

Global Focus Point

Introducing Triple Momentum Sector Allocation

Sector Allocation using Triple Momentum

Our Triple Momentum stock screening methodology appears to be a helpful tool for global sector allocation. Global Sectors with Positive Triple Momentum (Top Quintile) would have outperformed sectors with Negative Triple Momentum (Bottom Quintile) according to back-testing since 2004. Triple Momentum combines earnings, price, and news momentum for each stock to identify current themes. We then calculate aggregate [Global Sector Triple Momentum](#) Ranks by averaging stock-level ranks. In December, Triple Momentum was most positive for the Global [Software](#), [Insurance](#), and [Banks](#), and most negative for [Materials](#), [Consumer Staples](#), and [Real Estate](#).

Region-Sector Allocation using Triple Momentum

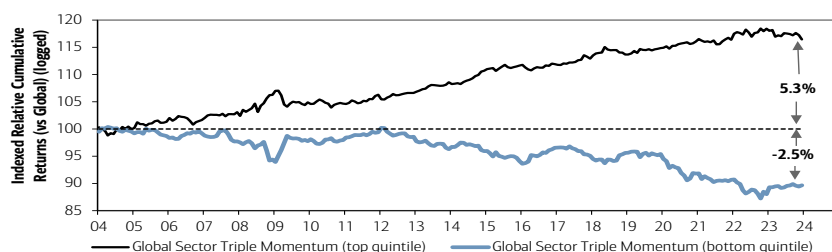
Similarly, back-testing shows [Region-Sectors with Positive Triple Momentum](#) (Top Quintile) would have outperformed region-sectors with Negative Triple Momentum (Bottom Quintile). Within region-sectors, Triple Momentum was most positive in December for [Emerging ex-Asia Real Estate](#) and [Diversified Financials](#), and most negative on [Emerging ex-Asia Media & Entertainment](#), [Europe Energy](#), and [USA Banks](#).

Triple Momentum signals can persist for extended periods

A monthly time series of Triple Momentum signals for each global sector and each region-sector highlights how rankings change through time. Signals can persist. Software has been among the top-three sectors for the last [five months](#). Real Estate has been among the bottom-three sectors for the last [11 months](#).

Chart 1: Global Sector Triple Momentum: Relative Cumulative Performance of Top and Bottom Quintile Sectors (backtested)

Sectors with Positive Triple Momentum would have outperformed Negative Triple Momentum



Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack This performance is back-tested for period from Jan-04 to Dec-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

10 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.

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 48 to 50.

12643274

Timestamp: 09 January 2024 02:00PM EST

Contents

Executive Summary	4
Concept	4
Global Sector: back-testing results & current signals	5
Region-Sector: back-testing results & current signals	6
Region-Sector: Triple Momentum Heat Map	7
Stocks: back-testing results & current signals	9
Global Sectors Triple Momentum	12
Banks	12
Consumer Discretionary	14
Consumer Staples	16
Diversified Financials	18
Energy	20
Health Care	22
Industrials	24
Insurance	26
Materials	28
Media & Entertainment	30
Real Estate	32
Semiconductors	34
Software	36
Tech Hardware	38
Telecommunication Services	40
Utilities	42
Triple Momentum Methodology	44
Construction Methodology	44
Performance Calculation Methodology	44
Appendix A: Triple Momentum Summary Stats	45
Appendix B: Triple Momentum Performance Summary	47

Notice to Readers:

The various indicators and 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 indicators/ 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.

Triple Momentum (and its global, regional and sector versions) 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. Triple Momentum was not created to act as a benchmark.

Some of the analysis as described in this report 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.

All data in the report is as of 31-Dec-2023 unless stated otherwise.



Executive Summary

Concept

In this analysis, we highlight the benefits of combining three types of momentum, namely Earnings Momentum, Price Momentum, and News Momentum.

Earnings Momentum quantifies the sentiment of sell-side analysts by monitoring changing consensus earnings estimates and is defined as the three-month change in the consensus EPS estimate for each stock.

Price Momentum, which is what most investors think of when they think of "momentum", captures the sentiment of market participants who buy and sell equities. Our Price Momentum measure is defined as the slope of the log-linear regression using daily prices over the preceding 12-months.

News Momentum captures the three-month trend in news sentiment from five billion news events sourced globally from a combination of structured and unstructured data sources in multiple languages. We calculate a News Pulse for each stock which quantifies the momentum in news using news articles from the preceding 90 days.

Triple Momentum is an amalgamation of Earnings Momentum, Price Momentum and News Momentum. We have previously used Triple Momentum to highlight stocks globally with high Triple Momentum Ranks and low Triple Momentum Ranks. Please refer to our [“Signals from Triple Momentum”](#) for more details on the methodology for Stock Triple Momentum.

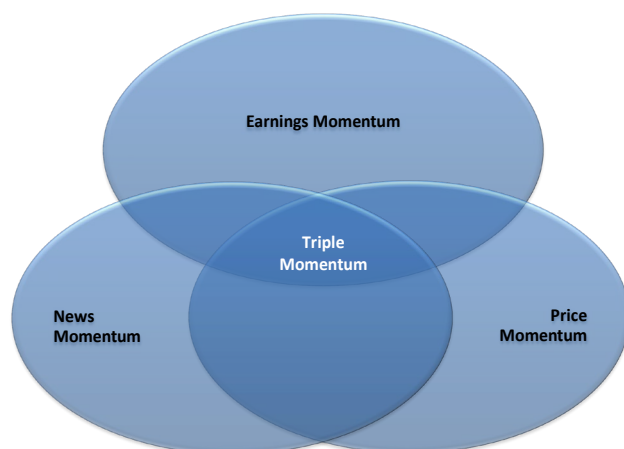
In this new analysis, we aggregate stock-level Triple Momentum Ranks by global sector and for each region-sector, and provide the back-testing results to support the efficacy of this methodology through time for Global Sector Allocation and Region-Sector Allocation. All analysis in the report starts in Jan-04 since News data is only available from that period. Please refer to the Methodology at the back of this report.

We also show current rankings of global sectors and region-sectors. In addition, charts show how these rankings have changed on a monthly basis since 2004, indicating which sectors and region-sectors have been in vogue at any point in time in the past.

We plan to update this analysis each month to help investors monitor changing themes in global equity markets and publish the analysis in the NewsAlpha report.

Chart 2: Triple Momentum Concept

Triple Momentum combines Earnings Momentum, Price Momentum, and News Momentum



Source : BofA Global Quantitative Strategy

BofA GLOBAL RESEARCH

Global Sector: back-testing results & current signals

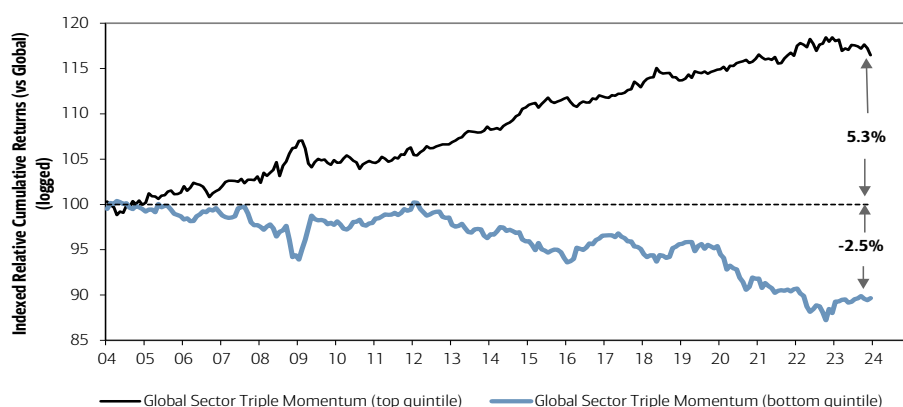
Average Global Sector Triple Momentum Rank: We calculate an arithmetic average of Triple Momentum Rank for all stocks by global sector, and re-rank these averages from 1 to 100 (where 100 represents the global sector with the strongest Triple Momentum).

