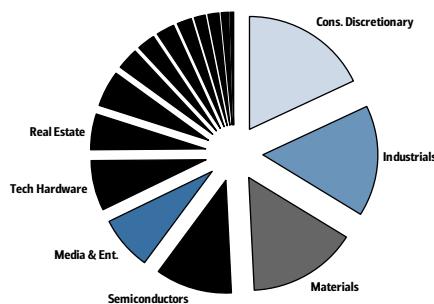


Source : BofA Global Quantitative Strategy, MSCI, Exshare

BofA GLOBAL RESEARCH

**Chart 116: Sector weights of Asia Pac ex-Japan high Beta (top quintile)**

Asia Pac ex-Japan High Beta is dominated by stocks from Cons. Discretionary

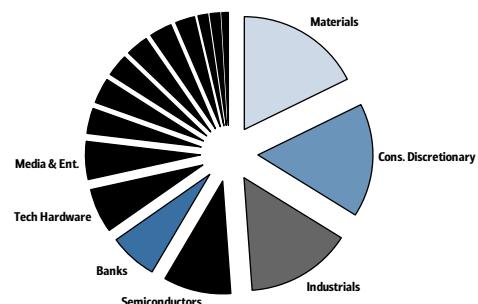


Source : BofA Global Quantitative Strategy, MSCI, Exshare

BofA GLOBAL RESEARCH

**Chart 117: Sector weights of Emerging Markets high Beta (top quintile)**

Emerging Markets High Beta stocks are most tilted towards Materials

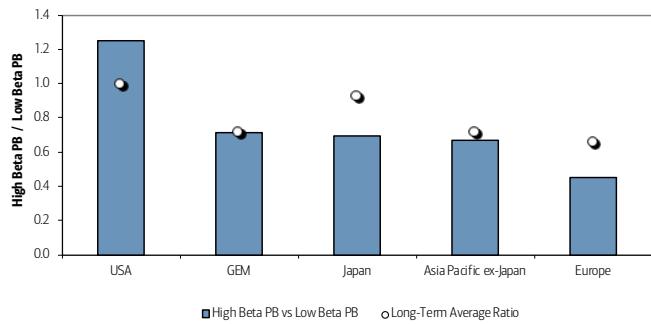


Source : BofA Global Quantitative Strategy, MSCI, Exshare

BofA GLOBAL RESEARCH

### Chart 118: Speculation Measure by Region

On PB basis Asia Pacific ex-Japan High Beta stocks' discount to Low Beta stocks has increased

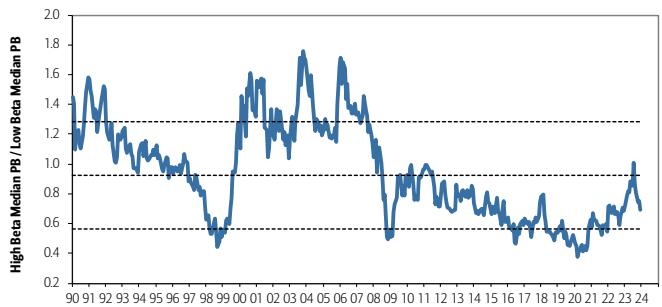


Source : BofA Global Quantitative Strategy, MSCI, IBES

BofA GLOBAL RESEARCH

### Chart 119: Japan – High Beta Median PB vs. Low Beta Median PB

On PB basis Japan High Beta stocks' discount to Low Beta stocks has increased



Source : BofA Global Quantitative Strategy, MSCI, IBES

BofA GLOBAL RESEARCH

### Chart 120: USA – High Beta Median PB vs. Low Beta Median PB

High Beta vs Low Beta PB for USA is currently above the long-term average



Source : BofA Global Quantitative Strategy, MSCI, IBES

BofA GLOBAL RESEARCH

### Chart 121: Asia Pac ex-Japan High Beta Median PB vs. Low Beta Median PB

Based on PB Asia Pacific ex-Japan High Beta stocks are trading at a discount of 33%



Source : BofA Global Quantitative Strategy, MSCI, IBES

BofA GLOBAL RESEARCH

### Chart 122: Europe – High Beta Median PB vs. Low Beta Median PB

On PB basis Europe High Beta stocks' discount to Low Beta stocks has diminished

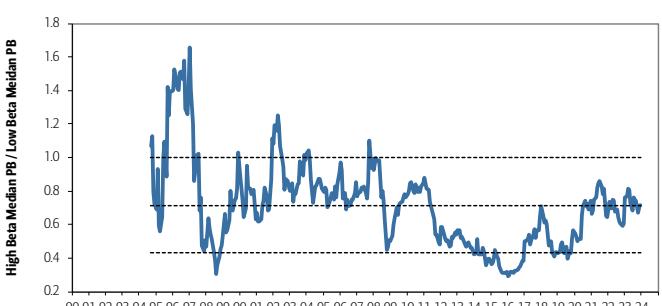


Source : BofA Global Quantitative Strategy, MSCI, IBES

BofA GLOBAL RESEARCH

### Chart 123: Emerging Markets High Beta Median PB vs. Low Beta Median PB

Based on PB GEM High Beta stocks are trading at a discount of 29%



Source : BofA Global Quantitative Strategy, MSCI, IBES

BofA GLOBAL RESEARCH



## Four Stages of an upturn

**Bounce:** Markets rally from cycle lows but there is usually little or no evidence to justify the bounce.

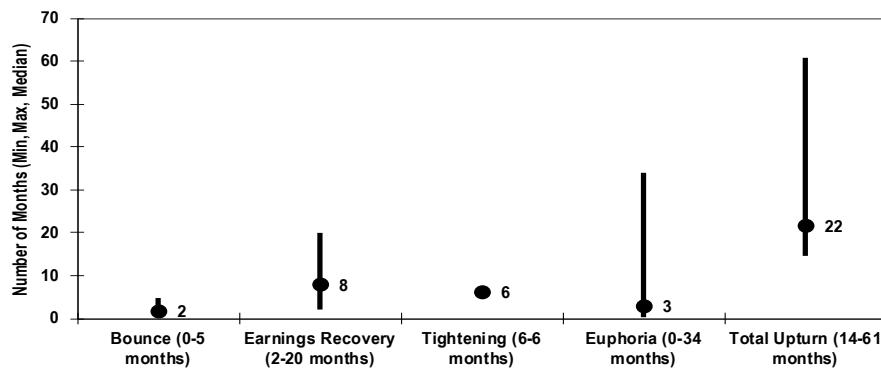
**Earnings Recovery:** Consensus earnings forecasts start to rise.

**Tightening:** The first 6 months after central banks start tightening.

**Euphoria:** From six months into the tightening cycle until markets peak.

**Chart 124: Number of months in the four stages of an upturn**

Upturn in an economic cycle averages 22 months

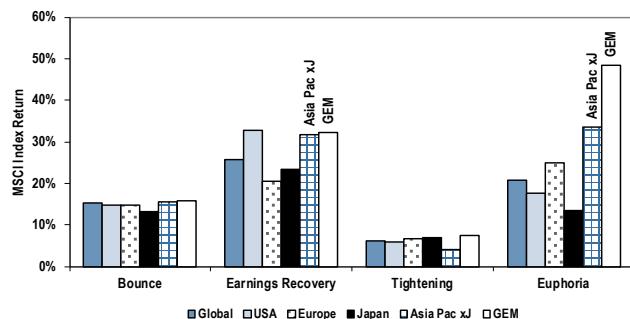


Source : BofA Global Quantitative Strategy, MSCI, IBES, Bloomberg

BofA GLOBAL RESEARCH

**Chart 125: Regional performance in the four stages of an upturn**

In Earnings Recovery phase USA performs the best as all regions post positive returns

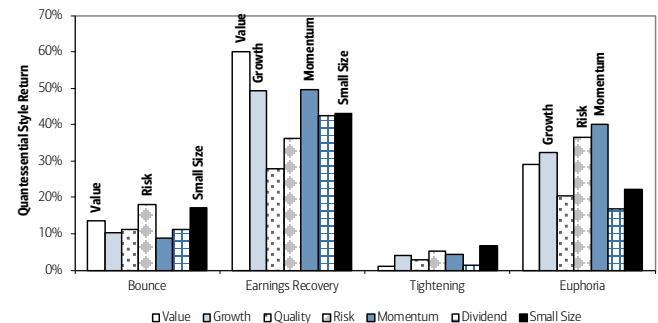


Source : BofA Global Quantitative Strategy, MSCI, IBES, Bloomberg

BofA GLOBAL RESEARCH

**Chart 126: Global Style performance in the four stages of an upturn**

In Earnings Recovery phase Value performs the best as cyclical styles rally

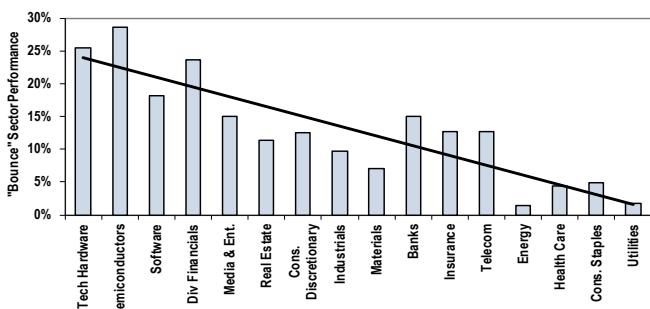


Source : BofA Global Quantitative Strategy, MSCI, IBES, Bloomberg

BofA GLOBAL RESEARCH

### Chart 127: Global sector performance during the “Bounce” stage

During Bounce phase, the best performing sector is Semiconductors

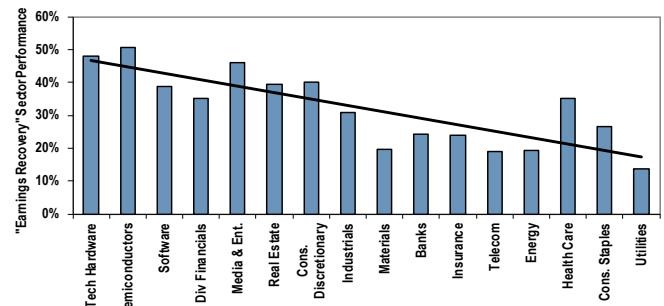


Source : BofA Global Quantitative Strategy, MSCI, IBES, Bloomberg

BofA GLOBAL RESEARCH

### Chart 128: Global sector performance during “Earnings Recovery”

In Earnings Recovery phase Semiconductors performs the best as cyclical sectors rally

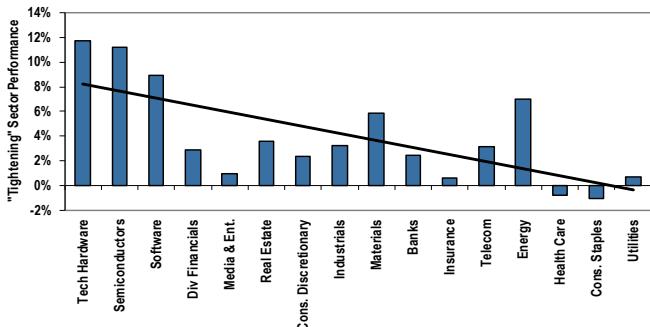


Source : BofA Global Quantitative Strategy, MSCI, IBES, Bloomberg

BofA GLOBAL RESEARCH

### Chart 129: Global sector performance during the “Tightening” stage

During Tightening phase, the best performing sector is Tech Hardware

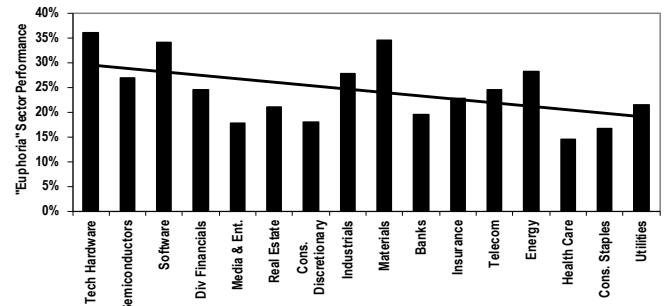


Source : BofA Global Quantitative Strategy, MSCI, IBES, Bloomberg

BofA GLOBAL RESEARCH

### Chart 130: Global sector performance during the “Euphoria” stage

During Euphoria the best performing sector is Tech Hardware

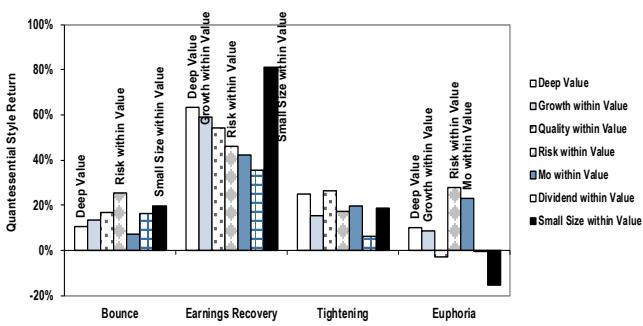


Source : BofA Global Quantitative Strategy, MSCI, IBES, Bloomberg

BofA GLOBAL RESEARCH

### Chart 131: Which Styles within Value work first ?

During Earnings Recovery phase, the best performing style within Value is Small Size within Value

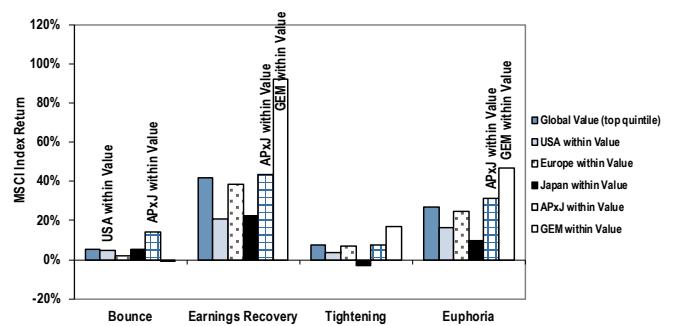


Source : BofA Global Quantitative Strategy, MSCI, IBES, Worldscope, ExShare, Bloomberg

BofA GLOBAL RESEARCH

### Chart 132: Which Regions within Value work first ?

In Earnings Recovery phase GEM within Value performs the best within Value



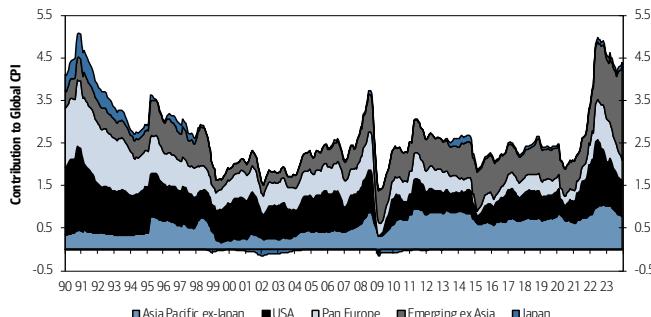
Source : BofA Global Quantitative Strategy, MSCI, IBES, Worldscope, ExShare, Bloomberg

BofA GLOBAL RESEARCH

# Global Inflation & Short Rates

## Chart 133: Contribution to Global CPI Forecast by Region

The largest contributor to Global CPI forecast is Emerging ex Asia

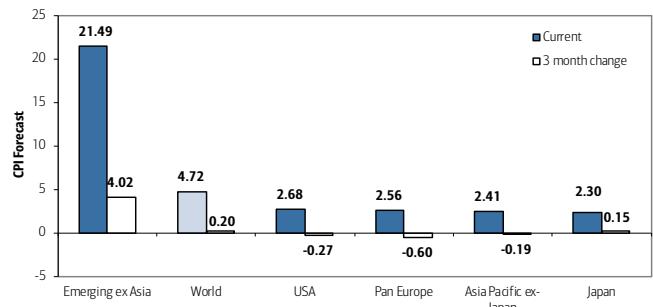


Source : BofA Global Quantitative Strategy, Consensus Economics

BofA GLOBAL RESEARCH

## Chart 134: Forecast CPI by region

The current Global CPI forecast is 4.7%

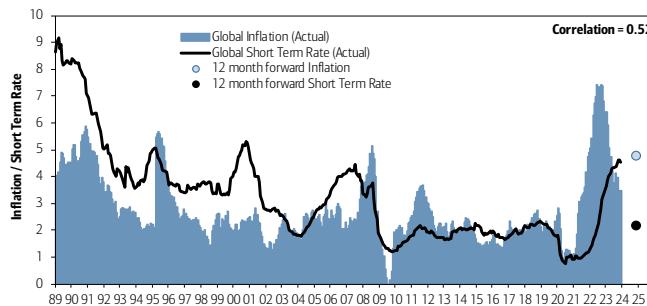


Source : BofA Global Quantitative Strategy, Consensus Economics

BofA GLOBAL RESEARCH

## Chart 135: Global Inflation and Short Rates

The forecast is for short-rates to ease in the next 12-months

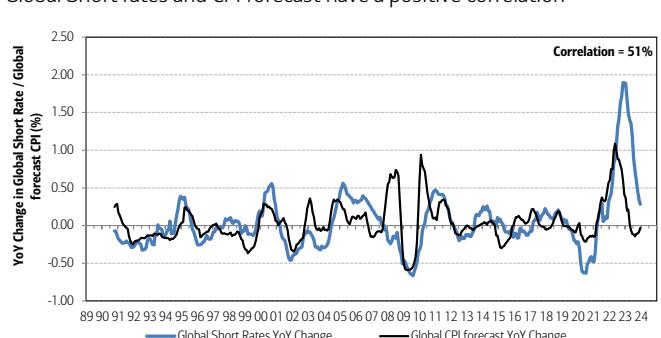


Source : BofA Global Quantitative Strategy, Consensus Economics

BofA GLOBAL RESEARCH

## Chart 136: YoY Change in Global Short Rates (Actual) and CPI Forecast

Global Short rates and CPI forecast have a positive correlation

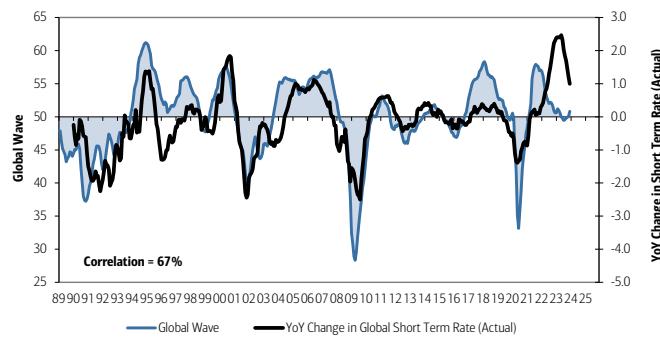


Source : BofA Global Quantitative Strategy, Consensus Economics

BofA GLOBAL RESEARCH

## Chart 137: Global Wave and Global Short Rates (Actual)

Global Short Term rates have a positive correlation with the Global Wave

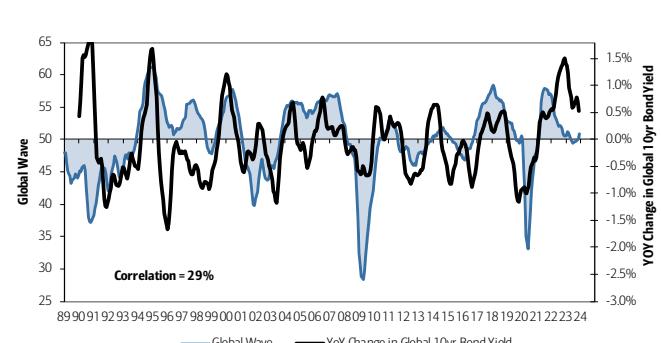


Source : BofA Global Quantitative Strategy, MSCI, IBES, Haver, Bloomberg, OECD, IMF, ICE Bond Indices, National Statistics Database

BofA GLOBAL RESEARCH

## Chart 138: Global Wave and YoY change in Global 10 year Bond Yield

Global 10Yr Bond Yield has a 29% correlation with the Global Wave

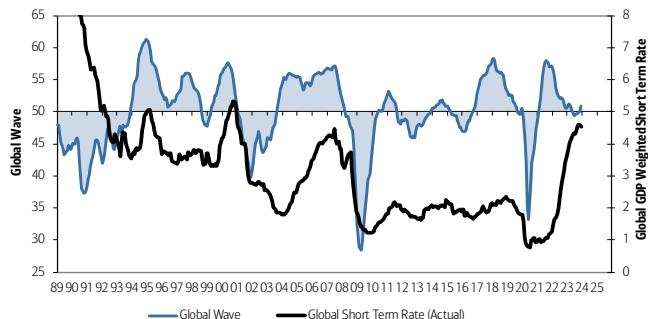


Source : BofA Global Quantitative Strategy, MSCI, IBES, Haver, Bloomberg, OECD, IMF, ICE Bond Indices, National Statistics Database

BofA GLOBAL RESEARCH

### Chart 139: Global Short Term Rate (Actual) versus Global Wave

Central banks tighten as an upturn matures and inflation rises and vice-versa

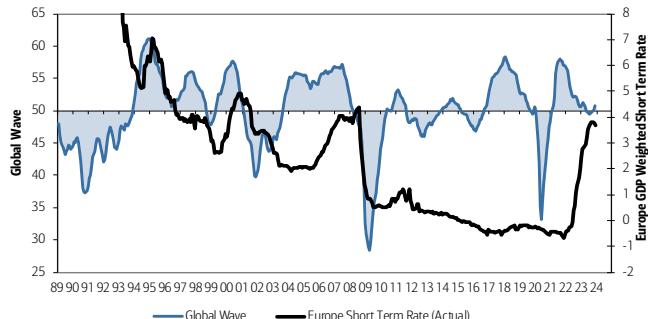


Source : BofA Global Quantitative Strategy, MSCI, IBES, Haver, Bloomberg, OECD, IMF, ICE Bond Indices, National Statistics Database

BofA GLOBAL RESEARCH

### Chart 141: Europe Short Term Rate (Actual) versus Global Wave

Europe Short Term rates have a 3% correlation with the Global Wave

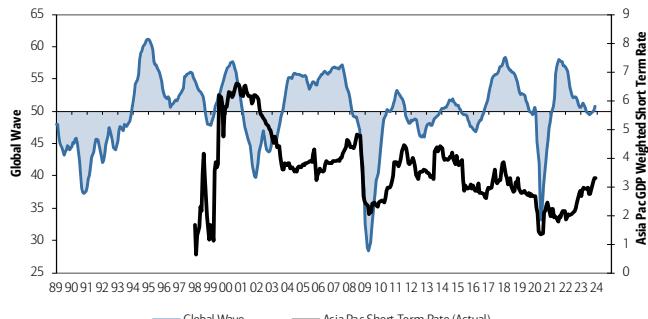


Source : BofA Global Quantitative Strategy, MSCI, IBES, Haver, Bloomberg, OECD, IMF, ICE Bond Indices, National Statistics Database

BofA GLOBAL RESEARCH

### Chart 143: Asia Pac ex-Japan Short Term Rate (Actual) versus Global Wave

YoY Change in APxJ Short Term rates have a 50% correlation with the Global Wave



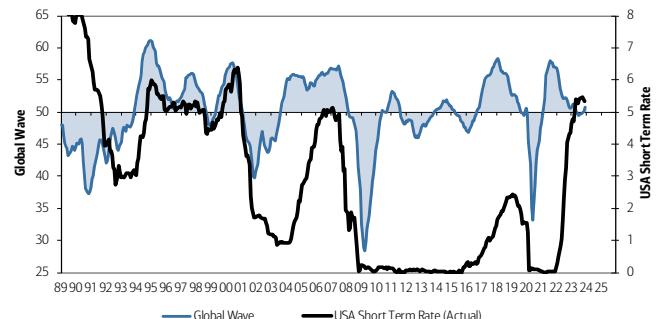
Source : BofA Global Quantitative Strategy, MSCI, IBES, Haver, Bloomberg, OECD, IMF, ICE Bond Indices, National Statistics Database

BofA GLOBAL RESEARCH



### Chart 140: USA Short Term Rate (Actual) versus Global Wave

USA Short Term rates have a 60% correlation with the Global Wave

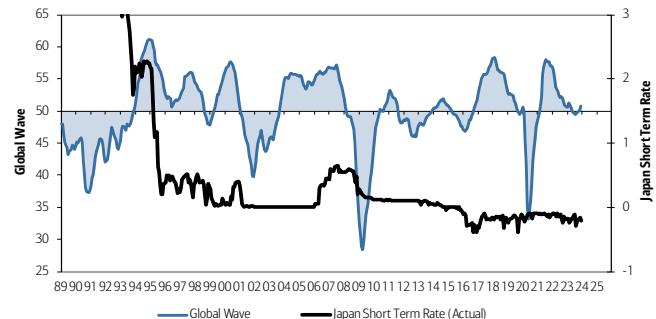


Source : BofA Global Quantitative Strategy, MSCI, IBES, Haver, Bloomberg, OECD, IMF, ICE Bond Indices, National Statistics Database

BofA GLOBAL RESEARCH

### Chart 142: Japan Short Term Rate (Actual) versus Global Wave

Japan Short Term rates are in negative territory

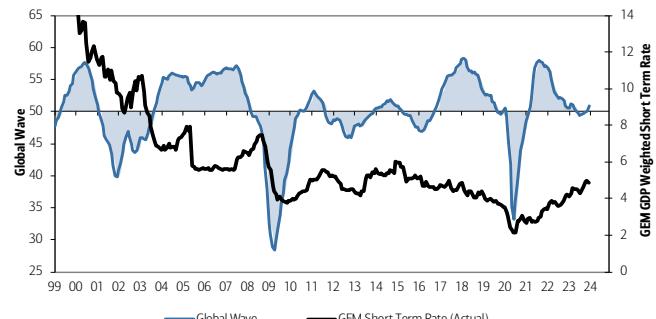


Source : BofA Global Quantitative Strategy, MSCI, IBES, Haver, Bloomberg, OECD, IMF, ICE Bond Indices, National Statistics Database

BofA GLOBAL RESEARCH

### Chart 144: Emerging Markets Short Term Rate (Actual) versus Global Wave

EM Short Term rates (YoY chg) have a 31% correlation with the Global Wave



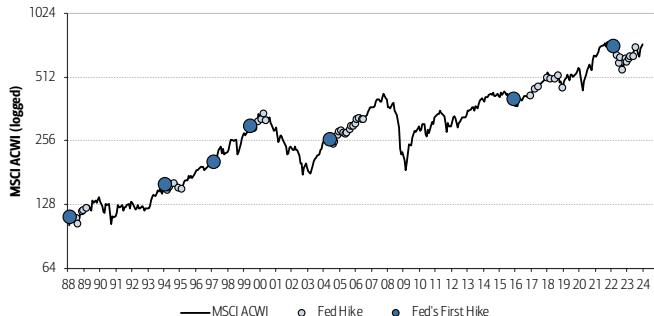
Source : BofA Global Quantitative Strategy, MSCI, IBES, Haver, Bloomberg, OECD, IMF, ICE Bond Indices, National Statistics Database

BofA GLOBAL RESEARCH

## Equity Markets vs Fed Policy

### Chart 145: MSCI ACWI and Fed Tightening

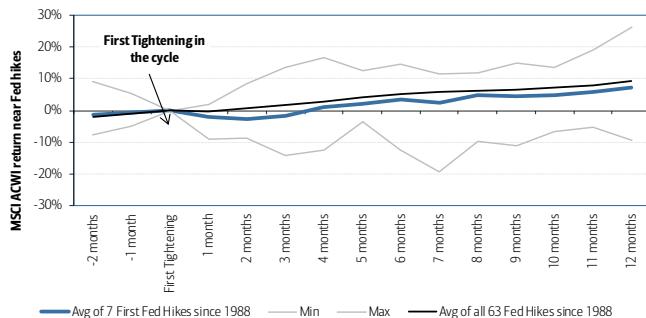
MSCI ACWI returns are muted when Fed is tightening monetary policy



BofA GLOBAL RESEARCH

### Chart 147: MSCI ACWI Performance near First Fed Tightenings

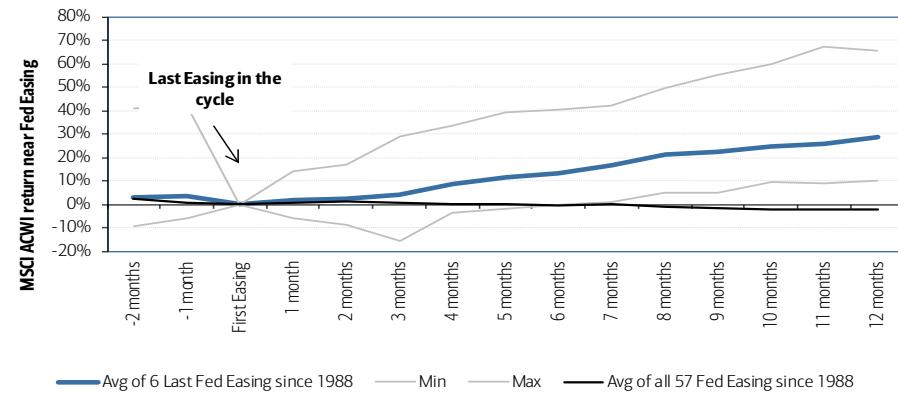
In 12m post the first tightening in the cycle, global equities, on average rally 7.1%



BofA GLOBAL RESEARCH

### Chart 149: MSCI ACWI Performance near Last Fed Easings

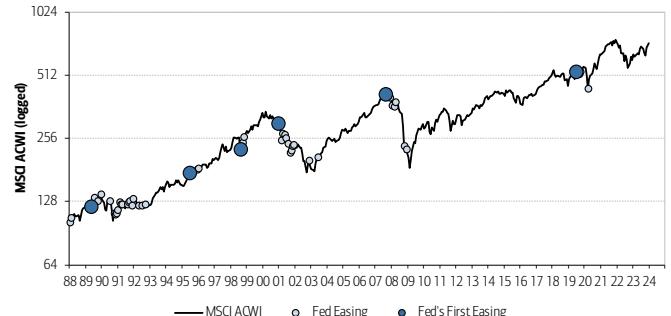
Global equities rally 28.4% in the 12m subs to last easing in the cycle



BofA GLOBAL RESEARCH

### Chart 146: MSCI ACWI and Fed Easing

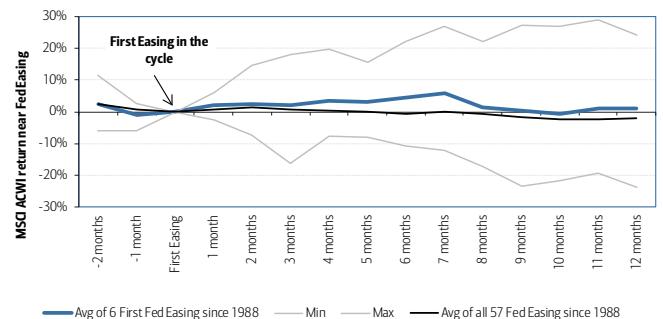
MSCI AC World Index rallies, on average post rate cuts from central banks



BofA GLOBAL RESEARCH

### Chart 148: MSCI ACWI Performance near First Fed Easings

In 12m post the first easing in the cycle, global equity returns are muted



BofA GLOBAL RESEARCH

# Global Quantessential Styles

**Table 16: Global Style tilts based on back-testing and definitions**

Style definition and style recommendations based on the direction of the Global Wave

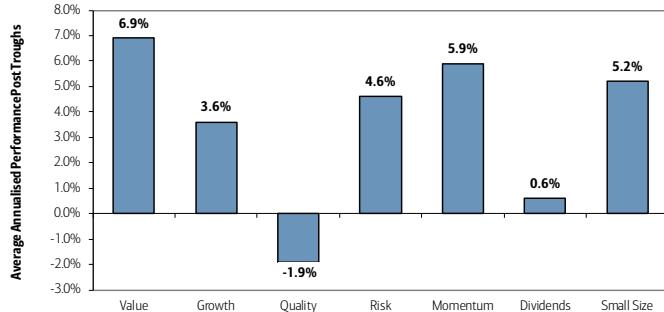
Style	Style definition (factors are equal-weighted)	Tilt when Global Wave is rising	Tilt when Global Wave is falling
Value	EV/EBITDA, Price-to-Sales (trailing), PE (forecast)	OVERWEIGHT	OVERWEIGHT
Growth	EPS Revisions, 2-year EPS Growth Forecast, 7-year EPS Growth	OVERWEIGHT	Neutral
Quality	S&P Quality Rank, Free-cash-flow-to-Equity	UNDERWEIGHT	OVERWEIGHT
Risk	Beta, Price Volatility	OVERWEIGHT	UNDERWEIGHT
Momentum	12-month Trend Price	OVERWEIGHT	OVERWEIGHT
Dividend	Reported Div Yield, 5-year Div Growth, Low Payout Ratio	Neutral	OVERWEIGHT
Small Size	Low MCap (total), high Average Daily Turnover / MCap	OVERWEIGHT	UNDERWEIGHT

Source : BofA Global Quantitative Strategy, MSCI, Bloomberg, S&P, Exshare, Worldscope Back-tested 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.

BofA GLOBAL RESEARCH

**Chart 150: Back-tested results (Jan-89 to Aug-09) when the Global Wave was rising**

Value performed the best when the Global Wave was rising



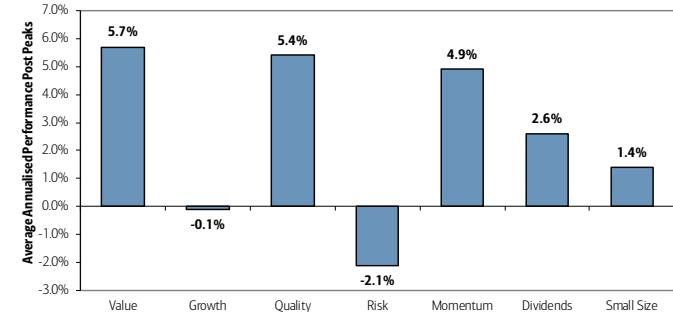
Source : BofA Global Quantitative Strategy, MSCI, IBES, Haver, Bloomberg, OECD, IMF, ICE Bond Indices, National Statistics Database, S&P, Worldscope

This performance is back-tested and does not represent the actual performance of any account or fund. Back-tested 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.

BofA GLOBAL RESEARCH

**Chart 151: Back-tested results (Jan-89 to Aug-09) when the Global Wave was falling**

Value and Quality performed the best when the Global Wave was falling



Source : BofA Global Quantitative Strategy, MSCI, IBES, Haver, Bloomberg, OECD, IMF, ICE Bond Indices, National Statistics Database, S&P, Worldscope

This performance is back-tested and does not represent the actual performance of any account or fund. Back-tested 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.

BofA GLOBAL RESEARCH

**Chart 152: Price Sensitivity to Earnings Trends and Bond Yields Differs Dramatically by Style**

Defensive styles tend to outperform when earnings and bond yields fall

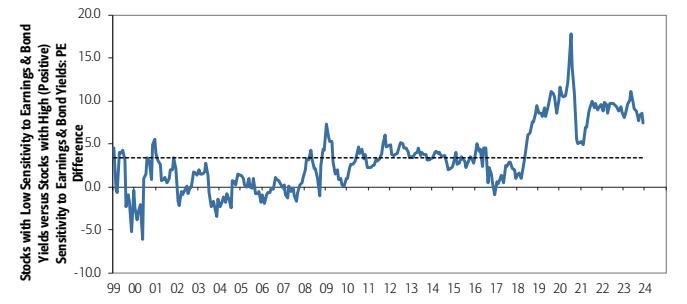


Source : BofA Global Quantitative Strategy, MSCI, IBES, Worldscope, Exshare, S&P, Bloomberg

BofA GLOBAL RESEARCH

**Chart 153: Global: Low vs High Earnings Trends and Bond Yield Sensitivity PE Ratio**

PE premium for Stocks with Low Sensitivity to Earnings & Bond Yields has increased



Source : BofA Global Quantitative Strategy, MSCI, IBES, Exshare, Bloomberg

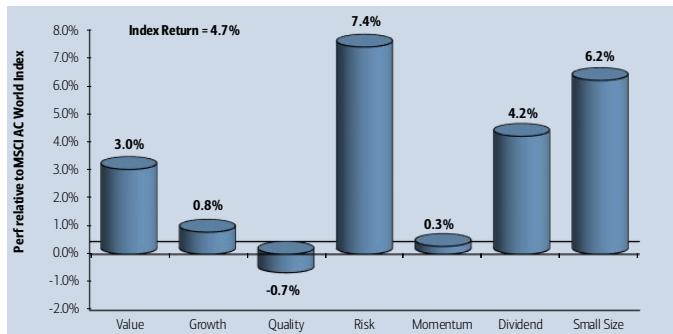
BofA GLOBAL RESEARCH



## Global Quantessential Style Performance

### Chart 154: Quantessential Style relative performance: Last Month

The best performing style last month was Quantessential Risk



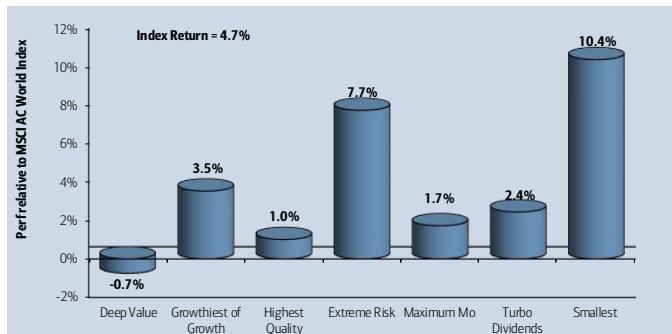
Source : BofA Global Quantitative Strategy, MSCI, IBES, S&P, Worldscope, Bloomberg

Performance is based on our monthly-rebalanced 30-stock Quantessential Styles.

BofA GLOBAL RESEARCH

### Chart 155: Top 30 Style relative performance: Last Month

The best performing style last month was Smallest



Source : BofA Global Quantitative Strategy, MSCI, IBES, S&P, Worldscope, Bloomberg

Performance is based on our monthly-rebalanced 30-stock Extreme Styles.

BofA GLOBAL RESEARCH

### Chart 156: Quantessential Style relative performance: 2023

The best performing style last year was Quantessential Risk



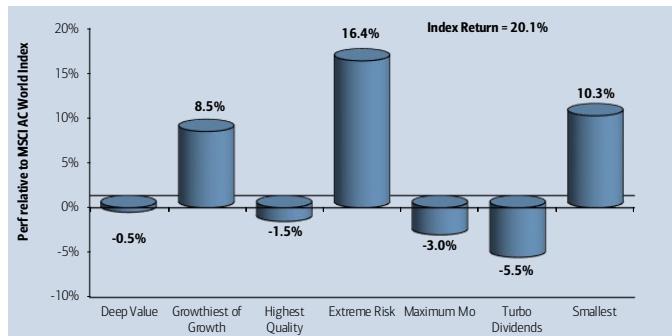
Source : BofA Global Quantitative Strategy, MSCI, IBES, S&P, Worldscope, Bloomberg

Performance is based on our monthly-rebalanced 30-stock Quantessential Styles.

BofA GLOBAL RESEARCH

### Chart 157: Top 30 Style relative performance: 2023

The best performing style last year was Extreme Risk



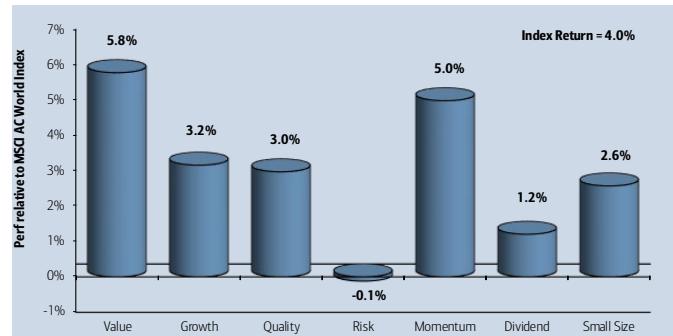
Source : BofA Global Quantitative Strategy, MSCI, IBES, S&P, Worldscope, Bloomberg

Performance is based on our monthly-rebalanced 30-stock Extreme Styles.

BofA GLOBAL RESEARCH

### Chart 158: Quantessential Style back-testing results (Jan-89 to Aug-09)

Over the 20-year backtesting period, Value was the best performing style



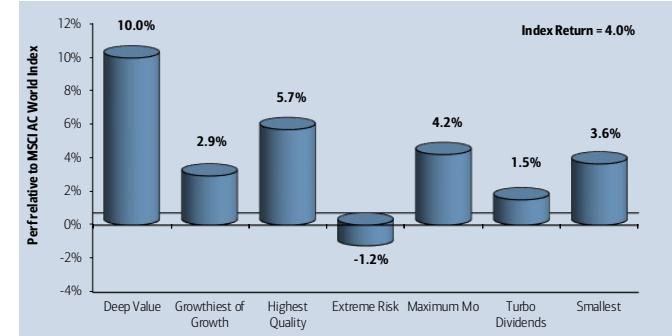
Source : BofA Global Quantitative Strategy, MSCI, IBES, S&P, Worldscope, Bloomberg

Performance is based on our monthly-rebalanced 30-stock Quantessential Styles. Back-tested 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.

BofA GLOBAL RESEARCH

### Chart 159: Top 30 Style back-testing results (Jan-89 to Aug-09)

Over the 20-year backtesting period, Deep Value was the best performing style



Source : BofA Global Quantitative Strategy, MSCI, IBES, S&P, Worldscope, Bloomberg

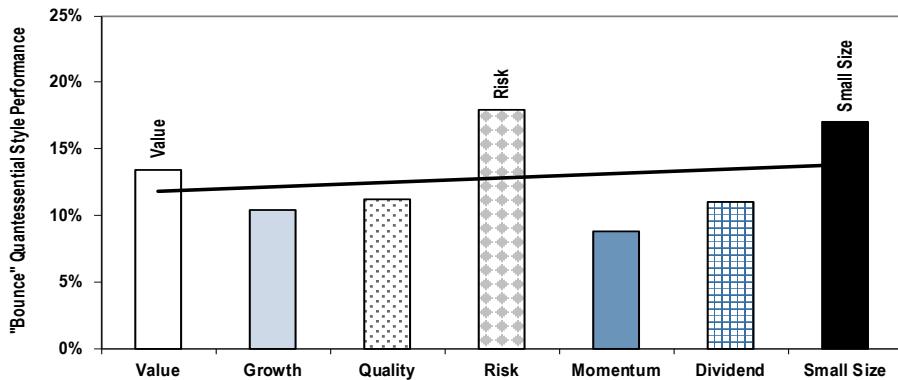
Performance is based on our monthly-rebalanced 30-stock Extreme Styles. Back-tested performance depicts the theoretical (not actual) performance of a particular strategy over the time period indicated. No representation is being made that any actual portfolio is likely to have achieved returns similar to those shown herein.

BofA GLOBAL RESEARCH



### Chart 160: Global Quantessential Style performance during the "Bounce" stage

Bounce phase supports rotation towards cyclical styles



Source : BofA Global Quantitative Strategy, MSCI, IBES, Worldscope, ExShare, Bloomberg

BofA GLOBAL RESEARCH

### Chart 161: Quantessential Style relative performance: 2011-2015

The best performing style during this period was Momentum



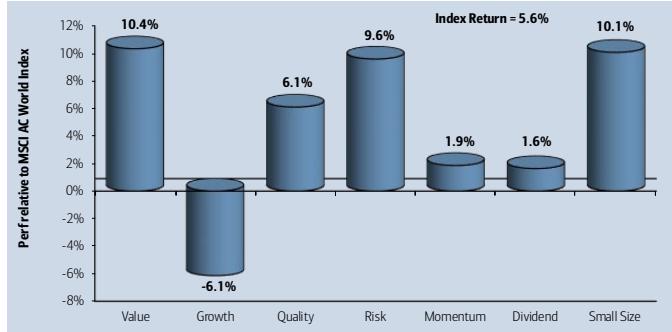
Source : BofA Global Quantitative Strategy, MSCI, IBES, Worldscope, S&P, Bloomberg

Performance is based on our monthly-rebalanced 30-stock Quantessential Styles.

BofA GLOBAL RESEARCH

### Chart 162: Quantessential Style relative performance: 2016

Value was the best performing style during 2016



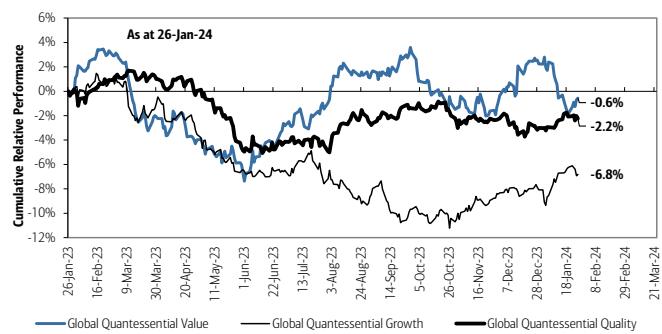
Source : BofA Global Quantitative Strategy, MSCI, IBES, Worldscope, S&P, Bloomberg

Performance is based on our monthly-rebalanced 30-stock Quantessential Styles.

BofA GLOBAL RESEARCH

### Chart 163: Quantessential Value/Growth/Quality - Cumulative Relative Perf Last 12-months

The best performing style in the last 12m was Global Quantessential Value

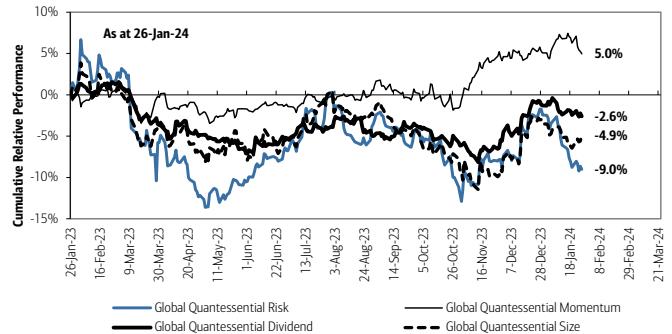


Source : BofA Global Quantitative Strategy, MSCI, IBES, Worldscope, ExShare, Bloomberg

BofA GLOBAL RESEARCH

### Chart 164: Quantessential Risk/Mo/Dividend/Size - Cumulative Relative Perf Last 12-months

Global Quantessential Momentum outperformed the index by 5.0% in the last 12m



Source : BofA Global Quantitative Strategy, MSCI, IBES, Worldscope, ExShare, Bloomberg

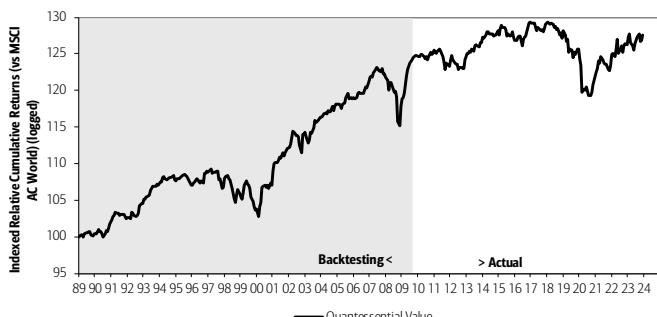
BofA GLOBAL RESEARCH



## Global Quantessential Value

### Chart 165: Global Quantessential Value relative cumulative performance

Value has outperformed by 6.8% in the last 12-months

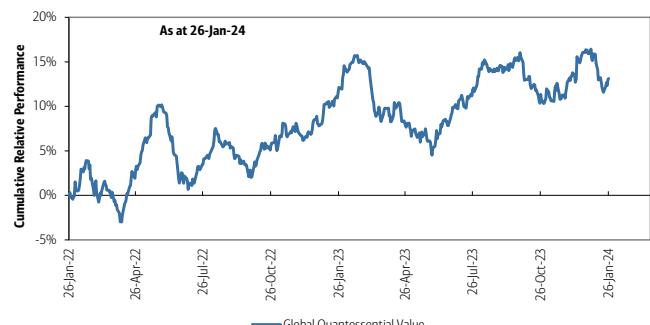


Source : BofA Global Quantitative Strategy, MSCI, IBES, Worldscope, Exshare, S&P, Bloomberg  
Performance is based on our monthly-rebalanced 30-stock Quantessential Value. The shaded area shows back-tested results during the period from Jan-89 to Aug-09. The unshaded portion represents actual performance since Sep-09. Back-tested 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.

BofA GLOBAL RESEARCH

### Chart 166: Quantessential Value: Daily Relative Cumulative Performance

In the last 2-years, Global Quantessential Value returned 13.1% relative to ACWI



Source : BofA Global Quantitative Strategy, MSCI, IBES, Worldscope, Exshare, S&P, Bloomberg  
BofA GLOBAL RESEARCH

### Chart 167: PE of Value (top quintile) relative to the PE of MSCI AC World Index

Top Quintile Value is inexpensive relative to the index



Source : BofA Global Quantitative Strategy, MSCI, IBES, Worldscope, Exshare, S&P, Bloomberg  
BofA GLOBAL RESEARCH

### Chart 168: Proportion of Value that is cyclical

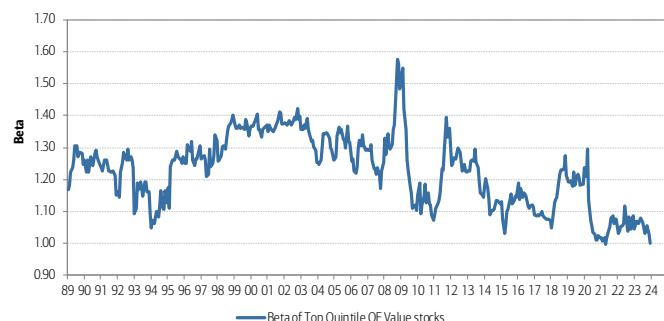
Currently 45% of Value is cyclical



Source : BofA Global Quantitative Strategy, MSCI, IBES, Worldscope, Exshare, S&P, Bloomberg  
BofA GLOBAL RESEARCH

### Chart 169: Median Beta of Quantessential Value (top quintile)

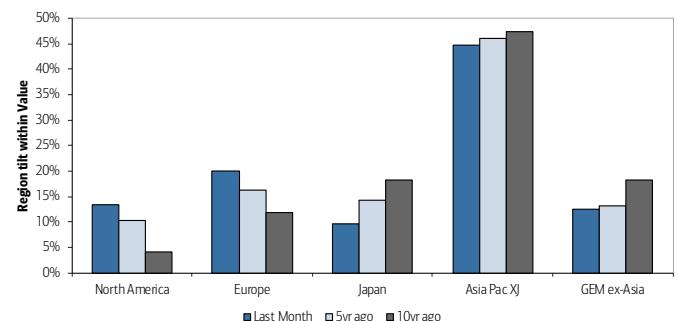
The beta of top quintile of stocks by value is currently 1.00



Source : BofA Global Quantitative Strategy, MSCI, IBES, Worldscope, Exshare, S&P, Bloomberg  
BofA GLOBAL RESEARCH

### Chart 170: Region Tilt of Value (top quintile)

Asia Pac ex Jap dominates the top quintile of stocks by Value

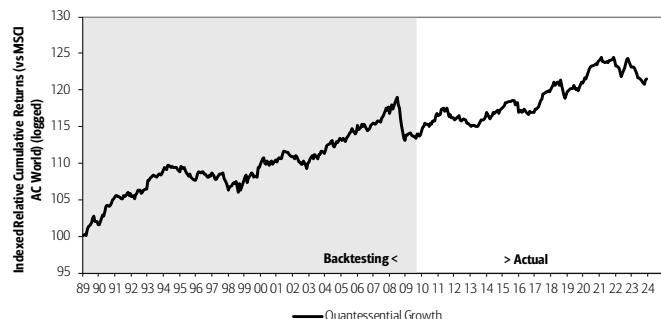


Source : BofA Global Quantitative Strategy, MSCI, IBES, Worldscope, ExShare, Bloomberg  
BofA GLOBAL RESEARCH

## Global Quantessential Growth

### Chart 171: Global Quantessential Growth relative cumulative performance

Growth has outperformed by 3.1% in the last 3 Months

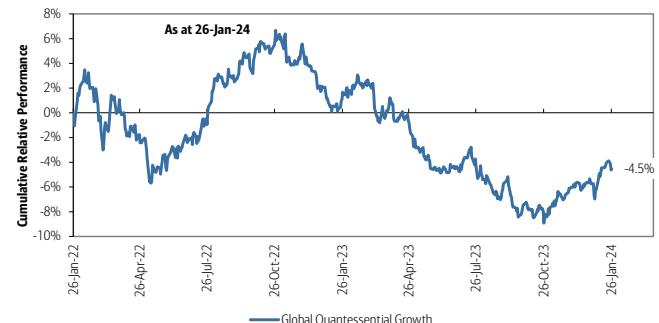


Source : BofA Global Quantitative Strategy, MSCI, IBES, Worldscope, Exshare, S&P, Bloomberg  
Performance is based on our monthly-rebalanced 30-stock Quantessential Growth. The shaded area shows back-tested results during the period from Jan-89 to Aug-09. The unshaded portion represents actual performance since Sep-09. Back-tested 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.

BofA GLOBAL RESEARCH

### Chart 172: Quantessential Growth: Daily Relative Cumulative Performance

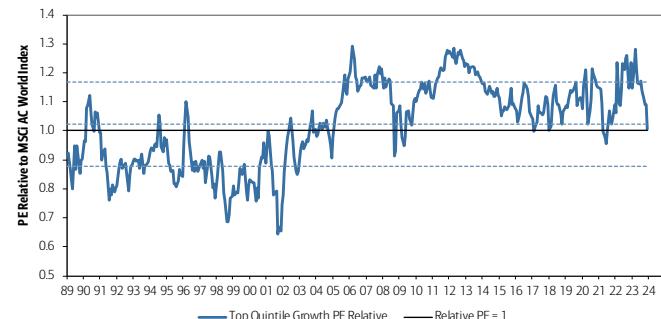
Global Quantessential Growth underperformed the index in the last 2 years



Source : BofA Global Quantitative Strategy, MSCI, IBES, Worldscope, Exshare, S&P, Bloomberg  
BofA GLOBAL RESEARCH

### Chart 173: PE of Growth (top quintile) relative to the PE of MSCI AC World Index

Top Quintile Growth is expensive relative to the index



Source : BofA Global Quantitative Strategy, MSCI, IBES, Worldscope, Exshare, S&P, Bloomberg  
BofA GLOBAL RESEARCH

### Chart 174: Proportion of Growth that is cyclical

40% of stocks Growth stocks are cyclical



Source : BofA Global Quantitative Strategy, MSCI, IBES, Worldscope, ExShare, Bloomberg  
BofA GLOBAL RESEARCH

### Chart 175: Median Beta of Quantessential Growth (top quintile)

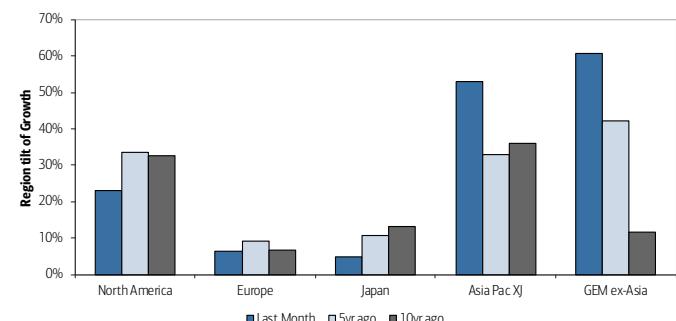
Current beta of the top quintile of stocks by Growth is 0.9



Source : BofA Global Quantitative Strategy, MSCI, IBES, Worldscope, ExShare, Bloomberg  
BofA GLOBAL RESEARCH

### Chart 176: Region Tilt of Growth (top quintile)

GEM ex-Asia has the largest proportion of Growth stocks globally

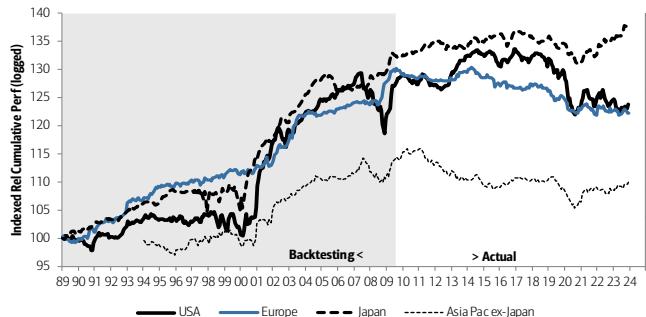


Source : BofA Global Quantitative Strategy, MSCI, IBES, Worldscope, ExShare, Bloomberg  
BofA GLOBAL RESEARCH

## Quantessential Value vs Growth by Regions

### Chart 177: Quantessential Value rel cumulative perf - Since Inception

Long-term, Value has performed the best in Japan

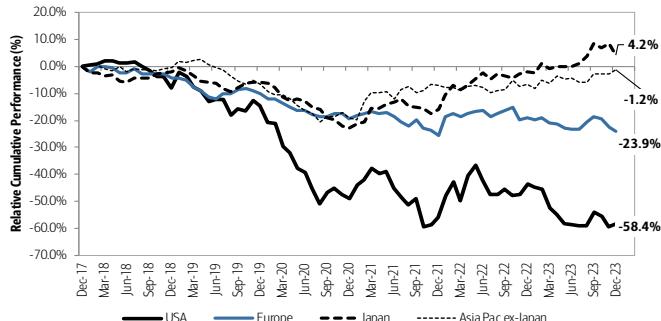


Source : BofA Global Quantitative Strategy, MSCI, IBES, Worldscope, ExShare, Bloomberg  
The shaded area shows back-tested results during the period from Jan-89 to Aug-09. The unshaded portion represents actual performance since Sep-09. Back-tested performance depicts the theoretical (not actual) performance 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.

BofA GLOBAL RESEARCH

### Chart 179: Quantessential Value rel cumulative perf - Last 6 years

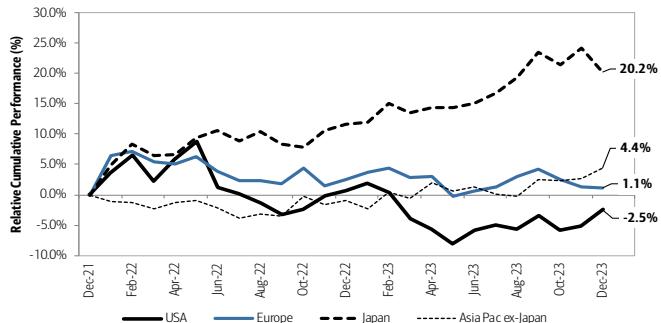
In the last 6-years, Value has performed the best in Japan



Source : BofA Global Quantitative Strategy, MSCI, IBES, Worldscope, ExShare, Bloomberg  
BofA GLOBAL RESEARCH

### Chart 181: Quantessential Value rel cumulative perf - Last 2-years

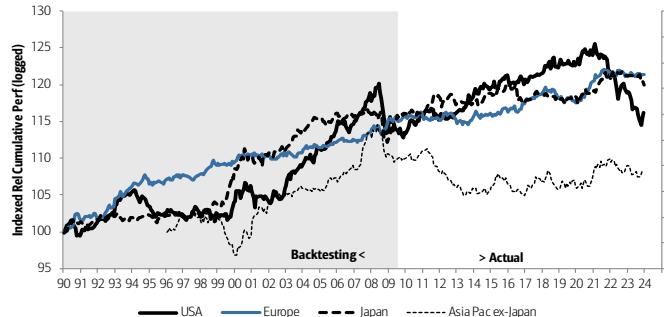
During last 2-years, best returns for Value were in Japan



Source : BofA Global Quantitative Strategy, MSCI, IBES, Worldscope, ExShare, Bloomberg  
BofA GLOBAL RESEARCH

### Chart 178: Quantessential Growth rel cumulative perf - Since Inception

Long-term, Growth returns were highest in Europe and lowest in APxJ

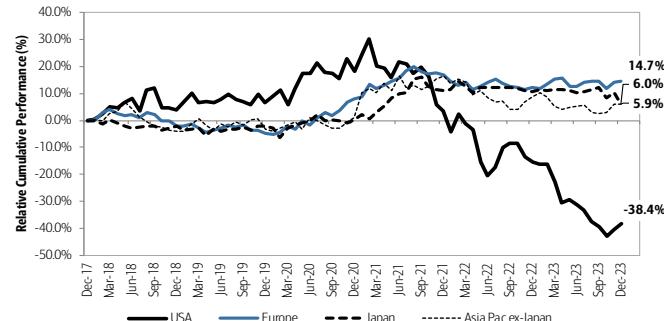


Source : BofA Global Quantitative Strategy, MSCI, IBES, Worldscope, ExShare, Bloomberg  
The shaded area shows back-tested results during the period from Jan-90 to Aug-09. The unshaded portion represents actual performance since Sep-09. Back-tested performance depicts the theoretical (not actual) performance 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.

BofA GLOBAL RESEARCH

### Chart 180: Quantessential Growth rel cumulative perf - Last 6 years

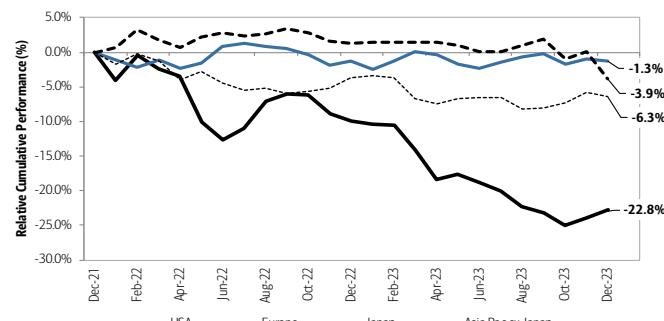
In the last 6-years, Growth has performed the best in Europe



Source : BofA Global Quantitative Strategy, MSCI, IBES, Worldscope, ExShare, Bloomberg  
BofA GLOBAL RESEARCH

### Chart 182: Quantessential Growth rel cumulative perf - Last 2-years

In last 2-years, Growth returns were highest in Europe and lowest in USA

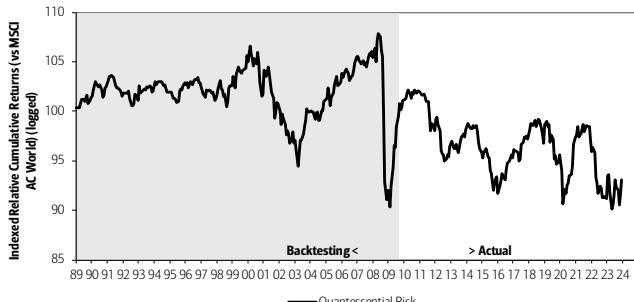


Source : BofA Global Quantitative Strategy, MSCI, IBES, Worldscope, ExShare, Bloomberg  
BofA GLOBAL RESEARCH

## Global Quantessential Risk

### Chart 183: Global Quantessential Risk relative cumulative performance

Risk has outperformed by 7.7% in the last 6 Months

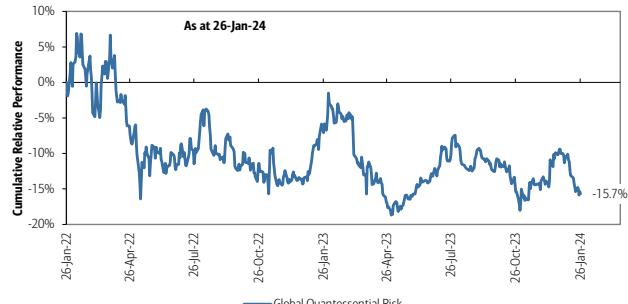


Source : BofA Global Quantitative Strategy, MSCI, IBES, Worldscope, Exshare, S&P, Bloomberg  
Performance is based on our monthly-rebalanced 30-stock Quantessential Risk. The shaded area shows back-tested results during the period from Jan-89 to Aug-09. The unshaded portion represents actual performance since Sep-09. Back-tested 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.

BofA GLOBAL RESEARCH

### Chart 185: Quantessential Risk: Daily Relative Cumulative Performance

Global Quantessential Risk underperformed the index in the last 2-years



Source : BofA Global Quantitative Strategy, MSCI, IBES, Worldscope, Exshare, S&P, Bloomberg  
BofA GLOBAL RESEARCH

### Chart 187: PE of Risk (top quintile) relative to the PE of MSCI AC World Index

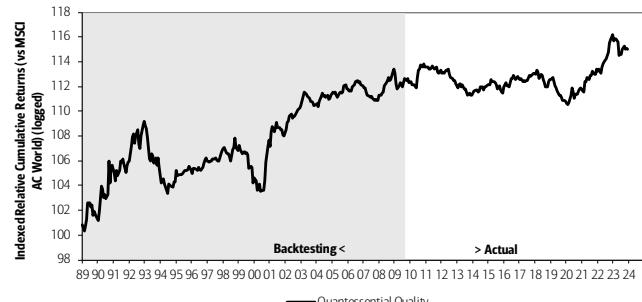
Top Quintile Risk is trading at a 11% PE discount relative to the index



Source : BofA Global Quantitative Strategy, MSCI, IBES, Worldscope, Exshare, S&P, Bloomberg  
BofA GLOBAL RESEARCH

### Chart 184: Global Quantessential Quality relative cumulative performance

Quality has underperformed by -1.4% in the last 3 Months

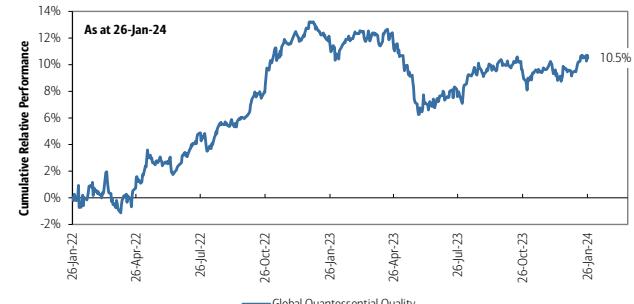


Source : BofA Global Quantitative Strategy, MSCI, IBES, Worldscope, Exshare, S&P, Bloomberg  
Performance is based on our monthly-rebalanced 30-stock Quantessential Quality. The shaded area shows back-tested results during the period from Jan-89 to Aug-09. The unshaded portion represents actual performance since Sep-09. Back-tested 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.

BofA GLOBAL RESEARCH

### Chart 186: Quantessential Quality: Daily Relative Cumulative Performance

Global Quantessential Quality outperformed the index in the last 2-years



Source : BofA Global Quantitative Strategy, MSCI, IBES, Worldscope, Exshare, S&P, Bloomberg  
BofA GLOBAL RESEARCH

### Chart 188: PE of Quality (top quintile) relative to the PE of MSCI AC World Index

Top Quintile Quality is trading at a 1% PE premium relative to the index

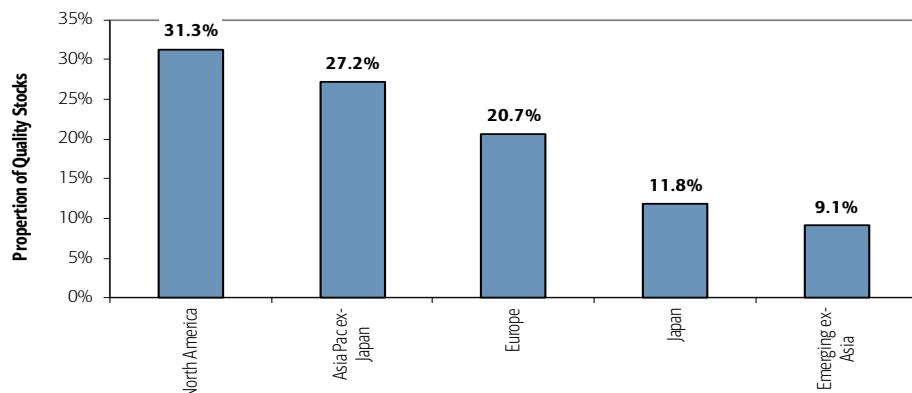


Source : BofA Global Quantitative Strategy, MSCI, IBES, Worldscope, Exshare, S&P, Bloomberg  
BofA GLOBAL RESEARCH



### Chart 189: Proportion of Quantessential Quality stocks by Global Regions

North America has the highest proportion of Quality stocks

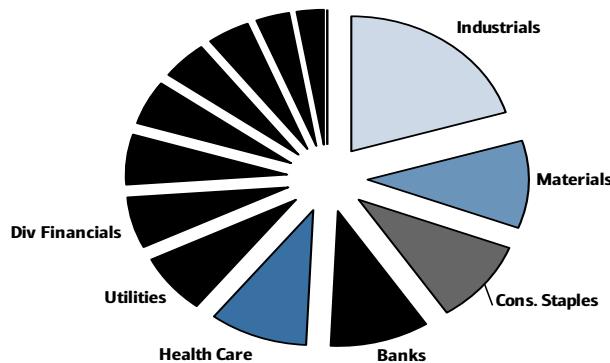


Source : BofA Global Quantitative Strategy, MSCI, IBES, Worldscope, Exshare, S&P, Bloomberg

BofA GLOBAL RESEARCH

### Chart 190: Proportion of Quantessential Quality stocks by Global Sectors

From a style perspective Quality also has exposure to Momentum

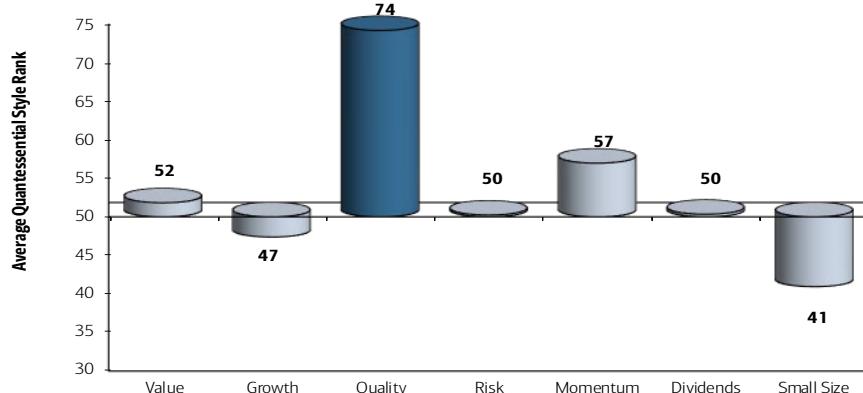


Source : BofA Global Quantitative Strategy, MSCI, IBES, Worldscope, Exshare, S&P, Bloomberg

BofA GLOBAL RESEARCH

### Chart 191: Average Style Rank (100=best, 50=median, 1=worst)

Quality is overweight Momentum and Value

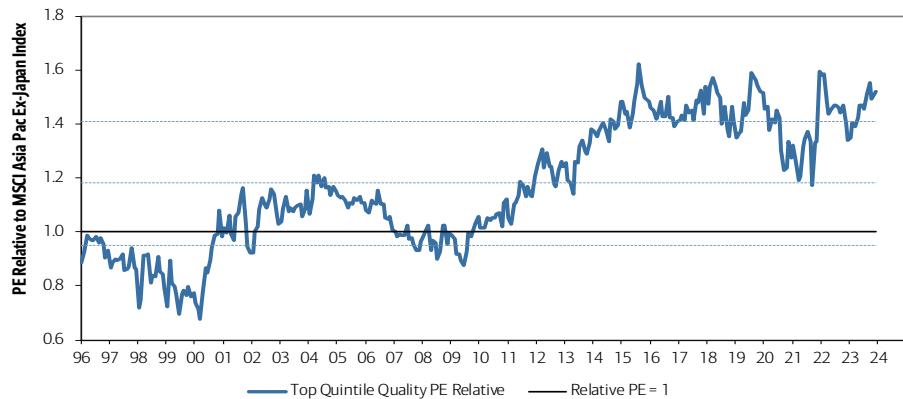


Source : BofA Global Quantitative Strategy, MSCI, IBES, Worldscope, Exshare, S&P, Bloomberg

BofA GLOBAL RESEARCH

### Chart 192: Asia Pac ex-Japan PE of Quality (top quintile) relative to the PE of MSCI AP ex-Japan Index

Rel PE has risen last month

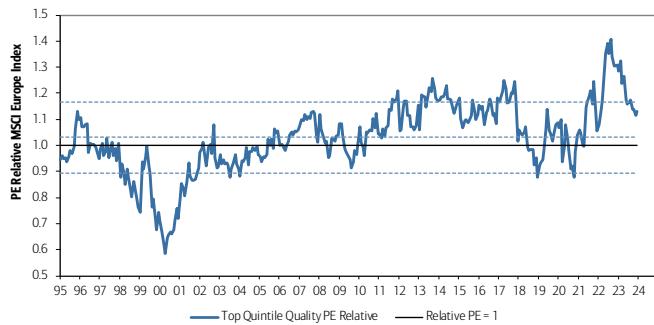


Source : BofA Global Quantitative Strategy, MSCI, IBES, Worldscope, Exshare, S&P, Bloomberg

BofA GLOBAL RESEARCH

### Chart 193: Europe PE of Quality (top quintile) relative to the PE of MSCI Europe Index

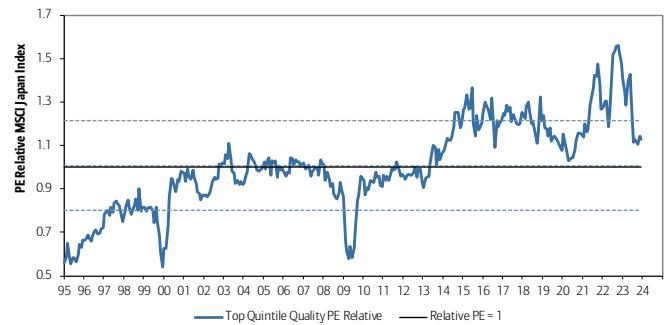
Rel PE has risen last month



Source : BofA Global Quantitative Strategy, MSCI, IBES, Worldscope, Exshare, S&P, Bloomberg  
BofA GLOBAL RESEARCH

### Chart 194: Japan PE of Quality (top quintile) relative to the PE of MSCI Japan Index

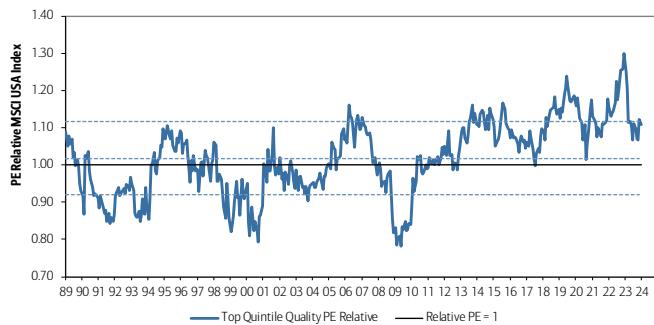
Rel PE has moderated recently



Source : BofA Global Quantitative Strategy, MSCI, IBES, Worldscope, Exshare, S&P, Bloomberg  
BofA GLOBAL RESEARCH

### Chart 195: USA PE of Quality (top quintile) relative to the PE of MSCI USA Index

Rel PE has moderated recently



Source : BofA Global Quantitative Strategy, MSCI, IBES, Worldscope, Exshare, S&P, Bloomberg  
BofA GLOBAL RESEARCH

### Chart 196: Emerging Markets PE of Quality (top quintile) relative to the PE of MSCI Emerging Markets Index

Current PE Relative is 1.4



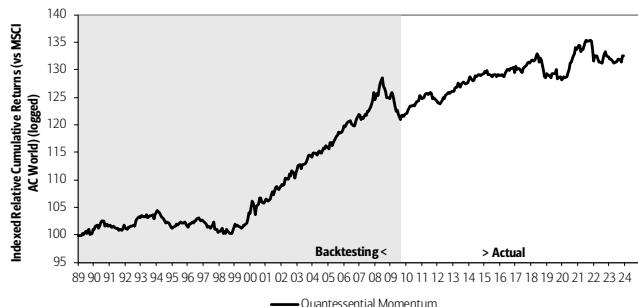
Source : BofA Global Quantitative Strategy, MSCI, IBES, Worldscope, Exshare, S&P, Bloomberg  
BofA GLOBAL RESEARCH



## Global Quantessential Momentum

### Chart 197: Global Quantessential Momentum relative cumulative performance

Momentum has outperformed by 5.6% in the last 6 Months

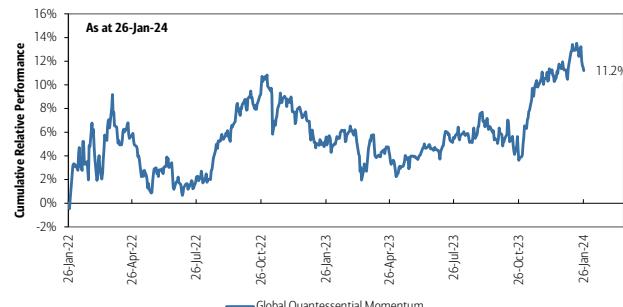


Source : BofA Global Quantitative Strategy, MSCI, IBES, Worldscope, Exshare, S&P, Bloomberg  
Performance is based on our monthly-rebalanced 30-stock Quantessential Momentum. The shaded area shows back-tested results during the period from Jan-89 to Aug-09. The unshaded portion represents actual performance since Sep-09. Back-tested 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.

BofA GLOBAL RESEARCH

### Chart 199: Quantessential Momentum: Daily Relative Cumulative Performance

Quantessential Momentum outperformed the index in the last 2-years



Source : BofA Global Quantitative Strategy, MSCI, IBES, Worldscope, Exshare, S&P, Bloomberg  
BofA GLOBAL RESEARCH

### Chart 201: PE of Momentum (top quintile) relative to the PE of MSCI AC World Index

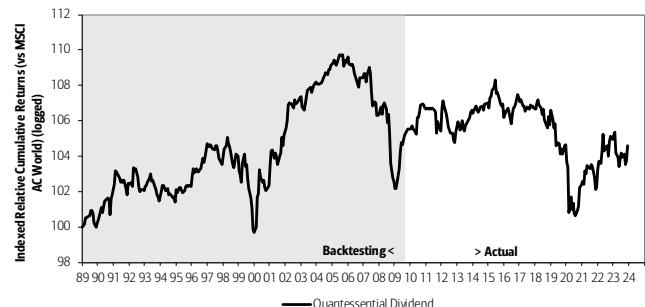
On a PE basis, TQ Momentum is trading above the long-term average



Source : BofA Global Quantitative Strategy, MSCI, IBES, Worldscope, Exshare, S&P, Bloomberg  
BofA GLOBAL RESEARCH

### Chart 198: Global Quantessential Dividend relative cumulative performance

Dividend has outperformed by 3.8% in the last 6 Months

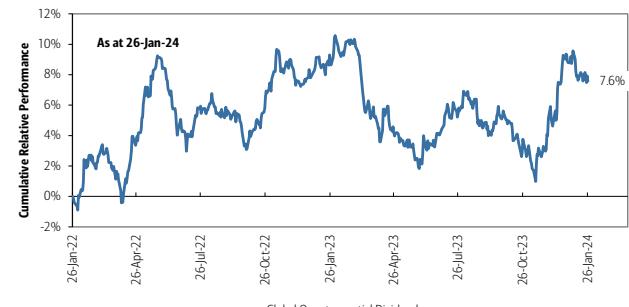


Source : BofA Global Quantitative Strategy, MSCI, IBES, Worldscope, Exshare, S&P, Bloomberg  
Performance is based on our monthly-rebalanced 30-stock Quantessential Dividend. The shaded area shows back-tested results during the period from Jan-89 to Aug-09. The unshaded portion represents actual performance since Sep-09. Back-tested 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.

BofA GLOBAL RESEARCH

### Chart 200: Quantessential Dividends: Daily Relative Cumulative Performance

Quantessential Dividend outperformed the index in the last 2-years



Source : BofA Global Quantitative Strategy, MSCI, IBES, Worldscope, Exshare, S&P, Bloomberg  
BofA GLOBAL RESEARCH

### Chart 202: PE of Dividends (top quintile) relative to the PE of MSCI AC World Index

Top Quintile Dividend is trading below -1 STD on a forward PE basis

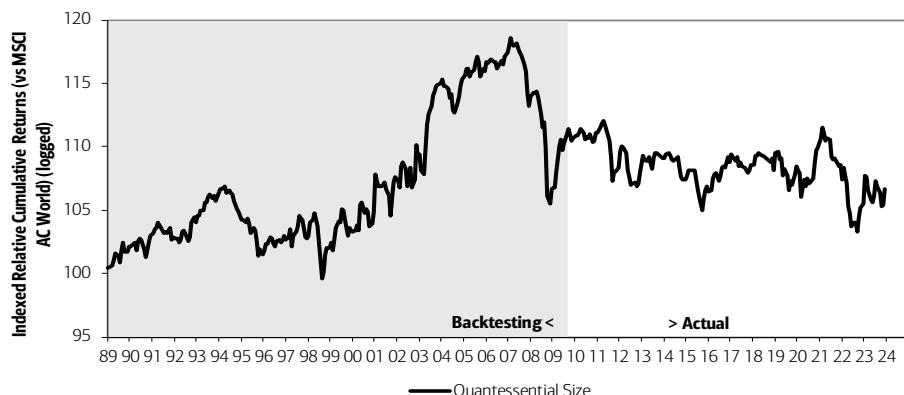


Source : BofA Global Quantitative Strategy, MSCI, IBES, Worldscope, Exshare, S&P, Bloomberg  
BofA GLOBAL RESEARCH

## Global Quantessential Small Size

### Chart 203: Global Quantessential Small Size relative cumulative performance

Small Size has outperformed by 2.7% in the last 6 Months



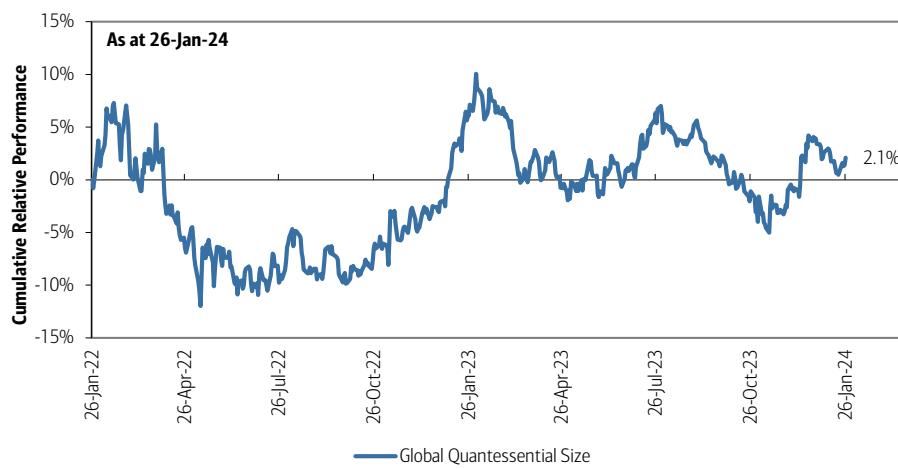
Source : BofA Global Quantitative Strategy, MSCI, IBES, Worldscope, Exshare, S&P, Bloomberg

Performance is based on our monthly-rebalanced 30-stock Quantessential Size. The shaded area shows back-tested results during the period from Jan-89 to Aug-09. The unshaded portion represents actual performance since Sep-09. Back-tested 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.

BofA GLOBAL RESEARCH

### Chart 204: Quantessential Small Size: Daily Relative Cumulative Performance

In the last 2-years, Global Quantessential Size returned 2.1% relative to ACWI



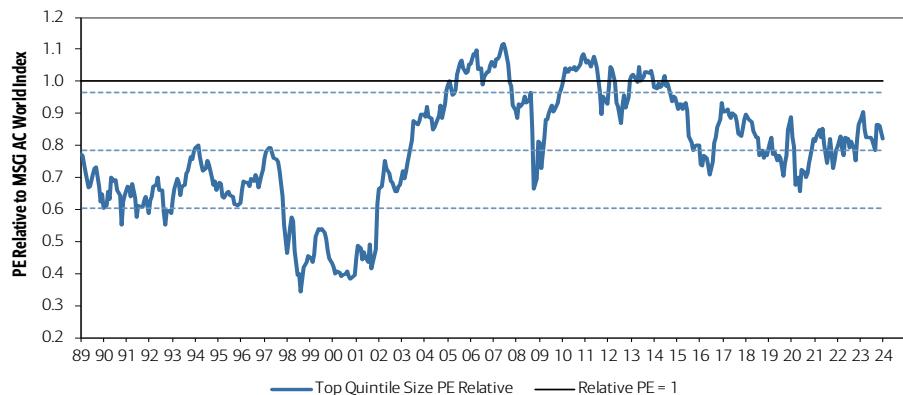
Source : BofA Global Quantitative Strategy, MSCI, IBES, Worldscope, Exshare, S&P, Bloomberg

BofA GLOBAL RESEARCH



### Chart 205: PE of Small Size (top quintile) relative to the PE of MSCI AC World Index

Top Quintile Size is trading at a 18% PE discount relative to the index



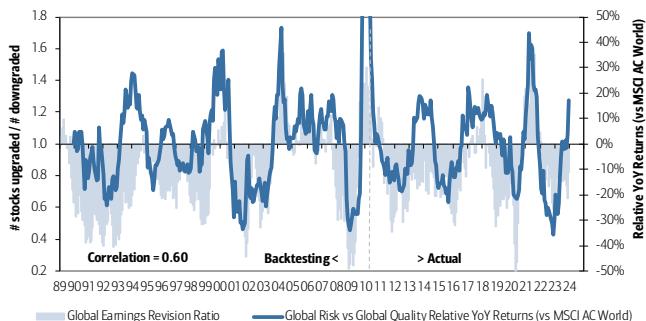
Source : BofA Global Quantitative Strategy, MSCI, IBES, Worldscope, Exshare, S&P, Bloomberg

BofA GLOBAL RESEARCH

## Risk Vs Quality

### Chart 206: Risk vs Quality YoY perf vs Trends in Global Earnings Expectations

Risk tends to outperform, on average during an improving earnings cycle

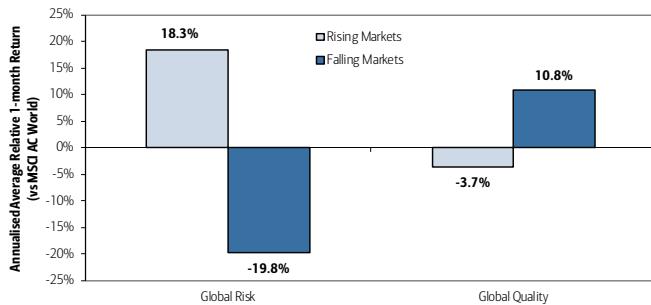


Source : BofA Global Quantitative Strategy, MSCI, IBES, Worldscope, Exshare, S&P, Bloomberg  
Back-tested results are from Jan-89 to Aug-09. Actual performance is from Sep-09. Back-tested performance depicts the theoretical (not actual) performance of a particular strategy over the time period indicated. No representation is being made that any actual portfolio is likely to have achieved returns similar to those shown herein.

BofA GLOBAL RESEARCH

### Chart 208: Risk outperforms in rising markets, underperforms in falling markets

Performance of Risk and Quality tends to move with the cycle



Source : BofA Global Quantitative Strategy, MSCI, IBES, Worldscope, Exshare, S&P, Bloomberg  
BofA GLOBAL RESEARCH

### Chart 210: PE of Risk (top quintile) vs. PE of Quality (top quintile)

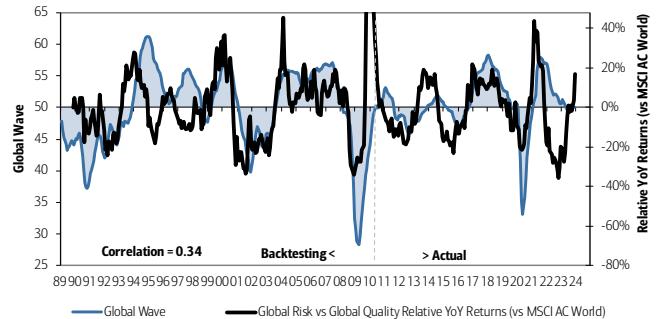
Forecast PE for Top Quintile Quality is at 17.5 and Top Quintile Risk at 15.3



Source : BofA Global Quantitative Strategy, MSCI, IBES, Worldscope, Exshare, S&P, Bloomberg  
BofA GLOBAL RESEARCH

### Chart 207: Risk vs Quality YoY perf vs Global Wave

Risk tends to outperform, on average when the Global Wave is rising



Source : BofA Global Quantitative Strategy, MSCI, IBES, Haver, Bloomberg, OECD, IMF, ICE Bond Indices, National Statistics Database, S&P, Worldscope

Back-tested results are from Jan-89 to Aug-09. Actual performance is from Sep-09. Back-tested 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.

BofA GLOBAL RESEARCH

### Chart 209: Relative cumulative performance: Risk and Quality

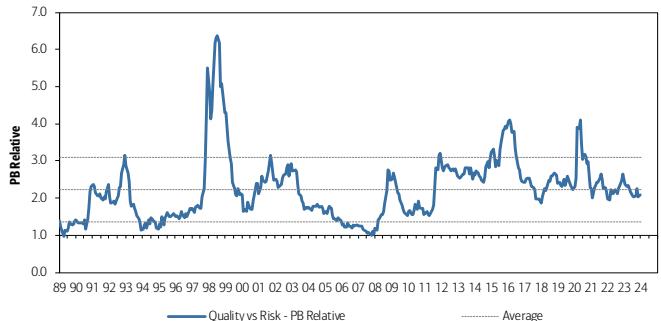
Quantessential Risk outperformed Quantessential Quality in the last 12-months



Source : BofA Global Quantitative Strategy, MSCI, IBES, Worldscope, Exshare, S&P, Bloomberg  
BofA GLOBAL RESEARCH

### Chart 211: PB relative: High Quality vs High Risk

Top Quintile Quality is trading at a PB premium to Top Quintile Risk



Source : BofA Global Quantitative Strategy, MSCI, IBES, Worldscope, Exshare, S&P, Bloomberg  
BofA GLOBAL RESEARCH



# Steady Compounds

## Construction Methodology

Global Steady Compounds is a screen of stocks that have delivered consistent and superior earnings growth and performance over a ten year period. The back-testing in this analysis is from Jan-98 to May-16 and we introduced the current version of our Steady Compounds analysis in Jun-16.

For each region below, the universe of large liquid stocks included in the analysis is selected from the constituents of various indices that meet our minimum market cap, turnover and coverage requirements as specified in the table below. The regional universes are determined at the end of each month, using data and closing prices corresponding to the market's close on the last business day of each month. These minimum market cap, turnover, and number of estimate constraints were selected in order to maximise the number of large liquid stocks included in the analysis over the back-tested period (Jan-98 to May-16).

For example, for a stock to be included in the Asia Pac ex-Japan Steady Compounds analysis it must be in the largest 99% of stocks of the MSCI APxJ Index by total market cap, the largest 92% by average daily turnover in the last 6 months, and the largest 90% by average daily turnover in the last 20 days, and it must have a minimum of three IBES consensus earnings estimates. Table below shows the minimum values for each requirement as of December 2023, the most recent rebalance. This screen will be rebalanced on a monthly basis.

The universe for the Global Steady Compounds is the union of the five regional universes. The Global Steady Compounds are not simply a combined list of the regional Steady Compounds, but are determined from the combined universe of stocks from all the regions.

**Table 17: Universe specification for inclusion in regional Steady Compounds analysis**

Min. market cap and turnover requirements by region for inclusion in Steady Compounds

	\$US m (minimum)			% Percentile (top x% of stocks)			Min # Est.	# Stocks @ Dec-23	Indices Used
	TMCAP	ADTV 6m	ADTV 20d	TMCAP	ADTV 6m	ADTV 20d			
USA	652	3.3	4.0	50%	50%	50%	3	1988	MSCI, S&P 500, Nasdaq, Russell 3000
Europe	5656	7.0	5.2	60%	60%	60%	3	373	MSCI, Stoxx, FTSE All World Europe, FTSE All Share
Japan	405	1.2	1.1	40%	40%	40%	3	614	MSCI, Topix, Jasdaq
Asia Pac ex Japan	94	0.6	0.5	99%	92%	90%	3	1346	MSCI, Individual Country Exchanges
GEM	94	0.7	0.5	70%	70%	70%	3	2232	MSCI GEM IMI

Source : BofA Global Quantitative Strategy, MSCI, IBES

BofA GLOBAL RESEARCH

Stocks in the firm's restricted list are not included in this analysis.

For each eligible security, our monthly analysis determines the Global Steady Compounds as stocks with all of the following characteristics:

Above median earnings growth: where earnings growth is defined as the slope of the log-linear regression line using the preceding ten years of a monthly rolling twelve month forward IBES consensus EPS estimates.

Low volatility of earnings growth: defined as below median year-on-year change in ten years of a monthly rolling twelve month forward IBES consensus EPS estimate.

Above median two-year EPS growth forecasts: using FY2 IBES consensus EPS estimate divided by last reported EPS shown as a percentage

Above median performance: using monthly rolling twelve month returns in USD over the preceding ten year period.

Above-median revisions: using IBES consensus EPS estimates over the preceding three months

The Global Steady Compounders are determined using data and closing prices corresponding to the market's close on the last business day of each month from MSCI, IBES, Worldscope, Exshare, S&P, and Bloomberg databases.

We expect to publish the new Global Steady Compounders screen each month.

We show Momentum and Value charts for the 9 most expensive (by PE) and 9 least expensive stocks from Global Steady Compounders list, where available.

The Global Steady Compounders list act as stock screens and not as recommended stock portfolios. The Steady Compounder screens are not a recommended list either individually or as a group of stocks. Investors should consider the fundamentals of the companies and their own individual circumstances/objectives before making any investment decisions.

The screen referenced in this report 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. The screen referenced in this report was not created to act as a benchmark.

### **Performance Calculation Methodology**

Refer to appendix "[Steady Compounders Performance](#)" for a detailed performance data and advance decline statistics.

Rebalancing and performance calculations are conducted each month, using data and closing prices corresponding to the relevant market's close on the last business day of each month. The performance of Global Steady Compounders list is computed on the basis of price return in USD. The performance is presented relative to the market capitalization-weighted MSCI AC World Index.

The analysis is back-tested and does not represent the actual performance of any account or fund. Back-tested performance depicts the hypothetical back-tested performance of a particular strategy over the time period indicated. In future periods, market and economic conditions will differ and the same strategy will not necessarily produce the same results. No representation is being made that any actual portfolio is likely to have achieved returns similar to those shown herein. In fact, there are frequently sharp differences between back-tested returns and the actual results realized in the actual management of a portfolio. Back-tested performance results are created by applying an investment strategy or methodology to historical data and attempts to give an indication as to how a strategy might have performed during a certain period in the past if the product had been in existence during such time. Back-tested results have inherent limitations including the fact that they are calculated with the full benefit of hindsight, which allows the security selection methodology to be adjusted to maximize the returns. Further, the results shown do not reflect actual trading or the impact that material economic and market factors might have had on a portfolio manager's decision-making under actual circumstances. Back-tested returns do not reflect advisory fees, trading costs, or other fees or expenses.