Global Sector Triple Momentum Top Quintile: Global Sector Triple Momentum Top Quintile includes global sectors in the top 20% by the Average Sector Triple Momentum Rank (which equates to three global sectors out of a total of 16).

Global Sector Triple Momentum Bottom Quintile: Global Sector Triple Momentum Bottom Quintile includes global sectors in the bottom 20% by the Average Sector Triple Momentum Rank (three global sectors out of a total of 16).

Chart 3: Global Sector Triple Momentum: Relative Cumulative Performance of Top and Bottom Quintile Sectors (backtested)

Within Global Sectors, Triple Momentum Top Quintile would have outperformed Triple Momentum Bottom Quintile by +7.8% since 2004



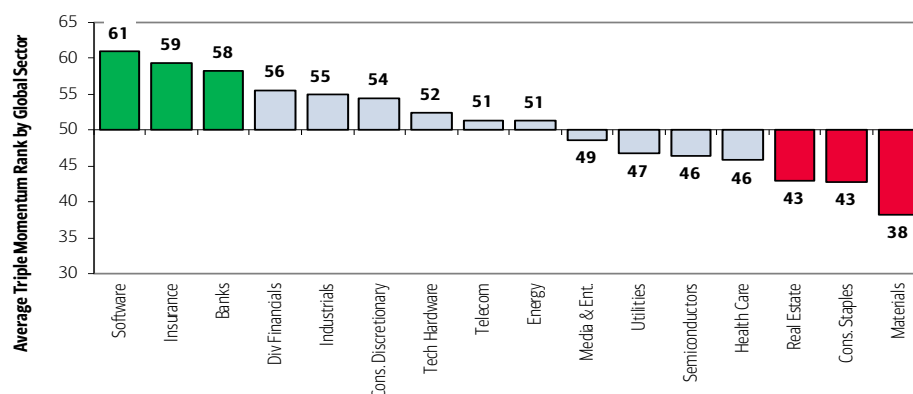
Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

This performance is back-tested for period from Jan-04 to Dec-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 4: Average Stock Triple Momentum Rank by Global Sectors

Average Triple Momentum Rank is currently strongest for Software, Insurance, and Banks



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

BofA GLOBAL RESEARCH

Region-Sector: back-testing results & current signals

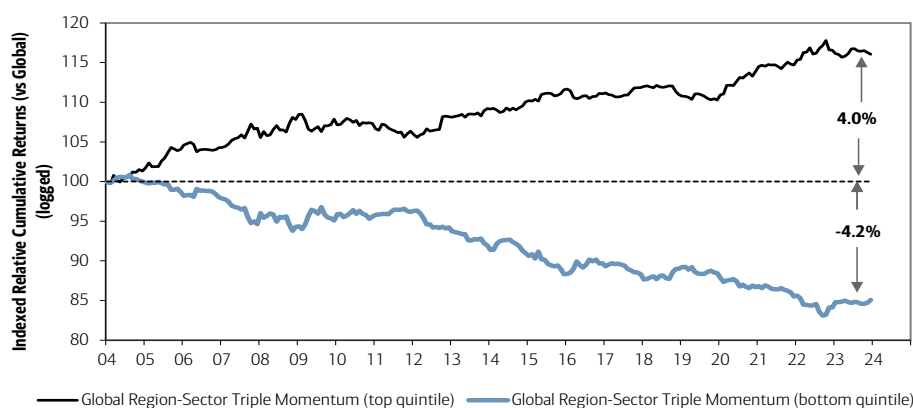
Average Region-Sector Triple Momentum Rank: We calculate an arithmetic average of Triple Momentum Rank for all stocks in the relevant global region-sector, and re-rank these averages from 1 to 100 (where 100 represents the relevant region-sector with the strongest Triple Momentum).

Region-Sector Triple Momentum Top Quintile includes region-sectors in the top 20% by the Average Region-Sector Triple Momentum Rank (which equates to 16 region-sectors out of a total of 80).

Region-Sector Triple Momentum Bottom Quintile includes region-sectors in the bottom 20% by the Average Region-Sector Triple Momentum Rank (16 region-sectors out of a total of 80).

Chart 5: Region-Sector Triple Momentum: Relative Cumulative Performance of Top and Bottom Quintile (backtested)

Within Region-Sectors, Triple Momentum Top Quintile would have outperformed Triple Momentum Bottom Quintile by +8.2% since 2004



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

This performance is back-tested for period from Jan-04 to Dec-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 1: Region-Sector Triple Momentum (Top Quintile)

The Average Stock Triple Momentum Rank is currently highest for Emerging ex-Asia Real Estate

Region-Sector (top quintile)	Average Stock Triple Momentum Rank
Emerging Ex-Asia Real Estate	89
Emerging Ex-Asia Diversified Financials	82
Japan Insurance	80
Japan Energy	80
Japan Utilities	77
Japan Banks	76
Emerging Ex-Asia Banks	74
Emerging Ex-Asia Insurance	72
Emerging Ex-Asia Health Care	68
Japan Real Estate	68
Europe Software	66
United States Insurance	65
Emerging Ex-Asia Utilities	63
United States Software	62
Japan Software	62
Japan Consumer Discretionary	61

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

BofA GLOBAL RESEARCH

Table 2: Region-Sector Triple Momentum (Bottom Quintile)

The Average Stock Triple Momentum Rank is currently lowest for Emerging ex-Asia Media & Entertainment

Region-Sector (bottom quintile)	Average Stock Triple Momentum Rank
Emerging Ex-Asia Media & Entertainment	17
Europe Energy	25
United States Banks	27
Europe Materials	28
United States Utilities	30
Japan Media & Entertainment	33
United States Consumer Staples	35
United States Real Estate	36
United States Materials	36
Emerging Ex-Asia Materials	37
Europe Real Estate	37
United States Health Care	38
Asia Pac ex-Japan Real Estate	38
Europe Tech Hardware	40
Europe Consumer Staples	42
Asia Pac ex-Japan Materials	43

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

BofA GLOBAL RESEARCH

Region-Sector: Triple Momentum Heat Map

The following table shows a matrix of an Average Triple Momentum Rank for Country-Sectors and Region-Sectors.

This matrix is colour-coded for easy visualization of Triple Momentum Ranks across country-sectors and region-sectors. For e.g. country-sectors or region-sectors with the highest average Triple Momentum Ranks are coloured green. Similarly country-sectors or region-sectors with the lowest average Triple Momentum Ranks are coloured red. Average Ranks that fall between highest and lowest are coloured progressively from green to red.

Table 3: Average Stock Triple Momentum Rank by Region-Sector and Country-Sector

Average Triple Momentum Rank is highest for Emerging ex-Asia – Real Estate and lowest for Emerging ex-Asia Media & Entertainment