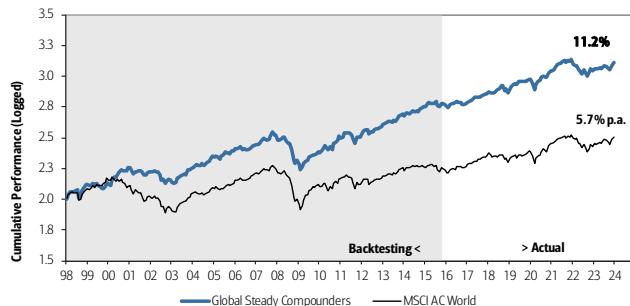
Past performance should not and cannot be viewed as an indicator of future performance.

A complete performance record is available upon request.



### Chart 212: Global Steady Compounders Long-term cumulative returns

Steady Compounders have returned 11.2% p.a. since inception



Source : BofA Global Quantitative Strategy, MSCI, IBES

Back-tested results are from Jan-98 to May-16. Actual performance is from Jun-16. Back-tested 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.

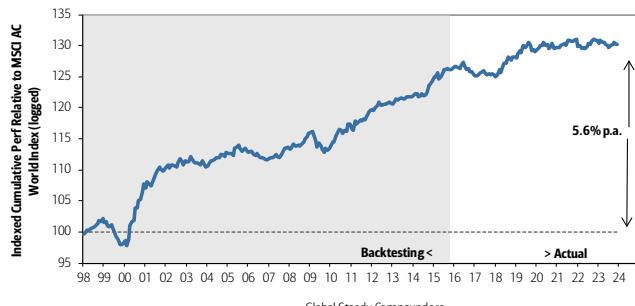
BofA GLOBAL RESEARCH

### Chart 213: Global Steady Compounders Long-term relative cumulative returns

Steady Compounders have outperformed MSCI AC World by 5.6% p.a.

### Chart 213: Global Steady Compounders Long-term relative cumulative returns

Steady Compounders have outperformed MSCI AC World by 5.6% p.a.



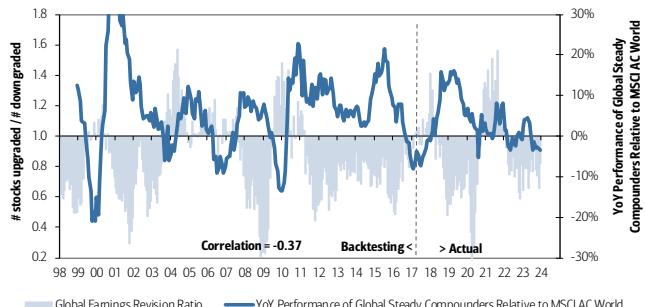
Source : BofA Global Quantitative Strategy, MSCI, IBES

Back-tested results are from Jan-98 to May-16. Actual performance is from Jun-16. Back-tested 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.

BofA GLOBAL RESEARCH

### Chart 214: Global Steady Compounders: YoY relative returns and Trend in Earnings Expectations

YoY Global Steady Compounders have underperformed by -3.4%



Source : BofA Global Quantitative Strategy, MSCI, IBES

Back-tested results are from Jan-98 to May-16. Actual performance is from Jun-16. Back-tested 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.

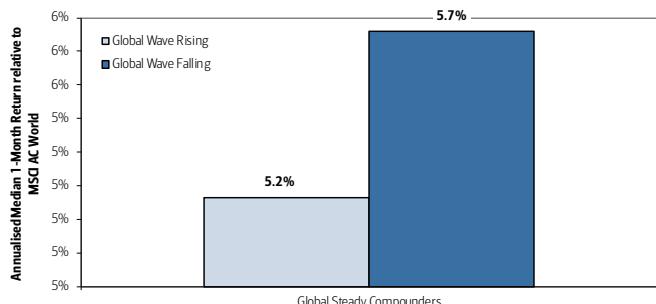
BofA GLOBAL RESEARCH

### Chart 215: Global Steady Compounders: Annualized Relative Performance (since inception) vs Global Wave

YoY Global Steady Compounders have underperformed by -3.4%

### Chart 215: Global Steady Compounders: Annualized Relative Performance (since inception) vs Global Wave

Global Steady Compounders outperform irrespective of the direction of the cycle

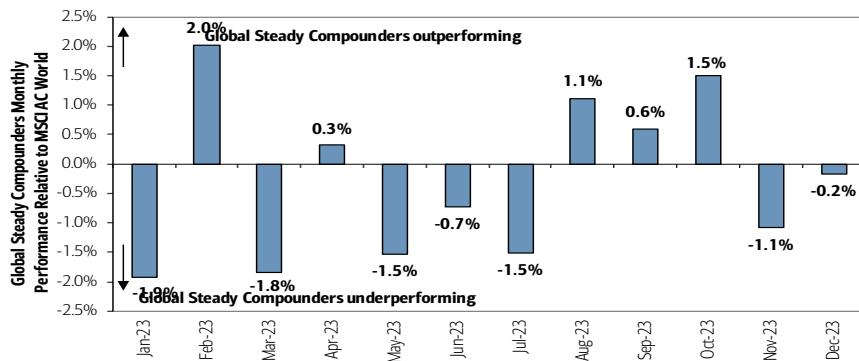


Source : BofA Global Quantitative Strategy, MSCI, IBES, Haver, Bloomberg, OECD, IMF, ICE Bond Indices, National Statistics Database

BofA GLOBAL RESEARCH

### Chart 216: Global Steady Compounders: Relative Performance last 12 months

YoY Global Steady Compounders have underperformed by -3.4%



Source : BofA Global Quantitative Strategy, MSCI, IBES

BofA GLOBAL RESEARCH

**Chart 217: Global Steady Compounds:****ROE Level**

ROE of Global Steady Compounds is 15% vs Index ROE of 13%



Source : BofA Global Quantitative Strategy, MSCI, IBES  
BofA GLOBAL RESEARCH

**Chart 218: Global Steady Compounds:****Median PE**

Median PE of Steady Compounds is 23.0 vs Index PE of 17.3



Source : BofA Global Quantitative Strategy, MSCI, IBES  
BofA GLOBAL RESEARCH

**Chart 219: Global Steady Compounds:****PEG Ratio**

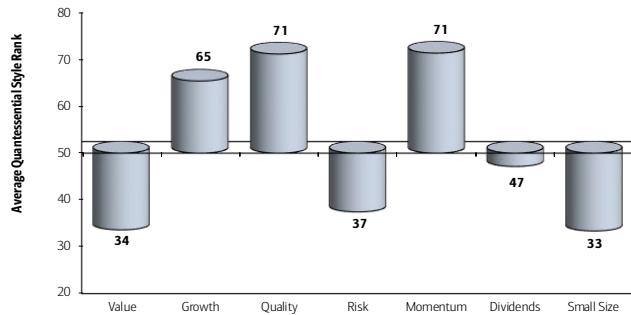
PEG of Global Steady Compounds is 187% vs Index PEG of 174%



Source : BofA Global Quantitative Strategy, MSCI, IBES  
BofA GLOBAL RESEARCH

**Chart 220: Global Steady Compounds: Style Tilt**

Steady Compounds have exposure to Quality and Momentum



Source : BofA Global Quantitative Strategy, MSCI, IBES  
BofA GLOBAL RESEARCH

**Table 18: Global Steady Compounds: Average Characteristics**

Steady Compounds & MSCI ACWI median factor characteristics

Factors	Average	MSCI AC World
EV/EBITDA	22.04	12.84
P/FCF	29.19	19.54
P/S (Trailing)	3.82	2.02
PB (Trailing)	6.33	2.20
PE (Forecast)	24.03	15.66
PEG Ratio	1.87	1.74
EPS FY2/Reportd	32.9%	22.9%
EPS Revisions	4.2%	1.6%
Trend Growth 7yr	11.6%	5.7%
FCF to Equity	16.7%	9.9%
Quality Rank	77	49
ROE	15.41	12.69
Profit Margins	0.11	0.10
Asset Turnover	0.60	0.53
Operating Leverage	2.30	2.42
Beta 60m	0.88	0.90
EPS Vol 3yr	7.3%	14.4%
Price Vol 1yr	6.6%	9.6%
Trend Price 12m	16.7%	4.6%
Div Growth 5yr	11.1%	13.1%
Div Payout 5yr	28.7%	35.1%
Div Yield (Reported)	1.1%	2.5%
Market Cap (Total)	16,594	10,682
Turnover / Mcap 6m	1.10	0.92

Source : BofA Global Quantitative Strategy

BofA GLOBAL RESEARCH



**Table 19: Global Steady Compounds**

Global Steady Compounds screen sorted by country and sector

<b>BBG Code</b>	<b>Company Name</b>	<b>Country</b>	<b>Sector</b>	<b>PE</b>
REA AU	REA Group	Australia	Media & Ent.	47.4
TNE AU	Technology One	Australia	Software	41.5
600612 CH	Lao Feng Xiang-A	China	Cons. Discretionary	13.7
600085 CH	Beijing Tongrentang-A	China	Health Care	35.0
002138 CH	Shenzhen Sunlo-A	China	Tech Hardware	22.8
NOVOB DC	Novo Nordisk	Denmark	Health Care	31.1
MTX GR	MTU Aero Engines	Germany	Industrials	16.0
HNR1 GR	Hannover Rueck	Germany	Insurance	12.3
KMB IN	Kotak Mahindra	India	Banks	27.0
DABUR IN	Dabur India	India	Cons. Staples	45.1
NEST IN	Nestle India	India	Cons. Staples	7.4
BRGR IN	Berger Paints	India	Materials	51.3
PIDI IN	Pidilite Indus	India	Materials	65.3
UTCEM IN	Ultratech Cement	India	Materials	33.6
REC IM	Recordati Industria	Italy	Health Care	19.7
2801 JP	Kikkoman Corp	Japan	Cons. Staples	31.2
4527 JP	Rohto Pharmaceutical	Japan	Cons. Staples	19.4
8279 JP	Yaoko Co	Japan	Cons. Staples	15.8
4091 JP	Taiyo Nippon Sanso	Japan	Materials	16.3
8056 JP	BIPROGY	Japan	Software	17.8
4684 JP	OBIC	Japan	Software	34.8
CLS SJ	Clicks Group	South Africa	Cons. Staples	26.3
3044 TT	Tripod Technology	Taiwan	Tech Hardware	12.5
LIN US	Linde	United Kingdor	Materials	26.7
JPM US	JPMorgan Chase	United States	Banks	11.0
AZO US	AutoZone	United States	Cons. Discretionary	16.7
CHH US	Choice Hotels Intl	United States	Cons. Discretionary	16.8
DPZ US	Domino's Pizza	United States	Cons. Discretionary	26.3
GNTX US	Gentex Corp	United States	Cons. Discretionary	15.1
MCD US	McDonald's	United States	Cons. Discretionary	23.7
NKE US	NIKE	United States	Cons. Discretionary	26.5
ORLY US	O'Reilly Automotive	United States	Cons. Discretionary	22.3
ROST US	Ross Stores	United States	Cons. Discretionary	24.0
SBUX US	Starbucks	United States	Cons. Discretionary	22.3
WEN US	Wendy's Co	United States	Cons. Discretionary	17.6
STZ US	Constellation Brands	United States	Cons. Staples	18.4
MNST US	Monster Beverage	United States	Cons. Staples	31.7
AXP US	American Express	United States	Div Financials	15.2
EEFT US	Euronet Worldwide	United States	Div Financials	12.3
FI US	Fiserv	United States	Div Financials	15.5
MA US	Mastercard	United States	Div Financials	30.0
V US	Visa	United States	Div Financials	25.5
BSX US	Boston Scientific	United States	Health Care	25.9
CNMD US	Conmed	United States	Health Care	25.0
ELV US	Elevance Health	United States	Health Care	12.7
LLY US	Eli Lilly	United States	Health Care	47.1
GMED US	Globus Medical	United States	Health Care	19.6
UNH US	UnitedHealth	United States	Health Care	18.9
ZTS US	Zoetis	United States	Health Care	32.8
AOS US	A.O. Smith	United States	Industrials	20.6

Source : BofA Global Quantitative Strategy This screen is not a recommended list either individually or as a group of stocks. Investors should consider the fundamentals of the companies and their own individual circumstances/objectives before making any investment decisions.

BofA GLOBAL RESEARCH

**Table 20: Global Steady Compounds (Continued...)**

Global Steady Compounds screen sorted by country and sector

<b>BB Code</b>	<b>Company Name</b>	<b>Country</b>	<b>Sector</b>	<b>PE</b>
AAON US	Aaon	United States	Industrials	32.1
CW US	Curtiss-Wright	United States	Industrials	22.2
ETN US	Eaton	United States	Industrials	24.1
EXLS US	Exlservice Hldgs	United States	Industrials	19.1
FSS US	Fed Signal	United States	Industrials	26.4
HEI US	Heico	United States	Industrials	50.3
HUBB US	Hubbell	United States	Industrials	20.2
ITT US	ITT Inc	United States	Industrials	20.4
LII US	Lennox Int'l	United States	Industrials	22.8
MSA US	MSA Safety	United States	Industrials	23.0
RBC US	RBC Bearings	United States	Industrials	30.3
TT US	Trane Tech	United States	Industrials	24.4
VRSK US	Verisk Analytics	United States	Industrials	36.1
GWW US	W.W. Grainger	United States	Industrials	21.5
AJG US	Gallagher Arthur	United States	Insurance	22.0
AIZ US	Assurant Inc	United States	Insurance	11.1
CINF US	Cincinnati Financial	United States	Insurance	16.8
EG US	Everest Group	United States	Insurance	5.7
GL US	Globe Life	United States	Insurance	10.7
HIG US	Hartford Fin.	United States	Insurance	8.2
MMC US	Marsh & McLennan	United States	Insurance	21.9
PRI US	Primerica Inc	United States	Insurance	11.7
PGR US	Progressive	United States	Insurance	19.9
SIGI US	Selective Insurance	United States	Insurance	12.8
MLM US	Martin Marietta	United States	Materials	23.9
KWR US	Quaker Chemical	United States	Materials	24.2
RPM US	RPM	United States	Materials	20.9
AMT US	American Tower	United States	Real Estate	44.2
EQIX US	Equinix	United States	Real Estate	74.5
BLKB US	Blackbaud	United States	Software	19.0
CDNS US	Cadence	United States	Software	46.5
FICO US	Fair Isaac	United States	Software	46.8
INTU US	Intuit	United States	Software	36.0
PTC US	PTC Inc	United States	Software	33.9
ROP US	Roper Tech	United States	Software	29.7
CRM US	Salesforce	United States	Software	28.0
SNPS US	Synopsys	United States	Software	36.9
VRSN US	VeriSign	United States	Software	25.1
BMI US	Badger Meter	United States	Tech Hardware	44.7
PLXS US	Plexus	United States	Tech Hardware	17.6
CWT US	California Water	United States	Utilities	23.6

Source : BofA Global Quantitative Strategy

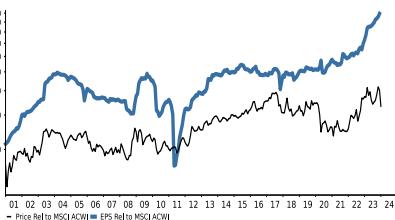
BofA GLOBAL RESEARCH



## Nine Least Expensive Global Steady Compounds

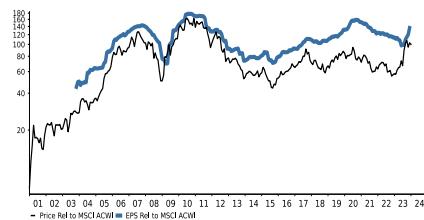
### Chart 221: Everest Group - Momentum & Value

Relative EPS trend for Everest Group has improved in the last 6 months



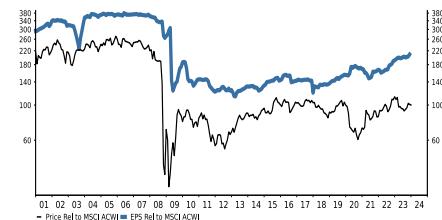
### Chart 222: Tripod Technology - Momentum & Value

Tripod Technology has outperformed in the last 12 months



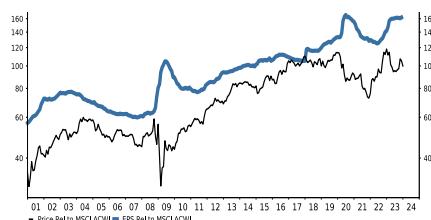
### Chart 223: Hartford Fin. - Momentum & Value

Hartford Fin. has underperformed in the last 12 months



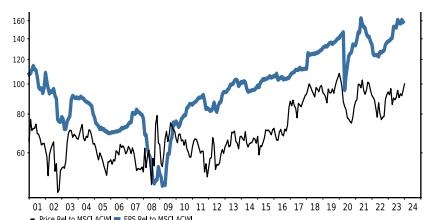
### Chart 224: Globe Life - Momentum & Value

Relative EPS trend for Globe Life has improved in the last 6 months



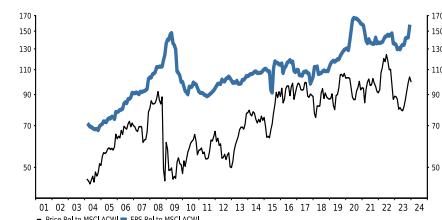
### Chart 225: JPMorgan Chase - Momentum & Value

JPMorgan Chase has outperformed in the last 3 months



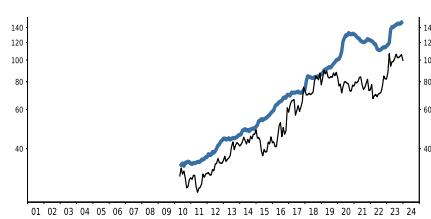
### Chart 226: Assurant Inc - Momentum & Value

Assurant Inc has outperformed in the last 6 months



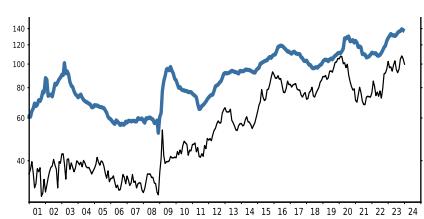
### Chart 227: Primerica Inc - Momentum & Value

Primerica Inc has underperformed in the last 3 months



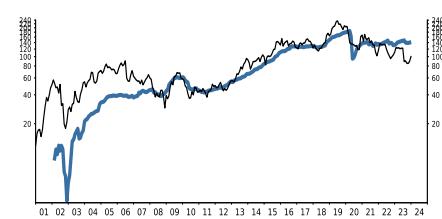
### Chart 228: Hannover Rueck - Momentum & Value

Hannover Rueck has outperformed in the last 6 months



### Chart 229: Euronet Worldwide - Momentum & Value

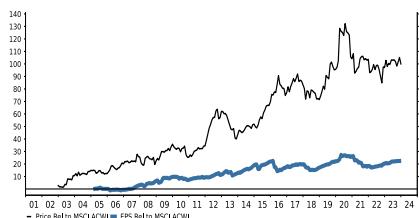
Relative EPS trend for Euronet Worldwide has deteriorated in the last 6 months



## Nine Most Expensive Global Steady Compounds

### Chart 230: Equinix - Momentum & Value

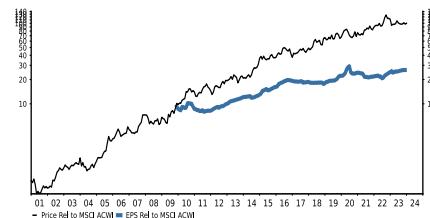
Equinix has underperformed in the last 6 months



Source : BofA Global Quantitative Strategy, MSCI, IBES  
BofA GLOBAL RESEARCH

### Chart 231: Pidilite Indus - Momentum & Value

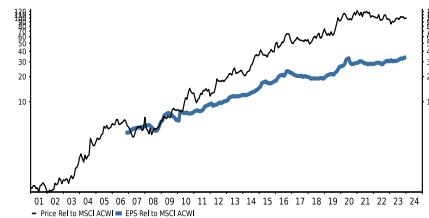
Pidilite Indus has outperformed in the last 3 months



Source : BofA Global Quantitative Strategy, MSCI, IBES  
BofA GLOBAL RESEARCH

### Chart 232: Berger Paints - Momentum & Value

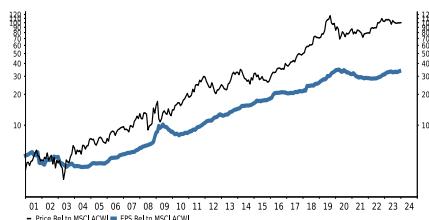
Berger Paints has underperformed in the last 3 months



Source : BofA Global Quantitative Strategy, MSCI, IBES  
BofA GLOBAL RESEARCH

### Chart 233: Heico - Momentum & Value

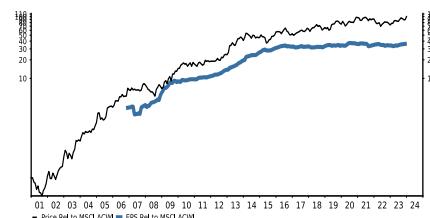
Heico has underperformed in the last 3 months



Source : BofA Global Quantitative Strategy, MSCI, IBES  
BofA GLOBAL RESEARCH

### Chart 234: REA Group - Momentum & Value

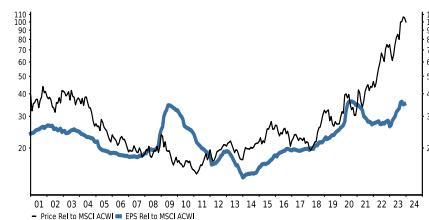
REA Group has outperformed in the last 3 months



Source : BofA Global Quantitative Strategy, MSCI, IBES  
BofA GLOBAL RESEARCH

### Chart 235: Eli Lilly - Momentum & Value

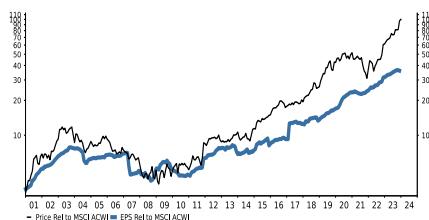
Eli Lilly has outperformed in the last 12 months



Source : BofA Global Quantitative Strategy, MSCI, IBES  
BofA GLOBAL RESEARCH

### Chart 236: Fair Isaac - Momentum & Value

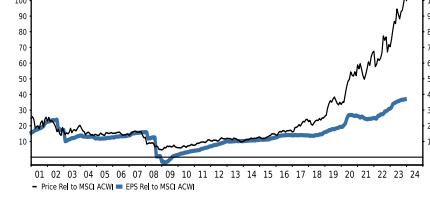
Relative EPS trend for Fair Isaac has improved in the last 12 months



Source : BofA Global Quantitative Strategy, MSCI, IBES  
BofA GLOBAL RESEARCH

### Chart 237: Cadence - Momentum & Value

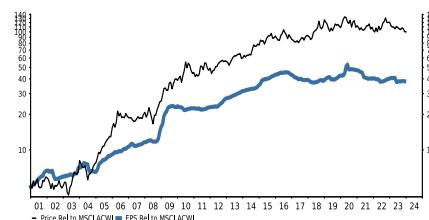
Cadence has outperformed in the last 12 months



Source : BofA Global Quantitative Strategy, MSCI, IBES  
BofA GLOBAL RESEARCH

### Chart 238: Dabur India - Momentum & Value

Dabur India has underperformed in the last 3 months



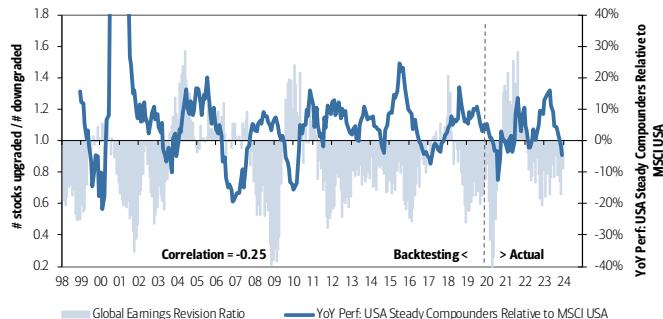
Source : BofA Global Quantitative Strategy, MSCI, IBES  
BofA GLOBAL RESEARCH

## Regional Steady Compounds

### USA Steady Compounds

**Chart 239: USA Steady Compounds: YoY relative returns and Trend in Earnings Expectations**

YoY USA Steady Compounds have underperformed by -4.8%



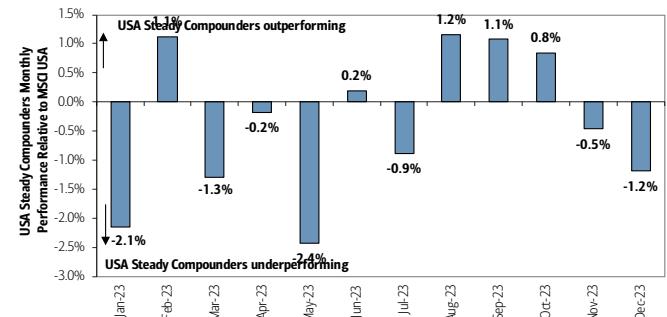
Source : BofA Global Quantitative Strategy, MSCI, IBES

Back-tested results are from Jan-98 to May-16. Actual performance is from Jun-16. Back-tested 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.

BofA GLOBAL RESEARCH

**Chart 240: USA Steady Compounds: Relative Performance last 12 months**

Steady Compounds underperformed by -1.2% last month



Source : BofA Global Quantitative Strategy, MSCI, IBES

BofA GLOBAL RESEARCH



**Table 21: USA Steady Compounds**

USA Steady Compounds screen sorted by sector

BB Code	Company Name	Country	Sector	PE
LIN US	Linde	United Kingdom	Materials	26.7
JPM US	JPMorgan Chase	United States	Banks	11.0
AZO US	AutoZone	United States	Cons. Discretionary	16.7
CHH US	Choice Hotels Intl	United States	Cons. Discretionary	16.8
DPZ US	Domino's Pizza	United States	Cons. Discretionary	26.3
NKE US	NIKE	United States	Cons. Discretionary	26.5
ORLY US	O'Reilly Automotive	United States	Cons. Discretionary	22.3
ROST US	Ross Stores	United States	Cons. Discretionary	24.0
SBUX US	Starbucks	United States	Cons. Discretionary	22.3
WEN US	Wendy's Co	United States	Cons. Discretionary	17.6
CASY US	Casey's Stores	United States	Cons. Staples	20.8
STZ US	Constellation Brands	United States	Cons. Staples	18.4
COST US	Costco	United States	Cons. Staples	41.0
MNST US	Monster Beverage	United States	Cons. Staples	31.7
CBOE US	CBOE	United States	Div Financials	21.9
EEFT US	Euronet Worldwide	United States	Div Financials	12.3
FLT US	FleetCor Tech	United States	Div Financials	14.6
MA US	Mastercard	United States	Div Financials	30.0
V US	Visa	United States	Div Financials	25.5
BSX US	Boston Scientific	United States	Health Care	25.9
CI US	Cigna	United States	Health Care	10.6
CNMD US	Conmed	United States	Health Care	25.0
ELV US	Elevance Health	United States	Health Care	12.7
LLY US	Eli Lilly	United States	Health Care	47.1
GMED US	Globus Medical	United States	Health Care	19.6
MCK US	McKesson	United States	Health Care	15.5
RMD US	Resmed	United States	Health Care	22.7
SYK US	Stryker	United States	Health Care	26.0
UNH US	UnitedHealth	United States	Health Care	18.9
ZTS US	Zoetis	United States	Health Care	32.8
AOS US	A.O. Smith	United States	Industrials	20.6
AAON US	Aaon	United States	Industrials	32.1
AME US	Ametek	United States	Industrials	24.4
ADP US	ADP	United States	Industrials	24.4
BAH US	Booz Allen Hamilton	United States	Industrials	23.4
BR US	Broadridge Fin.	United States	Industrials	25.4
CACI US	CACI Intl	United States	Industrials	15.2
CTAS US	Cintas	United States	Industrials	39.4
CW US	Curtiss-Wright	United States	Industrials	22.2
EXLS US	Exservice Hldgs	United States	Industrials	19.1
FSS US	Fed Signal	United States	Industrials	26.4
FCN US	FTI Consulting	United States	Industrials	24.5
HUBB US	Hubbell	United States	Industrials	20.2
ITT US	ITT Inc	United States	Industrials	20.4
LII US	Lennox Int'l	United States	Industrials	22.8
MSA US	MSA Safety	United States	Industrials	23.0
NDSN US	Nordson	United States	Industrials	26.2
PH US	Parker-Hannifin	United States	Industrials	19.0
PAYX US	Paychex	United States	Industrials	24.4
RBC US	RBC Bearings	United States	Industrials	30.3
RSG US	Republic Services	United States	Industrials	27.8
SNA US	Snap-on	United States	Industrials	14.9
TT US	Trane Tech	United States	Industrials	24.4

Source : BofA Global Quantitative Strategy

BofA GLOBAL RESEARCH

**Table 22: USA Steady Compounds: Average Characteristics**

Steady Compounds &amp; MSCI ACWI median factor characteristics

Factors	Average	MSCI USA
EV/EBITDA	21.93	16.83
P/FCF	29.26	23.78
P/S (Trailing)	3.82	2.93
PB (Trailing)	6.73	4.13
PE (Forecast)	24.38	19.33
PEG Ratio	1.99	2.02
EPS FY2/Reportd	27.7%	16.3%
EPS Revisions	3.8%	1.9%
Trend Growth 7yr	13.1%	8.4%
FCF to Equity	18.4%	15.0%
Quality Rank	79	67
ROE	18.35	15.56
Profit Margins	0.11	0.11
Asset Turnover	0.67	0.54
Operating Leverage	2.23	2.59
Beta 60m	0.93	1.10
EPS Vol 3yr	6.0%	13.1%
Price Vol 1yr	6.9%	9.4%
Trend Price 12m	19.2%	2.5%
Div Growth 5yr	12.7%	10.0%
Div Payout 5yr	23.7%	25.6%
Div Yield (Reported)	1.0%	2.1%
Market Cap (Total)	37,063	27,401
Turnover / Mcap 6m	1.21	1.63

Source : BofA Global Quantitative Strategy

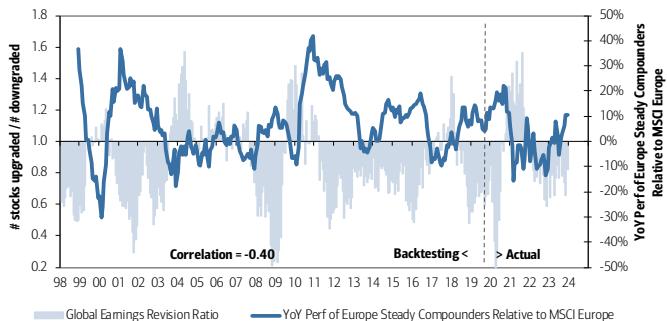
BofA GLOBAL RESEARCH



## Europe Steady Compounds

### Chart 241: EUROPE Steady Compounds: YoY relative returns and Trend in Earnings Expectations

YoY Europe Steady Compounds have outperformed by 10.4%



Source : BofA Global Quantitative Strategy, MSCI, IBES

Back-tested results are from Jan-98 to May-16. Actual performance is from Jun-16. Back-tested 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.

BofA GLOBAL RESEARCH

### Table 23: EUROPE Steady Compounds

Europe Steady Compounds screen sorted by sector

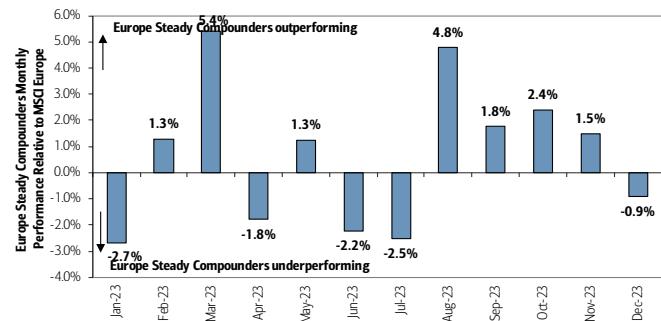
BB Code	Company Name	Country	Sector	PE
NOVOB DC	Novo Nordisk	Denmark	Health Care	31.1
CHR DC	Christian Hansen	Denmark	Materials	33.3
OR FP	L'Oreal	France	Cons. Staples	34.3
EDEN FP	Edenred	France	Div Financials	23.4
VIE FP	Veolia	France	Utilities	13.4
DB1 GR	Deutsche Boerse	Germany	Div Financials	18.5
HNR1 GR	Hannover Rueck	Germany	Insurance	12.3
MUV2 GR	MunichRe	Germany	Insurance	10.1
TLX GR	Talanx	Germany	Insurance	9.7
SAP GR	SAP	Germany	Software	22.8
REC IM	Recordati Industria	Italy	Health Care	19.7
WKL NA	Wolters Kluwer	Netherlands	Industrials	26.8
IBE SM	Iberdrola	Spain	Utilities	15.5
AZN LN	AstraZeneca	United Kingdom	Health Care	16.1
EXPN LN	Experian	United Kingdom	Industrials	26.2
REL LN	RELX	United Kingdom	Industrials	25.1

Source : BofA Global Quantitative Strategy

BofA GLOBAL RESEARCH

### Chart 242: EUROPE Steady Compounds: Relative Performance last 12 months

Steady Compounds underperformed by -0.9% last month



Source : BofA Global Quantitative Strategy, MSCI, IBES

BofA GLOBAL RESEARCH

### Table 24: EUROPE Steady Compounds: Average Characteristics

Steady Compounds & MSCI ACWI median factor characteristics

Factors	Average	MSCI Europe
EV/EBITDA	20.28	11.47
P/FCF	22.92	17.56
P/S (Trailing)	5.65	1.79
PB (Trailing)	5.42	2.19
PE (Forecast)	21.26	15.20
PEG Ratio	1.60	1.73
EPS FY2/Reportd	40.5%	14.2%
EPS Revisions	3.7%	0.5%
Trend Growth 7yr	9.8%	4.3%
FCF to Equity	25.6%	11.8%
Quality Rank	59	43
ROE	13.26	13.47
Profit Margins	0.13	0.10
Asset Turnover	0.45	0.55
Operating Leverage	3.17	2.76
Beta 60m	0.83	1.15
EPS Vol 3yr	4.1%	13.5%
Price Vol 1yr	7.8%	8.6%
Trend Price 12m	14.9%	-1.2%
Div Growth 5yr	7.1%	12.3%
Div Payout 5yr	52.6%	43.4%
Div Yield (Reported)	1.9%	3.0%
Market Cap (Total)	38,344	15,391
Turnover / Mcap 6m	0.27	0.40

Source : BofA Global Quantitative Strategy

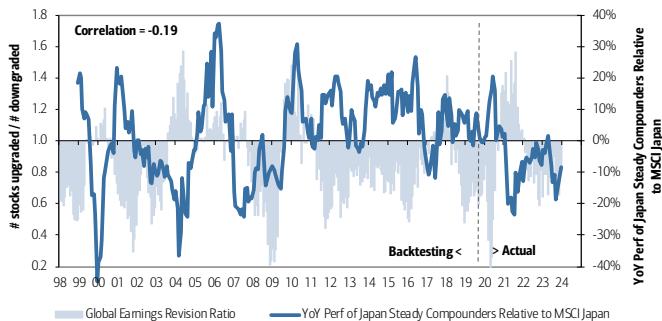
BofA GLOBAL RESEARCH



## Japan Steady Compounds

**Chart 243: JAPAN Steady Compounds: YoY relative returns and Trend in Earnings Expectations**

YoY Japan Steady Compounds have underperformed by -8.3%



Source : BofA Global Quantitative Strategy, MSCI, IBES

Back-tested results are from Jan-98 to May-16. Actual performance is from Jun-16. Back-tested 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.

BofA GLOBAL RESEARCH

**Table 25: JAPAN Steady Compounds**

Japan Steady Compounds screen sorted by sector

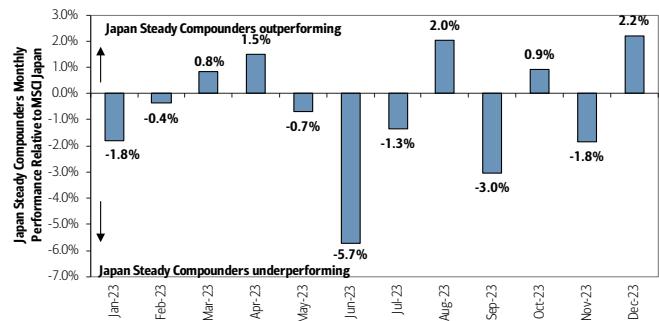
BB Code	Company Name	Country	Sector	PE
2801 JP	Kikkoman Corp	Japan	Cons. Staples	31.2
4527 JP	Rohto Pharmaceutical	Japan	Cons. Staples	19.4
6370 JP	Kurita Water	Japan	Industrials	20.5
1969 JP	Takasago Thermal Engg	Japan	Industrials	13.9
8056 JP	BIPROGY	Japan	Software	17.8
4684 JP	OBIC	Japan	Software	34.8

Source : BofA Global Quantitative Strategy

BofA GLOBAL RESEARCH

**Chart 244: JAPAN Steady Compounds: Relative Performance last 12 months**

Steady Compounds have outperformed by 2.2% last month



Source : BofA Global Quantitative Strategy, MSCI, IBES

BofA GLOBAL RESEARCH

**Table 26: JAPAN Steady Compounds: Average Characteristics**

Steady Compounds & MSCI ACWI median factor characteristics

Factors	Average	MSCI Japan
EV/EBITDA	25.21	9.85
P/FCF	33.90	22.10
P/S (Trailing)	2.30	1.43
PB (Trailing)	2.93	1.45
PE (Forecast)	20.54	15.93
PEG Ratio	3.31	1.69
EPS FY2/Reportd	27.7%	18.5%
EPS Revisions	6.3%	2.6%
Trend Growth 7yr	12.9%	3.6%
FCF to Equity	12.6%	5.0%
Quality Rank	84	42
ROE	12.49	10.04
Profit Margins	0.07	0.07
Asset Turnover	0.07	0.69
Operating Leverage	0.07	2.03
Beta 60m	0.83	0.72
EPS Vol 3yr	5.1%	15.7%
Price Vol 1yr	8.7%	8.1%
Trend Price 12m	20.5%	7.5%
Div Growth 5yr	14.6%	8.8%
Div Payout 5yr	36.0%	32.7%
Div Yield (Reported)	1.3%	2.3%
Market Cap (Total)	4,657	10,565
Turnover / Mcap 6m	0.64	0.83

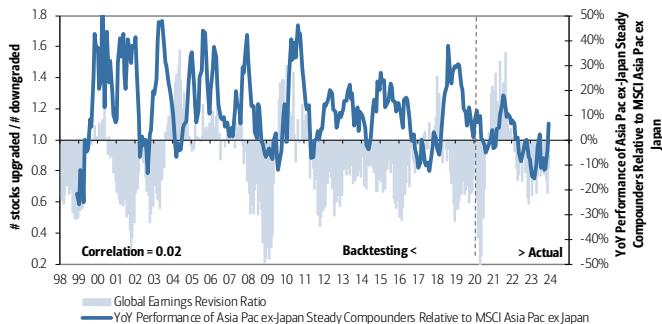
Source : BofA Global Quantitative Strategy

BofA GLOBAL RESEARCH

## Asia Pac ex-Japan Steady Compounds

### Chart 245: Asia Pac ex-Japan Steady Compounds: YoY relative returns and Trend in Earnings Expectations

YoY Asia Pac ex-Japan Steady Compounds have outperformed by 6.4%



Source : BofA Asia Pac Quantitative Strategy, MSCI, IBES

Back-tested results are from Jan-98 to May-16. Actual performance is from Jun-16. Back-tested 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.

BofA GLOBAL RESEARCH

### Table 27: Asia Pac ex-Japan Steady Compounds

Asia Pac ex-Japan Steady Compounds screen sorted by sector

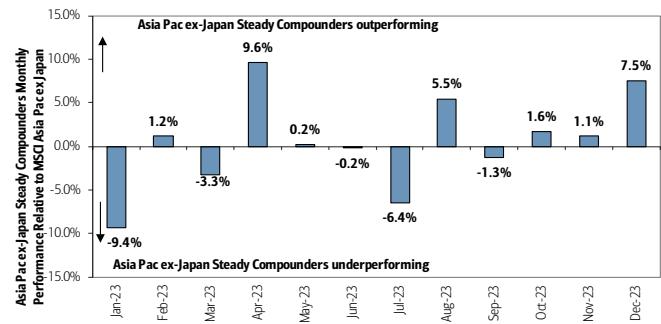
BB Code	Company Name	Country	Sector	PE
COH AU	Cochlear	Australia	Health Care	50.0
CWY AU	Cleanaway Waste Mgmt	Australia	Industrials	30.6
REA AU	REA Group	Australia	Media & Ent.	47.4
ICICIBC IN	ICICI Bank	India	Banks	16.8
NEST IN	Nestle India	India	Cons. Staples	7.4
LT IN	Larsen & Toubro	India	Industrials	30.7
BRGR IN	Berger Paints	India	Materials	51.3
PIDI IN	Pidilite Indus	India	Materials	65.3
UTCEM IN	Ultratech Cement	India	Materials	33.6
MEL NZ	Meridian Energy	New Zealand	Utilities	32.1
3044 TT	Tripod Technology	Taiwan	Tech Hardware	12.5

Source : BofA Asia Pac Quantitative Strategy

BofA GLOBAL RESEARCH

### Chart 246: Asia Pac ex-Japan Steady Compounds: Relative Performance last 12 months

Steady Compounds have outperformed by 7.5% last month



Source : BofA Asia Pac Quantitative Strategy, MSCI, IBES

BofA GLOBAL RESEARCH

### Table 28: Asia Pac ex-Japan Steady Compounds: Average Characteristics

Steady Compounds & MSCI ACWI median factor characteristics

Factors	Average	MSCI Asia Pac xJ
EV/EBITDA	38.63	12.98
P/FCF	63.00	18.81
P/S (Trailing)	4.69	1.98
PB (Trailing)	8.70	1.98
PE (Forecast)	40.51	14.99
PEG Ratio	2.82	1.30
EPS FY2/Reportd	47.0%	34.3%
EPS Revisions	4.7%	1.5%
Trend Growth 7yr	8.2%	3.4%
FCF to Equity	17.9%	7.2%
Quality Rank	52	40
ROE	16.29	11.35
Profit Margins	0.09	0.10
Asset Turnover	0.69	0.52
Operating Leverage	1.77	2.24
Beta 60m	0.93	0.74
EPS Vol 3yr	5.5%	14.3%
Price Vol 1yr	9.7%	10.7%
Trend Price 12m	29.1%	-14.2%
Div Growth 5yr	21.6%	17.6%
Div Payout 5yr	48.4%	34.8%
Div Yield (Reported)	0.9%	2.3%
Market Cap (Total)	16,331	6,389
Turnover / Mcap 6m	0.30	0.93

Source : BofA Asia Pac Quantitative Strategy

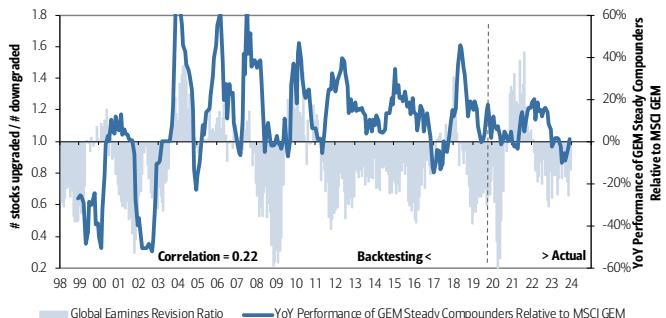
BofA GLOBAL RESEARCH



## Emerging Markets Steady Compounds

**Chart 247: Emerging Markets Steady Compounds: YoY relative returns and Trend in Earnings Expectations**

YoY GEM Steady Compounds have outperformed by 1.1%



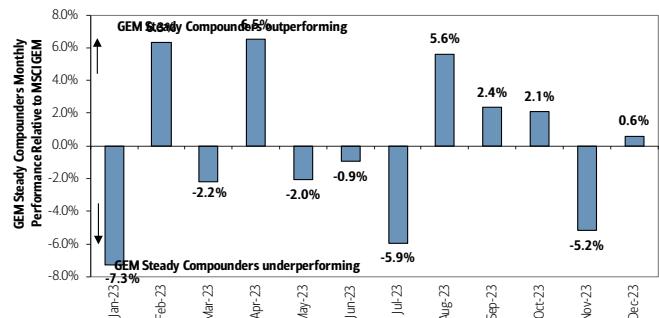
Source : BofA Global Quantitative Strategy, MSCI, IBES

Back-tested results are from Jan-98 to May-16. Actual performance is from Jun-16. Back-tested 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.

BofA GLOBAL RESEARCH

**Chart 248: Emerging Markets Steady Compounds: Relative Performance last 12 months**

Steady Compounds have outperformed by 0.6% last month



Source : BofA Global Quantitative Strategy, MSCI, IBES

BofA GLOBAL RESEARCH

**Table 29: Emerging Markets Steady Compounds**

Emerging Markets Steady Compounds screen sorted by sector

BB Code	Company Name	Country	Sector	PE
600612 CH	Lao Feng Xiang-A	China	Cons. Discretio	13.7
600519 CH	Kweichow Moutai-A	China	Cons. Staples	24.7
002262 CH	Jiangsu Nhwa Pharma-	China	Health Care	20.4
002595 CH	Shandong Himile Med	China	Industrials	13.6
002138 CH	Shenzhen Sunlo-A	China	Tech Hardware	22.8
MSIL IN	Maruti Suzuki	India	Cons. Discretio	23.7
NEST IN	Nestle India	India	Cons. Staples	7.4
BRGR IN	Berger Paints	India	Materials	51.3
PIDI IN	Pidilite Indus	India	Materials	65.3
SI IN	Supreme Ind.	India	Materials	45.9
UTCEM IN	Ultratech Cement	India	Materials	33.6
ALINMA AB	Alinma Bank	Saudi Arabia	Banks	14.9

Source : BofA Global Quantitative Strategy

BofA GLOBAL RESEARCH

**Table 30: Emerging Markets Steady Compounds: Average Characteristics**

Steady Compounds & MSCI ACWI median factor characteristics

Factors	Average	MSCI GEM
EV/EBITDA	25.79	12.12
P/FCF	98.83	16.65
P/S (Trailing)	5.56	1.84
PB (Trailing)	5.06	1.95
PE (Forecast)	24.21	14.14
PEG Ratio	2.03	1.16
EPS FY2/Reportd	53.6%	33.8%
EPS Revisions	5.0%	1.8%
Trend Growth 7yr	14.1%	4.9%
FCF to Equity	9.1%	8.5%
Quality Rank	55	42
ROE	17.34	12.47
Profit Margins	0.11	0.11
Asset Turnover	0.95	0.52
Operating Leverage	1.57	2.35
Beta 60m	0.56	0.76
EPS Vol 3yr	12.1%	16.1%
Price Vol 1yr	8.5%	10.8%
Trend Price 12m	22.3%	-10.5%
Div. Growth 5yr	32.2%	20.4%
Div. Pay out 5yr	35.6%	35.2%
Div. Yield (Reported)	0.8%	2.3%
Market Cap (Total)	12,532	6,086
Turnover / Mcap 6m	0.47	0.88

Source : BofA Global Quantitative Strategy

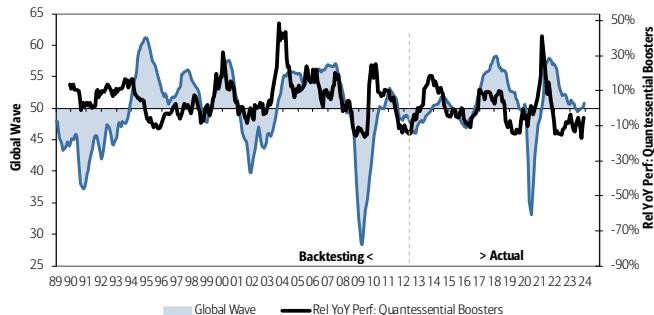
BofA GLOBAL RESEARCH



# Global Boosters and Bunkers

## Chart 249: YoY Global Quantessential Boosters performance versus the Global Wave

Global QE Boosters have underperformed the index by -5.6% in the last 12m



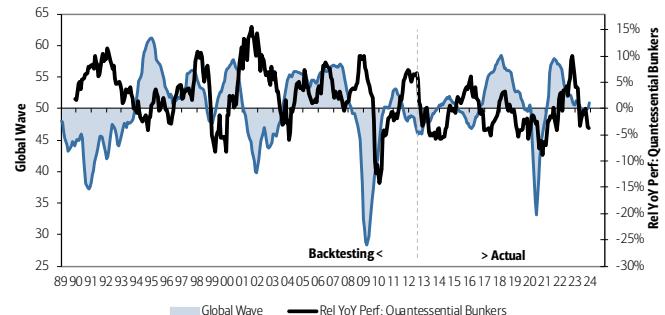
Source : BofA Global Quantitative Strategy, MSCI, IBES, Haver, Bloomberg, OECD, IMF, ICE Bond Indices, National Statistics Database, S&P, Worldscope

Back-tested results are from Jan-89 to Feb-12. Actual performance is from Mar-12. Back-tested 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.

BofA GLOBAL RESEARCH

## Chart 250: YoY Global Quantessential Bunkers performance versus the Global Wave

Benchmark-aware Global Bunkers have a -48% correlation with trends in earnings cycle



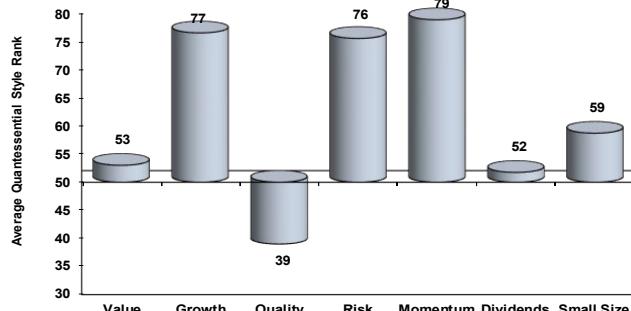
Source : BofA Global Quantitative Strategy, MSCI, IBES, Haver, Bloomberg, OECD, IMF, ICE Bond Indices, National Statistics Database, S&P, Worldscope

Back-tested results are from Jan-89 to Feb-12. Actual performance is from Mar-12. Back-tested 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.

BofA GLOBAL RESEARCH

## Chart 251: Style characteristics of Global Quantessential Boosters

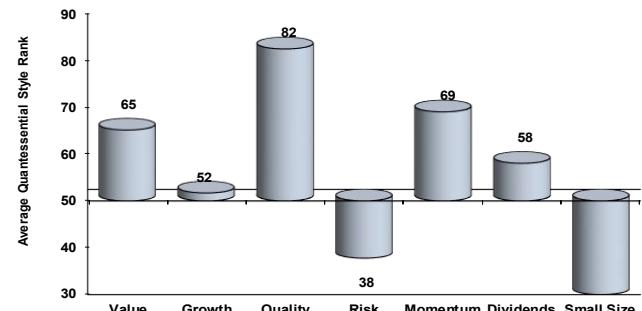
Boosters are overweight cyclical styles for an upturn



Source : BofA Global Quantitative Strategy, MSCI, IBES, S&P, Worldscope, Exshare, Bloomberg  
BofA GLOBAL RESEARCH

## Chart 252: Style characteristics of Global Quantessential Bunkers

Bunkers are overweight defensive styles for a downturn

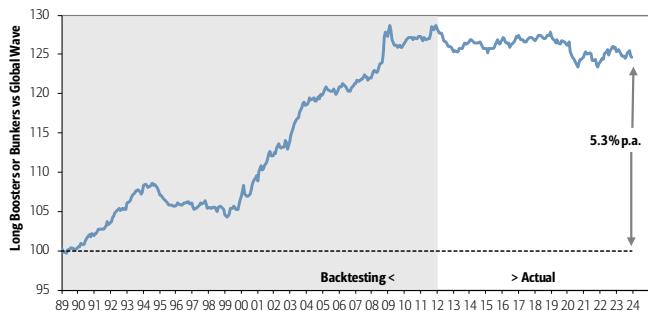


Source : BofA Global Quantitative Strategy, MSCI, IBES, S&P, Worldscope, Exshare, Bloomberg  
BofA GLOBAL RESEARCH



### Chart 253: LONG Quantessential Boosters OR Bunkers relative cumulative performance based on the direction of the Global Wave

Rotating into Boosters or Bunkers based on Global Wave direction averages 5.3% p.a.



Source : BofA Global Quantitative Strategy, MSCI, IBES, Haver, Bloomberg, OECD, IMF, ICE Bond Indices, National Statistics Database, S&P, Worldscope

The shaded area shows back-tested results during the period from Jan-89 to Feb-12. The unshaded portion represents actual performance since Mar-12. Back-tested 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.

BofA GLOBAL RESEARCH

**Table 31: Global Boosters**

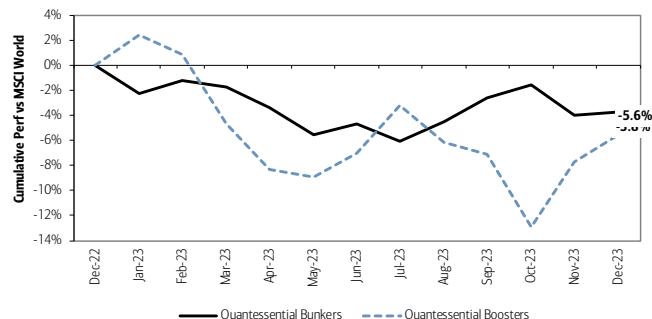
Thirty-stocks Global Boosters screen

MCAP				
BBG Code	Name	Country	Sector	(\$US m)*
IGO AU	IGO	Australia	Materials	4,209
MIN AU	Mineral Resources	Australia	Materials	8,391
PLS AU	Pilbara Minerals	Australia	Materials	7,706
PRI03 BZ	PRI0	Brazil	Energy	7,570
CSNA3 BZ	CSN	Brazil	Materials	2,684
GGBR4 BZ	Gerdau	Brazil	Materials	5,657
MEG CN	MEG Energy	Canada	Energy	5,123
FM CN	First Quantum	Canada	Materials	4,849
IVN CN	Ivanhoe Mines	Canada	Materials	5,938
1919 HK	COSCO Shipping-H	China	Industrials	3,035
3800 HK	GCL Tech	China	Semis	3,429
RF FP	Eurazeo	France	Div Fins	3,458
WCH GR	Wacker Chemie	Germany	Materials	2,305
JSP IN	Jindal Steel	India	Materials	3,210
JSTL IN	JSW Steel	India	Materials	6,467
TATA IN	Tata Steel	India	Materials	12,302
VEDL IN	Vedanta	India	Materials	2,887
TCOM IN	Tata Comm.	India	Telecom	2,425
TEN IM	Tenaris SA	Italy	Energy	8,213
9107 JP	Kawasaki Kisen	Japan	Industrials	5,917
ORBIA* MM	Orbia Advance	Mexico	Materials	2,233
MT NA	ArcelorMittal	Netherlands	Materials	14,512
MBK PW	mBank	Poland	Banks	2,022
AMS SJ	Anglo Platinum	South Africa	Materials	3,496
009540 KS	HD Korea Shipbuilding	South Korea	Industrials	3,986
2609 TT	Yang Ming	Taiwan	Industrials	2,919
3481 TT	Innolux	Taiwan	Hardware	4,019
APA US	APA Corp	United States	Energy	11,025
MRO US	Marathon Oil	United States	Energy	14,633
TRGP US	Targa Resources	United States	Energy	18,462

Source : BofA Global Quantitative Strategy, MSCI, IBES, S&P, Worldscope, Bloomberg  
Market Cap

### Chart 254: Global Quantessential Boosters vs Bunkers Cumulative 12 month relative performance

Quantessential Bunkers outperformed Quantessential Boosters in the last 12-months



Source : BofA Global Quantitative Strategy, MSCI, IBES, S&P, Worldscope, Bloomberg  
BofA GLOBAL RESEARCH

**Table 32: Global Cyclical Stocks with high Triple Momentum**

Global cyclical stocks with above average Boosters and Triple Momentum Ranks with a BofA Buy Rating

Company Name	BBG Code	Region	Country	Sector	MCAP (Total		BofA	Boosters	Triple Momentum
					\$USm)	Avg Daily TO (6m \$US m)			
Computershare	CPU AU	Asia Pac ex-Japan	Australia	Industrials	10,166	30.4	Buy	65	65
CAR	CAR AU	Asia Pac ex-Japan	Australia	Media & Ent.	8,153	31.4	Buy	77	63
BYD-H	1211 HK	Asia Pac ex-Japan	China	Cons. Discretionary	26,728	213.1	Buy	85	71
Great Wall Motor-H	2333 HK	Asia Pac ex-Japan	China	Cons. Discretionary	2,436	34.0	Buy	98	93
Li Auto	2015 HK	Asia Pac ex-Japan	China	Cons. Discretionary	24,164	134.2	Buy	81	100
Tal Education-ADR	TAL US	Asia Pac ex-Japan	China	Cons. Discretionary	5,751	63.9	Buy	92	100
Vipshop-ADR	VIPS US	Asia Pac ex-Japan	China	Cons. Discretionary	7,451	50.1	Buy	91	95
Futu-ADR	FUTU US	Asia Pac ex-Japan	China	Div Financials	4,509	111.1	Buy	83	97
Kuaishou Tech	1024 HK	Asia Pac ex-Japan	China	Media & Ent.	19,622	151.0	Buy	90	77
Netease	9999 HK	Asia Pac ex-Japan	China	Media & Ent.	64,962	114.9	Buy	63	71
Shriram Finance	SHFL IN	Asia Pac ex-Japan	India	Div Financials	10,419	30.8	Buy	95	97
Ashok Leyland	AL IN	Asia Pac ex-Japan	India	Industrials	5,997	30.8	Buy	95	94
Interglobe Aviation	INDIGO IN	Asia Pac ex-Japan	India	Industrials	13,289	32.6	Buy	86	72
Xero	XRO AU	Asia Pac ex-Japan	New Zealand	Software	11,234	32.4	Buy	79	58
Grab	GRAB US	Asia Pac ex-Japan	Singapore	Industrials	12,017	64.6	Buy	94	86
Hanwha Aerospace	012450 KS	Asia Pac ex-Japan	South Korea	Industrials	5,327	47.6	Buy	95	63
Samsung Heavy	010140 KS	Asia Pac ex-Japan	South Korea	Industrials	5,005	41.5	Buy	99	98
Hybe	352820 KS	Asia Pac ex-Japan	South Korea	Media & Ent.	6,748	51.9	Buy	93	89
JYP Entertainment	035900 KS	Asia Pac ex-Japan	South Korea	Media & Ent.	2,176	45.4	Buy	97	91
Naver	035420 KS	Asia Pac ex-Japan	South Korea	Media & Ent.	26,579	133.8	Buy	75	82
Samsung Electronics	005930 KS	Asia Pac ex-Japan	South Korea	Tech Hardware	327,919	733.1	Buy	68	87
ASE Tech	3711 TT	Asia Pac ex-Japan	Taiwan	Semiconductors	19,152	47.4	Buy	81	55
MediaTek	2454 TT	Asia Pac ex-Japan	Taiwan	Semiconductors	47,823	162.8	Buy	77	97
Asustek	2357 TT	Asia Pac ex-Japan	Taiwan	Tech Hardware	10,416	82.7	Buy	99	100
Largan Precision	3008 TT	Asia Pac ex-Japan	Taiwan	Tech Hardware	10,616	57.1	Buy	67	62
Quanta	2382 TT	Asia Pac ex-Japan	Taiwan	Tech Hardware	29,859	471.4	Buy	96	100
Wistron	3231 TT	Asia Pac ex-Japan	Taiwan	Tech Hardware	10,467	378.9	Buy	98	88
Wiwynn	6669 TT	Asia Pac ex-Japan	Taiwan	Tech Hardware	11,617	175.4	Buy	94	100
MercadoLibre	MELI US	Emerging ex-Asi:	Argentina	Cons. Discretionary	89,956	608.9	Buy	78	92
Vibra Energia	VBBR3 BZ	Emerging ex-Asi:	Brazil	Cons. Discretionary	5,503	42.7	Buy	100	100
Localiza	RENT3 BZ	Emerging ex-Asi:	Brazil	Industrials	12,258	78.7	Buy	86	81
Naspers	NPN SJ	Emerging ex-Asi:	South Africa	Cons. Discretionary	31,961	86.9	Buy	83	67
Vestas Wind	VWS DC	Europe	Denmark	Industrials	29,128	52.1	Buy	60	65
Teleperformance	TEP FP	Europe	France	Industrials	9,603	33.4	Buy	67	56
Adidas	ADS GR	Europe	Germany	Cons. Discretionary	34,776	93.5	Buy	76	90
Check Point	CHKP US	Europe	Israel	Software	18,670	110.2	Buy	57	92
Wix.Com	WIX US	Europe	Israel	Software	7,351	56.4	Buy	96	100
Leonardo	LDO IM	Europe	Italy	Industrials	10,127	40.5	Buy	84	63
Prysmian	PRY IM	Europe	Italy	Industrials	12,323	31.5	Buy	75	81
Prosus Nv	PRX NA	Europe	Netherlands	Cons. Discretionary	81,670	107.2	Buy	71	71
Assa Abloy	ASSAB SS	Europe	Sweden	Industrials	28,903	36.3	Buy	52	71
3i Group	III LN	Europe	United Kingdom	Div Financials	29,854	32.4	Buy	69	100
Rolls-Royce	RR LN	Europe	United Kingdom	Industrials	32,700	53.3	Buy	85	76
Denso	6902 JP	Japan	Japan	Cons. Discretionary	48,622	130.8	Buy	72	81
Isuzu Motors	7202 JP	Japan	Japan	Cons. Discretionary	10,657	38.9	Buy	90	63
Mazda Motor	7261 JP	Japan	Japan	Cons. Discretionary	7,266	60.5	Buy	99	95
Nissan	7201 JP	Japan	Japan	Cons. Discretionary	15,973	110.0	Buy	92	91
Panasonic	6752 JP	Japan	Japan	Cons. Discretionary	23,120	99.5	Buy	79	56
Suzuki Motor	7269 JP	Japan	Japan	Cons. Discretionary	20,888	70.3	Buy	92	97

Source : BofA Global Quantitative Strategy, MSCI, IBES, S&amp;P, Worldscope, Bloomberg, RavenPack BofA Fundamental Ratings as at 19-Jan-24

BofA GLOBAL RESEARCH



**Table 33: Global Cyclical Stocks with high Triple Momentum (cont)**

Global cyclical stocks with above average Boosters and Triple Momentum Ranks with a BofA Buy Rating

Company Name	BBG Code	Region	Country	Sector	MCAP (Total	Avg Daily TO	BofA	Boosters	Triple Momentum
					\$USm)	(6m \$US m)	Ratings	Rank	Rank
Nomura	8604 JP	Japan	Japan	Div Financials	15,877	50.9	Buy	79	94
ORIX	8591 JP	Japan	Japan	Div Financials	23,515	72.8	Buy	61	62
Hitachi	6501 JP	Japan	Japan	Industrials	69,936	145.5	Buy	74	97
Japan Airlines	9201 JP	Japan	Japan	Industrials	8,299	63.6	Buy	88	53
Mitsubishi Corp	8058 JP	Japan	Japan	Industrials	72,149	281.5	Buy	70	69
Mitsubishi Electric	6503 JP	Japan	Japan	Industrials	31,211	75.4	Buy	64	96
Mitsui & Co	8031 JP	Japan	Japan	Industrials	59,670	156.7	Buy	78	56
Toyota Tsusho	8015 JP	Japan	Japan	Industrials	22,663	47.2	Buy	93	97
Advantest	6857 JP	Japan	Japan	Semiconductors	29,573	453.8	Buy	73	50
Tokyo Electron	8035 JP	Japan	Japan	Semiconductors	89,081	467.5	Buy	58	50
NEC	6701 JP	Japan	Japan	Software	17,065	61.2	Buy	89	99
TDK	6762 JP	Japan	Japan	Tech Hardware	19,036	81.3	Buy	87	88
Magna Int'l	MG CN	North America	Canada	Cons. Discretionary	15,954	63.2	Buy	80	56
Amazon	AMZN US	North America	United States	Cons. Discretionary	1,641,761	7,177.6	Buy	65	69
Carnival Corp	CCL US	North America	United States	Cons. Discretionary	17,721	464.4	Buy	92	93
D.R. Horton	DHI US	North America	United States	Cons. Discretionary	47,531	334.5	Buy	74	62
Deckers Outdoor	DECK US	North America	United States	Cons. Discretionary	20,066	212.1	Buy	75	90
Domino's Pizza	DPZ US	North America	United States	Cons. Discretionary	14,619	232.4	Buy	67	72
Doordash	DASH US	North America	United States	Cons. Discretionary	39,597	337.7	Buy	89	97
Expedia	EXPE US	North America	United States	Cons. Discretionary	20,942	282.5	Buy	93	90
Hilton	HLT US	North America	United States	Cons. Discretionary	50,375	262.6	Buy	80	89
Lululemon Athletica	LULU US	North America	United States	Cons. Discretionary	58,045	694.9	Buy	70	84
PulteGroup	PHM US	North America	United States	Cons. Discretionary	23,068	191.4	Buy	76	50
Ares Management	ARES US	North America	United States	Div Financials	21,971	98.8	Buy	89	67
Capital One	COF US	North America	United States	Div Financials	52,914	262.2	Buy	66	67
FleetCor Tech	FLT US	North America	United States	Div Financials	21,744	119.1	Buy	55	80
Goldman Sachs	GS US	North America	United States	Div Financials	124,546	695.7	Buy	61	82
KKR	KKR US	North America	United States	Div Financials	76,738	222.1	Buy	77	96
Raymond James	RJF US	North America	United States	Div Financials	23,645	90.7	Buy	52	80
Tradeweb Markets-Class A	TW US	North America	United States	Div Financials	11,216	76.3	Buy	62	92
Howmet Aerospace	HWM US	North America	United States	Industrials	22,849	120.3	Buy	68	93
Old Dominion	ODFL US	North America	United States	Industrials	42,906	287.3	Buy	54	51
Owens Corning	OC US	North America	United States	Industrials	13,493	108.8	Buy	84	54
United Rentals	URI US	North America	United States	Industrials	43,069	332.0	Buy	79	80
Wabtec	WAB US	North America	United States	Industrials	23,283	95.0	Buy	66	95
Meta	META US	North America	United States	Media & Ent.	876,009	6,497.4	Buy	82	59
Netflix	NFLX US	North America	United States	Media & Ent.	252,780	2,343.2	Buy	71	88
Pinterest- Class A	PINS US	North America	United States	Media & Ent.	21,937	306.0	Buy	57	99
Roku	ROKU US	North America	United States	Media & Ent.	11,044	641.8	Buy	100	58
KLA	KLAC US	North America	United States	Semiconductors	81,708	477.7	Buy	51	72
Lam Research	LCRX US	North America	United States	Semiconductors	110,940	705.0	Buy	56	69
Micron Tech	MU US	North America	United States	Semiconductors	96,682	960.3	Buy	85	88
NVIDIA	NVDA US	North America	United States	Semiconductors	1,507,466	20,971.5	Buy	61	96
Aspen Tech	AZPN US	North America	United States	Software	12,969	36.4	Buy	59	50
CyberArk Software	CYBR US	North America	United States	Software	9,679	76.2	Buy	82	95
Dropbox	DBX US	North America	United States	Software	8,330	82.4	Buy	90	86
Hubspot	HUBS US	North America	United States	Software	29,446	270.2	Buy	72	55
MongoDB	MDB US	North America	United States	Software	28,202	550.4	Buy	93	82
Palantir Technologies-A	PLTR US	North America	United States	Software	33,529	1,060.5	Buy	84	72
PTC Inc	PTC US	North America	United States	Software	21,467	113.3	Buy	73	83
Salesforce	CRM US	North America	United States	Software	272,382	1,151.1	Buy	61	87
Servicenow	NOW US	North America	United States	Software	157,197	684.6	Buy	51	91
Synopsys	SNPS US	North America	United States	Software	80,320	412.8	Buy	62	96
UpPath - Class A	PATH US	North America	United States	Software	11,013	157.1	Buy	95	66
Workday	WDAY US	North America	United States	Software	59,746	424.9	Buy	64	88
Jabil	JBL US	North America	United States	Tech Hardware	16,127	215.8	Buy	97	62

Source : BofA Global Quantitative Strategy, MSCI, IBES, S&amp;P, Worldscope, Bloomberg, RavenPack BofA Fundamental Ratings as at 19-Jan-24

BofA GLOBAL RESEARCH



**Table 34: Asia Pac (including Japan) Cyclical Stocks with high Triple Momentum**

Asia Pac including Japan cyclical stocks with above average Boosters and Triple Momentum Ranks with a BofA Buy Rating

Company Name	BBG Code	Country	Sector	MCAP (Total		Avg Daily TO	BofA	Boosters	Triple Momentum
				\$USm)	(6m \$US m)		Ratings	Ranks	Rank
Great Wall Motor-H	2333 HK	China	Cons. Discretionary	2,436	34.0	Buy	66	60	
Li Auto	2015 HK	China	Cons. Discretionary	24,164	134.2	Buy	97	54	
New Oriental Education & Tec	9901 HK	China	Cons. Discretionary	13,144	21.1	Buy	96	86	
PDD Hldgs	PDD US	China	Cons. Discretionary	188,354	916.1	Buy	76	92	
Tal Education-ADR	TAL US	China	Cons. Discretionary	5,751	63.9	Buy	99	86	
Trip.com	9961 HK	China	Cons. Discretionary	23,999	44.9	Buy	89	70	
Vipshop-ADR	VIPS US	China	Cons. Discretionary	7,451	50.1	Buy	93	80	
Futu-ADR	FUTU US	China	Div Financials	4,509	111.1	Buy	98	65	
BYD Electronic	285 HK	China	Tech Hardware	8,046	27.5	Buy	82	65	
Manappuram Fin.	MGFL IN	India	Div Financials	1,811	22.4	Buy	90	57	
Shriram Finance	SHFL IN	India	Div Financials	10,419	30.8	Buy	50	98	
Ashok Leyland	AL IN	India	Industrials	5,997	30.8	Buy	58	56	
Interglobe Aviation	INDIGO IN	India	Industrials	13,289	32.6	Buy	98	61	
Mazda Motor	7261 JP	Japan	Cons. Discretionary	7,266	60.5	Buy	87	77	
Nissan	7201 JP	Japan	Cons. Discretionary	15,973	110.0	Buy	89	77	
Suzuki Motor	7269 JP	Japan	Cons. Discretionary	20,888	70.3	Buy	66	79	
Nomura	8604 JP	Japan	Div Financials	15,877	50.9	Buy	87	75	
ORIX	8591 JP	Japan	Div Financials	23,515	72.8	Buy	70	64	
Hitachi	6501 JP	Japan	Industrials	69,936	145.5	Buy	56	81	
Makita	6586 JP	Japan	Industrials	7,446	23.8	Buy	90	60	
Mitsubishi Electric	6503 JP	Japan	Industrials	31,211	75.4	Buy	57	93	
Toyota Tsusho	8015 JP	Japan	Industrials	22,663	47.2	Buy	60	78	
Yamato Trans	9064 JP	Japan	Industrials	6,646	21.3	Buy	69	51	
NEC	6701 JP	Japan	Software	17,065	61.2	Buy	91	96	
Kyocera	6971 JP	Japan	Tech Hardware	22,058	53.1	Buy	58	61	
TDK	6762 JP	Japan	Tech Hardware	19,036	81.3	Buy	67	94	
Grab	GRAB US	Singapore	Industrials	12,017	64.6	Buy	98	59	
Hanwha Aerospace	012450 KS	South Korea	Industrials	5,327	47.6	Buy	95	51	
Hybe	352820 KS	South Korea	Media & Ent.	6,748	51.9	Buy	96	72	
JYP Entertainment	035900 KS	South Korea	Media & Ent.	2,176	45.4	Buy	65	56	
Naver	035420 KS	South Korea	Media & Ent.	26,579	133.8	Buy	70	96	
Samsung Electronics	005930 KS	South Korea	Tech Hardware	327,919	733.1	Buy	51	97	
Makalot Ind.	1477 TT	Taiwan	Cons. Discretionary	2,685	27.4	Buy	55	90	
Faraday Tech	3035 TT	Taiwan	Semiconductors	3,350	218.6	Buy	76	95	
Asustek	2357 TT	Taiwan	Tech Hardware	10,416	82.7	Buy	85	99	
Quanta	2382 TT	Taiwan	Tech Hardware	29,859	471.4	Buy	62	93	

Source : BofA Global Quantitative Strategy, MSCI, IBES, S&amp;P, Worldscope, Bloomberg, RavenPack

BofA GLOBAL RESEARCH

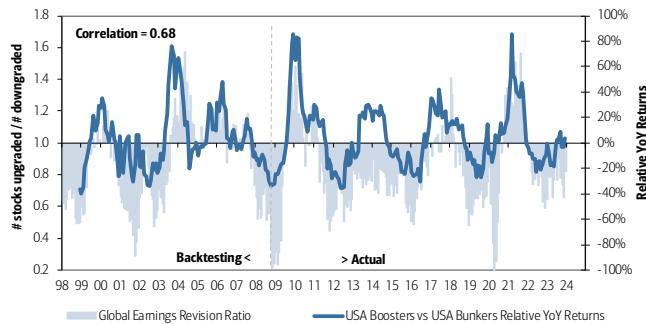


# Regional Boosters and Bunkers

## USA Bunkers and Boosters

### Chart 255: USA Boosters and Bunkers: YoY Returns vs Global Earnings Expectations

USA Boosters outperforms, on average during an improving earnings cycle



Source : BofA Global Quantitative Strategy, MSCI, IBES

Back-tested results are from Jan-98 to Sep-08. Actual performance is from Oct-08. Back-tested 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.

BofA GLOBAL RESEARCH

### Chart 257: USA Boosters and Bunkers: relative cumulative performance

USA Boosters have outperformed by 3.3% in the last Year-to-Date



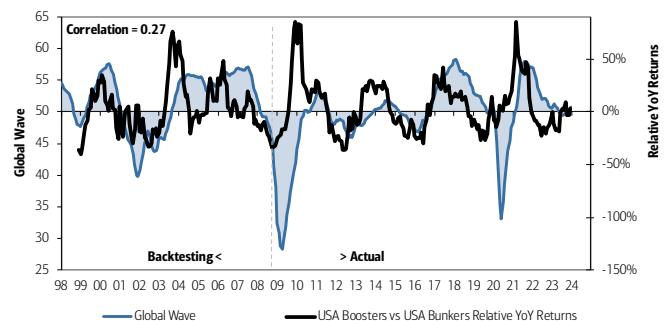
Source : BofA Global Quantitative Strategy, MSCI, IBES

Back-tested results are from Jan-98 to Sep-08. Actual performance is from Oct-08. Back-tested 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.

BofA GLOBAL RESEARCH

### Chart 256: USA Boosters and Bunkers: YoY Returns vs Global Wave

USA Boosters outperforms, on average during rising Global Wave



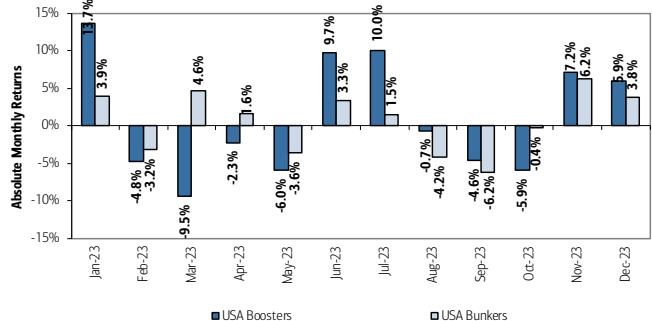
Source : BofA Global Quantitative Strategy, MSCI, IBES, Haver, Bloomberg, OECD, IMF, ICE Bond Indices, National Statistics Database, S&P, Worldscope

Back-tested results are from Jan-98 to Sep-08. Actual performance is from Oct-08. Back-tested 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.

BofA GLOBAL RESEARCH

### Chart 258: USA Boosters and Bunkers Monthly Performance: Last 12-Months

USA Boosters has outperformed in 2 out of last 3 months



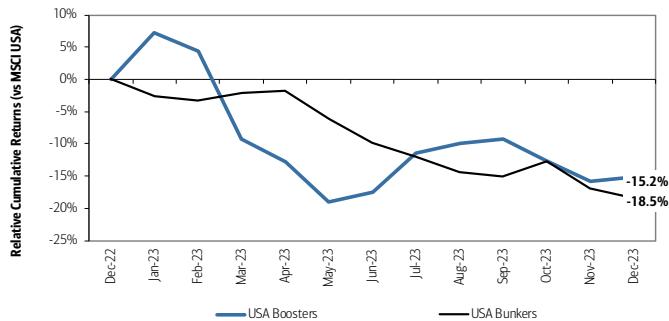
Source : BofA Global Quantitative Strategy, MSCI, IBES

BofA GLOBAL RESEARCH



### Chart 259: USA Boosters and Bunkers: Cumulative 12 month relative performance

Boosters outperformed Bunkers in the last 12-months

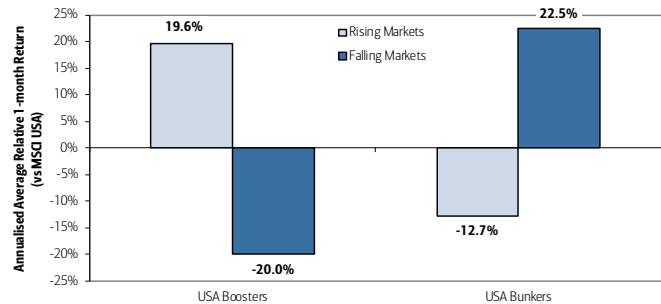


Source : BofA Global Quantitative Strategy, MSCI, IBES

BofA GLOBAL RESEARCH

### Chart 260: USA Boosters and Bunkers: Performance in Rising & Falling Markets

Performance of USA Boosters and Bunkers tends to move with the cycle



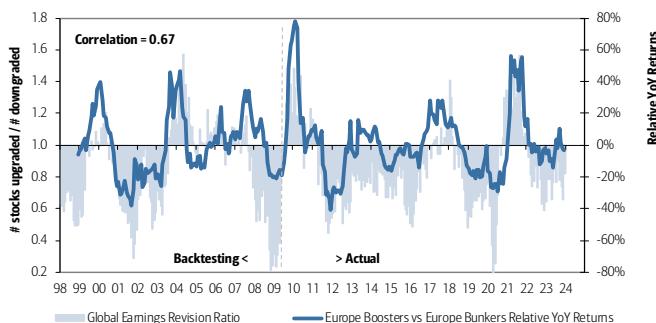
Source : BofA Global Quantitative Strategy, MSCI, IBES

BofA GLOBAL RESEARCH

## Europe Bunkers and Boosters

### Chart 261: Europe Boosters and Bunkers: YoY Returns vs Global Earnings Expectations

Europe Boosters versus Bunkers has a 67% correlation with trends in earnings cycle



Source : BofA Global Quantitative Strategy, MSCI, IBES

Back-tested results are from Jan-98 to Sep-08. Actual performance is from Oct-08. Back-tested 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.

BofA GLOBAL RESEARCH

### Chart 263: Europe Boosters and Bunkers: relative cumulative performance

Europe Boosters have outperformed by 5.4% in the last 6 Months



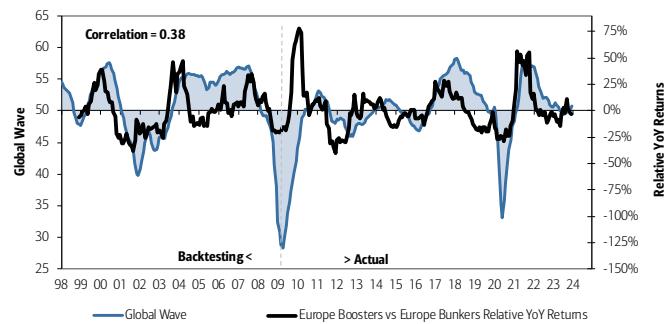
Source : BofA Global Quantitative Strategy, MSCI, IBES

Back-tested results are from Jan-98 to Sep-08. Actual performance is from Oct-08. Back-tested 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.

BofA GLOBAL RESEARCH

### Chart 262: Europe Boosters and Bunkers: YoY Returns vs Global Wave

Bunkers outperforms Boosters, on average during falling Global Wave



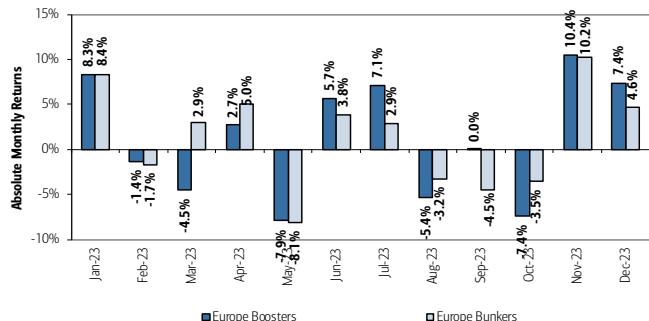
Source : BofA Global Quantitative Strategy, MSCI, IBES, Haver, Bloomberg, OECD, IMF, ICE Bond Indices, National Statistics Database, S&P, Worldscope

Back-tested results are from Jan-98 to Sep-08. Actual performance is from Oct-08. Back-tested 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.

BofA GLOBAL RESEARCH

### Chart 264: Europe Boosters and Bunkers Monthly Performance: Last 12-Months

Europe Boosters has outperformed in 2 out of last 3 months

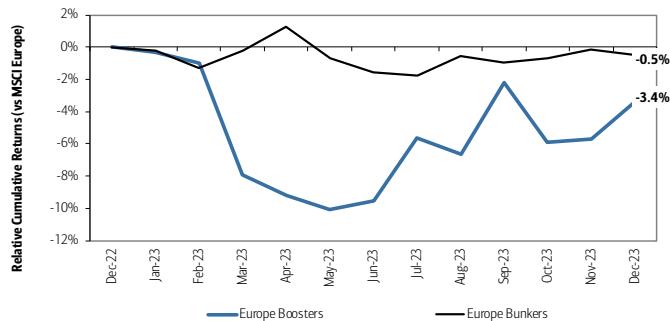


Source : BofA Global Quantitative Strategy, MSCI, IBES

BofA GLOBAL RESEARCH

### Chart 265: Europe Boosters and Bunkers: Cumulative 12 month relative performance

Bunkers outperformed Boosters by 2.9% in the last 12-months

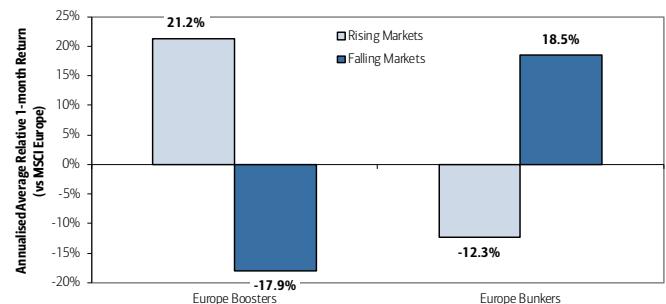


Source : BofA Global Quantitative Strategy, MSCI, IBES

BofA GLOBAL RESEARCH

### Chart 266: Europe Boosters and Bunkers: Performance in Rising & Falling Markets

Boosters outperforms in rising markets, underperforms in falling markets



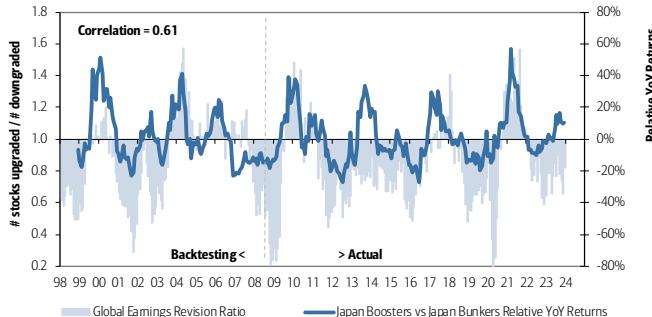
Source : BofA Global Quantitative Strategy, MSCI, IBES

BofA GLOBAL RESEARCH

## Japan Bunkers and Boosters

### Chart 267: Japan Boosters and Bunkers: YoY Returns vs Global Earnings Expectations

Boosters outperforms Bunkers, on average during an improving earnings cycle



Source : BofA Global Quantitative Strategy, MSCI, IBES

Back-tested results are from Jan-98 to Sep-08. Actual performance is from Oct-08. Back-tested 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.

BofA GLOBAL RESEARCH

### Chart 269: Japan Boosters and Bunkers: relative cumulative performance

Japan Boosters have underperformed by -0.3% in the last 3 Months



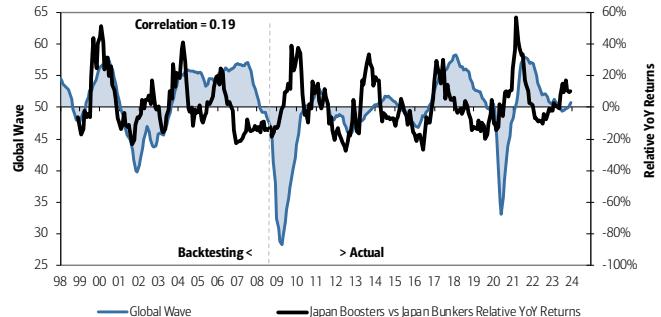
Source : BofA Global Quantitative Strategy, MSCI, IBES

Back-tested results are from Jan-98 to Sep-08. Actual performance is from Oct-08. Back-tested 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.

BofA GLOBAL RESEARCH

### Chart 268: Japan Boosters and Bunkers: YoY Returns vs Global Wave

Japan Boosters versus Bunkers has a 19% correlation with the Global Wave



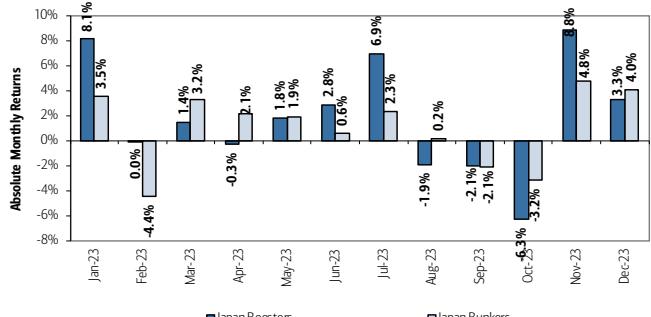
Source : BofA Global Quantitative Strategy, MSCI, IBES, Haver, Bloomberg, OECD, IMF, ICE Bond Indices, National Statistics Database, S&P, Worldscope

Back-tested results are from Jan-98 to Sep-08. Actual performance is from Oct-08. Back-tested 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.

BofA GLOBAL RESEARCH

### Chart 270: Japan Boosters and Bunkers Monthly Performance: Last 12-Months

Japan Bunkers has outperformed in 3 out of last 6 months

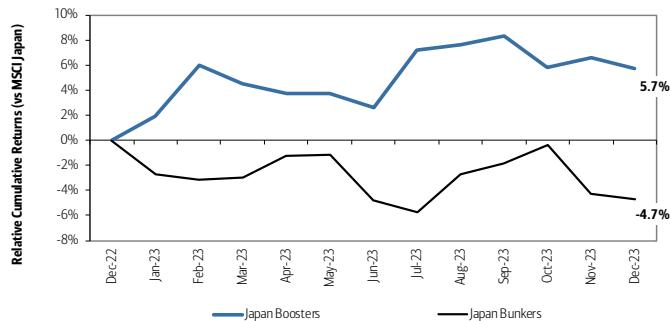


Source : BofA Global Quantitative Strategy, MSCI, IBES

BofA GLOBAL RESEARCH

### Chart 271: Japan Boosters and Bunkers: Cumulative 12 month relative performance

Boosters outperformed Bunkers by 10.4% in the last 12-months

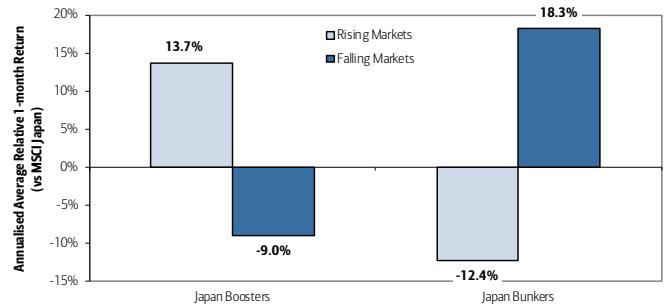


Source : BofA Global Quantitative Strategy, MSCI, IBES

BofA GLOBAL RESEARCH

### Chart 272: Japan Boosters and Bunkers: Performance in Rising & Falling Markets

Bunkers outperforms in falling markets, underperforms in rising markets



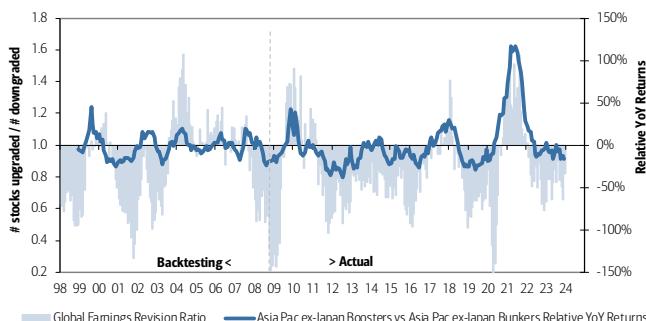
Source : BofA Global Quantitative Strategy, MSCI, IBES

BofA GLOBAL RESEARCH

## Asia Pac ex-Japan Bunkers and Boosters

### Chart 273: Asia Pac ex-Japan Boosters and Bunkers: YoY Returns vs Global Earnings Expectations

Boosters outperforms Bunkers, on average during an improving earnings cycle



Source : BofA Global Quantitative Strategy, MSCI, IBES

Back-tested results are from Jan-98 to Sep-08. Actual performance is from Oct-08. Back-tested 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.

BofA GLOBAL RESEARCH

### Chart 275: Asia Pac ex-Japan Boosters and Bunkers: relative cumulative performance

Asia Pac ex-Japan Boosters have underperformed by -0.4% in the last 1 Month



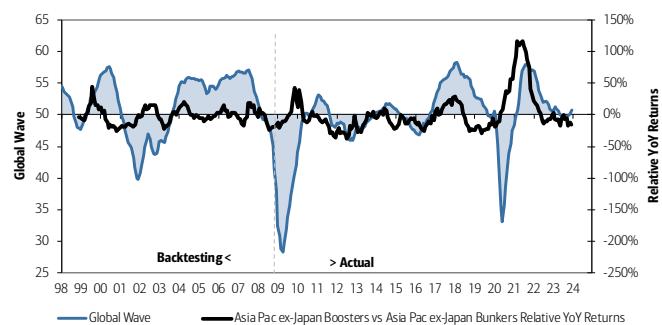
Source : BofA Global Quantitative Strategy, MSCI, IBES

Back-tested results are from Jan-98 to Sep-08. Actual performance is from Oct-08. Back-tested 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.

BofA GLOBAL RESEARCH

### Chart 274: Asia Pac ex-Japan Boosters and Bunkers: YoY Returns vs Global Wave

Bunkers outperforms Boosters, on average during falling Global Wave



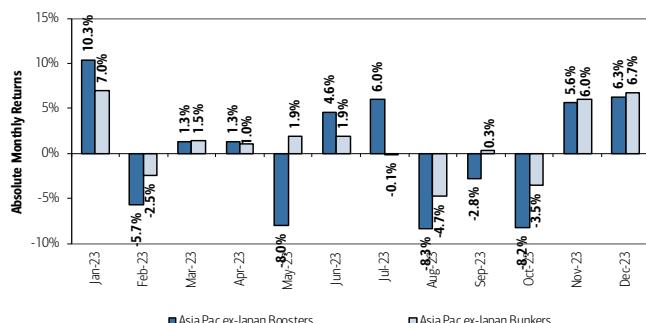
Source : BofA Global Quantitative Strategy, MSCI, IBES, Haver, Bloomberg, OECD, IMF, ICE Bond Indices, National Statistics Database, S&P, Worldscope

Back-tested results are from Jan-98 to Sep-08. Actual performance is from Oct-08. Back-tested 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.

BofA GLOBAL RESEARCH

### Chart 276: Asia Pac ex-Japan Boosters and Bunkers Monthly Performance: Last 12-Months

APxJ Bunkers has outperformed in 3 out of last 6 months

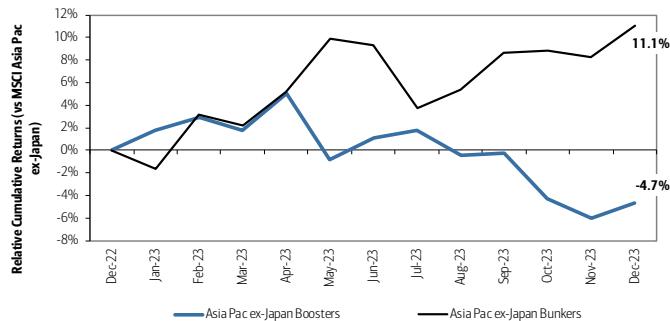


Source : BofA Global Quantitative Strategy, MSCI, IBES

BofA GLOBAL RESEARCH

### Chart 277: Asia Pac ex-Japan Boosters and Bunkers: Cumulative 12 month relative performance

Bunkers outperformed Boosters by 15.7% in the last 12-months

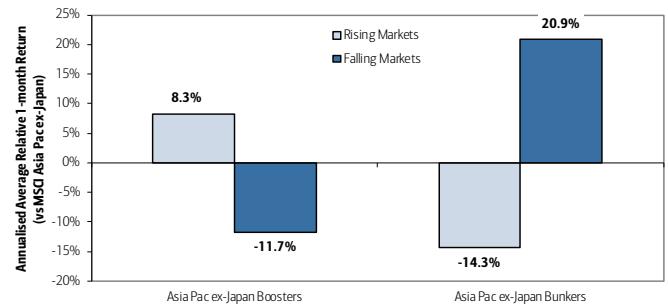


Source : BofA Global Quantitative Strategy, MSCI, IBES

BofA GLOBAL RESEARCH

### Chart 278: Asia Pac ex-Japan Boosters and Bunkers: Performance in Rising & Falling Markets

Bunkers outperforms in falling markets, underperforms in rising markets



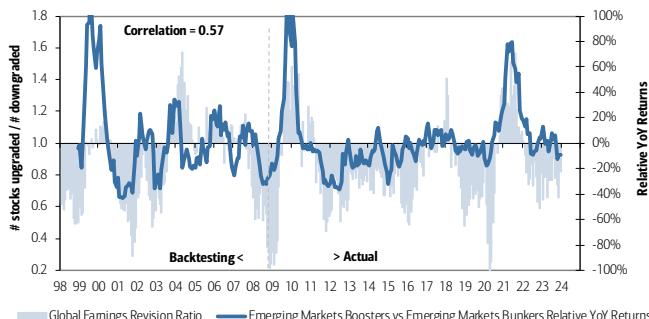
Source : BofA Global Quantitative Strategy, MSCI, IBES

BofA GLOBAL RESEARCH

## Emerging Markets Bunkers and Boosters

### Chart 279: Emerging Markets Boosters and Bunkers: YoY Returns vs Global Earnings Expectations

EM Boosters versus Bunkers has a 57% correlation with trends in earnings cycle



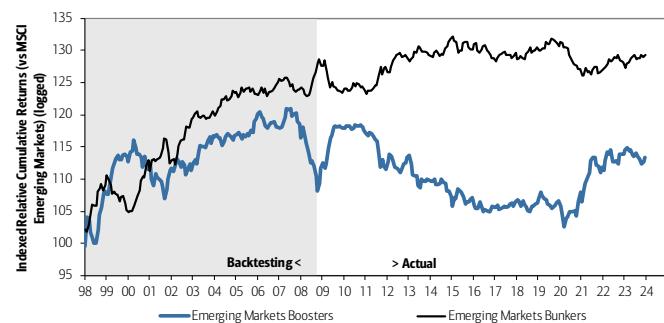
Source : BofA Global Quantitative Strategy, MSCI, IBES

Back-tested results are from Jan-98 to Sep-08. Actual performance is from Oct-08. Back-tested 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.

BofA GLOBAL RESEARCH

### Chart 281: Emerging Markets Boosters and Bunkers: relative cumulative performance

Emerging Markets Boosters have underperformed by -1.2% in the last 3 Months



Source : BofA Global Quantitative Strategy, MSCI, IBES

Back-tested results are from Jan-98 to Sep-08. Actual performance is from Oct-08. Back-tested 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.

BofA GLOBAL RESEARCH

### Chart 280: Emerging Markets Boosters and Bunkers: YoY Returns vs Global Wave

Boosters outperforms Bunkers, on average during rising Global Wave



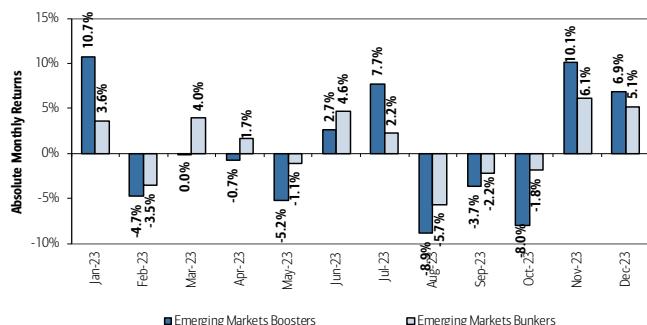
Source : BofA Global Quantitative Strategy, MSCI, IBES, Haver, Bloomberg, OECD, IMF, ICE Bond Indices, National Statistics Database, S&P, Worldscope

Back-tested results are from Jan-98 to Sep-08. Actual performance is from Oct-08. Back-tested 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.

BofA GLOBAL RESEARCH

### Chart 282: Emerging Markets Boosters and Bunkers Monthly Performance: Last 12-Months

EM Boosters has outperformed EM Bunkers last month

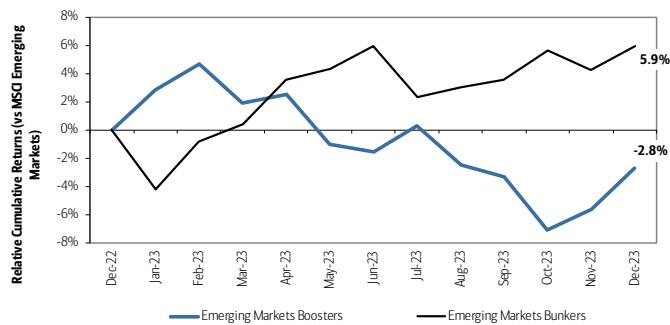


Source : BofA Global Quantitative Strategy, MSCI, IBES

BofA GLOBAL RESEARCH

### Chart 283: Emerging Markets Boosters and Bunkers: Cumulative 12 month relative performance

Bunkers outperformed Boosters in the last 12-months

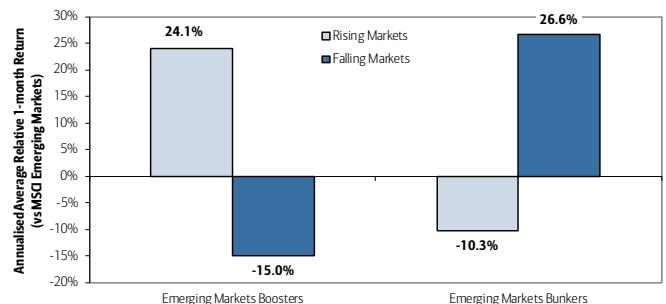


Source : BofA Global Quantitative Strategy, MSCI, IBES

BofA GLOBAL RESEARCH

### Chart 284: Emerging Markets Boosters and Bunkers: Performance in Rising & Falling Markets

Boosters outperforms in rising markets, underperforms in falling markets



Source : BofA Global Quantitative Strategy, MSCI, IBES

BofA GLOBAL RESEARCH

## Boosters by Investor Type

In this analysis, we screen for stocks with characteristics that tend to outperform in an economic upturn that also overlap with the Quality, Value, Growth or Dividend styles in order to help investors with style biases position more aggressively.

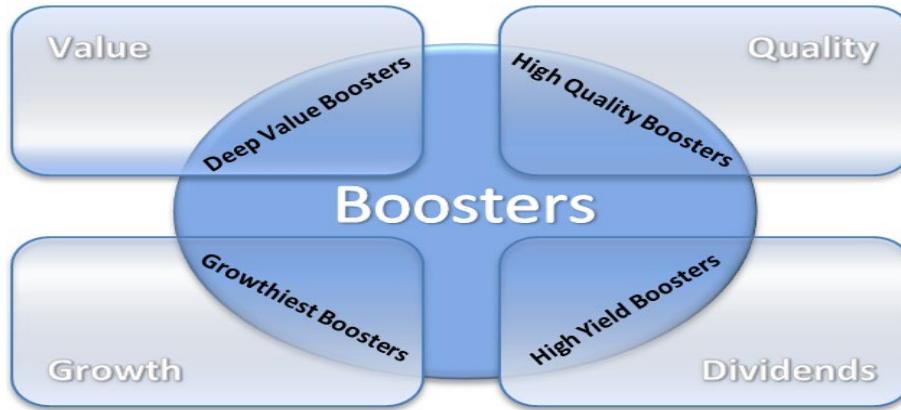
Boosters are stocks with style characteristics that tend to outperform in economic upturns. History shows that when our macro indicator – the Global Wave – is rising some styles tend to outperform, including Value, High Growth, Low Quality, High Risk, Momentum and Small Size. Boosters are stocks with these characteristics.

We provide these four types of Boosters screens for a global universe of stocks and also for each region of the world (US, Europe, Japan, Asia Pac ex-Japan, and Emerging Markets). The four global Boosters screens include 30 stocks while the various regional Boosters screens include 25 stocks. Refer to the appendix "[Boosters by Investor Type Methodology](#)" for a detailed description of the Screen Construction Methodology. Refer to appendix "[Boosters by Investor Type Performance](#)" for detailed performance data and advance decline statistics.

We highlight stocks that currently screen as High Quality Boosters, Growthiest Boosters, Deep Value Boosters and High Yield Boosters in each region of the world. See "[Regional Boosters by Investor Type](#)".

### Chart 285: Boosters for four types of investors: Value, Quality, Growth and Dividends

Four types of Boosters that overlaps with Quality, Value, Growth or Dividend styles



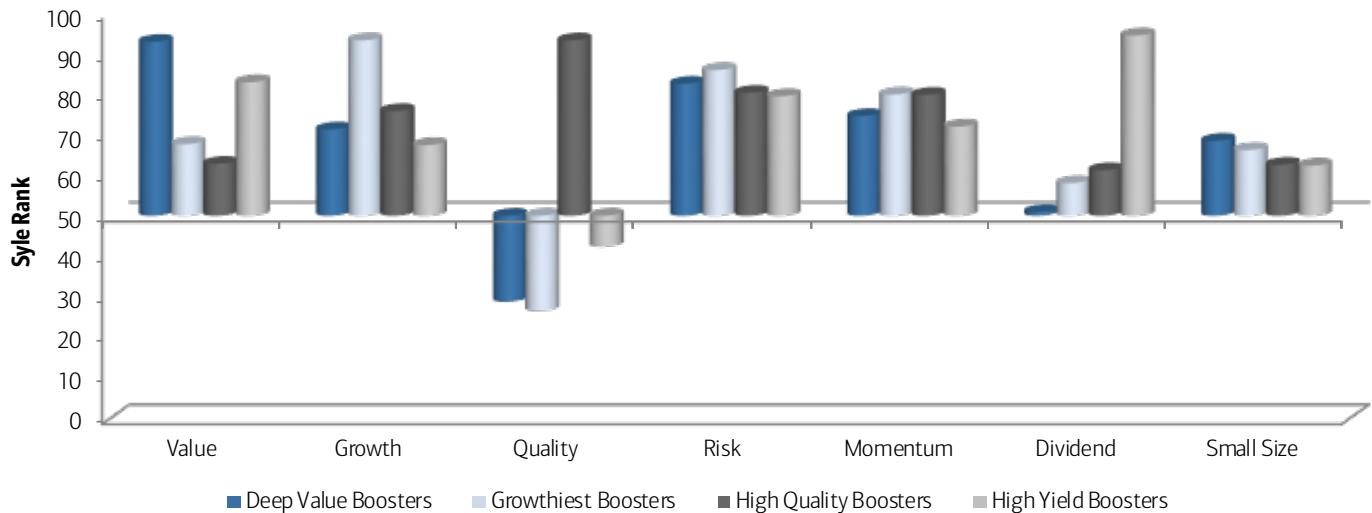
Source : BofA Global Quantitative Strategy

BofA GLOBAL RESEARCH

# Global Boosters by Investor Type

## Chart 286: Style Tilts: Global Boosters by Investor Type

High Quality Boosters provides exposure to Quality stocks with an upturn style characteristics

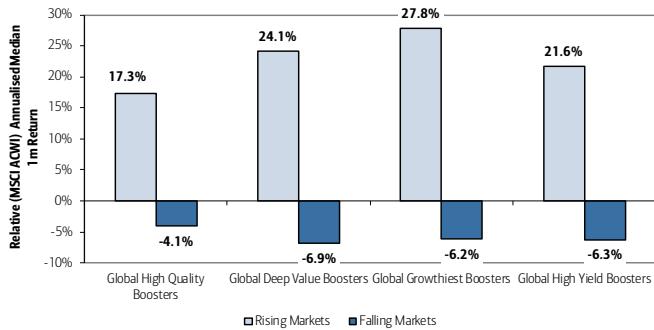


Source : BofA Global Quantitative Strategy, MSCI, IBES, Worldscope, Exshare, S&P, Bloomberg

BofA GLOBAL RESEARCH

## Chart 287: Performance in Rising and Falling Markets

All four types of Boosters outperforms in rising markets, underperforms in falling markets

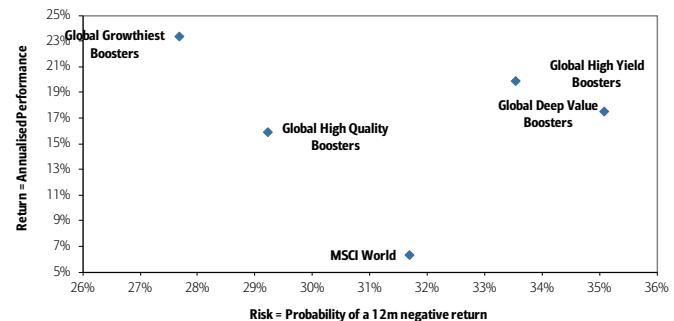


Source : BofA Global Quantitative Strategy, MSCI, IBES, Worldscope, Exshare, S&P, Bloomberg  
Back-tested results are from Jan-96 to Aug-16. Actual performance is from Sep-16. Back-tested performance depicts the theoretical (not actual) performance of a particular strategy over the time period indicated. No representation is being made that any actual portfolio is likely to have achieved returns similar to those shown herein.

BofA GLOBAL RESEARCH

## Chart 288: Risk-return profile of Global Boosters by Investor Type

Growthiest Boosters have the best risk-return characteristics



Source : BofA Global Quantitative Strategy, MSCI, IBES, Worldscope, Exshare, S&P, Bloomberg  
Risk = Probability of a 12m negative return

BofA GLOBAL RESEARCH

# Global Contenders & Defenders

The universe of large and liquid stocks included in this analysis is selected from the constituents of the MSCI AC World Index that meet our market cap, turnover and coverage requirements. The universe will be recalculated every 6 months in line with the six-month rebalancing of the MSCI Index.

For a stock to be included in the analysis it must be in the largest 60% of stocks of the MSCI AC World Index by market cap, the largest 60% by average daily turnover in the last 6 months and last 20-days, and it must have a minimum of three consensus earnings estimates. This table shows the minimum values for each requirement as of December 2023, the most recent universe rebalance.

The Global Contenders & Defenders are determined at the end of each month using month-end data from MSCI, IBES, and ExShare databases. Stocks in the firm's restricted list at the time of the month-end analysis are excluded from the analysis.

Our monthly analysis produces rankings for each eligible security for earnings momentum, price momentum and valuation.

## Chart 289: Global Contenders Ranks Definition

Contenders Rank is a combination of Earnings Momentum, Price Momentum and PE Rank

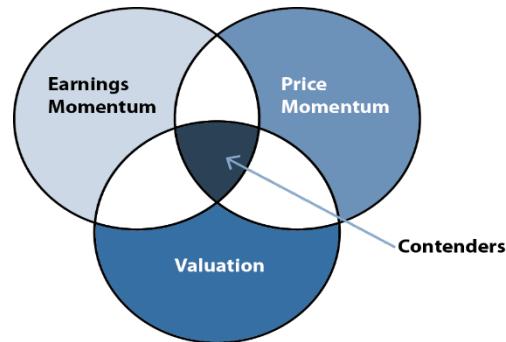
- An Earnings Revision Rank from 1 (worst) to 100 (best) is a percentile rank calculated for each stock based on a 3-month earnings revision to consensus EPS estimates.
- A Price Momentum Rank from 1 (worst) to 100 (best) is a percentile rank calculated for each stock based on the slope of a log-linear regression of daily prices in last twelve months.
- A PE Rank from 1 (worst) to 100 (best) is a percentile rank calculated for each stock based on Price-to-12-month-forward EPS forecast.
- The Contenders Rank is a combination of the Earnings Revision Rank, Price Momentum Rank, and PE Rank.

Source : BofA Global Quantitative Strategy

BofA GLOBAL RESEARCH

## Chart 290: Global Contenders Methodology

Thirty-stocks Global Contenders are inexpensive stocks with rising earnings and price momentum



Source : BofA Global Quantitative Strategy

BofA GLOBAL RESEARCH

At inception in May 2010, the Global Contenders were the thirty lowest PE stocks with above average earnings momentum and price momentum that met the region and sector distribution of the MSCI AC World Index (subject to rounding). In each subsequent month, a stock will drop out of the Global Contenders only when either the Earnings Revision Rank falls below average (rank of 50) or the Price Momentum Rank falls below average (rank of 50). When a stock falls out of the Contenders it is replaced by the stock with the highest Contenders Rank that is not already a Contender, subject to regional and sector constraints.

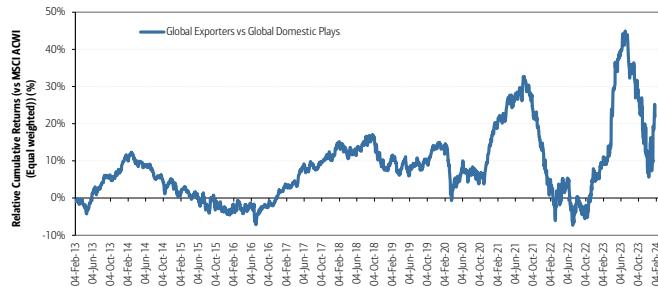
At inception, the Global Defenders were the thirty highest PE stocks with below average earnings momentum and price momentum that met the region and sector distribution of the MSCI AC World Index (subject to rounding). In each subsequent month, a stock will drop out of the Global Defenders only when either the Earnings Revision Rank moves above average (rank of 50) or the Price Momentum Rank moves above average (rank of 50). When a stock falls out of the Defenders it is replaced by the stock with the lowest Contenders Rank that is not already a Defender, subject to regional and sector constraints.

Our back-testing results showed the average monthly turnover rate to be 25% for the Global Contenders and 27% for the Global Defenders. This indicates that roughly 7-8 stocks of the 30 Contenders and 7-8 stocks of the 30 Defenders would be expected to change each month, on average.

# Geographic Revenue Exposure

## Chart 291: Global Exporters vs. Domestic Plays Relative Cumulative Performance

Global Exporters have outperformed Domestic Plays by +4.4% year-to-date

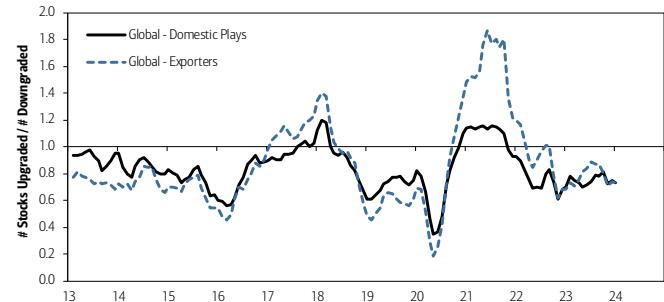


Source : BofA Global Quantitative Strategy, MSCI, Bloomberg, FactSet

BofA GLOBAL RESEARCH

## Chart 292: Earnings Revision Ratio: Global Domestic Plays vs. Exporters

3-Month Ratio is higher for Global Domestic Plays compared to Exporters

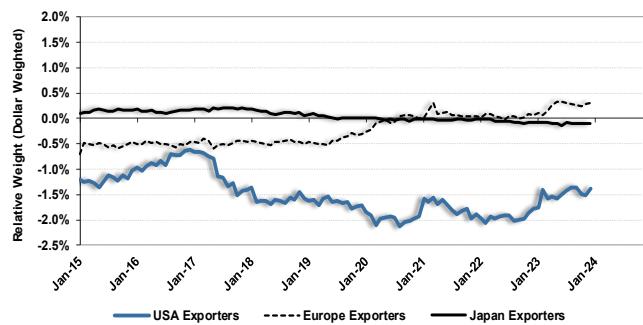


Source : BofA Global Quantitative Strategy, MSCI, IBES, Bloomberg, FactSet

BofA GLOBAL RESEARCH

## Chart 293: USA, Europe & Japan - Exporters Positioning

Funds are most underweight USA Exporters

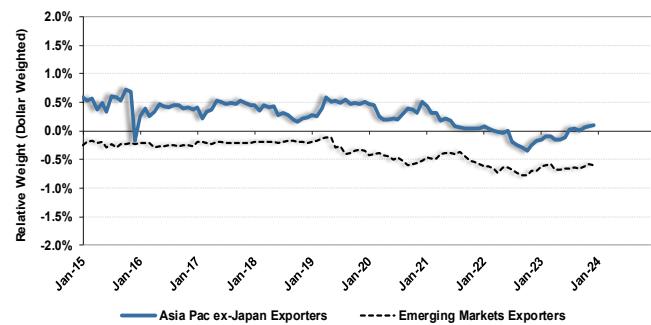


Source : BofA Global Quantitative Strategy, MSCI, Bloomberg, FactSet

BofA GLOBAL RESEARCH

## Chart 294: APxJ & Emerging Markets - Exporters Positioning

Funds are overweight Asia Pac ex-Japan Exporters

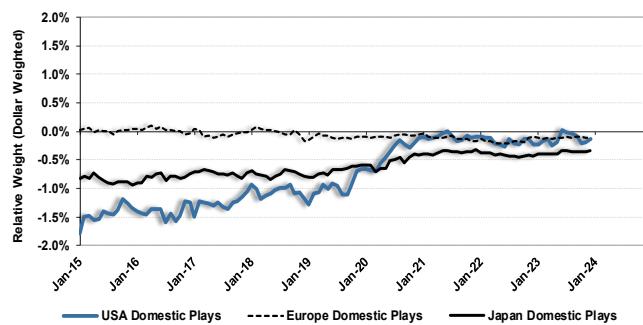


Source : BofA Global Quantitative Strategy, MSCI, Bloomberg, FactSet

BofA GLOBAL RESEARCH

## Chart 295: USA, Europe & Japan - Domestic Plays Positioning

Long-only funds are underweight Domestic Plays in Japan

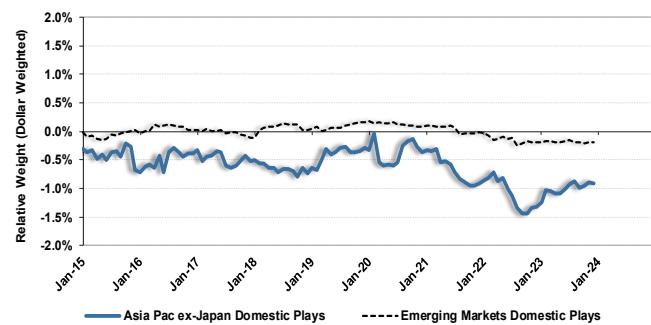


Source : BofA Global Quantitative Strategy, MSCI, Bloomberg, FactSet

BofA GLOBAL RESEARCH

## Chart 296: APxJ & Emerging Markets - Domestic Plays Positioning

Funds are most underweight Asia Pac ex-Japan Domestic Plays



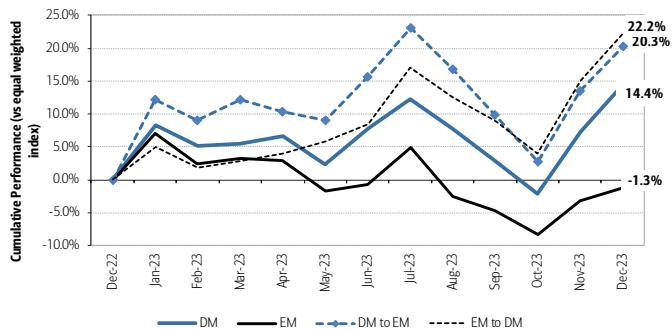
Source : BofA Global Quantitative Strategy, MSCI, Bloomberg, FactSet

BofA GLOBAL RESEARCH



### Chart 297: Performance (equal-weighted) based on Region and Revenue Exposure

In the last 12m, EM to DM performed the best, and EM performed the worst

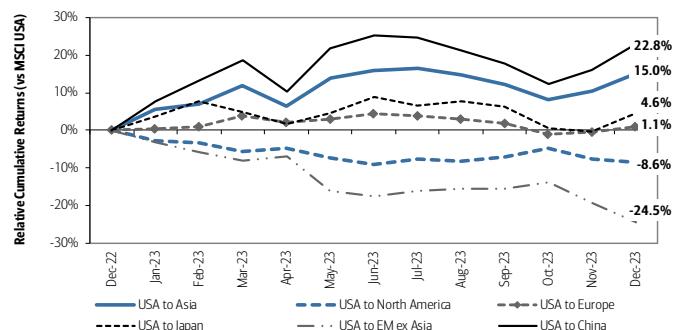


Source : BofA Global Quantitative Strategy, MSCI, Bloomberg, FactSet

BofA GLOBAL RESEARCH

### Chart 298: Performance of US stocks by regional revenue exposure

USA Exporters have mixed returns in the last 12m

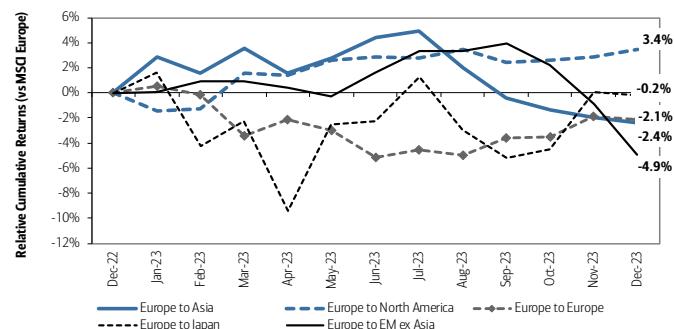


Source : BofA Global Quantitative Strategy, MSCI, Bloomberg, FactSet

BofA GLOBAL RESEARCH

### Chart 299: Performance of Europe stocks by regional revenue exposure

Europe Exporters have mixed returns in the last 12m

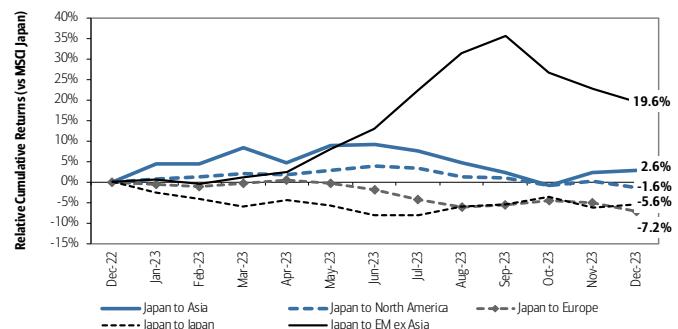


Source : BofA Global Quantitative Strategy, MSCI, Bloomberg, FactSet

BofA GLOBAL RESEARCH

### Chart 300: Performance of Japan stocks by regional revenue exposure

In the last 12m, Exporters from Japan to EM ex Asia performed the best

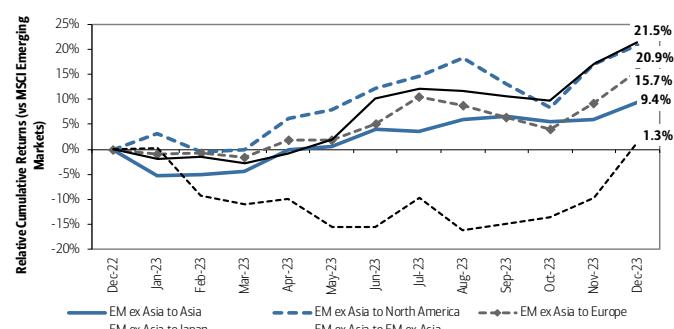


Source : BofA Global Quantitative Strategy, MSCI, Bloomberg, FactSet

BofA GLOBAL RESEARCH

### Chart 301: Performance of EM ex Asia stocks by regional revenue exposure

In the last 12m, Exporters from EM ex Asia to EM ex Asia performed the best

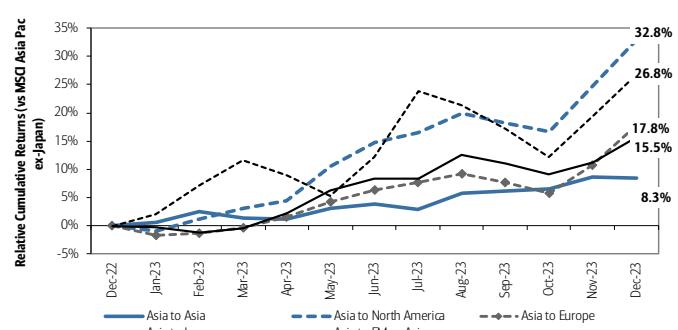


Source : BofA Global Quantitative Strategy, MSCI, Bloomberg, FactSet

BofA GLOBAL RESEARCH

### Chart 302: Performance of Asia Pac ex-Japan stocks by regional revenue exposure

APx Exporters have outperformed in the last 12m



Source : BofA Global Quantitative Strategy, MSCI, Bloomberg, FactSet

BofA GLOBAL RESEARCH



### Chart 303: Performance of DM stocks with Revenue exposure to China (YoY) vs Earnings Cycle

DM stocks with revenue exposure to China tend to underperform in global downturns



Source : BofA Global Quantitative Strategy, MSCI, Bloomberg, FactSet

BofA GLOBAL RESEARCH

### Table 35: Global ex-Japan stocks with revenue exposure to Japan

Screen to highlight Global non-Japan stocks with revenue exposure to Japan

Symbol	Company Name	BBG Code	Country	Region	Sector	MCAP (Total \$ US m)	Avg Daily TO (6m \$US m)	Revenue Exposure
202636	AFLAC	AFL US	United States	North America	Insurance	49,010	178.8	64%
676100	Anglo Platinum	AMS SJ	South Africa	Emerging ex-Asia	Materials	13,985	14.9	37%
004561	Antofagasta	ANTO LN	United Kingdom	Europe	Materials	21,107	14.9	28%
281911	Prudential Fin.	PRU US	United States	North America	Insurance	37,647	147.9	26%
287932	Teck Resources	TECK/B CN	Canada	North America	Materials	21,748	70.2	19%
BNG8PQ	NN Group	NN NA	Netherlands	Europe	Insurance	11,255	40.4	18%
B61X7R	SITC Int'l	1308 HK	China	Asia Pac ex-Japan	Industrials	4,631	8.1	18%
200784	AMD	AMD US	United States	North America	Semiconductors	238,166	6,622.1	18%
B1ZX58	Anglo American (UK)	AAL LN	United Kingdom	Europe	Materials	33,602	68.3	16%
645166	Lagan Precision	3008 TT	Taiwan	Asia Pac ex-Japan	Tech Hardware	12,481	57.1	15%
204685	Albemarle	ALB US	United States	North America	Materials	16,954	392.2	15%
B0MP1B	Shenzhou Intl	2313 HK	China	Asia Pac ex-Japan	Cons. Discretionary	15,478	37.4	14%
250665	Lattice Semi	LSCC US	United States	North America	Semiconductors	9,509	149.3	14%
B4TPSL	Alchip Tech	3661 TT	Taiwan	Asia Pac ex-Japan	Semiconductors	7,907	201.3	14%
614469	BHP	BHP AU	Australia	Asia Pac ex-Japan	Materials	174,351	255.8	13%
BHNCRK	ESR	1821 HK	Hong Kong	Asia Pac ex-Japan	Real Estate	6,026	6.7	12%
B3BQFC	Adaro Energy Indonesia	ADRO JI	Indonesia	Asia Pac ex-Japan	Energy	4,944	7.7	12%
203206	Analog Devices	ADI US	United States	North America	Semiconductors	98,945	587.4	11%
238086	W.W. Grainger	GWW US	United States	North America	Industrials	41,435	195.4	11%
BYZWMR	Vat Group Ag	VACN SW	Switzerland	Europe	Industrials	15,024	25.1	11%
235211	Freeport-McMoRan	FCX US	United States	North America	Materials	61,030	415.9	11%
250224	Lam Research	LCRX US	United States	North America	Semiconductors	103,564	705.0	10%
BMWS3X	Viatris	VTRS US	United States	North America	Health Care	12,991	87.1	10%
BMD02L	UiPath - Class A	PATH US	United States	North America	Software	12,030	157.1	10%

Source : BofA Global Quantitative Strategy, MSCI, Bloomberg, FactSet

BofA GLOBAL RESEARCH



**Table 36: Developed Markets stocks with revenue exposure to China**

Screen to highlight Developed Markets stocks with revenue exposure to China

Symbol	Company Name	BBG Code	Country	Sector	MCAP (Total \$US m)	Avg Daily TO (6m) \$US m	Revenue Exposure
608625	Fortescue	FMG AU	Australia	Materials	60,969	97.3	89%
271492	Qualcomm	QCOM US	United States	Semiconductors	161,407	1,001.0	62%
614469	BHP	BHPAU	Australia	Materials	174,351	255.8	58%
686930	TDK	6762JP	Japan	Tech Hardware	18,523	81.3	55%
622010	Rio Tinto	RIO AU	Australia	Materials	34,363	114.5	54%
B01Z7J	Monolithic Power	MPWR US	United States	Semiconductors	30,137	270.2	52%
B17KC6	Wilmar Int'l	WIL SP	Singapore	Cons. Staples	17,330	14.9	51%
661040	Murata	6981JP	Japan	Tech Hardware	43,043	106.9	50%
288540	Texas Instruments	TXN US	United States	Semiconductors	154,772	845.0	49%
234760	First Quantum	FM CN	Canada	Materials	5,704	70.1	46%
250665	Lattice Semi	LSCC US	United States	Semiconductors	9,509	149.3	45%
BNKJSM	Marvell Tech	MRVL US	United States	Semiconductors	52,035	548.1	42%
680060	Sharp	6753JP	Japan	Cons. Discretionary	4,639	24.1	39%
588950	Infineon	IFXGR	Germany	Semiconductors	54,530	143.5	37%
664050	Nippon Paint	4612JP	Japan	Materials	19,169	27.9	36%
B505PN	NXP Semiconductor	NXPI US	Netherlands	Semiconductors	59,212	438.0	36%
664180	Nitto Denko	6988JP	Japan	Materials	10,742	41.6	35%
642872	Hirose Electricco	6806JP	Japan	Tech Hardware	4,105	16.4	33%
204685	Albemarle	ALB US	United States	Materials	16,954	392.2	33%
680526	Shiseido	4911JP	Japan	Cons. Staples	12,064	91.3	33%
BDZ78H	Broadcom	AVGO US	United States	Semiconductors	521,446	2,585.5	32%
718472	Swatch Group	UHR SW	Switzerland	Cons. Discretionary	7,859	28.9	32%
627094	Disco Corp	6146JP	Japan	Semiconductors	26,883	250.8	31%
BJN59B	Dr Ing Hc F Porsche Ag	P911 GR	Germany	Cons. Discretionary	40,203	40.1	31%
B09M9D	Kone Oyj	KNEBV FH	Finland	Industrials	22,608	25.2	31%
222470	Corning	GLW US	United States	Tech Hardware	25,973	116.9	30%
575602	BMW	BMW GR	Germany	Cons. Discretionary	64,547	103.0	29%
635693	FANUC	6954JP	Japan	Industrials	29,506	111.7	29%
674720	Rohm	6963JP	Japan	Semiconductors	7,898	71.0	29%
232052	Estee Lauder	EL US	United States	Cons. Staples	33,946	391.9	28%
287932	Teck Resources	TECK/B CN	Canada	Materials	21,748	70.2	28%
204655	Applied Materials	AMAT US	United States	Semiconductors	135,577	812.6	27%
248013	KLA	KLAC US	United States	Semiconductors	79,244	477.7	27%
246324	Intel	INTC US	United States	Semiconductors	210,447	1,451.1	27%
676396	SMC	6273JP	Japan	Industrials	36,203	112.1	27%
687049	Advantest	6857JP	Japan	Semiconductors	26,069	453.8	27%
BGOSCK	BE Semiconductor	BESI NA	Netherlands	Semiconductors	12,231	54.0	26%
214508	Amphenol	APH US	United States	Tech Hardware	59,126	217.0	26%
250224	Lam Research	LRCX US	United States	Semiconductors	103,564	705.0	26%
B1XZS8	Anglo American (UK)	AAL LN	United Kingdom	Materials	33,602	68.3	26%
BCRWZ1	Richemont	CFRSW	Switzerland	Cons. Discretionary	71,789	151.4	25%

Source : BofA Global Quantitative Strategy, MSCI, Bloomberg, FactSet

BofA GLOBAL RESEARCH



**Table 37: Emerging Markets stocks with revenue exposure to China**

Screen to highlight Emerging Markets stocks with revenue exposure to China

Symbol	Company Name	BBG Code	Country	Sector	MCAP (Total \$US m)	Avg Daily TO (6m \$US m)	Revenue Exposure
B52J81	AirTac Int'l	1590 TT	Taiwan	Industrials	6,582	18.1	96%
B0P6L8	WPG	3702 TT	Taiwan	Tech Hardware	4,464	15.5	79%
618666	Catcher Tech	2474 TT	Taiwan	Tech Hardware	4,301	14.5	72%
B01VZN	LG Display	034220 KS	South Korea	Tech Hardware	3,540	13.6	66%
219628	Vale	VALE3 BZ	Brazil	Materials	72,137	352.0	51%
BH4DMW	Silergy Corp	6415 TT	Taiwan	Semiconductors	6,248	40.5	49%
B6RV67	Parade Technolog	4966 TT	Taiwan	Semiconductors	3,174	40.4	47%
628360	Nanya Tech	2408 TT	Taiwan	Semiconductors	7,874	26.0	44%
619022	Cheng Shin Rubber	2105 TT	Taiwan	Cons. Discretionary	4,742	10.4	42%
698438	Yageo Corp	2327 TT	Taiwan	Tech Hardware	8,231	34.7	42%
645166	Largan Precision	3008 TT	Taiwan	Tech Hardware	12,481	57.1	41%
B11875	Nan Ya Printed	8046 TT	Taiwan	Tech Hardware	5,295	36.0	38%
662158	Nan Ya Plastics	1303 TT	Taiwan	Materials	17,184	11.8	37%
B05638	Global Unichip	3443 TT	Taiwan	Semiconductors	7,598	201.8	34%
677168	SEMCO	009150 KS	South Korea	Tech Hardware	8,885	43.9	34%
634854	Formosa Plastics	1301 TT	Taiwan	Materials	16,427	16.3	33%
628819	AUO Corp	2409 TT	Taiwan	Tech Hardware	4,553	20.8	33%
B02GKC	Suzano	SUZB3 BZ	Brazil	Materials	15,164	59.3	33%
BP2NF5	F&F	383220 KS	South Korea	Cons. Discretionary	2,653	11.8	32%
634691	LG Chem	051910 KS	South Korea	Materials	27,351	125.4	31%
626073	Delta Electronics	2308 TT	Taiwan	Tech Hardware	26,534	72.3	29%
B4TPSL	Alchip Tech	3661 TT	Taiwan	Semiconductors	7,907	201.3	27%
670039	Uni-President	1216 TT	Taiwan	Cons. Staples	13,793	19.6	27%
B613DJ	Hanmi Pharma	128940 KS	South Korea	Health Care	3,507	12.7	27%

Source : BofA Global Quantitative Strategy, MSCI, Bloomberg, FactSet

BofA GLOBAL RESEARCH

**Table 38: Developed Europe stocks with revenue exposure to the USA (>30%)**

Screen to highlight Developed Europe stocks with revenue exposure to the USA

Symbol	Company Name	BBG Code	Country	Sector	(Total \$US m)	MCAP (6m \$US m)	Avg Daily TO (6m \$US m)	Revenue Exposure
BNHKYX	Argenx	ARGX BB	Belgium	Health Care	22,417	31.2	92%	
005367	Ashtead Group	AHT LN	United Kingdom	Industrials	30,490	35.8	85%	
067760	Pearson	PSON LN	United Kingdom	Cons. Discretionary	8,731	14.6	69%	
B19NLV	Experian	EXPN LN	United Kingdom	Industrials	37,545	39.3	67%	
BD6K45	Compass Group	CPG LN	United Kingdom	Cons. Discretionary	46,890	52.5	65%	
B09DHL	MTU Aero Engines	MTX GR	Germany	Industrials	11,609	40.5	64%	
BDOQ39	Koninklijke Ahold	AD NA	Netherlands	Cons. Staples	27,610	58.4	63%	
584235	Deutsche Telekom	DTE GR	Germany	Telecom	119,805	137.4	63%	
BMV7PQ	Investor Ab-B Shs	INWEB SS	Sweden	Div Financials	42,214	55.8	60%	
BYWH8S	Hellofresh	HFG GR	Germany	Cons. Staples	2,731	19.6	59%	
BOLCW0	Hikma Pharma	HIK LN	United Kingdom	Health Care	5,042	9.4	57%	
BDR05C	National Grid	NG/ LN	United Kingdom	Utilities	49,743	61.4	56%	
BPHOY2	Aegon	AGN NA	Netherlands	Insurance	11,767	33.8	56%	
092232	Smith & Nephew	SN/ LN	United Kingdom	Health Care	12,008	24.0	53%	
559699	JCB	UCB BB	Belgium	Health Care	16,953	20.4	53%	
474171	Remy Cointreau	RCO FP	France	Cons. Staples	6,509	12.0	50%	
BNZGVW	Universal Music	UMG NA	Netherlands	Media & Ent.	51,937	33.8	50%	
BN7SWP	GSK	GSK LN	United Kingdom	Health Care	75,705	77.4	50%	
B082RF	Rentokil Initial	RTO LN	United Kingdom	Industrials	14,175	30.4	48%	
BP6KMJ	Novo Nordisk	NOVOB DC	Denmark	Health Care	355,355	278.7	48%	
B1WY23	Smiths Grp	SMIN LN	United Kingdom	Industrials	7,813	11.6	46%	
B545MG	Swiss Re	SREN SW	Switzerland	Insurance	35,671	78.2	45%	
BJT1GR	Alcon	ALC SW	Switzerland	Health Care	38,971	56.6	45%	
BYPCT1	Assa Abloy	ASSAB SS	Sweden	Industrials	30,392	36.3	45%	
711038	Roche	ROG SW	Switzerland	Health Care	204,095	287.6	44%	
706271	Sodexo	SW FP	France	Cons. Discretionary	16,227	18.0	44%	
721247	EssilorLuxottica	EL FP	France	Health Care	90,994	73.4	44%	
B0R80X	Avolta	AVOL SW	Switzerland	Cons. Discretionary	5,916	15.8	42%	
040520	Halma	HLMA LN	United Kingdom	Tech Hardware	11,054	17.0	42%	
BMHVLR	Tenaris SA	TEN IM	Italy	Energy	20,533	42.3	42%	
714209	Skanska	SKAB SS	Sweden	Industrials	7,243	11.6	41%	
598662	Koninklijke Philips	PHIA NA	Netherlands	Health Care	21,630	48.6	41%	
769835	Getinge	GETIB SS	Sweden	Health Care	5,657	14.6	41%	
098952	AstraZeneca	AZN LN	United Kingdom	Health Care	209,437	165.3	40%	
595937	Ericsson	ERICB SS	Sweden	Tech Hardware	19,303	40.3	40%	
BMXVKB	Bachem Holding Ag-Reg B	BANB SW	Switzerland	Health Care	5,792	7.1	40%	
733337	Lonza	LONN SW	Switzerland	Health Care	31,295	110.2	39%	
451957	Kerry Group	KYGA ID	Ireland	Cons. Staples	15,391	26.2	39%	
B8C3BL	Sage Group	SGE LN	United Kingdom	Software	15,349	25.4	39%	
435209	Fresenius	FRE GR	Germany	Health Care	17,465	37.2	39%	
563396	Nemetschek Se	NEM GR	Germany	Software	10,013	7.9	39%	
BNZFHIC	Hexagon-B	HEXAB SS	Sweden	Tech Hardware	31,147	46.6	39%	
BM8H5Y	Dassault Systemes	DSY FP	France	Software	65,305	45.0	38%	
B11ZRK	Legrand	LRFP	France	Industrials	27,554	39.5	38%	
B058TZ	Safran	SAF FP	France	Industrials	75,261	89.4	38%	
BRJL17	UBS	UBSG SW	Switzerland	Div Financials	107,361	173.6	37%	
584332	Sartorius-Pfd	SRT3 GR	Germany	Health Care	13,781	33.4	37%	
023740	Diageo	DGE LN	United Kingdom	Cons. Staples	81,844	91.9	37%	
B8KF9B	WPP	WPP LN	United Kingdom	Media & Ent.	10,318	18.8	36%	
452518	Wartsila	WRT1VFH	Finland	Industrials	8,579	12.0	35%	

Source : BofA Global Quantitative Strategy, MSCI, Bloomberg, FactSet

BofA GLOBAL RESEARCH



**Table 39: Developed Europe stocks with revenue exposure to the USA (>30%)...continued...**

Screen to highlight Developed Europe stocks with revenue exposure to the USA

Symbol	Company Name	BBG Code	Country	Sector	MCAP (Total \$US m)	Avg Daily TO (6m \$US m)	Revenue Exposure
452518	Wartsila	WRT1VFH	Finland	Industrials	8,579	12.0	35%
BN4MYF	Vestas Wind	VWS DC	Denmark	Industrials	32,069	52.1	35%
BYPBS6	ArcelorMittal	MT NA	Netherlands	Materials	24,187	59.6	35%
484628	SAP	SAP GR	Germany	Software	189,284	249.0	35%
B18ZRK	Logitech	LOGN SW	Switzerland	Tech Hardware	16,405	52.7	35%
B4YVF5	Brenntag	BNRGR	Germany	Industrials	14,203	29.3	35%
596230	Lindt & Sprungli	LISN SW	Switzerland	Cons. Staples	16,327	9.0	35%
B10RZP	Unilever	ULVR LN	United Kingdom	Cons. Staples	121,126	121.0	35%
BYZ2QP	Sartorius Stedim	DIM FP	France	Health Care	24,388	14.9	35%
BD594Y	Siemens Healthineers	SHL GR	Germany	Health Care	65,542	36.5	35%
BZ01RF	Demant	DEMAN1 DC	Denmark	Health Care	9,823	12.8	34%
710306	Novartis	NOVN SW	Switzerland	Health Care	229,655	264.4	34%
451180	Hannover Rueck	HNR1 GR	Germany	Insurance	28,815	23.8	33%
710889	ABB	ABBN SW	Switzerland	Industrials	83,406	107.9	33%
B63H84	Rolls-Royce	RR/ LN	United Kingdom	Industrials	32,157	53.3	32%
712387	Nestle	NESN SW	Switzerland	Cons. Staples	309,335	314.7	32%
590294	Nokia	NOKIA FH	Finland	Tech Hardware	19,189	49.7	32%
B24CGK	Reckitt Benckiser	RKT LN	United Kingdom	Cons. Staples	49,583	66.1	32%
B025YZ	Arkema	AKE FP	France	Materials	8,538	13.6	32%
B798FW	Novozymes	NZYMB DC	Denmark	Materials	12,497	22.6	31%
506921	Bayer	BAYN GR	Germany	Health Care	36,496	136.4	31%
B1Q3J3	AB SKF	SKFB SS	Sweden	Industrials	8,509	23.0	31%
B12PJ2	Husqvarna-Class B	HUSQB SS	Sweden	Industrials	3,839	8.2	31%
B1YXBJ	Air Liquide	AI FP	France	Materials	101,894	102.2	31%
715603	Sonova	SOON SW	Switzerland	Health Care	19,440	37.5	31%
BF2PQ0	Unibail-Rodamco-Westfield	URWFP	France	Real Estate	10,278	25.0	30%
079805	BP	BP/ LN	United Kingdom	Energy	101,417	149.8	30%
316383	Intertek Group	ITRK LN	United Kingdom	Industrials	8,736	11.6	30%

Source : BofA Global Quantitative Strategy, MSCI, Bloomberg, FactSet

BofA GLOBAL RESEARCH



**Table 40: Japan stocks with revenue exposure to the USA (>20%)**

Screen to highlight Japan stocks with revenue exposure to the USA

Symbol	Company Name	BBG Code	Sector	MCAP (Total \$US m)	ADT (6m \$US m)	Revenue Exposure
B0FS5D	Seven & i	3382JP	Cons. Staples	35,180	91.4	72%
635640	Subaru	7270JP	Cons. Discretionary	14,109	58.4	71%
687044	Takeda Pharma	4502JP	Health Care	45,502	120.1	52%
613210	Bridgestone	5108JP	Cons. Discretionary	29,564	76.4	51%
649080	Kikkoman Corp	2801JP	Cons. Staples	11,874	34.0	50%
643514	Honda	7267JP	Cons. Discretionary	56,509	178.6	47%
664286	Nissan	7201JP	Cons. Discretionary	16,592	110.0	41%
659101	Mizuho	8411JP	Banks	43,453	197.7	40%
656946	Marubeni	8002JP	Industrials	26,634	108.3	39%
B5LTM9	Otsuka	4578JP	Health Care	20,928	44.2	38%
663955	Nintendo	7974JP	Media & Ent.	67,790	166.5	37%
649750	Kubota	6326JP	Industrials	17,781	56.7	36%
649955	Kyowa Kirin	4151JP	Health Care	9,078	16.2	36%
625072	Daikin	6367JP	Industrials	47,789	181.3	35%
688507	Terumo	4543JP	Health Care	24,513	62.7	35%
680458	Shin-Etsu	4063JP	Materials	84,953	189.0	35%
690030	Mazda Motor	7261JP	Cons. Discretionary	6,828	60.5	34%
665880	Olympus	7733JP	Health Care	18,326	87.7	34%
690054	Toyota Indus	6201JP	Industrials	26,579	46.9	34%
661650	Seiko Epson	6724JP	Tech Hardware	5,764	19.1	33%
685894	Sumitomo Corp	8053JP	Industrials	26,686	79.4	33%
630720	Eisai	4523JP	Health Care	14,835	90.0	32%
666010	Ono Pharma	4528JP	Health Care	9,234	32.3	32%
BQRRZ0	Recruit	6098JP	Industrials	71,734	150.2	32%
682150	Sony	6758JP	Cons. Discretionary	119,954	268.4	31%
651312	Tokio Marine	8766JP	Insurance	50,126	108.7	30%
617232	Canon	7751JP	Tech Hardware	34,248	93.8	29%
650626	Lasertec	6920JP	Semiconductors	24,859	2,063.5	28%
617369	CAPCOM	9697JP	Media & Ent.	8,613	44.0	27%
640587	Hamamatsu Photonics	6965JP	Tech Hardware	6,791	16.3	27%
641628	Dentsu	4324JP	Media & Ent.	6,933	28.1	26%
688380	Sysmex Corp	6869JP	Health Care	11,691	29.0	26%
614650	Brother Inds	6448JP	Tech Hardware	4,115	14.2	26%
664054	Taiyo Nippon Sanso	4091JP	Materials	11,600	15.3	25%
B3FF8W	Hoshizaki Elec	6465JP	Industrials	5,304	11.6	25%
B019MQ	Asahi Intecc	7747JP	Health Care	5,527	15.8	24%
612528	Trend Micro	4704JP	Software	7,540	34.4	24%
635693	FANUC	6954JP	Industrials	29,506	111.7	23%
656302	Sumitomo Mitsui	8316JP	Banks	65,273	362.2	23%
649374	Kirin	2503JP	Cons. Staples	13,394	41.5	23%
698526	Yamaha Motor	7272JP	Cons. Discretionary	9,386	52.0	23%
657270	Panasonic	6752JP	Cons. Discretionary	24,311	99.5	23%
649926	Kyocera	6971JP	Tech Hardware	22,050	53.1	22%
B8BRV4	Japan Airlines	9201JP	Industrials	8,605	63.6	22%
664310	Nomura	8604JP	Div. Financials	14,310	50.9	22%
664238	Yamaha	7951JP	Cons. Discretionary	4,327	26.0	22%
633517	Mitsubishi UFJ	8306JP	Banks	109,031	610.0	21%
649668	Konami	9766JP	Media & Ent.	7,515	28.9	21%
664176	Nissin Food	2897JP	Cons. Staples	10,771	29.4	21%

Source : BofA Global Quantitative Strategy, MSCI, Bloomberg, FactSet

BofA GLOBAL RESEARCH



**Table 41: Emerging Markets ex Asia stocks with revenue exposure to the USA (>10%)**

Screen to highlight Emerging Markets ex-Asia stocks with revenue exposure to the USA

Symbol	Company Name	BIGG Code	Country	Sector	MCAP (Total \$US m)	ADT (6m \$US m)	Revenue Exposure
730221	Cd Projekt Sa	CDRPW	Poland	Media & Ent.	2,922	10.2	71%
B1V74X	JBS SA	JBSS3BZ	Brazil	Cons. Staples	11,375	36.0	58%
239254	Gruma, S.A.B.	GRUMAB MM	Mexico	Cons. Staples	6,796	10.8	57%
244820	Industrias Penoles	PE&OLES* MM	Mexico	Materials	5,827	3.8	52%
239247	Bimbo	BIMBOA MM	Mexico	Cons. Staples	22,372	13.0	52%
264551	Gerdau	GGBR4BZ	Brazil	Materials	5,657	48.6	46%
282388	Arca Continental	AC* MM	Mexico	Cons. Staples	18,841	17.1	35%
204342	Alfa	ALFAA MM	Mexico	Industrials	3,881	4.5	34%
240645	Cemex SAB	CEMEXCPO MM	Mexico	Materials	11,831	34.2	32%
BH3T8K	Orbia Advance	ORBIA* MM	Mexico	Materials	4,465	5.3	27%
BC9Z8H	Richter Gedeon	RICHT HB	Hungary	Health Care	4,713	4.3	25%
264367	Grupo Mexico	GMEXICOB MM	Mexico	Materials	43,296	30.1	24%
B03MYK	Turkish Airlines	THYAO TI	Turkiye	Industrials	10,682	342.3	21%
B1323K	SABIC Agri-Nutrients	SAFCO AB	Saudi Arabia	Materials	17,543	17.6	20%

Source : BofA Global Quantitative Strategy, MSCI, Bloomberg, FactSet

BofA GLOBAL RESEARCH

**Table 42: Asia Pac ex Japan stocks with revenue exposure to the USA (>30%)**

Screen to highlight Asia Pac ex-Japan stocks with revenue exposure to the USA

Symbol	Company Name	BBG Code	Country	Sector	Total MCAP (\$US m)	ADT (6m \$US m)	Revenue Exposure
BMX9K0	Legend Biotech-ADR	LEGN US	China	Health Care	10,968	45.1	100%
615159	Mphasis	MPHL IN	India	Software	6,209	16.4	82%
BF4QXG	Wiwynn	6669 TT	Taiwan	Tech Hardware	10,397	175.4	80%
B734XQ	Zhen Ding Tech	4958 TT	Taiwan	Tech Hardware	3,364	9.1	75%
645993	Inventec Corp	2356 TT	Taiwan	Tech Hardware	6,172	99.0	74%
BFXZDY	ASE Tech	3711 TT	Taiwan	Semiconductors	19,251	47.4	67%
688910	TSMC	2330 TT	Taiwan	Semiconductors	501,058	443.7	66%
600521	Accton Tech	2345 TT	Taiwan	Tech Hardware	9,546	59.3	66%
BGHHOL	WuXi AppTec-H	2359 HK	China	Health Care	4,096	33.7	66%
618041	Computershare	CPU AU	Australia	Industrials	10,048	30.4	64%
620605	WIPRO	WPRO IN	India	Software	29,575	31.1	60%
629489	HCL Technologies	HCLT IN	India	Software	47,702	40.1	57%
672880	Reece	REH AU	Australia	Industrials	9,869	5.9	56%
693233	Wan Hai Lines	2615 TT	Taiwan	Industrials	5,029	17.3	56%
B1FJ0C	Brambles	BXB AU	Australia	Industrials	12,896	36.1	55%
614101	Quanta	2382 TT	Taiwan	Tech Hardware	28,255	471.4	53%
BD9Q2J	Genscript Biotech	1548 HK	China	Health Care	5,392	22.4	53%
B85LKS	AAC Tech	2018 HK	China	Tech Hardware	3,561	15.2	51%
B5VSK2	Indorama Ventures	IVL TB	Thailand	Materials	4,482	14.3	50%
621179	Cochlear	COH AU	Australia	Health Care	13,356	26.6	50%
BWFGD6	Tech Mahindra	TECHM IN	India	Software	14,919	36.6	50%
618549	CSL	CSL AU	Australia	Health Care	94,485	157.5	49%
BMG75K	SK Bioscience	302440 KS	South Korea	Health Care	4,293	10.7	48%
670263	Aurobindo Pharma	ARBP IN	India	Health Care	7,633	23.2	48%
625398	Aristocrat	ALL AU	Australia	Cons. Discretionary	18,065	36.2	47%
618965	China Airlines	2610 TT	Taiwan	Industrials	4,249	33.4	47%
634578	Eclat Textile	1476 TT	Taiwan	Cons. Discretionary	5,024	11.5	46%
667248	Wistron	3231 TT	Taiwan	Tech Hardware	9,316	378.9	46%
629467	Doosan Enerbility	034020 KS	South Korea	Industrials	7,908	48.6	44%
641095	Dr Reddy's	DRRD IN	India	Health Care	11,620	32.6	43%
621120	Tata Elxsi	TELX IN	India	Software	6,551	13.6	42%
622574	Compal	2324 TT	Taiwan	Tech Hardware	5,722	46.8	41%
640586	HMM	011200 KS	South Korea	Industrials	7,435	42.1	41%
677172	Samsung Electronics	005930 KS	South Korea	Tech Hardware	363,870	733.1	39%
B4TPSL	Alchip Tech	3661 TT	Taiwan	Semiconductors	7,907	201.3	39%
B61JC6	Treasury Wine (TWE)	TWE AU	Australia	Cons. Staples	5,872	28.3	38%
B4PLX1	Pegatron Corp	4938 TT	Taiwan	Tech Hardware	7,579	24.0	37%
643856	Hon Hai	2317 TT	Taiwan	Tech Hardware	47,203	101.9	36%
BGDY26	Beigene	6160 HK	China	Health Care	17,715	20.3	35%
698758	Yang Ming	2609 TT	Taiwan	Industrials	5,837	55.8	34%
686774	Swire Pacific	19 HK	Hong Kong	Real Estate	7,253	9.2	34%
621808	Lenovo	992 HK	China	Tech Hardware	16,961	52.6	34%
614376	Lupin	LPC IN	India	Health Care	7,237	16.9	34%
B28YTC	Macquarie Group	MQG AU	Australia	Div Financials	48,426	97.1	33%
BRJS8F	Delta Electronics (Thai)	DELTA TB	Thailand	Tech Hardware	32,160	39.6	33%
658248	Sun Pharma	SUNP IN	India	Health Care	36,313	29.6	32%

Source : BofA Global Quantitative Strategy, MSCI, Bloomberg, FactSet

BofA GLOBAL RESEARCH



**DM-2-EM****Table 43: DM-2-EM**

Screen to highlight Developed Markets stocks with revenue exposure to Emerging Markets

BGK4T3	Futu-ADR	FUTU US	Hong Kong	Div Financials	5,029	111.1	100%
B5B23W	Sands China	1928 HK	Hong Kong	Cons. Discretionary	23,683	39.8	100%
B23X1H	MercadoLibre	MELI US	United States	Cons. Discretionary	78,723	608.9	95%
624226	Jardine C&C	JCNC SP	Singapore	Industrials	8,917	6.9	93%
608625	Fortescue	FMG AU	Australia	Materials	60,969	97.3	89%
B63QM7	Nexon	3659 JP	Japan	Media & Ent.	15,590	44.4	85%
271492	Qualcomm	QCOM US	United States	Semiconductors	161,407	1,001.0	84%
266927	Pan American Silver	PAAS CN	Canada	Materials	5,978	13.8	84%
646587	Galaxy Ent.	27 HK	Hong Kong	Cons. Discretionary	24,504	41.2	83%
B929F4	ASML Holding	ASML NA	Netherlands	Semiconductors	303,579	367.2	81%
643655	HK & China Gas	3 HK	Hong Kong	Utilities	14,290	10.6	80%
B1Y1SQ	Jeronimo Martins	JMT PL	Portugal	Cons. Staples	16,016	14.5	78%
BF13KN	Wheaton Precious	WPM CN	Canada	Materials	22,456	48.7	77%
643557	Wharf	4 HK	Hong Kong	Real Estate	9,843	7.6	77%
550190	BBVA	BBVA SM	Spain	Banks	54,207	107.5	77%
BJDS7L	Prosus Nv	PRX NA	Netherlands	Cons. Discretionary	79,279	107.2	76%
B01Z7J	Monolithic Power	MPWR US	United States	Semiconductors	30,137	270.2	76%
687049	Advantest	6857 JP	Japan	Semiconductors	26,069	453.8	74%
BP6NH4	Grab	GRAB US	Singapore	Industrials	12,776	64.6	71%
614469	BHP	BHP AU	Australia	Materials	174,351	255.8	71%
234760	First Quantum	FM CN	Canada	Materials	5,704	70.1	70%
248013	KLA	KLAC US	United States	Semiconductors	79,244	477.7	69%
B05NXN	Xinyi Glass	868 HK	Hong Kong	Industrials	4,737	8.0	68%
B9895B	Coca-Cola HBC AG	CCH LN	United Kingdom	Cons. Staples	10,823	12.5	68%
200247	AES	AES US	United States	Utilities	12,890	116.8	68%
204655	Applied Materials	AMAT US	United States	Semiconductors	135,577	812.6	66%
250224	Lam Research	LRCX US	United States	Semiconductors	103,564	705.0	66%
BGOSCK	BE Semiconductor	BESI NA	Netherlands	Semiconductors	12,231	54.0	66%
288418	Teradyne	TER US	United States	Semiconductors	16,714	159.9	66%
603050	Hang Lung Prop	101 HK	Hong Kong	Real Estate	6,269	7.7	65%
BNKJSM	Marvell Tech	MRVL US	United States	Semiconductors	52,035	548.1	63%
B17KC6	Wilmar Int'l	WIL SP	Singapore	Cons. Staples	17,330	14.9	62%
689567	Tokyo Electron	8035 JP	Japan	Semiconductors	84,488	467.5	60%
286685	Lundin Mining	LUN CN	Canada	Materials	6,357	27.9	59%
B0MOC8	Sumco Corp	3436 JP	Japan	Semiconductors	5,252	69.2	59%
627094	Disco Corp	6146 JP	Japan	Semiconductors	26,883	250.8	57%
204685	Albemarle	ALB US	United States	Materials	16,954	392.2	55%
686930	TDK	6762 JP	Japan	Tech Hardware	18,523	81.3	55%
622010	Rio Tinto	RIO AU	Australia	Materials	34,363	114.5	54%
B1CRLC	Mondi Plc (UK)	MNDI LN	United Kingdom	Materials	9,517	16.7	54%
BMD58R	Epiroc Ab-A	EPIA SS	Sweden	Industrials	16,528	15.1	53%
BDHLTQ	Baker Hughes	BKR US	United States	Energy	34,510	242.1	53%
B3NPHP	Mosaic Co	MOS US	United States	Materials	11,872	135.6	53%
277920	Schlumberger	SLB US	United States	Energy	73,959	498.6	52%
528983	Erste Group	EBS AV	Austria	Banks	17,439	19.2	50%
B29NF3	Franco-Nevada	FNV CN	Canada	Materials	21,377	80.8	50%
661040	Murata	6981 JP	Japan	Tech Hardware	43,043	106.9	50%
288540	Texas Instruments	TXN US	United States	Semiconductors	154,772	845.0	49%
287932	Teck Resources	TECK/B CN	Canada	Materials	21,748	70.2	49%

Source : BofA Global Quantitative Strategy, MSCI, Bloomberg, FactSet

BofA GLOBAL RESEARCH



**EM-2-DM****Table 44: EM-2-DM**

Screen to highlight Emerging Markets stocks with revenue exposure to Developed Markets

<b>Symbol</b>	<b>Company Name</b>	<b>BBG Code</b>	<b>Country</b>	<b>Sector</b>	<b>Free MCAP (\$US m)</b>	<b>Avg Daily TO (6m \$US m)</b>	<b>Revenue Exposure</b>
712797	LPP	LPP PW	Poland	Cons. Discretionary	7,638	11.2	100%
BF52QF	Reinet Investments	RNI SJ	South Africa	Div Financials	4,995	7.0	100%
BMX9K0	Legend Biotech-ADR	LEGN US	China	Health Care	10,968	45.1	100%
BF4QXG	Wiwynn	6669 TT	Taiwan	Tech Hardware	10,397	175.4	92%
730221	Cd Projekt Sa	CDR PW	Poland	Media & Ent.	2,922	10.2	90%
633605	Feng Tay	9910 TT	Taiwan	Cons. Discretionary	5,631	10.5	89%
BYX9GP	Doosan Bobcat	241560 KS	Korea	Industrials	3,923	14.4	89%
620605	WIPRO	WPRO IN	India	Software	29,575	31.1	89%
B54J7	Inari Amertron	INRI MK	Malaysia	Semiconductors	2,452	5.7	89%
BYNJCV	Samsung Biologics	207940 KS	Korea	Health Care	42,000	32.7	88%
620512	Infosys	INFO IN	India	Software	76,954	110.9	87%
BD6F8V	LTIMindtree	LTIM IN	India	Software	22,385	29.3	87%
615159	Mphasis	MPHL IN	India	Software	6,209	16.4	87%
600521	Accton Tech	2345 TT	Taiwan	Tech Hardware	9,546	59.3	84%
629489	HCL Technologies	HCLT IN	India	Software	47,702	40.1	83%
B01NPJ	TCS	TCS IN	India	Software	166,802	88.0	83%
B4PLX1	Pegatron Corp	4938 TT	Taiwan	Tech Hardware	7,579	24.0	82%
643856	Hon Hai	2317 TT	Taiwan	Tech Hardware	47,203	101.9	80%
B28SM0	Persistent Systems	PSYS IN	India	Software	6,831	33.2	78%
621120	Tata Elxsi	TELX IN	India	Software	6,551	13.6	78%
698758	Yang Ming	2609 TT	Taiwan	Industrials	5,837	55.8	78%
BGHHOL	WuXi AppTec-H	2359 HK	China	Health Care	4,096	33.7	77%
688910	TSMC	2330 TT	Taiwan	Semiconductors	501,058	443.7	77%
B734XQ	Zhen Ding Tech	4958 TT	Taiwan	Tech Hardware	3,364	9.1	76%
BFXZDY	ASE Tech	3711 TT	Taiwan	Semiconductors	19,251	47.4	76%
670263	Aurobindo Pharma	ARBP IN	India	Health Care	7,633	23.2	75%
BMXNYN	Pepco Group Nv	PCO PW	Poland	Cons. Discretionary	3,817	8.5	75%
BWFGD6	Tech Mahindra	TECHM IN	India	Software	14,919	36.6	75%
645993	Inventec Corp	2356 TT	Taiwan	Tech Hardware	6,172	99.0	74%
B1V74X	JBS SA	JBSS3 BZ	Brazil	Cons. Staples	11,375	36.0	74%
B5VSK2	Indorama Ventures	IVL TB	Thailand	Materials	4,482	14.3	72%
BL6B9P	WuXi Biologics	2269 HK	China	Health Care	16,116	120.5	72%
640586	HMM	011200 KS	Korea	Industrials	7,435	42.1	69%
B775KQ	Hankook Tire & Tech	161390 KS	Korea	Cons. Discretionary	4,367	8.5	68%
667248	Wistron	3231 TT	Taiwan	Tech Hardware	9,316	378.9	67%
677164	Samsung SDI	006400 KS	Korea	Tech Hardware	25,201	112.1	66%
638878	Balkrishna Indus	BIL IN	India	Cons. Discretionary	5,967	8.3	66%
BNSP8W	LG Energy Solution	373220 KS	Korea	Industrials	77,673	140.0	65%
B018C0	Minor Intl	MINT TB	Thailand	Cons. Discretionary	4,836	12.7	65%
239254	Gruma, S.A.B.	GRUMAB MM	Mexico	Cons. Staples	6,796	10.8	65%
614101	Quanta	2382 TT	Taiwan	Tech Hardware	28,255	471.4	64%
649092	Kia	000270 KS	Korea	Cons. Discretionary	31,217	68.2	62%
B4TPSL	Alchip Tech	3661 TT	Taiwan	Semiconductors	7,907	201.3	62%
618965	China Airlines	2610 TT	Taiwan	Industrials	4,249	33.4	62%
BD9Q2J	Genscript Biotech	1548 HK	China	Health Care	5,392	22.4	62%
BZBFKT	Bid Corp	BID SJ	South Africa	Cons. Staples	7,825	19.7	62%
605104	Asustek	2357 TT	Taiwan	Tech Hardware	11,847	82.7	61%
634578	Eclat Textile	1476 TT	Taiwan	Cons. Discretionary	5,024	11.5	59%
621808	Lenovo	992 HK	China	Tech Hardware	16,961	52.6	59%
B9J4ZK	Pegasus Hava	PGSUS TI	Turkey	Industrials	2,250	58.1	59%

Source : BofA Global Quantitative Strategy, MSCI, Bloomberg, FactSet

BofA GLOBAL RESEARCH

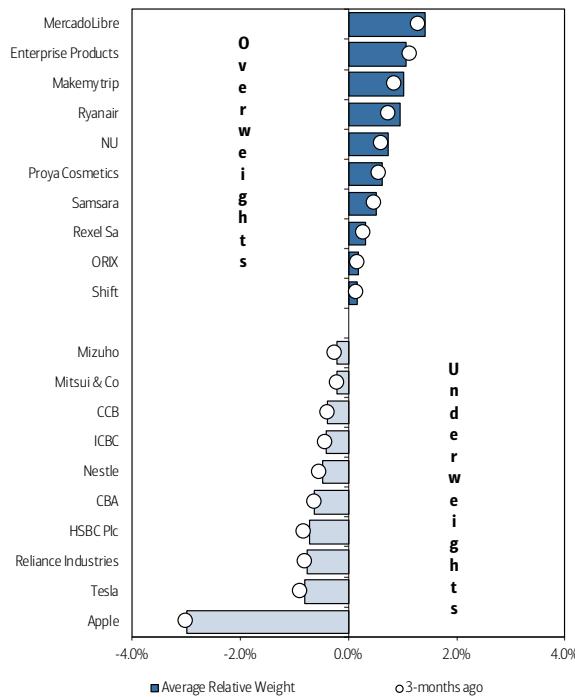


# Global Positioning in Stocks

The chart below shows investors' most significant overweight and underweight positions.

## Chart 304: Global Stocks Positioning

Funds are most underweight Apple and have increased their underweight in the last 3m

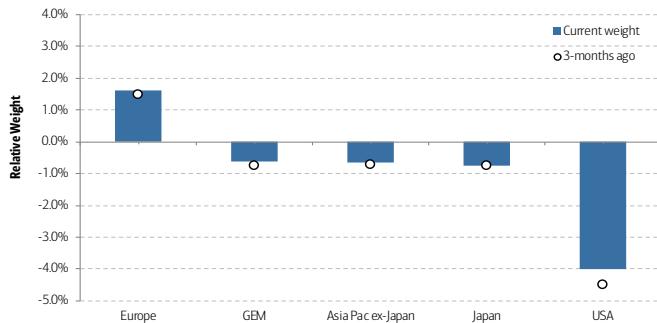


Source : BofA Global Quantitative Strategy, MSCI, FTSE, Factset, Bloomberg, 13F Filings, Benchmark Indices, Country Stock Exchanges  
Name with \* represents non-benchmark stocks

BofA GLOBAL RESEARCH

## Chart 305: Global Positioning: Regions

Relative to their benchmark funds are most overweight Europe



Source : BofA Global Quantitative Strategy, MSCI, FTSE, Factset, Bloomberg, 13F Filings, Benchmark Indices, Country Stock Exchanges

BofA GLOBAL RESEARCH

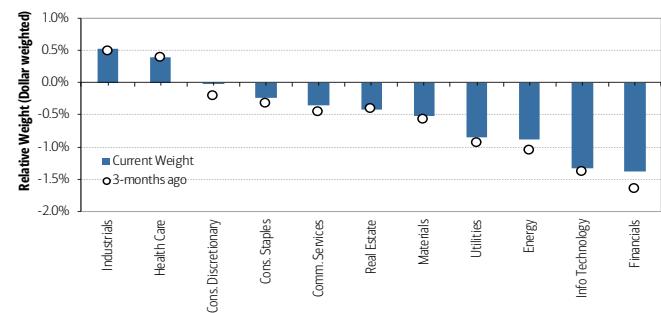
For each of the funds in the analysis, we calculate weights relative-to-benchmark ("active weight") for every stock in that portfolio. We aggregate these active weights across all funds. The chart below shows investors' most significant overweight and underweight positions. These are the largest average aggregate active weights subject to the constraints:

### Constraints:

- held by at least 50 funds
- average active weight greater than 15bps
- average daily turnover greater than US\$10m
- the total dollar value of the aggregate active weight is greater than US\$500m.
- top two overweights and underweights by each region.

## Chart 306: Global Positioning: Sectors

Relative to their benchmark funds are most overweight Industrials



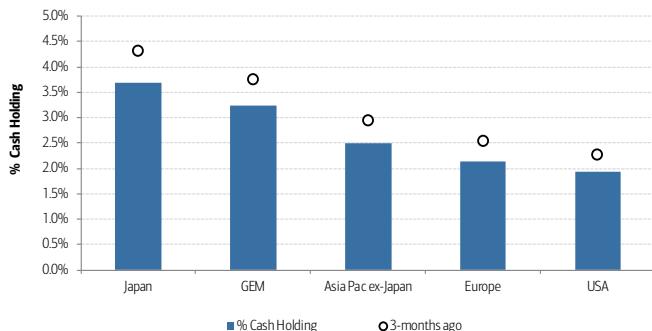
Source : BofA Global Quantitative Strategy, MSCI, FTSE, Factset, Bloomberg, 13F Filings, Benchmark Indices, Country Stock Exchanges

BofA GLOBAL RESEARCH



### Chart 307: Global Positioning: Cash

Average cash balance is currently highest in Japan at 3.7%

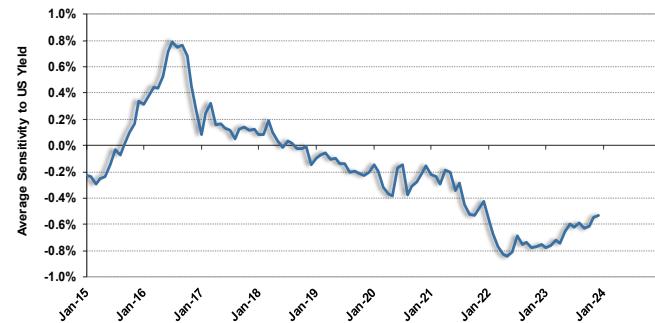


Source : BofA Global Quantitative Strategy, MSCI, FTSE, Factset, Bloomberg, 13F Filings, Benchmark Indices, Country Stock Exchanges

BofA GLOBAL RESEARCH

### Chart 308: Global Funds' Relative Equity Duration through time

Funds are not positioned for rising bond yields

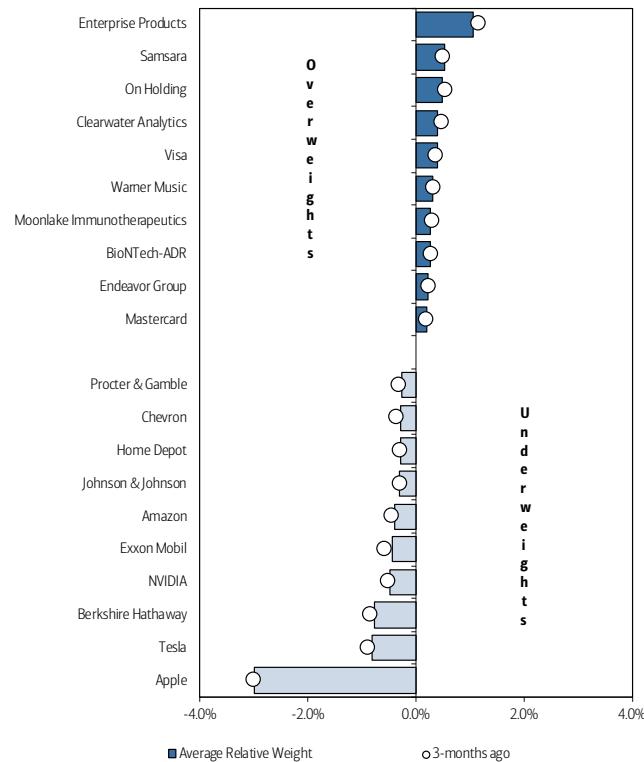


Source : BofA Global Quantitative Strategy, MSCI, FTSE, Factset, Bloomberg, 13F Filings, Benchmark Indices, Country Stock Exchanges

BofA GLOBAL RESEARCH

### Chart 309: USA Stocks Positioning

Enterprise Products is the most overweight stock in the USA, and Apple is the most underweight

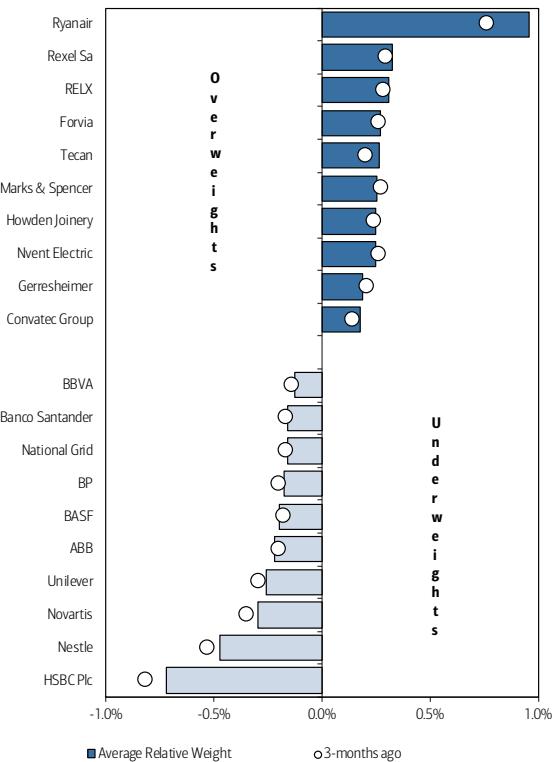


Source : BofA Global Quantitative Strategy, MSCI, FTSE, Factset, 13F Filings, Benchmark Indices, Country Stock Exchanges Name with \* represents non-benchmark stocks

BofA GLOBAL RESEARCH

### Chart 310: Europe Stocks Positioning

In Europe, the funds are most overweight Ryanair and most underweight HSBC Plc

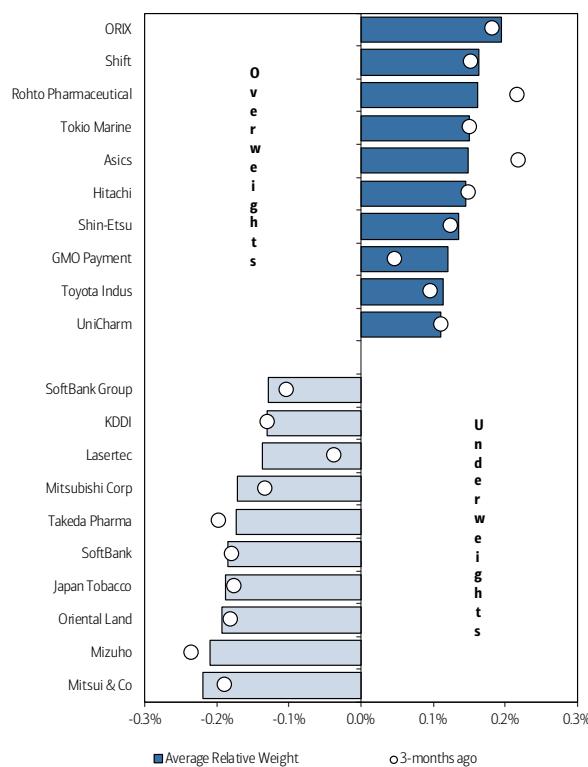


Source : BofA Global Quantitative Strategy, MSCI, FTSE, Factset, 13F Filings, Benchmark Indices, Country Stock Exchanges Name with \* represents non-benchmark stocks

BofA GLOBAL RESEARCH

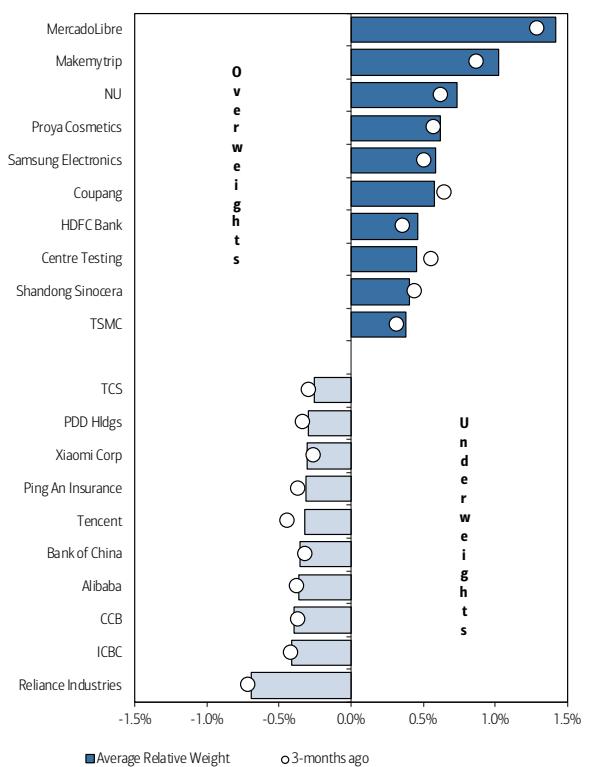
### Chart 311: Japan Stocks Positioning

Funds are most underweight Mitsui & Co and have increased their underweight in the last 3m



### Chart 312: Emerging Markets Stocks Positioning

In EM, the funds are most overweight MercadoLibre and most underweight Reliance Industries



Source : BofA Global Quantitative Strategy, MSCI, FTSE, Factset, 13F Filings, Benchmark Indices, Country Stock Exchanges      Name with \* represents non-benchmark stocks

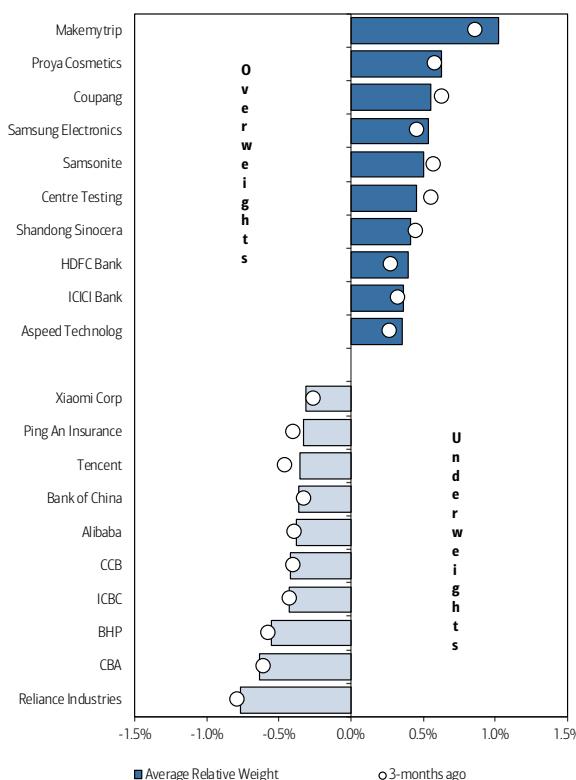
BofA GLOBAL RESEARCH

Source : BofA Global Quantitative Strategy, MSCI, FTSE, Factset, 13F Filings, Benchmark Indices, Country Stock Exchanges      Name with \* represents non-benchmark stocks

BofA GLOBAL RESEARCH

### Chart 313: Asia Pac ex-Japan Stocks Positioning

Makemytrip is the most overweight stock in APxJ, and Reliance Industries is the most underweight



Source : BofA Asia Pac Quantitative Strategy, MSCI, FTSE, Factset, 13F Filings, Benchmark Indices, Country Stock Exchanges

Name with \* represents non-benchmark stocks

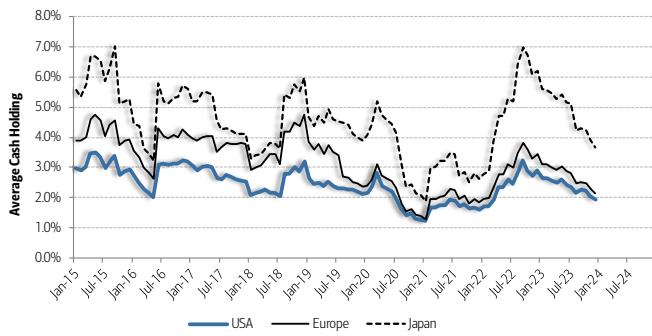
For each of the funds in the analysis, we calculate weights relative-to-benchmark ("active weight") for every stock in that portfolio. We aggregate these active weights across all funds. The chart below shows investors' most significant overweight and underweight positions. These are the largest average aggregate active weights subject to the constraints:

#### Constraints:

- held by at least 50 funds
- average active weight greater than 15bps
- average daily turnover greater than US\$10m
- the total dollar value of the aggregate active weight is greater than US\$500m.

### Chart 314: USA, Europe & Japan: Trends in Investor Cash Positioning

Average cash balance is currently highest in Japan at 3.7%

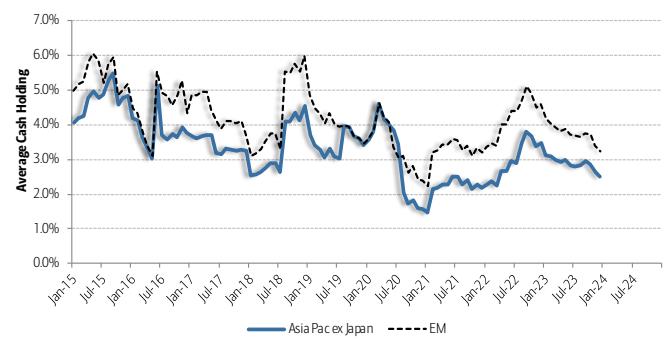


Source : BofA Asia Pac Quantitative Strategy, MSCI, FTSE, Factset, 13F Filings, Benchmark Indices, Country Stock Exchanges

BofA GLOBAL RESEARCH

### Chart 315: Asia Pac ex-Japan & Emerging Markets: Trends in Investor Cash Positioning

Average cash balance is currently highest in GEM at 3.2%

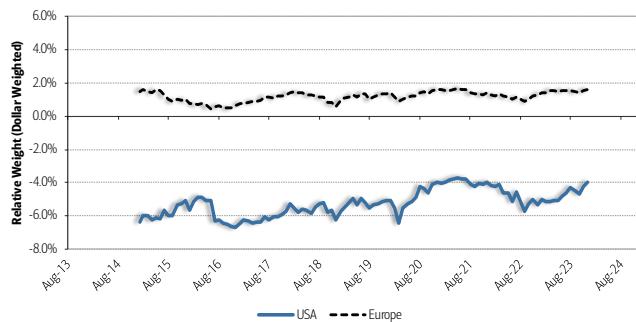


Source : BofA Asia Pac Quantitative Strategy, MSCI, FTSE, Factset, 13F Filings, Benchmark Indices, Country Stock Exchanges

BofA GLOBAL RESEARCH

**Chart 316: USA and Europe - Regional Positioning**

Funds are currently overweight Europe by 1.62%

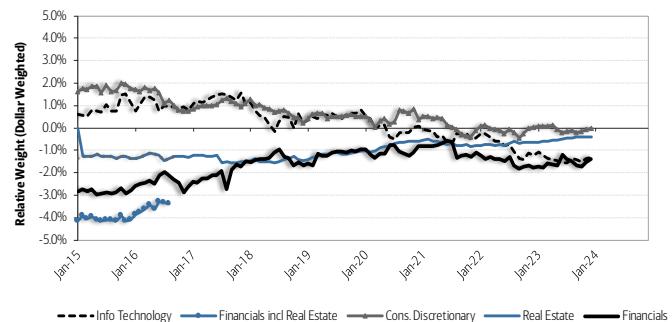


Source : BofA Global Quantitative Strategy, MSCI, FTSE, Factset, Bloomberg, 13F Filings, Benchmark Indices, Country Stock Exchanges

BofA GLOBAL RESEARCH

**Chart 317: Global Early Cyclicals & Financials – Sector Positioning**

Funds are most underweight Financials

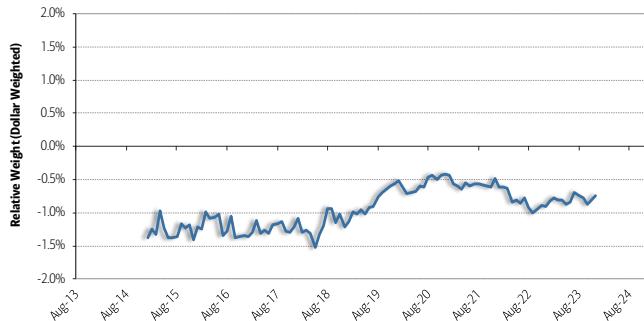


Source : BofA Global Quantitative Strategy, MSCI, FTSE, Factset, Bloomberg, 13F Filings, Benchmark Indices, Country Stock Exchanges

BofA GLOBAL RESEARCH

**Chart 318: Japan: Regional Positioning**

Funds have added to their active exposure in the last 3m

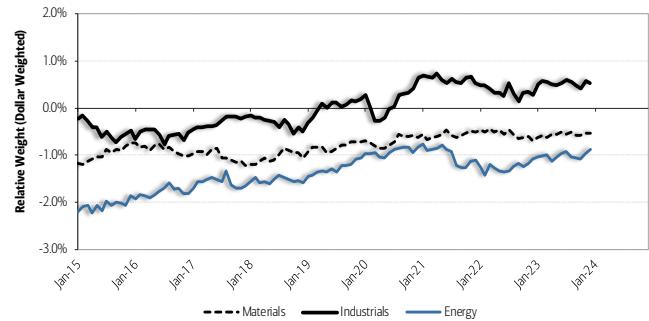


Source : BofA Global Quantitative Strategy, MSCI, FTSE, Factset, Bloomberg, 13F Filings, Benchmark Indices, Country Stock Exchanges

BofA GLOBAL RESEARCH

**Chart 319: Global: Late Cyclicals – Sector Positioning**

Funds are most overweight Industrials

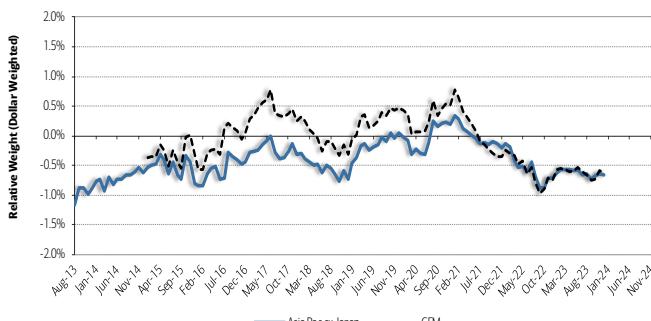


Source : BofA Global Quantitative Strategy, MSCI, FTSE, Factset, Bloomberg, 13F Filings, Benchmark Indices, Country Stock Exchanges

BofA GLOBAL RESEARCH

**Chart 320: Asia Pac ex-Japan and Emerging Markets - Regional Positioning**

Funds are currently underweight APxJ by -0.67%

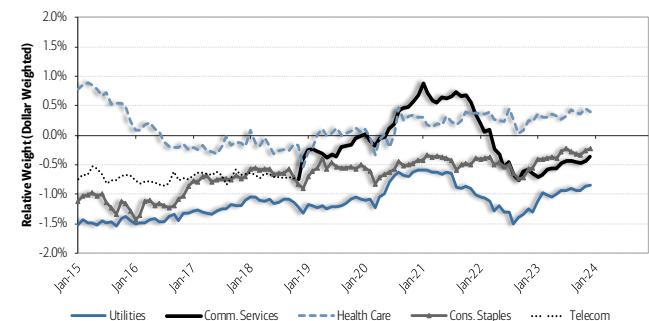


Source : BofA Global Quantitative Strategy, MSCI, FTSE, Factset, Bloomberg, 13F Filings, Benchmark Indices, Country Stock Exchanges

BofA GLOBAL RESEARCH

**Chart 321: Global: Defensives – Sector Positioning**

Funds are most overweight Health Care



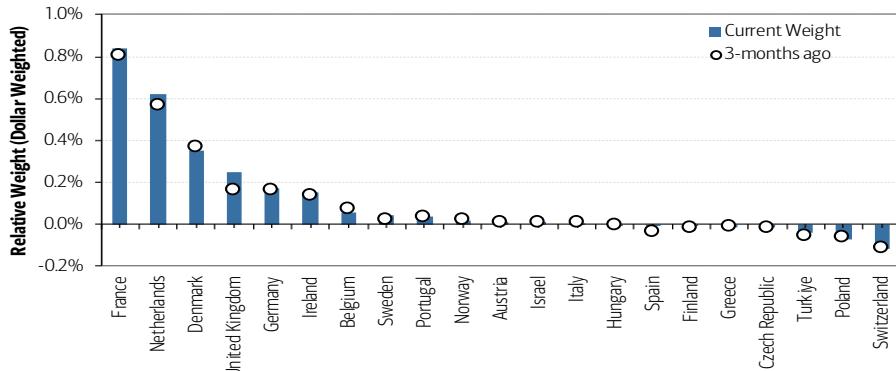
Source : BofA Global Quantitative Strategy, MSCI, FTSE, Factset, Bloomberg, 13F Filings, Benchmark Indices, Country Stock Exchanges

BofA GLOBAL RESEARCH



### Chart 322: Europe: Country Positioning

Funds are most overweight France and most underweight Switzerland

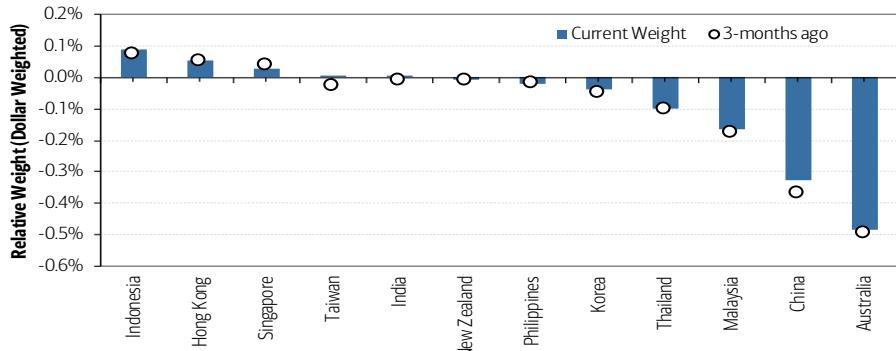


Source : BofA Global Quantitative Strategy, MSCI, FTSE, Factset, Bloomberg, 13F Filings, Benchmark Indices, Country Stock Exchanges

BofA GLOBAL RESEARCH

### Chart 323: Asia Pac ex-Japan: Country Positioning

Relative to their benchmark funds are most overweight Indonesia

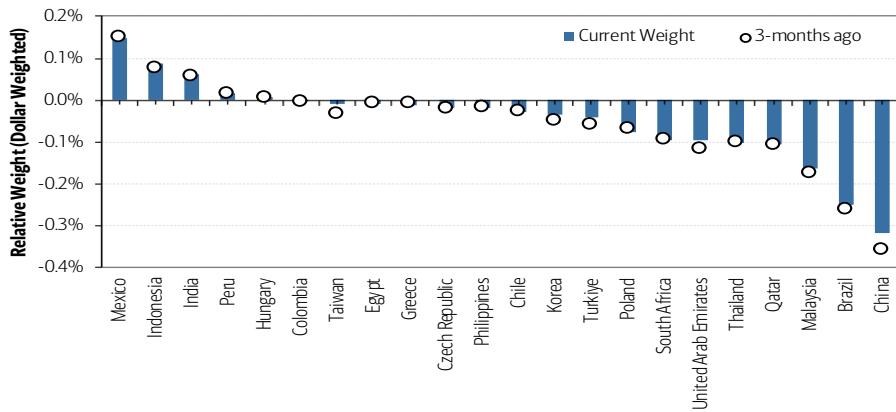


Source : BofA Global Quantitative Strategy, MSCI, FTSE, Factset, Bloomberg, 13F Filings, Benchmark Indices, Country Stock Exchanges

BofA GLOBAL RESEARCH

### Chart 324: Emerging Markets: Country Positioning

Relative to their benchmark funds are most overweight Mexico



Source : BofA Global Quantitative Strategy, MSCI, FTSE, Factset, Bloomberg, 13F Filings, Benchmark Indices, Country Stock Exchanges

BofA GLOBAL RESEARCH

# Global Fund Performance

## Methodology

In this report we analyse relative returns of large long-only equity funds which declare portfolio holdings on a regular basis (frequency differs by fund, but is typically monthly or quarterly), manage more than US\$500m in any one region, for which we have identified and have access to their benchmark, and which have a ready-made "fund price" available from various data sources (Factset, Bloomberg). The table below summarizes the total number of funds, their funds under management and number of unique benchmarks used in this analysis.