Average Stock Triple Momentum Rank	Banks	Cons. Discretionary	Cons. Staples	Diversified Financials	Energy	Health Care	Industrials	Insurance	Materials	Media & Ent	Real Estate	Semiconductors	Software	Tech Hardware	Telecom	Utilities	Region/Country
Canada	31	33	46	44	70		40	69	22		37		61		21	36	43
USA	30	49	33	46	54	39	54	69	41	50	33	45	65	51	49	40	47
Belgium	10	84	12	28		47		28	5								33
Denmark	99	68	23			47	29		65							46	48
Finland			10		15		58	12	39					5	20	21	30
France	40	44	38	47	63	38	51	91	57	59	47	9	58		66	56	48
Germany	95	39	48	79		22	42	84	27	59	37	44	74		66	40	45
Italy	74	47	44	37	62	35	72	42							51	53	55
Netherlands	47	82	27	63		34	54	75	21	93		60			43		52
Spain	85	73			17	65	80								33	34	54
Sweden	62	43	81	47		48	53		15					25	58		49
Switzerland		13	25	38		38	41	39	23		56		74	78	6		34
UK	25	46	47	52	31	54	65	36	34	53	42		68	35	38	67	48
Australia	48	21	31	26	40	48	33	66	46	70	37		37		23	24	41
Hong Kong	7	45	52	18		67	37	45			41					40	40
Japan	62	61	48	57	88	50	62	82	61	49	67	67	59	48	41	87	60
Singapore	45	60	18	85			70			16	33				17	87	49
China	40	55	50	59	61	51	53	23	43	51	43	37	25	57		45	49
India	69	74	67	73	74	70	80	84	57	82	78		47		67	72	69
Korea	54	68	60	53	69	51	56		38	49		79	55	32	41	81	54
Taiwan	50	55	9	34	50	45	29	67	21			54		63	58		50
Brazil	73	63	47	100	91	30	38		53						88	67	64
Mexico	76		68				43		26		89				58		56
Poland	57				18				8	24						80	35
South Africa	54	48	26	38	86	42	82	35	25		82				23		42
Asia Pac ex-Japan	58	61	47	61	56	58	57	54	43	51	38	49	54	58	52	54	54
Emerging ex-Asia	74	58	53	82	60	68	61	72	37	17	89				55	63	61
Europe	53	46	42	54	25	43	52	48	28	61	37	48	66	40	50	47	46
Japan	76	61	48	61	80	51	61	80	57	33	68	52	62	47	50	77	58
United States	27	50	35	51	51	38	53	65	36	52	36	43	62	46	45	30	46
Global	58	54	43	56	51	46	55	59	38	49	43	46	61	52	51	47	

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

BofA GLOBAL RESEARCH

Stocks: back-testing results & current signals

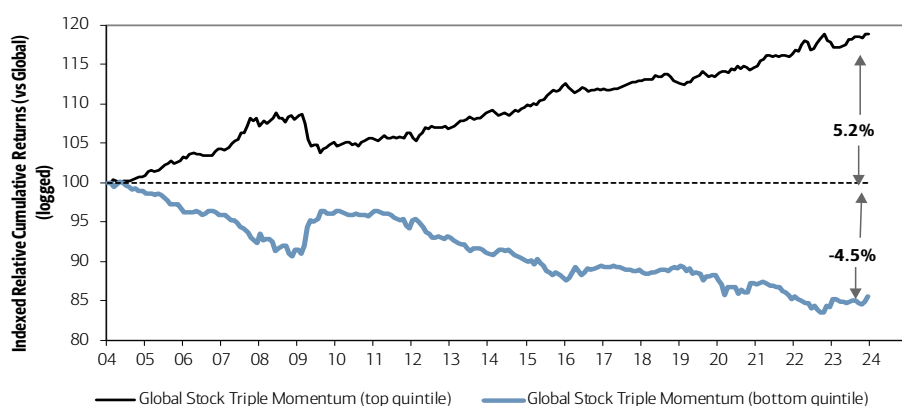
Stock Triple Momentum Top Quintile includes the top 20% of stocks in MSCI All Country World Index by the Stock Triple Momentum Rank.

Stock Triple Momentum Bottom Quintile includes the bottom 20% of stocks in MSCI All Country World Index by the Stock Triple Momentum Rank.

Global Stock Triple Momentum (top quintile) and Global Stock Triple Momentum (bottom quintile) screens 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.

Chart 6: Stock Triple Momentum: Relative Cumulative Performance of Top and Bottom Quintile (backtested)

Among stocks globally, Stock Triple Momentum Top Quintile would have outperformed Bottom Quintile by +9.7% since 2004



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

This performance is back-tested for period from Jan-04 to Dec-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 4: Global Stock Triple Momentum - Stocks with the Highest Triple Momentum Rank (top 45)

Top 45 global stocks with the highest Triple Momentum Rank

Company Name	BBG Code	Country	Sector	MCAP (Total \$USm)	Avg Daily TO (6m \$US m)
Vibra Energia	VBBR3 BZ	Brazil	Cons. Discretionary	5,459	42.7
Cosan	CSAN3 BZ	Brazil	Energy	7,381	24.5
Ultrapar Participacoes	JGPA3 BZ	Brazil	Energy	6,203	24.8
Parkland Corp	PKI CN	Canada	Energy	5,692	20.4
Li Auto	2015 HK	China	Cons. Discretionary	30,507	134.2
New Oriental Education & Tec	9901 HK	China	Cons. Discretionary	12,694	21.1
Pop Mart International Group	9992 HK	China	Cons. Discretionary	3,277	14.8
Tal Education-ADR	TAL US	China	Cons. Discretionary	6,187	63.9
PetroChina-H	357 HK	China	Energy	14,696	71.1
BYD Electronic	285 HK	China	Tech Hardware	10,026	27.5
Wartsila	WRTV FH	Finland	Industrials	8,465	12.0
Credit Agricole	ACA FP	France	Banks	44,407	61.0
Adidas	ADS GR	Germany	Cons. Discretionary	34,282	93.5
MunichRe	MUV2 GR	Germany	Insurance	57,621	106.7
Heidelberg Materials	HEI GR	Germany	Materials	16,594	34.3
Alpha Services	ALPHA GA	Greece	Banks	4,002	11.8
Eurobank Ergasias	EUROB GA	Greece	Banks	6,569	8.1
Piraeus Financial	TPEIR GA	Greece	Banks	4,516	12.3
Mytilineos	MYTIL GA	Greece	Industrials	5,770	8.2
Chinasoft Int'l	354 HK	Hong Kong	Software	2,097	12.6
OTP Bank	OTP HB	Hungary	Banks	12,929	18.3
REC	RECL IN	India	Div Financials	13,751	66.6
Shriram Finance	SHFL IN	India	Div Financials	9,805	30.8
Bank Rakyat	3BRI IJ	Indonesia	Banks	56,169	41.5
Mazda Motor	7261 JP	Japan	Cons. Discretionary	7,061	60.5
Hitachi	5501 JP	Japan	Industrials	65,900	145.5
Toppan	7911 JP	Japan	Industrials	8,942	22.3
Sompo	3630 JP	Japan	Insurance	17,079	66.4
Mitsubishi Chemical	4188 JP	Japan	Materials	9,358	31.4
Gamuda	GAM MK	Malaysia	Industrials	2,817	5.4
Dallah Health	DALLAH AB	Saudi Arabia	Health Care	4,636	4.8
Co For Coop Insurance	TAWUNIYA AB	Saudi Arabia	Insurance	5,615	12.6
Etihad Etisalat	EEC AB	Saudi Arabia	Telecom	10,553	11.5
Hankook Tire & Tech	161390 KS	South Korea	Cons. Discretionary	4,115	8.5
Alchip Tech	3661 TT	Taiwan	Semiconductors	8,100	201.3
Acer	2353 TT	Taiwan	Tech Hardware	4,742	44.8
Asustek	2357 TT	Taiwan	Tech Hardware	10,875	82.7
Wiwynn	5669 TT	Taiwan	Tech Hardware	9,641	175.4
Next	NXT LN	United Kingdom	Cons. Discretionary	13,689	21.5
Wise - A	WISE LN	United Kingdom	Div Financials	10,907	9.8
Melrose Industries	VRO LN	United Kingdom	Industrials	9,568	23.4
Booking	3KNG US	United States	Cons. Discretionary	121,644	829.1
Progressive	PGR US	United States	Insurance	95,240	367.2
Martin Marietta	VLM US	United States	Materials	30,086	166.6
Godaddy	GDDY US	United States	Software	14,714	137.4

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

BofA GLOBAL RESEARCH

Table 5: Global Stock Triple Momentum - Stocks with the Lowest Triple Momentum Rank (bottom 45)