**Table 45: Summary Stats for Fund Returns**

Earnings expectations have improved in World in last 6m

Number of Funds	Total FUM (\$US millions)	Unique Benchmarks
2154	13,763,648	479

Source : BofA Global Quantitative Strategy, Factset, Bloomberg, Benchmark Indices

BofA GLOBAL RESEARCH

We divide funds by type based on various characteristics, including Region, Investment Style, Active / Passive, Active Share Ratio (ASR), Funds Under Management (FUM), Market Cap of Stocks, Portfolio Size (# of stocks in the fund), and Turnover.

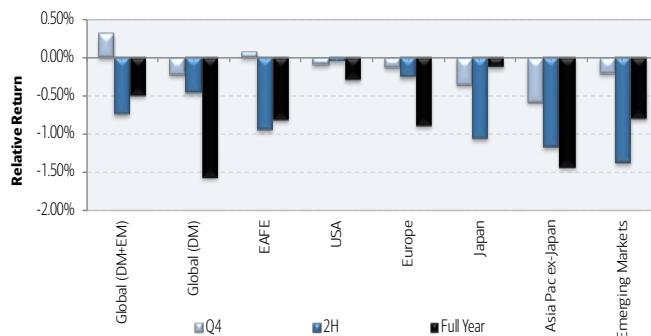
For each period of return we currently include in the report (1m, 3m, 6m, 12m, Year-to-date, 2yr, 3yr) we only include funds which were in our analysis and have price return for the entire period in question. We calculate relative returns of each fund for each period. Relative return is defined as the difference between a fund's return and the benchmark return. We calculate Median, Top Quartile, and Bottom Quartile relative returns across all funds for each group of fund in the analysis.

The data in this report is based on the most recent month-end data. The number of funds may change each month based on data availability and an annual refresh of the funds included in this analysis.

These "Benchmark Indices" are managed by MSCI, S&P, FTSE and Country Indices such as NSE, CNX among others.

**Chart 325: Relative returns of Funds by Region: Periodic returns**

Last month the best performing fund group was Global (DM+EM)

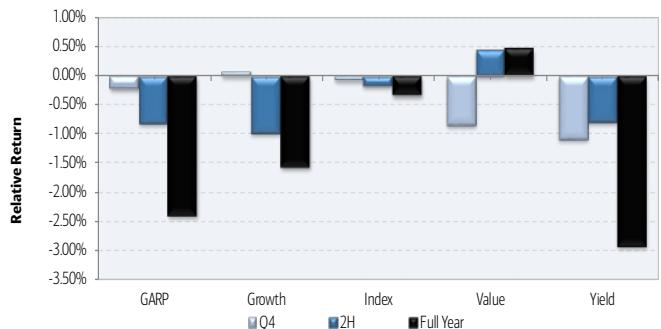


Source : BofA Global Quantitative Strategy, Factset, Bloomberg, Benchmark Indices

BofA GLOBAL RESEARCH

**Chart 326: Relative returns of Funds by Investment Style: Periodic returns**

Last month the best performing fund group was Growth



Source : BofA Global Quantitative Strategy, Factset, Bloomberg, Benchmark Indices

BofA GLOBAL RESEARCH



### Chart 327: Relative returns of Funds by Type (Active/Passive): Periodic returns

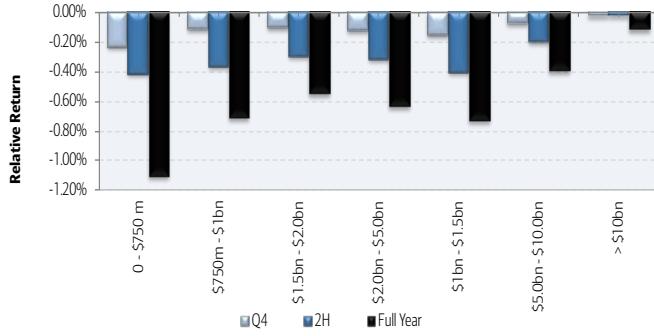
Last month the best performing fund group was Passive



Source : BofA Global Quantitative Strategy, Factset, Bloomberg, Benchmark Indices  
BofA GLOBAL RESEARCH

### Chart 329: Relative returns of Funds by FUM (USD \$): Periodic returns

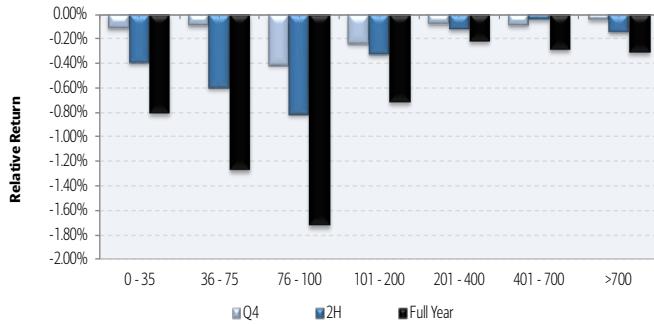
Last month the best performing fund group was \$1bn - \$1.5bn



Source : BofA Global Quantitative Strategy, Factset, Bloomberg, Benchmark Indices  
BofA GLOBAL RESEARCH

### Chart 331: Relative returns of Funds by Portfolio Size (# of stocks): Periodic returns

201 - 400 funds have performed the best in the last 12m



Source : BofA Global Quantitative Strategy, Factset, Bloomberg, Benchmark Indices  
BofA GLOBAL RESEARCH

### Chart 328: Relative returns of Funds by ASR: Periodic returns

Last month the best performing fund group was 81-100%

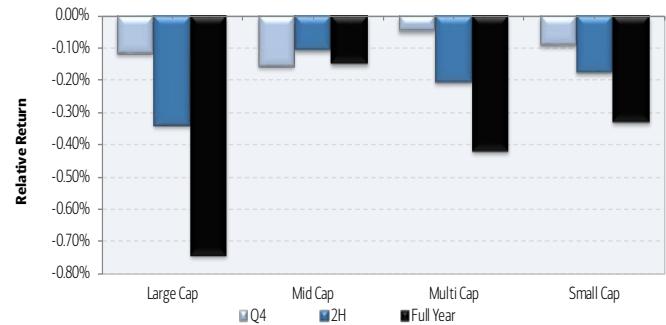


Source : BofA Global Quantitative Strategy, Factset, Bloomberg, Benchmark Indices

BofA GLOBAL RESEARCH

### Chart 330: Relative returns of Funds by MCAP: Periodic returns

Mid Cap funds have performed best in the last 6m

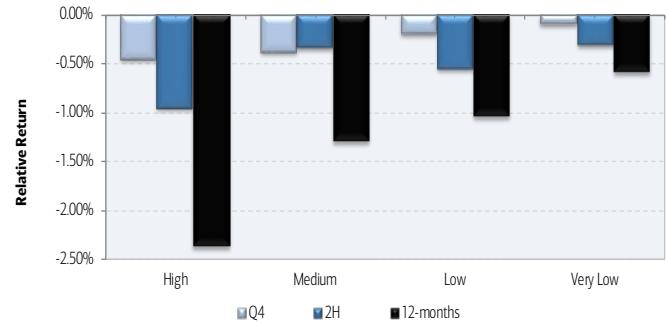


Source : BofA Global Quantitative Strategy, Factset, Bloomberg, Benchmark Indices

BofA GLOBAL RESEARCH

### Chart 332: Relative returns of Funds by Turnover: Periodic returns

Very Low funds have performed the best in the last 12m



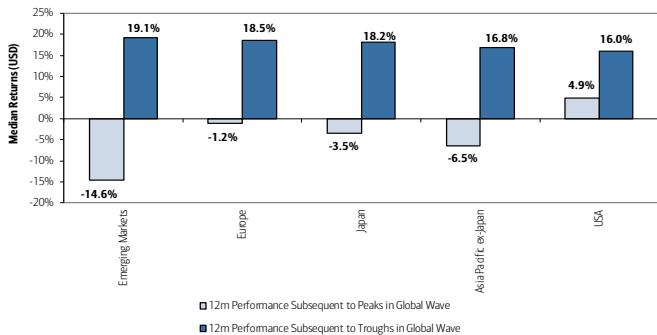
Source : BofA Global Quantitative Strategy, Factset, Bloomberg, Benchmark Indices

BofA GLOBAL RESEARCH

# Regional Allocation

## Chart 333: Regional Performance after the Global Wave Peaks and Troughs

Emerging Markets perform the best post troughs in the Global Wave



Source : BofA Global Quantitative Strategy, MSCI, IBES, Factset, Bloomberg, OECD, IMF, ICE Bond Indices, National Statistics Database

BofA GLOBAL RESEARCH

## Chart 334: S&P 500 Index (logged)

S&P 500 has rallied +2.6% year-to-date (until 26-Jan-24)

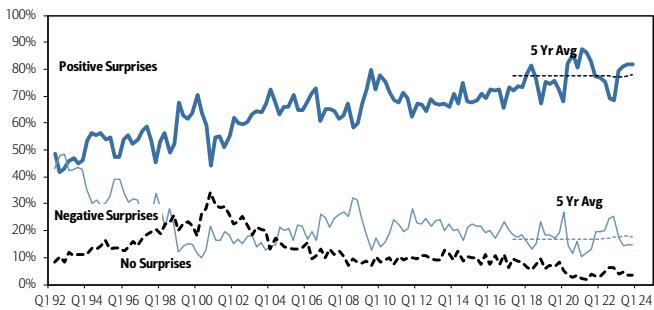


Source : BofA Global Quantitative Strategy, S&P

BofA GLOBAL RESEARCH

## Chart 335: Proportion of S&P 500 Companies Reporting an Earnings Surprise

S&P 500 Earnings 4Q23 - Positive surprises 82% out of 458 companies (92%) reported

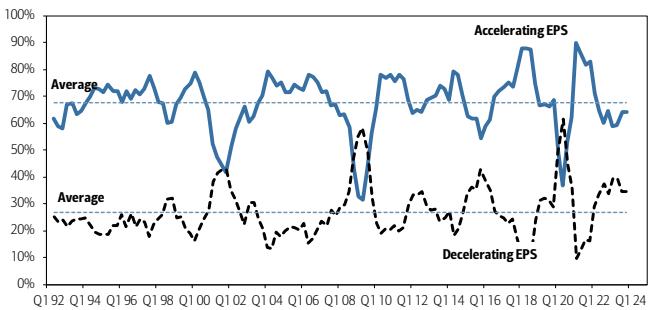


Source : BofA Global Quantitative Strategy, Bloomberg

BofA GLOBAL RESEARCH

## Chart 336: Proportion of S&P 500 Reporting Up / Down YoY EPS Growth

S&P 500 Earnings 4Q23 - Positive growth 64% out of 458 companies (92%) reported

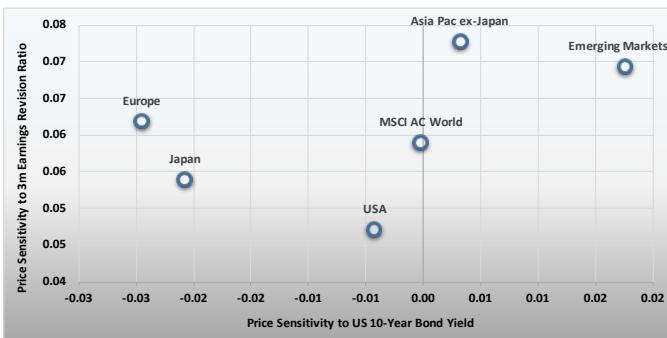


Source : BofA Global Quantitative Strategy, Bloomberg

BofA GLOBAL RESEARCH

## Chart 337: Regional Price Sensitivity to Earnings Trends and Bond Yields

EM is most sensitive to EPS trends and bond yields

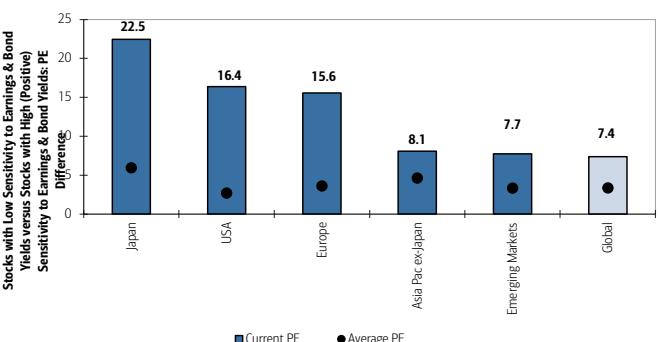


Source : BofA Global Quantitative Strategy, MSCI, IBES, Exshare, Bloomberg

BofA GLOBAL RESEARCH

## Chart 338: Regional Low vs High Earnings Trends and Bond Yields Sensitivity PE Ratio

High Earnings trends and Bond Yields sensitive stocks are trading at a discount



Source : BofA Global Quantitative Strategy, MSCI, IBES, Exshare, Bloomberg

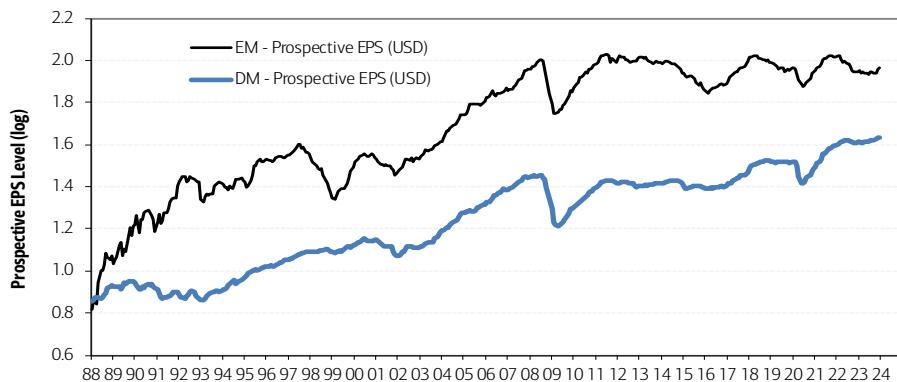
BofA GLOBAL RESEARCH



## Emerging vs Developed Markets

### Chart 339: Prospective EPS and Trend EPS – Emerging Markets Vs Developed Markets

Prospective EPS has ticked up recently for Emerging Markets

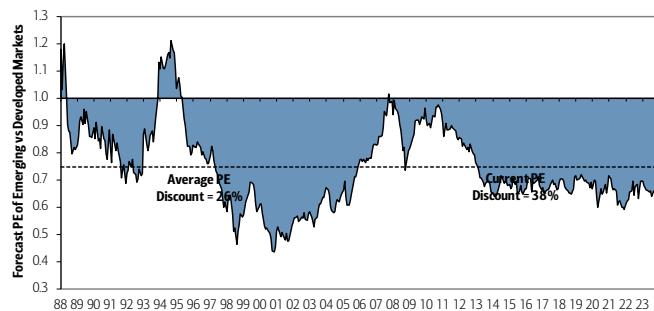


Source : BofA Global Quantitative Strategy, IBES, MSCI

BofA GLOBAL RESEARCH

### Chart 340: Emerging vs Developed Markets Forecast PE

EM is trading at 38% discount to DM currently

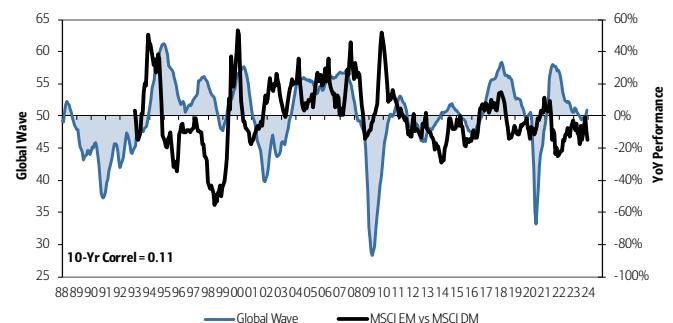


Source : BofA Global Quantitative Strategy, IBES, MSCI

BofA GLOBAL RESEARCH

### Chart 341: Emerging Markets relative Performance vs the Global Wave

EM has underperformed DM by -14.7% in the last 12m

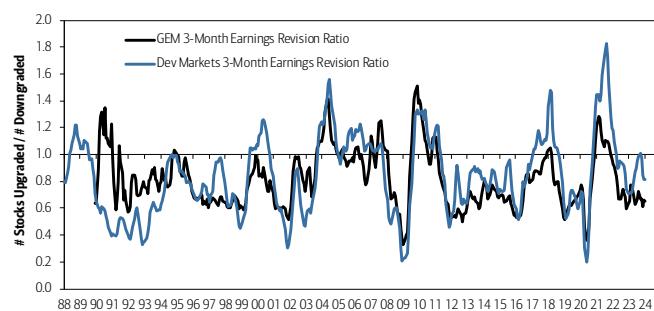


Source : BofA Global Quantitative Strategy, MSCI, IBES, Haver, Bloomberg, OECD, IMF, ICE Bond Indices, National Statistics Database

BofA GLOBAL RESEARCH

### Chart 342: Emerging vs Developed Markets Earnings Revision Ratio

ERR in both regions is below 1.0 (more downgrades than upgrades)

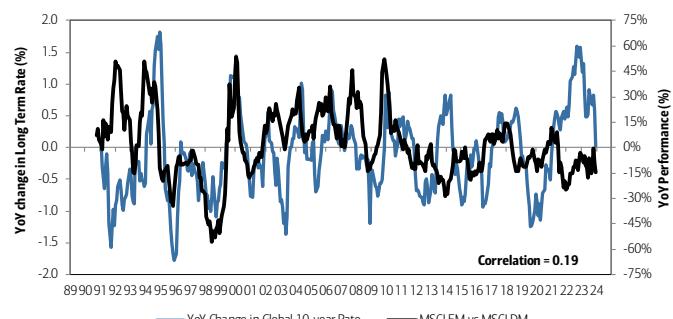


Source : BofA Global Quantitative Strategy, IBES, MSCI

BofA GLOBAL RESEARCH

### Chart 343: Emerging vs Developed Markets performance and Long Term Rates

EM tends to outperform DM in rising yield environment



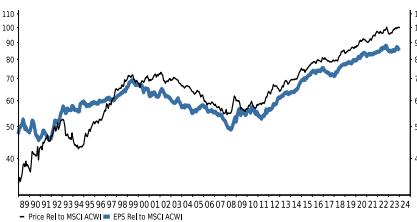
Source : BofA Global Quantitative Strategy, MSCI, Bloomberg

BofA GLOBAL RESEARCH

# USA

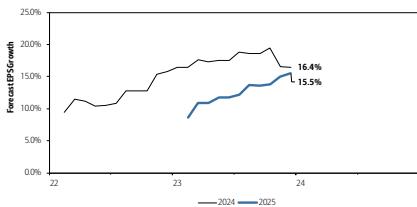
## Chart 344: USA: Momentum & Value vs World

Relative EPS trend for USA has improved in last 12m



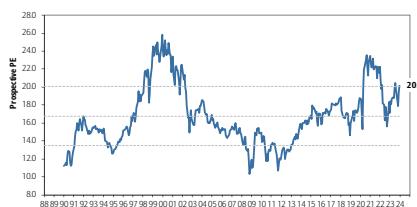
## Chart 347: USA: Forecast EPS Growth

Forecast EPS growth for 2025 is 15%



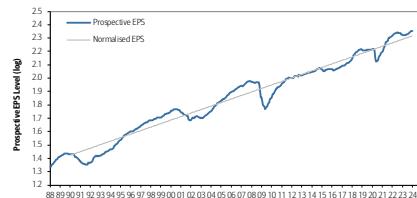
## Chart 350: USA: Prospective PE

USA forecast PE is currently at 20.7



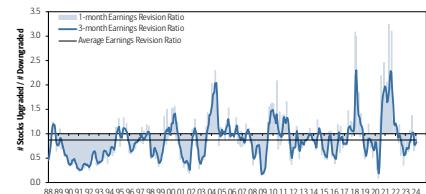
## Chart 345: USA: Prospective EPS

Earnings expectations have improved in USA in last 3m



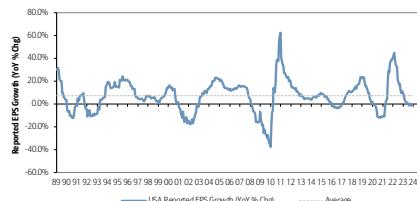
## Chart 346: USA: Earnings Revision Ratio

Earnings revisions fell in USA last month, but the trend remains strong



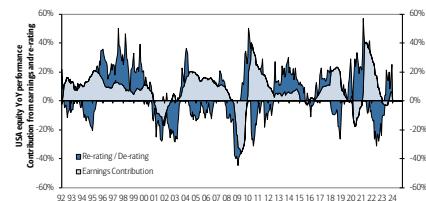
## Chart 348: USA: Reported EPS (LTM)

Current reported EPS growth is -1%



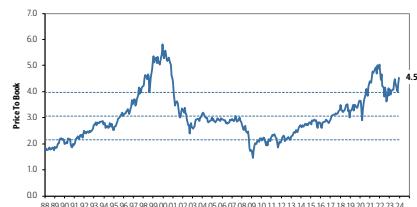
## Chart 349: USA: Earnings Contribution

In the last 12m, re-rating contributed 18.8% to equity performance (25.0%)



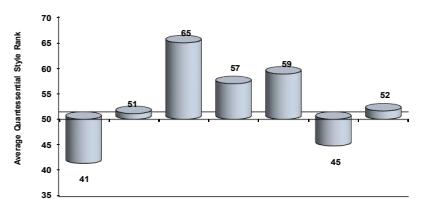
## Chart 351: USA: PB Trailing

USA PB (trailing) is currently above the long-term average



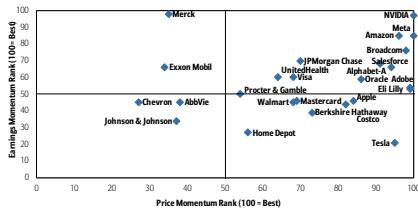
## Chart 352: USA: Average Style Rank

From a style perspective the US is tilted towards Quality



### Chart 353: USA: Quadrant Analysis for Stocks

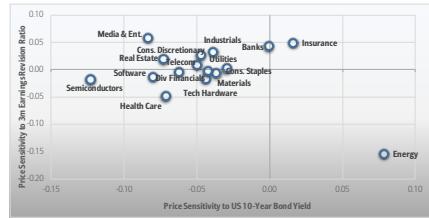
There are more stocks in the attractive top-right quadrant than bottom-left



Source : BofA Global Quantitative Strategy, MSCI, IBES  
BofA GLOBAL RESEARCH

### Chart 356: USA Sectors: Price Sensitivity to Earnings Trends and Bond Yields

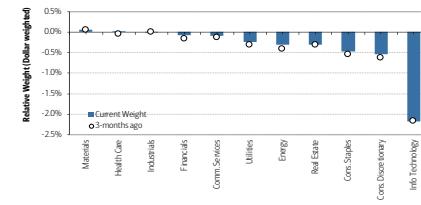
Insurance are most positively sensitive to earnings and yields



Source : BofA Global Quantitative Strategy, MSCI, IBES, Exshare, Bloomberg  
BofA GLOBAL RESEARCH

### Chart 354: USA: Sector Positioning

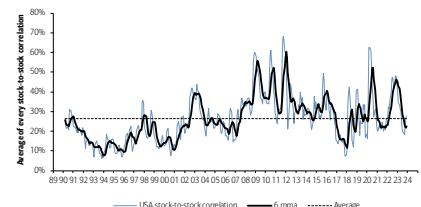
Funds are most overweight Materials



Source : BofA Global Quantitative Strategy, MSCI, FTSE, Factset, Bloomberg, 13F Filings, Benchmark Indices, Stock Exchanges  
BofA GLOBAL RESEARCH

### Chart 355: USA: Stock-to-stock correlation

Correlations have risen in recent months

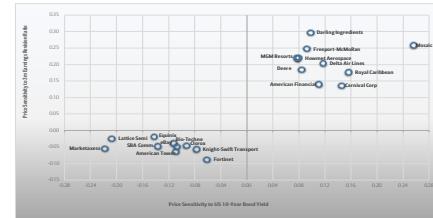


Source : BofA Global Quantitative Strategy, MSCI, Exshare, Factset

BofA GLOBAL RESEARCH

### Chart 356: USA Stocks: Price Sensitivity to Earnings Trends and Bond Yields

Mosaic Co is positively sensitive to earnings and yield moves



Source : BofA Global Quantitative Strategy, MSCI, IBES, Exshare, Bloomberg  
BofA GLOBAL RESEARCH

### Chart 358: USA: Low vs High Earnings Trends and Bond Yields Sensitivity PE Ratio

The relative PE currently is 16.4x



Source : BofA Global Quantitative Strategy, MSCI, IBES, Exshare, Bloomberg

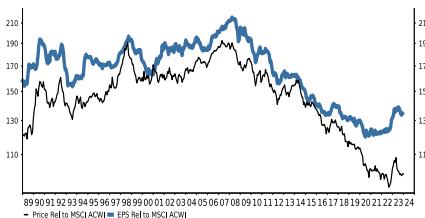
BofA GLOBAL RESEARCH



## Europe

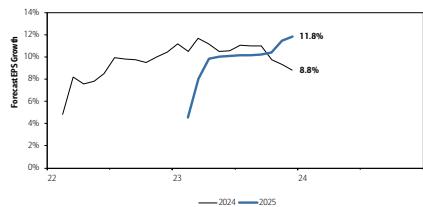
### Chart 359: Europe vs. The World – Momentum & Value

Relative EPS trend for Europe has deteriorated in last 3m



### Chart 362: Europe: Forecast EPS Growth

Forecast EPS growth for 2025 is 12%



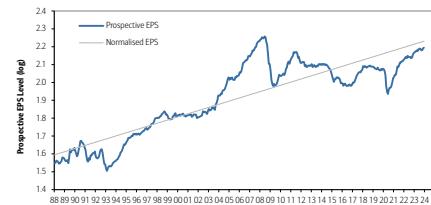
### Chart 365: Europe: Prospective PE

Europe forecast PE is currently at 12.8



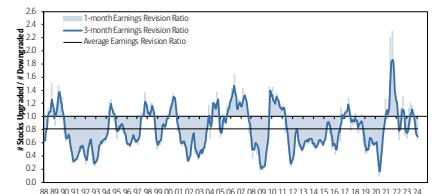
### Chart 360: Europe: Prospective EPS

Earnings expectations have improved in Europe in last 3m



### Chart 361: Europe: Earnings Revision Ratio

Earnings revisions for Europe fell last month and remains below long term trend



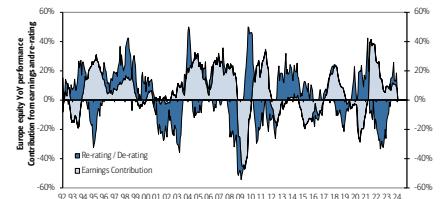
### Chart 363: Europe: Reported EPS (LTM)

Current reported EPS growth is 7%



### Chart 364: Europe: Earnings Contribution

In the last 12m, re-rating contributed 9.4% earnings contributed 7.3%



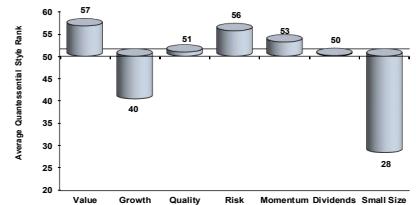
### Chart 366: Europe: PB Trailing

PB (trailing) is currently below the long-term average



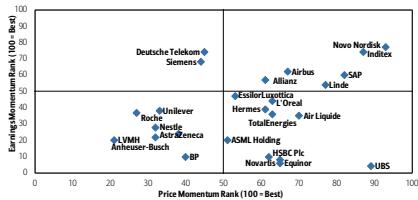
### Chart 367: Europe: Average Style Rank

Europe is most overweight Value



### Chart 368: Europe: Quadrant Analysis for Stocks

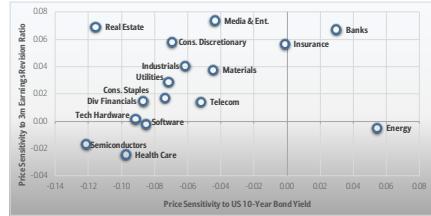
There are more stocks in the unattractive bottom-left quadrant than top-right



Source : BofA Global Quantitative Strategy, MSCI, IBES  
BofA GLOBAL RESEARCH

### Chart 371: Europe Sectors: Price Sensitivity to Earnings Trends and Bond Yields

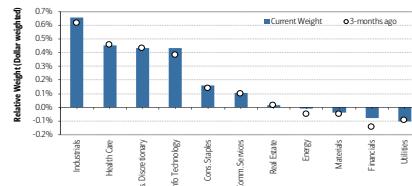
Banks are most positively sensitive to earnings and yields



Source : BofA Global Quantitative Strategy, MSCI, IBES, Exshare, Bloomberg  
BofA GLOBAL RESEARCH

### Chart 369: Europe: Sector Positioning

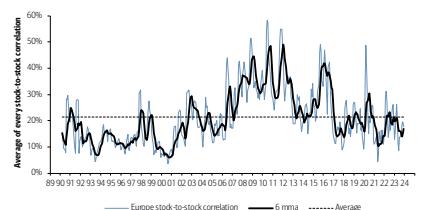
Funds are most overweight Industrials



Source : BofA Global Quantitative Strategy, MSCI, FTSE, Factset, Bloomberg, 13F Filings, Benchmark Indices, Stock Exchanges  
BofA GLOBAL RESEARCH

### Chart 370: Europe: Stock-to-stock correlation

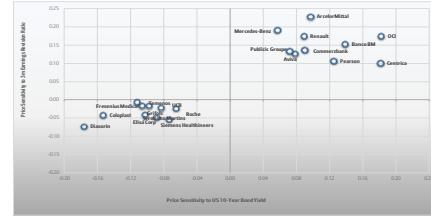
Correlations have risen in recent months



Source : BofA Global Quantitative Strategy, MSCI, Exshare, Factset  
BofA GLOBAL RESEARCH

### Chart 372: Europe Stocks: Price Sensitivity to Earnings Trends and Bond Yields

OCI is positively sensitive to earnings and yield moves



Source : BofA Global Quantitative Strategy, MSCI, IBES, Exshare, Bloomberg  
BofA GLOBAL RESEARCH

### Chart 373: Europe: Low vs High Earnings Trends and Bond Yields Sensitivity PE Ratio

The relative PE currently is 15.6x



Source : BofA Global Quantitative Strategy, MSCI, IBES, Exshare, Bloomberg  
BofA GLOBAL RESEARCH

# Japan

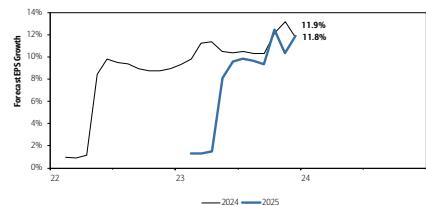
## Chart 374: Japan vs. The World – Momentum & Value

Relative EPS trend for Japan has improved in last 3m



## Chart 377: Japan: Forecast EPS Growth

Forecast EPS growth for 2024 is 12%



## Chart 380: Japan: Prospective PE

PE (12m fwd) is currently below the long-term average



## Chart 375: Japan: Prospective EPS

Earnings expectations have improved in Japan in last 6m



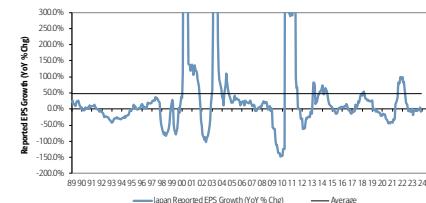
## Chart 376: Japan: Earnings Revision Ratio

ERR fell in Japan last month and the trend moderated



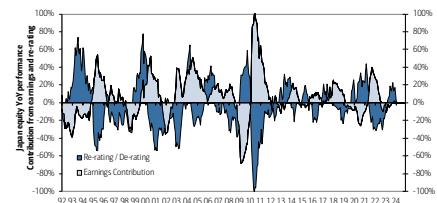
## Chart 378: Japan: Reported EPS (LTM)

Current reported EPS growth is -6%



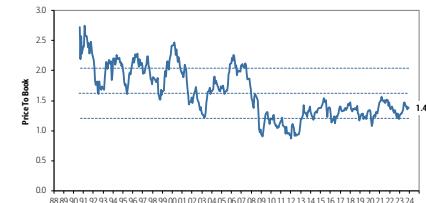
## Chart 379: Japan: Earnings Contribution

In the last 12m, re-rating contributed 16.9% earnings contributed 0.9%



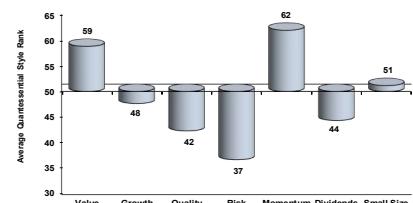
## Chart 381: Japan: PB Trailing

PB (trailing) is currently below the long-term average



## Chart 382: Japan: Average Style Rank

From a style perspective Japan is tilted towards Momentum



### Chart 383: Japan: Quadrant Analysis for Stocks

Majority of the stocks fall in the attractive top-right quadrant



Source : BofA Global Quantitative Strategy, MSCI, IBES  
BofA GLOBAL RESEARCH

### Chart 386: Japan Sectors: Price Sensitivity to Earnings Trends and Bond Yields

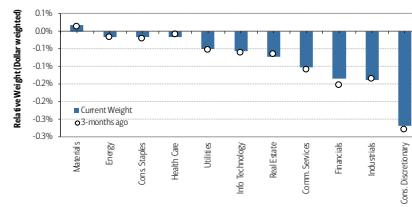
Insurance are most positively sensitive to earnings and yields



Source : BofA Global Quantitative Strategy, MSCI, IBES, Exshare, Bloomberg  
BofA GLOBAL RESEARCH

### Chart 384: Japan: Sector Positioning

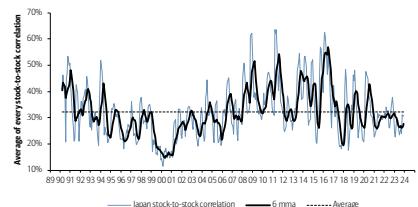
Funds are most overweight Materials



Source : BofA Global Quantitative Strategy, MSCI, FTSE, Factset, Bloomberg, 13F Filings, Benchmark Indices, Stock Exchanges  
BofA GLOBAL RESEARCH

### Chart 385: Japan: Stock-to-stock correlation

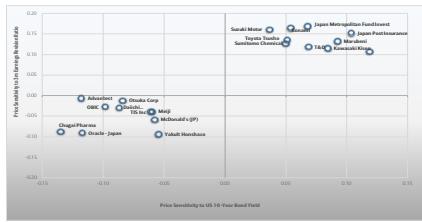
Correlations have risen in recent months



Source : BofA Global Quantitative Strategy, MSCI, Exshare, Factset  
BofA GLOBAL RESEARCH

### Chart 387: Japan Stocks: Price Sensitivity to Earnings Trends and Bond Yields

Japan Post Insurance is positively sensitive to earnings and yield moves



Source : BofA Global Quantitative Strategy, MSCI, IBES, Exshare, Bloomberg  
BofA GLOBAL RESEARCH

### Chart 388: Japan: Low vs High Earnings Trends and Bond Yields Sensitivity PE Ratio

The relative PE currently is 22.5x

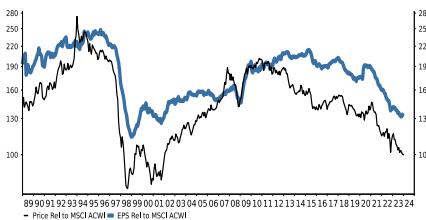


Source : BofA Global Quantitative Strategy, MSCI, IBES, Exshare, Bloomberg  
BofA GLOBAL RESEARCH

## Asia Pac ex-Japan

### Chart 389: APxJ vs. The World – Momentum & Value

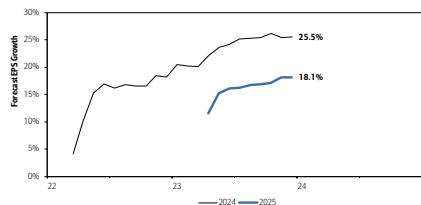
Asia Pac ex-Japan has underperformed in last 3m



Source : BofA Global Quantitative Strategy, MSCI, IBES  
BofA GLOBAL RESEARCH

### Chart 392: APxJ: Forecast EPS Growth

Forecast EPS growth for 2025 is 18%



Source : BofA Global Quantitative Strategy, MSCI, IBES  
BofA GLOBAL RESEARCH

### Chart 395: APxJ: Prospective PE

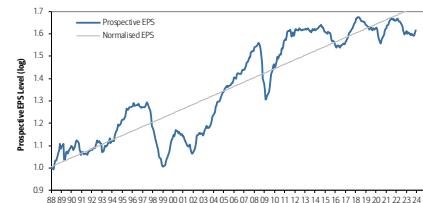
PE (12m fwd) is currently below the long-term average



Source : BofA Global Quantitative Strategy, MSCI, IBES  
BofA GLOBAL RESEARCH

### Chart 390: APxJ: Prospective EPS

Earnings expectations have improved in Asia Pacific Ex-Japan in last 3m



Source : BofA Global Quantitative Strategy, MSCI, IBES  
BofA GLOBAL RESEARCH

### Chart 391: APxJ: Earnings Revision Ratio

ERR fell in Asia Pac Ex-Japan last month and the trend moderated



Source : BofA Global Quantitative Strategy, MSCI, IBES  
BofA GLOBAL RESEARCH

### Chart 393: APxJ: Reported EPS (LTM)

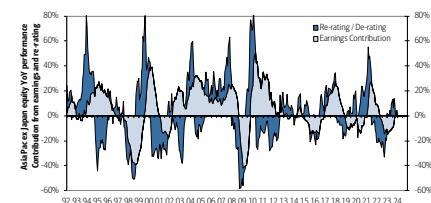
Current reported EPS growth is -7%



Source : BofA Global Quantitative Strategy, MSCI, IBES  
BofA GLOBAL RESEARCH

### Chart 394: APxJ: Earnings Contribution

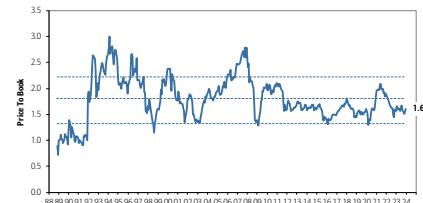
In the last 12m, earnings contributed 1.7% to equity performance (4.6%)



Source : BofA Global Quantitative Strategy, MSCI, IBES  
BofA GLOBAL RESEARCH

### Chart 396: APxJ: PB Trailing

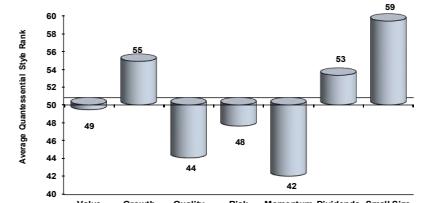
Asia Pac ex-Japan PB is currently at 1.5



Source : BofA Global Quantitative Strategy, MSCI, IBES  
BofA GLOBAL RESEARCH

### Chart 397: APxJ: Average Style Rank

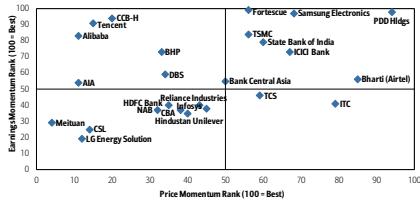
APxJ has most exposure to Small Size stocks



Source : BofA Global Quantitative Strategy, IBES, MSCI  
BofA GLOBAL RESEARCH

### **Chart 398: APxJ: Quadrant Analysis for Stocks**

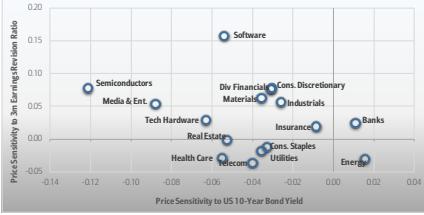
There are more stocks in the unattractive bottom-left quadrant than top-right



Source : BofA Global Quantitative Strategy, MSCI, IBES  
BofA GLOBAL RESEARCH

## **Chart 401: APxJ Sectors: Price Sensitivity to Earnings Trends and Bond Yields**

Banks are most positively sensitive to earnings and yields

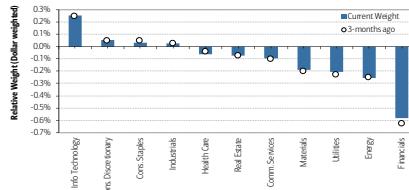


Source : BofA Global Quantitative Strategy, MSCI, IBES, Exshare, Bloomberg

BofA GLOBAL RESEARCH

### **Chart 399: APxJ: Sector Positioning**

Funds are most overweight Info Technology

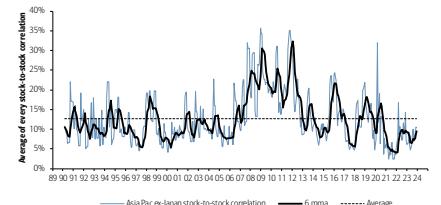


Source : BofA Global Quantitative Strategy, MSCI, FTSE, Factset, Bloomberg, 13F Filings, Benchmark Indices, Stock Exchanges

BofA GLOBAL RESEARCH

## **Chart 400: APxJ: Stock-to-stock correlation**

Correlations have risen in recent months

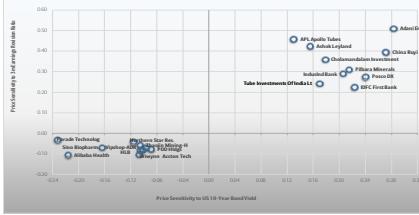


Source : BofA Global Quantitative Strategy, MSCI, Exshare, Factset

BofA GLOBAL RESEARCH

## **Chart 402: APxJ Stocks: Price Sensitivity to Earnings Trends and Bond Yields**

Ashok Leyland is positively sensitive to earnings and yield moves

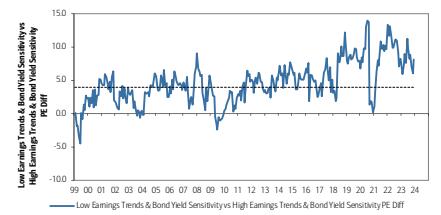


Source : BofA Global Quantitative Strategy, MSCI, IBES, Exshare, Bloomberg

BofA GLOBAL RESEARCH

### **Chart 403: APxJ: Low vs High Earnings Trends and Bond Yields Sensitivity PE Ratio**

The PE difference is currently 8.1x



Source : BofA Global Quantitative Strategy, MSCI, IBES, Exshare, Bloomberg

BofA GLOBAL RESEARCH

## Emerging Markets (GEM)

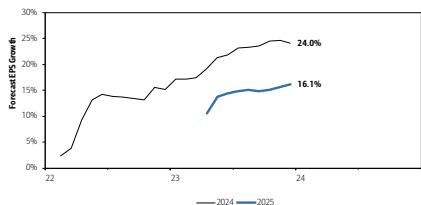
### Chart 404: GEM vs. The World – Momentum & Value

Emerging Markets has underperformed in last 6m



### Chart 407: GEM: Forecast EPS Growth

Forecast EPS growth for 2025 is 16%



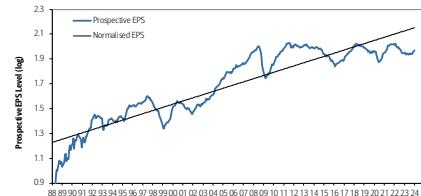
### Chart 410: GEM: Prospective PE

Emerging Markets forecast PE is currently at 10.7



### Chart 405: GEM: Prospective EPS

Earnings expectations have improved in GEM in last 3m



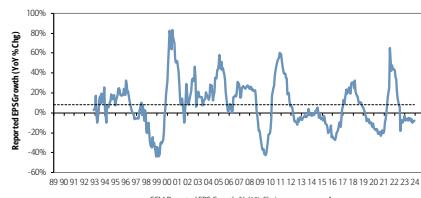
### Chart 406: GEM: Earnings Revision Ratio

ERR fell in Emerging Markets last month and the trend moderated



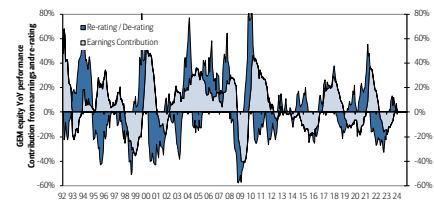
### Chart 408: GEM: Reported EPS (LTM)

Current reported EPS growth is -7%



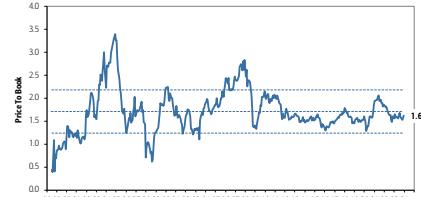
### Chart 409: GEM: Earnings Contribution

In the last 12m, earnings contributed 4.1% to equity performance (7.0%)



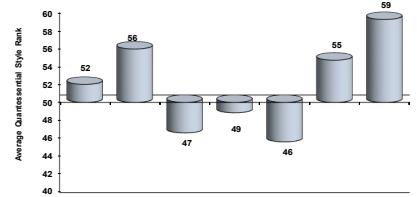
### Chart 411: GEM: PB Trailing

GEM PB Ratio has ticked down compared to last month



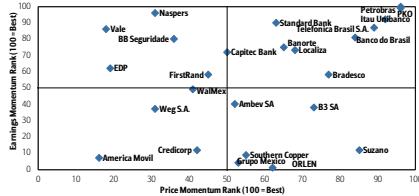
### Chart 412: GEM: Average Style Rank

From a style perspective GEM is tilted towards Small Size



### **Chart 413: GEM: Quadrant Analysis for Stocks**

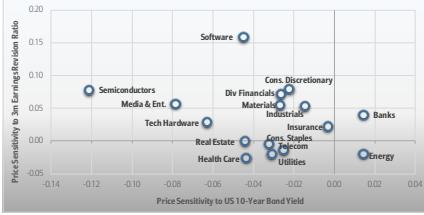
36% of largest 25 stocks are in the top-right quadrant



Source : BofA Global Quantitative Strategy, MSCI, IBES  
BofA GLOBAL RESEARCH

### **Chart 416: GEM Sectors: Price Sensitivity to Earnings Trends and Bond Yields**

Banks are most positively sensitive to earnings and yields

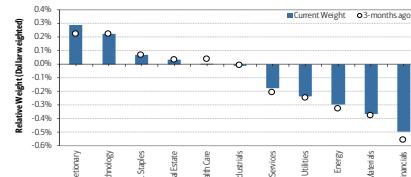


Source : BofA Global Quantitative Strategy, MSCI, IBES, Exshare, Bloomberg

BofA GLOBAL RESEARCH

## **Chart 414: GEM: Sector Positioning**

Funds are most overweight Cons. Discretionary

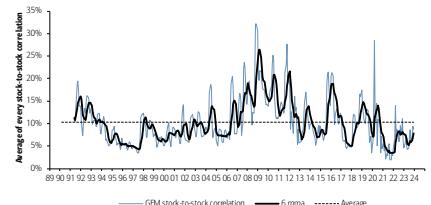


Source : BofA Global Quantitative Strategy, MSCI, FTSE, Factset, Bloomberg, 13F Filings, Benchmark Indices, Stock Exchanges

BofA GLOBAL RESEARCH

### **Chart 415: GEM: Stock-to-stock correlation**

Correlations are trending below long-term avg

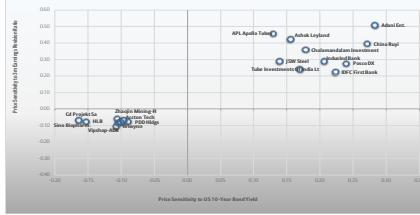


Source : BofA Global Quantitative Strategy, MSCI, Exshare, Factset

BofA GLOBAL RESEARCH

## **Chart 417: GEM Stocks: Price Sensitivity to Earnings Trends and Bond Yields**

Ashok Leyland is positively sensitive to earnings and yield moves



Source : BofA Global Quantitative Strategy, MSCI, IBES, Exshare, Bloomberg

BofA GLOBAL RESEARCH

### **Chart 418: GEM: High vs Low Earnings Trends and Bond Yields Sensitivity PE Ratio**

The relative PE currently is 7.7x



Source : BofA Global Quantitative Strategy, MSCI, IBES, Exshare, Bloomberg

BofA GLOBAL RESEARCH

# Global Sector Allocation

## Construction Methodology

Our system for ranking global sectors incorporates four components representing macro, bottom-up, style, and valuation. The backtesting in this analysis is from Dec-92 to Aug-10 and we introduced the current version of analysis in Sep-10.

This analysis includes stocks in the MSCI AC World Index as at each month-end. The model determines the Positive Sectors which we expect to outperform the MSCI AC World Index, the Negative Sectors which we expect to underperform the Index, and the Neutral Sectors which we expect to perform roughly in-line with the Index using the month-end data. In this analysis, the sectors are based broadly on the Global Industry Classification Standard (GICS). We split the largest three sectors by market cap into eight sectors, thereby converting the ten GICS sectors into fifteen at the end of each month. The number of sectors included in the analysis stays constant through time. Each sector's performance is based on its respective MSCI index.

A Combined Rank is the equal-weighted average of the Top-Down Rank, Bottom-Up Rank, Style Rank, and PE Rank.

Sectors with a Combined Rank of 60 or above are selected as the Positive Sectors, while sectors with a Combined Rank of 40 or below are selected as the Negative Sectors. Sectors that have a Combined Rank between 40 and 60 are Neutral Sectors

### Chart 419: Global Sector Allocation Ranks Definition

Four Pillars Rank is a combination of Top-Down, Bottom-Up, Style, PE Rank

**Top-Down Rank** – a percentile rank based on performance in previous periods in which the Global Wave was rising or falling. The sector which averaged the best performance during periods in which the Global Wave was rising will have a Top-Down Rank of 100.

**Bottom-Up Rank** – a percentile rank based on the proportion of stocks with above average earnings and price momentum less the proportion of stocks with below average earnings and price momentum from our Global Contenders & Defenders analysis.

**Sector Style Rank** – a percentile rank based on the average Style Rank of stocks in that sector and the style tilts suggested by our back-testing. The sector with the most extreme exposure to the styles which back-testing suggests should outperform as the Global Wave is rising will have a Sector Style Rank of 100.

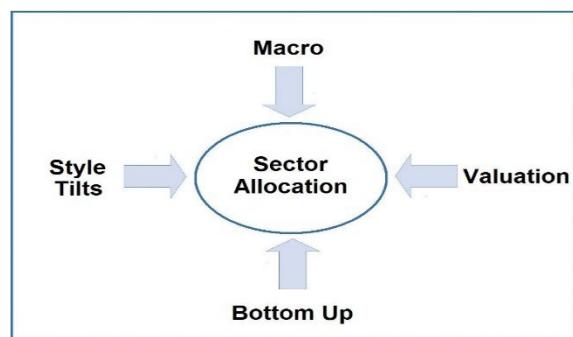
**Sector PE Rank** – a percentile rank of prospective sector PE based on IBES consensus EPS estimates. The sector with the lowest PE will have Rank of 100.

Source : BofA Global Quantitative Strategy

BofA GLOBAL RESEARCH

### Chart 420: Global Sector Allocation Concept

Framework for Sector Allocation



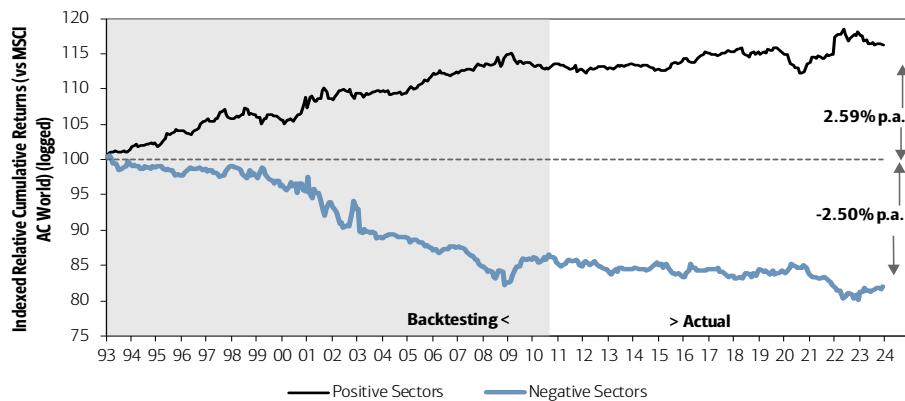
Source : BofA Global Quantitative Strategy

BofA GLOBAL RESEARCH



### Chart 421: Relative performance of positive and negative global sectors

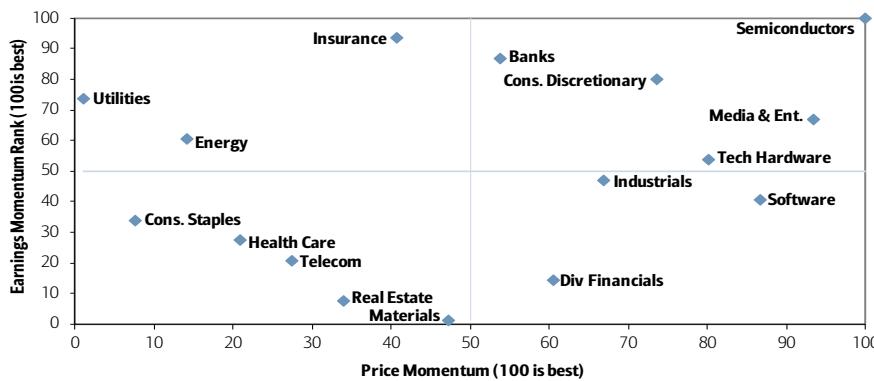
Sectors with attractive returns return 2.59% p.a. relative to ACWI



BofA GLOBAL RESEARCH

### Chart 422: Global Sectors Quadrant Analysis

31% of sectors are in the unattractive bottom-left quadrant

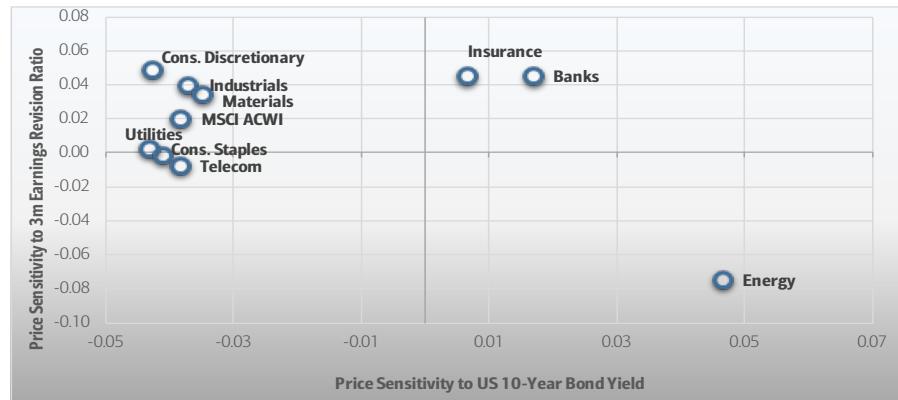


Source : BofA Global Quantitative Strategy, MSCI, IBES

BofA GLOBAL RESEARCH

### Chart 423: Global Sectors Price Sensitivity to Earnings Trends and Bond Yields

Banks and Insurance are most positively sensitive to earnings and yields



Source : BofA Global Quantitative Strategy, MSCI, IBES, Exshare, Bloomberg

BofA GLOBAL RESEARCH

**Table 46: Global Sector Ranking**

Sector with the highest Four Pillars rank is Insurance Real Estate has the lowest rank

<b>Sector</b>	<b>Top</b>	<b>Bottom</b>	<b>Style</b>	<b>PE Rank</b>	<b>Combined</b>	<b>Recommendation</b>
Insurance	8	87	100	80	69	<b>Positive</b>
Cons. Discretionary	67	93	54	54	67	<b>Positive</b>
Software	100	100	47	1	62	<b>Positive</b>
Telecom	41	54	74	74	60	<b>Positive</b>
Industrials	54	80	60	47	60	<b>Positive</b>
Banks	21	27	93	100	60	Positive
Utilities	41	54	74	67	59	Neutral
Cons. Staples	93	14	80	41	57	Neutral
Energy	14	74	34	87	52	Neutral
Div Financials	1	41	67	100	52	Neutral
Semiconductors	87	60	1	14	41	Neutral
Media & Ent.	60	67	8	27	41	Neutral
Health Care	80	1	21	34	34	Negative
Materials	34	8	34	60	34	Negative
Tech Hardware	27	47	27	21	31	Negative
Real Estate	47	21	14	8	22	Negative

Source : BofA Global Quantitative Strategy, MSCI, IBES

BofA GLOBAL RESEARCH

**Table 47: Global Region Ranking**

Four Pillars rank is highest for EM ex Asia and lowest for North America

<b>Region</b>	<b>Top Down</b>	<b>Bottom Up</b>	<b>Style Rank</b>	<b>PE Rank</b>	<b>Combined</b>	
	<b>Rank</b>	<b>Rank</b>			<b>Rank</b>	
North America	49	48	49	45	48	
Dev Europe	47	47	46	59	50	
Japan	45	61	57	54	54	
Asia Pac ex Japan	62	54	54	51	55	
EM ex Asia	58	61	58	67	62	

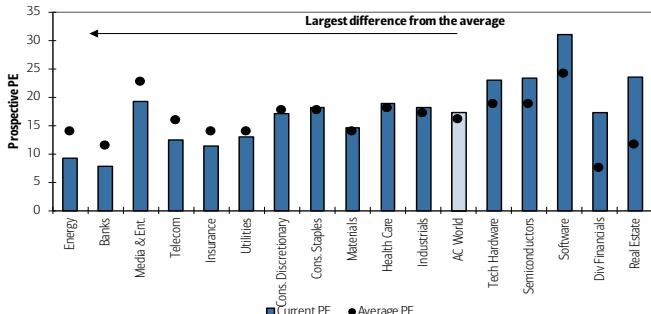
Source : BofA Global Quantitative Strategy, MSCI, IBES

BofA GLOBAL RESEARCH



### Chart 424: Prospective PE by Global Sectors: by the largest difference from long-term average

Current prospective PE of the World is 17.3x

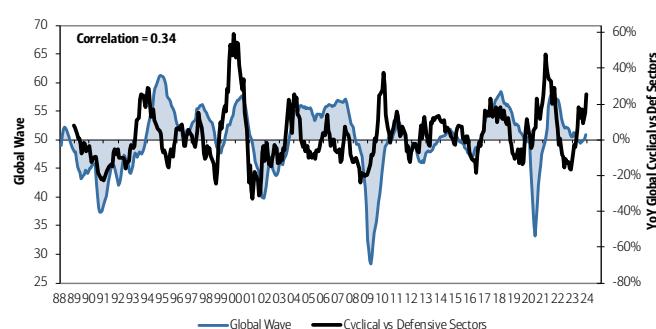


Source : BofA Global Quantitative Strategy, MSCI, IBES, Exshare

BofA GLOBAL RESEARCH

### Chart 426: Cyclical vs Defensive sector performance and the Global Wave

Cyclical sectors outperform, on average when the Global Wave is rising

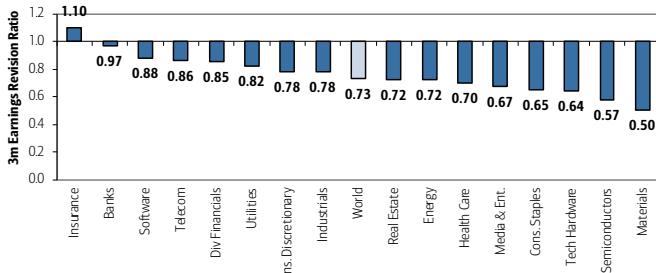


Source : BofA Global Quantitative Strategy, MSCI, IBES, Haver, Bloomberg, OECD, IMF, ICE Bond Indices, National Statistics Database

BofA GLOBAL RESEARCH

### Chart 428: Three-Month Earnings Revision Ratio by Sector

ERR trend is strongest in Insurance among global sectors

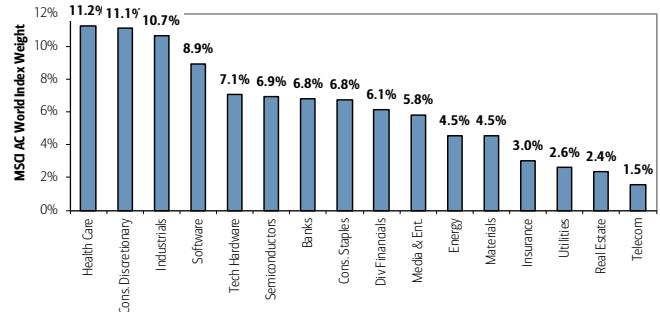


Source : BofA Global Quantitative Strategy, MSCI, IBES

BofA GLOBAL RESEARCH

### Chart 425: Sector Weights: MSCI AC World

Health Care is the largest sector in MSCI AC World

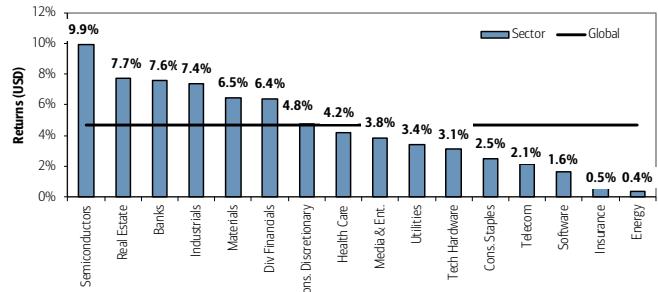


Source : BofA Global Quantitative Strategy, MSCI

BofA GLOBAL RESEARCH

### Chart 427: Sector Perf Last Month (USD)

Sector with largest contribution to performance last month was Semiconductors

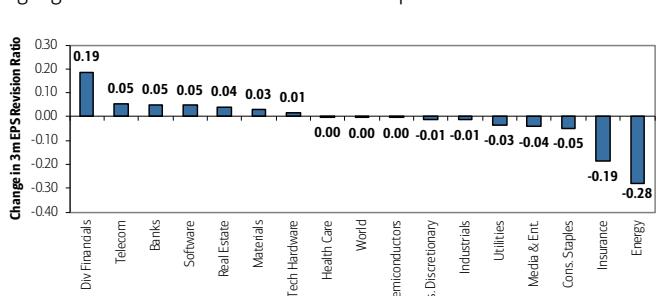


Source : BofA Global Quantitative Strategy, MSCI

BofA GLOBAL RESEARCH

### Chart 428: One-Month Change in the Three-Month Earnings Revision Ratio by Sector

Highlights sectors for which 3m ERR has improved last month



Source : BofA Global Quantitative Strategy, MSCI, IBES

BofA GLOBAL RESEARCH

# Regional Sector Allocation

We divide the world into 75 regional-sectors based on five regions and 15 sectors. For each regional-sector our analysis produces a Top-Down Rank, Bottom-Up Rank, a Style Rank, and a Value Rank.

A **Top-Down Rank** from 1 (worst) to 100 (best) is a rank calculated for each region-sector based on 1) average performance in periods in which the Global Wave was falling, or 2) average performance in periods in which the Global Wave was rising, depending on the direction of the Global Wave.

A **Bottom-Up Rank** from 1 (worst) to 100 (best) is a rank for region-sector based on the proportion of stocks with above average earnings and price momentum less the proportion of stocks with below average earnings and price momentum.

A **Style Rank** from 1 (worst) to 100 (best) is a rank based on the average Style Ranks of the styles that back-testing of the Global Wave currently suggests tilting towards.

A **Value Rank** from 1 (expensive) to 100 (inexpensive) is a rank based on PE (price divided by twelve-month forward consensus earnings estimate).

The **Combined Rank** is an average of the Top Down Rank, Bottom Up Rank, Style Rank, and Value Rank.

The same analysis is applied for calculating the four pillars rank at the stock level.

**Table 48: Four Pillars Ranks**

Emerging Ex-Asia Energy and Emerging Ex-Asia Utilities currently have the strongest Four Pillars rank

Country-Sector Name	Four Pillars Rank	Top			Target	
	Down Rank	Bottom Up Rank	Style Rank	PE Rank	Weight	
Emerging Ex-Asia Energy	93	100	82	93	99	1%
Emerging Ex-Asia Utilities	82	99	68	96	65	0%
Asia Pac ex-Japan Semiconductors	79	97	87	87	46	1%
Emerging Ex-Asia Cons. Discretionary	79	89	63	97	66	0%
Japan Semiconductors	78	96	46	91	80	0%
Emerging Ex-Asia Industrials	76	65	57	84	98	0%
Asia Pac ex-Japan Tech Hardware	74	73	89	92	43	1%
Emerging Ex-Asia Banks	74	82	80	54	81	1%
Asia Pac ex-Japan Cons. Discretionary	74	66	92	75	63	1%
Japan Cons. Discretionary	72	40	96	79	71	1%
Japan Industrials	70	48	93	82	55	1%
Asia Pac ex-Japan Div Financials	69	81	55	80	59	0%
North America Energy	68	55	95	46	76	3%
Japan Utilities	67	1	68	99	100	0%
Japan Energy	66	7	68	95	95	0%
Asia Pac ex-Japan Energy	66	80	36	63	86	0%
Emerging Ex-Asia Div Financials	65	60	50	83	68	0%
Japan Materials	65	38	67	76	79	0%
Japan Insurance	65	6	82	88	83	1%
North America Insurance	65	46	99	41	73	2%
Emerging Ex-Asia Materials	64	83	18	66	88	0%
Asia Pac ex-Japan Materials	62	87	36	67	57	1%
Japan Banks	61	10	76	72	87	0%
Developed Europe Software	61	95	88	50	12	0%
North America Software	61	74	100	64	4	7%

Source : BofA Global Quantitative Strategy

BofA GLOBAL RESEARCH



**Table 49: Four Pillars Ranks (Continued...)**

Four Pillars rank is a combination of Top Down, Bottom-Up, Style and PE rank

Country-Sector Name	Four Pillars Rank	Top			Style Rank	PE Rank	Target Weight
	Down Rank	Bottom Up Rank	Style Rank	PE Rank	Target Weight		
Japan Div Financials	60	3	76	86	77	0%	
North America Media & Ent.	60	63	86	68	24	5%	
Japan Real Estate	59	33	76	78	50	0%	
Emerging Ex-Asia Cons. Staples	59	68	57	71	40	0%	
Developed Europe Real Estate	59	51	63	70	51	0%	
Emerging Ex-Asia Health Care	57	45	50	100	33	0%	
Developed Europe Cons. Discretionary	57	57	66	34	69	2%	
North America Tech Hardware	56	90	74	47	13	6%	
Japan Software	56	84	57	59	23	0%	
Emerging Ex-Asia Software	55	78	50	89	1	0%	
North America Industrials	55	69	97	30	21	6%	
Developed Europe Tech Hardware	54	72	30	39	74	0%	
North America Cons. Discretionary	54	53	91	62	11	7%	
Asia Pac ex-Japan Insurance	54	32	39	53	91	1%	
Japan Tech Hardware	52	88	46	55	19	0%	
Developed Europe Banks	52	41	21	49	97	2%	
Developed Europe Energy	52	47	29	36	96	2%	
Developed Europe Insurance	51	27	45	42	89	1%	
Emerging Ex-Asia Insurance	50	59	50	5	85	0%	
Asia Pac ex-Japan Banks	49	54	22	26	93	2%	
Emerging Ex-Asia Telecom	48	86	33	24	48	0%	
Asia Pac ex-Japan Industrials	47	43	25	58	64	0%	
North America Semiconductors	46	91	34	43	14	4%	
Asia Pac ex-Japan Software	45	98	57	20	7	0%	
Asia Pac ex-Japan Utilities	44	13	82	74	6	0%	
North America Banks	41	49	13	18	84	2%	
Developed Europe Div Financials	41	20	57	32	54	1%	
Japan Cons. Staples	40	4	75	51	29	0%	
North America Div Financials	38	77	8	37	32	5%	
Developed Europe Materials	38	70	11	16	56	1%	
Asia Pac ex-Japan Health Care	38	79	25	38	10	0%	
Asia Pac ex-Japan Media & Ent.	38	22	28	57	44	0%	
Japan Media & Ent.	38	28	39	61	22	0%	
Developed Europe Industrials	37	71	12	25	39	2%	
Asia Pac ex-Japan Telecom	36	17	49	3	78	0%	
Developed Europe Semiconductors	36	76	39	22	9	1%	
Developed Europe Utilities	36	24	38	21	60	1%	
Developed Europe Media & Ent.	34	16	68	4	47	1%	
Asia Pac ex-Japan Real Estate	33	18	16	28	70	0%	
Asia Pac ex-Japan Cons. Staples	28	44	30	17	20	1%	
North America Materials	27	36	7	33	31	2%	
North America Utilities	27	15	5	45	41	0%	
Japan Telecom	26	26	39	11	27	0%	
Developed Europe Telecom	24	12	16	8	62	1%	
Developed Europe Health Care	24	30	9	12	45	3%	
Developed Europe Cons. Staples	22	23	14	1	49	3%	
North America Health Care	22	35	1	14	36	8%	
Japan Health Care	22	19	24	29	15	0%	
North America Real Estate	20	64	4	9	3	0%	
North America Telecom	20	2	18	7	52	1%	
North America Cons. Staples	13	9	3	13	28	4%	

Source : BofA Global Quantitative Strategy

BofA GLOBAL RESEARCH



## Global Quant Strategy Fifty – Methodology

The Global Quant Strategy Fifty is a screen that reflects our macro views, bottom-up analysis, style tilts and valuation bias, and targets region-sector exposures relative to the MSCI All Country World Index.

Each month using four pillars region-sector ranks (calculated based on month-end data - see below) are used to determine ten overweight and ten underweight region-sector recommendations. Each overweight region-sector is given an additional 2% weight relative to the MSCI ACWI and each underweight region-sector is reduced by 2% (or to 0% if the region-sector weight is less than 2%). The screen then targets the adjusted region-sector weights. There are seventy-five region-sectors (fifteen major sectors within five major regions) and, at times, certain region-sectors will be excluded based on the availability of data (four pillars rank) or their lower weight in the index.

Stocks are selected from a universe which includes the constituents of the MSCI ACWI. Stocks in the firm's restricted list are not included in this analysis. The screen can include BofA Global Research rated stocks or unrated or uncovered stocks.

The stocks are selected based on the four pillars stock ranks and selected so they meet the region and sector distribution of the MSCI ACWI, adjusted for the region-sector overweights and underweights (subject to rounding). On monthly basis stocks will drop out of the screen based on their four pillars ranks and the next best four pillar-ranked stock is picked with that region-sector.

**Table 50: Global Strategy Regional Sector Recommendations**

Regional-sector allocation is currently most positive on Europe and Insurance

	North America	Emerging ex-Asia	Asia Pacific ex-Japan	Europe	Japan
Banks		Overweight			
Cons. Discretionary		Overweight			
Cons. Staples	Underweight		Underweight	Underweight	
Div Financials					
Energy	Overweight	Overweight			
Health Care	Underweight			Underweight	Underweight
Industrials		Overweight			
Insurance					
Materials					
Media & Ent.					
Real Estate	Underweight				
Semiconductors			Overweight		Overweight
Software					
Tech Hardware			Overweight		
Telecom	Underweight			Underweight	
Utilities	Underweight	Overweight			Overweight

Source : BofA Global Quantitative Strategy

BofA GLOBAL RESEARCH



## Global Quant Strategy Fifty

The Global Quant Strategy Fifty is a screen that reflects our macro views, bottom-up analysis, style tilts and valuation bias, and targets region-sector exposures relative to the MSCI AC World index (refer to the Methodology section for details). This monthly screen is a list of 50 stocks with a 2% position in each stock, rebalanced to 2% each month.

**Table 51: Global Quant Strategy Fifty**

50-stock screen that reflects our macro views, bottom-up analysis, style tilts and valuation

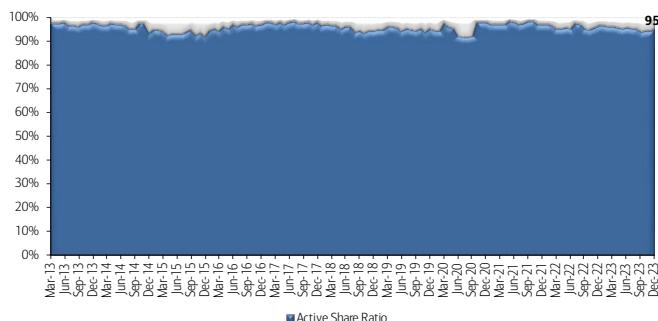
BBG Code	Company Name	Country	Sector	MCAP (Total US\$m)		ADTV		Beta	PE^	PB*^	Four Pillars	Bottom Up Rank	Top Down Rank		Style Rank	PE Rank	BofA Rating
				Total	US\$m	US\$m	Weight						Rank	Rank			
AXSB IN	Axis Bank	AP	Banks	40,826	113	2%	1.17	12.8	2.3	77	94	93	55	67	Neutral		
VIPS US	Vipshop-ADR	AP	Cons. Discretionary	8,240	50	2%	0.84	7.6	1.6	84	82	100	63	90	Buy		
FMG AU	Fortescue	AP	Materials	60,969	97	2%	1.57	12.5	2.8	75	79	100	52	70	U/P		
3711 TT	ASE Tech	AP	Semiconductors	<b>19,251</b>	<b>47</b>	<b>2%</b>	<b>1.27</b>	<b>12.8</b>	<b>1.9</b>	<b>77</b>	<b>94</b>	<b>89</b>	<b>59</b>	<b>67</b>	<b>Buy</b>		
2324 TT	Compal	AP	Tech Hardware	5,722	47	2%	0.63	17.1	1.1	73	100	70	74	47	U/P		
DNB NO	DNB Bank	EU	Banks	<b>32,810</b>	<b>30</b>	<b>2%</b>	<b>1.47</b>	<b>8.8</b>	<b>1.3</b>	<b>76</b>	<b>81</b>	<b>83</b>	<b>53</b>	<b>85</b>	Neutral		
CON GR	Continental Ag	EU	Cons. Discretionary	<b>16,994</b>	<b>26</b>	<b>2%</b>	<b>1.81</b>	<b>8.4</b>	<b>1.0</b>	<b>77</b>	<b>81</b>	<b>85</b>	<b>53</b>	<b>87</b>	<b>Buy</b>		
AKRBP NO	Aker BP	EU	Energy	18,390	26	2%	1.89	7.7	1.6	74	82	61	60	91	U/P		
TEP FP	Teleperformance	EU	Industrials	<b>8,684</b>	<b>33</b>	<b>2%</b>	<b>1.04</b>	<b>8.5</b>	<b>2.0</b>	<b>70</b>	<b>65</b>	<b>70</b>	<b>56</b>	<b>87</b>	<b>Buy</b>		
HEI GR	Heidelberg Materials	EU	Materials	16,647	34	2%	1.52	7.7	0.8	73	99	42	59	90	Buy		
7202 JP	Isuzu Motors	JP	Cons. Discretionary	<b>10,014</b>	<b>39</b>	<b>2%</b>	<b>1.24</b>	<b>7.6</b>	<b>1.1</b>	<b>81</b>	<b>82</b>	<b>90</b>	<b>60</b>	<b>90</b>	<b>Buy</b>		
8002 JP	Marubeni	JP	Industrials	<b>26,634</b>	<b>108</b>	<b>2%</b>	<b>1.13</b>	<b>8.1</b>	<b>1.2</b>	<b>83</b>	<b>98</b>	<b>79</b>	<b>66</b>	<b>88</b>	Neutral		
6146 JP	Disco Corp	JP	Semiconductors	<b>26,883</b>	<b>251</b>	<b>2%</b>	<b>1.22</b>	<b>39.3</b>	<b>9.7</b>	<b>65</b>	<b>84</b>	<b>94</b>	<b>72</b>	<b>10</b>	Neutral		
9502 JP	Chubu Electric	JP	Utilities	<b>9,794</b>	<b>27</b>	<b>2%</b>	<b>0.24</b>	<b>6.9</b>	<b>0.5</b>	<b>67</b>	<b>99</b>	<b>6</b>	<b>70</b>	<b>92</b>	—		
JPM US	JPMorgan Chase	NA	Banks	494,325	1393	2%	1.21	11.0	1.6	60	96	26	43	75	Buy		
RCL US	Royal Caribbean	NA	Cons. Discretionary	<b>33,172</b>	<b>299</b>	<b>2%</b>	<b>2.70</b>	<b>14.3</b>	<b>6.2</b>	<b>76</b>	<b>93</b>	<b>70</b>	<b>79</b>	<b>60</b>	Neutral		
DHI US	D.R. Horton	NA	Cons. Discretionary	51,414	335	2%	1.65	10.6	1.9	74	96	56	66	77	Buy		
DKS US	Dick's Sporting	NA	Cons. Discretionary	<b>9,030</b>	<b>192</b>	<b>2%</b>	<b>1.63</b>	<b>11.6</b>	<b>4.2</b>	<b>69</b>	<b>62</b>	<b>85</b>	<b>58</b>	<b>72</b>	Neutral		
EXPE US	Expedia	NA	Cons. Discretionary	20,923	283	2%	2.05	12.4	11.4	69	94	50	64	68	Buy		
ACI US	Albertsons-A	NA	Cons. Staples	13,241	69	2%	0.36	8.6	5.7	69	49	99	41	86	—		
KKR US	KKR	NA	Div Financials	73,288	222	2%	1.63	17.2	3.3	75	91	92	69	47	Buy		
BN CN	Brookfield	NA	Div Financials	<b>66,052</b>	<b>100</b>	<b>2%</b>	<b>1.68</b>	<b>11.4</b>	<b>1.4</b>	<b>72</b>	<b>79</b>	<b>80</b>	<b>54</b>	<b>74</b>	—		
FANG US	Diamondback Energy	NA	Energy	27,731	294	2%	1.98	7.4	1.7	84	99	91	55	90	U/P		
CNQ CN	Canadian Natural	NA	Energy	71,798	599	2%	1.65	9.5	2.5	77	97	78	50	83	Buy		
MOH US	Molina Health	NA	Health Care	<b>21,064</b>	<b>132</b>	<b>2%</b>	<b>0.44</b>	<b>15.3</b>	<b>5.5</b>	<b>70</b>	<b>92</b>	<b>70</b>	<b>63</b>	<b>55</b>	Neutral		
UTHR US	United Therapeutics	NA	Health Care	10,320	73	2%	0.56	10.0	2.0	69	64	80	51	81	U/P		
JAZZ US	Jazz Pharma	NA	Health Care	<b>7,766</b>	<b>77</b>	<b>2%</b>	<b>0.64</b>	<b>6.2</b>	<b>2.1</b>	<b>68</b>	<b>34</b>	<b>100</b>	<b>46</b>	<b>94</b>	Buy		
URI US	United Rentals	NA	Industrials	39,155	332	2%	1.96	13.4	4.2	79	94	92	66	64	Buy		
DAL US	Delta Air Lines	NA	Industrials	<b>25,887</b>	<b>372</b>	<b>2%</b>	<b>1.51</b>	<b>6.2</b>	<b>2.6</b>	<b>74</b>	<b>50</b>	<b>81</b>	<b>69</b>	<b>94</b>	Buy		
FDX US	FedEx	NA	Industrials	63,602	521	2%	1.27	12.3	2.5	68	94	45	64	69	Buy		
AIZ US	Assurant Inc	NA	Insurance	8,934	55	2%	0.52	11.1	1.8	71	95	43	73	74	Buy		
TECK/B CN	Tek Resources	NA	Materials	21,748	70	2%	1.40	9.4	1.0	72	65	89	49	83	Buy		
META US	Meta	NA	Media & Ent.	<b>786,705</b>	<b>6497</b>	<b>2%</b>	<b>1.31</b>	<b>20.4</b>	<b>5.9</b>	<b>67</b>	<b>89</b>	<b>75</b>	<b>67</b>	<b>38</b>	Buy		
NFLX US	Netflix	NA	Media & Ent.	<b>215,759</b>	<b>2343</b>	<b>2%</b>	<b>1.25</b>	<b>30.8</b>	<b>9.5</b>	<b>66</b>	<b>85</b>	<b>97</b>	<b>65</b>	<b>16</b>	Buy		
CMCSA US	Comcast Corp	NA	Media & Ent.	180,473	804	2%	1.10	10.2	2.1	61	96	22	49	79	Buy		
NVDA US	NVIDIA	NA	Semiconductors	<b>1,223,193</b>	<b>20971</b>	<b>2%</b>	<b>1.60</b>	<b>25.1</b>	<b>42.0</b>	<b>69</b>	<b>87</b>	<b>99</b>	<b>63</b>	<b>26</b>	Buy		
LRCX US	Lam Research	NA	Semiconductors	<b>103,564</b>	<b>705</b>	<b>2%</b>	<b>1.66</b>	<b>24.6</b>	<b>11.8</b>	<b>64</b>	<b>87</b>	<b>90</b>	<b>53</b>	<b>27</b>	Buy		
KLAC US	KLA	NA	Semiconductors	<b>79,244</b>	<b>478</b>	<b>2%</b>	<b>1.40</b>	<b>23.3</b>	<b>24.8</b>	<b>64</b>	<b>88</b>	<b>87</b>	<b>51</b>	<b>30</b>	Buy		
GIB/A CN	CGI	NA	Software	22,491	56	2%	0.98	17.9	3.9	65	76	96	43	43	U/P		
CRM US	Salesforce	NA	Software	<b>256,035</b>	<b>1151</b>	<b>2%</b>	<b>1.26</b>	<b>28.0</b>	<b>4.2</b>	<b>63</b>	<b>86</b>	<b>89</b>	<b>57</b>	<b>20</b>	Buy		
ORCL US	Oracle	NA	Software	288,812	1072	2%	0.97	17.7	134.3	62	76	85	44	44	Neutral		
GEN US	Gen Digital	NA	Software	<b>14,592</b>	<b>74</b>	<b>2%</b>	<b>1.14</b>	<b>10.4</b>	<b>5.9</b>	<b>62</b>	<b>48</b>	<b>70</b>	<b>50</b>	<b>78</b>	Buy		
NTAP US	NetApp	NA	Tech Hardware	<b>18,407</b>	<b>157</b>	<b>2%</b>	<b>1.30</b>	<b>13.9</b>	<b>22.1</b>	<b>78</b>	<b>93</b>	<b>99</b>	<b>59</b>	<b>62</b>	U/P		
FFIV US	F5	NA	Tech Hardware	<b>10,615</b>	<b>81</b>	<b>2%</b>	<b>1.10</b>	<b>14.0</b>	<b>3.6</b>	<b>70</b>	<b>78</b>	<b>90</b>	<b>52</b>	<b>61</b>	U/P		
JBL US	Jabil	NA	Tech Hardware	16,674	216	2%	1.43	13.3	5.3	69	46	92	72	65	Buy		
PKO PW	PKO	XA	Banks	<b>15,996</b>	<b>25</b>	<b>2%</b>	<b>1.59</b>	<b>8.0</b>	<b>1.3</b>	<b>86</b>	<b>98</b>	<b>80</b>	<b>75</b>	<b>89</b>	Neutral		
NPN SJ	Naspers	XA	Cons. Discretionary	<b>31,879</b>	<b>87</b>	<b>2%</b>	<b>0.79</b>	<b>11.4</b>	<b>2.0</b>	<b>70</b>	<b>63</b>	<b>90</b>	<b>52</b>	<b>75</b>	Buy		
PETR4 BZ	Petrobras	XA	Energy	<b>42,947</b>	<b>333</b>	<b>2%</b>	<b>1.73</b>	<b>4.4</b>	<b>1.2</b>	<b>90</b>	<b>100</b>	<b>91</b>	<b>73</b>	<b>97</b>	Buy		
RENT3 BZ	Localiza	XA	Industrials	<b>14,035</b>	<b>79</b>	<b>2%</b>	<b>1.55</b>	<b>17.2</b>	<b>2.5</b>	<b>75</b>	<b>91</b>	<b>92</b>	<b>71</b>	<b>47</b>	Buy		
SBSP3 BZ	SABESP	XA	Utilities	<b>10,605</b>	<b>34</b>	<b>2%</b>	<b>1.40</b>	<b>12.2</b>	<b>1.6</b>	<b>76</b>	<b>95</b>	<b>71</b>	<b>70</b>	<b>69</b>	Buy		
Portfolio	Average			93,867	830	100%	1.31	13.3	7.5	72	83	78	60	68			
Portfolio	Median			24,189	111	100%	1.30	11.5	2.4	72	88	85	59	73			

Source : BofA Global Quantitative Strategy, MSCI, IBES, Exshare, Worldscope  
Note: \* ADTV= Average Daily Turnover    ^ Forward PE    \*\* Trailing PB    Additions are in bold and for relegated stocks please refer to Appendix W. BofA Fundamental Analyst Recommendation as at 29 Jan 2024. The BofA Fundamental analysts' stock recommendations are included for informational purpose only and are not used in this Quantitative model.