Bottom 45 global stocks with the lowest Triple Momentum Rank

Company Name	BBG Code	Country	Sector	MCAP (Total \$USm)	Avg Daily TO (6m \$US m)
BRP Inc	DOO CN	Canada	Cons. Discretionary	2,429	24.2
First Quantum	FM CN	Canada	Materials	6,598	70.1
SQM	SQM/B CI	Chile	Industrials	7,821	26.7
WuXi Biologics	2269 HK	China	Health Care	14,997	120.5
Ganfeng Lithium-H	1772 HK	China	Materials	1,468	16.4
China Vanke-H	2202 HK	China	Real Estate	1,907	23.3
ENN Energy	2688 HK	China	Utilities	8,539	30.0
Moller-Maersk-B	MAERSKB DC	Denmark	Industrials	15,353	45.5
Kering	KERFP	France	Cons. Discretionary	51,542	90.7
Remy Cointreau	RCO FP	France	Cons. Staples	5,393	12.0
Bayer	BAYN GR	Germany	Health Care	37,987	136.4
Wacker Chemie	WCH GR	Germany	Materials	6,035	12.4
Xtep International	1368 HK	Hong Kong	Cons. Discretionary	1,277	6.5
China Int'l Capital Corp-H	3908 HK	Hong Kong	Div Financials	2,681	19.9
Xinyi Glass	868 HK	Hong Kong	Industrials	4,639	8.0
Aneka Tambang	ANTM IJ	Indonesia	Materials	2,594	4.5
Yamaha	7951 JP	apan	Cons. Discretionary	4,230	26.0
Misumi Group	9962 JP	apan	Industrials	4,768	18.4
Dentsu	4324 JP	apan	Media & Ent.	6,972	28.1
Axiata Group	AXIATA MK	Malaysia	Telecom	5,049	2.1
OCI	OCI NA	Netherlands	Materials	6,139	13.4
Cyfrowy Polsat SA	CPS PW	Poland	Media & Ent.	1,927	3.3
Capitaland Investment	CLI SP	Singapore	Real Estate	11,768	17.2
Boliden	BOL SS	Sweden	Materials	8,181	32.4
Julius Baer	BAER SW	Switzerland	Div Financials	11,635	30.8
Voltronic Power	6409 TT	Taiwan	Industrials	4,569	8.9
Asia Cement	1102 TT	Taiwan	Materials	4,701	8.5
JD Sports Fashion	JD/ LN	United Kingdom	Cons. Discretionary	7,938	12.2
Hargreaves Lansd	HL/ LN	United Kingdom	Div Financials	4,368	11.1
St James's Place	STJ LN	United Kingdom	Div Financials	4,500	12.5
Phoenix Group	PHNX LN	United Kingdom	Insurance	6,623	11.7
Anglo American (UK)	AAL LN	United Kingdom	Materials	31,910	68.3
Croda Intl	CRDA LN	United Kingdom	Materials	8,262	18.0
WPP	WPP LN	United Kingdom	Media & Ent.	10,557	18.8
Hasbro	HAS US	United States	Cons. Discretionary	6,712	104.6
Conagra Brands	CAG US	United States	Cons. Staples	13,483	123.7
Darling Ingredients	DAR US	United States	Cons. Staples	7,370	90.4
Estee Lauder	EL US	United States	Cons. Staples	31,869	391.9
Mettler-Toledo	MTD US	United States	Health Care	24,757	188.7
Moderna	MRNA US	United States	Health Care	42,291	413.5
Pfizer	PFE US	United States	Health Care	166,386	1011.6
Rewity	RVTY US	United States	Health Care	13,327	83.2
Paycom Software	PAYC US	United States	Industrials	11,921	181.9
Southwest Airlines	LUV US	United States	Industrials	17,363	229.7
Albemarle	ALB US	United States	Materials	15,939	392.2