BofA GLOBAL RESEARCH

### Chart 430: Global Quant Strategy Fifty: Active Share Ratio

The ASR of Global Quant Fifty is 95%

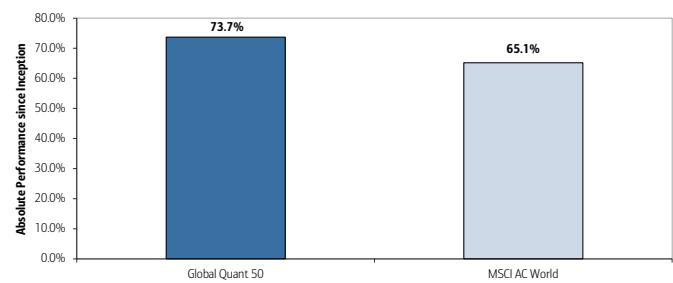


Source : BofA Global Quantitative Strategy

BofA GLOBAL RESEARCH

### Chart 431: Global Quant Fifty vs MSCI AC World Performance since Feb-13

Global Quant Fifty has outperformed the index since inception

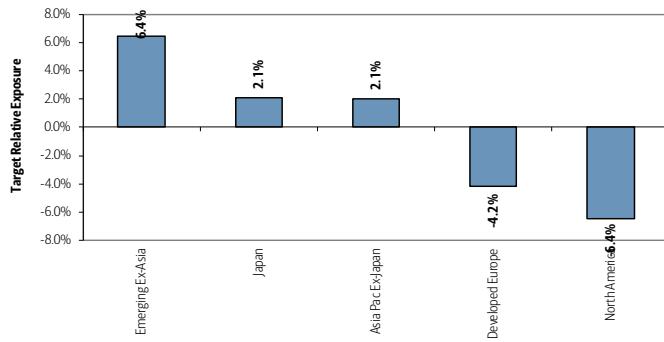


Source : BofA Global Quantitative Strategy

BofA GLOBAL RESEARCH

### Chart 432: Target region weights relative to MSCI AC World Index

Global Quant Fifty is most overweight Emerging Ex-Asia and Japan

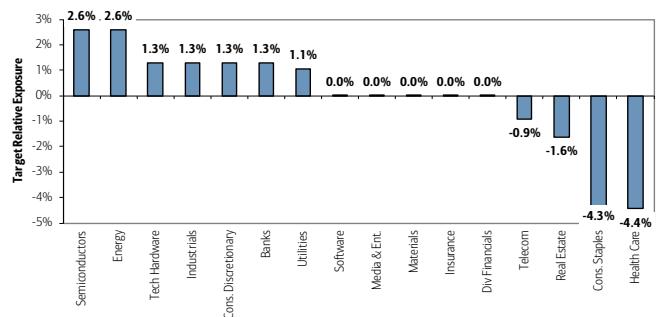


Source : BofA Global Quantitative Strategy

BofA GLOBAL RESEARCH

### Chart 433: Target sector weights relative to MSCI AC World Index

Global Quant Fifty is most overweight Semiconductors and Energy sectors

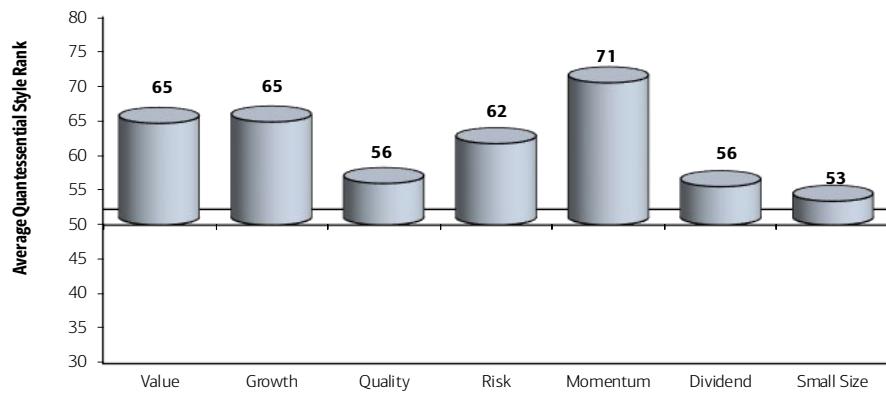


Source : BofA Global Quantitative Strategy

BofA GLOBAL RESEARCH

### Chart 434: Style tilts of Global Quant Strategy Fifty

Global Quant Fifty is most overweight Momentum and Growth



Source : BofA Global Quantitative Strategy

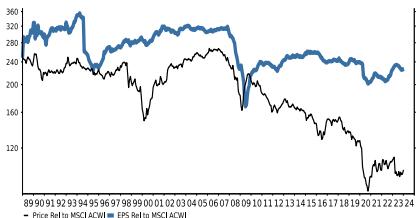
BofA GLOBAL RESEARCH



## Banks

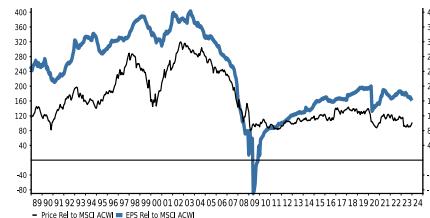
### Chart 435: Global Banks vs. The World – Momentum & Value\*

Relative EPS trend for World Banks has deteriorated in last 12m



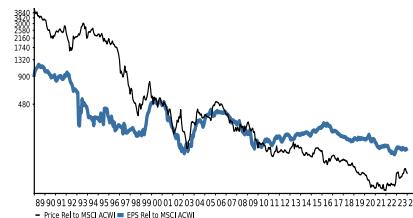
### Chart 436: USA Banks vs. The World – Momentum & Value

USA Banks has underperformed the world in last 12m



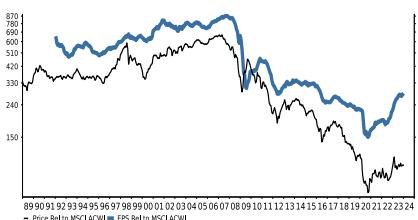
### Chart 437: Japan Banks vs. The World – Momentum & Value

Relative EPS trend for Japan Banks has improved in last 3m



### Chart 438: Europe Banks vs. The World – Momentum & Value

Relative EPS trend for Europe Banks has improved in last 3m



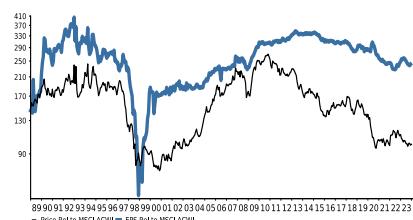
### Chart 439: APxJ Banks vs. The World – Momentum & Value

Relative EPS trend for APxJ Banks has deteriorated in last 6m



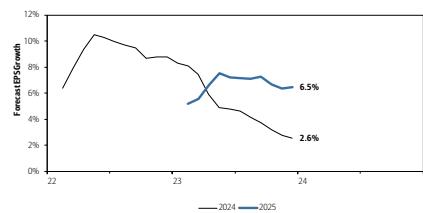
### Chart 440: Emerging Markets Banks vs. The World – Momentum & Value

Relative EPS trend for EM Banks has deteriorated in last 6m



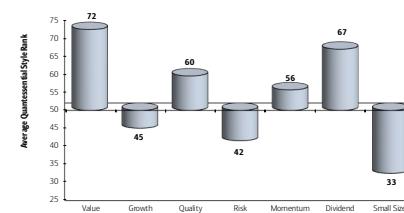
### Chart 441: Global Banks forecast EPS growth

Forecast EPS growth for 2025 is 6%



### Chart 442: Global Banks – average Style Rank (100=best, 50=median, 1=worst)

Banks are most overweight Value



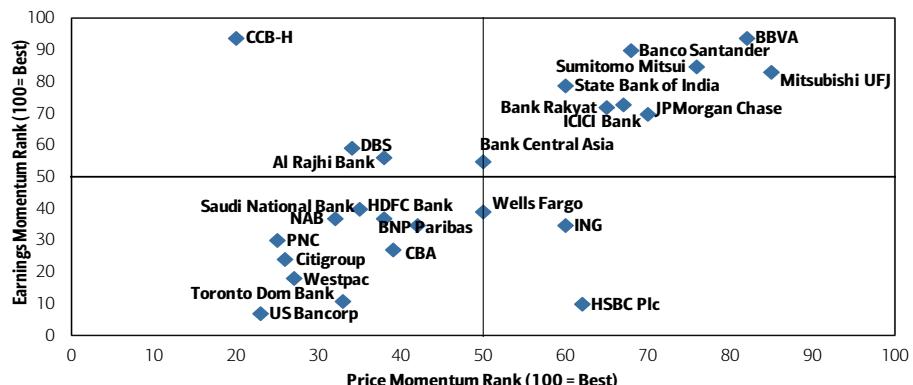
### Chart 443: Global Banks Prospective EPS and Trend EPS

Earnings forecast has improved in the last 3m



### Chart 444: Quadrant Analysis of Global Banks Stocks

32% of largest 25 stocks are in the top-right quadrant



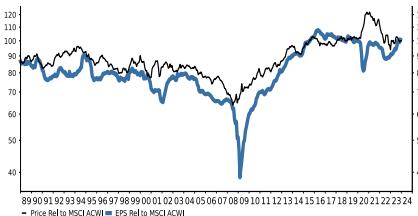
Source : BofA Global Quantitative Strategy, IBES, MSCI

BofA GLOBAL RESEARCH

## Consumer Discretionary

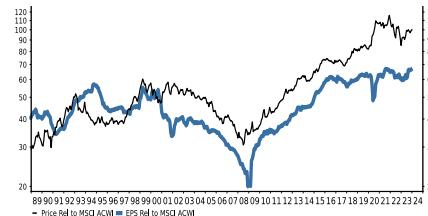
### Chart 445: Global Consumer Discretionary vs. The World – Momentum & Value\*

World Cons. Discretionary has underperformed in last 3m



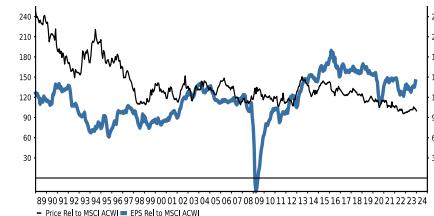
### Chart 446: USA Consumer Discretionary vs. The World – Momentum & Value

Relative EPS trend for USA Cons. Discretionary has improved in last 6m



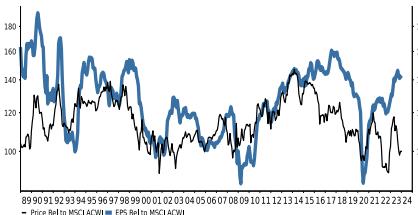
### Chart 447: Japan Consumer Discretionary vs. The World – Momentum & Value

Relative EPS trend for Japan Cons. Discretionary has improved in last 12m



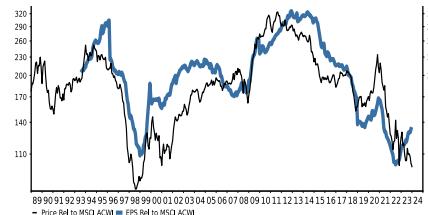
### Chart 448: Europe Consumer Discretionary vs. The World – Momentum & Value

Relative EPS trend for Europe Cons. Discretionary has deteriorated in last 3m



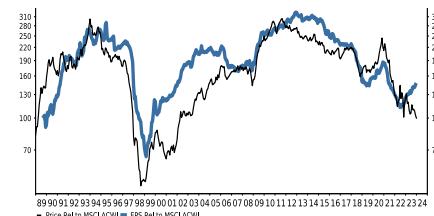
### Chart 449: APxJ Consumer Discretionary vs. The World – Momentum & Value

APxJ Cons. Discretionary has underperformed in last 3m



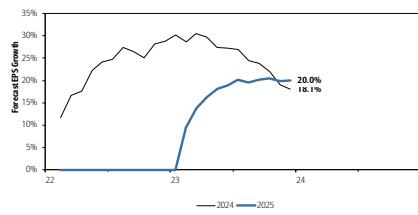
### Chart 450: Emerging Markets Consumer Discretionary vs. The World – Momentum & Value

Relative EPS trend for EM Cons. Discretionary has improved in last 6m



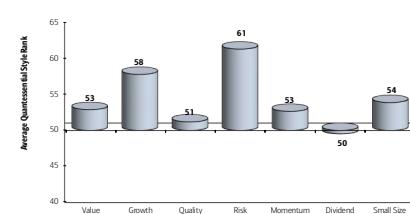
### Chart 451: Global Consumer Discretionary forecast EPS growth

Forecast EPS growth for 2024 is 18%



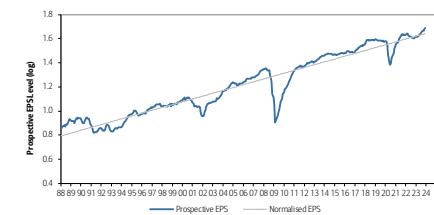
### Chart 452: Global Consumer Discretionary – average Style Rank (100=best, 50=median, 1=worst)

Global Cons. Discretionary has exposure to Risk



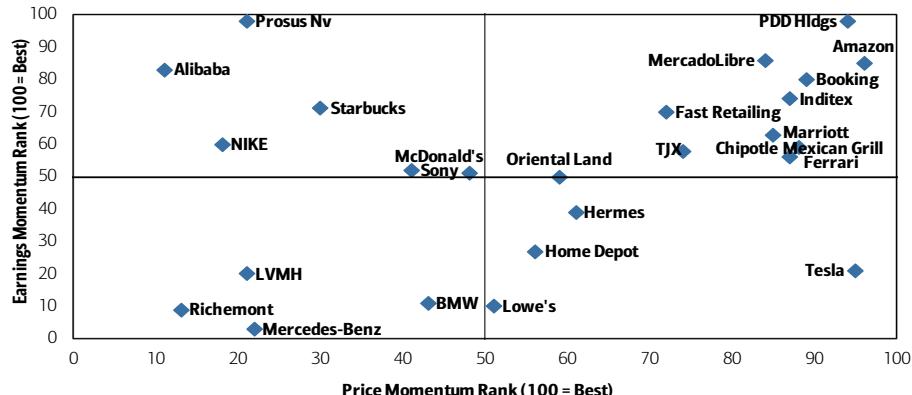
### Chart 453: Global Consumer Discretionary Prospective EPS and Trend EPS

Prospective EPS has risen by 6% in last 3m



### Chart 454: Quadrant Analysis of Global Consumer Discretionary Stocks

There are more stocks in the attractive top-right quadrant than bottom-left



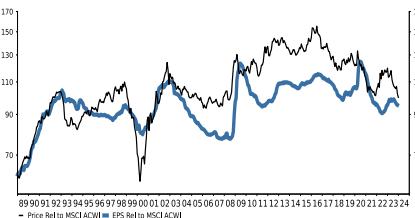
Source : BofA Global Quantitative Strategy, IBES, MSCI

BofA GLOBAL RESEARCH

## Consumer Staples

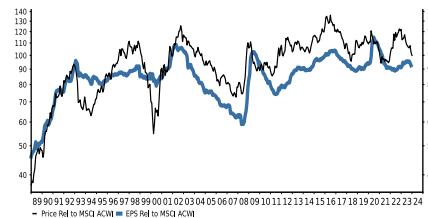
### Chart 455: Global Consumer Staples vs. The World – Momentum & Value\*

World Cons. Staples has underperformed in last 3m



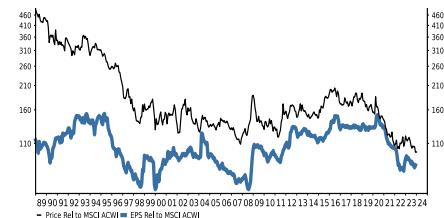
### Chart 456: USA Consumer Staples vs. The World – Momentum & Value

Relative EPS trend for USA Cons. Staples has deteriorated in last 6m



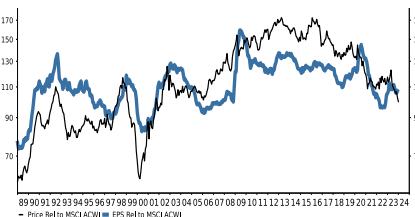
### Chart 457: Japan Consumer Staples vs. The World – Momentum & Value

Japan Cons. Staples has underperformed in last 6m



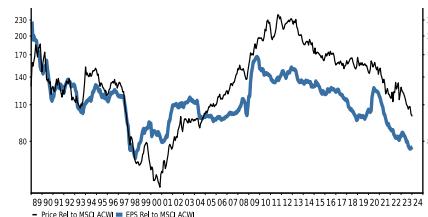
### Chart 458: Europe Consumer Staples vs. The World – Momentum & Value

Europe Cons. Staples has underperformed the world in last 12m



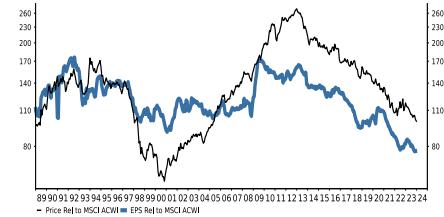
### Chart 459: APxJ Consumer Staples vs. The World – Momentum & Value

Relative EPS trend for APxJ Cons. Staples has deteriorated in last 12m



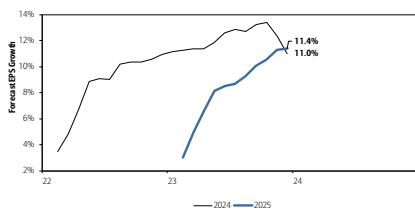
### Chart 460: Emerging Markets Consumer Staples vs. The World – Momentum & Value

EM Cons. Staples has underperformed the world in last 12m



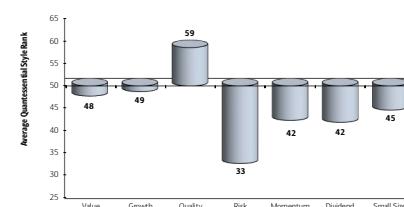
### Chart 461: Global Consumer Staples forecast EPS growth

Forecast EPS growth for 2025 is 11%



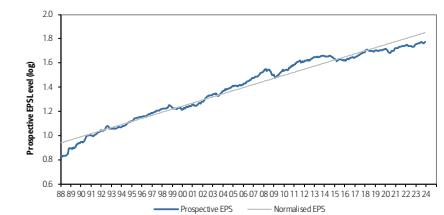
### Chart 462: Global Consumer Staples – average Style Rank (100=best, 50=median, 1=worst)

Global Cons. Staples is tilted towards Quality



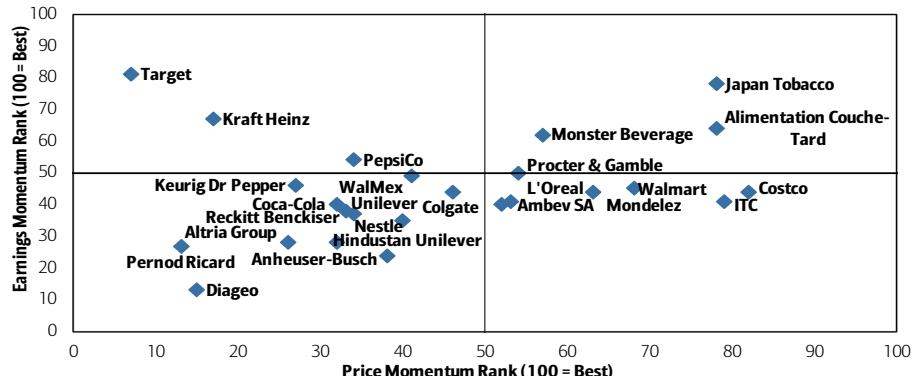
### Chart 463: Global Consumer Staples Prospective EPS and Trend EPS

Prospective EPS has risen by 1% last month



### Chart 464: Quadrant Analysis of Global Consumer Staples Stocks

12% of largest 25 stocks are in the top-right quadrant



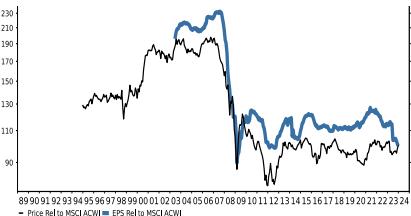
Source : BofA Global Quantitative Strategy, IBES, MSCI

BofA GLOBAL RESEARCH

## Diversified Financials

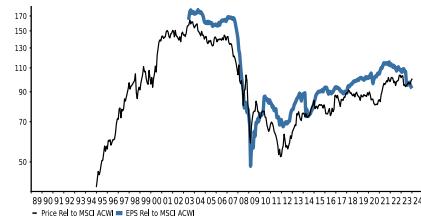
### Chart 465: Global Diversified Financials vs. The World – Momentum & Value\*

Relative EPS trend for World Div Financials has deteriorated in last 12m



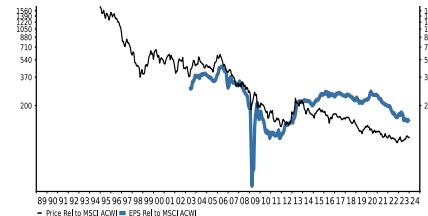
### Chart 466: USA Diversified Financials vs. The World – Momentum & Value

USA Div Financials has outperformed the world in last 3m



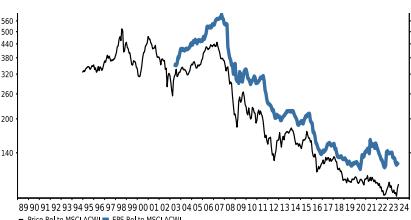
### Chart 467: Japan Diversified Financials vs. The World – Momentum & Value

Relative EPS trend for Japan Div Financials has deteriorated in last 12m



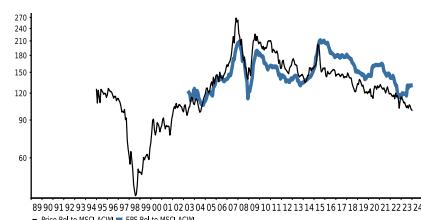
### Chart 468: Europe Diversified Financials vs. The World – Momentum & Value

Relative EPS trend for Europe Div Financials has deteriorated in last 6m



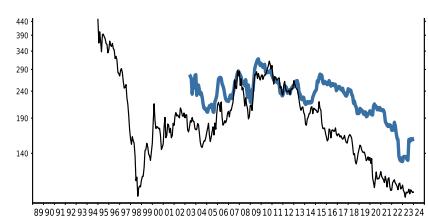
### Chart 469: APxJ Diversified Financials vs. The World – Momentum & Value

Relative EPS trend for APxJ Div Financials has improved in last 12m



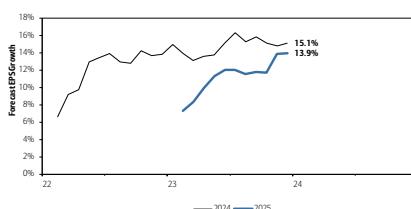
### Chart 470: Emerging Markets Diversified Financials vs. The World – Momentum & Value

Prospective EPS has risen by 1% last month



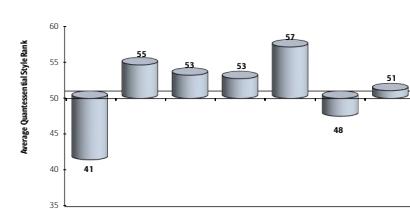
### Chart 471: Global Diversified Financials forecast EPS growth

Forecast EPS growth for 2025 is 14%



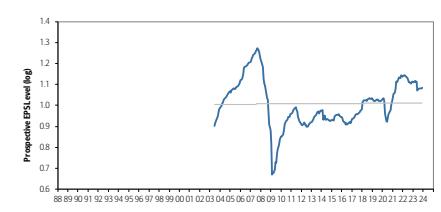
### Chart 472: Global Diversified Financials – average Style Rank (100=best, 50=median, 1=worst)

Global Div Financials has Growth and Quality tilt



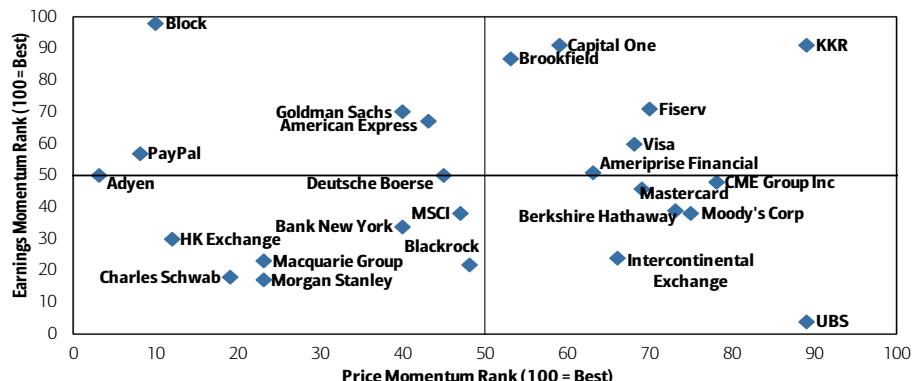
### Chart 473: Global Diversified Financials Prospective EPS and Trend EPS

Prospective EPS has deteriorated for Global Div Financials sector



### Chart 474: Quadrant Analysis of Global Diversified Financials Stocks

There are more stocks in the unattractive bottom-left quadrant than top-right



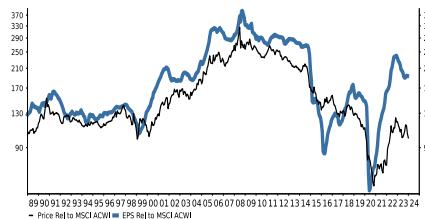
Source : BofA Global Quantitative Strategy, IBES, MSCI

BofA GLOBAL RESEARCH

## Energy

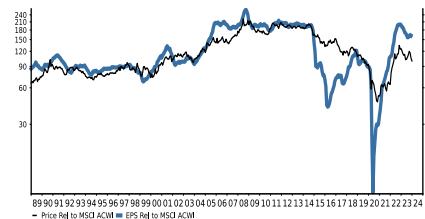
### Chart 475: Global Energy vs. The World – Momentum & Value\*

World Energy has underperformed in last 6m



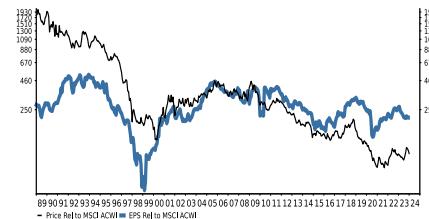
### Chart 476: USA Energy vs. The World – Momentum & Value

USA Energy has underperformed in last 3m



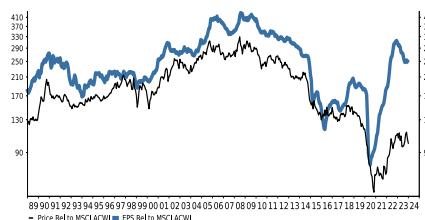
### Chart 477: Japan Energy vs. The World – Momentum & Value

Japan Energy has outperformed in last 12m



### Chart 478: Europe Energy vs. The World – Momentum & Value

Europe Energy has underperformed the world in last 12m



### Chart 479: APxJ Energy vs. The World – Momentum & Value

Relative EPS trend for APxJ Energy has deteriorated in last 6m



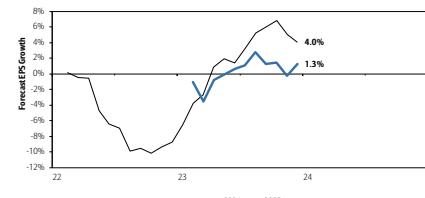
### Chart 480: Emerging Markets Energy vs. The World – Momentum & Value

Relative EPS trend for EM Energy has improved in last 3m



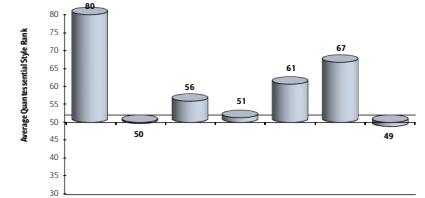
### Chart 481: Global Energy forecast EPS growth

Forecast EPS growth for 2024 is 4%



### Chart 482: Global Energy – average Style Rank (100=best, 50=median, 1=worst)

Energy are dominated by Value stocks



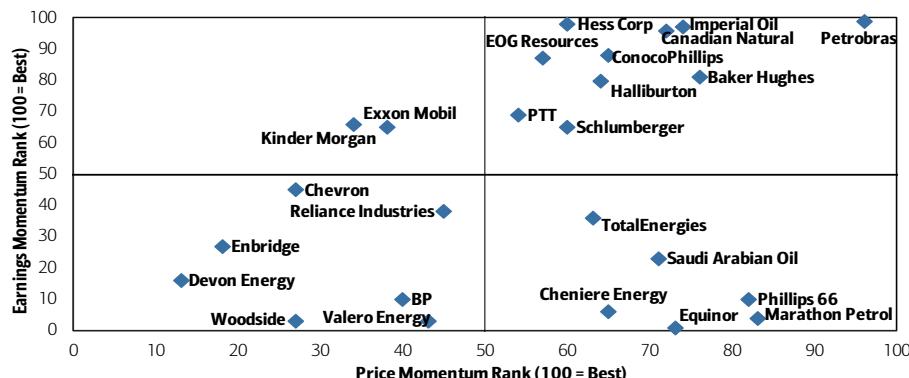
### Chart 483: Global Energy Prospective EPS and Trend EPS

Prospective EPS has moderated slightly last month



### Chart 484: Quadrant Analysis of Global Energy Stocks

There are more stocks in the attractive top-right quadrant than bottom-left



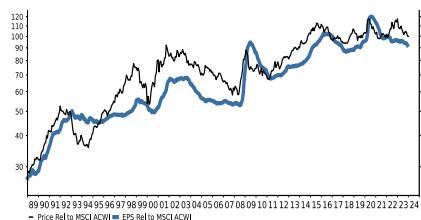
Source : BofA Global Quantitative Strategy, IBES, MSCI

BofA GLOBAL RESEARCH

## Health Care

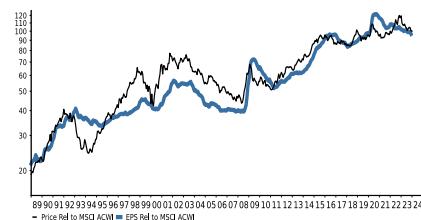
### Chart 485: Global Health Care vs. The World – Momentum & Value\*

World Health Care has underperformed in last 6m



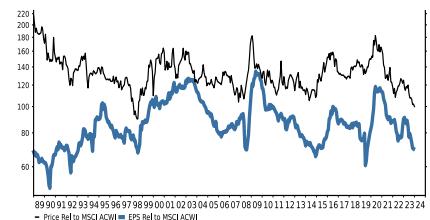
### Chart 486: USA Health Care vs. The World – Momentum & Value

USA Health Care has underperformed in last 6m



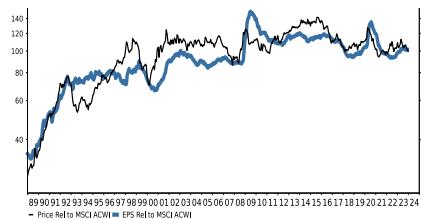
### Chart 487: Japan Health Care vs. The World – Momentum & Value

Japan Health Care has underperformed the world in last 12m



### Chart 488: Europe Health Care vs. The World – Momentum & Value

Europe Health Care has underperformed in last 3m



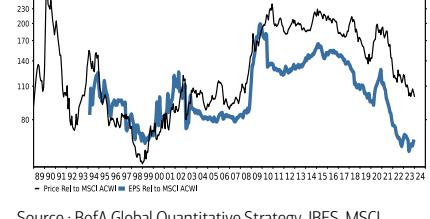
### Chart 489: APxJ Health Care vs. The World – Momentum & Value

Relative EPS trend for APxJ Health Care has improved in last 6m



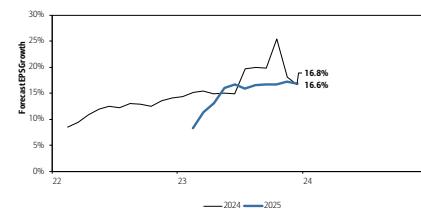
### Chart 490: Emerging Markets Health Care vs. The World – Momentum & Value

EM Health Care has underperformed in last 3m



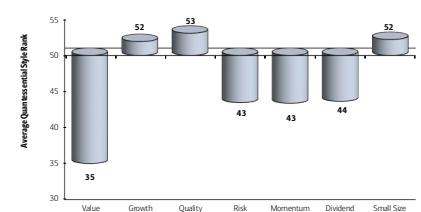
### Chart 491: Global Health Care forecast EPS growth

Forecast EPS growth for 2025 is 17%



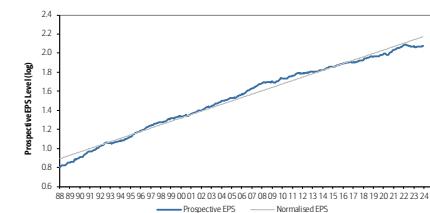
### Chart 492: Global Health Care – average Style Rank (100=best, 50=median, 1=worst)

Global Health Care sector has exposure to Quality and not Risk



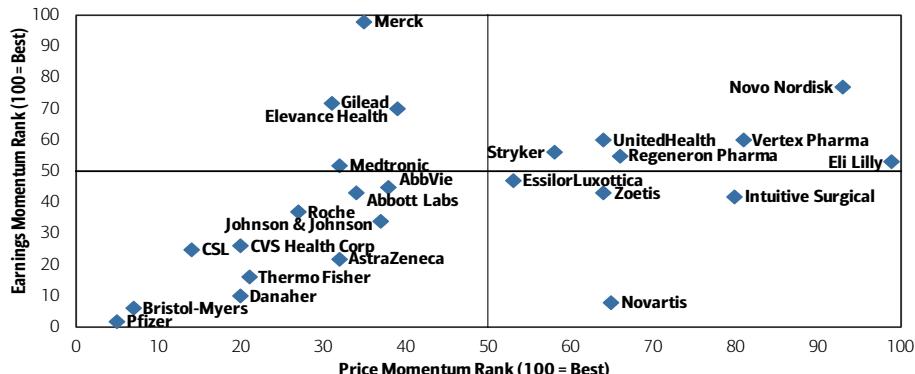
### Chart 493: Global Health Care Prospective EPS and Trend EPS

Prospective EPS has risen by 1% last month



### Chart 494: Quadrant Analysis of Global Health Care Stocks

24% of largest 25 stocks are in the top-right quadrant



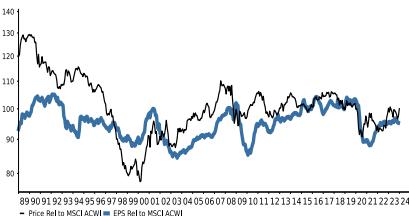
Source : BofA Global Quantitative Strategy, IBES, MSCI

BofA GLOBAL RESEARCH

## Industrials

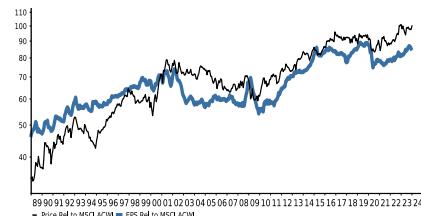
### Chart 495: Global Industrials vs. The World – Momentum & Value\*

World Industrials has outperformed the world in last 6m



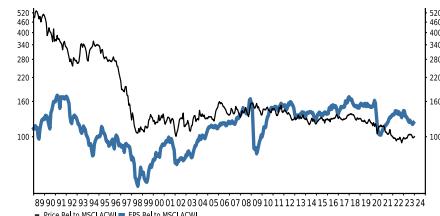
### Chart 496: USA Industrials vs. The World – Momentum & Value

USA Industrials has outperformed the world in last 3m



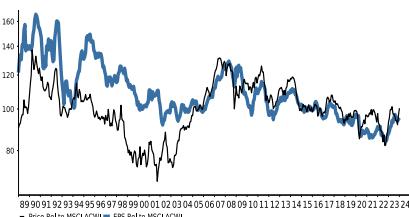
### Chart 497: Japan Industrials vs. The World – Momentum & Value

Japan Industrials has underperformed in last 3m



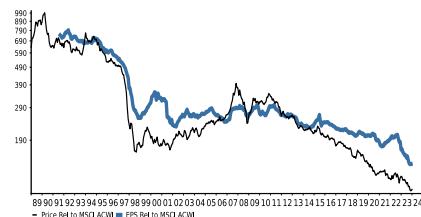
### Chart 498: Europe Industrials vs. The World – Momentum & Value

Relative EPS trend for Europe Industrials has improved in last 12m



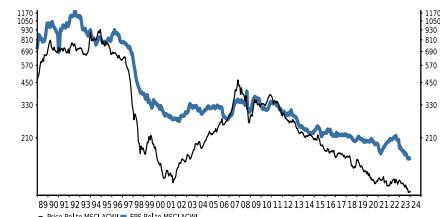
### Chart 499: APxJ Industrials vs. The World – Momentum & Value

Relative EPS trend for APxJ Industrials has deteriorated in last 3m



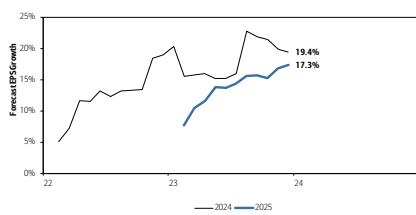
### Chart 500: Emerging Markets Industrials vs. The World – Momentum & Value

Relative EPS trend for EM Industrials has deteriorated in last 6m



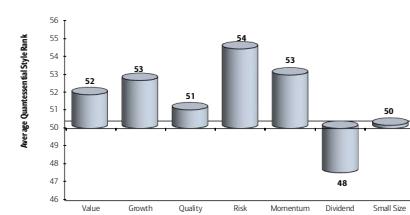
### Chart 501: Global Industrials forecast EPS growth

Forecast EPS growth for 2025 is 17%



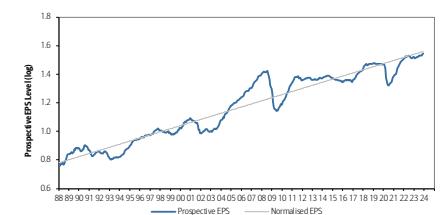
### Chart 502: Global Industrials – average Style Rank (100=best, 50=median, 1=worst)

Industrials are dominated by Risk stocks



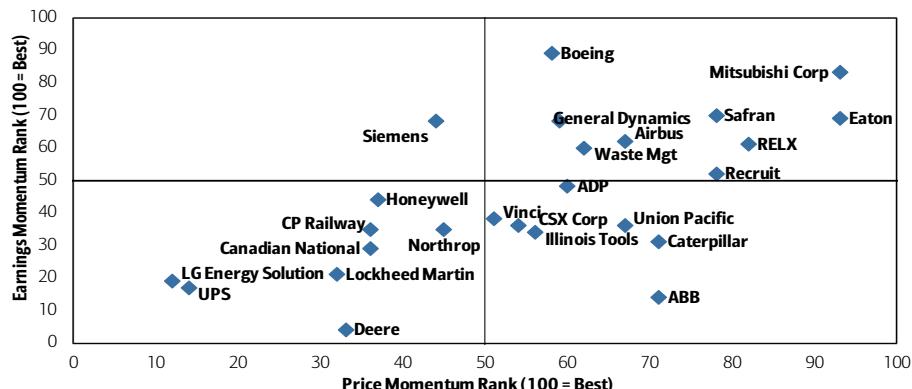
### Chart 503: Global Industrials Prospective EPS and Trend EPS

Earnings forecast has improved in the last 6m



### Chart 504: Quadrant Analysis of Global Industrials Stocks

There are more stocks in the attractive top-right quadrant than bottom-left



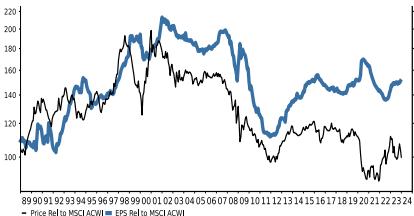
Source : BofA Global Quantitative Strategy, IBES, MSCI

BofA GLOBAL RESEARCH

## Insurance

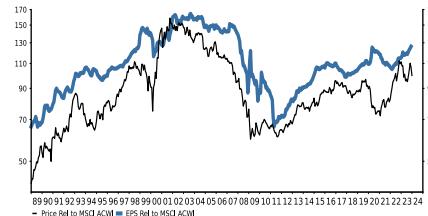
### Chart 505: Global Insurance vs. The World – Momentum & Value\*

World Insurance has underperformed in last 3m



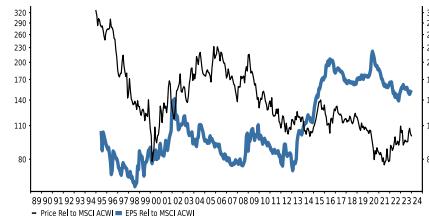
### Chart 506: USA Insurance vs. The World – Momentum & Value

Relative EPS trend for USA Insurance has improved in last 6m



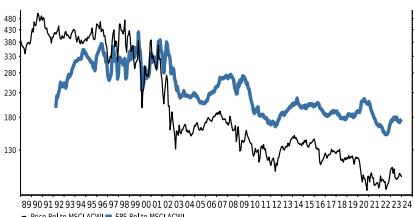
### Chart 507: Japan Insurance vs. The World – Momentum & Value

Japan Insurance has underperformed the world in last 12m



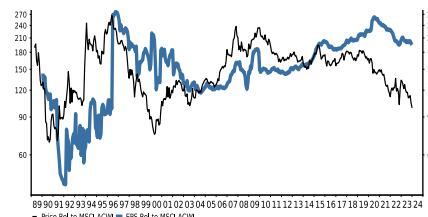
### Chart 508: Europe Insurance vs. The World – Momentum & Value

Europe Insurance has underperformed the world in last 12m



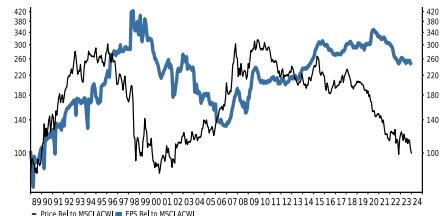
### Chart 509: APxJ Insurance vs. The World – Momentum & Value

APxJ Insurance has underperformed the world in last 12m



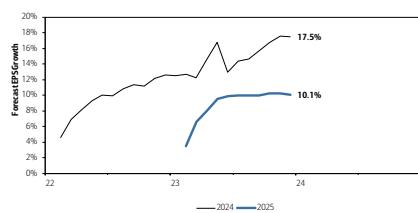
### Chart 510: Emerging Markets Insurance vs. The World – Momentum & Value

EM Insurance has underperformed in last 3m



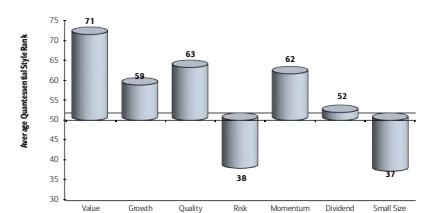
### Chart 511: Global Insurance forecast EPS growth

Forecast EPS growth for 2025 is 10%



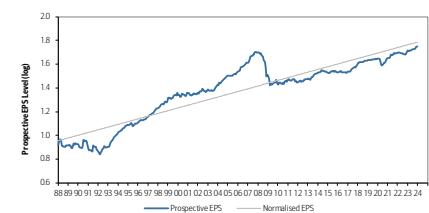
### Chart 512: Global Insurance – average Style Rank (100=best, 50=median, 1=worst)

Insurance are dominated by Value stocks



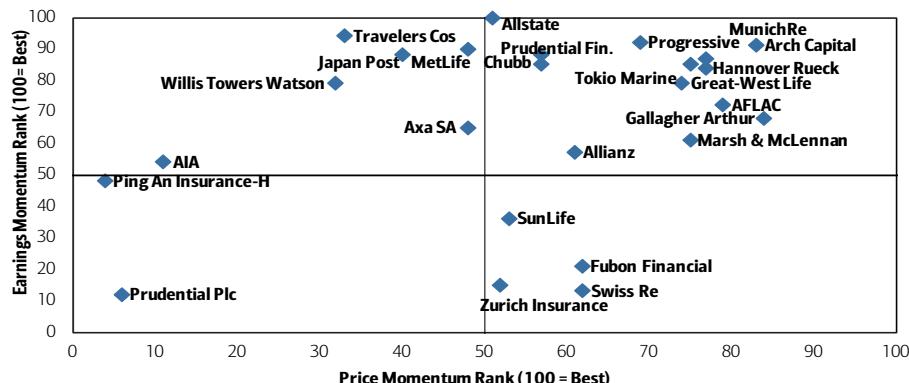
### Chart 513: Global Insurance Prospective EPS and Trend EPS

Prospective EPS has risen by 6% in last 3m



### Chart 514: Quadrant Analysis of Global Insurance Stocks

Majority of the stocks fall in the attractive top-right quadrant



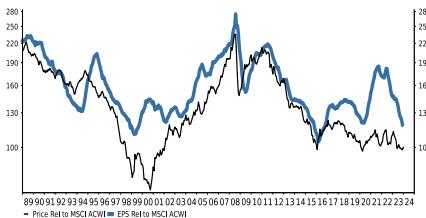
Source : BofA Global Quantitative Strategy, IBES, MSCI

BofA GLOBAL RESEARCH

## Materials

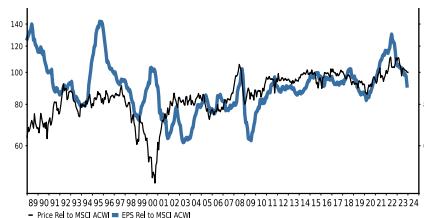
### Chart 515: Global Materials vs. The World – Momentum & Value\*

World Materials has outperformed the world in last 3m



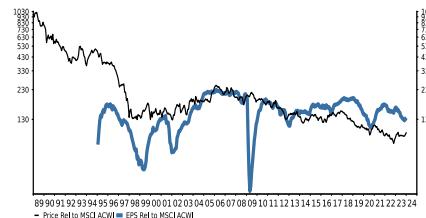
### Chart 516: USA Materials vs. The World – Momentum & Value

USA Materials has underperformed the world in last 12m



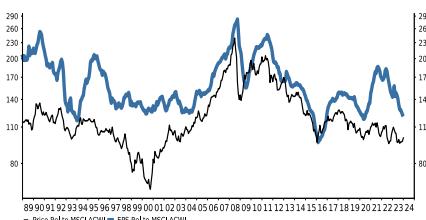
### Chart 517: Japan Materials vs. The World – Momentum & Value

Relative EPS trend for Japan Materials has improved in last 3m



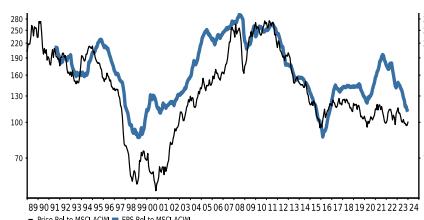
### Chart 518: Europe Materials vs. The World – Momentum & Value

Relative EPS trend for Europe Materials has deteriorated in last 3m



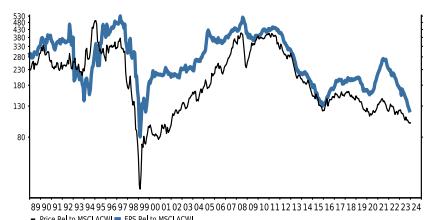
### Chart 519: APxJ Materials vs. The World – Momentum & Value

Relative EPS trend for APxJ Materials has deteriorated in last 3m



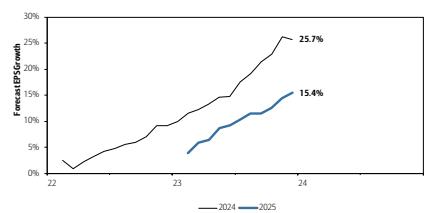
### Chart 520: Emerging Markets Materials vs. The World – Momentum & Value

Relative EPS trend for EM Materials has deteriorated in last 6m



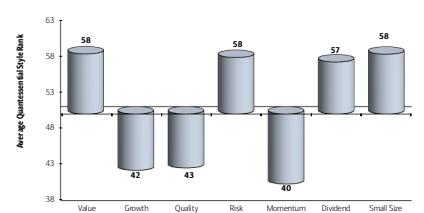
### Chart 521: Global Materials forecast EPS growth

Forecast EPS growth for 2024 is 26%



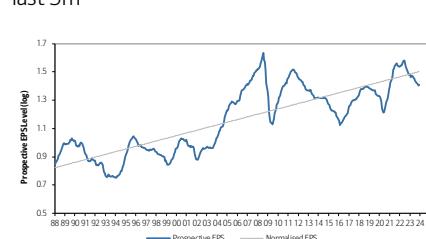
### Chart 522: Global Materials – average Style Rank (100=best, 50=median, 1=worst)

Materials are tilted towards Value



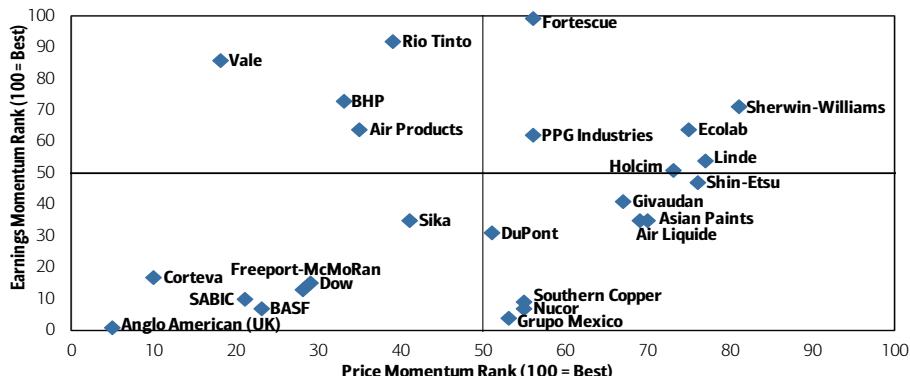
### Chart 523: Global Materials Prospective EPS and Trend EPS

Prospective EPS has moderated slightly in the last 3m



### Chart 524: Quadrant Analysis of Global Materials Stocks

There are more stocks in the unattractive bottom-left quadrant than top-right



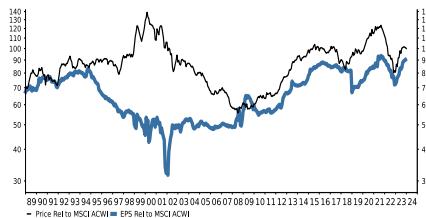
Source : BofA Global Quantitative Strategy, IBES, MSCI

BofA GLOBAL RESEARCH

## Media & Entertainment

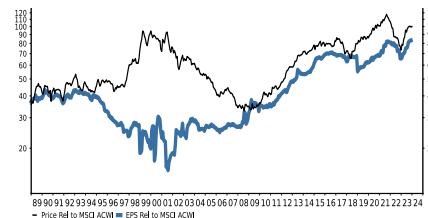
### Chart 525: Global Media & Entertainment vs. The World – Momentum & Value\*

World Media & Ent. has outperformed in last 12m



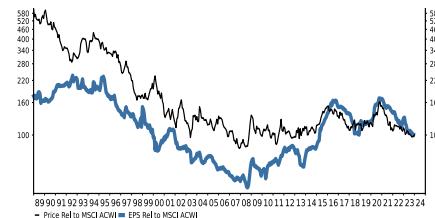
### Chart 526: USA Media & Entertainment vs. The World – Momentum & Value

USA Media & Ent. has outperformed in last 12m



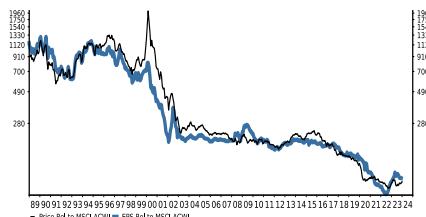
### Chart 527: Japan Media & Entertainment vs. The World – Momentum & Value

Relative EPS trend for Japan Media & Ent. has improved in last 6m



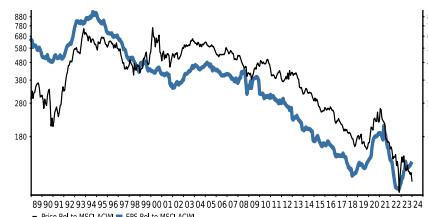
### Chart 528: Europe Media & Entertainment vs. The World – Momentum & Value

Relative EPS trend for Europe Media & Ent. has deteriorated in last 3m



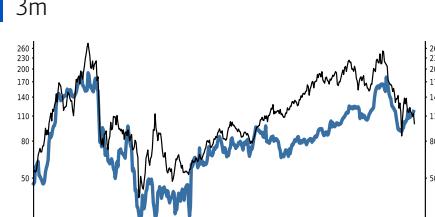
### Chart 529: APxJ Media & Entertainment vs. The World – Momentum & Value

Relative EPS trend for APxJ Media & Ent. has improved in last 12m



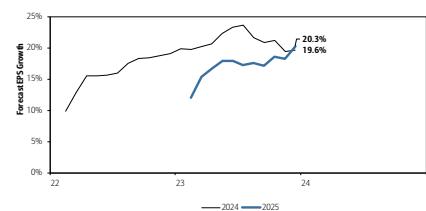
### Chart 530: Emerging Markets Media & Entertainment vs. The World – Momentum & Value

EM Media & Ent. has underperformed in last 3m



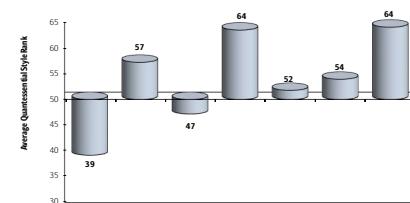
### Chart 531: Global Media & Entertainment forecast EPS growth

Forecast EPS growth for 2025 is 20%



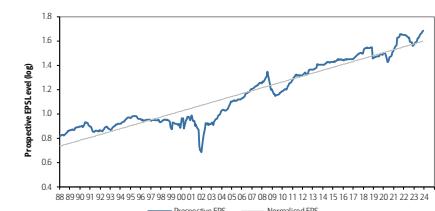
### Chart 532: Global Media & Entertainment – average Style Rank (100=best, 50=Media & Entertainment, 1=worst)

Media & Ent. are tilted towards Small Size



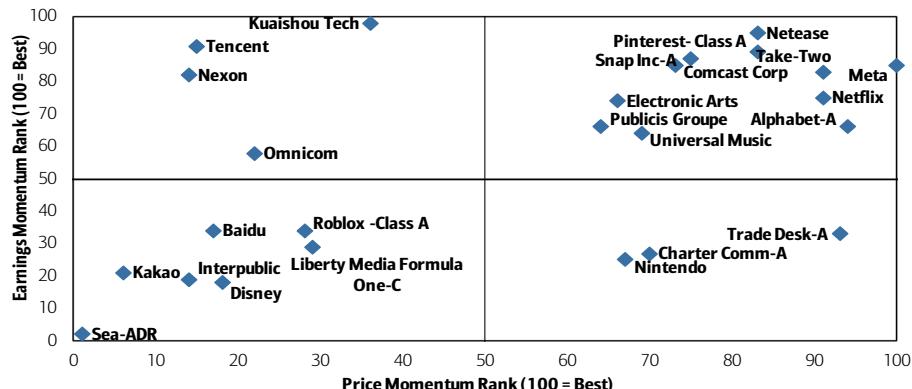
### Chart 533: Global Media & Entertainment Prospective EPS and Trend EPS

Earnings forecast has improved in the last 6m



### Chart 534: Quadrant Analysis of Global Media & Entertainment Stocks

44% of largest 25 stocks are in the top-right quadrant



Source : BofA Global Quantitative Strategy, IBES, MSCI

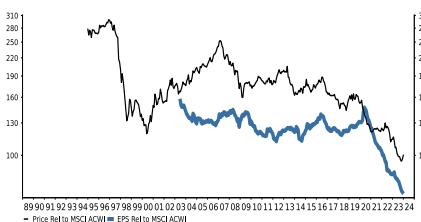
BofA GLOBAL RESEARCH



## Real Estate

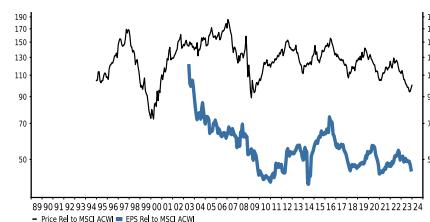
### Chart 535: Global Real Estate vs. The World – Momentum & Value\*

World Real Estate has outperformed the world in last 6m



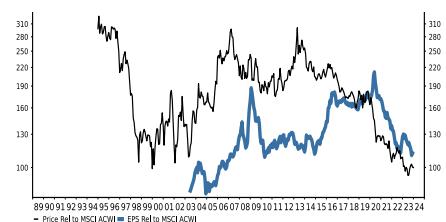
### Chart 536: USA Real Estate vs. The World – Momentum & Value

USA Real Estate has underperformed the world in last 12m



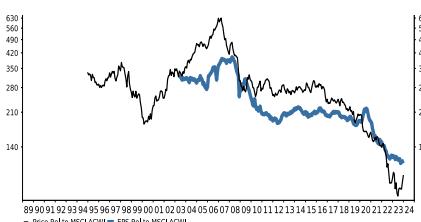
### Chart 537: Japan Real Estate vs. The World – Momentum & Value

Japan Real Estate has outperformed the world in last 6m



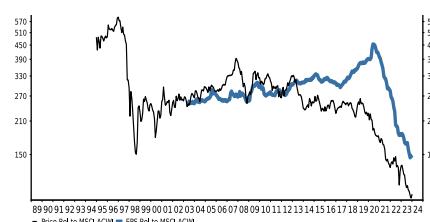
### Chart 538: Europe Real Estate vs. The World – Momentum & Value

Relative EPS trend for Europe Real Estate has deteriorated in last 12m



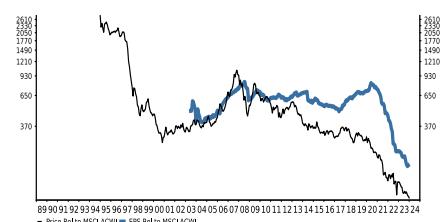
### Chart 539: APxJ Real Estate vs. The World – Momentum & Value

APxJ Real Estate has underperformed in last 6m



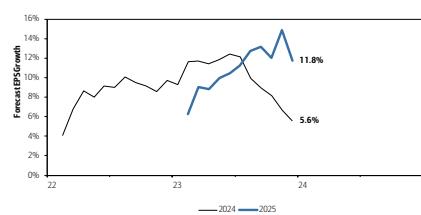
### Chart 540: Emerging Markets Real Estate vs. The World – Momentum & Value

Relative EPS trend for EM Real Estate has deteriorated in last 3m



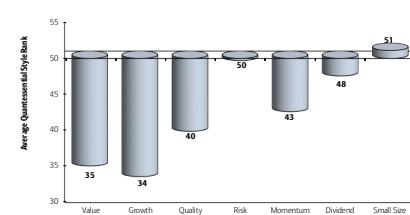
### Chart 541: Global Real Estate forecast EPS growth

Forecast EPS growth for 2025 is 12%



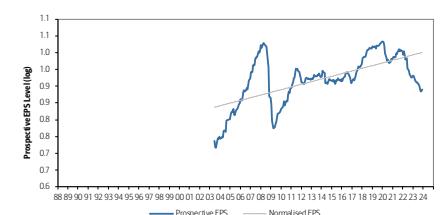
### Chart 542: Global Real Estate – average Style Rank (100=best, 50=median, 1=worst)

Real Estate are dominated by Small Size stocks



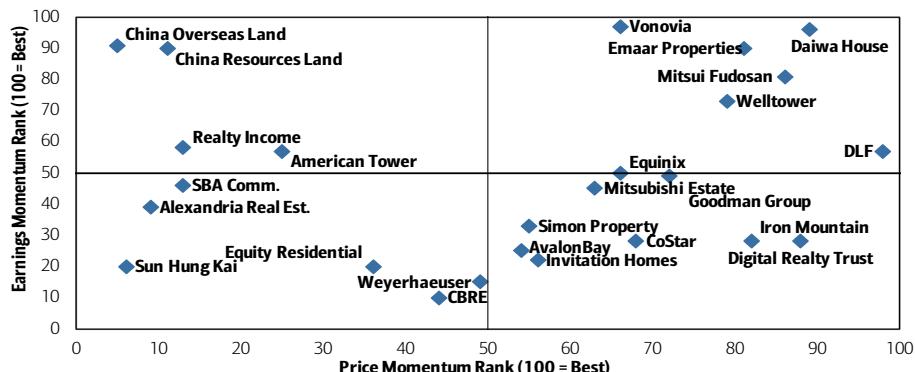
### Chart 543: Global Real Estate Prospective EPS and Trend EPS

Earnings forecast has improved in the last 1m



### Chart 544: Quadrant Analysis of Global Real Estate Stocks

There are more stocks in the unattractive bottom-left quadrant than top-right



Source : BofA Global Quantitative Strategy, IBES, MSCI

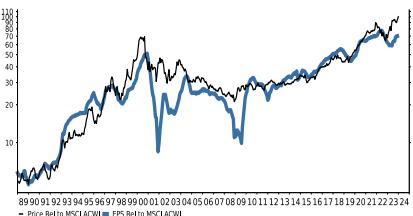
BofA GLOBAL RESEARCH



## Semiconductors & Semiconductor Equipment

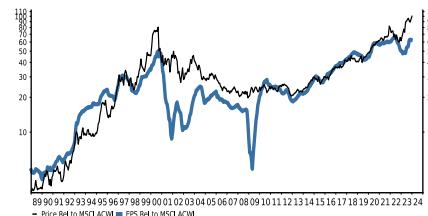
### Chart 545: Global Semiconductors vs. The World – Momentum & Value\*

Relative EPS trend for World Semiconductors has improved in last 12m



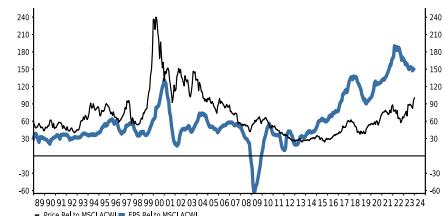
### Chart 546: USA Semiconductors vs. The World – Momentum & Value

Relative EPS trend for USA Semiconductors has improved in last 3m



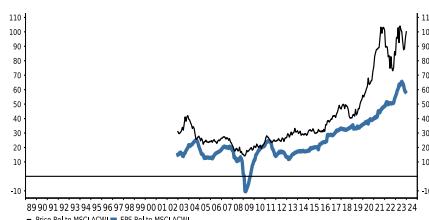
### Chart 547: Japan Semiconductors vs. The World – Momentum & Value

Japan Semiconductors has outperformed the world in last 3m



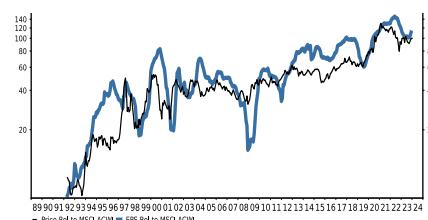
### Chart 548: Europe Semiconductors vs. The World – Momentum & Value

Europe Semiconductors has underperformed in last 6m



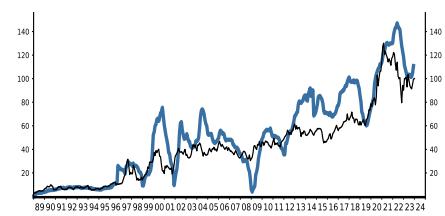
### Chart 549: APxJ Semiconductors vs. The World – Momentum & Value

APxJ Semiconductors has outperformed the world in last 6m



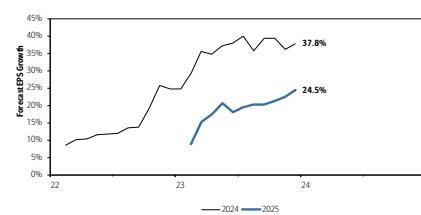
### Chart 550: Emerging Markets Semiconductors vs. The World – Momentum & Value

EM Semiconductors has outperformed the world in last 6m



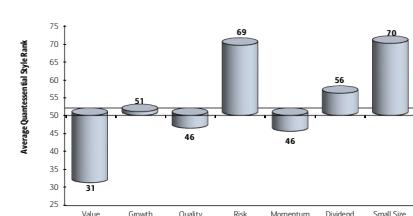
### Chart 551: Global Semiconductors forecast EPS growth

Forecast EPS growth for 2025 is 24%



### Chart 552: Global Semiconductors – average Style Rank (100=best, 50=median, 1=worst)

Semiconductors are dominated by Small Size stocks



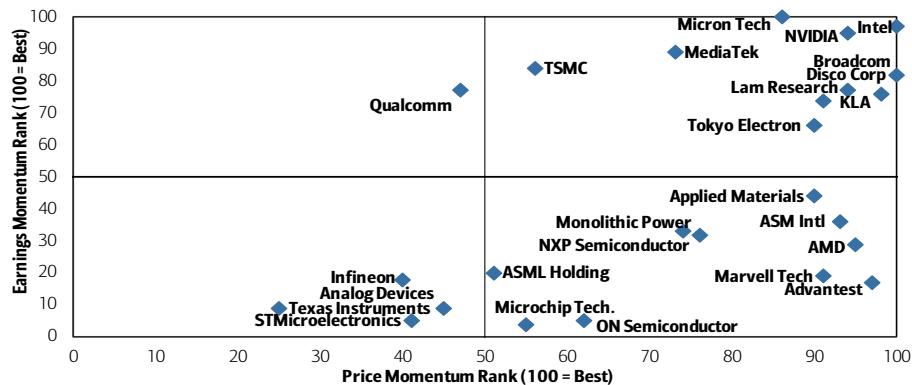
### Chart 553: Global Semiconductors Prospective EPS and Trend EPS

Earnings forecast has improved in the last 6m



### Chart 554: Quadrant Analysis of Global Semiconductors Stocks

40% of largest 25 stocks are in the top-right quadrant



Source : BofA Global Quantitative Strategy, IBES, MSCI

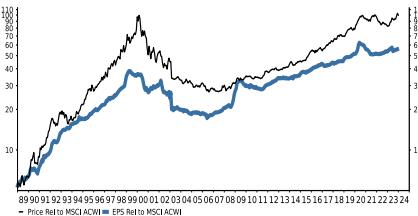
BofA GLOBAL RESEARCH



## Software & Services

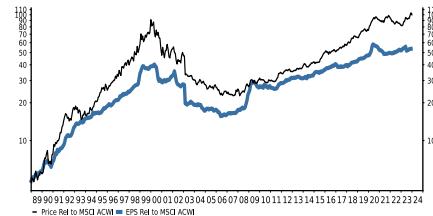
### Chart 555: Global Software vs. The World – Momentum & Value\*

Relative EPS trend for World Software has improved in last 6m



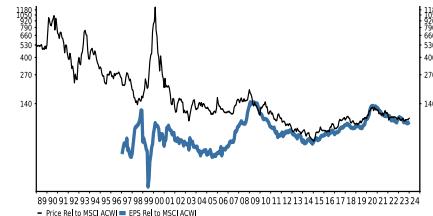
### Chart 556: USA Software vs. The World – Momentum & Value

Relative EPS trend for USA Software has improved in last 12m



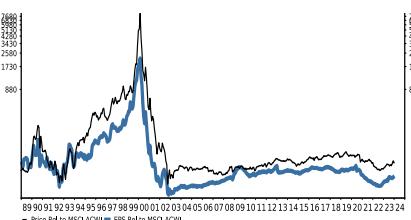
### Chart 557: Japan Software vs. The World – Momentum & Value

Relative EPS trend for Japan Software has improved in last 6m



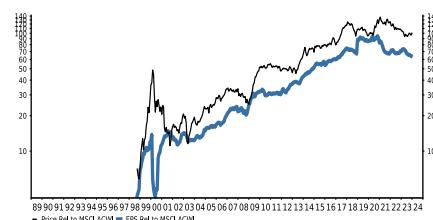
### Chart 558: Europe Software vs. The World – Momentum & Value

Relative EPS trend for Europe Software has improved in last 6m



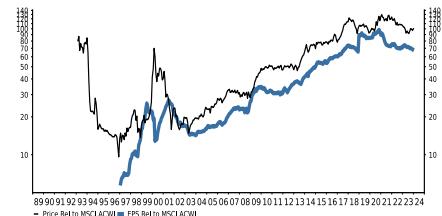
### Chart 559: APxJ Software vs. The World – Momentum & Value

Relative EPS trend for APxJ Software has deteriorated in last 12m



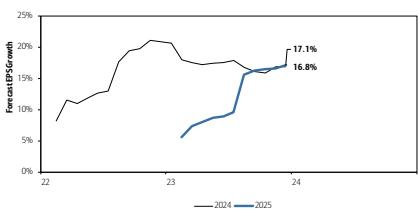
### Chart 560: Emerging Markets Software vs. The World – Momentum & Value

Earnings forecast has improved in the last 6m



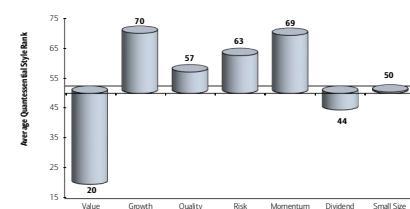
### Chart 561: Global Software forecast EPS growth

Forecast EPS growth for 2024 is 17%



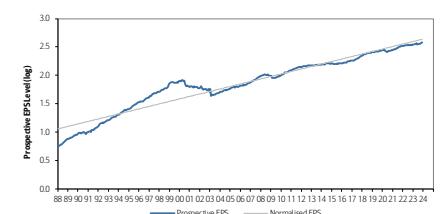
### Chart 562: Global Software – average Style Rank (100=best, 50=median, 1=worst)

Software are tilted towards Growth



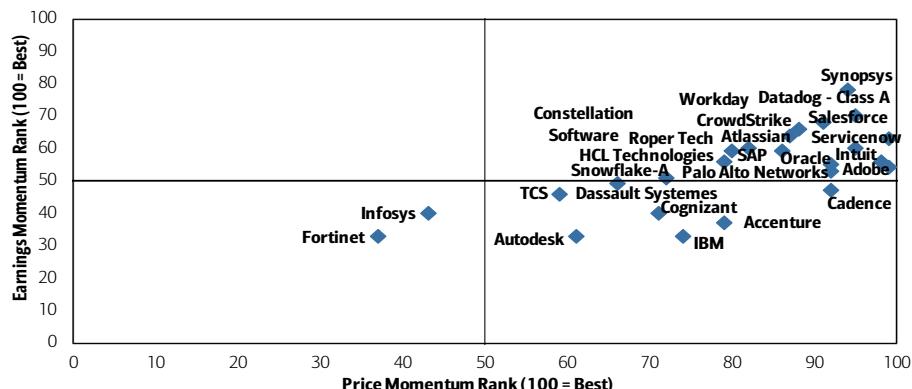
### Chart 563: Global Software Prospective EPS and Trend EPS

Prospective EPS for Global Software has been trending sideways



### Chart 564: Quadrant Analysis of Global Software Stocks

64% of largest 25 stocks are in the top-right quadrant



Source : BofA Global Quantitative Strategy, IBES, MSCI

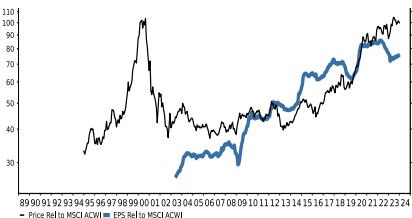
BofA GLOBAL RESEARCH



## Technology Hardware

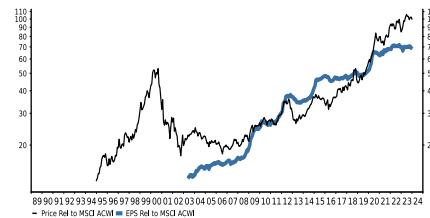
### Chart 565: Global Tech Hardware vs. The World – Momentum & Value\*

Relative EPS trend for World Tech Hardware has improved in last 3m



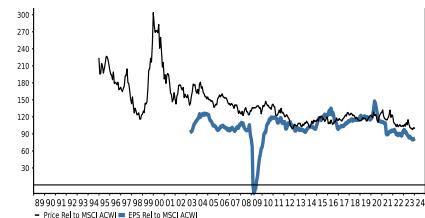
### Chart 566: USA Tech Hardware vs. The World – Momentum & Value

Relative EPS trend for USA Tech Hardware has deteriorated in last 6m



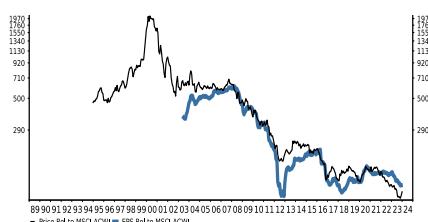
### Chart 567: Japan Tech Hardware vs. The World – Momentum & Value

Japan Tech Hardware has outperformed the world in last 3m



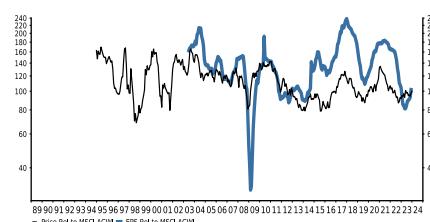
### Chart 568: Europe Tech Hardware vs. The World – Momentum & Value

Europe Tech Hardware has outperformed the world in last 3m



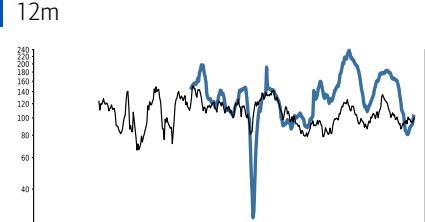
### Chart 569: APxJ Tech Hardware vs. The World – Momentum & Value

Relative EPS trend for APxJ Tech Hardware has improved in last 3m



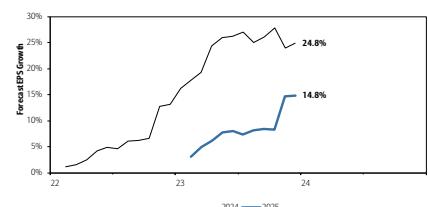
### Chart 570: Emerging Markets Tech Hardware vs. The World – Momentum & Value

EM Tech Hardware has outperformed in last 12m



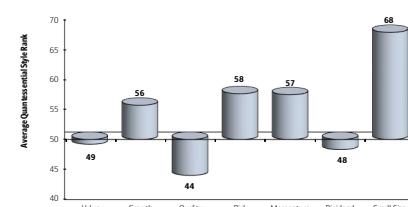
### Chart 571: Global Tech Hardware forecast EPS growth

Forecast EPS growth for 2024 is 25%



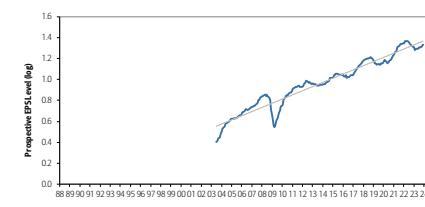
### Chart 572: Global Tech Hardware – average Style Rank (100=best, 50=median, 1=worst)

Tech Hardware are most overweight Small Size



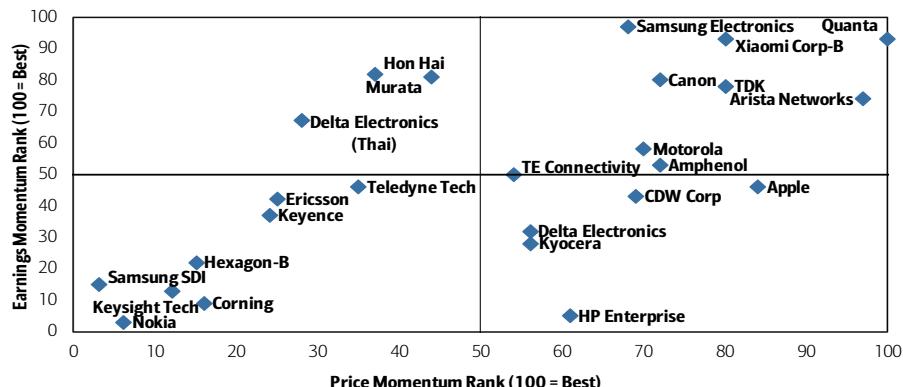
### Chart 573: Global Tech Hardware Prospective EPS and Trend EPS

Prospective EPS has risen by 5% in last 3m



### Chart 574: Quadrant Analysis of Global Tech Hardware Stocks

14% of largest 25 stocks are in the top-right quadrant



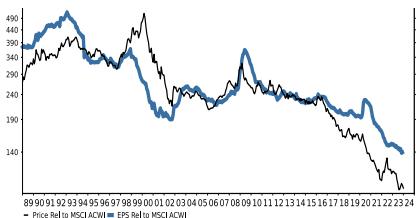
Source : BofA Global Quantitative Strategy, IBES, MSCI

BofA GLOBAL RESEARCH

## Telecommunication Services

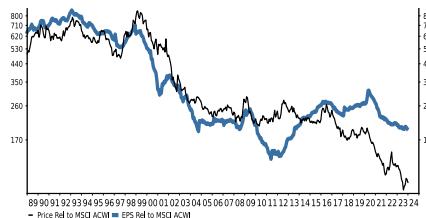
### Chart 575: Global Telecom vs. The World – Momentum & Value\*

Relative EPS trend for World Telecom has deteriorated in last 6m



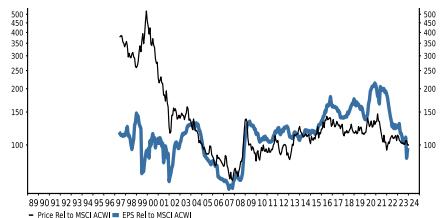
### Chart 576: USA Telecom vs. The World – Momentum & Value

Relative EPS trend for USA Telecom has deteriorated in last 12m



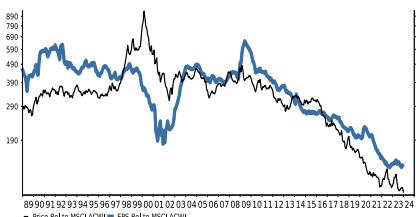
### Chart 577: Japan Telecom vs. The World – Momentum & Value

Japan Telecom has underperformed the world in last 12m



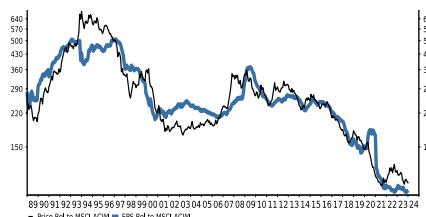
### Chart 578: Europe Telecom vs. The World – Momentum & Value

Europe Telecom has underperformed in last 3m



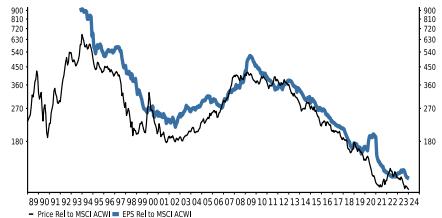
### Chart 579: APxJ Telecom vs. The World – Momentum & Value

Relative EPS trend for APxJ Telecom has deteriorated in last 6m



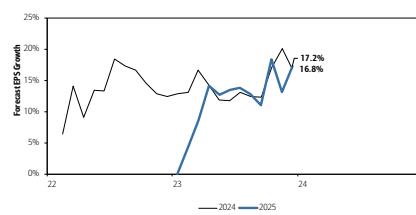
### Chart 580: Emerging Markets Telecom vs. The World – Momentum & Value

EM Telecom has underperformed in last 3m



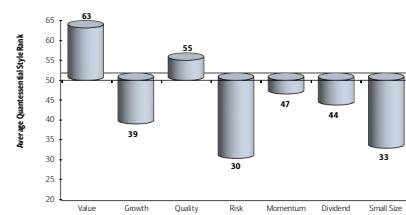
### Chart 581: Global Telecom forecast EPS growth

Forecast EPS growth for 2024 is 17%



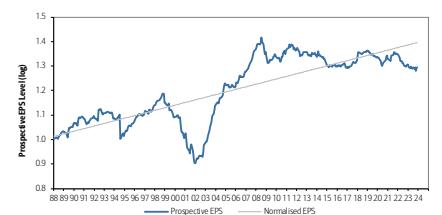
### Chart 582: Global Telecom – average Style Rank (100=best, 50=median, 1=worst)

Telecom stocks are most overweight Value



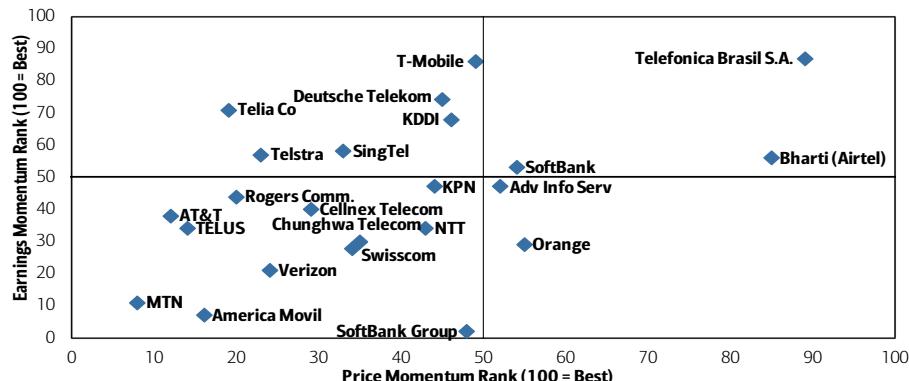
### Chart 583: Global Telecom Prospective EPS and Trend EPS

Prospective EPS has risen by 1% last month



### Chart 584: Quadrant Analysis of Global Telecom Stocks

Only 13% Telecom stocks are in top-right quadrant



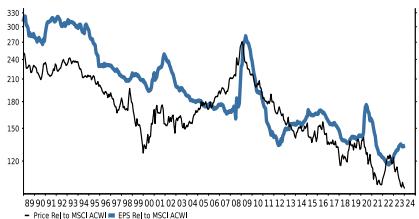
Source : BofA Global Quantitative Strategy, IBES, MSCI

BofA GLOBAL RESEARCH

## Utilities

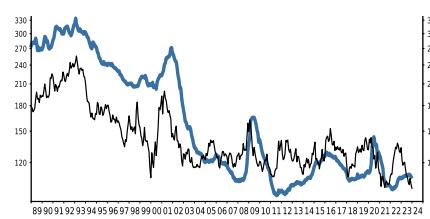
### Chart 585: Global Utilities vs. The World – Momentum & Value\*

Global Utilities has underperformed in last 3m



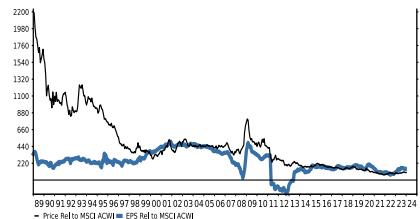
### Chart 586: USA Utilities vs. The World – Momentum & Value

Relative EPS trend for USA Utilities has improved in last 12m



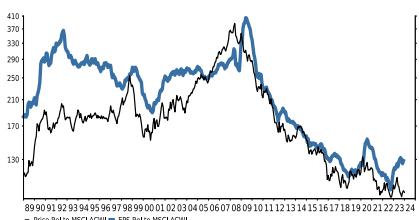
### Chart 587: Japan Utilities vs. The World – Momentum & Value

Japan Utilities has underperformed in last 3m



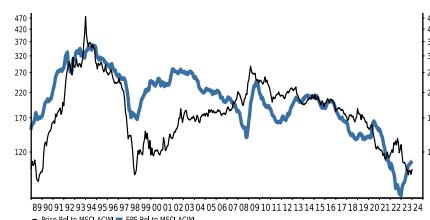
### Chart 588: Europe Utilities vs. The World – Momentum & Value

Europe Utilities has outperformed the world in last 3m



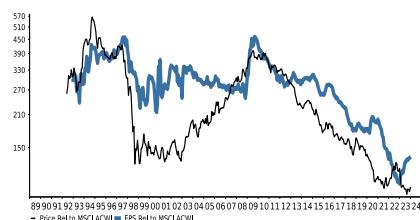
### Chart 589: APxJ Utilities vs. The World – Momentum & Value

Relative EPS trend for APxJ Utilities has improved in last 3m



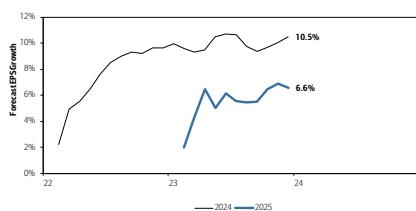
### Chart 590: Emerging Markets Utilities vs. The World – Momentum & Value

EM Utilities has outperformed the world in last 3m



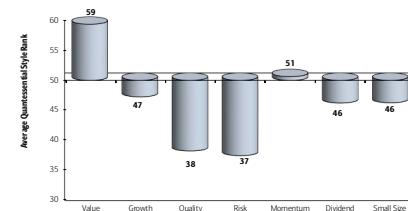
### Chart 591: Global Utilities forecast EPS growth

Forecast EPS growth for 2025 is 7%



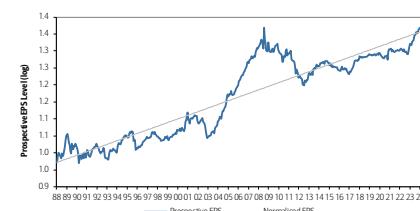
### Chart 592: Global Utilities – average Style Rank (100=best, 50=median, 1=worst)

Utilities are dominated by Value stocks



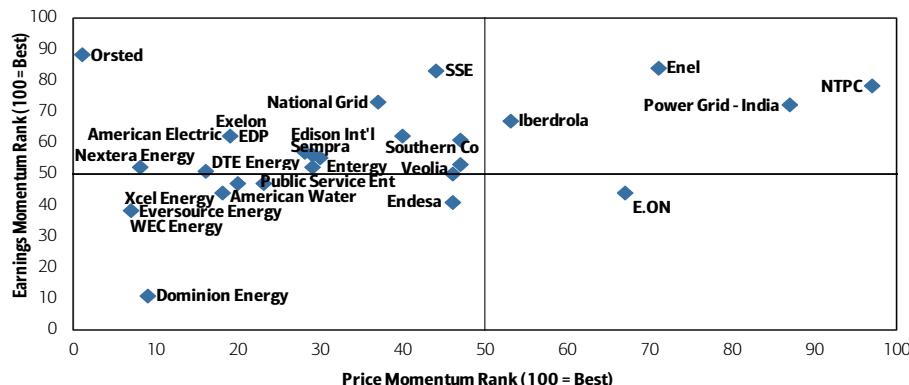
### Chart 593: Global Utilities Prospective EPS and Trend EPS

Earnings forecast has improved in the last 6m



### Chart 594: Quadrant Analysis of Global Utilities Stocks

16% of largest 25 stocks are in the top-right quadrant



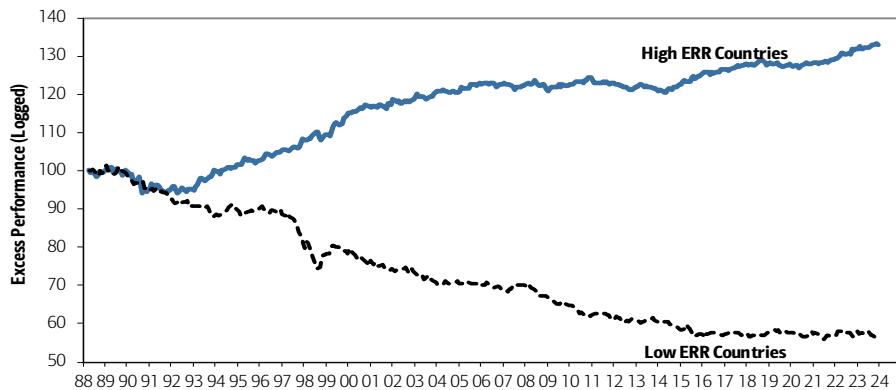
Source : BofA Global Quantitative Strategy, IBES, MSCI

BofA GLOBAL RESEARCH

## Country Allocation

### Chart 595: Excess Performance of Countries with Highest & Lowest Earnings Revision Ratio

Countries with higher Earnings Revision Ratio outperform those with lower Ratio

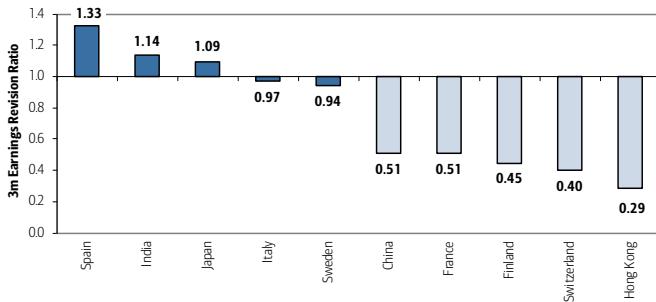


Source : BofA Global Quantitative Strategy, MSCI, IBES

BofA GLOBAL RESEARCH

### Chart 596: Largest Twenty Countries – Highest & Lowest ERR

Among largest twenty countries, the 3-Month Ratio is strongest in Spain

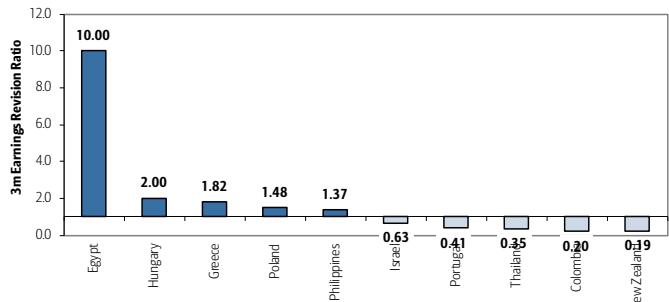


Source : BofA Global Quantitative Strategy, MSCI, IBES

BofA GLOBAL RESEARCH

### Chart 597: Smaller Countries – High & Low ERR

Among global countries, the 3-Month Ratio is strongest in Egypt

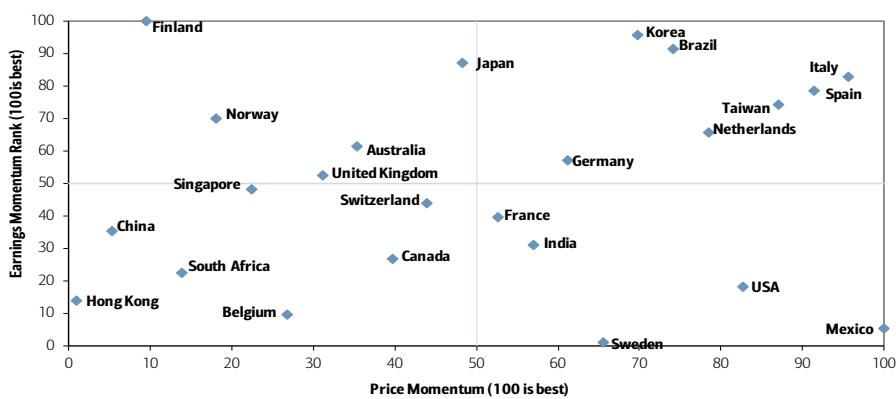


Source : BofA Global Quantitative Strategy, MSCI, IBES

BofA GLOBAL RESEARCH

### Chart 598: Price Momentum & Earnings Momentum Characteristics by Country

Countries with rising earnings and price momentum include Italy, Spain and Brazil



Source : BofA Global Quantitative Strategy, MSCI, IBES

BofA GLOBAL RESEARCH

# Most Important Stocks

Our Most Important Stocks analysis determines which regional-sectors and stocks are the most important to benchmark-aware investors. Index weight is important but so is the extent to which performance differs from index.

The following two charts highlight the thirty most important region-sectors and the thirty most important stocks in the World.

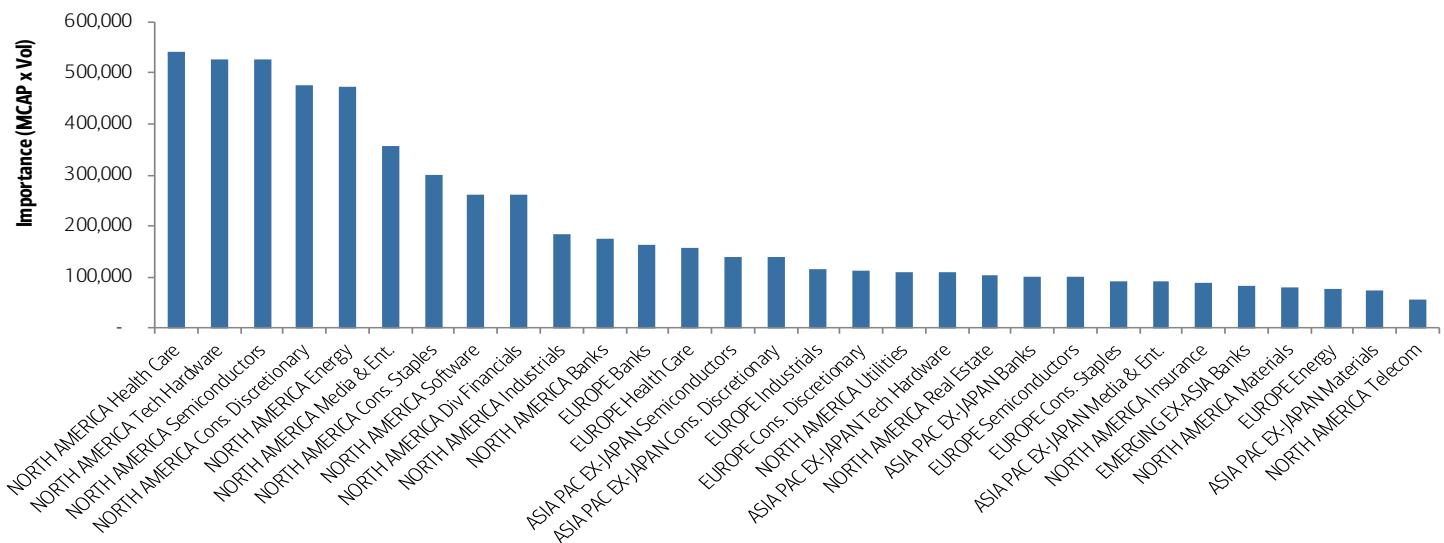
The universe of stocks included in this analysis is selected from the constituents of the MSCI AC World Index. The universe is determined at the end of each month using month-end data from MSCI databases.

Stocks in the firm's restricted list are not included in this analysis.

Weights are based on the MSCI AC World Index as of the most recent month-end, while volatility of relative performance is based on ten years of returns as of the most recent month-end. We define Importance as the index weight multiplied by the volatility of relative performance.

## Chart 599: Most Important Region-Sectors (top 30)

NORTH AMERICA Health Care is the Most Important region-sector globally

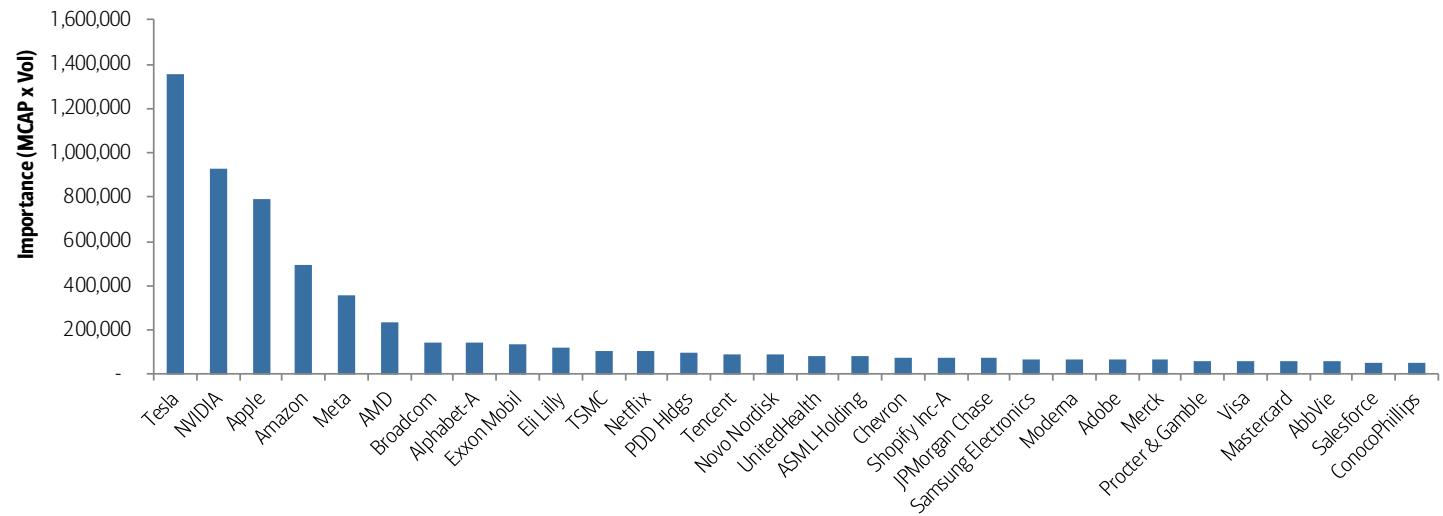


Source : BofA Asia Pac Quantitative Strategy, MSCI, Exshare

BofA GLOBAL RESEARCH

### Chart 600: Most Important Stocks (top 30)

The Most Important global stocks are Tesla and NVIDIA

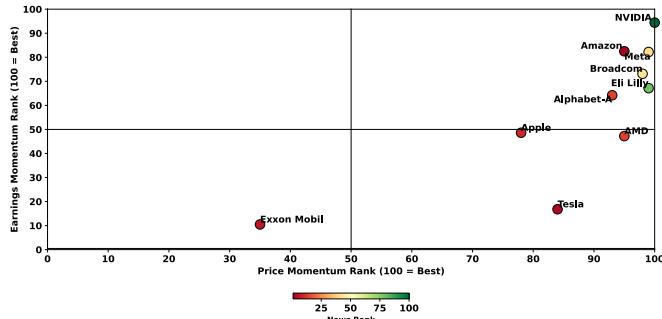


Source : BofA Asia Pac Quantitative Strategy, MSCI, Exshare

BofA GLOBAL RESEARCH

### Chart 601: Most Important Stocks (top 10) – Triple Momentum Quadrant Analysis

Triple Momentum is most positive for NVIDIA and Eli Lilly

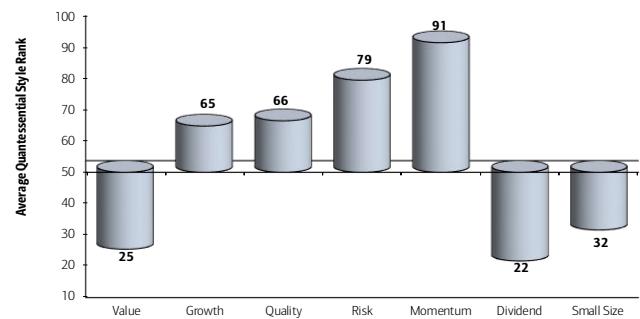


Source : BofA Asia Pac Quantitative Strategy, MSCI, Exshare

BofA GLOBAL RESEARCH

### Chart 602: Most Important Stocks (top 10) - Style Characteristics

From a style perspective ten Most Important stocks are tilted towards Momentum



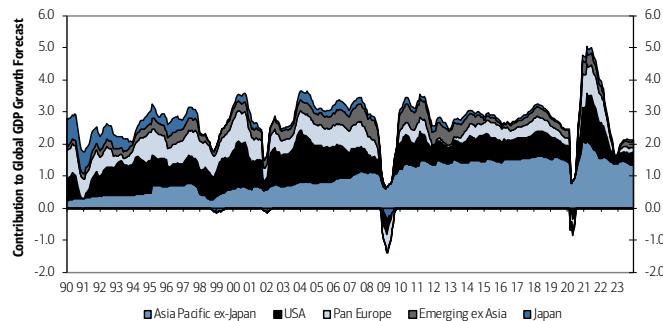
Source : BofA Asia Pac Quantitative Strategy, MSCI, Exshare

BofA GLOBAL RESEARCH

# Additional Macro Indicators

## Chart 603: Contribution to Global GDP Forecast by Region

Asia Pacific ex-Japan has contributed most positively to the Global GDP Forecasts

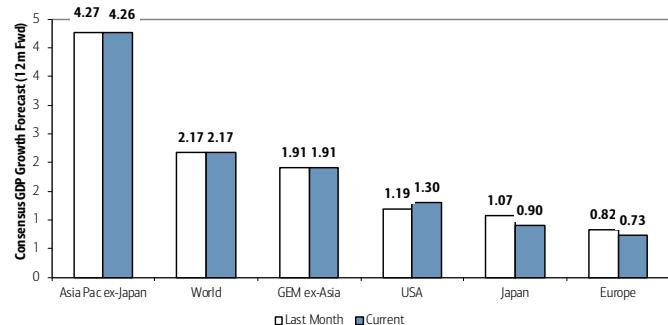


Source : BofA Global Quantitative Strategy, MSCI, Haver

BofA GLOBAL RESEARCH

## Chart 604: Global GDP forecasts by Region

The GDP Forecasts are highest in Asia Pac ex-Japan and lowest in Europe

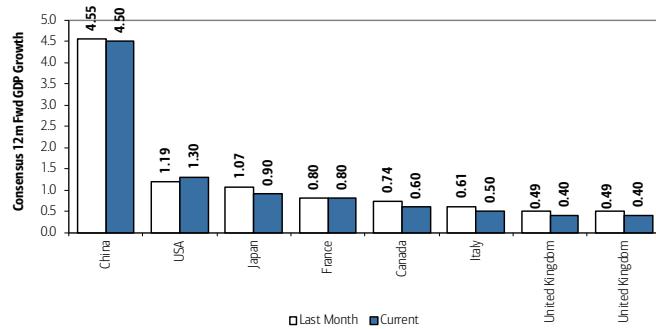


Source : BofA Global Quantitative Strategy, MSCI, Haver

BofA GLOBAL RESEARCH

## Chart 605: Global GDP forecasts by Countries

The GDP Forecasts have deteriorated the most in Japan

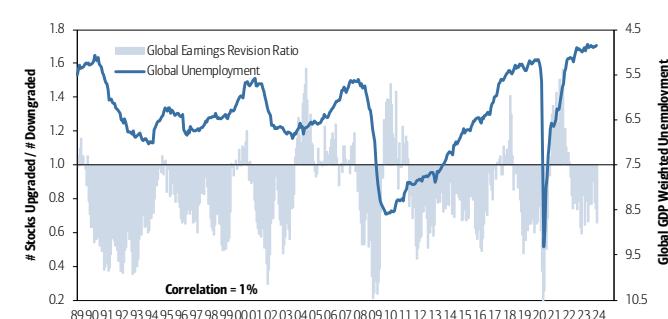


Source : BofA Global Quantitative Strategy, MSCI, Haver

BofA GLOBAL RESEARCH

## Chart 606: Global Unemployment and Trends in Global Profit Expectations

Global GDP weighted Unemployment Rate fell in last 12m

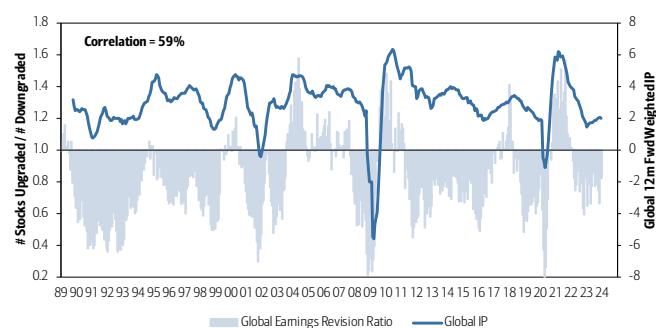


Source : BofA Global Quantitative Strategy, MSCI, IBES, Haver

BofA GLOBAL RESEARCH

## Chart 607: Global Industrial Production Forecast and Trends in Global Profit Expectations

Global IP forecasts and trends in EPS cycle has a 59% correlation

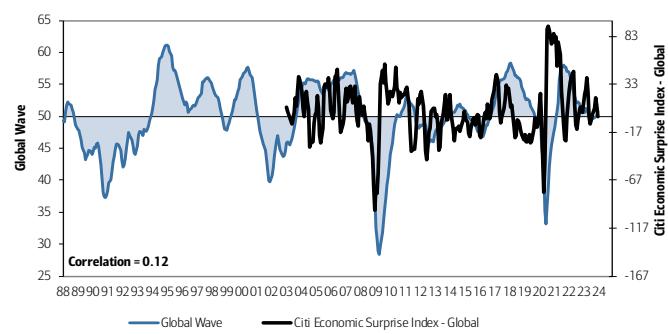


Source : BofA Global Quantitative Strategy, MSCI, IBES, Haver

BofA GLOBAL RESEARCH

## Chart 608: Citi Economic Surprise Index vs the Global Wave

Economic data releases have been weaker than expected



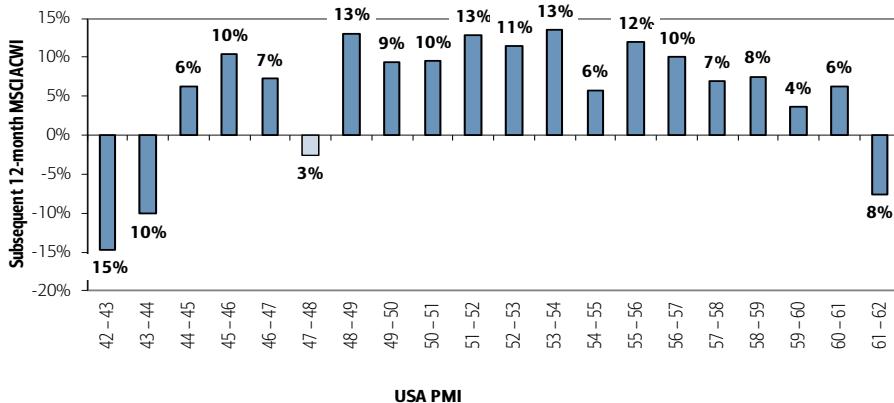
Source : BofA Global Quantitative Strategy, MSCI, IBES, Haver, Bloomberg, OECD, IMF, ICE Bond Indices, National Statistics Database

BofA GLOBAL RESEARCH



### Chart 609: USA PMI and MSCI ACWI subsequent 12m returns

MSCI ACWI averages -3% in the subsequent 12m when PMI was at current levels in the past

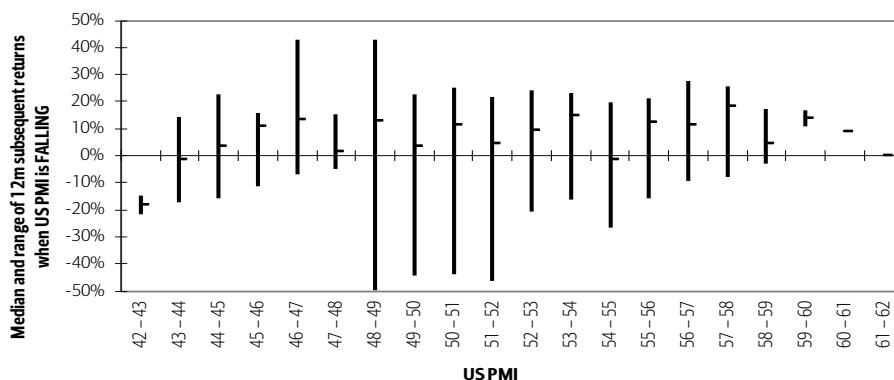


Source : BofA Global Quantitative Strategy, MSCI, IBES, Bloomberg, OECD, IMF

BofA GLOBAL RESEARCH

### Chart 610: 2m fall in USA PMI and subsequent 12m MSCI ACWI return

For current level of PMI & falling, MSCI ACWI returns 2% in the subsequent 12m on average



Source : BofA Global Quantitative Strategy, MSCI, IBES, Bloomberg, OECD, IMF

BofA GLOBAL RESEARCH

### Chart 611: USA PMI and MSCI ACWI YoY Performance

Current PMI is in contraction territory

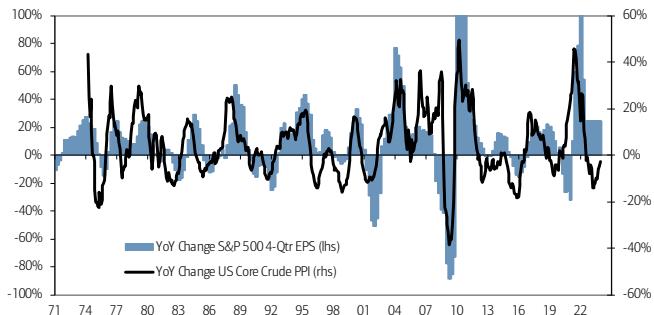


Source : BofA Global Quantitative Strategy, MSCI, IBES, Bloomberg, OECD, IMF

BofA GLOBAL RESEARCH

### Chart 612: US Core Crude PPI and US Reported Profits

US Reported Profits have remained resilient

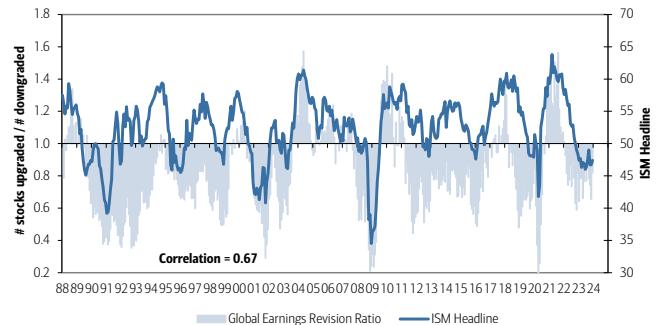


Source : BofA Global Quantitative Strategy, S&P

BofA GLOBAL RESEARCH

### Chart 613: US ISM and Trends in Global Profit Expectations

US ISM and Trends in Global Profit Expectations has a strong correlation

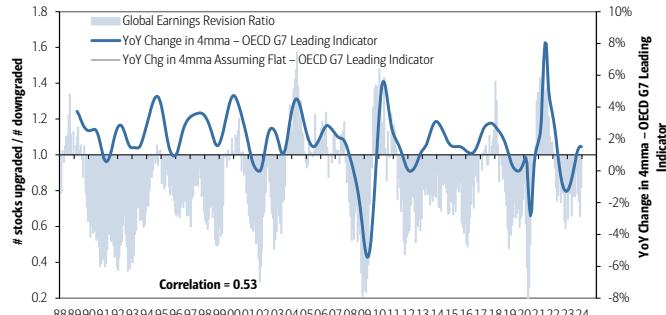


Source : BofA Global Quantitative Strategy, MSCI, IBES, Bloomberg

BofA GLOBAL RESEARCH

### Chart 614: OECD G7 CLI and Trends in Global Profit Expectations

OECD G7 CLI has improved in recent months

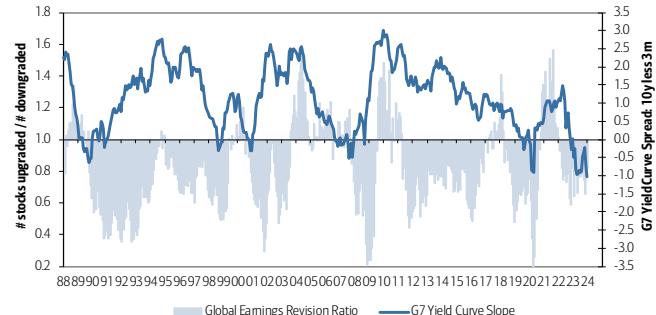


Source : BofA Global Quantitative Strategy, MSCI, IBES, Bloomberg

BofA GLOBAL RESEARCH

### Chart 615: G7 Yield Curve Slope & Trends in Profit Expectations

G7 Yield Curve Slope remains inverted

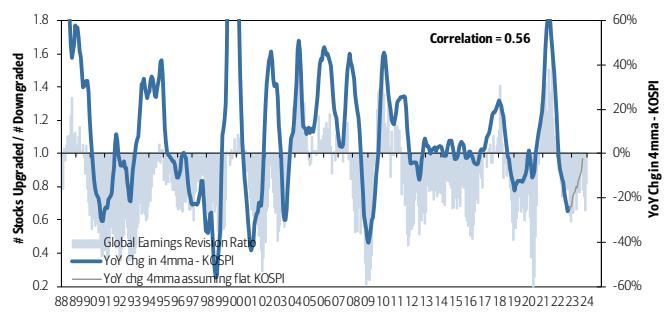


Source : BofA Global Quantitative Strategy, MSCI, IBES, Bloomberg

BofA GLOBAL RESEARCH

### Chart 616: KOSPI and Trends in Global Profit Expectations

KOSPI and Trends in Global Profit Expectations has a 56% correlation

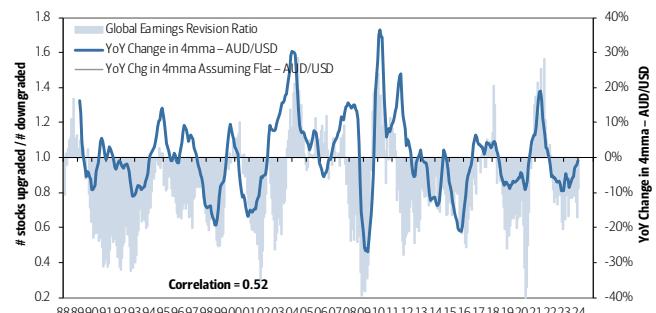


Source : BofA Global Quantitative Strategy, MSCI, IBES, Bloomberg

BofA GLOBAL RESEARCH

### Chart 617: AUD and Trends in Global Profit Expectations

AUD has appreciated vs USD in the last 12-months



Source : BofA Global Quantitative Strategy, MSCI, IBES, Bloomberg

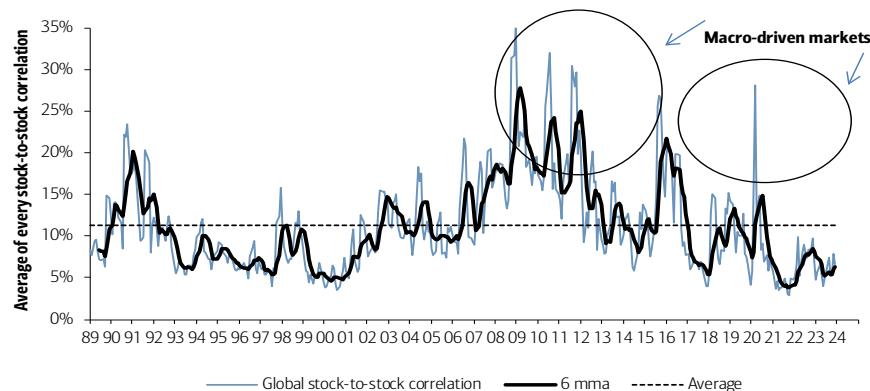
BofA GLOBAL RESEARCH



## Global stock-to-stock correlation

### Chart 618: Global Stock-to-stock correlations

The trend in stock-to-stock correlations remain below the long-term average

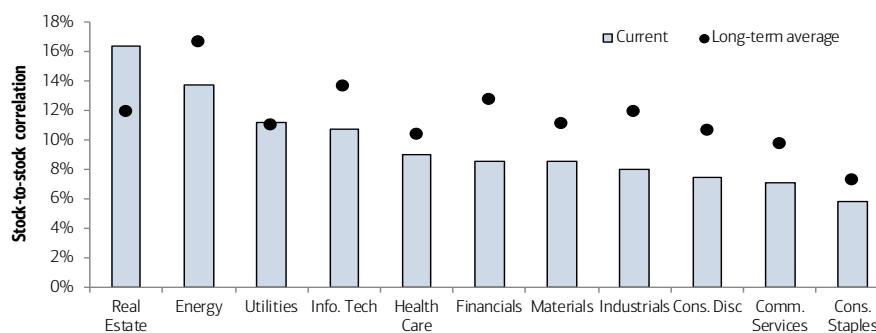


Source : BofA Global Quantitative Strategy, MSCI, Exshare

BofA GLOBAL RESEARCH

### Chart 619: Global Sector stock-to-stock correlation: Current vs Long-term

Stock-to-stock correlation is highest in Real Estate sector

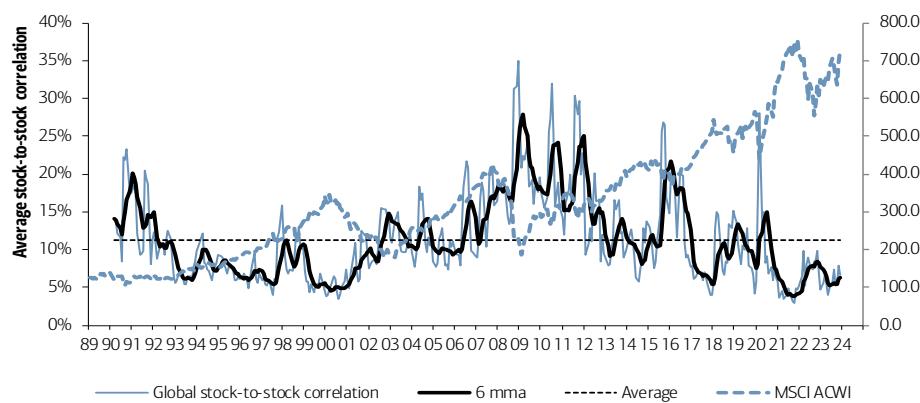


Source : BofA Global Quantitative Strategy, MSCI, Exshare

BofA GLOBAL RESEARCH

### Chart 620: Global stock-to-stock correlation and MSCI ACWI

Stock-to-stock correlations have remained low for global stocks



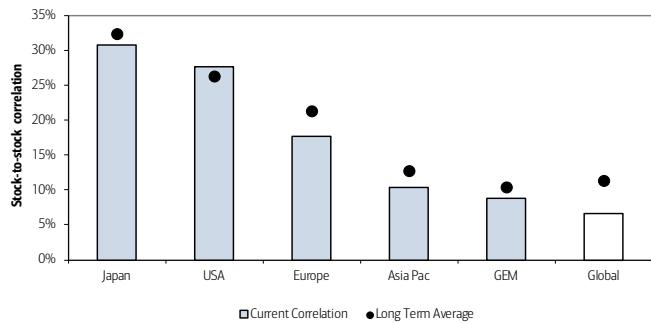
Source : BofA Global Quantitative Strategy, MSCI, Exshare

BofA GLOBAL RESEARCH

## Regional stock-to-stock correlation

### Chart 621: Regional stock-to-correlation: Current vs Long-term level

Stock-to-stock correlation is lowest in Global

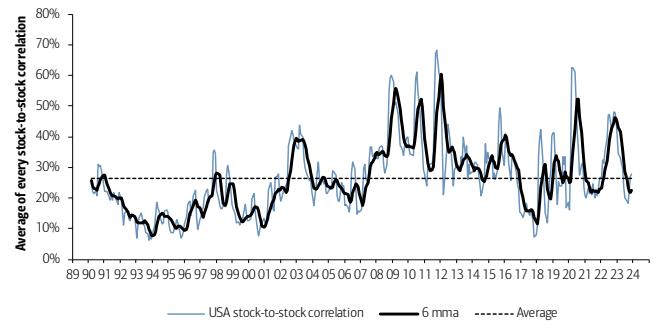


Source : BofA Global Quantitative Strategy, MSCI, Exshare

BofA GLOBAL RESEARCH

### Chart 622: USA stock-to-stock correlation

The trend in stock-to-stock correlations have ticked-up in the USA recently

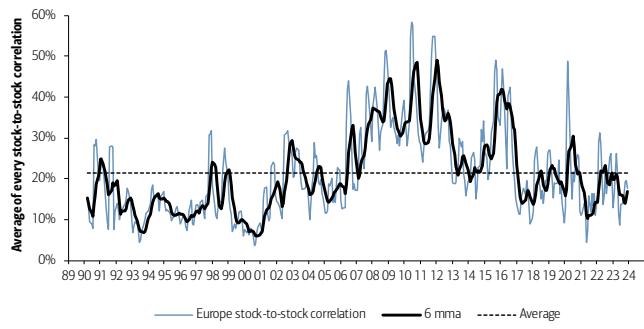


Source : BofA Global Quantitative Strategy, MSCI, Exshare

BofA GLOBAL RESEARCH

### Chart 623: Europe stock-to-stock correlation

Stock-to-stock correlations have fallen in Europe last month

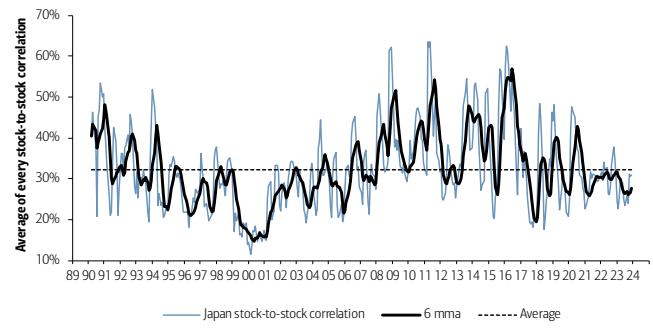


Source : BofA Global Quantitative Strategy, MSCI, Exshare

BofA GLOBAL RESEARCH

### Chart 624: Japan stock-to-stock correlation

Stock-to-stock correlations have risen in Japan last month

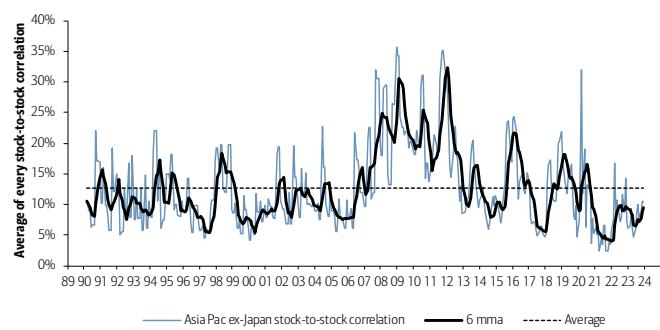


Source : BofA Global Quantitative Strategy, MSCI, Exshare

BofA GLOBAL RESEARCH

### Chart 625: Asia Pac ex Japan stock-to-stock correlation

Stock-to-stock correlations have increased in Asia Pac ex-Japan last month

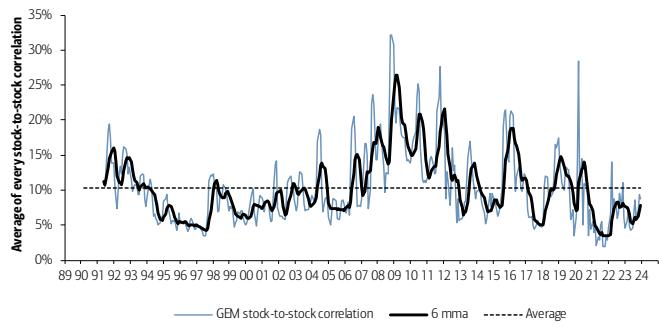


Source : BofA Global Quantitative Strategy, MSCI, Exshare

BofA GLOBAL RESEARCH

### Chart 626: Emerging Markets stock-to-stock correlation

The trend in stock-to-stock correlations have ticked-up in GEM recently



Source : BofA Global Quantitative Strategy, MSCI, Exshare

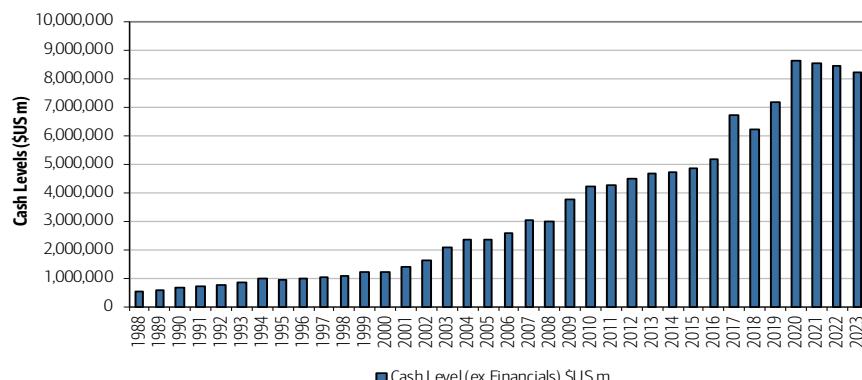
BofA GLOBAL RESEARCH



# Cash - Over \$8 trillion

## Chart 627: Total cash and cash equivalents

Total cash on balance sheet for stocks in ACWI is \$8.2tr

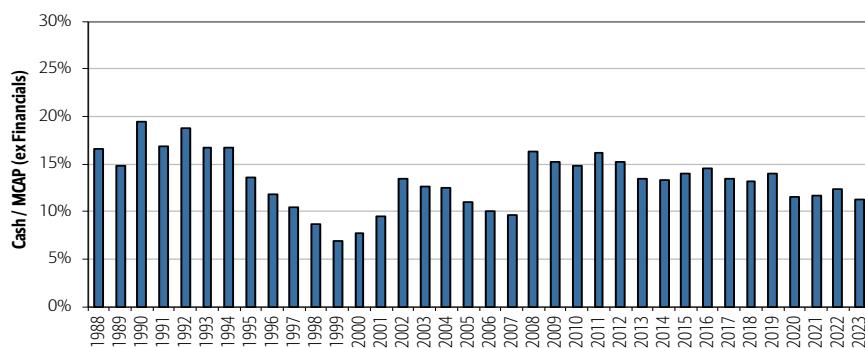


Source : BofA Global Quantitative Strategy, MSCI, Worldscope

BofA GLOBAL RESEARCH

## Chart 628: Cash-to-Market Cap

Globally cash on balance sheet is 11% of market cap

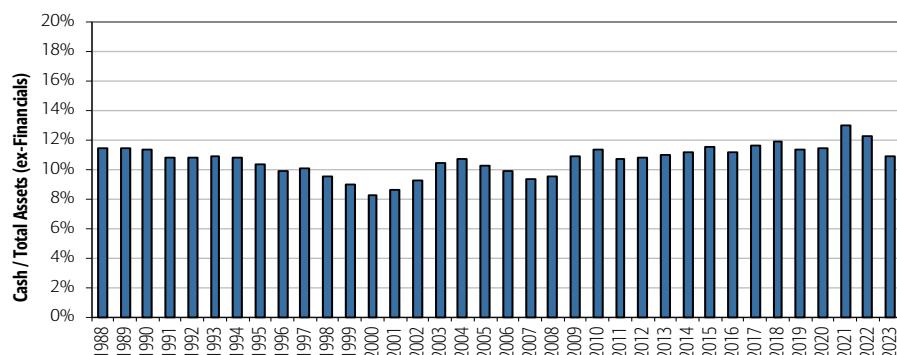


Source : BofA Global Quantitative Strategy, MSCI, Worldscope

BofA GLOBAL RESEARCH

## Chart 629: Cash-to-Total Assets

Cash-to-Total Assets globally is at 11%



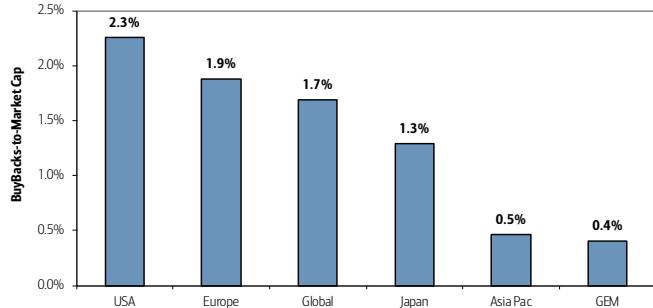
Source : BofA Global Quantitative Strategy, MSCI, Worldscope

BofA GLOBAL RESEARCH

## Buy-Backs

### Chart 630: Buy-Backs (last 12 months) relative to Market Cap by Region

The USA has the highest ratio of Buybacks-to-MCAP

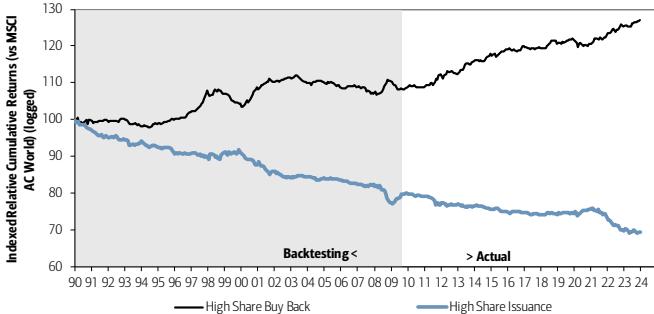


Source : BofA Global Quantitative Strategy, MSCI, Exshare

BofA GLOBAL RESEARCH

### Chart 632: High Share Buy-Backs and High Share Issuance Relative Cumulative Performance

High Share Buy Back have outperformed by 2.8% in the last 3 Months



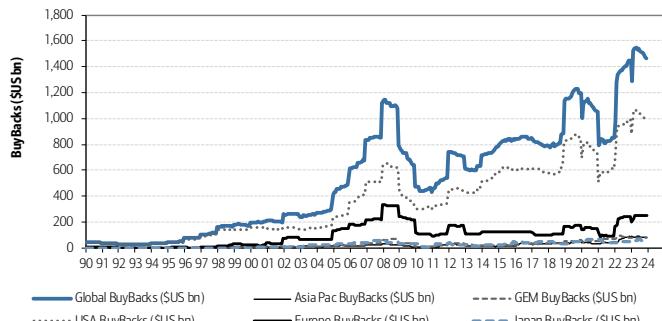
Source : BofA Global Quantitative Strategy, MSCI, Exshare

The shaded area shows back-tested results during the period from Jan-90 to Aug-09. The unshaded portion represents actual performance since Sep-09. Back-tested 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.

BofA GLOBAL RESEARCH

### Chart 634: Buy-Backs Dollar Value (\$US bn) by Regions

In the last 12m buyback levels has increased by 1%



Source : BofA Global Quantitative Strategy, MSCI, Exshare

BofA GLOBAL RESEARCH

### Chart 631: % Global stocks buying back shares

Globally, 28% of stocks are buying back their shares

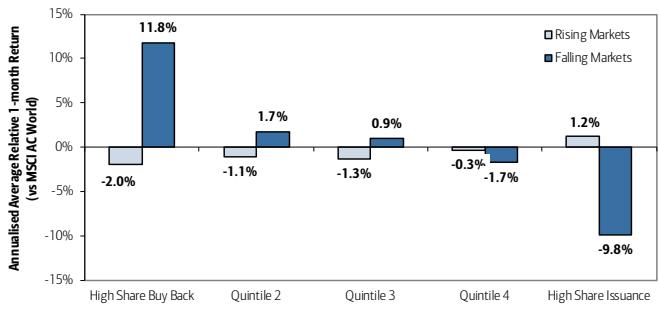


Source : BofA Global Quantitative Strategy, MSCI, Exshare

BofA GLOBAL RESEARCH

### Chart 633: Share Buy-Backs (by Quintile) Performance in Rising and Falling Markets

Companies issuing share outperform in rising markets

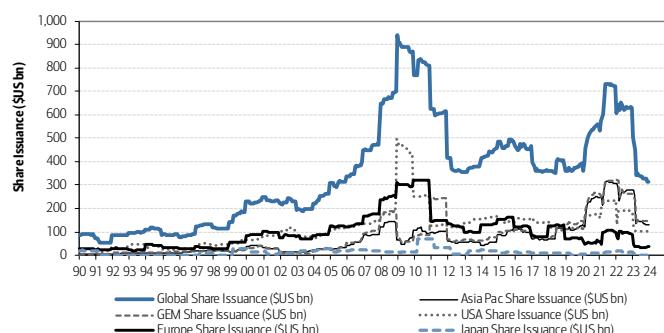


Source : BofA Global Quantitative Strategy, MSCI, Exshare

BofA GLOBAL RESEARCH

### Chart 635: Share Issuance Dollar Value (\$US bn) by Regions

YoY, share issuance has dropped by 50%



Source : BofA Global Quantitative Strategy, MSCI, IBES, Haver, Bloomberg, OECD, IMF, ICE Bond Indices, National Statistics Database, Worldscope

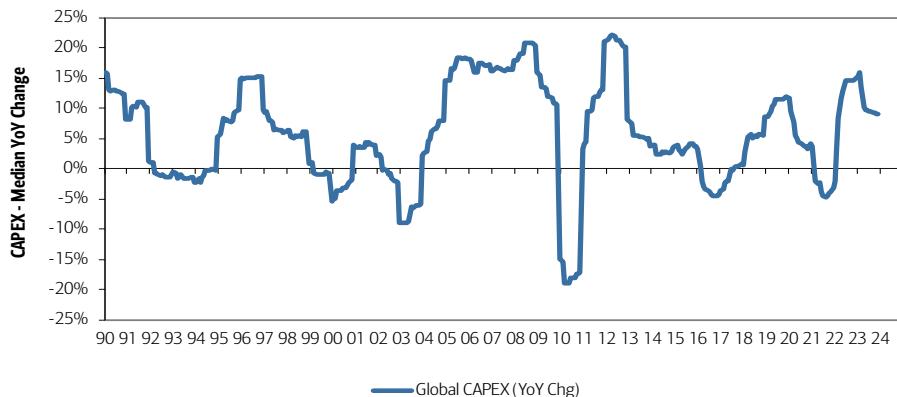
BofA GLOBAL RESEARCH



## Global Capex Cycle

### Chart 636: Global Capex Cycle

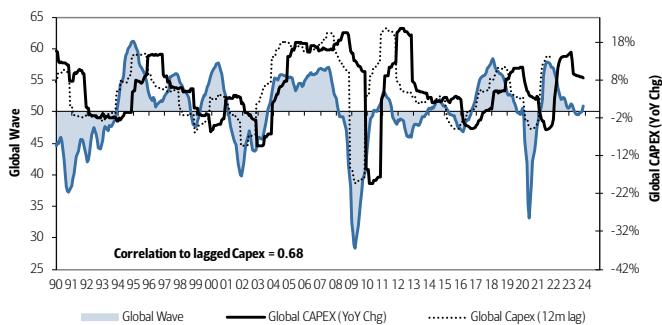
Global CAPEX has risen by 9.0% in the last 12m, but spending has been trending down in last 3m



BofA GLOBAL RESEARCH

### Chart 637: Global Capex Cycle and the Global Wave

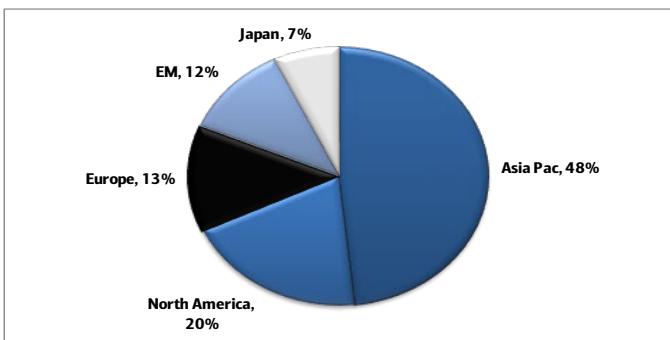
12m lag CAPEX cycle has a correlation of 68% with Global Wave



BofA GLOBAL RESEARCH

### Chart 639: Region Tilts of Top Quintile by Capex Growth

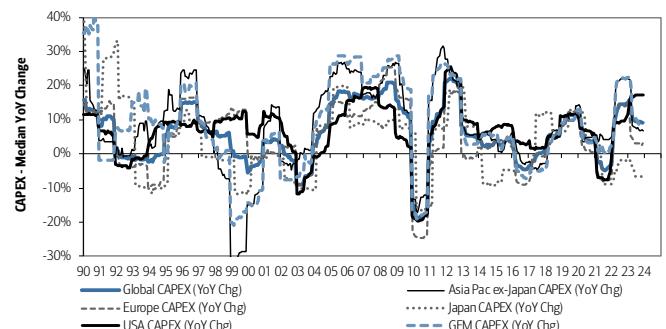
In the World, CAPEX is highest in Asia Pac and lowest in Japan



BofA GLOBAL RESEARCH

### Chart 638: Capex levels by global regions

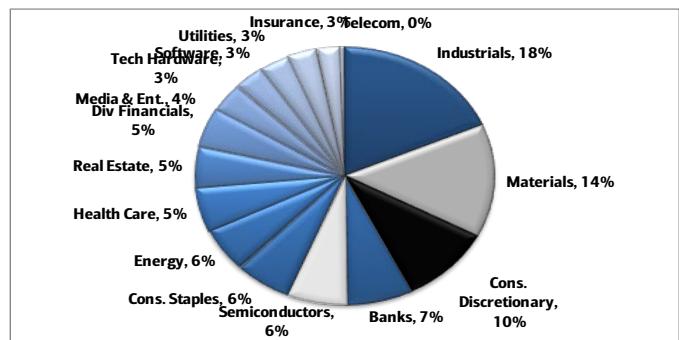
CAPEX in Europe has risen by 3.0% in the last 12m



BofA GLOBAL RESEARCH

### Chart 640: Sector Tilts of Top Quintile by Capex Growth

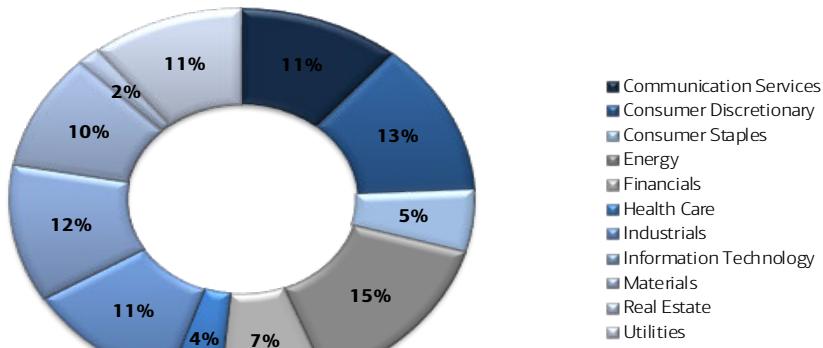
Sector with the highest CAPEX in the World is Industrials



BofA GLOBAL RESEARCH

**Chart 641: Global Sectors Capex Level**

Sector with highest CAPEX globally is Energy

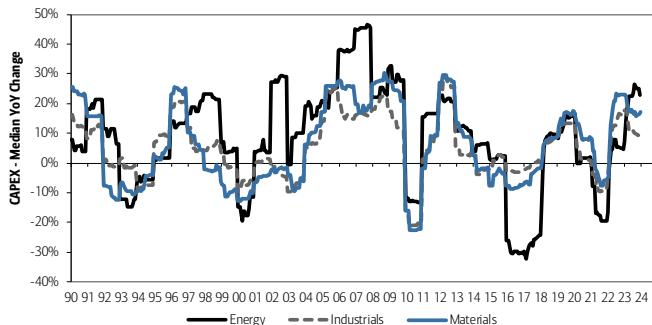


Source : BofA Global Quantitative Strategy, MSCI, Worldscope

BofA GLOBAL RESEARCH

**Chart 642: Late Cyclic Sectors Capex Growth (YoY Chg)**

Capex spending has improved in Energy

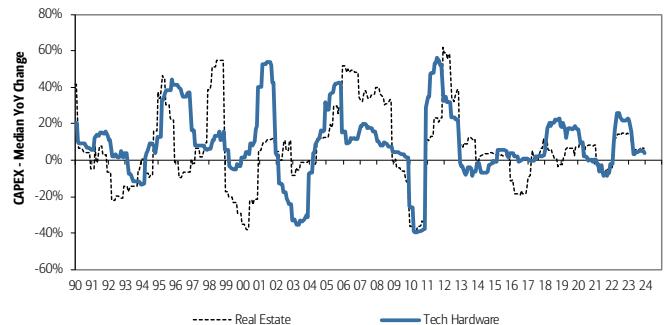


Source : BofA Global Quantitative Strategy, MSCI, Worldscope

BofA GLOBAL RESEARCH

**Chart 643: Early Cyclic Sectors Capex Growth (YoY Chg)**

YoY change in Capex is strongest in Real Estate

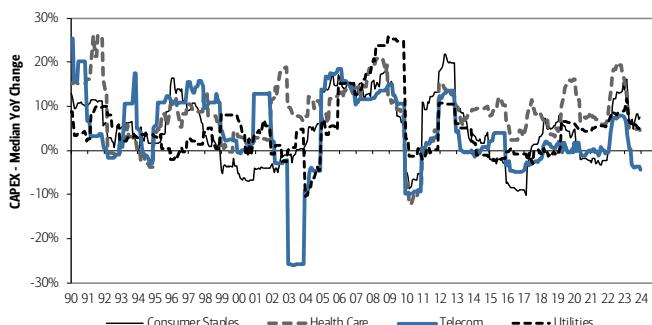


Source : BofA Global Quantitative Strategy, MSCI, Worldscope

BofA GLOBAL RESEARCH

**Chart 644: Defensive Sectors Capex Growth (YoY Chg)**

Capex spending has improved in Cons. Staples



Source : BofA Global Quantitative Strategy, MSCI, Worldscope

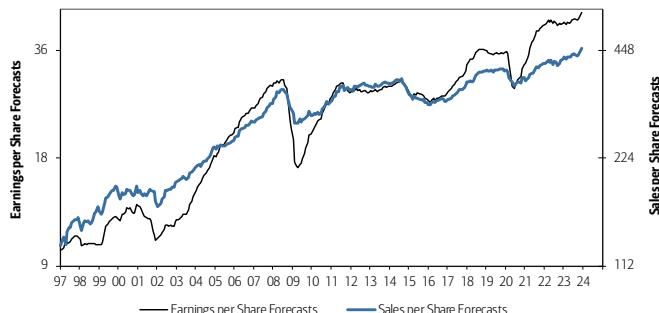
BofA GLOBAL RESEARCH



## Margins

### Chart 645: Global – Trends in EPS and Sales Forecasts

Global EPS forecasts have improved in the last 3m

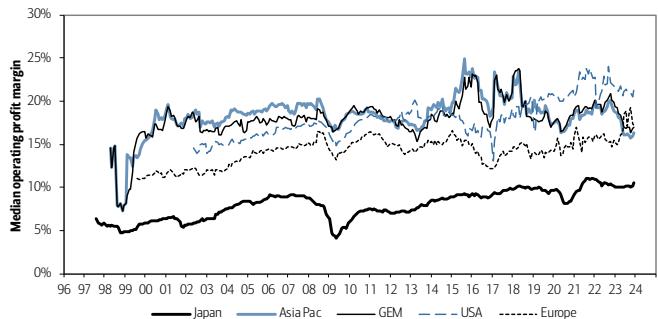


Source : BofA Global Quantitative Strategy, MSCI, IBES

BofA GLOBAL RESEARCH

### Chart 646: Changes in Forecast Operating Profit Margin by Region

In the last 3m Operating Margins have improved the most in Europe

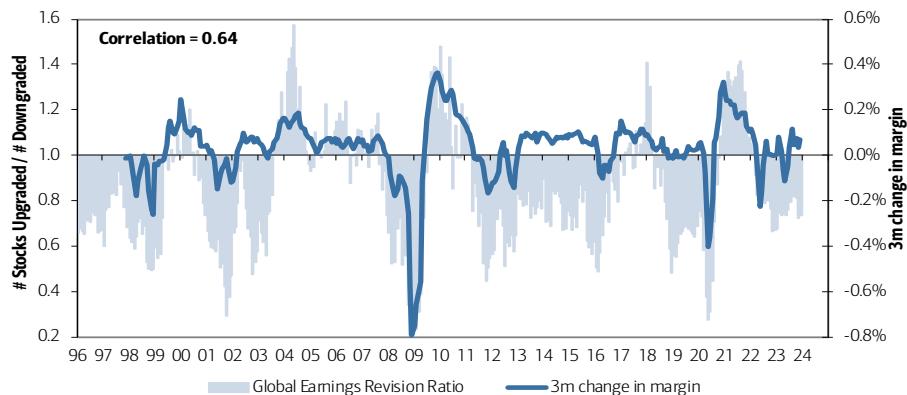


Source : BofA Global Quantitative Strategy, MSCI, IBES

BofA GLOBAL RESEARCH

### Chart 647: Three-month change in forecast margins vs Global Earnings Revision Ratio

Operating profit margins have improved in the last 3m

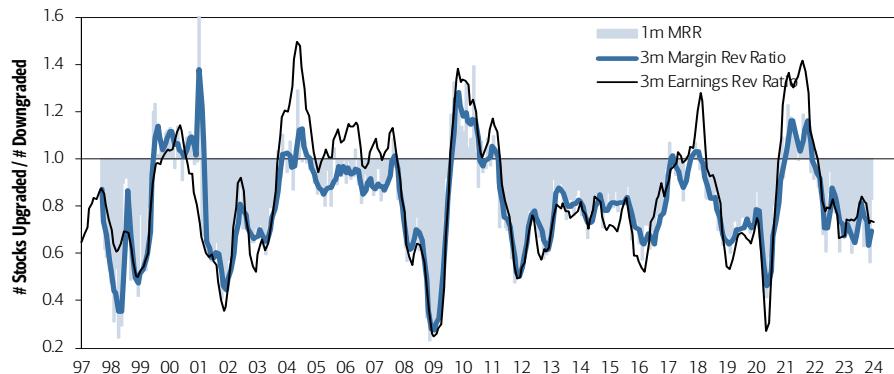


Source : BofA Global Quantitative Strategy, MSCI, IBES

BofA GLOBAL RESEARCH

### Chart 648: Global Margin Revision Ratio and Global Earnings Revision Ratio

Downdgrades outnumber upgrades as the Margin Revision Ratio is below 1.00



Source : BofA Global Quantitative Strategy, MSCI, IBES

BofA GLOBAL RESEARCH

## Margins: Where's the pressure?

This table below shows the 3-month change in forecast operating margins for each of 15 sectors in each of the largest 25 countries of the world.

**Table 52: Global Forecast Operating Margins – change in the last three months**

100% of countries within Tech Hardware had a rise in operating margins in last 3m

	Energy	Materials	Industrials	Cons. Staples	Health Care	Telecom	Utilities	Media & Ent.	Semiconductors	Cons. Discretionary	Banks	Insurance	Div Financials	Real Estate	Software	Tech Hardware	Country	
Canada	-0.7%	-	-	-	-	-4.9%	-2.0%	-	-	0.2%	-	-0.4%	-	-	#####	-	-0.4%	
USA	-1.7%	-0.8%	-	0.1%	-0.3%	-	0.4%	0.0%	-0.2%	0.1%	-1.5%	0.6%	-0.3%	0.3%	2.3%	1.2%	0.2%	
Belgium	-	-0.3%	-	0.8%	-	-	-	-	-	6.9%	-4.0%	-	-	-	-	-	0.3%	
Finland	-	0.9%	-1.0%	-	-	-	-	-	-	-	-	-	-	-	-	0.8%	0.8%	
France	-0.6%	0.7%	0.0%	0.0%	-0.7%	0.2%	-	0.6%	-	0.1%	1.0%	-	-1.4%	-	0.3%	-	0.1%	
Germany	-	0.4%	-0.1%	0.5%	-2.4%	-	-0.2%	0.2%	-2.3%	-0.3%	0.3%	-	-	-	0.6%	-	0.0%	
Italy	-	-	0.5%	-1.1%	-	1.6%	0.4%	-	-	0.1%	2.8%	-	-	-	-	-	1.0%	
Netherlands	-	0.2%	0.0%	0.0%	-	-	-	1.6%	-3.3%	-	16.3%	-	-	-	-	-	0.3%	
Norway	-	2.0%	-	-	-	-	0.1%	-	-	-	-1.9%	-	-	-	-	-	0.1%	
Spain	-	-	0.0%	-	-	-	0.6%	-	-	-	-2.1%	-	-	-	-	-	-0.4%	
Sweden	-	-	-	-	-	-	0.6%	-	-	-	0.3%	-	-	-	-	-	0.4%	
Switzerland	-	49.8%	0.5%	0.4%	1.4%	-	-	-	-	-2.7%	-	-428.4%	11.1%	-54.4%	0.2%	-	0.3%	
UK	-1.4%	0.7%	-1.5%	0.0%	0.1%	392.2%	2.8%	-2.6%	-	-	30.1%	-	0.2%	-	-	-	0.1%	
Australia	0.1%	4.8%	0.0%	0.1%	-0.2%	0.4%	-	1.0%	-	-0.1%	-0.2%	-	-2.0%	-1.0%	-	-	0.0%	
Hong Kong	-	-	0.8%	0.5%	-	-	0.3%	-	-	1.8%	-	0.6%	-	-	-	-	0.6%	
Japan	0.1%	0.0%	0.2%	0.1%	-0.2%	0.0%	0.1%	-0.7%	-0.4%	0.2%	2.2%	0.0%	0.1%	0.0%	0.2%	0.0%	0.1%	
Singapore	-	-	0.4%	-	-	-	0.4%	-	-	-	-0.4%	-	-	0.7%	-	-	0.4%	
China	-0.7%	-1.1%	-0.1%	-0.1%	-0.3%	-	0.0%	0.9%	0.5%	-0.7%	0.1%	0.2%	-0.7%	-0.6%	-0.2%	-0.1%	0.2%	-0.1%
India	0.0%	0.0%	1.2%	0.1%	-0.2%	-	0.0%	-	-	0.0%	1.1%	0.1%	-	-21.8%	3.1%	-	0.0%	
Korea	-	-0.4%	-	0.0%	-	-	-	-	-	-	-0.3%	0.8%	1.1%	-	-	-	0.1%	
Brazil	-	0.0%	-	-0.2%	-	-	-	-	-	-	0.8%	0.0%	-	-	-	-	0.0%	
South Africa	-	-4.4%	-	0.0%	-4.5%	-0.8%	-	-	-	-	-	-	-2.9%	-	-	-	-2.3%	
WORLD	-0.5%	-0.4%	0.1%	0.0%	-0.3%	0.3%	0.2%	0.2%	-0.6%	0.1%	0.6%	0.1%	-0.1%	0.0%	0.2%	0.2%	0.0%	

Key :

- = operating margins have increased by more than 0.5% in the last 3 months
- = operating margins have increased by less than 0.5% in the last 3 months
- = operating margins have fallen by less than 0.5% in the last 3 months
- = operating margins have fallen by more than 0.5% in the last 3 months

Source : BofA Global Quantitative Strategy, MSCI, IBES

BofA GLOBAL RESEARCH



# Sales Growth

## Chart 649: Global trend in Sales Forecasts

Global Sales forecasts have improved in the last 3m

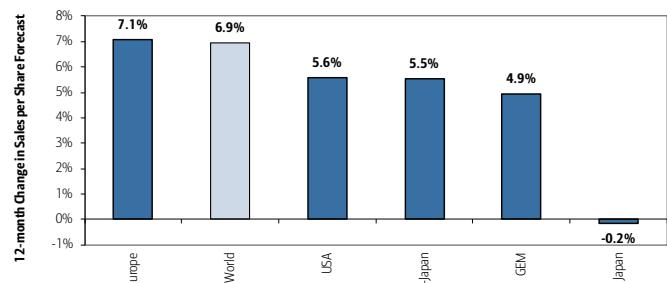


Source : BofA Global Quantitative Strategy, MSCI, IBES

BofA GLOBAL RESEARCH

## Chart 650: Twelve-month change in Sales Forecasts by Global Regions

In last 12m, Sales forecasts have improved the most in Europe

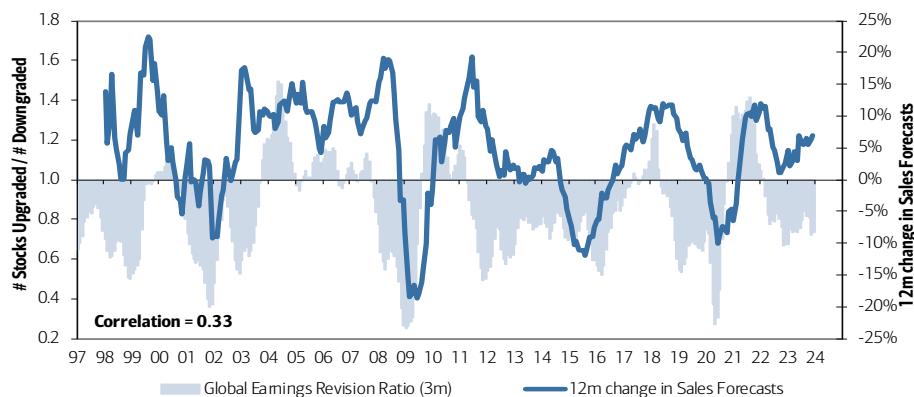


Source : BofA Global Quantitative Strategy, MSCI, IBES

BofA GLOBAL RESEARCH

## Chart 651: Twelve-month change in Sales Forecast and Earnings Revision Ratio

Sales growth forecast has improved by 6.9% in the last 12m in the World

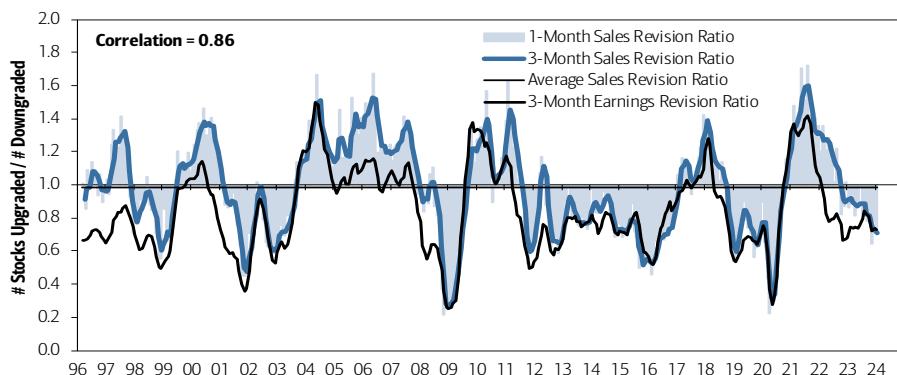


Source : BofA Global Quantitative Strategy, MSCI, IBES

BofA GLOBAL RESEARCH

## Chart 652: Global Sales Revision Ratio

Global Sales and Earnings Revision Ratio have a 86% correlation



Source : BofA Global Quantitative Strategy, MSCI, IBES

BofA GLOBAL RESEARCH

## Sales Growth: Where's the top line growth?

This table below shows the 3-month change in sales forecasts for each of 15 sectors in each of the largest 25 countries of the world.

**Table 53: Global Sales Forecasts - change in the last three months**

South Africa had the biggest increase in Sales forecasts in last 3m

	Banks	Cons. Discretionary	Cons. Staples	Div Financials	Energy	Health Care	Industrials	Insurance	Materials	Media & Ent.	Real Estate	Semiconductors	Software	Tech Hardware	Telecom	Utilities	Country
Canada	2.6%	1.9%	4.2%	-	4.3%	-	1.9%	40.0%	-2.0%	-	2.0%	-	3.1%	-	8.1%	9.5%	2.0%
USA	1.2%	-0.8%	1.3%	-0.3%	3.1%	3.4%	1.3%	2.2%	-2.5%	2.4%	0.7%	7.4%	2.8%	-4.4%	0.7%	-1.1%	1.4%
Belgium	1.2%	14.6%	-0.8%	-	-	4.7%	-	-15.0%	-20.7%	-0.9%	-	-	-	-	-	-	-2.5%
Finland	-	-	-	-	9.3%	9.8%	2.3%	26.7%	3.0%	-	-	-	-	-1.2%	3.8%	-	-7.7%
France	7.3%	-5.7%	4.2%	-24.8%	5.2%	3.2%	6.5%	3.3%	-1.8%	-2.6%	7.6%	-2.0%	2.0%	-	5.0%	4.1%	2.2%
Germany	7.2%	6.7%	0.5%	6.7%	-	-9.9%	5.7%	3.8%	2.7%	-1.6%	2.2%	5.0%	7.0%	-	3.3%	6.0%	4.9%
Italy	13.6%	4.8%	4.2%	4.2%	10.3%	6.5%	11.4%	3.5%	-	-	-	-	-	-	5.1%	2.4%	5.6%
Netherlands	3.0%	-24.1%	3.7%	-	-	-	5.3%	-1.4%	5.1%	-	-	0.1%	-	-	5.1%	-	5.0%
Norway	6.2%	-	5.6%	-	4.7%	-	-	9.6%	-0.8%	-	-	-	-	-	6.5%	-	4.4%
Spain	9.4%	6.2%	-	-	12.7%	6.7%	7.6%	-	-	-	-	-	-	-	4.0%	7.1%	6.8%
Sweden	6.0%	14.5%	9.5%	6.2%	-	14.2%	9.1%	-	9.0%	-	-	-	-	5.3%	4.4%	-	12.5%
Switzerland	9.1%	3.4%	8.1%	1.5%	-	7.2%	3.1%	0.7%	6.8%	-	4.1%	-	1.8%	4.8%	8.2%	9.1%	4.5%
UK	3.1%	6.7%	4.5%	8.3%	3.0%	4.2%	5.8%	4.5%	0.9%	-7.5%	6.1%	-	9.2%	6.6%	2.7%	-1.3%	3.0%
Australia	4.8%	8.0%	5.6%	-3.1%	2.9%	5.2%	3.8%	5.5%	5.5%	-	-38.2%	-	7.0%	-	5.3%	6.9%	3.4%
Hong Kong	1.3%	2.7%	8.9%	2.0%	-	-	0.6%	1.9%	-	-	-3.4%	-	-	-	0.6%	-1.9%	-0.3%
Japan	4.7%	9.9%	5.6%	14.0%	10.1%	7.4%	5.1%	8.2%	6.6%	-	3.5%	6.7%	8.7%	6.4%	7.4%	7.8%	7.0%
Singapore	5.2%	8.9%	-0.2%	5.0%	-	-	4.6%	-	-	4.0%	3.2%	-	-	-	3.0%	2.1%	2.3%
China	2.6%	-4.6%	0.2%	-0.2%	5.4%	-4.2%	5.7%	3.2%	2.9%	-	4.1%	-13.2%	1.9%	16.1%	9.8%	-3.4%	0.7%
India	2.7%	40.5%	3.0%	5.3%	0.3%	2.8%	1.0%	1.6%	1.3%	7.0%	-	-	-0.4%	-	6.9%	-0.9%	4.9%
Korea	4.9%	7.5%	-4.2%	7.1%	8.8%	7.9%	6.2%	-8.2%	-3.8%	-	31.7%	-30.3%	8.7%	-19.2%	9.2%	7.4%	-
Taiwan	7.0%	2.2%	11.5%	4.2%	5.9%	0.9%	-6.7%	-10.6%	4.6%	-	10.1%	-	6.5%	-	7.7%	-	6.0%
Brazil	4.5%	7.4%	1.6%	8.6%	1.2%	-2.1%	6.1%	6.1%	3.3%	-	-	-	5.6%	-	4.8%	7.8%	2.8%
Mexico	5.3%	-	5.0%	-	-	-	-14.9%	-	0.2%	-12.7%	-24.5%	-	-	-	3.3%	-	-0.4%
South Africa	4.9%	100.1%	8.6%	-3.4%	6.4%	8.1%	4.3%	-2.6%	-3.3%	-1.2%	-14.4%	-	-	-	3.7%	-	16.9%
WORLD	1.3%	5.0%	-0.2%	0.3%	4.6%	1.4%	1.5%	6.4%	0.2%	3.7%	-	11.9%	2.7%	13.1%	-1.5%	-0.1%	2.3%

Key:

= sales forecasts have increased by more than +1 Standard Deviation of 3 month change across country-sectors

= sales forecasts have increased by less than +1 Standard Deviation of 3 month change across country-sectors

= sales forecasts have fallen by less than +1 Standard Deviation of 3 month change across country-sectors

= sales forecasts have fallen by more than +1 Standard Deviation of 3 month change across country-sectors

Source : BofA Global Quantitative Strategy, MSCI, IBES

BofA GLOBAL RESEARCH



# Tactical View

## Short Term Momentum Indicators - as at 19th Jan 2024

### Chart 653: Copper (Spot), weekly last 2 years

Copper price increased (+2.1%)



Source : BofA Global Quantitative Strategy, Bloomberg

BofA GLOBAL RESEARCH

### Chart 654: AUD-USD cross rate, weekly last 2 years

AUD depreciated (-0.3%)



Source : BofA Global Quantitative Strategy, Bloomberg

BofA GLOBAL RESEARCH

### Chart 655: US Initial jobless claims, weekly last 2 years

US initial jobless claims increased by +25,000 to 214,000

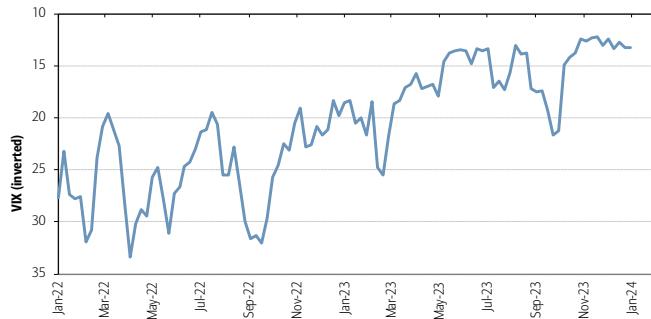


Source : BofA Global Quantitative Strategy, Bloomberg

BofA GLOBAL RESEARCH

### Chart 656: VIX, weekly last 2 years

VIX moved from 13.3 to 13.3



Source : BofA Global Quantitative Strategy, Bloomberg

BofA GLOBAL RESEARCH

### Chart 657: Global Credit Spreads, weekly 2 years

Global credit spreads narrowed (-13 bps)

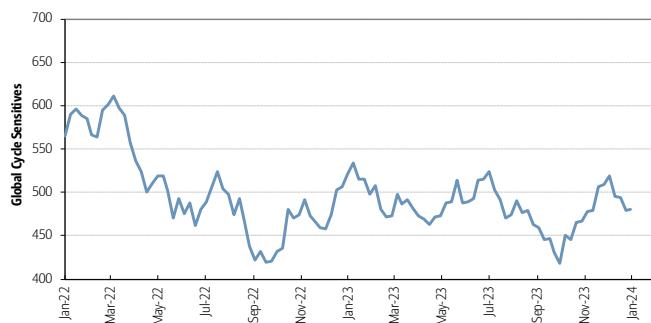


Source : BofA Global Quantitative Strategy, Bloomberg

BofA GLOBAL RESEARCH

### Chart 658: Global Cycle Sensitives, weekly returns 2 year

Global Cycle Sensitives outperformed (+0.4%)



Source : BofA Global Quantitative Strategy, Bloomberg

BofA GLOBAL RESEARCH

## Cycle Sensitives

The Global Cycle Sensitives are stocks that our analysis shows have tended to outperform as the cycle improves, and underperform as the cycle deteriorates. The back-testing for this analysis is from Jan-93 to Aug-05 and we introduced the current version of the analysis in Sep-05.

This analysis includes all stocks in the MSCI AC World Index as at each month-end with 1) market cap > US\$5bn, 2) median daily turnover in the preceding 6 months > US\$5m, and 3) number of broker estimates is greater than four. We define cycle sensitivity as the regression coefficient from regressing 60 months of three-month price returns against the three-month change in the Global Earnings Revision Ratio. The Cycle Sensitives are the 30-stocks with the highest cycle sensitivity and the list is sector-neutralised (approximately) to the MSCI AC World Index. The screens are determined at the end of each month using month-end data from MSCI.

The Cycle Sensitives acts as a stock screen and not as a recommended stock portfolio. The screens are not a recommended list either individually or as a group of stocks. Investors should consider the fundamentals of the companies and their own individual circumstances/objectives before making any investment decisions.

### Performance Calculation Methodology

Refer to appendix "[Cycle Sensitives Performance](#)" for detailed performance data and advance decline statistics.

Rebalancing and performance calculations are conducted each month, using data and closing prices corresponding to the market's close on the last business day of each month. Performance is computed on the basis of price return. The performance is presented relative to the market capitalization-weighted MSCI AC World Index.

The analysis is back-tested and does not represent the actual performance of any account or fund. Back-tested performance depicts the hypothetical back-tested performance of a particular strategy over the time period indicated. In future periods, market and economic conditions will differ and the same strategy will not necessarily produce the same results. No representation is being made that any actual portfolio is likely to have achieved returns similar to those shown herein. In fact, there are frequently sharp differences between back-tested returns and the actual results realized in the actual management of a portfolio. Back-tested performance results are created by applying an investment strategy or methodology to historical data and attempts to give an indication as to how a strategy might have performed during a certain period in the past if the product had been in existence during such time. Back-tested results have inherent limitations including the fact that they are calculated with the full benefit of hindsight, which allows the security selection methodology to be adjusted to maximize the returns. Further, the results shown do not reflect actual trading or the impact that material economic and market factors might have had on a portfolio manager's decision-making under actual circumstances. Back-tested returns do not reflect advisory fees, trading costs, or other fees or expenses.

This report includes factors for informational or descriptive purposes, and inclusion here is not equivalent to a recommendation of the factor or portfolio.

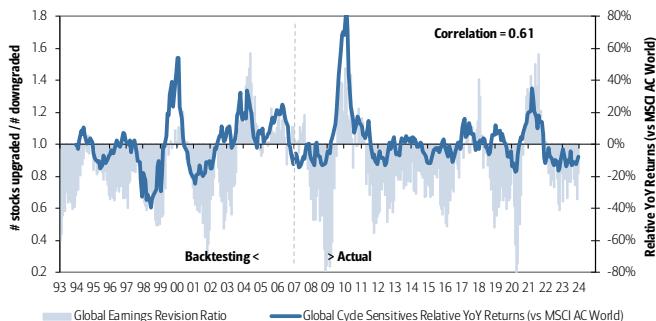
Past performance is no guarantee of future results.

A complete performance record is available upon request.



### Chart 659: Global Cycle Sensitives versus Trends in Global Earnings Expectations

Global Cycle Sensitives has a 61% correlation with trends in earnings cycle



Source : BofA Global Quantitative Strategy, MSCI

Back-tested results are from Jan-93 to Aug-05. Actual performance is from Sep-05. Back-tested 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.

BofA GLOBAL RESEARCH

### Table 54: Global Cycle Sensitives

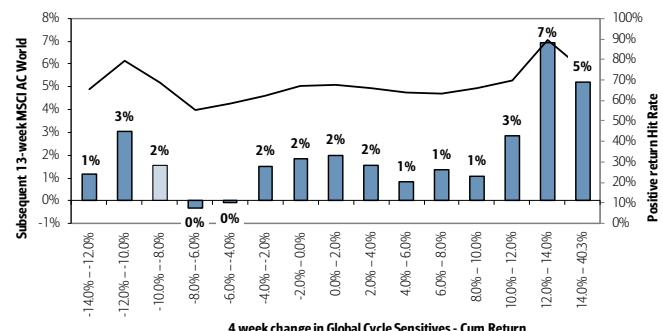
30-stocks sector-neutral screen of stocks with the highest price-sensitivity to changes in Global ERR

<b>Bloomberg</b>				<b>MCAP (Free US\$m)</b>	<b>Avg Daily TO (6m \$US mn)</b>
<b>Code</b>	<b>Company Name</b>	<b>Country</b>	<b>Sector</b>		
IIB IN	IndusInd Bank	Asia Pac ex-Japan	Banks	5,525	58.2
SBIN IN	State Bank of India	Asia Pac ex-Japan	Banks	13,772	119.4
1211 HK	BYD-H	Asia Pac ex-Japan	Cons. Discretionary	28,640	213.1
NIO US	NIO-ADR	Asia Pac ex-Japan	Cons. Discretionary	12,565	551.6
CIFC IN	Cholamandalam Inve	Asia Pac ex-Japan	Div Financials	6,354	27.2
APHS IN	Apollo Hospitals	Asia Pac ex-Japan	Health Care	6,899	28.7
2269 HK	WuXi Biologics	Asia Pac ex-Japan	Health Care	14,504	120.5
034020 KS	Doosan Enerbility	Asia Pac ex-Japan	Industrials	5,536	48.6
2603 TT	Evergreen Marine	Asia Pac ex-Japan	Industrials	4,750	87.3
PLS AU	Pilbara Minerals	Asia Pac ex-Japan	Materials	7,706	102.0
SE US	Sea-ADR	Asia Pac ex-Japan	Media & Ent.	14,834	351.8
2303 TT	United Microelectror	Asia Pac ex-Japan	Semiconductors	19,286	78.6
LTIM IN	LТИMindtree	Asia Pac ex-Japan	Software	6,716	29.3
TECHM IN	Tech Mahindra	Asia Pac ex-Japan	Software	8,206	36.6
WPRO IN	WIPRO	Asia Pac ex-Japan	Software	7,394	31.1
DELTA TB	Delta Electronics (Th)	Asia Pac ex-Japan	Tech Hardware	8,040	39.6
1810 HK	Xiaomi Corp-B	Asia Pac ex-Japan	Tech Hardware	30,643	165.6
TPWR IN	Tata Power	Asia Pac ex-Japan	Utilities	5,739	53.0
NESTE FH	Neste	Europe	Energy	15,053	34.4
2413 JP	M3	Japan	Health Care	7,304	47.2
9984 JP	SoftBank Group	Japan	Telecom	45,932	422.2
TSLA US	Tesla	North America	Cons. Discretionary	709,807	29,007.0
CELH US	Celsius	North America	Cons. Staples	8,175	237.3
DAR US	Darling Ingredients	North America	Cons. Staples	7,949	90.4
SQ US	Block	North America	Div Financials	42,499	664.0
Z US	Zillow-C	North America	Real Estate	8,849	152.2
FDX US	FedEx	North America	Industrials	60,422	521.0
CINF US	Cincinnati Financial	North America	Insurance	16,228	69.0
ROKU US	Roku	North America	Media & Ent.	11,374	641.8
ENPH US	Enphase Energy	North America	Semiconductors	18,018	561.6

Source : BofA Global Quantitative Strategy, MSCI, IBES

### Chart 660: Global Cycle Sensitives Large Performance Months

For current 4wk change, MSCI ACWI averages 1.5% in the subsequent 13wks



Source : BofA Global Quantitative Strategy, MSCI

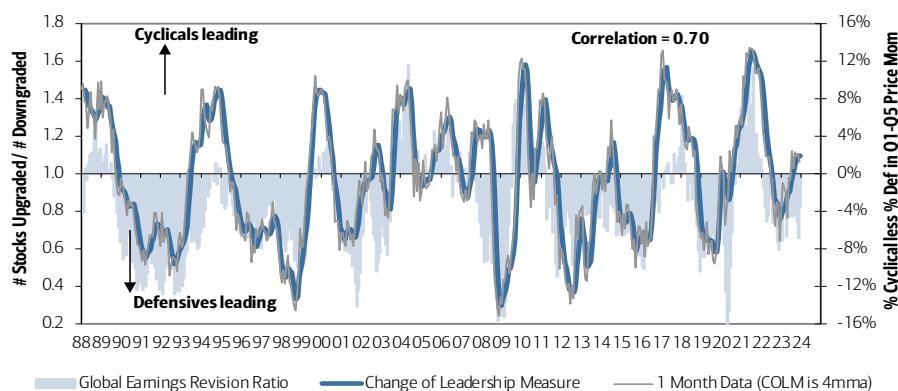
BofA GLOBAL RESEARCH

## Change of Leadership Measure

The Change of Leadership Measure captures whether cyclicals or defensives are leading performance. We first calculate the "top quintile by price momentum" as the top 20% of stocks in the MSCI AC World Index by price return over the last 12 months and the "bottom quintile by price momentum" as the bottom 20% of stocks by this measure. We calculate the proportion of stocks in the top quintile by price momentum that are from cyclical sectors (Energy, Materials, Industrials) less the proportion of stocks that are from defensive sectors (Consumer Staples, Utilities, Insurance). We then calculate the same for the bottom quintile by price momentum and take the difference between the results for the two quintiles. The Change of Leadership Measure is four-month-moving-average of this time series.

### Chart 661: Change of Leadership Measure and trends in global profit expectations

Cyclical sectors outperforms, on average during an improving earnings cycle

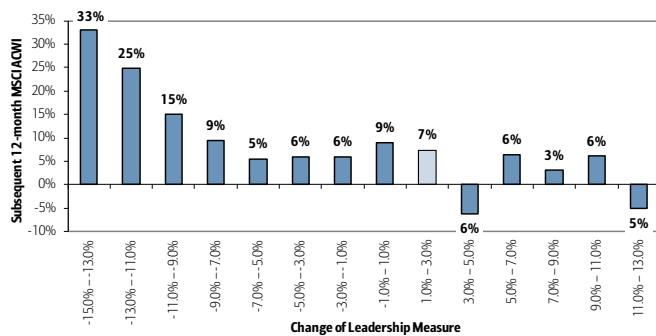


Source : BofA Global Quantitative Strategy, MSCI

BofA GLOBAL RESEARCH

### Chart 662: Change of Leadership Measure & subsequent 12-month Performance of MSCI ACWI

For current level of COLM, MSCI ACWI averages 7.4% in the subsequent 12m

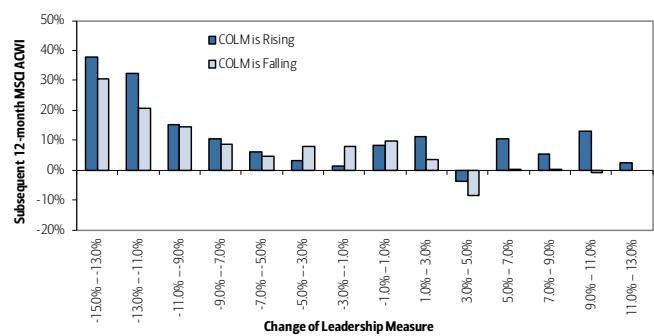


Source : BofA Global Quantitative Strategy, MSCI

BofA GLOBAL RESEARCH

### Chart 663: Rising/Falling Change of Leadership Measure & subsequent 12-month Performance of MSCI ACWI

When COLM is at current level and rising, MSCI ACWI averages 11.4% in the subsequent 12m



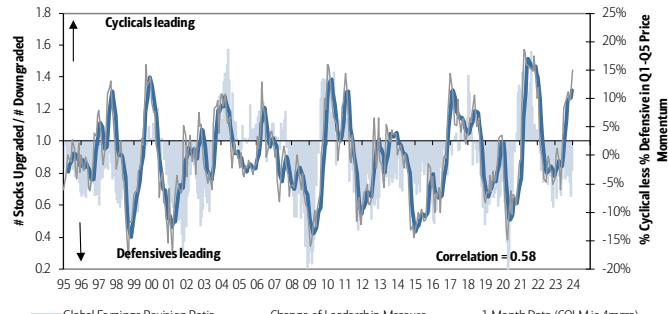
Source : BofA Global Quantitative Strategy, MSCI

BofA GLOBAL RESEARCH



### Chart 664: USA Change of Leadership Measure and trends in global profit expectations

In the USA, Cyclicals are dominating sector performance recently

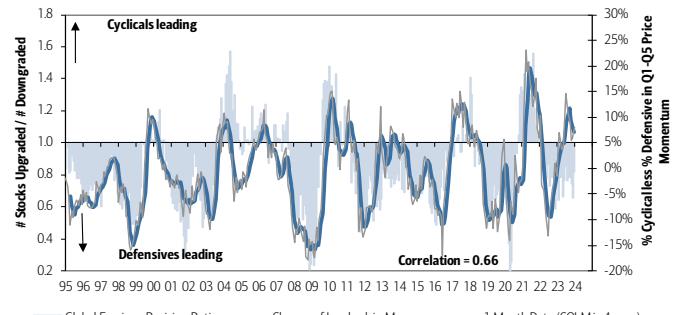


Source : BofA Global Quantitative Strategy, MSCI

BofA GLOBAL RESEARCH

### Chart 665: Europe Change of Leadership Measure and trends in global profit expectations

Europe Change of Leadership Measure has a 66% correlation with trends in earnings cycle

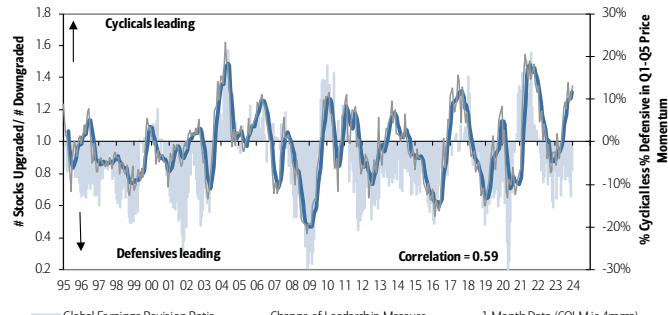


Source : BofA Global Quantitative Strategy, MSCI

BofA GLOBAL RESEARCH

### Chart 666: Japan Change of Leadership Measure and trends in global profit expectations

Defensive sectors outperforms, on average, when profits cycle is slowing

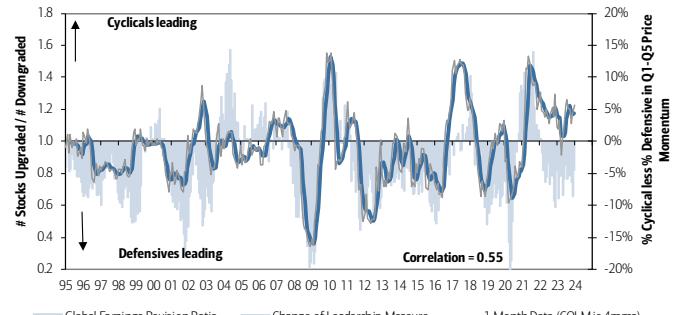


Source : BofA Global Quantitative Strategy, MSCI

BofA GLOBAL RESEARCH

### Chart 667: Asia Pac ex-Japan Change of Leadership Measure and trends in global profit expectations

Cyclical sectors outperforms, on average, during an improving earnings cycle

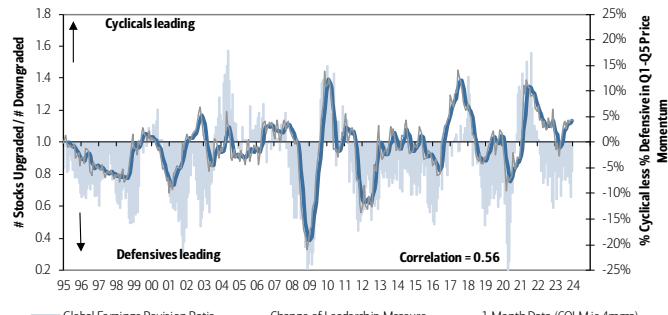


Source : BofA Global Quantitative Strategy, MSCI

BofA GLOBAL RESEARCH

### Chart 668: Emerging Markets Change of Leadership Measure and trends in global profit expectations

Cyclical sectors outperform, on average, when profits cycle is accelerating



Source : BofA Global Quantitative Strategy, MSCI

BofA GLOBAL RESEARCH

# Interest Rate Sensitivity

## Construction Methodology

Our interest rate sensitivity analysis determines the extent to which share prices move as interest rates change. The back-testing in this analysis is from Jan-89 to May-04 and we introduced the current version of the analysis in Jun-04.

This analysis includes all stocks in the MSCI AC World Index as at each month-end. We define Interest Rates Sensitivity for each stock as the regression coefficient from regressing 60 months of monthly price returns against the 3-month change in the US ten-year bond yield. The screens are determined at the end of each month using month-end data from MSCI and Bloomberg databases. We divide all the stocks in the analysis into five quintiles by interest rate sensitivity. We name the top quintile "Bearish on Bonds" and the bottom quintile "Bullish on Bonds".

Interest Rate Sensitivity acts as a stock screen and not as a recommended stock portfolio. The screens are not a recommended list either individually or as a group of stocks. Investors should consider the fundamentals of the companies and their own individual circumstances/objectives before making any investment decisions.

## Performance Calculation Methodology

Refer to appendix "[Interest Rate Sensitivity Performance](#)" for detailed performance data and advance decline statistics.

Rebalancing and performance calculations are conducted each month, using data and closing prices corresponding to the market's close on the last business day of each month. Performance is computed on the basis of price return. The performance is presented relative to the market capitalization-weighted MSCI AC World Index.

The analysis is back-tested and does not represent the actual performance of any account or fund. Back-tested performance depicts the hypothetical back-tested performance of a particular strategy over the time period indicated. In future periods, market and economic conditions will differ and the same strategy will not necessarily produce the same results. No representation is being made that any actual portfolio is likely to have achieved returns similar to those shown herein. In fact, there are frequently sharp differences between back-tested returns and the actual results realized in the actual management of a portfolio. Back-tested performance results are created by applying an investment strategy or methodology to historical data and attempts to give an indication as to how a strategy might have performed during a certain period in the past if the product had been in existence during such time. Back-tested results have inherent limitations including the fact that they are calculated with the full benefit of hindsight, which allows the security selection methodology to be adjusted to maximize the returns. Further, the results shown do not reflect actual trading or the impact that material economic and market factors might have had on a portfolio manager's decision-making under actual circumstances. Back-tested returns do not reflect advisory fees, trading costs, or other fees or expenses.

This report includes factors for informational or descriptive purposes, and inclusion here is not equivalent to a recommendation of the factor or portfolio.

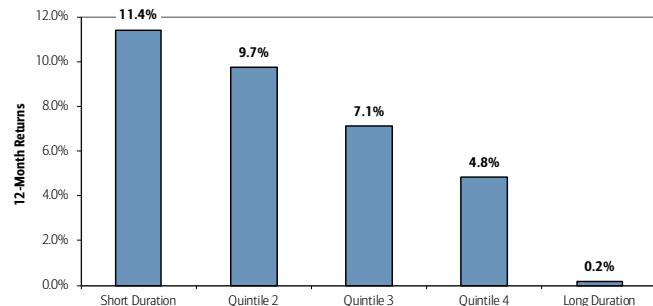
Past performance is no guarantee of future results.

A complete performance record is available upon request.



### Chart 669: YoY Performance of Global Stocks by Interest Rate Sensitivity Quintile

Short Duration outperformed Long Duration by 11.3% in the last 12-months



Source : BofA Global Quantitative Strategy, MSCI, IBES

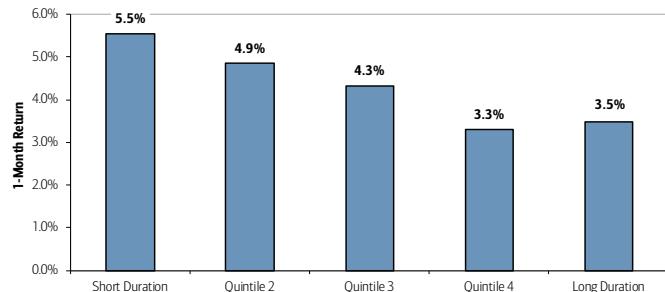
BofA GLOBAL RESEARCH

### Chart 670: Last Month's Performance of Global Stocks by Interest Rate Sensitivity Quintile

Short Duration outperformed Long Duration last month

### Chart 670: Last Month's Performance of Global Stocks by Interest Rate Sensitivity Quintile

Short Duration outperformed Long Duration last month

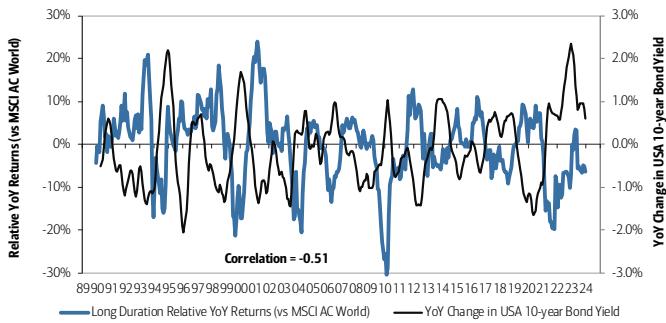


Source : BofA Global Quantitative Strategy, MSCI, IBES

BofA GLOBAL RESEARCH

### Chart 671: Long Duration YoY Performance vs. YoY change in US Long Bond Yield

Long Duration have underperformed by -6.5% in the last 12m



Source : BofA Global Quantitative Strategy, MSCI, IBES

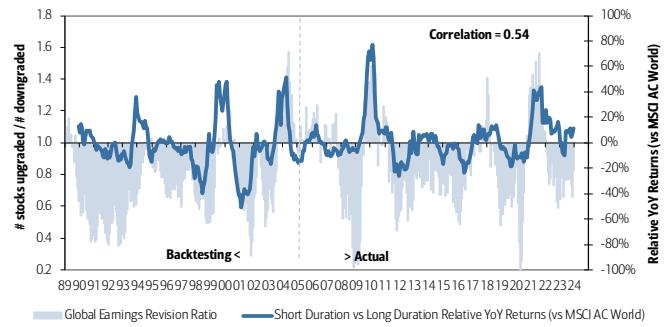
BofA GLOBAL RESEARCH

### Chart 672: YoY performance of Long and Short Duration vs Global earnings expectations

Long Duration outperforms, on average when profits cycle is slowing

### Chart 672: YoY performance of Long and Short Duration vs Global earnings expectations

Long Duration outperforms, on average when profits cycle is slowing



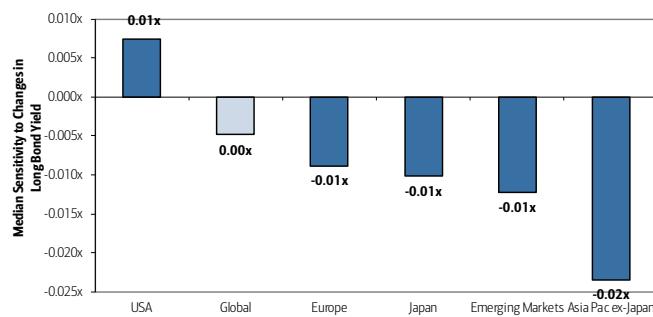
Source : BofA Global Quantitative Strategy, MSCI, IBES

Back-tested results are from Jan-89 to May-04. Actual performance is from Jun-04. Back-tested 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.

BofA GLOBAL RESEARCH

### Chart 673: Share Price Sensitivity to Changes in the US Long Bond Yield by Region

USA has the highest sensitivity, while Asia Pac ex-Japan has the lowest sensitivity to bond yields

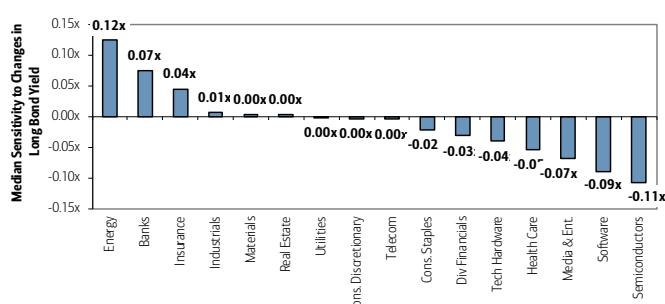


Source : BofA Global Quantitative Strategy, MSCI, IBES

BofA GLOBAL RESEARCH

### Chart 674: Share Price Sensitivity to Changes in the US Long Bond Yield by Global Sector

Energy has the highest sensitivity to US long bond yields



Source : BofA Global Quantitative Strategy, MSCI, IBES

BofA GLOBAL RESEARCH

## Thirty Short Duration Stocks

These Thirty Global Short Duration stocks includes thirty stocks with the highest sensitivity to changes in the US 10-year bond yields that meet the region and sector distribution of the MSCI AC World Index (subject to rounding).

For a stock to be included in this screen it must be in the largest 60% of stocks of the MSCI AC World Index by market cap, the largest 60% by average daily turnover in the last 6 months and last 20 days, and it must have a minimum of three consensus earnings estimates.

**Table 55: Global Short Duration**

Benchmark-aware thirty stocks screen with the highest sensitivity to changes in the US 10-year bond yields

BBG Code	Company Name	Region	Country	Sector	(Free \$US m)
IIB IN	IndusInd Bank	Asia Pac Ex Japan	India	Banks	5,525
MM IN	Mahindra	Asia Pac Ex Japan	India	Cons. Discretionary	19,383
3711 TT	ASE Tech	Asia Pac Ex Japan	Taiwan	Semiconductors	13,475
RNO FP	Renault	Developed Europe	France	Cons. Discretionary	7,836
BAYN GR	Bayer	Developed Europe	Germany	Health Care	36,496
LDO IM	Leonardo	Developed Europe	Italy	Industrials	6,677
CABK SM	CaixaBank	Developed Europe	Spain	Banks	16,983
IMB LN	Imperial Brands	Developed Europe	United Kingdom	Cons. Staples	19,611
ABG SJ	Absa Group	Emerging Markets	South Africa	Banks	7,606
7011 JP	MHI	Japan	Japan	Industrials	18,735
MTB US	M&T Bank	North America	United States	Banks	22,748
CCL US	Carnival Corp	North America	United States	Cons. Discretionary	18,679
RCL US	Royal Caribbean	North America	United States	Cons. Discretionary	31,513
ADM US	Archer Daniels	North America	United States	Cons. Staples	38,717
LPLA US	LPL Financial	North America	United States	Div Financials	17,227
MRO US	Marathon Oil	North America	United States	Energy	14,633
CI US	Cigna	North America	United States	Health Care	88,631
JAZZ US	Jazz Pharma	North America	United States	Health Care	7,377
DAL US	Delta Air Lines	North America	United States	Industrials	6,472
HII US	Huntington Ingalls	North America	United States	Industrials	10,351
MOS US	Mosaic Co	North America	United States	Materials	11,872
OMC US	Omnicom	North America	United States	Media & Ent.	17,092
PARA US	Paramount Global	North America	United States	Media & Ent.	7,222
HST US	Host Hotels & Resort	North America	United States	Real Estate	13,855
AVGO US	Broadcom	North America	United States	Semiconductors	495,374
ON US	ON Semiconductor	North America	United States	Semiconductors	36,046
IT US	Gartner	North America	United States	Software	35,559
PTC US	PTC Inc	North America	United States	Software	20,791
HPE US	HP Enterprise	North America	United States	Tech Hardware	21,783
JBL US	Jabil	North America	United States	Tech Hardware	16,674

Source : BofA Global Quantitative Strategy, MSCI, IBES

BofA GLOBAL RESEARCH



## Thirty Long Duration Stocks

These Thirty Global Long Duration stocks includes thirty stocks with the lowest sensitivity to changes in the US 10-year bond yields that meet the region and sector distribution of the MSCI AC World Index (subject to rounding).

For a stock to be included in this screen it must be in the largest 60% of stocks of the MSCI AC World Index by market cap, the largest 60% by average daily turnover in the last 6 months and last 20 days, and it must have a minimum of three consensus earnings estimates.

**Table 56: Global Long Duration**

Benchmark-aware thirty stocks screen with the lowest sensitivity to changes in the US 10-year bond yields

BBG Code	Company Name	Region	Country	Sector	MCAP (Free \$US)
3968 HK	China Merchants Bank	Asia Pac Ex Japan	China	Banks	13,593
2331 HK	Li Ning	Asia Pac Ex Japan	China	Cons. Discretionary	6,350
6415 TT	Silergy Corp	Asia Pac Ex Japan	Taiwan	Semiconductors	5,311
ZAL GR	Zalando	Developed Europe	Germany	Cons. Discretionary	5,312
KYGA ID	Kerry Group	Developed Europe	Ireland	Cons. Staples	13,852
FBK IM	FinecoBank	Developed Europe	Italy	Banks	9,164
LONN SW	Lonza	Developed Europe	Switzerland	Health Care	31,295
VACN SW	Vat Group Ag	Developed Europe	Switzerland	Industrials	13,522
PKO PW	PKO	Emerging Markets	Poland	Banks	11,197
6532 JP	Baycurrent Consulting	Japan	Japan	Industrials	4,639
ENB CN	Enbridge	North America	Canada	Energy	76,892
ABX CN	Barrick Gold	North America	Canada	Materials	31,872
C US	Citigroup	North America	United States	Banks	99,058
ETSY US	Etsy Inc	North America	United States	Cons. Discretionary	9,970
TSLA US	Tesla	North America	United States	Cons. Discretionary	709,807
EL US	Estee Lauder	North America	United States	Cons. Staples	33,946
MKTX US	Marketaxess	North America	United States	Div Financials	11,034
MRNA US	Moderna	North America	United States	Health Care	32,172
WST US	West Pharma	North America	United States	Health Care	26,008
CPRT US	Copart	North America	United States	Industrials	42,219
TRU US	Transunion	North America	United States	Industrials	13,282
ROKU US	Roku	North America	United States	Media & Ent.	11,374
SNAP US	Snap Inc-A	North America	United States	Media & Ent.	17,378
EQIX US	Equinix	North America	United States	Real Estate	75,356
AMD US	AMD	North America	United States	Semiconductors	238,166
ENPH US	Enphase Energy	North America	United States	Semiconductors	18,018
DOCU US	Docusign	North America	United States	Software	12,081
OKTA US	Okta	North America	United States	Software	14,191
AAPL US	Apple	North America	United States	Tech Hardware	3,010,059
ZBRA US	Zebra Tech	North America	United States	Tech Hardware	14,032

Source : BofA Global Quantitative Strategy, MSCI, IBES

BofA GLOBAL RESEARCH

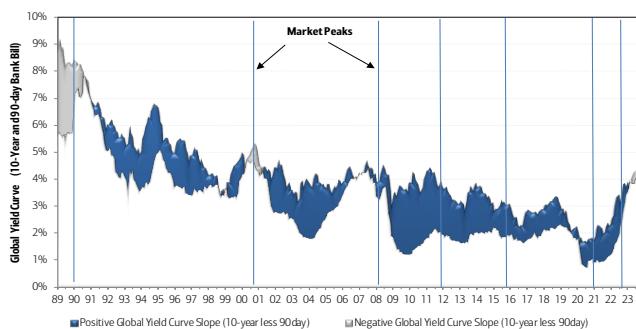
# Yield Curve Slope and Equities Performance

In this analysis we investigate the relationship between the slope of the yield curve and global equity market and sector performance over the last three decades. For the ~50 countries in MSCI All Country World Index, we calculated a GDP-weighted 10-year bond yield and a GDP-weighted 90-day bank bill rates. The difference between the global 10-year bond yield and the global 90-day rate represents the slope of the global yield curve.

We determine periods in which the global yield curve slope was between various 50bp ranges, for example, (-1.00% to -0.50%), (-0.50% to 0.00%), (0.00% - 0.50%), and so on. For each global sector and each month the yield curve falls within a certain range, we calculate the subsequent 12-month equity market and sector performance (relative to MSCI All Country World Index). The median relative return indicates how each sector tends to perform in different yield curve environments.