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

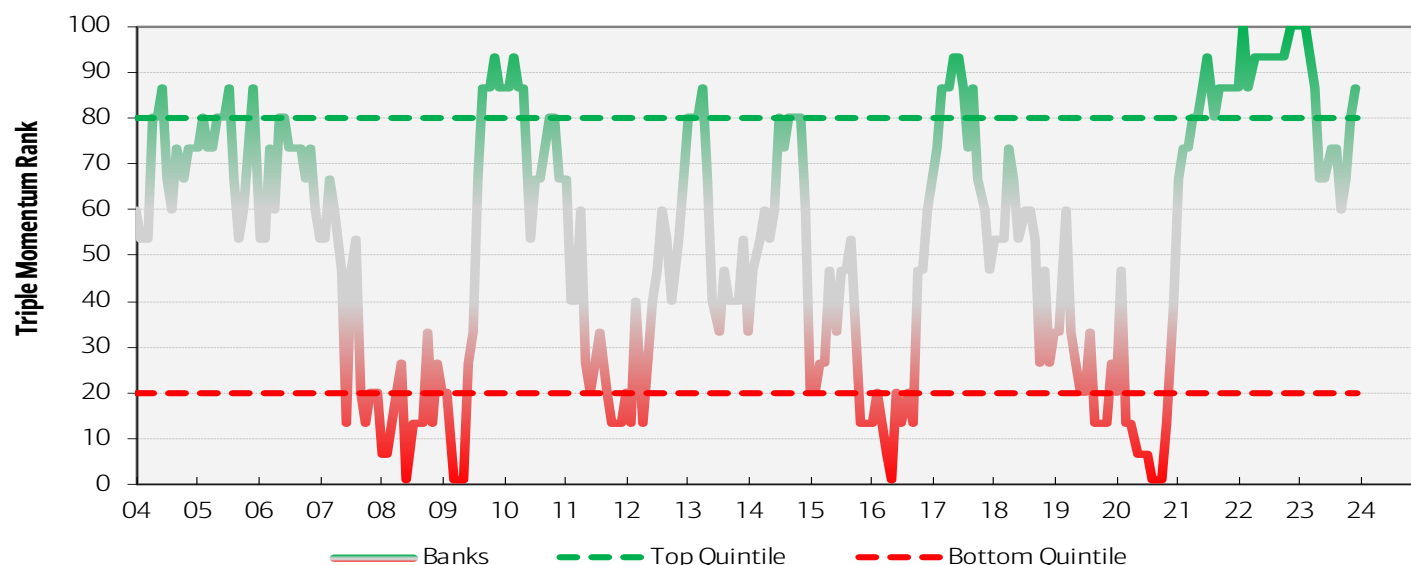
BofA GLOBAL RESEARCH

Global Sectors Triple Momentum

Banks

Chart 7: Global Banks: Triple Momentum Trend

The Triple Momentum Rank for Global Banks is in the top quintile

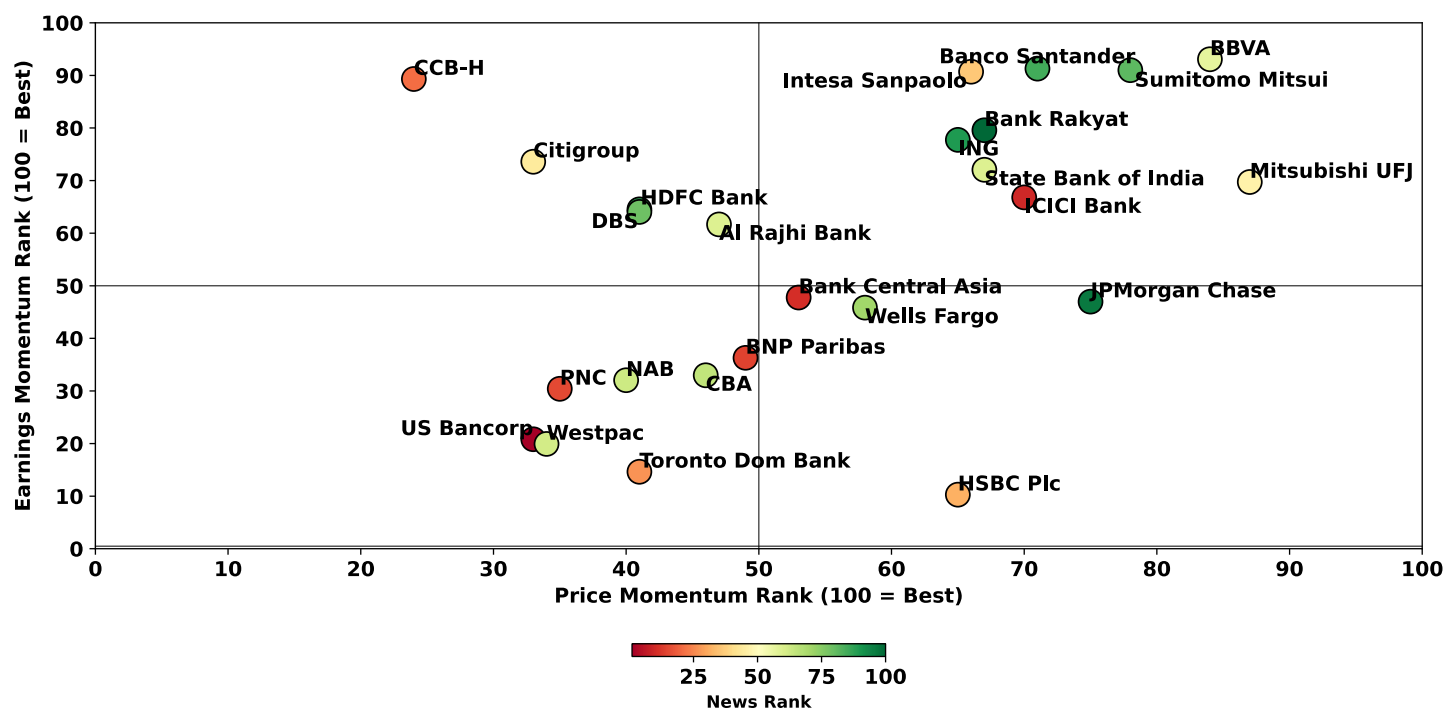


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

BofA GLOBAL RESEARCH

Chart 8: Banks: Earnings Momentum (vertical axis), Price Momentum (horizontal axis), News Momentum (colour)

Triple Momentum is most positive for Bank Rakyat, Sumitomo Mitsui and Banco Santander

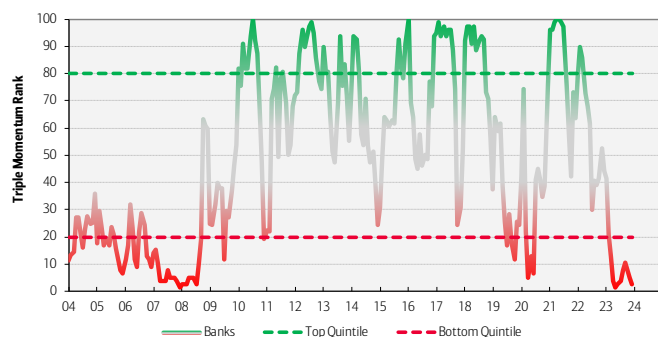


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

BofA GLOBAL RESEARCH

Chart 9: United States Banks: Triple Momentum Trend

The average stock Triple Momentum Rank for USA Banks is 3

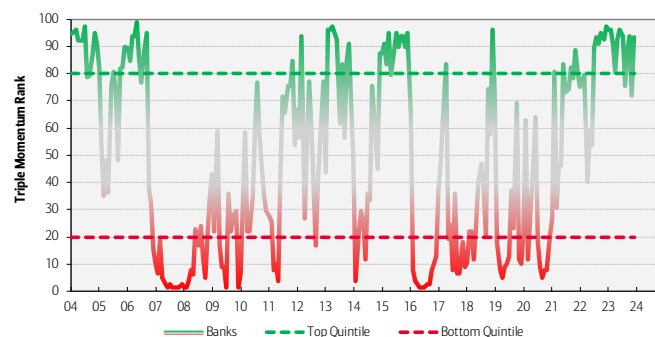


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

BofA GLOBAL RESEARCH

Chart 10: Japan Banks: Triple Momentum Trend

The average stock Triple Momentum Rank for Japan Banks is 93

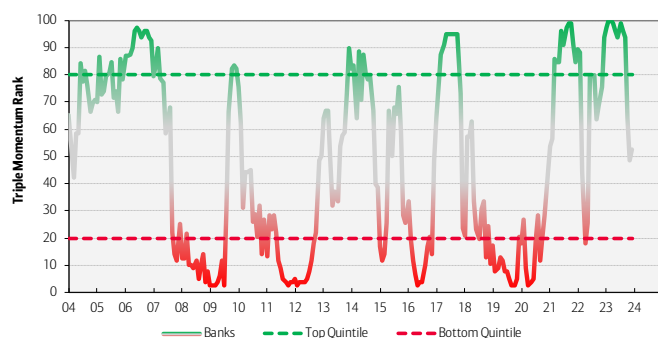


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

BofA GLOBAL RESEARCH

Chart 11: Europe Banks: Triple Momentum Trend

The average stock Triple Momentum Rank for Europe Banks is 53

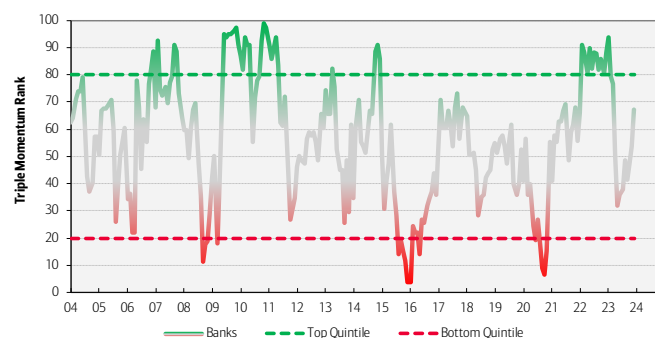


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

BofA GLOBAL RESEARCH

Chart 12: Asia Pac Banks: Triple Momentum Trend

The average stock Triple Momentum Rank for Asia Pac Banks is 67

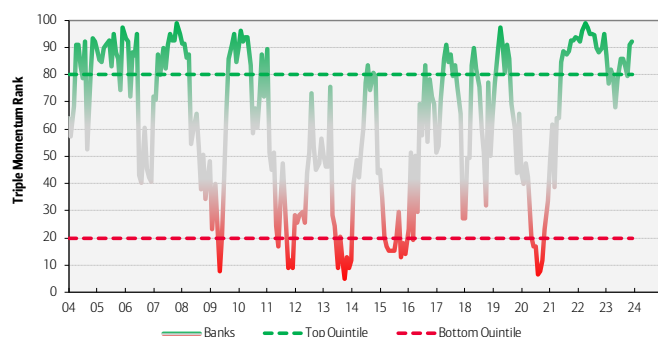


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

BofA GLOBAL RESEARCH

Chart 13: GEM ex-Asia Banks: Triple Momentum Trend

The average stock Triple Momentum Rank for Emerging ex-Asia Banks is 92



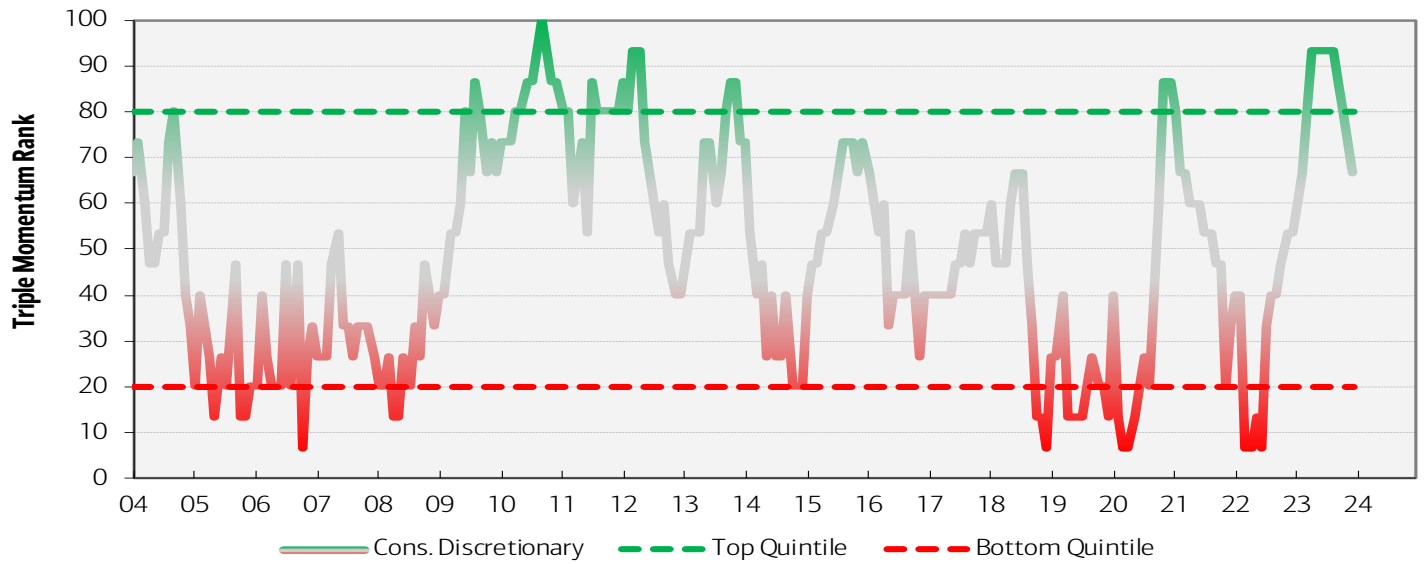
Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