**Chart 675: Global yield curve slope (10-year vs. 90-day) and major market peaks (MSCI ACWI)**

The Global Yield Curve Slope is in negative territory



Source : BofA Global Quantitative Strategy, MSCI, Exshare, OECD, Bloomberg

BofA GLOBAL RESEARCH

**Chart 677: Global yield curve slope (difference between 10-year and 90-day rates)**

The current Global Yield Curve Slope is at -0.6%

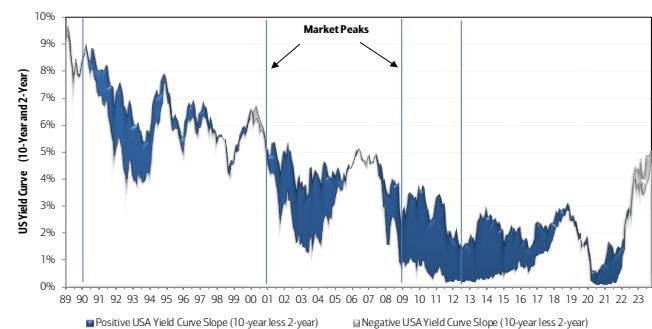


Source : BofA Global Quantitative Strategy, MSCI, Exshare, OECD, Bloomberg

BofA GLOBAL RESEARCH

**Chart 676: USA yield curve slope (10-year vs. 2-year) and major market peaks (MSCI ACWI)**

The USA Yield Curve Slope remains inverted but steepening

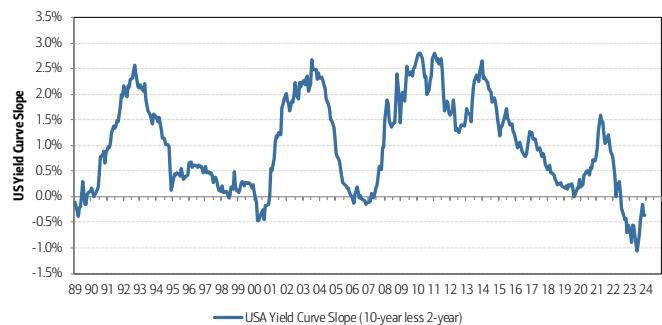


Source : BofA Global Quantitative Strategy, MSCI, Exshare, OECD, Bloomberg

BofA GLOBAL RESEARCH

**Chart 678: USA yield curve slope (difference between 10-year and 2-year rates)**

The USA Yield Curve Slope is flattening



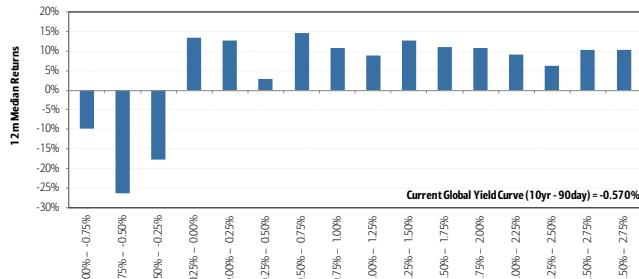
Source : BofA Global Quantitative Strategy, MSCI, Exshare, OECD, Bloomberg

BofA GLOBAL RESEARCH



### Chart 679: Subsequent MSCI ACWI returns (median 12m) in various Global Yield Curve slope (10-year vs. 90-day) ranges

The median ACWI returns is -26.5% when Global Yield Curve is in Current Slope Range = -0.75% – -0.50%

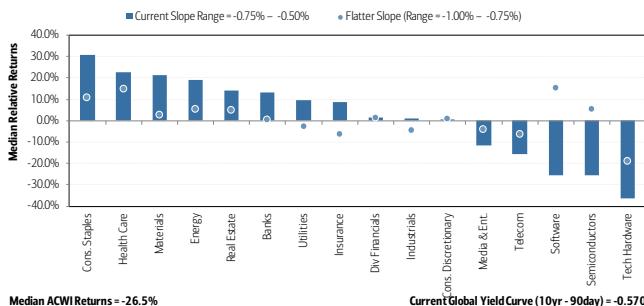


Source : BofA Global Quantitative Strategy, MSCI, Exshare, OECD, Bloomberg

BofA GLOBAL RESEARCH

### Chart 681: Current and flatter Global Yield Curve slope: Subsequent sector returns (12m relative)

For Flatter Slope (Range = -1.00% – -0.75%), the best performing sector is Software and worst is Tech Hardware



Source : BofA Global Quantitative Strategy, MSCI, Exshare, OECD, Bloomberg

BofA GLOBAL RESEARCH

### Table 57: Global Yield Curve slope and subsequent sector relative returns (median 12m)

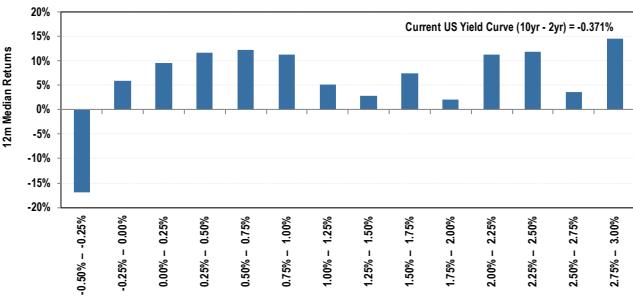
Median Sector Returns across various Global Yield Curve Slope

Global Sector	-1.00% – -0.75%	-0.75% – -0.50%	-0.50% – -0.25%	-0.25% – 0.00%	0.00% – 0.25%	0.25% – 0.50%	0.50% – 0.75%	0.75% – 1.00%	1.00% – 1.25%	1.25% – 1.50%	1.50% – 1.75%	1.75% – 2.00%	2.00% – 2.25%	2.25% – 2.50%	2.50% – 2.75%	2.75% – 3.00%
Cons. Staples	10.6%	30.7%	14.6%	6.5%	-1.0%	3.0%	-0.6%	-2.5%	1.9%	-1.3%	0.3%	4.3%	1.0%	6.2%	2.1%	2.1%
Health Care	14.8%	22.8%	13.5%	-5.3%	-1.9%	5.3%	-3.2%	-3.8%	-0.1%	8.1%	10.2%	8.4%	1.8%	-1.4%	0.7%	0.7%
Materials	2.6%	21.4%	15.5%	16.3%	2.8%	-2.3%	-4.3%	-3.8%	-0.5%	-7.4%	-10.8%	-5.4%	4.3%	2.0%	6.4%	6.4%
Energy	5.5%	18.8%	11.8%	10.1%	-1.3%	-3.9%	-8.2%	-0.6%	-0.9%	-2.9%	-5.6%	0.7%	7.2%	-7.8%	-0.6%	-0.6%
Real Estate	4.8%	13.9%	3.9%	-3.6%	-12.7%	-10.4%	-7.1%	-2.7%	0.4%	-1.6%	-0.3%	7.1%	12.0%	2.1%	2.8%	2.8%
Banks	0.4%	13.2%	1.4%	-4.3%	-11.4%	-12.7%	-4.9%	3.1%	0.2%	-0.2%	0.0%	3.2%	-0.2%	-9.6%	-9.6%	-9.6%
Utilities	-2.7%	9.6%	-0.5%	6.8%	-1.2%	-2.6%	0.9%	-5.7%	-3.0%	-4.0%	-5.2%	-6.3%	-0.9%	-7.8%	-14.1%	-14.1%
Insurance	-6.3%	8.7%	-3.8%	-8.1%	-9.2%	-7.0%	-0.4%	-0.2%	1.0%	4.9%	1.7%	2.2%	-3.6%	-6.3%	-7.9%	-7.9%
Div Financials	1.1%	1.5%	-0.3%	-3.6%	-7.2%	-4.2%	-1.0%	4.3%	0.1%	3.5%	1.7%	0.4%	-4.8%	-12.8%	-10.5%	-10.5%
Industrials	-4.7%	0.8%	1.0%	5.1%	-1.4%	-4.2%	-0.4%	0.8%	0.9%	1.4%	-1.7%	-1.7%	-0.3%	4.0%	2.2%	2.2%
Cons. Discretionary	0.8%	0.7%	1.4%	-2.3%	1.8%	5.2%	-0.1%	1.4%	0.2%	0.4%	-2.0%	-1.2%	-2.8%	7.6%	5.4%	5.4%
Media & Ent.	-4.3%	-11.5%	-9.8%	-5.5%	4.9%	14.1%	2.3%	0.9%	-1.7%	1.8%	3.7%	1.7%	-1.0%	5.9%	5.7%	5.7%
Telecom	-6.2%	-15.5%	-18.6%	5.6%	6.6%	7.1%	0.2%	-10.1%	-5.2%	-2.6%	-4.2%	-4.2%	-1.4%	-2.6%	-3.9%	-3.9%
Software	15.1%	-25.5%	-5.2%	4.9%	27.6%	22.8%	13.0%	7.8%	12.4%	8.0%	5.8%	3.9%	5.9%	3.0%	-0.9%	-0.9%
Semiconductors	5.4%	-25.7%	0.4%	-6.3%	7.2%	11.5%	15.1%	11.6%	7.7%	6.2%	11.0%	2.6%	4.8%	2.9%	2.9%	2.9%
Tech Hardware	-18.8%	-36.2%	-19.4%	3.4%	23.5%	12.8%	8.4%	4.5%	5.0%	5.2%	8.8%	-0.8%	-7.8%	2.7%	0.8%	0.8%
World	-9.8%	-26.5%	-17.7%	13.3%	12.8%	2.8%	14.6%	10.9%	8.9%	12.8%	11.0%	10.8%	9.1%	6.2%	10.4%	10.4%

Source : BofA Global Quantitative Strategy, MSCI, Exshare, OECD, Bloomberg

### Chart 680: Subsequent MSCI ACWI returns (median 12m) in various USA Yield Curve slope (10-year vs. 2-year) ranges

For US Yield Curve Current Slope Range = -0.50% – -0.25%, median ACWI returns is -17.0%

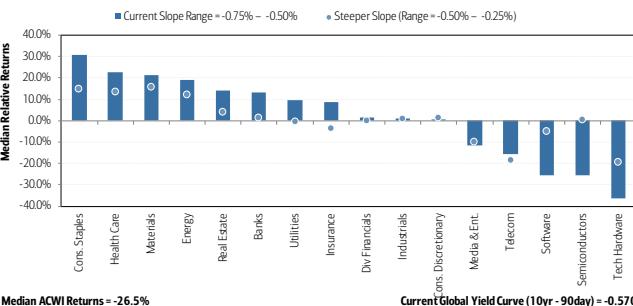


Source : BofA Global Quantitative Strategy, MSCI, Exshare, OECD, Bloomberg

BofA GLOBAL RESEARCH

### Chart 682: Current and steeper Global Yield Curve slope: Subsequent sector returns (12m relative)

For Steeper Slope (Range = -0.50% – -0.25%), the best performing sector is Materials



Source : BofA Global Quantitative Strategy, MSCI, Exshare, OECD, Bloomberg

BofA GLOBAL RESEARCH



# FX Sensitivity

## Construction Methodology

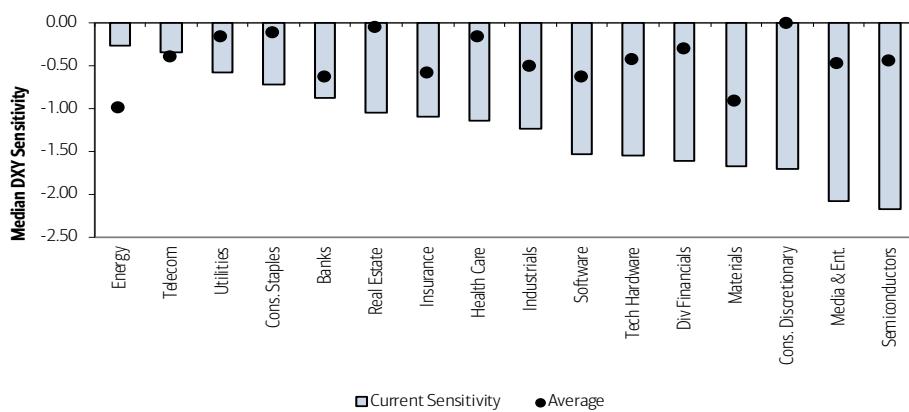
Our USD sensitivity analysis determines the extent to which share prices move as USD change. The back-testing in this analysis is from Jan-93 to Oct-10 and we introduced the current version of the analysis in Nov-10.

This analysis includes all stocks in the MSCI AC World Index as at each month-end. We define USD Sensitivity for each stock as the regression coefficient from regressing 60 months of monthly price returns against the 3-month change in the DXY Index. The screens are determined at the end of each month using month-end data from MSCI and Bloomberg databases. We divide all the stocks in the analysis into five quintiles by USD sensitivity. We name the top quintile "Positive Sensitivity" and the bottom quintile "Negative Sensitivity".

USD Sensitivity acts as a stock screen and not as a recommended stock portfolio. The screens are not a recommended list either individually or as a group of stocks. Investors should consider the fundamentals of the companies and their own individual circumstances/objectives before making any investment decisions.

### Chart 683: Sensitivity of USD by Global Sectors

Energy is least sensitive to USD, while Semiconductors is most sensitive



Source : BofA Global Quantitative Strategy, MSCI, IBES

BofA GLOBAL RESEARCH

**Table 58: Global Stocks with Positive Sensitivity to DXY**

20-stocks global screen with positive USD sensitivity (DXY)

Bloomberg	Company Name	Country	Sector
TOUCN	Tourmaline Oil	Canada	Energy
SQM/B CI	SQM	Chile	Industrials
1138 HK	COSCO Shipping Energy-H	China	Energy
1171 HK	Yanzhou Energy-H	China	Energy
ADANI IN	Adani Power	India	Utilities
ADRO JI	Adaro Energy Indonesia	Indonesia	Energy
ESLT IT	Elbit Systems	Israel	Industrials
1605JP	INPEX	Japan	Energy
4568JP	Daiichi Sankyo	Japan	Health Care
9042JP	Hankyu Hanshin	Japan	Industrials
9041JP	Kintetsu Group	Japan	Industrials
9001JP	Tobu Railway	Japan	Industrials
OCI NA	OCI	Netherlands	Materials
EQNR NO	Equinor	Norway	Energy
JCNC SP	Jardine C&C	Singapore	Industrials
BH TB	Bumrungrad Hospital	Thailand	Health Care
ISCTR TI	IsBank	Turkiye	Banks
THYAO TI	Turkish Airlines	Turkiye	Industrials
HEKTS TI	Hektaş Ticaret T.A.S	Turkiye	Materials
SASA TI	Sasa Polyester Sanayi	Turkiye	Materials

Source : BofA Global Quantitative Strategy, MSCI, IBES

BofA GLOBAL RESEARCH

**Table 59: Global Stocks with Negative Sensitivity to DXY**

20-stocks global screen with negative USD sensitivity (DXY)

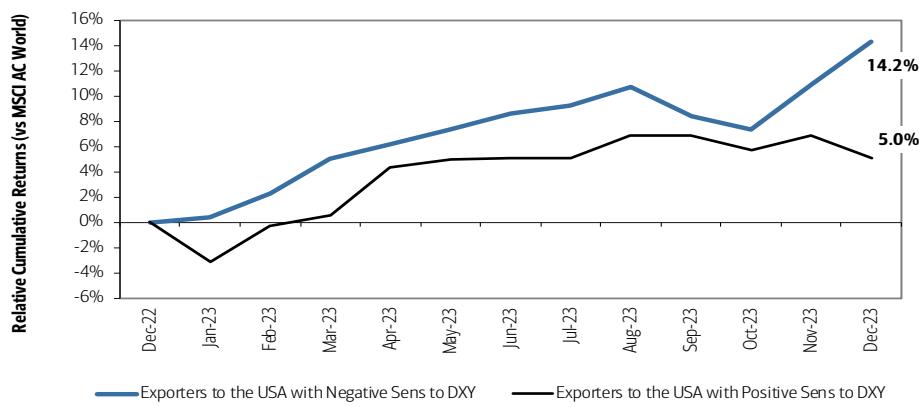
Bloomberg	Company Name	Country	Sector
CSNA3 BZ	CSN	Brazil	Materials
2333 HK	Great Wall Motor-H	China	Cons. Discretionar
1772 HK	Ganfeng Lithium-H	China	Materials
2899 HK	Zijin Mining-H	China	Materials
136 HK	China Ruyi	China	Media & Ent.
6098 HK	Country Garden Serv	China	Real Estate
6865 HK	Flat Glass-H	China	Semiconductors
3800 HK	GCL Tech	China	Semiconductors
2018 HK	AAC Tech	China	Tech Hardware
1810 HK	Xiaomi Corp-B	China	Tech Hardware
ZAL GR	Zalando	Germany	Cons. Discretionar
1585 HK	Yadea Group	Hong Kong	Cons. Discretionar
1347 HK	Hua Hong	Hong Kong	Semiconductors
KGH PW	KGHM	Poland	Materials
SE US	Sea-ADR	Singapore	Media & Ent.
034020 KS	Doosan Enerbility	South Korea	Industrials
2615 TT	Wan Hai Lines	Taiwan	Industrials
2609 TT	Yang Ming	Taiwan	Industrials
DELTATB	Delta Electronics (Thai)	Thailand	Tech Hardware
KOZALTI	Koza Altin	Turkiye	Materials

Source : BofA Global Quantitative Strategy, MSCI, IBES

BofA GLOBAL RESEARCH

**Chart 684: Performance: Global (ex US) stocks with revenue exposure to the US with sensitivity to DXY**

Exporters to the USA with Negative Sens to DXY have outperformed by 9.2% in the last 12-months



Source : BofA Global Quantitative Strategy, MSCI, IBES

BofA GLOBAL RESEARCH

**Table 60: Global ex US stocks with revenue exposure to the US and positive sensitivity to DXY**

Screen of Global ex-US stocks with revenue exposure to the US and positive sensitivity to USD (DXY)

Symbol	Company Name	BBG Code	Country	Sector	Avg Daily		Revenue Exposure	Sensitivity to DXY
					MCAP (Free \$US m)	TO (6m \$US m)		
B03MYK	Turkish Airlines	THYAO TI	Turkiye	Industrials	4,273	342.3	21%	1.3
BD4TJK	OCI	OCI NA	Netherlands	Materials	3,058	13.4	29%	1.0
635640	Subaru	7270 JP	Japan	Cons. Discretionary	11,287	58.4	71%	0.8
617232	Canon	7751 JP	Japan	Tech Hardware	25,686	93.8	29%	0.7
BDRJLN	Nutrien	NTR CN	Canada	Materials	27,996	103.5	53%	0.7
614650	Brother Inds	6448 JP	Japan	Tech Hardware	3,703	14.2	26%	0.7
079805	BP	BP/ LN	United Kingdom	Energy	101,417	149.8	30%	0.7
216616	Cameco	CCO CN	Canada	Energy	18,774	76.1	60%	0.6
666010	Ono Pharma	4528 JP	Japan	Health Care	6,926	32.3	32%	0.6
665880	Olympus	7733 JP	Japan	Health Care	17,410	87.7	34%	0.5
612528	Trend Micro	4704 JP	Japan	Software	7,163	34.4	24%	0.4
B1323K	SABIC Agri-Nutrients	SAFCO AB	Saudi Arabia	Materials	8,596	17.6	20%	0.4
045449	Imperial Brands	IMB LN	United Kingdom	Cons. Staples	19,611	27.8	21%	0.4
BNHKYX	Argenx	ARGX BB	Belgium	Health Care	22,417	31.2	92%	0.4
B61JC6	Treasury Wine (TWE)	TWE AU	Australia	Cons. Staples	5,872	28.3	38%	0.3
649374	Kirin	2503 JP	Japan	Cons. Staples	11,385	41.5	23%	0.3
649955	Kyowa Kirin	4151 JP	Japan	Health Care	4,539	16.2	36%	0.3
B5LTM9	Otsuka	4578 JP	Japan	Health Care	15,696	44.2	38%	0.2
098952	AstraZeneca	AZN LN	United Kingdom	Health Care	209,437	165.3	40%	0.2
711038	Roche	ROG SW	Switzerland	Health Care	204,095	287.6	44%	0.2
651312	Tokio Marine	8766 JP	Japan	Insurance	45,114	108.7	30%	0.2
BMWGTH	RB Global	RBA CN	Canada	Industrials	12,242	22.9	56%	0.1
613210	Bridgestone	5108 JP	Japan	Cons. Discretionary	23,652	76.4	51%	0.1
BZ8GX8	WiseTech	WTC AU	Australia	Software	8,571	37.5	31%	0.1
B24CGK	Reckitt Benckiser	RKT LN	United Kingdom	Cons. Staples	49,583	66.1	32%	0.1
BPGKMJ	Novo Nordisk	NOVOB DC	Denmark	Health Care	337,588	278.7	48%	0.1
B1FJOC	Brambles	BXB AU	Australia	Industrials	12,896	36.1	55%	0.1
B8BRV4	Japan Airlines	9201 JP	Japan	Industrials	2,840	63.6	22%	0.1
649926	Kyocera	6971 JP	Japan	Tech Hardware	18,742	53.1	22%	0.1
BMHVLR	Tenaris SA	TEN IM	Italy	Energy	8,213	42.3	42%	0.1

Source : BofA Global Quantitative Strategy, MSCI, IBES

BofA GLOBAL RESEARCH



# Oil Price Sensitivity

## Construction Methodology

Our Oil Price Sensitivity analysis determines the extent to which share prices move as the Oil Price moves. The back-testing in this analysis is from Jan-98 to Sep-08 and we introduced the current version of the analysis in Oct-08.

This analysis includes all stocks in Materials, Energy, and Industrials sectors of the MSCI AC World Index as at each month-end. We define Oil Price Sensitivity for each stock as the regression coefficient from regressing 60 months of monthly price returns against the 3-month change in the Oil Price – Brent Crude. The screens are determined at the end of each month using month-end data from MSCI and Bloomberg databases.

Positive Oil Price Sensitivity includes the 15 stocks with the highest sensitivity while Negative Oil Price Sensitivity includes the 15 stocks with the lowest sensitivity.

Oil Price Sensitivity acts as a stock screen and not as a recommended stock portfolio. The screens are not a recommended list either individually or as a group of stocks. Investors should consider the fundamentals of the companies and their own individual circumstances/objectives before making any investment decisions.

## Performance Calculation Methodology

Refer to appendix "[Oil Price Sensitivity Performance](#)" for detailed performance data and advance decline statistics.

Rebalancing and performance calculations are conducted each month, using data and closing prices corresponding to the market's close on the last business day of each month. Performance is computed on the basis of price return. The performance is presented relative to the market capitalization-weighted MSCI AC World Index.

The analysis is back-tested and does not represent the actual performance of any account or fund. Back-tested performance depicts the hypothetical back-tested performance of a particular strategy over the time period indicated. In future periods, market and economic conditions will differ and the same strategy will not necessarily produce the same results. No representation is being made that any actual portfolio is likely to have achieved returns similar to those shown herein. In fact, there are frequently sharp differences between back-tested returns and the actual results realized in the actual management of a portfolio. Back-tested performance results are created by applying an investment strategy or methodology to historical data and attempts to give an indication as to how a strategy might have performed during a certain period in the past if the product had been in existence during such time. Back-tested results have inherent limitations including the fact that they are calculated with the full benefit of hindsight, which allows the security selection methodology to be adjusted to maximize the returns. Further, the results shown do not reflect actual trading or the impact that material economic and market factors might have had on a portfolio manager's decision-making under actual circumstances. Back-tested returns do not reflect advisory fees, trading costs, or other fees or expenses.

This report includes factors for informational or descriptive purposes, and inclusion here is not equivalent to a recommendation of the factor or portfolio.

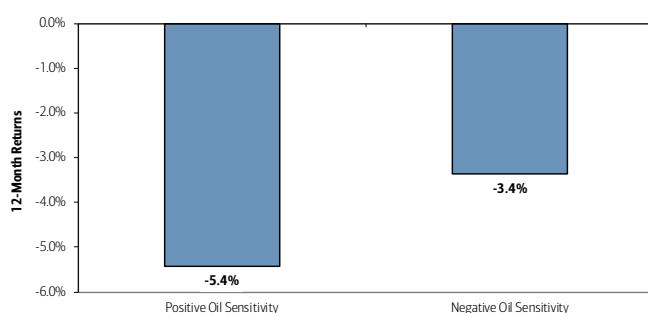
Past performance is no guarantee of future results.

A complete performance record is available upon request.



### Chart 685: 12-month Performance of Global Stocks by Oil Price Sensitivity

Negative Oil Sensitivity outperformed Positive Oil Sensitivity by 2.1% in the last 12-months

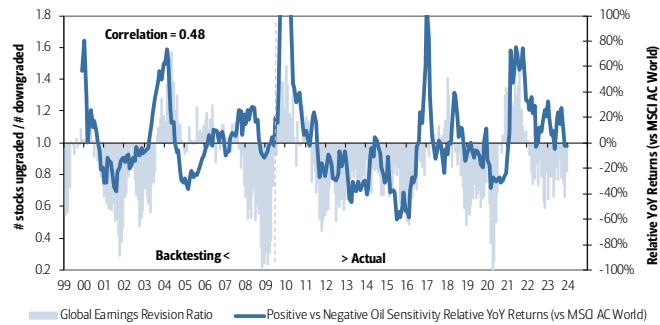


Source : BofA Global Quantitative Strategy, MSCI, IBES

BofA GLOBAL RESEARCH

### Chart 687: YoY perf of Positive vs Negative Oil Price Sensitivity

Positive Oil Sensitivity have underperformed by -2.1% in the last 12m



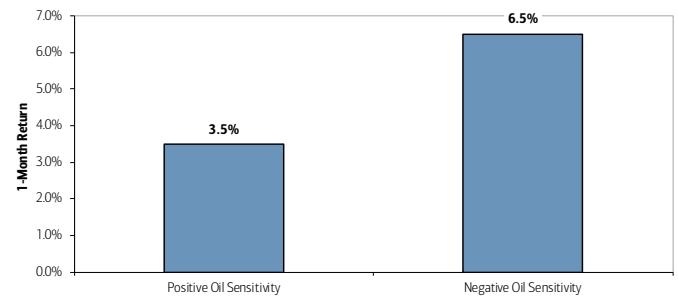
Source : BofA Global Quantitative Strategy, MSCI, IBES

Back-tested results are from Jan-98 to Sep-08. Actual performance is from Oct-08. Back-tested 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.

BofA GLOBAL RESEARCH

### Chart 686: Last Month's Performance of Global Stocks by Oil Price Sensitivity

Negative Oil Sensitivity outperformed Positive Oil Sensitivity last month

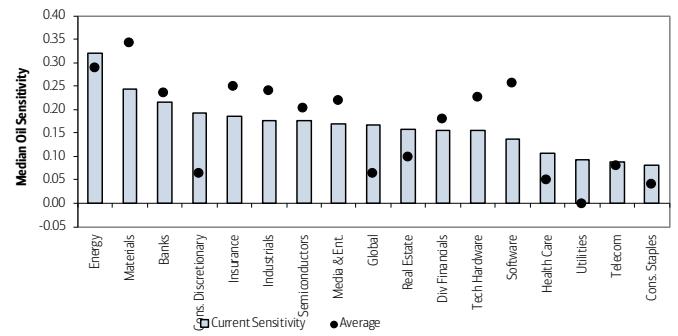


Source : BofA Global Quantitative Strategy, MSCI, IBES

BofA GLOBAL RESEARCH

### Chart 688: Median Sensitivity to Oil

Energy has the highest sensitivity to Oil price



Source : BofA Global Quantitative Strategy, MSCI, IBES

BofA GLOBAL RESEARCH

**Table 61: Global Positive Oil Price Sensitivity (15-stocks)**

15-stocks global screen for stocks that are positively sensitive to oil price

Name	Sector	Country	MCAP (Total
			US\$mn)
Adani Ent.	Industrials	India	39,030
APL Apollo Tubes	Materials	India	5,122
CG Power	Industrials	India	8,340
CSN	Materials	Brazil	5,367
Doosan Enerbility	Industrials	South Korea	7,908
Evergreen Marine	Industrials	Taiwan	9,896
Hanwha Solutions	Materials	South Korea	5,272
Jindal Steel	Materials	India	9,171
L&F	Industrials	South Korea	5,742
MEG Energy	Energy	Canada	5,123
Mosaic Co	Materials	United States	11,872
PRIO	Energy	Brazil	8,411
SASOL	Materials	South Africa	6,471
West Fraser	Materials	Canada	6,987
Yang Ming	Industrials	Taiwan	5,837

Source : BofA Global Quantitative Strategy, MSCI, IBES

BofA GLOBAL RESEARCH

**Table 62: Global Negative Oil Price Sensitivity (15-stocks)**

15-stocks global screen for stocks that are negatively sensitive to oil price

Name	Sector	Country	MCAP (Total
			US\$mn)
Aselsan	Industrials	Turkiye	6,945
Barrick Gold	Materials	Canada	31,872
Daifuku Co	Industrials	Japan	7,685
Ecolab	Materials	United States	56,536
EQT Corp	Energy	United States	15,899
Keisei Elec Rail	Industrials	Japan	8,150
Kintetsu Group	Industrials	Japan	6,048
Monotaro	Industrials	Japan	5,475
Nippon Paint	Materials	Japan	19,169
Northern Star Res.	Materials	Australia	10,704
Odakyu Elec. Railway	Industrials	Japan	5,622
Rockwell	Industrials	United States	35,662
Shin-Etsu	Materials	Japan	84,953
Tobu Railway	Industrials	Japan	5,639
Yaskawa Electric Corp	Industrials	Japan	11,142

Source : BofA Global Quantitative Strategy, MSCI, IBES

BofA GLOBAL RESEARCH



# Optimism Aggregates

## Chart 689: Global Broker Optimism (based on analysts' buy/hold/sell recommendations)

The Global Broker Optimism is currently at 69.7

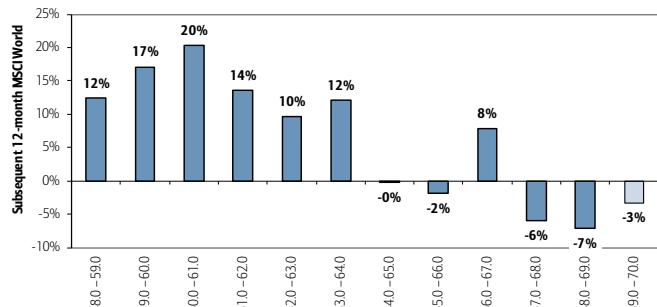


Source : BofA Global Quantitative Strategy, MSCI, IBES

BofA GLOBAL RESEARCH

## Chart 690: Global Broker Optimism and MSCI AC World subsequent 12m performance

For current level of Broker Optimism, MSCI ACWI averages -3.3% in the subsequent 12m

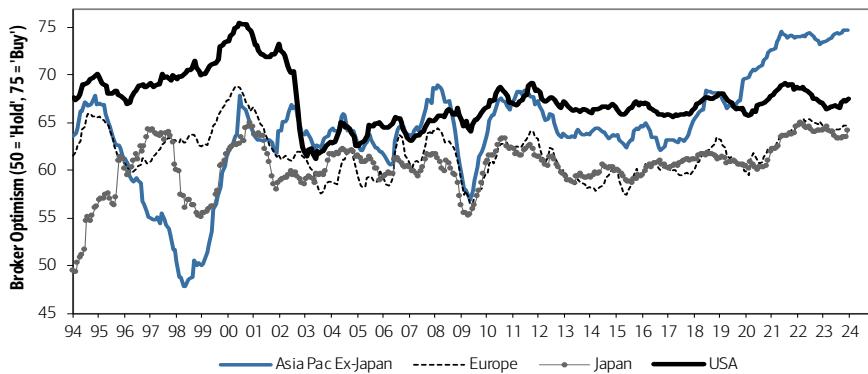


Source : BofA Global Quantitative Strategy, MSCI, IBES

BofA GLOBAL RESEARCH

## Chart 691: Broker Optimism by Regions

The Broker Optimism is currently highest in Asia Pac Ex-Japan

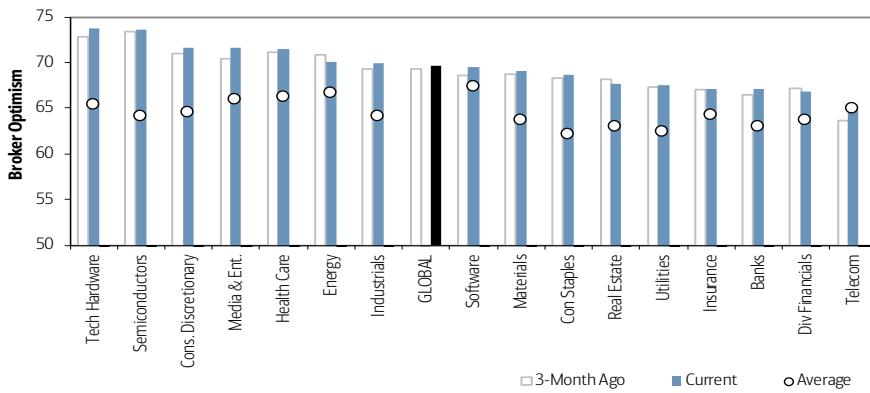


Source : BofA Global Quantitative Strategy, MSCI, IBES

BofA GLOBAL RESEARCH

## Chart 692: Broker Optimism by Global sectors

Last month, Broker Optimism improved the most in Telecom



Source : BofA Global Quantitative Strategy, MSCI, IBES

BofA GLOBAL RESEARCH



## Global Optimism

The table below shows the Ranks based on current Optimism Level for each of the 15 sectors in each of the largest 25 countries.

**Table 63: Global Optimism**

Among global countries, Optimism is highest in China and lowest in Switzerland

	Energy	Materials	Industrials	Cons. Staples	Health Care	Telecom	Utilities	Media & Ent.	Semiconductors	Cons. Discretionary	Banks	Insurance	Div Financials	Real Estate	Software	Tech Hardware	Country
Canada	69.6	72.0	70.5	64.3	—	69.8	61.6	—	—	69.4	57.3	64.6	64.9	75.3	68.5	—	67.6
USA	70.1	64.3	66.3	63.8	70.3	61.5	67.4	68.7	69.0	68.8	66.5	65.9	66.2	67.7	69.5	68.1	67.5
Belgium	—	68.8	—	58.8	71.3	—	65.5	—	—	87.5	53.5	57.3	83.4	48.3	—	—	67.4
Finland	74.0	61.4	62.8	61.0	71.5	50.0	69.8	—	—	—	75.0	65.8	—	—	—	—	64.9
France	73.0	72.5	65.7	63.3	64.8	72.8	72.5	72.1	69.5	67.2	63.7	79.8	73.5	56.8	69.3	—	67.1
Germany	—	64.9	68.8	56.4	65.5	78.3	77.0	75.0	79.8	67.7	68.3	63.7	64.3	68.4	67.4	—	67.0
Italy	73.1	—	74.1	58.3	60.2	65.6	63.8	—	—	68.6	70.1	61.9	72.3	—	—	—	67.0
Netherlands	—	65.1	61.4	63.6	47.5	64.5	—	71.8	68.6	73.8	64.0	72.8	70.9	—	—	—	65.8
Norway	60.3	55.5	53.5	65.3	—	57.5	—	57.3	—	—	53.8	63.3	—	—	—	—	59.4
Spain	71.5	—	64.4	—	71.5	63.8	55.7	—	—	69.8	72.8	—	—	—	—	—	63.8
Sweden	—	51.9	60.0	67.3	71.6	63.4	—	—	—	56.0	61.3	—	58.1	61.9	—	58.5	59.9
Switzerland	—	62.0	52.1	62.8	59.8	52.8	58.3	—	—	65.8	50.0	50.6	64.2	58.3	47.3	54.5	57.8
UK	73.9	67.8	69.1	64.0	69.1	59.9	67.5	65.8	—	63.8	65.4	64.6	61.4	61.6	64.8	51.5	65.4
Australia	71.2	65.0	60.6	64.5	59.6	76.8	62.0	65.4	—	66.8	45.4	74.0	63.3	62.3	66.5	—	63.6
Hong Kong	—	—	77.4	80.6	—	71.5	60.8	—	—	86.6	64.4	87.5	78.4	69.4	—	—	72.4
Japan	67.5	61.1	63.9	61.0	67.1	64.9	50.9	69.4	72.5	63.8	66.1	65.8	59.5	62.2	65.7	66.1	64.1
Singapore	—	—	66.3	69.3	—	83.3	79.5	72.5	—	78.0	64.8	—	41.8	72.8	—	—	69.4
China	79.0	81.9	81.3	79.6	80.2	62.5	80.8	80.4	77.1	80.7	71.8	73.4	69.2	77.4	79.7	82.6	79.2
India	72.0	62.6	68.8	68.7	64.7	60.5	59.3	58.8	—	66.3	71.9	78.9	74.8	65.3	53.1	—	66.6
Korea	78.6	68.4	78.5	76.6	74.8	78.8	66.8	71.4	79.0	78.0	75.4	79.2	76.0	—	73.4	80.9	76.1
Taiwan	56.3	52.2	57.6	67.8	95.0	52.3	—	—	67.8	79.6	54.6	61.2	63.8	—	—	66.3	64.0
Brazil	63.9	64.0	71.1	67.5	71.0	71.4	69.7	—	—	68.2	66.5	62.5	63.5	—	75.0	—	67.7
Mexico	—	61.1	60.6	68.3	—	61.6	—	—	—	—	58.3	—	—	70.9	—	—	63.6
Russia	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
South Africa	67.8	55.0	62.5	62.6	75.0	63.3	—	—	—	64.0	69.4	67.2	66.4	75.0	—	—	63.3
WORLD	70.1	69.0	70.0	68.6	71.5	65.3	67.6	72.0	73.4	71.7	67.1	67.1	67.1	68.7	69.5	73.7	69.7

Key : Rank of 100 = Highest Optimism

= Highest Optimism

= High Optimism

= Lowest Optimism

Source : BofA Global Quantitative Strategy, MSCI, IBES

BofA GLOBAL RESEARCH



# Optimism

## Construction Methodology

Our Optimism analysis monitors whether stocks with improving and falling broker optimism outperform or underperform market indices. The back-testing in this analysis is from Jan-94 to Feb-07 and we introduced the current version of the analysis in Mar-07.

This analysis includes all stocks in the MSCI AC World Index as at each month-end. We calculate the six-month change in the IBES consensus recommendation at the end of each month using month-end data. We divide all the stocks in the analysis into five quintiles by the six-month change in Optimism. We name the top quintile "Increasing Optimism" and the bottom quintile "Decreasing Optimism".

Increasing and Decreasing Optimism act as stock screens and not as recommended stock portfolios. The screens are not a recommended list either individually or as a group of stocks. Investors should consider the fundamentals of the companies and their own individual circumstances/objectives before making any investment decisions.

## Performance Calculation Methodology

Refer to appendix "[Optimism Performance](#)" for detailed performance data and advance decline statistics.

Rebalancing and performance calculations are conducted each month, using data and closing prices corresponding to the market's close on the last business day of each month. Performance is computed on the basis of price return. The performance is presented relative to the market capitalization-weighted MSCI AC World Index.

The analysis is back-tested and does not represent the actual performance of any account or fund. Back-tested performance depicts the hypothetical back-tested performance of a particular strategy over the time period indicated. In future periods, market and economic conditions will differ and the same strategy will not necessarily produce the same results. No representation is being made that any actual portfolio is likely to have achieved returns similar to those shown herein. In fact, there are frequently sharp differences between back-tested returns and the actual results realized in the actual management of a portfolio. Back-tested performance results are created by applying an investment strategy or methodology to historical data and attempts to give an indication as to how a strategy might have performed during a certain period in the past if the product had been in existence during such time. Back-tested results have inherent limitations including the fact that they are calculated with the full benefit of hindsight, which allows the security selection methodology to be adjusted to maximize the returns. Further, the results shown do not reflect actual trading or the impact that material economic and market factors might have had on a portfolio manager's decision-making under actual circumstances. Back-tested returns do not reflect advisory fees, trading costs, or other fees or expenses.

This report includes factors for informational or descriptive purposes, and inclusion here is not equivalent to a recommendation of the factor or portfolio.

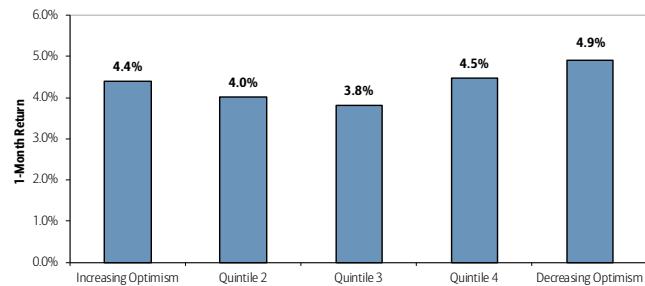
Past performance is no guarantee of future results.

A complete performance record is available upon request.



**Chart 693: Last Month's Performance of Global Stocks by Optimism**

Decreasing Optimism outperformed Increasing Optimism by 0.5% last month

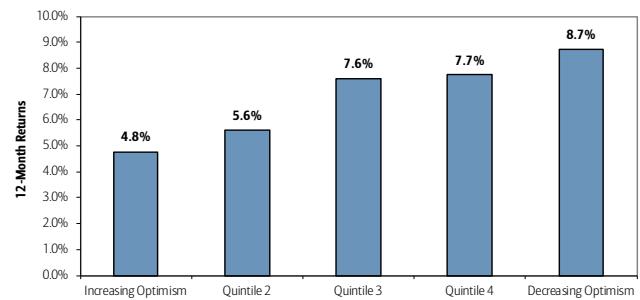


Source : BofA Global Quantitative Strategy, MSCI, IBES

BofA GLOBAL RESEARCH

**Chart 694: YoY Performance of Global Stocks by 6m Change in Optimism**

Decreasing Optimism outperformed Increasing Optimism by 4.0% in the last 12-months

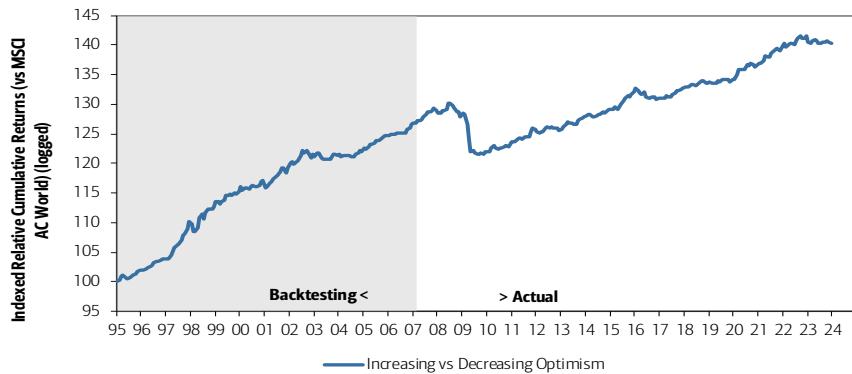


Source : BofA Global Quantitative Strategy, MSCI, IBES

BofA GLOBAL RESEARCH

**Chart 695: Relative cumulative performance of increasing versus decreasing optimism**

Increasing Optimism have outperformed by 0.6% in the last 3 Months



Source : BofA Global Quantitative Strategy, MSCI, IBES

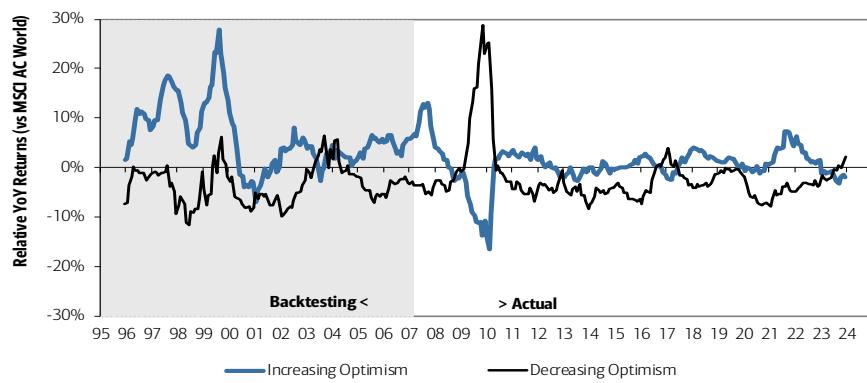
The shaded area shows back-tested results during the period from Jan-94 to Feb-07. The unshaded portion represents actual performance since Mar-07.

Back-tested 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.

BofA GLOBAL RESEARCH

**Chart 696: Relative YoY Performance of Increasing and Decreasing Optimism**

Decreasing Optimism outperformed Increasing Optimism in the last 12-months



Source : BofA Global Quantitative Strategy, MSCI, IBES

The shaded area shows back-tested results during the period from Jan-94 to Feb-07. The unshaded portion represents actual performance since Mar-07.

Back-tested 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.

BofA GLOBAL RESEARCH

**Table 64: Global Increasing Optimism (top 50 by change in broker recommendation)**

50-stocks global screen where Broker Optimism has been improving

<b>BBG Code</b>	<b>Company Name</b>	<b>Country</b>	<b>Sector</b>
ALBI AB	Bank Albilad	Saudi Arabia	Banks
DELTA TB	Delta Electronics (Thai)	Thailand	Tech Hardware
2357 TT	Asustek	Taiwan	Tech Hardware
RIBL AB	Riyad Bank	Saudi Arabia	Banks
URW FP	Unibail-Rodamco-Westfield	France	Real Estate
COAL IN	Coal India	India	Energy
3008 TT	Largan Precision	Taiwan	Tech Hardware
2002 TT	China Steel	Taiwan	Materials
GEN US	Gen Digital	United States	Software
1101 TT	Taiwan Cement	Taiwan	Materials
LISN SW	Lindt & Sprungli	Switzerland	Cons. Staples
EDV AU	Endeavour	Australia	Cons. Staples
FSV CN	Firstservice	Canada	Real Estate
TLC AU	The Lottery	Australia	Cons. Discretionary
OTEX CN	Open Text	Canada	Software
4704 JP	Trend Micro	Japan	Software
ELISA FH	Elisa Corp	Finland	Telecom
EAND UH	Emirates Telecom	United Arab Emirates	Telecom
2207 TT	Hotal Motor	Taiwan	Cons. Discretionary
LIFCOB SS	Lifco Ab-B	Sweden	Industrials
TNB MK	Tenaga	Malaysia	Utilities
2885 TT	Yuanta Financial	Taiwan	Div Financials
BOL SS	Boliden	Sweden	Materials
RJHI AB	Al Rajhi Bank	Saudi Arabia	Banks
PKG US	Packaging Corp	United States	Materials
BBCA IJ	Bank Central Asia	Indonesia	Banks
6669 TT	Wiwynn	Taiwan	Tech Hardware
2454 TT	MediaTek	Taiwan	Semiconductors
TRYG DC	Tryg	Denmark	Insurance
TCL AU	Transurban	Australia	Industrials
AMXB MM	America Movil	Mexico	Telecom
CON GR	Continental Ag	Germany	Cons. Discretionary
ORG AU	Origin Energy	Australia	Utilities
LW US	Lamb Weston	United States	Cons. Staples
JM SP	Jardine Matheson	Hong Kong	Industrials
PZU PW	Powszechny Zaklad	Poland	Insurance
VCX AU	Vicinity Centres	Australia	Real Estate
RIO AU	Rio Tinto	Australia	Materials
SHFL IN	Shriram Finance	India	Div Financials
FME GR	Fresenius Medical	Germany	Health Care
BBAS3 BZ	Banco do Brasil	Brazil	Banks
LII US	Lennox Int'l	United States	Industrials
MTX GR	MTU Aero Engines	Germany	Industrials
NZYMB DC	Novozymes	Denmark	Materials
BBDC4 BZ	Bradesco	Brazil	Banks
6146 JP	Disco Corp	Japan	Semiconductors
RR/ LN	Rolls-Royce	United Kingdom	Industrials
6415 TT	Silergy Corp	Taiwan	Semiconductors
2 HK	CLP	Hong Kong	Utilities
PSN LN	Persimmon	United Kingdom	Cons. Discretionary

Source : BofA Global Quantitative Strategy, MSCI, IBES

BofA GLOBAL RESEARCH



**Table 65: Global Decreasing Optimism (top 50 by change in broker recommendation)**

50-stocks global screen where Broker Optimism has been falling

<b>BBG Code</b>	<b>Company Name</b>	<b>Country</b>	<b>Sector</b>
VER AV	Verbund	Austria	Utilities
ALINMA AB	Alinma Bank	Saudi Arabia	Banks
PAYC US	Paycom Software	United States	Industrials
PKN PW	ORLEN	Poland	Energy
1801 JP	Taisei	Japan	Industrials
DIVI IN	Divi's Labs	India	Health Care
PWGR IN	Power Grid - India	India	Utilities
COMI EY	Commercial Intl Bank	Egypt	Banks
GALP PL	Galp	Portugal	Energy
NBK KK	National Bank Of Kuwait	Kuwait	Banks
4185 JP	JSR	Japan	Materials
086520 KS	Ecopro	South Korea	Industrials
2880 TT	Hua Nan Financial	Taiwan	Banks
3034 TT	Novatek Micro	Taiwan	Semiconductors
1301 TT	Formosa Plastics	Taiwan	Materials
IAG CN	iA Financial	Canada	Insurance
VACN SW	Vat Group Ag	Switzerland	Industrials
2886 TT	Mega Financial	Taiwan	Banks
ZURN SW	Zurich Insurance	Switzerland	Insurance
EIM IN	Eicher Motors	India	Cons. Discretionary
WPP LN	WPP	United Kingdom	Media & Ent.
WIL SP	Wilmar Int'l	Singapore	Cons. Staples
CSL US	Carlisle Companies	United States	Industrials
SLM SJ	Sanlam	South Africa	Insurance
AD NA	Koninklijke Ahold	Netherlands	Cons. Staples
SGX SP	Sing Exchange	Singapore	Div Financials
BAMI IM	Banco BM	Italy	Banks
ELM AB	Elm Co	Saudi Arabia	Software
VBL IN	Varun Beverages	India	Cons. Staples
2269 HK	WuXi Biologics	China	Health Care
LONN SW	Lonza	Switzerland	Health Care
KYGA ID	Kerry Group	Ireland	Cons. Staples
TECHM IN	Tech Mahindra	India	Software
TEP FP	Teleperformance	France	Industrials
SRT3 GR	Sartorius-Pfd	Germany	Health Care
BJFIN IN	Bajaj Finserv	India	Div Financials
CTC/A CN	Canadian Tire	Canada	Cons. Discretionary
CEZ CP	CEZ	Czech Republic	Utilities
FTNT US	Fortinet	United States	Software
CPI SJ	Capitec Bank	South Africa	Banks
MTD US	Mettler-Toledo	United States	Health Care
A US	Agilent Tech	United States	Health Care
MAERSKB DC	Moller-Maersk-B	Denmark	Industrials
RIFP	Pernod Ricard	France	Cons. Staples
ALDAR UH	Aldar Prop	United Arab Emirates	Real Estate
8697 JP	Japan Exchange	Japan	Div Financials
BHE IN	Bharat Elec	India	Industrials
ENPH US	Enphase Energy	United States	Semiconductors
8725 JP	MS&AD Insurance	Japan	Insurance
BIO US	Bio-Rad Lab	United States	Health Care

Source : BofA Global Quantitative Strategy, MSCI, IBES

BofA GLOBAL RESEARCH



# Performance Opportunity

Performance Opportunity refers to dispersion of returns, and hence how large or small the opportunity is to differentiate between outperforming and underperforming assets. If the dispersion of returns is small there is limited opportunity to overweight outperforming assets and underweight underperforming assets. If the dispersion of returns is large then performance opportunity is higher.

We calculate Performance Opportunity for Country, Sector, Style, Size and Currency. In each instance, we calculate the standard deviations of returns each month, annualise the return, and calculate a rolling twelve month average (which is shown in the charts below).

**Country Opportunity** measures the spread of returns from the 12 largest countries in the world by index weighting the MSCI AC World Index.

**Sector Opportunity** measures the spread of returns of 15 MSCI global sectors.

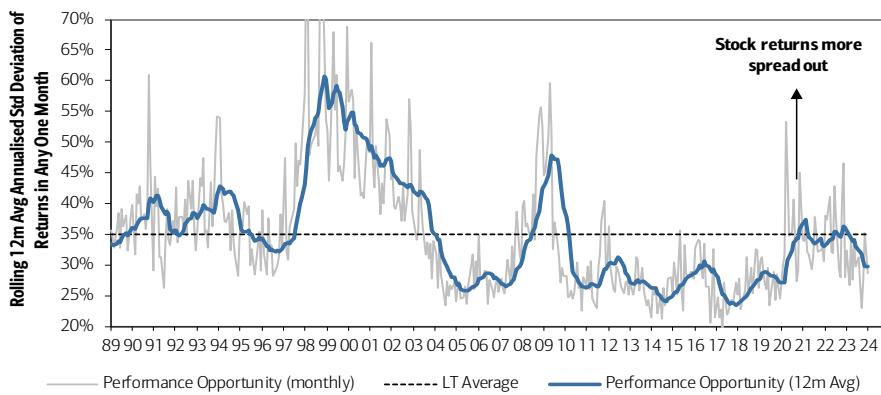
**Style Opportunity** measures the spread of returns of our seven global Quantessential Styles.

**Size Opportunity** measures the spread of returns in the largest 20% of stocks in the MSCI AC World index by market cap, and the same for the smallest 20%.

**Currency Opportunity** measures the spread of returns from each possible currency cross-rate combination of USD, Euro, Yen, AUD, CAD, CHF, and GBP.

## Chart 697: Performance opportunity from stock selection

Dispersion of stock returns is lower than 12-months ago



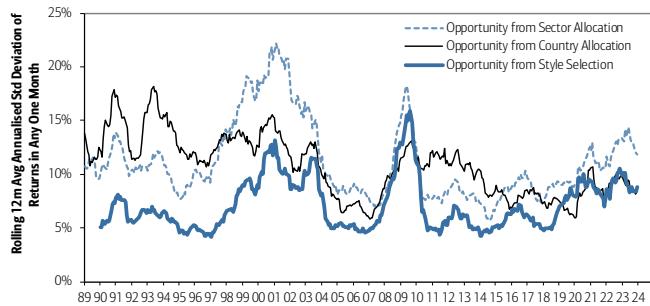
Source : BofA Global Quantitative Strategy, MSCI, IBES

BofA GLOBAL RESEARCH



### Chart 698: Opportunity to Add Value from Global Sector, Country, and Style Allocation

Performance opportunity is highest from Sector Allocation

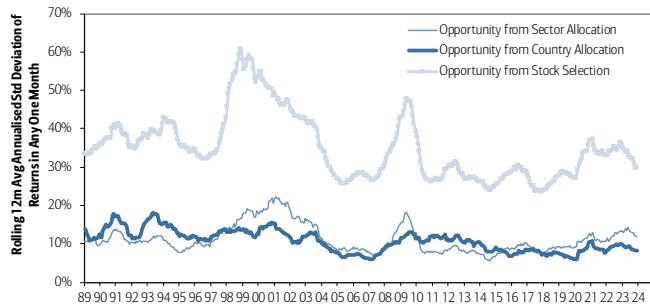


Source : BofA Global Quantitative Strategy, MSCI, IBES

BofA GLOBAL RESEARCH

### Chart 700: Opportunity from Global Sector & Country Allocation, and Stock Selection

Opportunity to add alpha from stock selection far exceeds sector or country allocation



Source : BofA Global Quantitative Strategy, MSCI, IBES

BofA GLOBAL RESEARCH

### Chart 702: Dispersion of Forecast PEs Globally

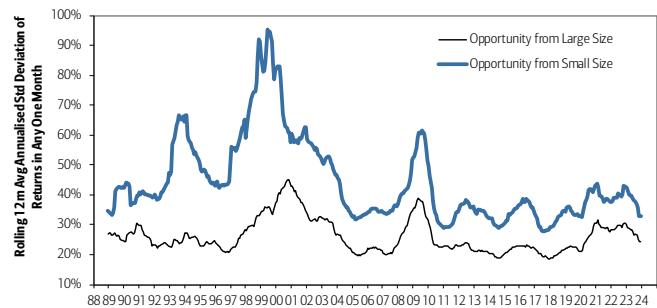
Dispersion of forecast PE is above the long-term average



Source : BofA Global Quantitative Strategy, MSCI, IBES

### Chart 699: Opportunity from Top and Bottom Quintile by Size

Opportunity to add value via Small Size stocks exceeds that of Large Size



Source : BofA Global Quantitative Strategy, MSCI, IBES

BofA GLOBAL RESEARCH

### Chart 701: Opportunity from Currency Allocation

Dispersion of returns by currency allocation is lower than 12-months ago



Source : BofA Global Quantitative Strategy, MSCI, IBES

BofA GLOBAL RESEARCH

# Institutional Investor Universe

Institutional investors reduce their ability to outperform a benchmark by focusing on large liquid stocks.

We approximate a global institutional investors' universe as large liquid stocks selected from the constituents of the MSCI AC World Index that meet our minimum market cap, turnover and coverage requirements. The Institutional Investor Universe is determined at the end of each month using month-end data from MSCI databases.

The Institutional Investor Universe is defined as the largest 60% of stocks of the MSCI AC World Index by market cap, the largest 60% by average daily turnover in the last 6 months and last 20 days, with a minimum of three consensus earnings estimates. Table below shows the minimum values for each requirement as of December 2023, the latest re-balance.

**Table 66: Minimum requirements for inclusion in Global Quantessential Styles**

Minimum market cap, turnover and coverage requirements for inclusion in Quantessential Styles

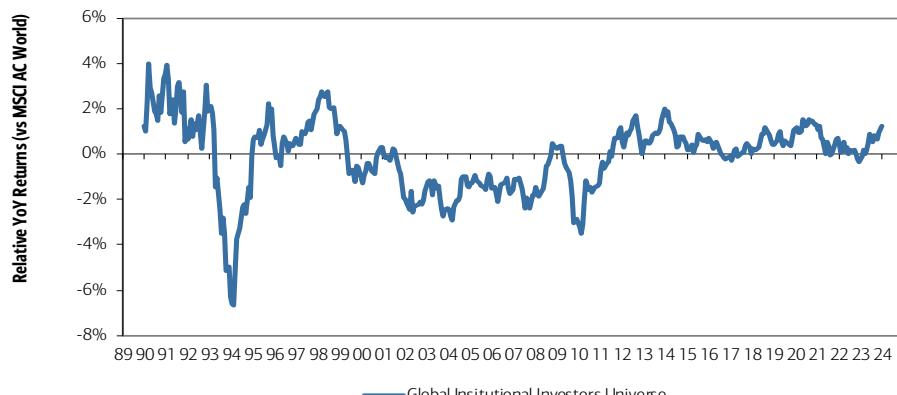
	Percentile	Minimum
Market Cap US\$m	60th	4,489
6-month Median Daily Turnover US\$m	60th	21.0
20-day Median Daily Turnover US\$m	60th	21.3
Number of analysts' estimates	-	3

Source : BofA Global Quantitative Strategy, MSCI, IBES

BofA GLOBAL RESEARCH

**Chart 703: Global Institutional Investor Universe – YoY perf relative to MSCI AC World Index**

YoY, Global Institutional Investors Universe has outperformed by 1.3%



Source : BofA Global Quantitative Strategy, MSCI, IBES

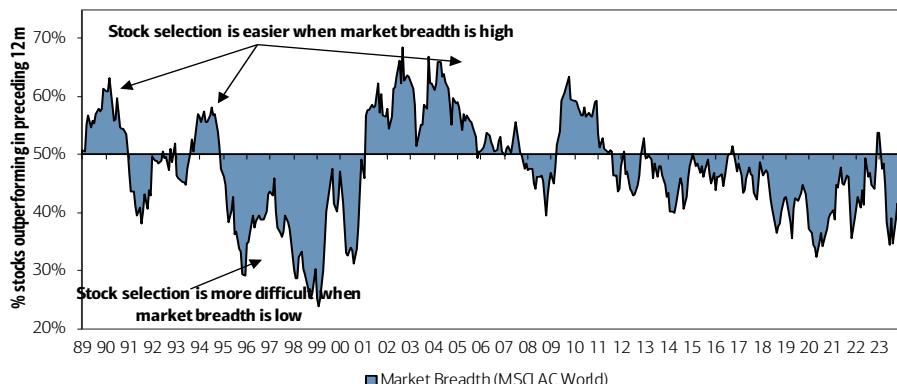
BofA GLOBAL RESEARCH



## Market Breadth

### Chart 704: Global market breadth – proportion of stocks outperforming MSCI AC World

Global Market Breadth is currently at 31.8%

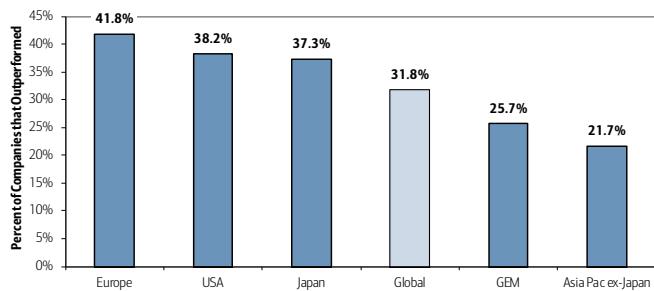


Source : BofA Global Quantitative Strategy, MSCI, IBES

BofA GLOBAL RESEARCH

### Chart 705: Market Breadth by Region, Last 12 months

Market Breadth is highest in Europe

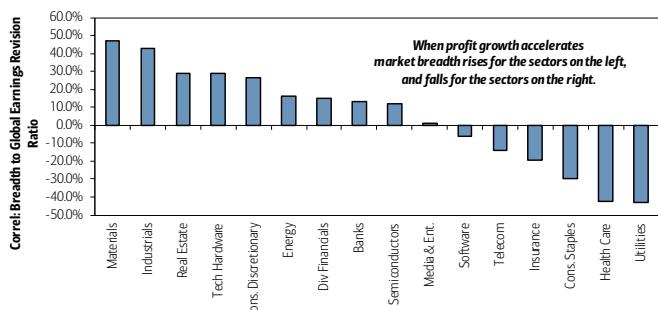


Source : BofA Global Quantitative Strategy, MSCI, IBES

BofA GLOBAL RESEARCH

### Chart 706: Correlation of sector market breadth to Global Earnings Revision Ratio

Correlation of Market Breadth & Earnings Revision Ratio is strongest for Materials and Industrials

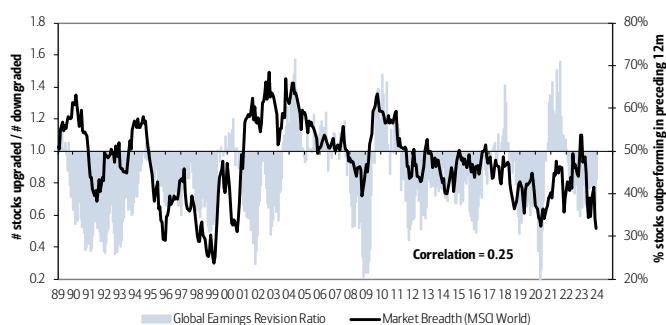


Source : BofA Global Quantitative Strategy, MSCI, IBES

BofA GLOBAL RESEARCH

### Chart 707: Global market breadth versus trends in global profit expectations

Global Market Breadth increases as profit growth accelerates

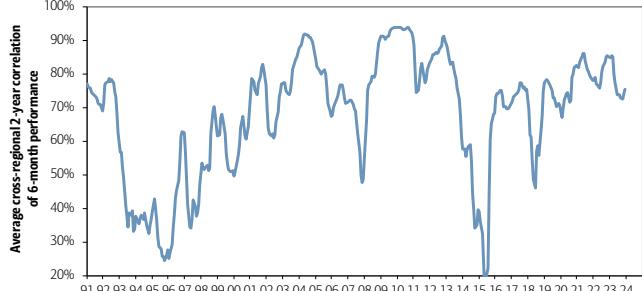


Source : BofA Global Quantitative Strategy, MSCI, IBES

BofA GLOBAL RESEARCH

### Chart 708: Average Cross-Regional Correlation of Performance

Performance correlation between regions remain elevated



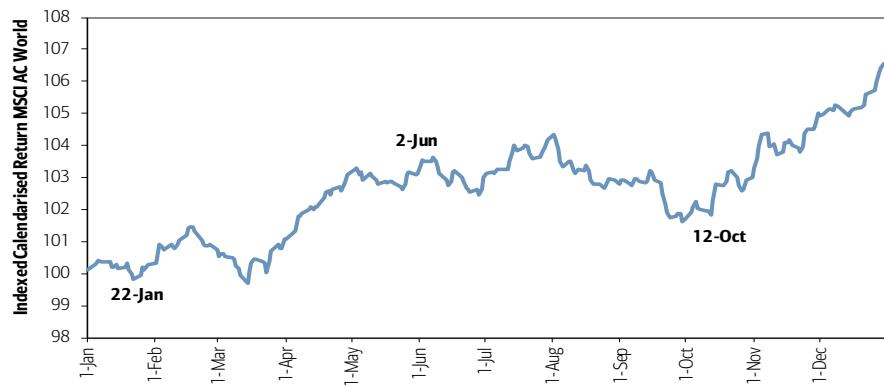
Source : BofA Global Quantitative Strategy, MSCI, IBES

BofA GLOBAL RESEARCH

# Seasonality

## Chart 709: Average cumulative daily return of MSCI AC World index for the calendar year

On average 2/3rds of index returns are achieved in the 4th quarter

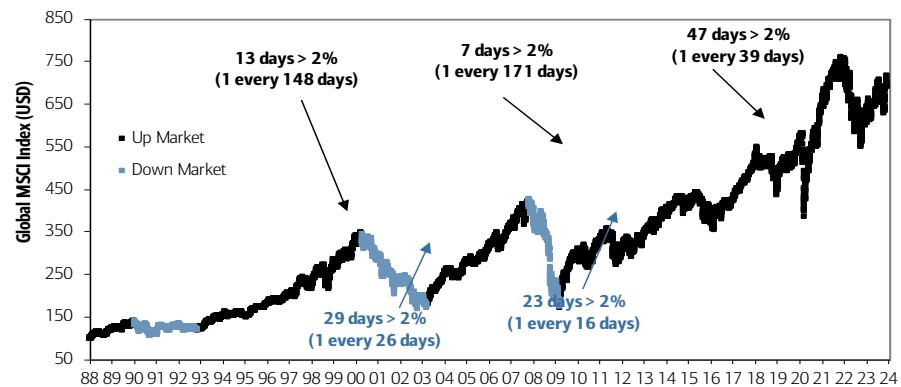


Source : BofA Global Quantitative Strategy, MSCI

BofA GLOBAL RESEARCH

## Chart 710: There are more positive days (+2%) in bear markets than bull markets

There are more positive days (+2%) in downturns than upturns

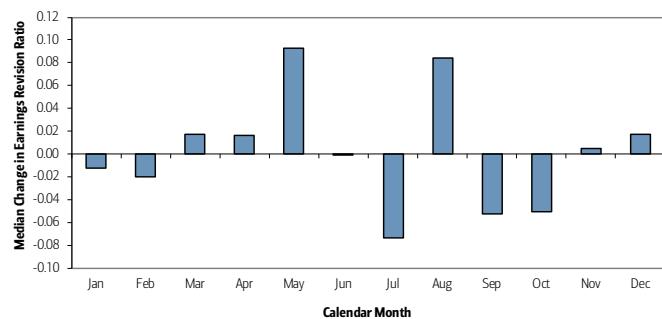


Source : BofA Global Quantitative Strategy, MSCI

BofA GLOBAL RESEARCH

## Chart 711: Seasonality of Global Earnings Expectations

Earnings expectations are higher at the beginning of the year, on average



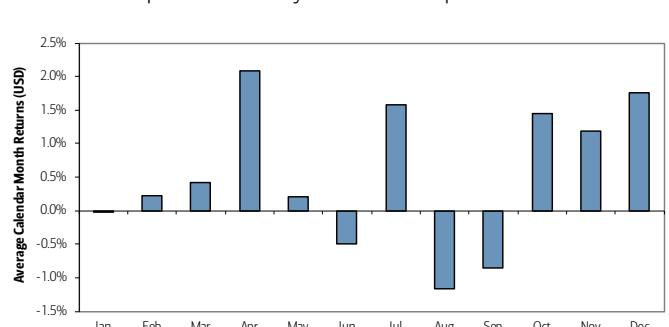
Source : BofA Global Quantitative Strategy, MSCI

Performance is based on official MSCI Index level since 1988.

BofA GLOBAL RESEARCH

## Chart 712: Seasonality of Market Performance (USD) - MSCI AC World

Global markets perform similarly in the second quarter



Source : BofA Global Quantitative Strategy, MSCI

Performance is based on official MSCI Index level since 1987.

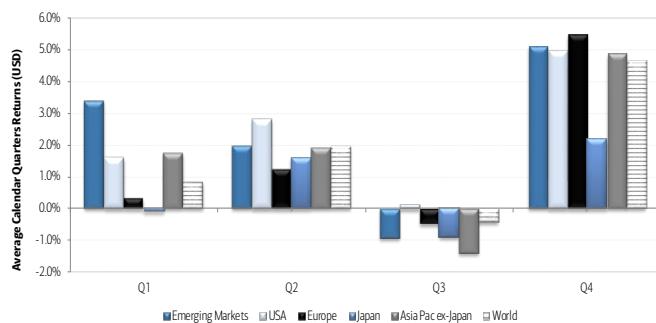
BofA GLOBAL RESEARCH



## Seasonality by Global Regions

### Chart 713: Seasonality of Market Performance (USD) - Global Regions

Global markets perform similarly in the second quarter



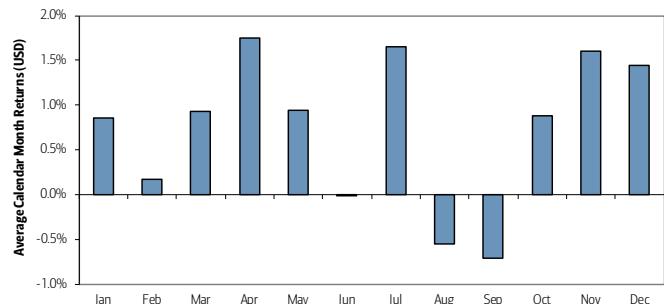
Source : BofA Global Quantitative Strategy, MSCI

Performance is based on official MSCI Index level since 1987.

BofA GLOBAL RESEARCH

### Chart 714: Seasonality of Market Performance (USD) - MSCI USA

Best returns for USA markets is in April



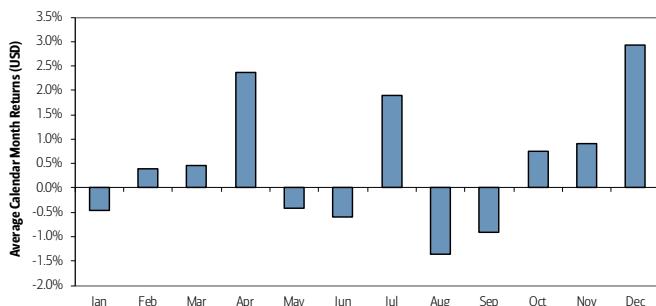
Source : BofA Global Quantitative Strategy, MSCI

Performance is based on official MSCI Index level since 1987.

BofA GLOBAL RESEARCH

### Chart 715: Seasonality of Market Performance (USD) - MSCI Europe

The best month for Europe equities is December



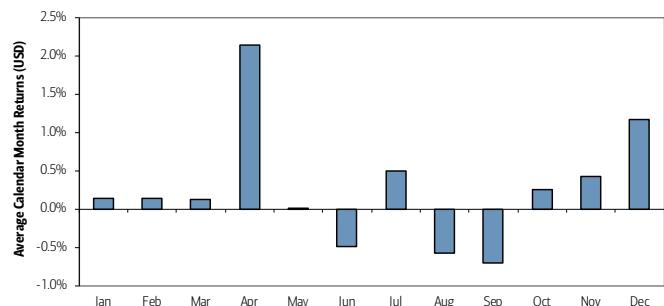
Source : BofA Global Quantitative Strategy, MSCI

Performance is based on official MSCI Index level since 1987.

BofA GLOBAL RESEARCH

### Chart 716: Seasonality of Market Performance (USD) - MSCI Japan

The best month for Japan equities is April



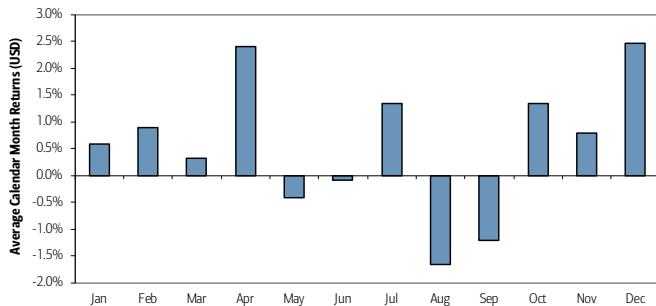
Source : BofA Global Quantitative Strategy, MSCI

Performance is based on official MSCI Index level since 1987.

BofA GLOBAL RESEARCH

### Chart 717: Seasonality of Market Performance (USD) - MSCI Asia Pac ex-Japan

Fourth quarter has the best returns for equities, on average



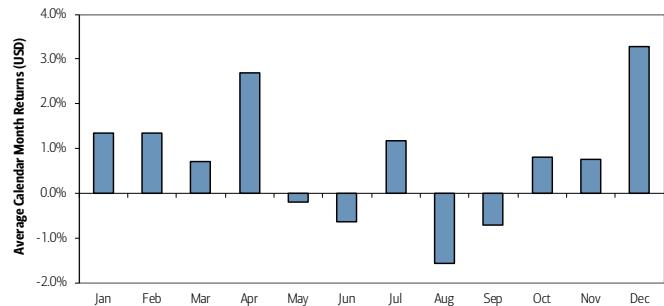
Source : BofA Global Quantitative Strategy, MSCI

Performance is based on official MSCI Index level since 1987.

BofA GLOBAL RESEARCH

### Chart 718: Seasonality of Market Performance (USD) - MSCI Emerging Markets

Best returns for GEM markets is in December



Source : BofA Global Quantitative Strategy, MSCI

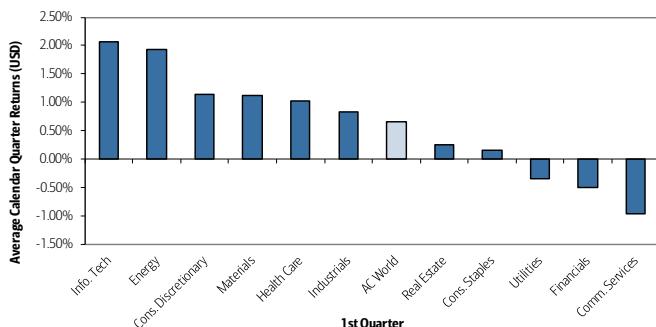
Performance is based on official MSCI Index level since 1987.

BofA GLOBAL RESEARCH

## Seasonality by Global Sectors

**Chart 719: Seasonality of Sector Performance (USD) - 1st Quarter**

Info. Tech performed the best, on average during 1st Quarter



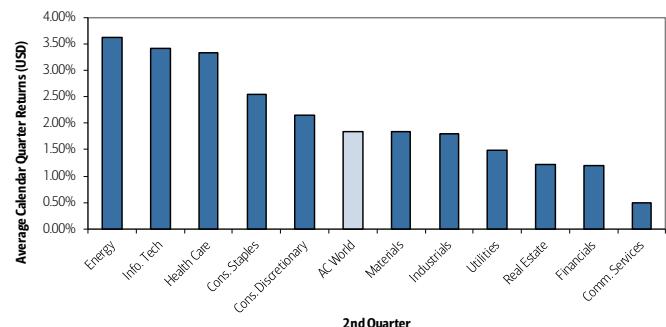
Source : BofA Global Quantitative Strategy, MSCI

Performance is based on official MSCI Index level since 1987.

BofA GLOBAL RESEARCH

**Chart 720: Seasonality of Sector Performance (USD) - 2nd Quarter**

Energy performed the best, on average during 2nd Quarter



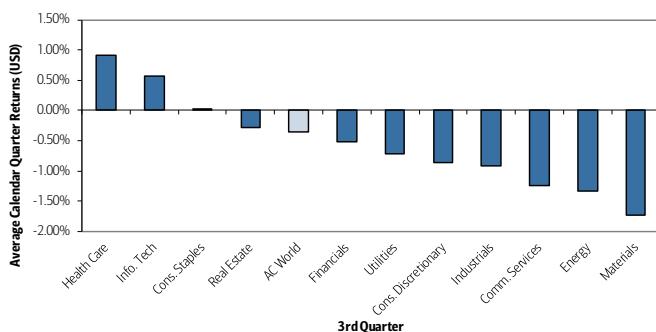
Source : BofA Global Quantitative Strategy, MSCI

Performance is based on official MSCI Index level since 1987.

BofA GLOBAL RESEARCH

**Chart 721: Seasonality of Sector Performance (USD) - 3rd Quarter**

Health Care performed the best, on average during 3rd Quarter



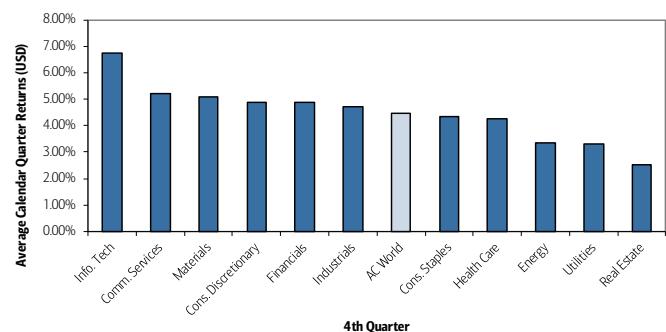
Source : BofA Global Quantitative Strategy, MSCI

Performance is based on official MSCI Index level since 1987.

BofA GLOBAL RESEARCH

**Chart 722: Seasonality of Sector Performance (USD) - 4th Quarter**

In 4th Quarter, Info. Tech performed the best and Real Estate the worst



Source : BofA Global Quantitative Strategy, MSCI

Performance is based on official MSCI Index level since 1987.

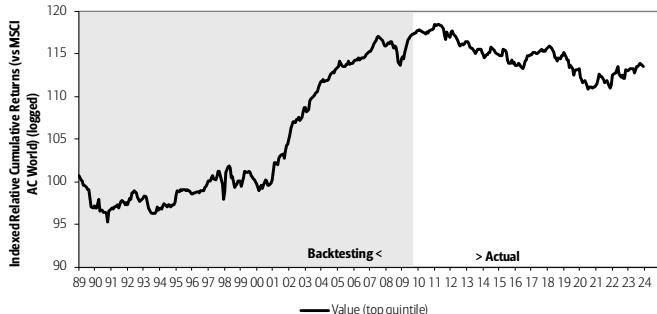
BofA GLOBAL RESEARCH



## Seasonality by Global Styles

**Chart 723: Global Quantessential Value (top quintile) relative cumulative returns**

TQ Value has underperformed by -0.7% in the last 1 Month

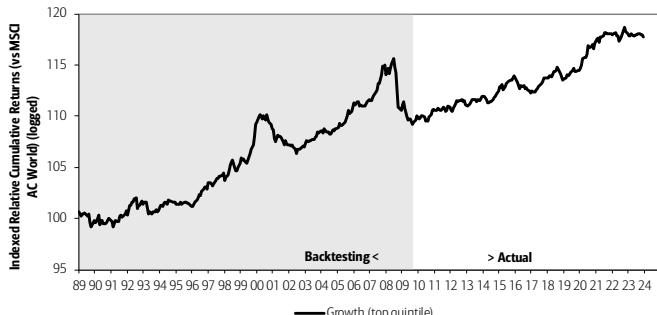


Source : BofA Global Quantitative Strategy, MSCI, IBES, S&P, Worldscope, Bloomberg  
The shaded area shows back-tested results during the period from Jan-89 to Aug-09. The unshaded portion represents actual performance since Sep-09. Back-tested performance depicts the theoretical (not actual) performance 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.

BofA GLOBAL RESEARCH

**Chart 725: Global Quantessential Growth (top quintile) relative cumulative returns**

TQ Growth has underperformed by -1.3% Year-to-Date

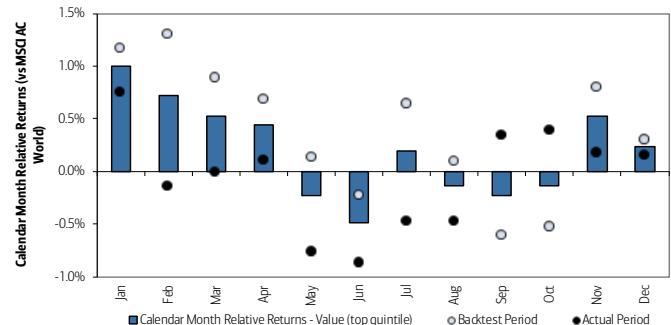


Source : BofA Global Quantitative Strategy, MSCI, IBES, S&P, Worldscope, Bloomberg  
The shaded area shows back-tested results during the period from Jan-89 to Aug-09. The unshaded portion represents actual performance since Sep-09. Back-tested performance depicts the theoretical (not actual) performance 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.

BofA GLOBAL RESEARCH

**Chart 724: Global Quantessential Value (top quintile) Seasonality**

Value tends to outperform in January, on average

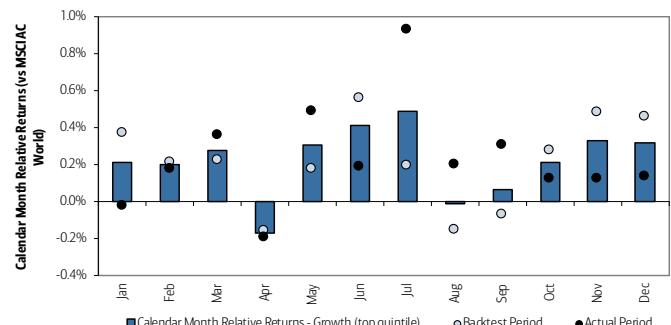


Source : BofA Global Quantitative Strategy, MSCI, IBES, S&P, Worldscope, Bloomberg  
The back-tested results for the period from Jan-89 to Aug-09. The actual performance since Sep-09. Back-tested performance depicts the theoretical (not actual) performance of a particular strategy over the time period indicated. No representation is being made that any actual portfolio is likely to have achieved returns similar to those shown herein.

BofA GLOBAL RESEARCH

**Chart 726: Global Quantessential Growth (top quintile) Seasonality**

Growth tends to outperform in July, on average

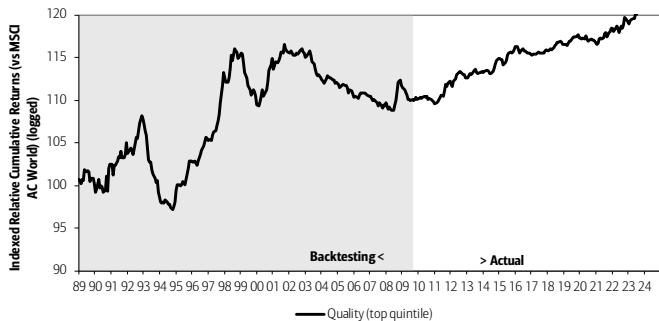


Source : BofA Global Quantitative Strategy, MSCI, IBES, S&P, Worldscope, Bloomberg  
The back-tested results for the period from Jan-89 to Aug-09. The actual performance since Sep-09. Back-tested performance depicts the theoretical (not actual) performance of a particular strategy over the time period indicated. No representation is being made that any actual portfolio is likely to have achieved returns similar to those shown herein.

BofA GLOBAL RESEARCH

### Chart 727: Global Quantessential Quality (top quintile) relative cumulative returns

TQ Quality has outperformed by 4.1% in the last 3 Months

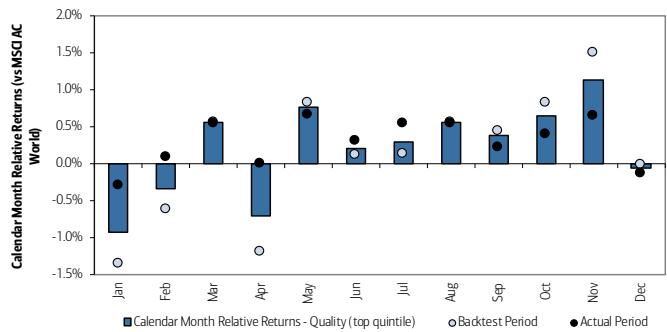


Source : BofA Global Quantitative Strategy, MSCI, IBES, S&P, Worldscope, Bloomberg  
The shaded area shows back-tested results during the period from Jan-89 to Aug-09. The unshaded portion represents actual performance since Sep-09. Back-tested performance depicts the theoretical (not actual) performance 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.

BofA GLOBAL RESEARCH

### Chart 728: Global Quantessential Quality (top quintile) Seasonality

November is the best month for Quality, on average

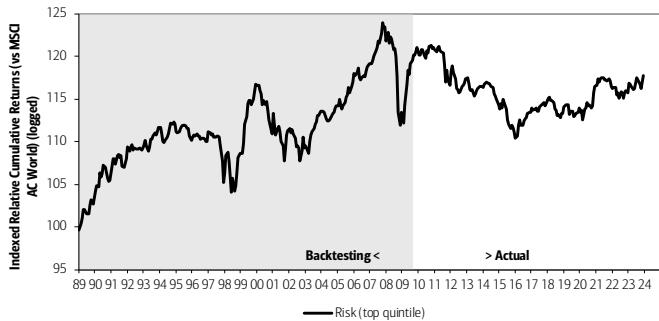


Source : BofA Global Quantitative Strategy, MSCI, IBES, S&P, Worldscope, Bloomberg  
The back-tested results for the period from Jan-89 to Aug-09. The actual performance since Sep-09. Back-tested performance depicts the theoretical (not actual) performance of a particular strategy over the time period indicated. No representation is being made that any actual portfolio is likely to have achieved returns similar to those shown herein.

BofA GLOBAL RESEARCH

### Chart 729: Global Quantessential Risk (top quintile) relative cumulative returns

TQ Risk has outperformed year-to-date

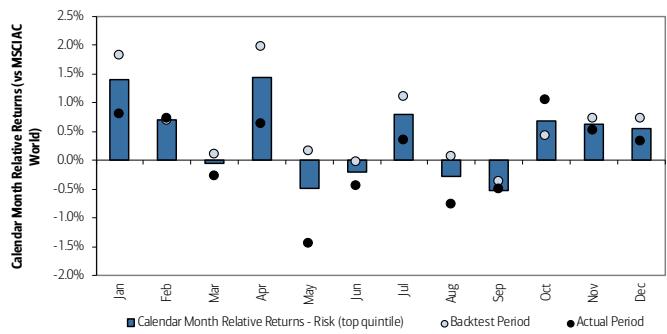


Source : BofA Global Quantitative Strategy, MSCI, IBES, S&P, Worldscope, Bloomberg  
The shaded area shows back-tested results during the period from Jan-89 to Aug-09. The unshaded portion represents actual performance since Sep-09. Back-tested performance depicts the theoretical (not actual) performance 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.

BofA GLOBAL RESEARCH

### Chart 730: Global Quantessential Risk (top quintile) Seasonality

Risk tends to underperform in September, on average



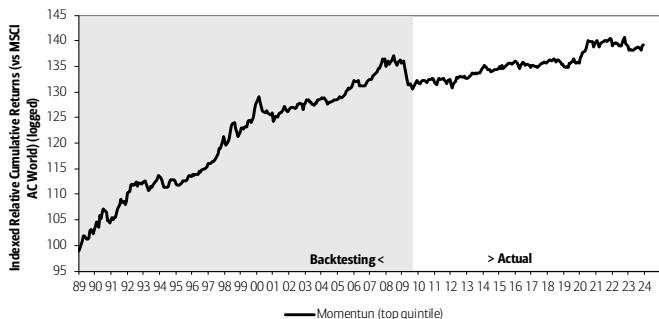
Source : BofA Global Quantitative Strategy, MSCI, IBES, S&P, Worldscope, Bloomberg  
The back-tested results for the period from Jan-89 to Aug-09. The actual performance since Sep-09. Back-tested performance depicts the theoretical (not actual) performance of a particular strategy over the time period indicated. No representation is being made that any actual portfolio is likely to have achieved returns similar to those shown herein.

BofA GLOBAL RESEARCH



### Chart 731: Global Quantessential Momentum (top quintile) relative cumulative returns

TQ Momentum has outperformed by 0.9% in the last 1 Month



Source : BofA Global Quantitative Strategy, MSCI, IBES, S&P, Worldscope, Bloomberg  
The shaded area shows back-tested results during the period from Jan-89 to Aug-09. The unshaded portion represents actual performance since Sep-09. Back-tested 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.

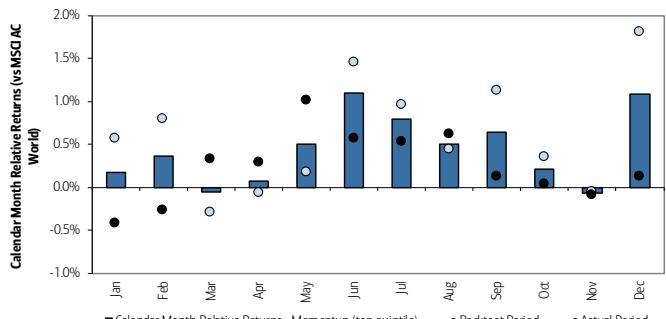
BofA GLOBAL RESEARCH

### Chart 732: Global Quantessential Momentum (top quintile) Seasonality

TQ Momentum tends to outperform in June, on average

### Chart 732: Global Quantessential Momentum (top quintile) Seasonality

Momentum tends to outperform in June, on average

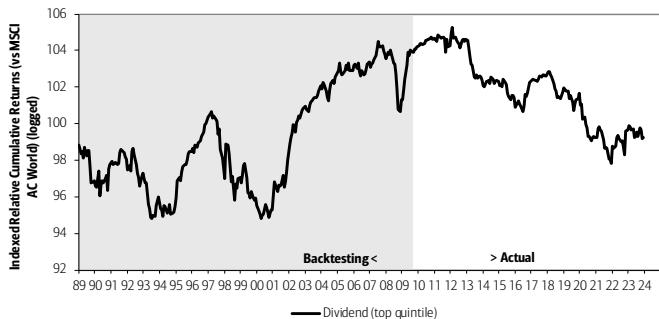


Source : BofA Global Quantitative Strategy, MSCI, IBES, S&P, Worldscope, Bloomberg  
The back-tested results for the period from Jan-89 to Aug-09. The actual performance since Sep-09. Back-tested performance depicts the theoretical (not actual) performance of a particular strategy over the time period indicated. No representation is being made that any actual portfolio is likely to have achieved returns similar to those shown herein.

BofA GLOBAL RESEARCH

### Chart 733: Global Quantessential Dividend (top quintile) relative cumulative returns

TQ Dividend has underperformed by -0.3% in the last 6 Months

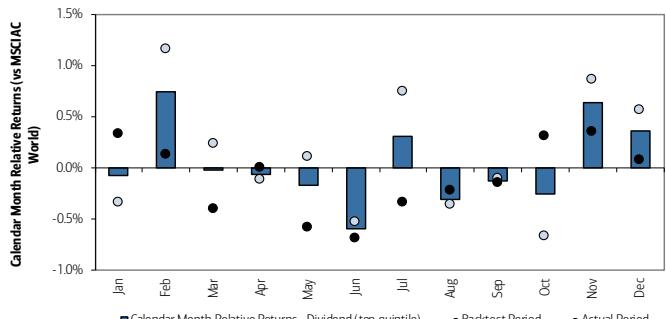


Source : BofA Global Quantitative Strategy, MSCI, IBES, S&P, Worldscope, Bloomberg  
The shaded area shows back-tested results during the period from Jan-89 to Aug-09. The unshaded portion represents actual performance since Sep-09. Back-tested performance depicts the theoretical (not actual) performance 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.

BofA GLOBAL RESEARCH

### Chart 734: Global Quantessential Dividend (top quintile) Seasonality

Dividend tends to outperform in February, on average

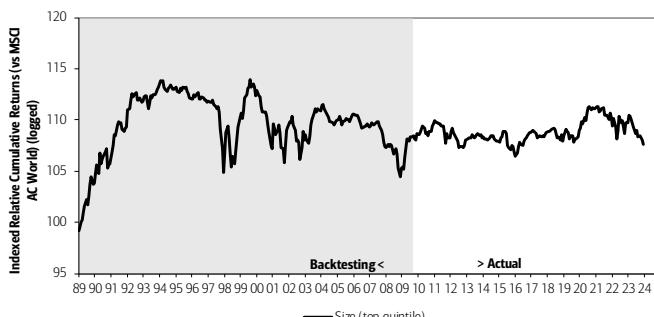


Source : BofA Global Quantitative Strategy, MSCI, IBES, S&P, Worldscope, Bloomberg  
The back-tested results for the period from Jan-89 to Aug-09. The actual performance since Sep-09. Back-tested performance depicts the theoretical (not actual) performance of a particular strategy over the time period indicated. No representation is being made that any actual portfolio is likely to have achieved returns similar to those shown herein.

BofA GLOBAL RESEARCH

### Chart 735: Global Quantessential Size (top quintile) relative cumulative returns

TQ Size has underperformed by -4.0% in the last 3 Months

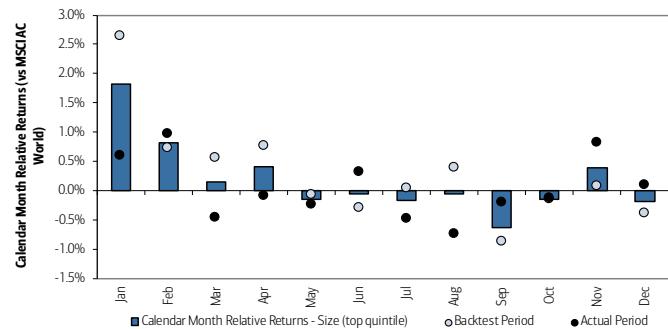


Source : BofA Global Quantitative Strategy, MSCI, IBES, S&P, Worldscope, Bloomberg  
The shaded area shows back-tested results during the period from Jan-89 to Aug-09. The unshaded portion represents actual performance since Sep-09. Back-tested performance depicts the theoretical (not actual) performance 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.

BofA GLOBAL RESEARCH

### Chart 736: Global Quantessential Size (top quintile) Seasonality

January is the best month for Small Size, on average



Source : BofA Global Quantitative Strategy, MSCI, IBES, S&P, Worldscope, Bloomberg  
The back-tested results for the period from Jan-89 to Aug-09. The actual performance since Sep-09. Back-tested 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.

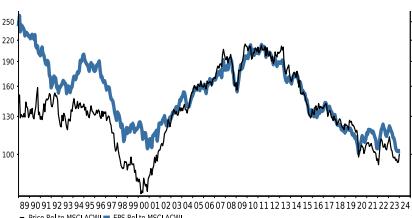
BofA GLOBAL RESEARCH

# Appendix A: Countries Momentum & Value Charts

## Asia Pac ex-Japan Countries

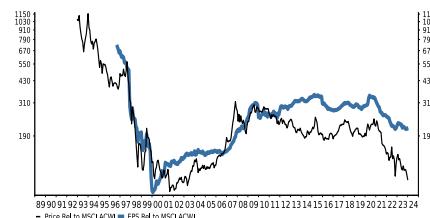
### Chart 737: Australia vs. The World – Momentum & Value

Australia has outperformed the world in last 6m



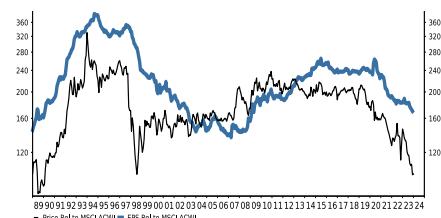
### Chart 738: China vs. The World – Momentum & Value

Relative EPS trend for China has deteriorated in last 12m



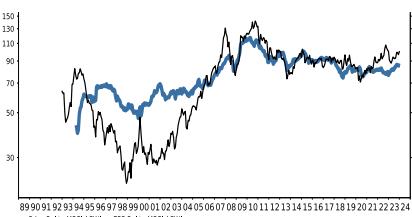
### Chart 739: Hong Kong vs. The World – Momentum & Value

Relative EPS trend for Hong Kong has deteriorated in last 3m



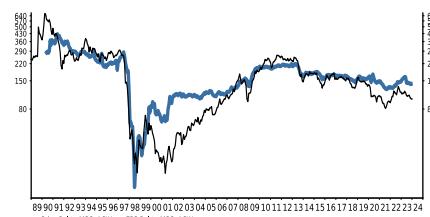
### Chart 740: India vs. The World – Momentum & Value

Relative EPS trend for India has improved in last 12m



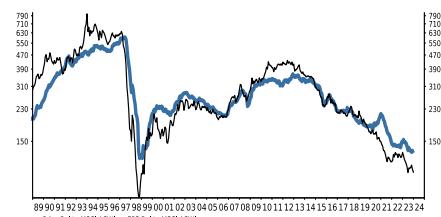
### Chart 741: Indonesia vs. The World – Momentum & Value

Relative EPS trend for Indonesia has deteriorated in last 3m



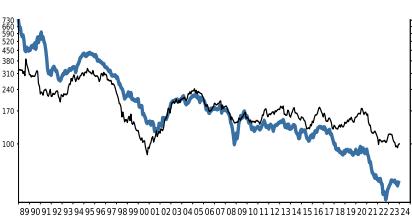
### Chart 742: Malaysia vs. The World – Momentum & Value

Relative EPS trend for Malaysia has deteriorated in last 3m



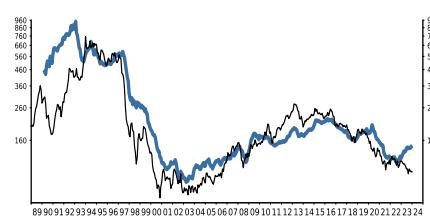
### Chart 743: New Zealand vs. The World – Momentum & Value

Relative EPS trend for New Zealand has improved in last 6m



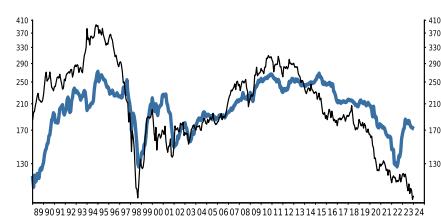
### Chart 744: Philippines vs. The World – Momentum & Value

Relative EPS trend for Philippines has improved in last 12m



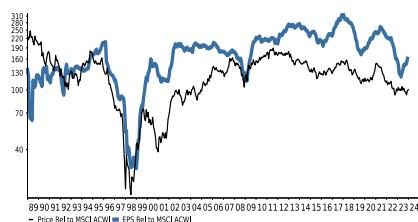
### Chart 745: Singapore vs. The World – Momentum & Value

Singapore has underperformed the world in last 12m



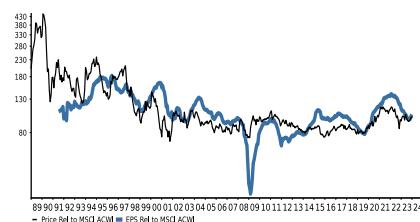
### Chart 746: South Korea vs. The World – Momentum & Value

South Korea has outperformed the world in last 6m



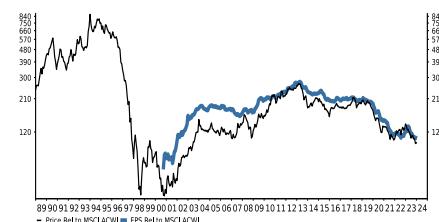
### Chart 747: Taiwan vs. The World – Momentum & Value

Relative EPS trend for Taiwan has improved in last 6m



### Chart 748: Thailand vs. The World – Momentum & Value

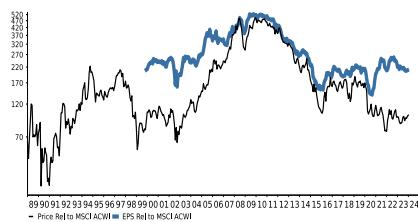
Thailand has underperformed in last 3m



## Emerging Markets Countries

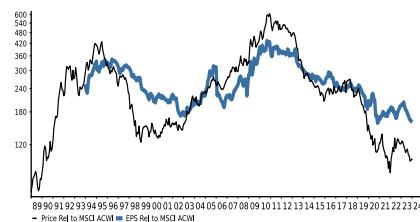
### Chart 749: Brazil vs. The World – Momentum & Value

Brazil has outperformed in last 12m



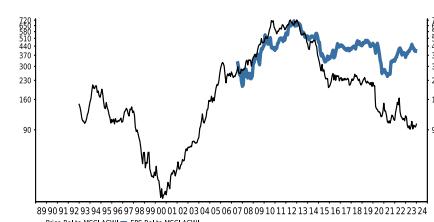
### Chart 750: Chile vs. The World – Momentum & Value

Chile has underperformed in last 6m



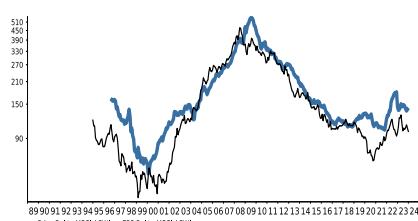
### Chart 751: Colombia vs. The World – Momentum & Value

Relative EPS trend for Colombia has deteriorated in last 6m



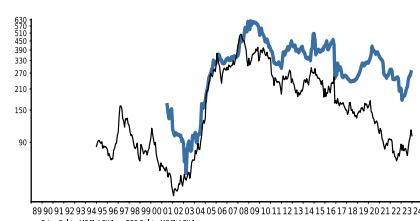
### Chart 752: Czech Republic vs. The World – Momentum & Value

Relative EPS trend for Czech Republic has deteriorated in last 12m



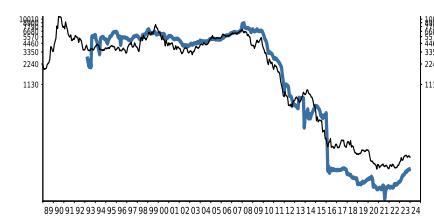
### Chart 753: Egypt vs. The World – Momentum & Value

Relative EPS trend for Egypt has improved in last 12m



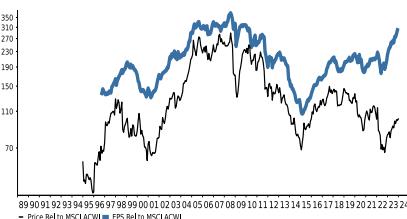
### Chart 754: Greece vs. The World – Momentum & Value

Greece has underperformed in last 6m



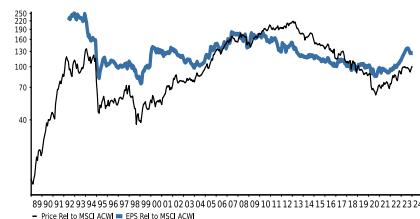
### Chart 755: Hungary vs. The World – Momentum & Value

Relative EPS trend for Hungary has improved in last 3m



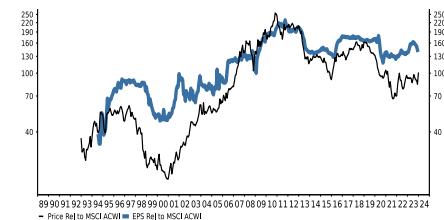
### Chart 756: Mexico vs. The World – Momentum & Value

Relative EPS trend for Mexico has deteriorated in last 3m



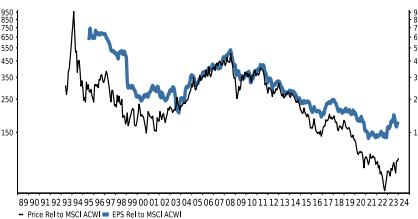
### Chart 757: Peru vs. The World – Momentum & Value

Peru has outperformed the world in last 3m



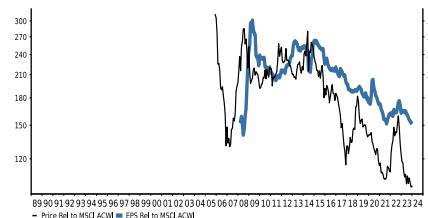
### Chart 758: Poland vs. The World – Momentum & Value

Poland has outperformed in last 12m



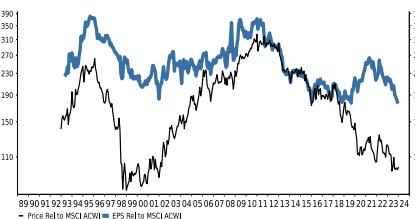
### Chart 759: Qatar vs. The World – Momentum & Value

Relative EPS trend for Qatar has deteriorated in last 12m



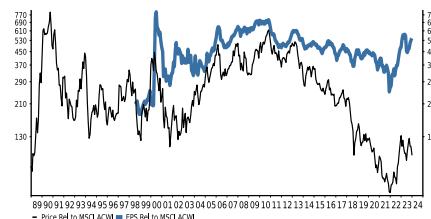
### Chart 760: South Africa vs. The World – Momentum & Value

South Africa has underperformed the world in last 12m



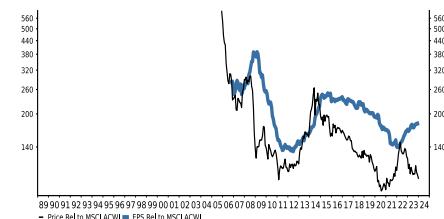
### Chart 761: Turkiye vs. The World – Momentum & Value

Turkiye has underperformed the world in last 12m



### Chart 762: UAE vs. The World – Momentum & Value

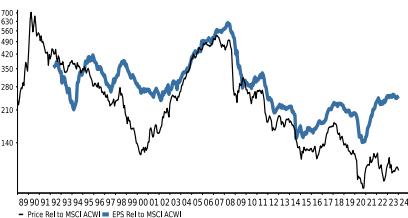
Relative EPS trend for UAE has deteriorated in last 3m



## Europe Countries

**Chart 763: Austria vs. The World – Momentum & Value**

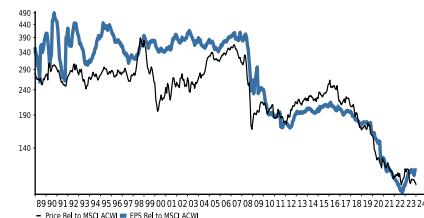
Austria has underperformed in last 3m



Source : BofA Global Quantitative Strategy, IBES, MSCI  
BofA GLOBAL RESEARCH

**Chart 764: Belgium vs. The World – Momentum & Value**

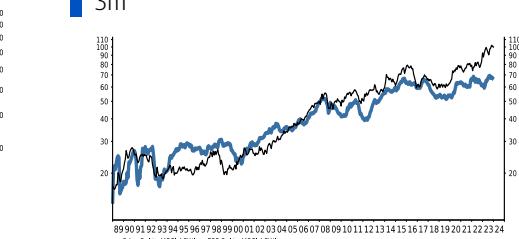
Belgium has underperformed in last 3m



Source : BofA Global Quantitative Strategy, IBES, MSCI  
BofA GLOBAL RESEARCH

**Chart 765: Denmark vs. The World – Momentum & Value**

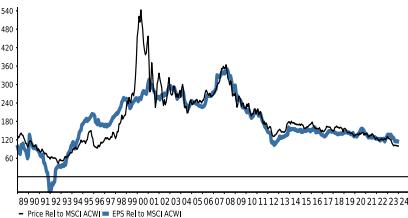
Denmark has outperformed the world in last 3m



Source : BofA Global Quantitative Strategy, IBES, MSCI  
BofA GLOBAL RESEARCH

**Chart 766: Finland vs. The World – Momentum & Value**

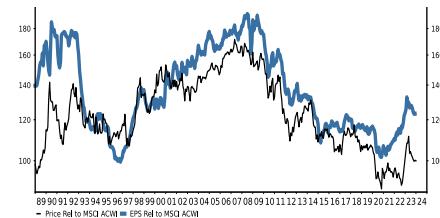
Relative EPS trend for Finland has improved in last 12m



Source : BofA Global Quantitative Strategy, IBES, MSCI  
BofA GLOBAL RESEARCH

**Chart 767: France vs. The World – Momentum & Value**

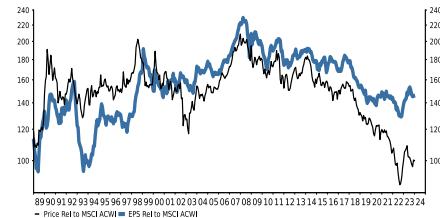
France has underperformed the world in last 12m



Source : BofA Global Quantitative Strategy, IBES, MSCI  
BofA GLOBAL RESEARCH

**Chart 768: Germany vs. The World – Momentum & Value**

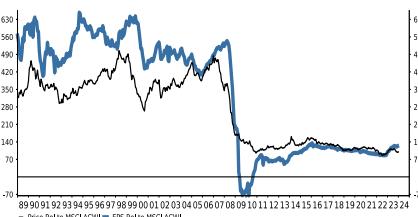
Germany has outperformed the world in last 3m



Source : BofA Global Quantitative Strategy, IBES, MSCI  
BofA GLOBAL RESEARCH

**Chart 769: Ireland vs. The World – Momentum & Value**

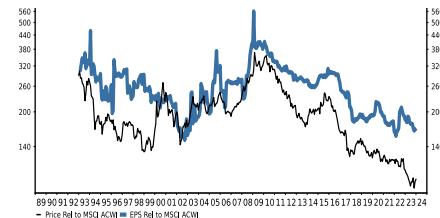
Relative EPS trend for Ireland has deteriorated in last 3m



Source : BofA Global Quantitative Strategy, IBES, MSCI  
BofA GLOBAL RESEARCH

**Chart 770: Israel vs. The World – Momentum & Value**

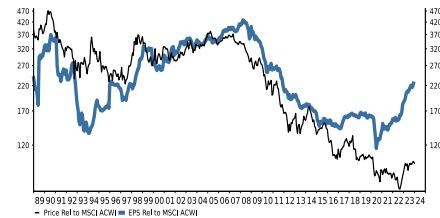
Israel has underperformed in last 3m



Source : BofA Global Quantitative Strategy, IBES, MSCI  
BofA GLOBAL RESEARCH

**Chart 771: Italy vs. The World – Momentum & Value**

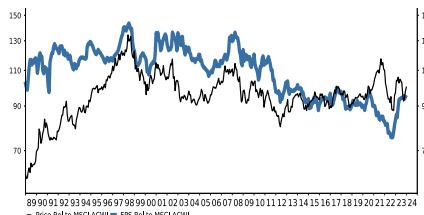
Italy has outperformed the world in last 3m



Source : BofA Global Quantitative Strategy, IBES, MSCI  
BofA GLOBAL RESEARCH

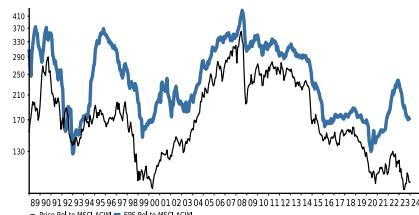
### Chart 772: Netherlands vs. The World – Momentum & Value

Relative EPS trend for Netherlands has improved in last 6m



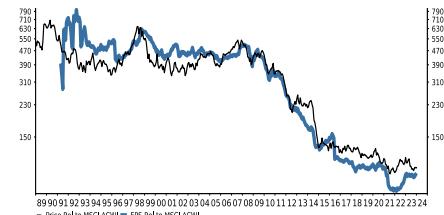
### Chart 773: Norway vs. The World – Momentum & Value

Relative EPS trend for Norway has deteriorated in last 12m



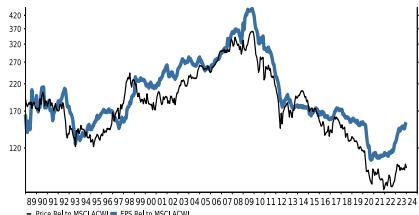
### Chart 774: Portugal vs. The World – Momentum & Value

Portugal has outperformed the world in last 3m



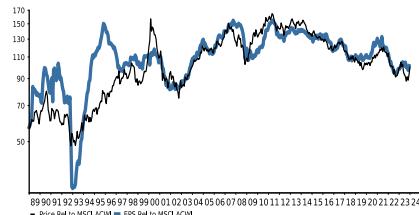
### Chart 775: Spain vs. The World – Momentum & Value

Spain has outperformed the world in last 3m



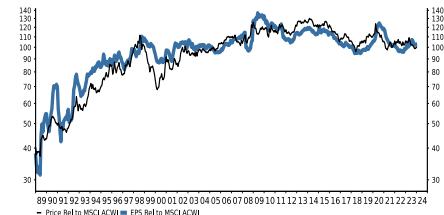
### Chart 776: Sweden vs. The World – Momentum & Value

Sweden has outperformed the world in last 6m



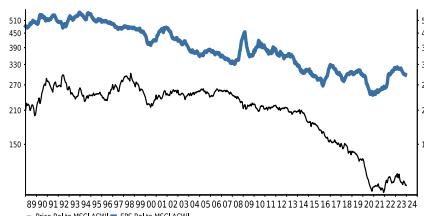
### Chart 777: Switzerland vs. The World – Momentum & Value

Switzerland has underperformed in last 3m



### Chart 778: UK vs. The World – Momentum & Value

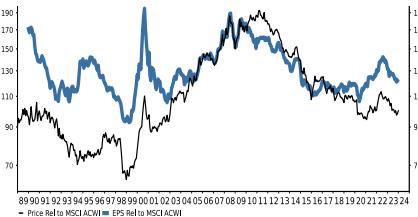
Relative EPS trend for United Kingdom has deteriorated in last 6m



## Canada, Japan, USA

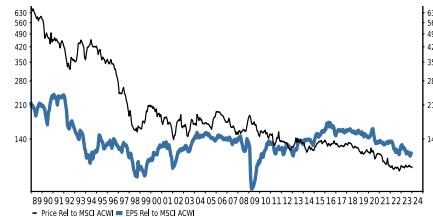
### Chart 779: Canada vs. The World – Momentum & Value

Relative EPS trend for Canada has deteriorated in last 3m



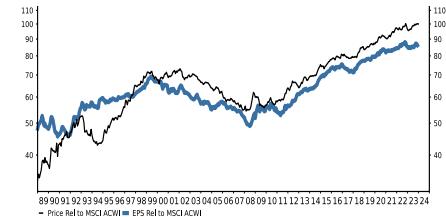
### Chart 780: Japan vs. The World – Momentum & Value

Relative EPS trend for Japan has improved in last 3m



### Chart 781: USA vs. The World – Momentum & Value

Relative EPS trend for USA has improved in last 12m



## Appendix B:

### Quantessential Style Performance

**Table 67: Quantessential Style back-testing results: Jan-89 to Aug-09**

Quantessential Styles back-testing performance across different periods (1m, 3m, 12m, YTD)

Style	1mth	3mth	6mth	12mth	YTD	Last 5yr	Since Inception	Annualised
Quantessential Value	6.1%	19.1%	87.4%	-0.2%	62.7%	52.8%	593.0%	9.82%
Quantessential Growth	1.9%	9.7%	44.1%	-32.5%	22.4%	16.7%	321.1%	7.20%
Quantessential Quality	6.4%	13.1%	50.0%	-18.8%	16.5%	18.1%	306.2%	7.02%
Quantessential Risk	8.7%	27.9%	124.1%	-38.2%	70.8%	12.2%	121.6%	3.93%
Quantessential Momentum	-0.4%	4.4%	17.2%	-37.2%	1.7%	45.8%	496.7%	9.03%
Quantessential Dividend	5.9%	16.3%	69.0%	-22.8%	36.3%	-6.5%	188.0%	5.25%
Quantessential Size	6.8%	13.5%	78.3%	-22.2%	47.5%	2.1%	276.0%	6.62%
MSCI AC World	3.4%	11.5%	47.0%	-18.5%	20.8%	10.3%	127.0%	4.05%

Source : BofA Global Quantitative Strategy, MSCI, IBES, Worldscope, Exshare, S&P, Bloomberg Note: No transaction costs are included in the return figures. Past performance is no guarantee of future results. A complete performance record is available on request. Back-tested 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.

BofA GLOBAL RESEARCH

**Table 68: Quantessential Style Actual Performance Ending Dec-23**

Quantessential Styles actual performance ending Dec-23 across different periods (1m, 3m, 12m, YTD)

Style	1mth	3mth	6mth	12mth	YTD	Since Inception	Annualised
Quantessential Value	7.7%	9.9%	11.8%	26.9%	26.9%	190.2%	7.76%
Quantessential Growth	5.5%	13.8%	5.9%	11.5%	11.5%	259.2%	9.39%
Quantessential Quality	4.0%	9.3%	8.0%	13.5%	13.5%	183.2%	7.58%
Quantessential Risk	12.1%	15.9%	14.1%	30.6%	30.6%	77.0%	4.09%
Quantessential Momentum	5.0%	15.0%	12.1%	21.8%	21.8%	317.7%	10.55%
Quantessential Dividend	8.9%	13.2%	10.3%	18.3%	18.3%	145.5%	6.50%
Quantessential Size	10.9%	12.2%	9.1%	26.3%	26.3%	103.2%	5.10%
MSCI AC World	4.7%	10.7%	6.5%	20.1%	20.1%	153.1%	6.73%

Source : BofA Global Quantitative Strategy, MSCI, IBES, Worldscope, Exshare, S&P, Bloomberg Note: No transaction costs are included in the return figures. The performance figures are updated on a monthly basis. Past performance is no guarantee of future results. A complete performance record is available on request.

BofA GLOBAL RESEARCH

**Table 69: Quantessential Style Actual Performance: Quarterly and Semi-annually**

Quantessential Styles actual performance ending Dec-23 across different periods (quarter, semi-annual)

Style	1Q23'	2Q23'	3Q23'	4Q23'	1H23'	2H23'
Quantessential Value	8.0%	5.1%	1.7%	9.9%	13.5%	11.8%
Quantessential Growth	5.9%	-0.6%	-7.0%	13.8%	5.3%	5.9%
Quantessential Quality	4.9%	0.2%	-1.2%	9.3%	5.2%	8.0%
Quantessential Risk	10.0%	4.0%	-1.5%	15.9%	14.5%	14.1%
Quantessential Momentum	4.4%	4.1%	-2.5%	15.0%	8.6%	12.1%
Quantessential Dividend	3.2%	3.9%	-2.6%	13.2%	7.3%	10.3%
Quantessential Size	11.9%	3.3%	-2.8%	12.2%	15.7%	9.1%
MSCI AC World	6.8%	5.6%	-3.8%	10.7%	12.8%	6.5%

Source : BofA Global Quantitative Strategy, MSCI, IBES, Worldscope, Exshare, S&P, Bloomberg Note: No transaction costs are included in the return figures. The performance figures are updated on a monthly basis. Past performance is no guarantee of future results. A complete performance record is available on request.

BofA GLOBAL RESEARCH



**Table 70: Quantessential Style Advance Decline Ending Dec-23**

Quantessential Styles advance decline ending Dec-23 across different periods (1m, 3m, 12m, YTD)

Style	QE Value		QE Growth		QE Quality		QE Risk		QE Momentum		QE Dividend		QE Size	
	Advance	Decline	Advance	Decline	Advance	Decline	Advance	Decline	Advance	Decline	Advance	Decline	Advance	Decline
Last Month	29	1	25	5	22	8	23	7	19	11	26	4	26	4
Last 3-Months	31	13	40	15	27	11	32	16	39	14	30	8	31	17
Last 6-Months	40	14	51	35	29	18	41	30	49	34	33	16	46	28
Last 12-Months	58	35	82	68	46	32	67	50	82	64	52	35	78	53
Year-To-Date	58	35	82	68	46	32	67	50	82	64	52	35	78	53
Since Inception Sep-09	353	308	490	385	274	196	358	353	420	417	326	272	539	415

Source : BofA Global Quantitative Strategy, MSCI, IBES

BofA GLOBAL RESEARCH

## Appendix C:

### Top 30 Style Performance

**Table 71: Top 30 Style back-testing results: Jan-89 to Aug-09**

Extreme Styles back-testing performance across different periods (1m, 3m, 12m, YTD)

Style	1mth	3mth	6mth	12mth	YTD	Last 5yr	Since Inception	Annualised
Deep Value	5.7%	14.1%	87.0%	-14.6%	50.2%	76.0%	1398.9%	14.00%
Growthiest of Growth	1.0%	9.2%	39.7%	-42.9%	27.3%	48.8%	302.5%	6.97%
Highest Quality	5.0%	12.9%	52.9%	-22.8%	16.4%	-14.1%	581.8%	9.73%
Extreme Risk	13.6%	30.2%	172.9%	-44.1%	89.5%	-6.8%	77.4%	2.81%
Maximum Mo	-3.0%	-0.2%	0.4%	-59.4%	-21.0%	1.9%	414.4%	8.25%
Turbo Dividends	3.7%	14.4%	97.2%	-23.1%	50.1%	14.4%	205.4%	5.55%
Smallest	7.0%	17.6%	111.1%	7.5%	85.8%	21.0%	362.3%	7.69%
MSCI AC World	3.4%	11.5%	47.0%	-18.5%	20.8%	10.3%	127.0%	4.05%

Source : BofA Global Quantitative Strategy, MSCI, IBES, Worldscope, Exshare, S&P, Bloomberg Note: No transaction costs are included in the return figures. Past performance is no guarantee of future results. A complete performance record is available on request. Back-tested 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.

BofA GLOBAL RESEARCH

**Table 72: Top 30 Style Actual Performance Ending Dec-23**

Extreme Styles actual performance ending Dec-23 across different periods (1m, 3m, 12m, YTD)

Style	1mth	3mth	6mth	12mth	YTD	Since Inception	Annualised
Deep Value	4.0%	3.9%	7.3%	19.6%	19.6%	67.9%	3.71%
Growthiest of Growth	8.2%	16.9%	10.0%	28.6%	28.6%	481.5%	13.15%
Highest Quality	5.7%	12.9%	8.0%	18.6%	18.6%	358.6%	11.28%
Extreme Risk	12.4%	22.9%	18.7%	36.5%	36.5%	40.7%	2.43%
Maximum Mo	6.4%	14.9%	11.5%	17.1%	17.1%	323.5%	10.66%
Turbo Dividends	7.1%	8.1%	8.8%	14.5%	14.5%	37.7%	2.27%
Smallest	15.1%	17.0%	10.3%	30.4%	30.4%	56.1%	3.17%
MSCI AC World	4.7%	10.7%	6.5%	20.1%	20.1%	153.1%	6.73%

Source : BofA Global Quantitative Strategy, MSCI, IBES, Worldscope, Exshare, S&P, Bloomberg Note: No transaction costs are included in the return figures. The performance figures are updated on a monthly basis. Past performance is no guarantee of future results. A complete performance record is available on request.

BofA GLOBAL RESEARCH

**Table 73: Top 30 Style Actual Performance: Quarterly and Semi-annually**

Extreme Styles actual performance ending Dec-23 across different periods (quarter, semi-annual)

Style	1Q23'	2Q23'	3Q23'	4Q23'	1H23'	2H23'
Deep Value	7.3%	3.9%	3.3%	3.9%	11.4%	7.3%
Growthiest of Growth	5.8%	10.5%	-5.9%	16.9%	16.9%	10.0%
Highest Quality	6.0%	3.5%	-4.4%	12.9%	9.8%	8.0%
Extreme Risk	12.6%	2.1%	-3.4%	22.9%	15.0%	18.7%
Maximum Mo	3.5%	1.4%	-2.9%	14.9%	5.0%	11.5%
Turbo Dividends	3.9%	1.3%	0.7%	8.1%	5.3%	8.8%
Smallest	10.2%	7.2%	-5.7%	17.0%	18.2%	10.3%
MSCI AC World	6.8%	5.6%	-3.8%	10.7%	12.8%	6.5%

Source : BofA Global Quantitative Strategy, MSCI, IBES, Worldscope, Exshare, S&P, Bloomberg Note: No transaction costs are included in the return figures. The performance figures are updated on a monthly basis. Past performance is no guarantee of future results. A complete performance record is available on request.

BofA GLOBAL RESEARCH



**Table 74: Top 30 Style Advance Decline Ending Dec-23**

Extreme Styles advance decline ending Dec-23 across different periods (1m, 3m, 12m, YTD)

Style	Growthiest of													
	Deep Value		Growth		Highest Quality		Extreme Risk		Maximum Mo		Turbo Dividends		Smallest	
Last Month	Advance	Decline	Advance	Decline	Advance	Decline	Advance	Decline	Advance	Decline	Advance	Decline	Advance	Decline
Last 3-Months	22	8	23	7	26	4	26	4	21	9	23	7	30	0
Last 6-Months	24	18	30	10	33	3	25	17	29	16	25	14	33	11
Last 12-Months	34	20	33	22	29	11	29	26	34	31	35	17	41	28
Year-To-Date	54	28	50	40	37	15	52	44	61	61	54	37	72	39
Since Inception Sep-09	54	28	50	40	37	15	52	44	61	61	54	37	72	39
	290	240	348	325	133	55	288	303	313	335	270	268	415	325

Source : BofA Global Quantitative Strategy, MSCI, IBES

BofA GLOBAL RESEARCH



## Appendix D:

### Top Quintile Style Performance

**Table 75: Top Quintile Style back-testing results: Jan-89 to Aug-09**

Quantessential Styles (top quintile) back-testing performance across different periods (1m, 3m, 12m, YTD)

Style	1mth	3mth	6mth	12mth	YTD	Last 5yr	Since Inception	Annualised
Value (top quintile)	4.7%	16.6%	90.6%	-4.4%	59.4%	73.3%	858.7%	11.56%
Growth (top quintile)	1.1%	11.4%	50.6%	-29.0%	31.0%	46.2%	561.6%	9.57%
Quality (top quintile)	3.9%	14.0%	57.4%	-9.8%	29.5%	25.0%	589.5%	9.79%
Risk (top quintile)	5.3%	20.0%	133.5%	-12.6%	84.7%	91.3%	965.3%	12.13%
Momentum (top quintile)	-1.6%	8.9%	28.9%	-29.5%	10.1%	56.8%	1660.3%	14.89%
Dividend (top quintile)	2.8%	13.6%	82.8%	-5.8%	57.0%	51.6%	418.2%	8.29%
Size (top quintile)	3.3%	14.9%	92.8%	-5.7%	60.0%	30.4%	535.4%	9.36%
MSCI AC World (EW)	3.3%	13.6%	66.4%	-10.6%	39.1%	39.9%	332.9%	7.35%

Source : BofA Global Quantitative Strategy, MSCI, IBES, Worldscope, Exshare, S&amp;P, Bloomberg

Note: No transaction costs are included in the return figures. Past performance is no guarantee of future results. A complete performance record is available on request. Back-tested performance is hypothetical in nature and reflects application of the screen prior to its introduction and is not intended to be indicative of future returns.

BofA GLOBAL RESEARCH

**Table 76: Top Quintile Style Actual Performance Ending Dec-23**

Quantessential Styles (top quintile) actual performance ending Dec-23 across different periods (1m, 3m, 12m, YTD)

Style	1mth	3mth	6mth	12mth	YTD	Since Inception	Annualised
Value (top quintile)	3.6%	5.2%	4.7%	8.8%	8.8%	47.6%	2.77%
Growth (top quintile)	3.4%	5.9%	2.0%	5.3%	5.3%	159.4%	6.92%
Quality (top quintile)	5.7%	11.5%	8.7%	18.3%	18.3%	199.2%	7.99%
Risk (top quintile)	7.8%	12.5%	7.2%	17.0%	17.0%	57.6%	3.24%
Momentum (top quintile)	5.2%	10.4%	5.2%	7.0%	7.0%	155.6%	6.81%
Dividend (top quintile)	4.6%	4.8%	2.6%	4.7%	4.7%	42.1%	2.50%
Size (top quintile)	2.6%	3.4%	-1.8%	-3.3%	-3.3%	69.7%	3.78%
MSCI AC World (EW)	4.3%	7.4%	2.9%	6.7%	6.7%	76.2%	4.06%

Source : BofA Global Quantitative Strategy, MSCI, IBES, Worldscope, Exshare, S&amp;P, Bloomberg

Note: No transaction costs are included in the return figures. The performance figures are updated on a monthly basis.

Past performance is no guarantee of future results. A complete performance record is available on request.

BofA GLOBAL RESEARCH

**Table 77: Top Quintile Style Actual Performance: Quarterly and Semi-annually**

Quantessential Styles (top quintile) actual performance ending Dec-23 across different periods (quarter, semi-annual)

Style	1Q23'	2Q23'	3Q23'	4Q23'	1H23'	2H23'
Value (top quintile)	5.2%	-1.3%	-0.5%	5.2%	3.9%	4.7%
Growth (top quintile)	4.1%	-0.8%	-3.7%	5.9%	3.3%	2.0%
Quality (top quintile)	5.7%	2.9%	-2.5%	11.5%	8.8%	8.7%
Risk (top quintile)	8.2%	0.9%	-4.8%	12.5%	9.2%	7.2%
Momentum (top quintile)	0.6%	1.1%	-4.7%	10.4%	1.7%	5.2%
Dividend (top quintile)	4.5%	-2.3%	-2.1%	4.8%	2.1%	2.6%
Size (top quintile)	5.8%	-7.0%	-5.0%	3.4%	-1.5%	-1.8%
MSCI AC World (EW)	4.4%	-0.7%	-4.2%	7.4%	3.7%	2.9%

Source : BofA Global Quantitative Strategy, MSCI, IBES, Worldscope, Exshare, S&amp;P, Bloomberg

Note: No transaction costs are included in the return figures. The performance figures are updated on a monthly basis.

Past performance is no guarantee of future results. A complete performance record is available on request.

BofA GLOBAL RESEARCH



**Table 78: Top Quintile Style Advance Decline Ending Dec-23**

Quantessential Styles (top quintile) advance decline ending Dec-23 across different periods (1m, 3m, 12m, YTD)

Style	Value		Growth		Quality		Risk		Momentum		Dividend		Size	
	(top quintile)		(top quintile)		(top quintile)		(top quintile)		(top quintile)		(top quintile)		(top quintile)	
Last Month	Advance	Decline												
Last 3-Months	402	169	377	178	324	66	506	78	449	135	397	106	317	268
Last 6-Months	412	254	518	349	358	57	485	153	526	241	403	154	359	300
Last 12-Months	478	304	655	619	293	142	451	242	573	457	412	258	384	418
Year-To-Date	630	416	1165	1055	315	156	512	283	817	801	536	379	529	527
Since Inception Sep-09	2835	1910	6188	6275	742	454	1765	1688	3500	4003	2443	1797	2569	1798

Source : BofA Global Quantitative Strategy, MSCI, IBES, Worldscope, Exshare, S&amp;P, Bloomberg

BofA GLOBAL RESEARCH

## Appendix E: Boosters Performance

**Table 79: Boosters back-testing results: Jan-98 to Aug-08**

Boosters back-testing performance across different periods (1m, 3m, 12m, YTD)

<b>Boosters</b>	<b>1mth</b>	<b>3mth</b>	<b>6mth</b>	<b>12mth</b>	<b>YTD</b>	<b>Last 5yr</b>	<b>Since Inception</b>	<b>Annualised</b>
Global	-19.4%	-30%	-34%	-47%	-41%	38%	33%	2.7%
USA	-21.0%	-29%	-29%	-44%	-37%	-4%	2%	0.2%
Europe	-24.9%	-32%	-33%	-42%	-36%	58%	24%	2.0%
Japan	-13.6%	-24%	-24%	-37%	-31%	17%	60%	4.5%
Asia Pac ex-Japan	-17.3%	-32%	-40%	-54%	-51%	25%	-8%	-0.8%
Emerging Markets	-23.4%	-34%	-46%	-58%	-56%	62%	209%	11.1%
Australia	-14.9%	-41%	-44%	-50%	-51%	121%	187%	10.3%

Source : BofA Global Quantitative Strategy, MSCI, IBES, Worldscope, Exshare, S&P, Bloomberg Note: No transaction costs are included in the return figures. Past performance is no guarantee of future results. A complete performance record is available on request. Back-tested 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.

BofA GLOBAL RESEARCH

**Table 80: Boosters Actual Performance Ending Dec-23**

Boosters actual performance ending Dec-23 across different periods (1m, 3m, 12m, YTD)

<b>Boosters</b>	<b>1mth</b>	<b>3mth</b>	<b>6mth</b>	<b>12mth</b>	<b>YTD</b>	<b>Since Inception</b>	<b>Annualised</b>
Global	9.7%	4%	3%	0%	0%	59%	3.1%
USA	5.9%	7%	11%	10%	10%	405%	11.2%
Europe	7.4%	10%	11%	13%	13%	31%	1.8%
Japan	3.3%	5%	8%	24%	24%	54%	2.9%
Asia Pac ex-Japan	6.3%	3%	-3%	0%	0%	50%	2.7%
Emerging Markets	6.9%	8%	2%	4%	4%	49%	2.6%
Australia	17.9%	18%	4%	-10%	-10%	-74%	-8.5%

Source : BofA Global Quantitative Strategy, MSCI, IBES, Worldscope, Exshare, S&P, Bloomberg Note: No transaction costs are included in the return figures. The performance figures are updated on a monthly basis. Past performance is no guarantee of future results. A complete performance record is available on request.

BofA GLOBAL RESEARCH

**Table 81: Boosters Advance Decline Ending Dec-23**

Boosters advance decline ending Dec-23 across different periods (1m, 3m, 12m, YTD)

<b>Region</b>	<b>Global</b>		<b>USA</b>		<b>Europe</b>		<b>Japan</b>		<b>Asia Pac ex-Japan</b>		<b>Emerging Markets</b>		<b>Australia</b>	
	Advance	Decline	Advance	Decline	Advance	Decline	Advance	Decline	Advance	Decline	Advance	Decline	Advance	Decline
Last Month	24	4	20	10	23	7	22	8	20	9	23	7	7	1
Last 3-Months	26	16	22	17	24	16	22	18	22	17	27	17	6	7
Last 6-Months	35	20	33	16	36	15	32	19	27	24	32	30	12	9
Last 12-Months	44	39	37	26	37	34	53	21	31	41	46	51	15	15
Year-To-Date	44	39	37	26	37	34	53	21	31	41	46	51	15	15
Since Inception Sep-08	246	235	443	292	383	379	406	418	219	265	644	673	163	172

Source : BofA Global Quantitative Strategy, MSCI, IBES, Exshare

BofA GLOBAL RESEARCH



**Table 82: Boosters Monthly Performance Last 12 months**

Boosters actual performance ending Dec-23 for last 12-months

<b>Boosters</b>	<b>Jan-23</b>	<b>Feb-23</b>	<b>Mar-23</b>	<b>Apr-23</b>	<b>May-23</b>	<b>Jun-23</b>	<b>Jul-23</b>	<b>Aug-23</b>	<b>Sep-23</b>	<b>Oct-23</b>	<b>Nov-23</b>	<b>Dec-23</b>
Global	7.5%	-5.7%	-2.2%	-0.3%	-8.3%	6.5%	8.5%	-6.6%	-1.8%	-10.4%	5.5%	9.7%
USA	13.7%	-4.8%	-9.5%	-2.3%	-6.0%	9.7%	10.0%	-0.7%	-4.6%	-5.9%	7.2%	5.9%
Europe	8.3%	-1.4%	-4.5%	2.7%	-7.9%	5.7%	7.1%	-5.4%	0.0%	-7.4%	10.4%	7.4%
Japan	8.1%	0.0%	1.4%	-0.3%	1.8%	2.8%	6.9%	-1.9%	-2.1%	-6.3%	8.8%	3.3%
Asia Pac ex-Japan	10.3%	-5.7%	1.3%	1.3%	-8.0%	4.6%	6.0%	-8.3%	-2.8%	-8.2%	5.6%	6.3%
Emerging Markets	10.7%	-4.7%	0.0%	-0.7%	-5.2%	2.7%	7.7%	-8.9%	-3.7%	-8.0%	10.1%	6.9%
Australia	13.3%	-14.8%	-9.9%	0.1%	-5.6%	5.6%	0.2%	-8.2%	-3.9%	-9.8%	10.7%	17.9%

Source : BofA Global Quantitative Strategy, MSCI, IBES, Worldscope, Exshare, S&amp;P, Bloomberg Note: No transaction costs are included in the return figures. The performance figures are updated on a monthly basis.

Past performance is no guarantee of future results. A complete performance record is available on request.

BofA GLOBAL RESEARCH

**Table 83: Boosters Monthly Performance Advance Decline Ending Dec-23**

Boosters advance decline ending Dec-23 for last 12-months

<b>Region</b>	<b>Global</b>	<b>USA</b>		<b>Europe</b>		<b>Japan</b>		<b>Asia Pac ex-Japan</b>		<b>Emerging Markets</b>		<b>Australia</b>		
	Advance	Decline	Advance	Decline	Advance	Decline	Advance	Decline	Advance	Decline	Advance	Decline	Advance	Decline
Dec-23	24	6	20	10	23	7	22	8	20	9	23	7	7	1
Nov-23	24	6	15	15	26	4	24	6	19	11	23	7	7	2
Oct-23	3	27	6	24	5	25	1	29	1	29	3	27	0	10
Sep-23	10	23	7	23	15	13	9	21	10	20	11	19	4	5
Aug-23	7	23	17	13	6	24	11	19	4	26	3	27	3	7
Jul-23	24	6	27	3	26	4	26	4	21	9	21	9	6	4
Jun-23	26	4	30	0	23	6	20	10	25	5	22	8	7	3
May-23	26	4	6	24	1	29	13	17	25	5	12	18	5	5
Apr-23	6	24	6	24	1	29	13	17	6	24	12	18	5	5
Mar-23	20	10	14	16	20	10	13	17	17	13	12	18	4	6
Feb-23	13	17	6	24	12	18	20	10	14	16	11	19	1	9
Jan-23	5	25	7	23	11	19	13	17	5	25	6	24	1	9

Source : BofA Global Quantitative Strategy, MSCI, IBES, Exshare

BofA GLOBAL RESEARCH

**Table 84: Benchmark Performance: Jan-98 to Aug-08**

MSCI regional benchmarks back-testing performance across different periods (1m, 3m, 12m, YTD)

<b>Benchmark</b>	<b>1mth</b>	<b>3mth</b>	<b>6mth</b>	<b>12mth</b>	<b>YTD</b>	<b>Last 5yr</b>	<b>Since Inception</b>	<b>Annualised</b>
MSCI AC World	-12.7%	-17%	-19%	-28%	-27%	34%	29%	2.4%
MSCI USA	-9.3%	-9%	-12%	-23%	-20%	18%	19%	1.6%
MSCI Europe	-15.2%	-21%	-26%	-33%	-33%	47%	35%	2.9%
MSCI Japan	-11.9%	-18%	-16%	-28%	-24%	17%	9%	0.8%
MSCI Asia Pac ex-Japan	-17.1%	-25%	-29%	-40%	-39%	67%	72%	5.2%
MSCI Emerging Markets	-17.7%	-28%	-29%	-35%	-37%	108%	91%	6.2%
MSCI Australia	-10.3%	-12%	-13%	-30%	-27%	49%	80%	5.6%

Source : BofA Global Quantitative Strategy, MSCI, IBES, Exshare

BofA GLOBAL RESEARCH

**Table 85: Benchmark Performance Ending Dec-23**

MSCI regional benchmarks actual performance ending Dec-23 across different periods (1m, 3m, 12m, YTD)

<b>Benchmark</b>	<b>1mth</b>	<b>3mth</b>	<b>6mth</b>	<b>12mth</b>	<b>YTD</b>	<b>Since Inception</b>	<b>Annualised</b>
MSCI AC World	4.7%	11%	6%	20%	20%	147%	6.1%
MSCI USA	4.6%	11%	8%	25%	25%	311%	9.7%
MSCI Europe	4.9%	11%	5%	17%	17%	41%	2.3%
MSCI Japan	4.3%	8%	5%	18%	18%	59%	3.1%
MSCI Asia Pac ex-Japan	4.5%	7%	3%	5%	5%	64%	3.3%
MSCI Emerging Markets	3.7%	7%	3%	7%	7%	30%	1.7%
MSCI Australia	7.3%	8%	6%	9%	9%	63%	3.3%

Source : BofA Global Quantitative Strategy, MSCI, IBES, Exshare

BofA GLOBAL RESEARCH



## Appendix F:

### Bunkers Performance

**Table 86: Bunkers back-testing results: Jan-98 to Aug-08**

Bunkers back-testing performance across different periods (1m, 3m, 12m, YTD)

Bunkers	1mth	3mth	6mth	12mth	YTD	Last 5yr	Since Inception	Annualised
Global	-5.2%	-2%	-8%	-16%	-14%	52%	77%	5.5%
USA	-7.0%	-2%	-7%	-15%	-13%	19%	46%	3.6%
Europe	-11.2%	-15%	-23%	-31%	-29%	57%	51%	3.9%
Japan	-13.2%	-20%	-18%	-25%	-23%	53%	70%	5.1%
Asia Pac ex-Japan	-12.9%	-19%	-23%	-34%	-33%	69%	59%	4.4%
Emerging Markets	-15.1%	-17%	-17%	-26%	-29%	188%	547%	19.0%
Australia	-11.9%	-9%	-12%	-30%	-23%	66%	180%	10.0%

Source : BofA Global Quantitative Strategy, MSCI, IBES, Worldscope, Exshare, S&P, Bloomberg Note: No transaction costs are included in the return figures. Past performance is no guarantee of future results. A complete performance record is available on request. Back-tested 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.

BofA GLOBAL RESEARCH

**Table 87: Bunkers Actual Performance Ending Dec-23**

Bunkers actual performance ending Dec-23 across different periods (1m, 3m, 12m, YTD)

Bunkers	1mth	3mth	6mth	12mth	YTD	Since Inception	Annualised
Global	2.7%	10%	2%	6%	6%	204%	7.6%
USA	3.8%	10%	0%	7%	7%	226%	8.1%
Europe	4.6%	11%	6%	16%	16%	71%	3.6%
Japan	4.0%	6%	6%	13%	13%	43%	2.4%
Asia Pac ex-Japan	6.7%	9%	4%	16%	16%	140%	5.9%
Emerging Markets	5.1%	9%	3%	13%	13%	48%	2.6%
Australia	9.7%	15%	4%	9%	9%	56%	3.0%

Source : BofA Global Quantitative Strategy, MSCI, IBES, Worldscope, Exshare, S&P, Bloomberg Note: No transaction costs are included in the return figures. The performance figures are updated on a monthly basis. Past performance is no guarantee of future results. A complete performance record is available on request.

BofA GLOBAL RESEARCH

**Table 88: Bunkers Advance Decline Ending Dec-23**

Bunkers advance decline ending Dec-23 across different periods (1m, 3m, 12m, YTD)

Region	Global		USA	Europe	Japan	Asia Pac ex-Japan	Emerging Markets	Australia
	Advance	Decline	Advance	Decline	Advance	Decline	Advance	Decline
Last Month	24	6	22	8	26	4	27	3
Last 3-Months	32	7	33	7	30	10	26	10
Last 6-Months	26	22	26	25	28	23	31	15
Last 12-Months	46	29	43	30	53	28	51	23
Year-To-Date	46	29	43	30	53	28	51	23
Since Inception Sep-08	225	154	415	252	396	293	341	306

Source : BofA Global Quantitative Strategy, MSCI, IBES, Exshare

BofA GLOBAL RESEARCH



**Table 89: Bunkers Monthly Performance Last 12 months**

Bunkers actual performance ending Dec-23 for last 12-months

Bunkers	Jan-23	Feb-23	Mar-23	Apr-23	May-23	Jun-23	Jul-23	Aug-23	Sep-23	Oct-23	Nov-23	Dec-23
Global	3.5%	-3.9%	4.1%	1.2%	-3.4%	2.7%	0.9%	-3.5%	-4.7%	-0.6%	7.3%	2.7%
USA	3.9%	-3.2%	4.6%	1.6%	-3.6%	3.3%	1.5%	-4.2%	-6.2%	-0.4%	6.2%	3.8%
Europe	8.4%	-1.7%	2.9%	5.0%	-8.1%	3.8%	2.9%	-3.2%	-4.5%	-3.5%	10.2%	4.6%
Japan	3.5%	-4.4%	3.2%	2.1%	1.9%	0.6%	2.3%	0.2%	-2.1%	-3.2%	4.8%	4.0%
Asia Pac ex-Japan	7.0%	-2.5%	1.5%	1.0%	1.9%	1.9%	-0.1%	-4.7%	0.3%	-3.5%	6.0%	6.7%
Emerging Markets	3.6%	-3.5%	4.0%	1.7%	-1.1%	4.6%	2.2%	-5.7%	-2.2%	-1.8%	6.1%	5.1%
Australia	12.7%	-5.4%	-2.2%	1.1%	-4.4%	3.4%	2.6%	-7.7%	-4.2%	-5.1%	10.2%	9.7%

Source : BofA Global Quantitative Strategy, MSCI, IBES, Worldscope, Exshare, S&P, Bloomberg Note: No transaction costs are included in the return figures. The performance figures are updated on a monthly basis. Past performance is no guarantee of future results. A complete performance record is available on request.

BofA GLOBAL RESEARCH

**Table 90: Bunkers Monthly Performance Advance Decline Ending Dec-23**

Bunkers advance decline ending Dec-23 for last 12-months

Region	Global		USA		Europe		Japan		Asia Pac ex-Japan		Emerging Markets		Australia	
	Advance	Decline	Advance	Decline	Advance	Decline	Advance	Decline	Advance	Decline	Advance	Decline	Advance	Decline
Dec-23	24	6	22	8	26	4	27	3	29	1	27	3	10	0
Nov-23	26	4	27	3	28	2	26	4	28	2	26	4	10	0
Oct-23	14	16	16	14	7	23	5	25	6	24	9	21	0	10
Sep-23	7	25	3	27	5	25	10	20	13	17	9	21	2	8
Aug-23	8	22	6	24	4	26	15	15	5	25	3	27	1	9
Jul-23	18	12	21	9	19	11	19	11	13	17	18	12	5	5
Jun-23	21	9	23	7	20	10	20	10	19	11	25	5	9	1
May-23	21	9	6	24	1	29	16	14	19	11	8	22	0	10
Apr-23	8	22	6	24	1	29	16	14	15	15	8	22	0	10
Mar-23	20	10	20	10	26	4	19	11	18	12	19	11	7	3
Feb-23	23	7	25	5	21	9	24	6	19	11	20	10	3	7
Jan-23	10	20	10	20	9	21	4	26	9	21	7	23	1	9

Source : BofA Global Quantitative Strategy, MSCI, IBES, Exshare

BofA GLOBAL RESEARCH

**Table 91: Benchmark Performance Last 12 months**

MSCI regional benchmarks actual performance ending Dec-23 for last 12-months

Benchmark	Jan-23	Feb-23	Mar-23	Apr-23	May-23	Jun-23	Jul-23	Aug-23	Sep-23	Oct-23	Nov-23	Dec-23
MSCI AC World	7.1%	-3.0%	2.8%	1.3%	-1.3%	5.6%	3.6%	-3.0%	-4.3%	-3.1%	9.1%	4.7%
MSCI USA	6.5%	-2.6%	3.4%	1.2%	0.5%	6.5%	3.3%	-1.9%	-4.8%	-2.4%	9.2%	4.6%
MSCI Europe	8.6%	-0.8%	2.0%	3.6%	-6.5%	4.6%	3.0%	-4.2%	-4.0%	-3.8%	9.7%	4.9%
MSCI Japan	6.2%	-3.9%	2.9%	0.4%	1.8%	4.0%	3.0%	-2.4%	-2.8%	-4.5%	8.5%	4.3%
MSCI Asia Pac ex-Japan	8.6%	-6.9%	2.5%	-1.8%	-2.7%	2.6%	5.4%	-6.4%	-3.0%	-4.1%	7.3%	4.5%
MSCI Emerging Markets	7.9%	-6.5%	2.7%	-1.3%	-1.9%	3.2%	5.8%	-6.4%	-2.8%	-3.9%	7.9%	3.7%
MSCI Australia	6.5%	-2.9%	-1.0%	1.5%	-3.3%	2.0%	2.7%	-1.2%	-3.2%	-3.3%	4.3%	7.3%

Source : BofA Global Quantitative Strategy, MSCI, IBES, Exshare

BofA GLOBAL RESEARCH



## Appendix G:

### Boosters By Investor Type Performance

**Table 92: Boosters By Investor Type back-testing results: Jan-96 to Aug-16**

Boosters By Investor Type back-testing performance across different periods (1m, 3m, 12m, YTD)

<b>Boosters By Type</b>	<b>1mth</b>	<b>3mth</b>	<b>6mth</b>	<b>12mth</b>	<b>YTD</b>	<b>Last 5yr</b>	<b>Since Inception</b>	<b>Annualised</b>
Global Deep Value Boosters	3.6%	10.8%	18.6%	9.3%	1.1%	-10.5%	1225%	13.3%
USA Deep Value Boosters	2.4%	1.5%	10.3%	-1.1%	-2.4%	98.5%	889%	11.7%
Europe Deep Value Boosters	2.0%	2.0%	12.7%	1.1%	-1.8%	40.4%	398%	8.1%
Japan Deep Value Boosters	7.3%	8.7%	23.7%	2.1%	2.2%	22.0%	203%	5.5%
APxJ Deep Value Boosters	1.3%	11.6%	21.9%	9.3%	12.0%	5.0%	2590%	17.3%
EM Deep Value Boosters	0.3%	14.9%	26.1%	17.7%	19.9%	-1.3%	3511%	19.0%
Global Growthiest Boosters	3.5%	11.0%	21.0%	12.8%	6.2%	27.5%	1719%	15.1%
USA Growthiest Boosters	0.5%	2.7%	13.7%	1.7%	-0.6%	71.6%	326%	7.3%
Europe Growthiest Boosters	0.9%	1.7%	11.6%	1.9%	0.5%	40.0%	211%	5.6%
Japan Growthiest Boosters	1.4%	3.1%	14.7%	3.0%	-2.0%	31.1%	56%	2.2%
APxJ Growthiest Boosters	4.8%	13.3%	23.9%	21.8%	14.8%	3.1%	1057%	12.6%
EM Growthiest Boosters	2.1%	20.9%	34.8%	36.8%	32.6%	-3.1%	1369%	13.9%
Global High Quality Boosters	3.5%	7.7%	16.5%	5.5%	7.8%	39.2%	1626%	14.8%
USA High Quality Boosters	1.8%	1.0%	13.8%	2.3%	3.8%	76.1%	486%	8.9%
Europe High Quality Boosters	3.6%	3.1%	10.9%	2.0%	2.9%	24.6%	329%	7.3%
Japan High Quality Boosters	1.9%	6.7%	17.7%	7.1%	4.1%	25.2%	127%	4.0%
APxJ High Quality Boosters	6.4%	14.5%	22.6%	13.9%	1.7%	4.2%	555%	9.5%
EM High Quality Boosters	2.3%	10.2%	23.2%	15.7%	6.5%	-12.6%	1126%	12.9%
Global High Yield Boosters	3.4%	11.0%	20.3%	11.2%	5.5%	1.9%	1521%	14.4%
USA High Yield Boosters	2.1%	5.0%	17.0%	7.0%	7.0%	100.2%	929%	11.9%
Europe High Yield Boosters	2.7%	0.4%	9.7%	-4.8%	-0.5%	21.0%	185%	5.2%
Japan High Yield Boosters	5.6%	6.5%	20.6%	7.3%	3.2%	43.4%	172%	5.0%
APxJ High Yield Boosters	2.6%	12.7%	20.4%	9.2%	5.7%	-10.5%	832%	11.4%
EM High Yield Boosters	3.8%	25.9%	34.1%	18.3%	21.5%	5.4%	1830%	15.4%

Source : BofA Global Quantitative Strategy, MSCI, Exshare Note: No transaction costs are included in the return figures. Past performance is no guarantee of future results. A complete performance record is available on request. Back-tested 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.

BofA GLOBAL RESEARCH

**Table 93: Boosters By Investor Type Actual Performance Ending Dec-23**

Boosters By Investor Type actual performance ending Dec-23 across different periods (1m, 3m, 12m, YTD)

<b>Boosters By Type</b>	<b>1mth</b>	<b>3mth</b>	<b>6mth</b>	<b>12mth</b>	<b>YTD</b>	<b>Since Inception</b>	<b>Annualised</b>
Global Deep Value Boosters	2.5%	6.7%	5.6%	14.3%	14.3%	142.3%	12.8%
USA Deep Value Boosters	7.8%	11.7%	11.6%	10.5%	10.5%	85.1%	8.8%
Europe Deep Value Boosters	4.9%	10.4%	9.3%	22.1%	22.1%	49.4%	5.6%
Japan Deep Value Boosters	2.7%	3.0%	10.6%	32.7%	32.7%	29.0%	3.5%
APxJ Deep Value Boosters	1.9%	3.1%	-4.5%	-8.9%	-8.9%	16.8%	2.1%
EM Deep Value Boosters	0.4%	7.1%	3.6%	14.2%	14.2%	29.5%	3.6%
Global Growthiest Boosters	2.7%	7.1%	-1.8%	11.2%	11.2%	220.3%	17.2%
USA Growthiest Boosters	8.5%	13.2%	9.9%	13.6%	13.6%	179.6%	15.0%
Europe Growthiest Boosters	6.6%	15.4%	12.9%	32.3%	32.3%	53.2%	6.0%
Japan Growthiest Boosters	4.2%	4.8%	7.7%	34.8%	34.8%	38.6%	4.5%
APxJ Growthiest Boosters	0.9%	4.8%	-0.8%	-2.6%	-2.6%	142.6%	12.8%
EM Growthiest Boosters	2.0%	8.3%	7.1%	13.9%	13.9%	145.8%	13.1%
Global High Quality Boosters	4.5%	8.5%	5.2%	9.2%	9.2%	40.6%	4.8%
USA High Quality Boosters	9.5%	18.3%	12.9%	27.9%	27.9%	153.2%	13.5%
Europe High Quality Boosters	6.0%	10.7%	9.2%	24.0%	24.0%	41.2%	4.8%
Japan High Quality Boosters	6.0%	5.8%	3.9%	18.9%	18.9%	36.4%	4.3%
APxJ High Quality Boosters	2.9%	5.8%	2.1%	-2.8%	-2.8%	31.5%	3.8%
EM High Quality Boosters	-0.7%	0.9%	0.1%	-9.5%	-9.5%	75.9%	8.0%
Global High Yield Boosters	6.8%	14.9%	15.3%	12.8%	12.8%	63.2%	6.9%
USA High Yield Boosters	6.3%	9.6%	10.5%	8.2%	8.2%	70.4%	7.5%
Europe High Yield Boosters	6.3%	13.0%	10.9%	14.9%	14.9%	18.4%	2.3%
Japan High Yield Boosters	2.8%	4.8%	12.2%	31.5%	31.5%	48.0%	5.5%
APxJ High Yield Boosters	2.9%	2.7%	-4.3%	-8.5%	-8.5%	47.2%	5.4%
EM High Yield Boosters	5.5%	7.3%	5.6%	2.3%	2.3%	30.3%	3.7%

Source : BofA Global Quantitative Strategy, MSCI, Exshare Note: No transaction costs are included in the return figures. The performance figures are updated on a monthly basis. Past performance is no guarantee of future results. A complete performance record is available on request.

BofA GLOBAL RESEARCH



**Table 94: Boosters By Investor Type Advance Decline Ending Dec-23**

Boosters By Investor Type advance decline ending Dec-23 across different periods (1m, 3m, 12m, YTD)

<b>Style</b>	<b>Last Month</b>		<b>Last 3-Months</b>		<b>Last 6-Months</b>		<b>Last 12-Months</b>		<b>Year-To-Date</b>		<b>Since Inception</b>	
	Advance	Decline	Advance	Decline	Advance	Decline	Advance	Decline	Advance	Decline	Advance	Decline
Global Deep Value Boosters	26	4	19	20	67	31	78	69	75	64	400	366
USA Deep Value Boosters	19	6	13	21	29	16	29	38	32	33	253	211
Europe Deep Value Boosters	24	1	16	13	32	9	47	19	43	19	261	206
Japan Deep Value Boosters	23	2	21	15	41	15	67	25	67	19	362	259
APxJ Deep Value Boosters	15	10	16	19	21	27	40	49	35	45	250	269
EM Deep Value Boosters	18	7	20	15	22	19	46	37	39	38	242	243
Global Growthiest Boosters	24	6	21	25	64	48	84	90	87	77	422	380
USA Growthiest Boosters	20	5	17	17	32	18	38	53	40	46	272	244
Europe Growthiest Boosters	25	0	19	15	32	11	52	32	51	28	325	260
Japan Growthiest Boosters	23	2	16	19	30	26	62	36	61	32	369	320
APxJ Growthiest Boosters	20	5	11	28	21	33	36	63	33	59	288	341
EM Growthiest Boosters	20	5	13	26	28	28	47	62	41	60	321	331
Global High Quality Boosters	28	2	21	18	62	43	77	68	72	66	341	345
USA High Quality Boosters	25	0	16	13	29	9	39	33	42	26	223	182
Europe High Quality Boosters	20	5	19	13	28	15	48	24	43	24	210	202
Japan High Quality Boosters	20	5	11	22	18	28	40	32	40	30	265	220
APxJ High Quality Boosters	20	5	14	18	22	25	30	47	30	42	224	245
EM High Quality Boosters	20	5	17	21	29	23	40	43	35	47	251	252
Global High Yield Boosters	25	5	25	21	72	38	82	68	81	63	393	337
USA High Yield Boosters	20	5	15	23	35	22	39	52	43	42	347	293
Europe High Yield Boosters	23	2	19	16	32	13	44	30	41	29	268	229
Japan High Yield Boosters	22	3	24	16	42	17	61	22	60	19	346	259
APxJ High Yield Boosters	15	10	17	24	23	32	45	58	35	58	301	318
EM High Yield Boosters	16	9	14	24	24	30	45	57	40	53	325	315

Source : BofA Global Quantitative Strategy, MSCI, Exshare

BofA GLOBAL RESEARCH

**Table 95: Benchmark Performance: Jan-96 to Aug-16**

MSCI regional benchmarks back-testing performance across different periods (1m, 3m, 12m, YTD)

<b>Benchmark</b>	<b>1mth</b>	<b>3mth</b>	<b>6mth</b>	<b>12mth</b>	<b>YTD</b>	<b>Last 5yr</b>	<b>Since Inception</b>	<b>Annualised</b>
MSCI World	0.1%	3.5%	12.1%	5.0%	4.3%	34.1%	129.0%	4.1%
MSCI USA	-0.1%	3.7%	12.7%	9.5%	6.1%	77.5%	256.0%	6.3%
MSCI Europe	0.0%	-0.8%	5.6%	-6.0%	-3.5%	9.2%	100.4%	3.4%
MSCI Japan	0.3%	4.1%	12.0%	1.0%	-0.1%	25.5%	-16.2%	-0.9%
MSCI Asia Pac ex Japan	1.7%	8.8%	18.5%	10.0%	8.0%	1.3%	66.0%	2.5%
MSCI GEM	2.3%	10.7%	20.7%	9.2%	12.5%	-13.5%	95.0%	3.3%

Source : BofA Global Quantitative Strategy, MSCI, Exshare

BofA GLOBAL RESEARCH

**Table 96: Benchmark Performance Ending Dec-23**

MSCI regional benchmarks actual performance ending Dec-23 across different periods (1m, 3m, 12m, YTD)

<b>Benchmark</b>	<b>1mth</b>	<b>3mth</b>	<b>6mth</b>	<b>12mth</b>	<b>YTD</b>	<b>Since Inception</b>	<b>Annualised</b>
MSCI World	4.7%	10.7%	6.5%	20.1%	20.1%	74.5%	7.9%
MSCI USA	4.6%	11.5%	7.6%	25.0%	25.0%	120.1%	11.4%
MSCI Europe	4.9%	10.7%	4.8%	16.7%	16.7%	37.4%	4.4%
MSCI Japan	4.3%	8.0%	5.5%	17.8%	17.8%	31.8%	3.8%
MSCI Asia Pac ex Japan	4.5%	7.5%	2.9%	4.6%	4.6%	19.1%	2.4%
MSCI GEM	3.7%	7.4%	3.5%	7.0%	7.0%	14.6%	1.9%

Source : BofA Global Quantitative Strategy, MSCI, Exshare

BofA GLOBAL RESEARCH



## Appendix H:

### Interest Rate Sensitivity Performance

**Table 97: Interest Rate Sensitivity back-testing results: Jan-89 to May-04**

Interest Rate Sensitivity back-testing performance across different periods (1m, 3m, 12m, YTD)

Interest Rate Sensitivity	1mth	3mth	6mth	12mth	YTD	Last 5yr	Since	Annualised
Short Duration	-3.5%	-9%	5%	46%	-2%	-2%	160%	6.4%
Quintile 2	-1.7%	-6%	7%	40%	0%	25%	153%	6.2%
Quintile 3	-0.3%	-2%	10%	40%	3%	27%	175%	6.8%
Quintile 4	0.1%	-1%	10%	35%	3%	35%	242%	8.3%
Long Duration	0.8%	0%	11%	32%	5%	41%	366%	10.5%
MSCI AC World (EW)	-0.9%	-4%	9%	39%	2%	28%	207%	7.6%

Source : BofA Global Quantitative Strategy, MSCI, IBES, Worldscope, Exshare, S&P, Bloomberg Note: No transaction costs are included in the return figures. Past performance is no guarantee of future results. A complete performance record is available on request. Back-tested 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.

BofA GLOBAL RESEARCH

**Table 98: Interest Rate Sensitivity Actual Performance Ending Dec-23**

Interest Rate Sensitivity actual performance ending Dec-23 across different periods (1m, 3m, 12m, YTD)

Interest Rate Sensitivity	1mth	3mth	6mth	12mth	YTD	Last 5yr	Since	Annualised
Short Duration	5.5%	8%	8%	11%	11%	49%	126%	4.3%
Quintile 2	4.9%	8%	4%	10%	10%	34%	145%	4.7%
Quintile 3	4.3%	8%	3%	7%	7%	25%	140%	4.6%
Quintile 4	3.3%	6%	0%	5%	5%	19%	155%	4.9%
Long Duration	3.5%	7%	-2%	0%	0%	0%	76%	3.0%
MSCI AC World (EW)	4.3%	7%	3%	7%	7%	27%	156%	4.9%

Source : BofA Global Quantitative Strategy, MSCI, IBES, Worldscope, Exshare, S&P, Bloomberg Note: No transaction costs are included in the return figures. The performance figures are updated on a monthly basis. Past performance is no guarantee of future results. A complete performance record is available on request.

BofA GLOBAL RESEARCH

**Table 99: Interest Rate Sensitivity Advance Decline Ending Dec-23**

Interest Rate Sensitivity advance decline ending Dec-23 across different periods (1m, 3m, 12m, YTD)

Interest Rate Sensitivity	Short Duration		Quintile 2		Quintile 3		Quintile 4		Long Duration	
	Advance	Decline	Advance	Decline	Advance	Decline	Advance	Decline	Advance	Decline
Last Month	447	138	474	110	450	134	399	185	341	243
Last 3-Months	447	188	494	197	488	215	445	248	360	274
Last 6-Months	468	229	490	331	498	350	400	408	296	401
Last 12-Months	486	304	629	392	640	459	547	471	358	447
Year-To-Date	486	304	629	392	640	459	547	471	358	447
Last 5-Years	1394	1163	2446	2124	2814	2488	2415	2269	1172	1486
Since Inception Jun-04	1576	1509	2902	2744	3392	3134	2901	2809	1399	1772

Source : BofA Global Quantitative Strategy, MSCI, IBES, Exshare

BofA GLOBAL RESEARCH



## Appendix I:

### Oil Price Sensitivity Performance

**Table 100: Oil Price Sensitivity back-testing results: Jan-98 to Sep-08**

Oil Price Sensitivity back-testing performance across different periods (1m, 3m, 12m, YTD)

<b>Oil Price Sensitivity</b>	<b>1mth</b>	<b>3mth</b>	<b>6mth</b>	<b>12mth</b>	<b>YTD</b>	<b>Last 5yr since Inception</b>	<b>Annualised</b>
Positive Oil Sensitivity	-28.9%	-41%	-36%	-50%	-50%	54%	164%
Negative Oil Sensitivity	-19.4%	-26%	-39%	-53%	-54%	51%	131%
MSCI AC World	-15.2%	-20%	-24%	-33%	-31%	58%	95%

Source : BofA Global Quantitative Strategy, MSCI, IBES, Worldscope, Exshare, S&P, Bloomberg Note: No transaction costs are included in the return figures. Past performance is no guarantee of future results. A complete performance record is available on request. Back-tested 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.

BofA GLOBAL RESEARCH

**Table 101: Oil Price Sensitivity Actual Performance Ending Dec-23**

Oil Price Sensitivity actual performance ending Dec-23 across different periods (1m, 3m, 12m, YTD)

<b>Oil Price Sensitivity</b>	<b>1mth</b>	<b>3mth</b>	<b>6mth</b>	<b>12mth</b>	<b>YTD</b>	<b>Last 5yr since Inception</b>	<b>Annualised</b>
Positive Oil Sensitivity	3.5%	-1%	3%	-5%	-5%	17%	25%
Negative Oil Sensitivity	6.5%	9%	2%	-3%	-3%	-18%	30%
MSCI AC World	4.3%	7%	3%	7%	7%	27%	160%

Source : BofA Global Quantitative Strategy, MSCI, IBES, Worldscope, Exshare, S&P, Bloomberg Note: No transaction costs are included in the return figures. The performance figures are updated on a monthly basis. Past performance is no guarantee of future results. A complete performance record is available on request.

BofA GLOBAL RESEARCH

**Table 102: Oil Price Sensitivity Advance Decline Ending Dec-23**

Oil Price Sensitivity advance decline ending Dec-23 across different periods (1m, 3m, 12m, YTD)

<b>Oil Price Sensitivity</b>	<b>Positive Oil Sensitivity</b>		<b>Negative Oil Sensitivity</b>	
	Advance	Decline	Advance	Decline
Last Month	8	7	10	5
Last 3-Months	8	8	10	10
Last 6-Months	13	8	15	14
Last 12-Months	9	17	20	21
Year-To-Date	9	17	20	21
Since Inception Oct-08	82	84	87	131

Source : BofA Global Quantitative Strategy, MSCI, IBES, Exshare

BofA GLOBAL RESEARCH



## Appendix J:

### Optimism Performance

**Table 103: Optimism back-testing results: Jan-94 to Feb-07**

Optimism back-testing performance across different periods (1m, 3m, 12m, YTD)

<b>Optimism</b>	<b>1mth</b>	<b>3mth</b>	<b>6mth</b>	<b>12mth</b>	<b>YTD</b>	<b>Last 5yr</b>	<b>Since Inception</b>	<b>Annualised</b>
Increasing Optimism	1.5%	8%	23%	24%	4%	193%	382%	13.8%
Quintile 2	1.0%	6%	16%	17%	3%	144%	356%	13.3%
Quintile 3	0.4%	5%	14%	17%	2%	127%	272%	11.4%
Quintile 4	0.7%	5%	15%	15%	2%	124%	245%	10.7%
Decreasing Optimism	1.2%	5%	15%	15%	2%	127%	60%	3.9%
MSCI AC World Index	1.1%	6%	17%	18%	3%	145%	163%	8.3%

Source : BofA Global Quantitative Strategy, MSCI, IBES, Worldscope, Exshare, S&P, Bloomberg Note: No transaction costs are included in the return figures. Past performance is no guarantee of future results. A complete performance record is available on request. Back-tested 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.

BofA GLOBAL RESEARCH

**Table 104: Optimism Actual Performance Ending Dec-23**

Optimism actual performance ending Dec-23 across different periods (1m, 3m, 12m, YTD)

<b>Optimism</b>	<b>1mth</b>	<b>3mth</b>	<b>6mth</b>	<b>12mth</b>	<b>YTD</b>	<b>Last 5yr</b>	<b>Since Inception</b>	<b>Annualised</b>
Increasing Optimism	4.4%	8%	3%	5%	5%	33%	50%	2.5%
Quintile 2	4.0%	6%	2%	6%	6%	30%	40%	2.0%
Quintile 3	3.8%	7%	3%	8%	8%	34%	64%	3.0%
Quintile 4	4.5%	8%	3%	8%	8%	29%	58%	2.8%
Decreasing Optimism	4.9%	8%	3%	9%	9%	9%	2%	0.1%
MSCI AC World Index	4.3%	7%	3%	7%	7%	27%	46%	2.3%

Source : BofA Global Quantitative Strategy, MSCI, IBES, Worldscope, Exshare, S&P, Bloomberg Note: No transaction costs are included in the return figures. The performance figures are updated on a monthly basis. Past performance is no guarantee of future results. A complete performance record is available on request.

BofA GLOBAL RESEARCH

**Table 105: Optimism Advance Decline Ending Dec-23**

Optimism advance decline ending Dec-23 across different periods (1m, 3m, 12m, YTD)

<b>Optimism</b>	<b>Quintile 1</b>		<b>Quintile 2</b>		<b>Quintile 3</b>		<b>Quintile 4</b>		<b>Quintile 5</b>	
	Advance	Decline								
Last Month	422	149	417	169	392	166	421	159	420	138
Last 3-Months	599	325	668	475	697	495	695	451	561	327
Last 6-Months	738	649	1005	941	1031	986	1021	886	712	655
Last 12-Months	1192	1129	2013	1788	1714	1678	1845	1613	1237	1019
Year-To-Date	1192	1129	2013	1788	1714	1678	1845	1613	1237	1019
Since Inception Mar-07	6879	6548	12098	11140	11831	11388	11163	10492	6633	6534

Source : BofA Global Quantitative Strategy, MSCI, IBES, Exshare

BofA GLOBAL RESEARCH



## Appendix K: Speculation Performance

**Table 106: Speculation back-testing results: Jan-90 to Sep-09**

Speculation back-testing performance across different periods (1m, 3m, 12m, YTD)

Beta	1mth	3mth	6mth	12mth	YTD	Last 5yr	Since Inception	Annualised
High Beta 60m	8.7%	34%	105%	14%	92%	58%	695%	10.5%
Quintile 2	7.8%	25%	74%	12%	62%	43%	454%	8.6%
Quintile 3	5.6%	19%	59%	9%	46%	35%	370%	7.7%
Quintile 4	4.3%	14%	40%	8%	31%	30%	353%	7.5%
Low Beta 60m	1.8%	8%	23%	3%	11%	26%	162%	4.7%
MSCI AC World Index	5.6%	20%	58%	11%	47%	43%	357%	7.6%

Source : BofA Global Quantitative Strategy, MSCI, IBES, Worldscope, Exshare, S&P, Bloomberg Note: No transaction costs are included in the return figures. Past performance is no guarantee of future results. A complete performance record is available on request. Back-tested 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.

BofA GLOBAL RESEARCH

**Table 107: Speculation Actual Performance Ending Dec-23**

Speculation actual performance ending Dec-23 across different periods (1m, 3m, 12m, YTD)

Beta	1mth	3mth	6mth	12mth	YTD	Last 5yr	Since Inception	Annualised
High Beta 60m	8.8%	13%	8%	19%	19%	68%	58%	3.3%
Quintile 2	6.0%	11%	6%	13%	13%	39%	78%	4.1%
Quintile 3	3.7%	7%	2%	5%	5%	20%	77%	4.1%
Quintile 4	2.3%	4%	0%	2%	2%	17%	94%	4.8%
Low Beta 60m	0.8%	2%	-2%	-4%	-4%	-7%	67%	3.7%
MSCI AC World Index	4.3%	7%	3%	7%	7%	27%	80%	4.2%

Source : BofA Global Quantitative Strategy, MSCI, IBES, Worldscope, Exshare, S&P, Bloomberg Note: No transaction costs are included in the return figures. The performance figures are updated on a monthly basis. Past performance is no guarantee of future results. A complete performance record is available on request.

BofA GLOBAL RESEARCH

**Table 108: Speculation Advance Decline Ending Dec-23**

Speculation advance decline ending Dec-23 across different periods (1m, 3m, 12m, YTD)

Speculation	High Beta 60m		Quintile 2		Quintile 3		Quintile 4		Low Beta 60m	
	Advance	Decline	Advance	Decline	Advance	Decline	Advance	Decline	Advance	Decline
Last Month	506	78	480	105	404	180	382	203	341	244
Last 3-Months	485	153	544	177	506	264	447	318	371	296
Last 6-Months	451	242	513	305	486	400	442	442	323	403
Last 12-Months	512	283	643	386	634	513	588	550	381	474
Year-To-Date	512	283	643	386	634	513	588	550	381	474
Since Inception Oct-09	1765	1688	3459	3082	3819	3583	3311	3181	1629	1846

Source : BofA Global Quantitative Strategy, MSCI, IBES, Exshare

BofA GLOBAL RESEARCH



## Appendix L:

### Cycle Sensitives Performance

**Table 109: Cycle Sensitives back-testing results: Jan-93 to Aug-05**

Cycle Sensitives back-testing performance across different periods (1m, 3m, 12m, YTD)

Cycle Sensitives	1mth	3mth	6mth	12mth	YTD	Last 5yr Since Inception	Annualised
Global Cycle Sensitives	5.0%	12%	5%	28%	9%	-7%	83%
MSCI AC World index	0.6%	5%	2%	17%	3%	-11%	136%

Source : BofA Global Quantitative Strategy, MSCI, IBES, Worldscope, Exshare, S&P, Bloomberg Note: No transaction costs are included in the return figures. Past performance is no guarantee of future results. A complete performance record is available on request. Back-tested 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.

BofA GLOBAL RESEARCH

**Table 110: Cycle Sensitives Actual Performance Ending Dec-23**

Cycle Sensitives actual performance ending Dec-23 across different periods (1m, 3m, 12m, YTD)

Cycle Sensitives	1mth	3mth	6mth	12mth	YTD	Last 5yr Since Inception	Annualised
Global Cycle Sensitives	9.1%	13%	6%	12%	12%	37%	148%
MSCI AC World index	4.7%	11%	6%	20%	20%	60%	142%

Source : BofA Global Quantitative Strategy, MSCI, IBES, Worldscope, Exshare, S&P, Bloomberg Note: No transaction costs are included in the return figures. The performance figures are updated on a monthly basis. Past performance is no guarantee of future results. A complete performance record is available on request.

BofA GLOBAL RESEARCH

**Table 111: Cycle Sensitives Advance Decline Ending Dec-23**

Cycle Sensitives advance decline ending Dec-23 across different periods (1m, 3m, 12m, YTD)

Global	Cycle Sensitives	
	Advance	Decline
Last Month	24	6
Last 3-Months	26	13
Last 6-Months	26	21
Last 12-Months	38	30
Year-To-Date	38	30
Last 5-Years	200	193
Since Inception Sep-05	255	260

Source : BofA Global Quantitative Strategy, MSCI, IBES, Exshare

BofA GLOBAL RESEARCH



## Appendix M:

### Global Quantessential Boosters & Bunkers Performance

**Table 112: Global Quantessential Boosters & Bunkers back-testing results: Jan-89 to Feb-12**

Quantessential Boosters &amp; Bunkers back-testing performance across different periods (1m, 3m, 12m, YTD)

<b>Global</b>	<b>1mth</b>	<b>3mth</b>	<b>6mth</b>	<b>12mth</b>	<b>YTD</b>	<b>Last 5yr Since Inception</b>	<b>Annualised</b>
Quantessential Boosters	7.2%	12%	6%	-13%	16%	-25%	535%
Quantessential Bunkers	3.1%	9%	10%	2%	8%	1%	502%
MSCI World	4.8%	10%	7%	-4%	11%	-10%	174%

Source : BofA Global Quantitative Strategy, MSCI, IBES, Worldscope, Exshare, S&P, Bloomberg Note: No transaction costs are included in the return figures. Past performance is no guarantee of future results. A complete performance record is available on request. Back-tested 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.

BofA GLOBAL RESEARCH

**Table 113: Global Quantessential Boosters & Bunkers Actual Performance Ending Dec-23**

Quantessential Boosters &amp; Bunkers actual performance ending Dec-23 across different periods (1m, 3m, 12m, YTD)

<b>Global</b>	<b>1mth</b>	<b>3mth</b>	<b>6mth</b>	<b>12mth</b>	<b>YTD</b>	<b>Since Inception</b>	<b>Annualised</b>
Quantessential Boosters	7.1%	13%	8%	15%	15%	80%	5.1%
Quantessential Bunkers	5.1%	10%	8%	16%	16%	105%	6.3%
MSCI World	4.7%	11%	6%	20%	20%	119%	6.8%

Source : BofA Global Quantitative Strategy, MSCI, IBES, Worldscope, Exshare, S&P, Bloomberg Note: No transaction costs are included in the return figures. The performance figures are updated on a monthly basis. Past performance is no guarantee of future results. A complete performance record is available on request.

BofA GLOBAL RESEARCH

**Table 114: Global Quantessential Boosters & Bunkers Advance Decline Ending Dec-23**

Quantessential Boosters &amp; Bunkers advance decline ending Dec-23 across different periods (1m, 3m, 12m, YTD)

<b>Global</b>	<b>Boosters</b>		<b>Bunkers</b>	
	Advance	Decline	Advance	Decline
Last Month	36	13	41	9
Last 3-Months	52	33	56	15
Last 6-Months	69	56	64	38
Last 12-Months	125	100	106	66
Year-To-Date	125	100	106	66
Since Inception Mar-12	659	688	586	471

Source : BofA Global Quantitative Strategy, MSCI, IBES, Exshare

BofA GLOBAL RESEARCH



## Appendix N: Steady Compounds Performance

**Table 115: Steady Compounds back-testing results: Jan-98 to May-16**

Steady Compounds back-testing performance across different periods (1m, 3m, 12m, YTD)

Steady Compounds	1mth	3mth	6mth	12mth	YTD	Last 5yr	Since Inception	Annualised
Global	1.5%	8.7%	1.8%	0.5%	2.6%	76.1%	505.2%	10.3%
USA	2.2%	7.1%	-0.6%	3.3%	2.3%	114.5%	592.3%	11.1%
Europe	1.1%	8.3%	2.5%	4.3%	2.6%	69.0%	536.0%	10.6%
Japan	1.2%	9.6%	4.4%	14.4%	2.6%	110.7%	67.9%	2.9%
Asia Pac ex-Japan	2.8%	8.5%	5.1%	-0.9%	0.4%	63.9%	1545.3%	16.4%
Emerging Markets	4.8%	13.0%	9.5%	-2.6%	2.0%	83.6%	257.6%	7.2%

Source : BofA Global Quantitative Strategy, MSCI, IBES, Worldscope, Exshare, S&P, Bloomberg Note: No transaction costs are included in the return figures. Past performance is no guarantee of future results. A complete performance record is available on request. Back-tested 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.

BofA GLOBAL RESEARCH

**Table 116: Steady Compounds Actual Performance Ending Dec-23**

Steady Compounds actual performance ending Dec-23 across different periods (1m, 3m, 12m, YTD)

Steady Compounds	1mth	3mth	6mth	12mth	YTD	Since Inception	Annualised
Global	4.5%	11.1%	7.2%	16.7%	16.7%	111.8%	10.4%
USA	3.4%	10.7%	8.4%	20.3%	20.3%	184.5%	14.8%
Europe	4.0%	14.0%	12.5%	27.1%	27.1%	64.3%	6.8%
Japan	6.5%	9.5%	4.3%	9.5%	9.5%	15.6%	1.9%
Asia Pac ex-Japan	12.0%	18.4%	11.1%	11.0%	11.0%	74.2%	7.6%
Emerging Markets	4.3%	5.1%	3.7%	8.2%	8.2%	103.5%	9.8%

Source : BofA Global Quantitative Strategy, MSCI, IBES, Worldscope, Exshare, S&P, Bloomberg Note: No transaction costs are included in the return figures. The performance figures are updated on a monthly basis. Past performance is no guarantee of future results. A complete performance record is available on request.

BofA GLOBAL RESEARCH

**Table 117: Steady Compounds Advance Decline Ending Dec-23**

Steady Compounds advance decline ending Dec-23 across different periods (1m, 3m, 12m, YTD)

Region	Global		USA		Europe		Japan		Asia Pac		Emerging Markets	
	Advance	Decline	Advance	Decline	Advance	Decline	Advance	Decline	Advance	Decline	Advance	Decline
Last Month	56	28	43	25	14	3	8	1	9	0	13	1
Last 3-Months	74	25	64	16	21	1	9	4	10	4	11	6
Last 6-Months	87	63	72	41	25	8	14	5	11	6	13	6
Last 12-Months	176	120	109	68	44	10	27	9	17	19	22	14
Year-To-Date	176	120	109	68	44	10	27	9	17	19	22	14
Since Inception May-16	756	632	422	282	162	125	107	112	133	128	112	106

Source : BofA Global Quantitative Strategy, MSCI, IBES, Exshare

BofA GLOBAL RESEARCH

**Table 118: Steady Compounds Monthly Performance Last 12 months**

Steady Compounds actual performance ending Dec-23 for last 12-months

Steady Compounds	Jan-23	Feb-23	Mar-23	Apr-23	May-23	Jun-23	Jul-23	Aug-23	Sep-23	Oct-23	Nov-23	Dec-23
Global	5.2%	-1.0%	1.0%	1.6%	-2.8%	4.9%	2.0%	-1.8%	-3.7%	-1.6%	8.0%	4.5%
USA	4.3%	-1.4%	2.1%	1.0%	-2.0%	6.7%	2.5%	-0.7%	-3.7%	-1.5%	8.7%	3.4%
Europe	5.9%	0.5%	7.3%	1.8%	-5.3%	2.4%	0.5%	0.6%	-2.3%	-1.4%	11.2%	4.0%
Japan	4.4%	-4.2%	3.8%	1.9%	1.1%	-1.7%	1.7%	-0.4%	-5.9%	-3.6%	6.7%	6.5%
Asia Pac ex-Japan	-0.7%	-5.7%	-0.9%	7.8%	-2.4%	2.4%	-1.0%	-0.9%	-4.3%	-2.5%	8.4%	12.0%
Emerging Markets	0.6%	-0.2%	0.5%	5.2%	-3.9%	2.3%	-0.1%	-0.7%	-0.4%	-1.8%	2.7%	4.3%

Source : BofA Global Quantitative Strategy, MSCI, IBES, Worldscope, Exshare, S&P, bloom be Note: No transaction costs are included in the return figures. The performance figures are updated on a monthly basis. Past performance is no guarantee of future results. A complete performance record is available on request.

BofA GLOBAL RESEARCH



**Table 119: Steady Compounds Advance Decline Last 12 months**

Steady Compounds advance decline ending Dec-23 for last 12-months

Region	Global		USA		Europe		Japan		Asia Pac		Emerging Markets	
	Advance	Decline	Advance	Decline	Advance	Decline	Advance	Decline	Advance	Decline	Advance	Decline
Dec-23	56	28	43	25	14	3	8	1	9	0	13	1
Nov-23	71	8	57	6	12	0	4	2	6	1	10	3
Oct-23	22	49	22	37	5	3	1	4	3	7	4	7
Sep-23	11	58	10	48	2	5	1	3	1	5	5	4
Aug-23	26	41	27	29	2	4	3	2	1	4	4	4
Jul-23	19	11	39	24	5	3	5	0	3	3	6	2
Jun-23	50	17	56	9	7	1	4	3	2	3	3	3
May-23	22	54	17	42	0	8	7	1	2	2	5	2
Apr-23	40	33	33	28	10	2	5	5	4	1	5	2
Mar-23	53	32	45	23	15	3	9	2	4	4	5	4
Feb-23	32	61	23	46	8	8	2	7	3	11	3	6
Jan-23	72	23	49	21	15	3	11	3	4	9	6	7

Source : BofA Global Quantitative Strategy, MSCI, IBES, Exshare

BofA GLOBAL RESEARCH

**Table 120: Benchmark Performance during back-testing: Jan-98 to May-16**

MSCI regional benchmarks back-testing performance across different periods (1m, 3m, 12m, YTD)

Benchmarks	1mth	3mth	6mth	12mth	YTD	Last 5yr	Since Inception	Annualised
MSCI AC World	-0.2%	8.3%	-1.1%	-7.4%	0.8%	15.7%	76.7%	3.1%
MSCI USA	1.6%	8.8%	0.5%	-1.2%	2.4%	55.1%	114.8%	4.2%
MSCI Europe	-1.4%	6.4%	-5.3%	-12.5%	-2.7%	-6.7%	40.2%	1.9%
MSCI Japan	-1.0%	7.6%	-3.8%	-9.8%	-4.0%	16.3%	26.4%	1.3%
MSCI Asia Pac ex-Japan	-1.9%	9.0%	-0.6%	-18.1%	-0.7%	-17.1%	117.6%	4.3%
MSCI Emerging Markets	-3.9%	9.1%	-0.8%	-19.6%	1.7%	-30.9%	95.8%	3.7%

Source : BofA Global Quantitative Strategy, MSCI, IBES, Exshare

BofA GLOBAL RESEARCH

**Table 121: Benchmark Performance Ending Dec-23**

MSCI regional benchmarks actual performance ending Dec-23 across different periods (1m, 3m, 12m, YTD)

Benchmarks	1mth	3mth	6mth	12mth	YTD	Since Inception	Annualised
MSCI AC World	4.7%	10.7%	6.5%	20.1%	20.1%	80.6%	8.1%
MSCI USA	4.6%	11.5%	7.6%	25.0%	25.0%	128.1%	11.5%
MSCI Europe	4.9%	10.7%	4.8%	16.7%	16.7%	36.4%	4.2%
MSCI Japan	4.3%	8.0%	5.5%	17.8%	17.8%	37.2%	4.3%
MSCI Asia Pac ex-Japan	4.5%	7.5%	2.9%	4.6%	4.6%	29.5%	3.5%
MSCI Emerging Markets	3.7%	7.4%	3.5%	7.0%	7.0%	26.8%	3.2%

Source : BofA Global Quantitative Strategy, MSCI, IBES, Exshare

BofA GLOBAL RESEARCH

**Table 122: Benchmark Performance Last 12 months**

MSCI regional benchmarks actual performance ending Dec-23 for last 12-months

Benchmarks	Jan-23	Feb-23	Mar-23	Apr-23	May-23	Jun-23	Jul-23	Aug-23	Sep-23	Oct-23	Nov-23	Dec-23
MSCI AC World	7.1%	-3.0%	2.8%	1.3%	-1.3%	5.6%	3.6%	-3.0%	-4.3%	-3.1%	9.1%	4.7%
MSCI USA	6.5%	-2.6%	3.4%	1.2%	0.5%	6.5%	3.3%	-1.9%	-4.8%	-2.4%	9.2%	4.6%
MSCI Europe	8.6%	-0.8%	2.0%	3.6%	-6.5%	4.6%	3.0%	-4.2%	-4.0%	-3.8%	9.7%	4.9%
MSCI Japan	6.2%	-3.9%	2.9%	0.4%	1.8%	4.0%	3.0%	-2.4%	-2.8%	-4.5%	8.5%	4.3%
MSCI Asia Pac ex-Japan	8.6%	-6.9%	2.5%	-1.8%	-2.7%	2.6%	5.4%	-6.4%	-3.0%	-4.1%	7.3%	4.5%
MSCI Emerging Markets	7.9%	-6.5%	2.7%	-1.3%	-1.9%	3.2%	5.8%	-6.4%	-2.8%	-3.9%	7.9%	3.7%

Source : BofA Global Quantitative Strategy, MSCI, IBES, Exshare

BofA GLOBAL RESEARCH



## Appendix O:

### Global Quant Strategy Fifty Performance

**Table 123: Global Quant Strategy Fifty Actual Performance Ending Dec-23**

Quant Strategy Fifty actual performance ending Dec-23 across different periods (1m, 3m, 12m, YTD)

Global Quant Fifty	1mth	3mth	6mth	12mth	YTD	Since Inception	Feb-13	Annualised
Global Quant 50	-3.4%	10.0%	-0.9%	11.3%	11.3%		74%	5.2%
MSCI AC World	4.7%	10.7%	6.5%	20.1%	20.1%		65%	4.7%

Source : BofA Global Quantitative Strategy, MSCI, IBES, Worldscope, Exshare, S&P, Bloomberg Note: No transaction costs are included in the return figures. The performance figures are updated on a monthly basis.  
Past performance is no guarantee of future results. A complete performance record is available on request.

BofA GLOBAL RESEARCH

**Table 124: Global Quant Strategy Fifty Advance Decline Ending Dec-23**

Quant Strategy Fifty advance decline ending Dec-23 across different periods (1m, 3m, 12m, YTD)

Global Quant Fifty	Global Quant 50
	Advance
Last Month	38
Last 3-Months	52
Last 6-Months	72
Last 12-Months	137
Year-To-Date	137
Since Inception Feb-13	1454
	Decline
	12
	27
	56
	90
	90
	1200

Source : BofA Global Quantitative Strategy, MSCI, IBES, Exshare

BofA GLOBAL RESEARCH

## Appendix P: Global Quant Strategy Fifty Relegations

**Table 125: Global Quant Strategy Fifty - Relegated Stocks**

Stocks that were relegated this month from Global Quant Strategy Fifty screen

BBG Code	Name
PRI03 BZ	PRIOR
BBAS3 BZ	Banco do Brasil
CDW US	CDW Corp
ANET US	Arista Networks
ZM US	Zoom
OTEX CN	Open Text
QRVO US	Qorvo
CHTR US	Charter Comm-A
LYB US	LyondellBasell
ACGL US	Arch Capital
BLDR US	Builders FirstSource
PCAR US	PACCAR
CAH US	Cardinal Health
CNC US	Centene Corp
GILD US	Gilead
DVA US	DaVita Inc
FLT US	FleetCor Tech
COF US	Capital One
TAP US	Molson Coors Beverage
ATD CN	Alimentation Couche-Tard
TJX US	TJX
PHM US	PulteGroup
LEN US	Lennar
9503 JP	Kansai Electric
8725 JP	MS&AD Insurance
1812 JP	Kajima
7270 JP	Subaru
PUB FP	Publicis Groupe
HNR1 GR	Hannover Rueck
DG FP	Vinci
FRE GR	Fresenius
CCEP US	Coca-Cola Europacific
PNDORA DC	Pandora
BBVA SM	BBVA
3231 TT	Wistron
3034 TT	Novatek Micro

Source : BofA Global Quantitative Strategy

BofA GLOBAL RESEARCH



# Global Quant Publications

## Monthly reports schedule

### Day 1: Contenders & Defenders

A popular visual model. For each stock, this report graphically shows how consensus earnings expectations have changed over the long term versus the market, and whether recent earnings revisions appear to have been reflected in relative share price performance. Popular ways of using this analysis include 1) reviewing the Contenders and Defenders, 2) perusing individual stock charts, 3) monitoring region, country and sector themes using the “quadrant charts”, and 4) reviewing stock rankings. Regional versions are published monthly in these linked reports for [Global Contenders & Defenders](#) and Asia Pac ex-Japan Contenders & Defenders.

### Day 1: [Global Performance Monitor](#)

The above linked monthly report analysing the performance of global regions, countries, sectors and identifying the major stock contributors to global equity market performance.

### Day 2/3: Quantessential Style

Style rotation. Different investment styles outperform at various stages of the cycle. This investment style analysis relates performance of seven Quantessential Styles (Value, Growth, Quality, Risk, Momentum, Dividend and Size) to trends in global macro data. Popular uses include 1) when to buy “Deep Value”, “Growthiest of Growth”, and other styles, 2) identifying stocks with various style characteristics, 3) monitoring style performance, and 4) explaining out/under-performance due to style tilts. Regional versions are published in these linked monthly reports for [Global Quantessential Style](#) and [Asia Pac ex-Japan Quantessential Style](#).

### Week 1: [Global Fund Performance Monitor](#)

The above linked monthly report analysing the relative returns of large long-only equity funds in order to help fund managers understand how returns have been affected by fund characteristics. Funds are grouped by Region, Investment Style, Active/Passive, Active Share Ratio, Funds Under Management, Stock Size, Number of Stocks, and Portfolio Turnover.

### Week 2: [Global Wave](#)

The Global Wave (report link above) quantifies turning points and multi-year trends in global economic activity. The direction of the global cycle influences equity market performance, regional allocation, country allocation, style allocation, and stock selection. The Bunkers are stocks for a downturn and the Boosters are stocks for an upturn.

### Week 2: [NewsAlpha](#)

The above linked monthly report: 1) quantifies alpha opportunities using news for both short-term and long-term investors, 2) Leverages big data – a) to identify the most significant news events, b) to highlight which stocks are driven by news and c) to create an indicator- The Global News Pulse - to monitor trends in news sentiment globally.

### Week 2: Positioning in Stocks

Quantifies how large investors are positioned in terms of stocks, regions, countries and sectors. Popular uses include 1) identifying extreme positioning for contrarian trade ideas, and 2) identifying developing trends in investor positioning. Regional versions are published in these linked monthly reports for [Global Positioning in Stocks](#) and [Pacific Positioning](#).

### Week 3: Quant Panorama

Summary report. In this monthly report, we present all our views and recent research on regional allocation, country and sector allocation, style allocation, and stock selection.

One-stop shopping. Regional versions are published in these linked monthly reports for [Global Quant Panorama](#) and Asia Pac ex-Japan Quant Panorama.

**Week 4: Earnings Revision Ratio**

Shows trends in earnings expectations at the regional, country and sector level.

Regional versions are published in these linked monthly reports for [Global Earnings Revision Ratio](#) and [Asia Pac ex-Japan Earnings Revision Ratio](#).

**Weekly: High Frequency Monitor**

In this above linked weekly report, we monitor high frequency data to help equity investors track short-term changes in market-moving data in order to swiftly identify hot topics and turning points.

**Occasional: Focus Point**

The report above contains brief comments on topical issues and new research.



# 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 <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.

**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.

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

## Other Important Disclosures

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

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

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

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

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

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

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

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

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



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

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

#### **General Investment Related Disclosures:**

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

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

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

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

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

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

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

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

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

#### **Copyright and General Information:**

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

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

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

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

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



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

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

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

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