BofA GLOBAL RESEARCH

Consumer Discretionary

Chart 14: Global Consumer Discretionary: Triple Momentum Trend

The Triple Momentum Rank for Global Consumer Discretionary is 67

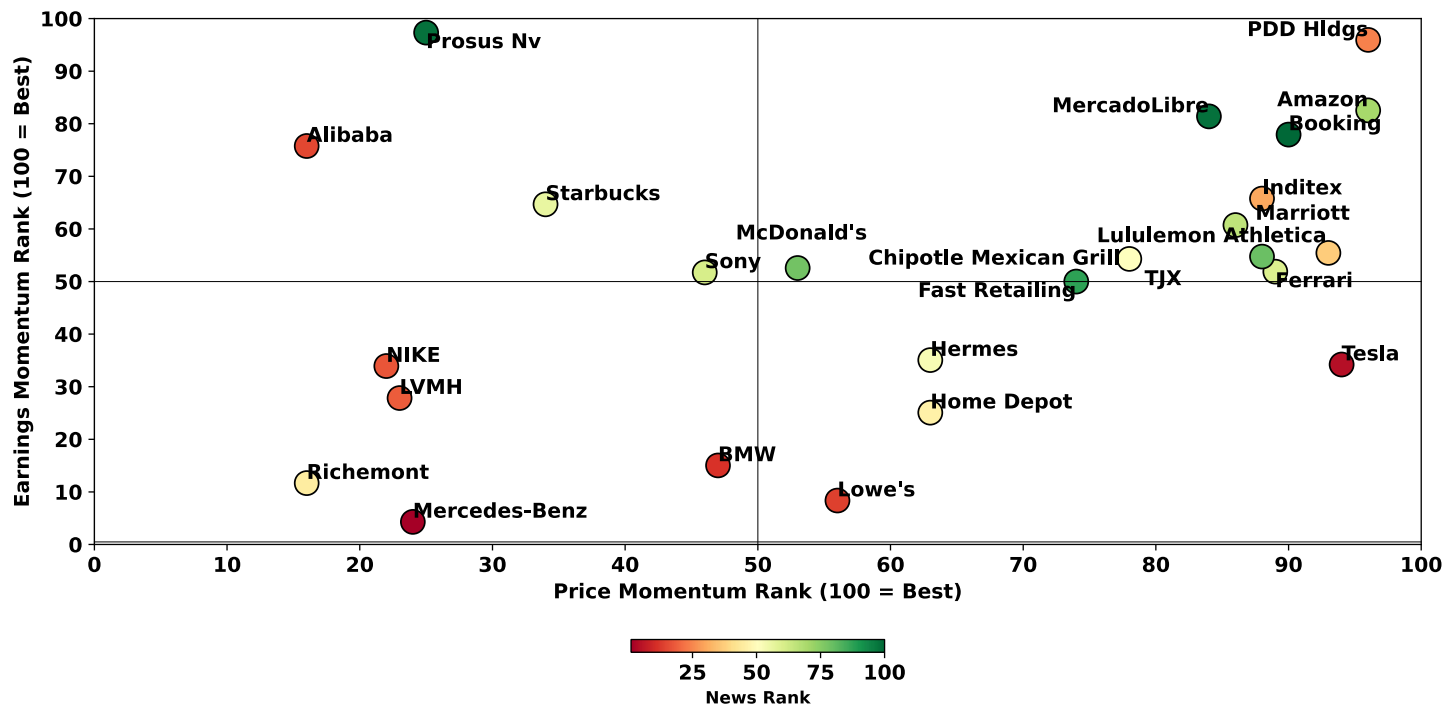


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

BofA GLOBAL RESEARCH

Chart 15: Consumer Discretionary: Earnings Momentum (vertical axis), Price Momentum (horizontal axis), News Momentum (colour)

Triple Momentum is most positive for Booking, MercadoLibre and Chipotle Mexican Grill

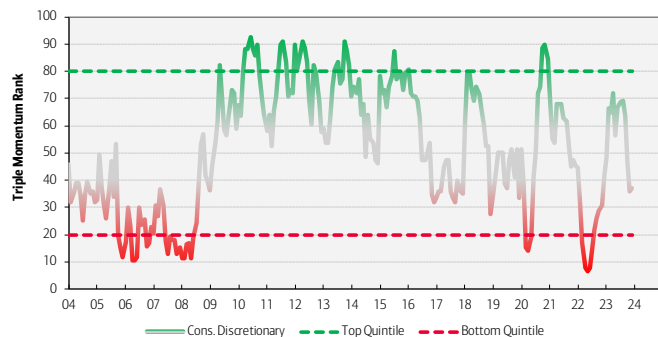


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

BofA GLOBAL RESEARCH

Chart 16: United States Consumer Discretionary: Triple Momentum Trend

The average stock Triple Momentum Rank for USA Consumer Discretionary is 37

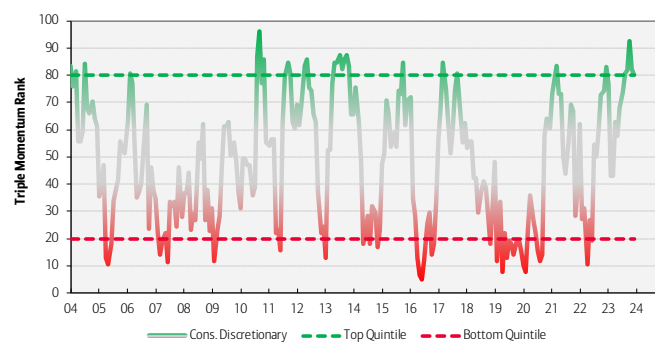


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

BofA GLOBAL RESEARCH

Chart 17: Japan Consumer Discretionary: Triple Momentum Trend

The average stock Triple Momentum Rank for Japan Consumer Discretionary is 80

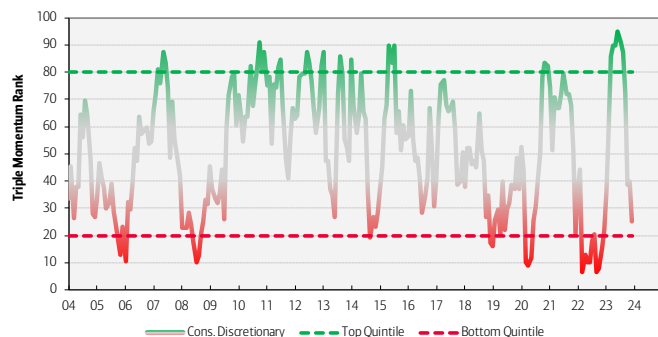


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

BofA GLOBAL RESEARCH

Chart 18: Europe Consumer Discretionary: Triple Momentum Trend

The average stock Triple Momentum Rank for Europe Consumer Discretionary is 25

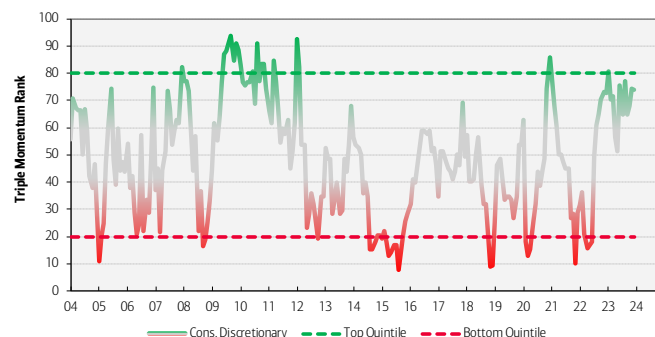


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

BofA GLOBAL RESEARCH

Chart 19: Asia Pac Consumer Discretionary: Triple Momentum Trend

The average stock Triple Momentum Rank for Asia Pac Consumer Discretionary is 74

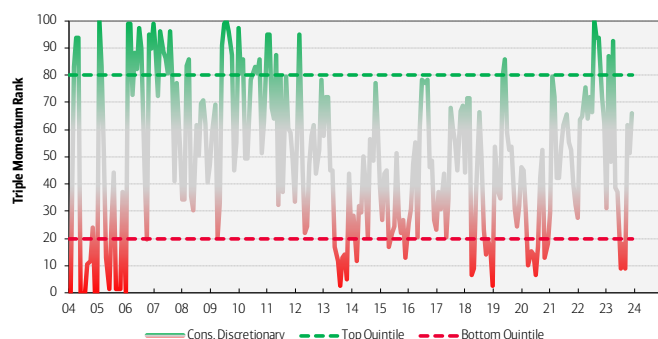


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

BofA GLOBAL RESEARCH

Chart 20: GEM ex-Asia Consumer Discretionary: Triple Momentum Trend

The average stock Triple Momentum Rank for Emerging ex-Asia Consumer Discretionary is 66



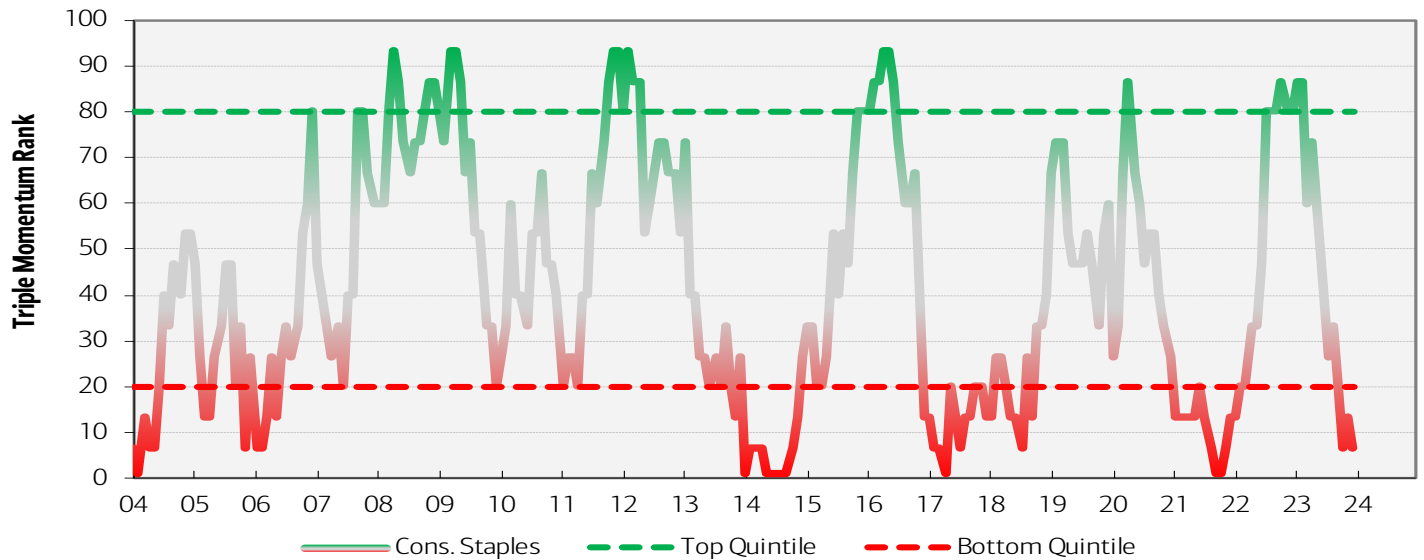
Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

BofA GLOBAL RESEARCH

Consumer Staples

Chart 21: Global Consumer Staples: Triple Momentum Trend

The Triple Momentum Rank for Global Consumer Staples is in the bottom quintile

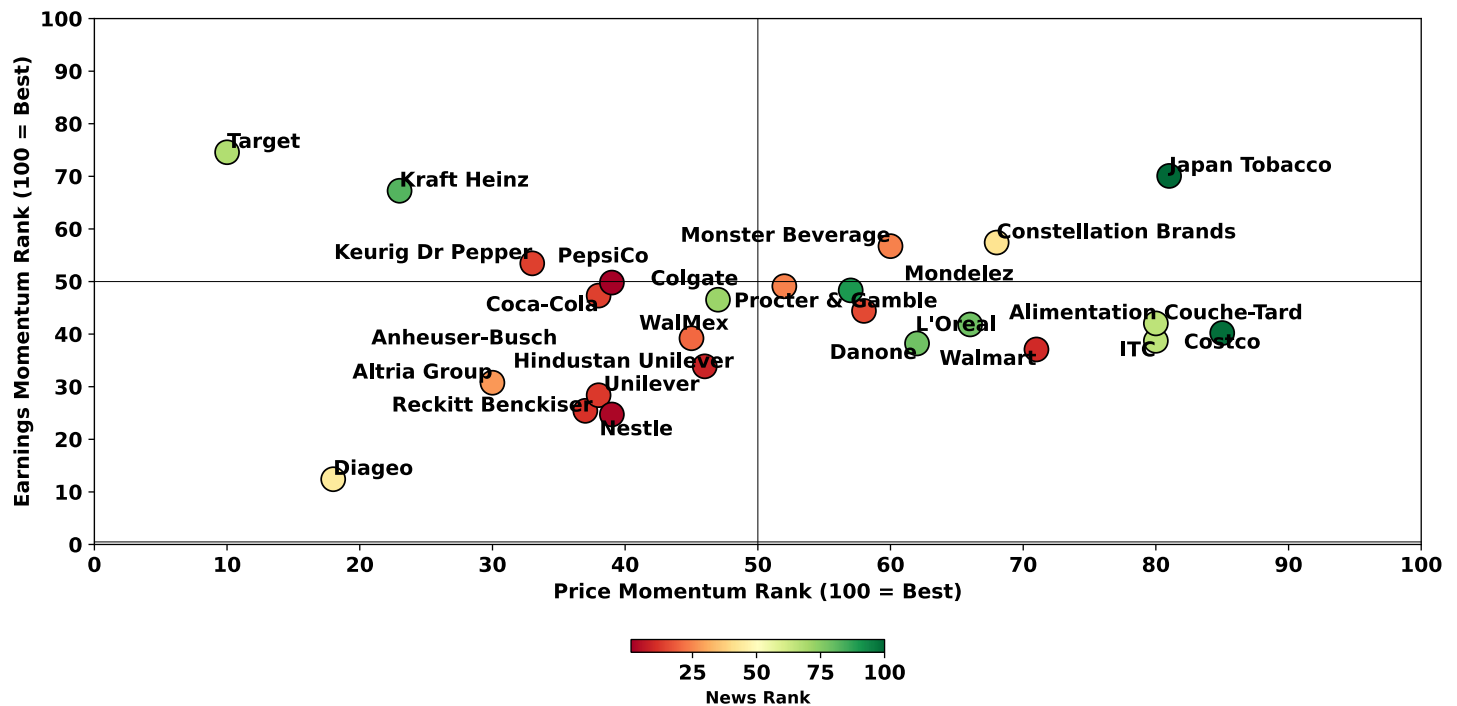


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

BofA GLOBAL RESEARCH

Chart 22: Consumer Staples: Earnings Momentum (vertical axis), Price Momentum (horizontal axis), News Momentum (colour)

Triple Momentum is most positive for Japan Tobacco

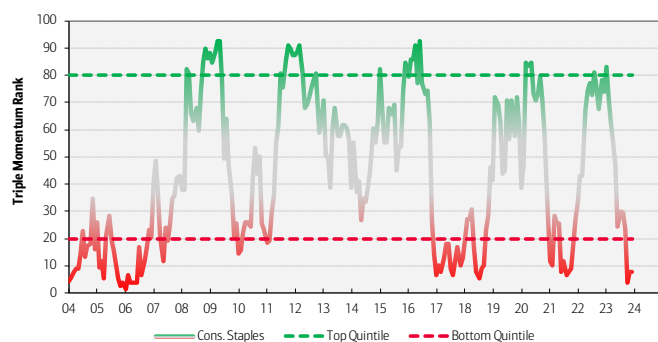


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

BofA GLOBAL RESEARCH

Chart 23: United States Consumer Staples: Triple Momentum Trend

The average stock Triple Momentum Rank for USA Consumer Staples is 8

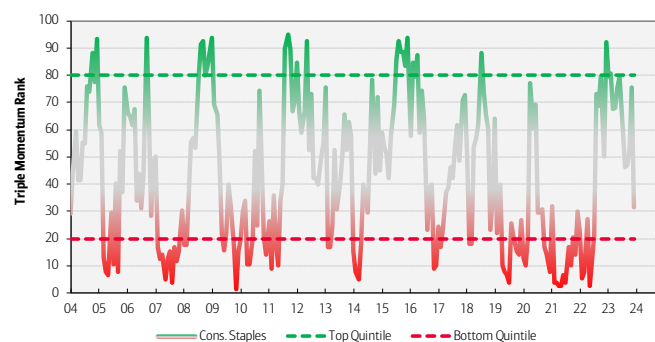


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

BofA GLOBAL RESEARCH

Chart 24: Japan Consumer Staples: Triple Momentum Trend

The average stock Triple Momentum Rank for Japan Consumer Staples is 32

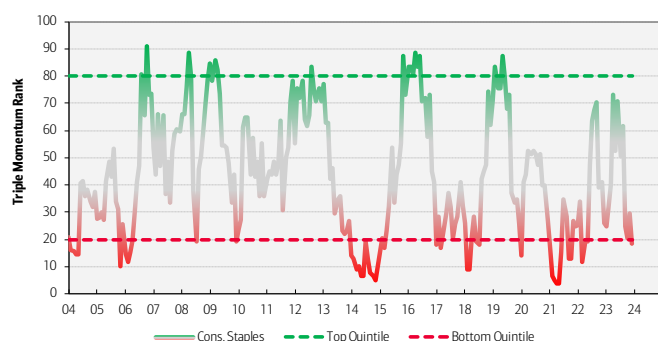


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

BofA GLOBAL RESEARCH

Chart 25: Europe Consumer Staples: Triple Momentum Trend

The average stock Triple Momentum Rank for Europe Consumer Staples is 18

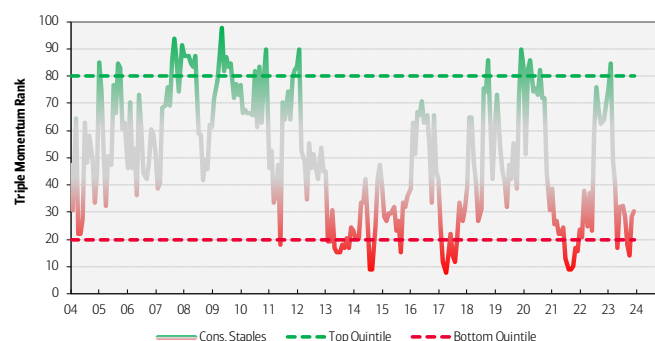


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

BofA GLOBAL RESEARCH

Chart 26: Asia Pac Consumer Staples: Triple Momentum Trend

The average stock Triple Momentum Rank for Asia Pac Consumer Staples is 30

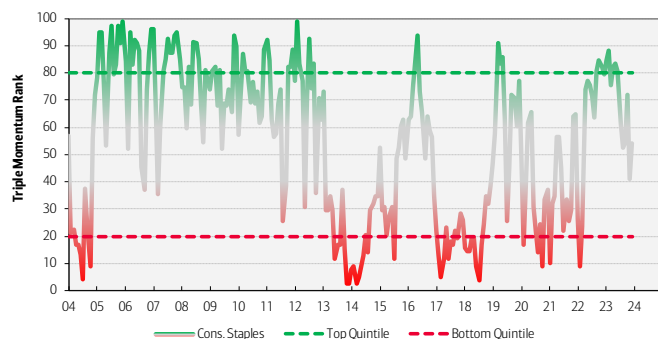


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

BofA GLOBAL RESEARCH

Chart 27: GEM ex-Asia Consumer Staples: Triple Momentum Trend

The average stock Triple Momentum Rank for Emergingex-Asia Consumer Staples is 54



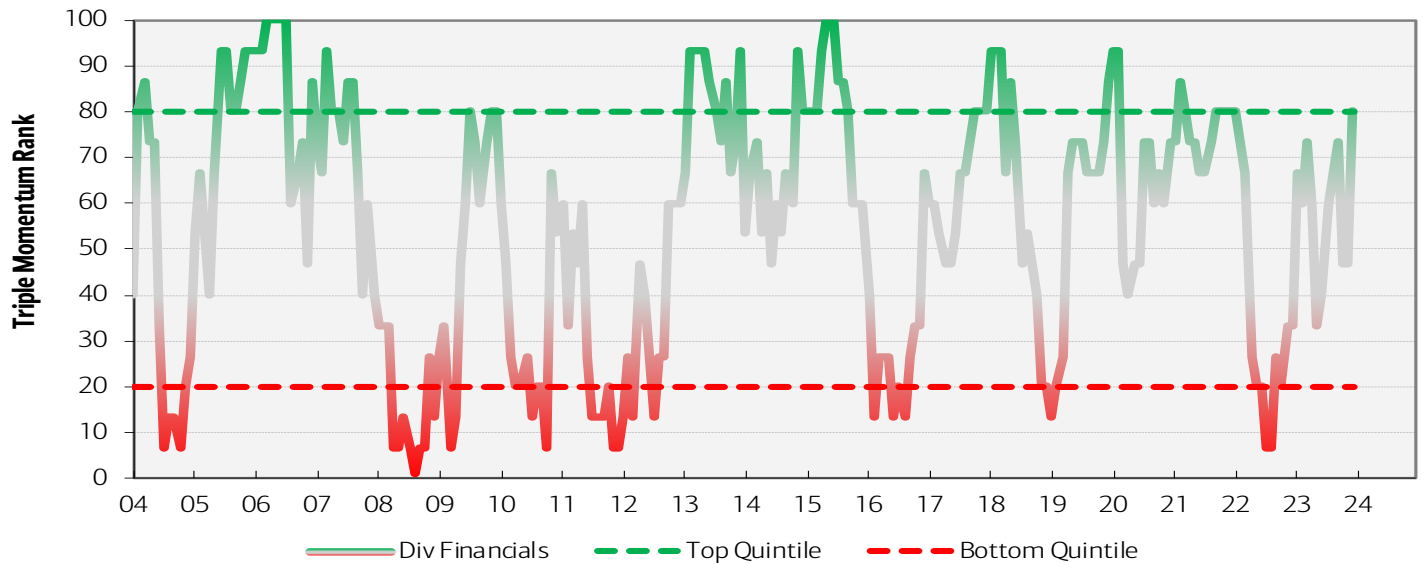
Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

BofA GLOBAL RESEARCH

Diversified Financials

Chart 28: Global Diversified Financials: Triple Momentum Trend

The Triple Momentum Rank for Global Diversified Financials is 80

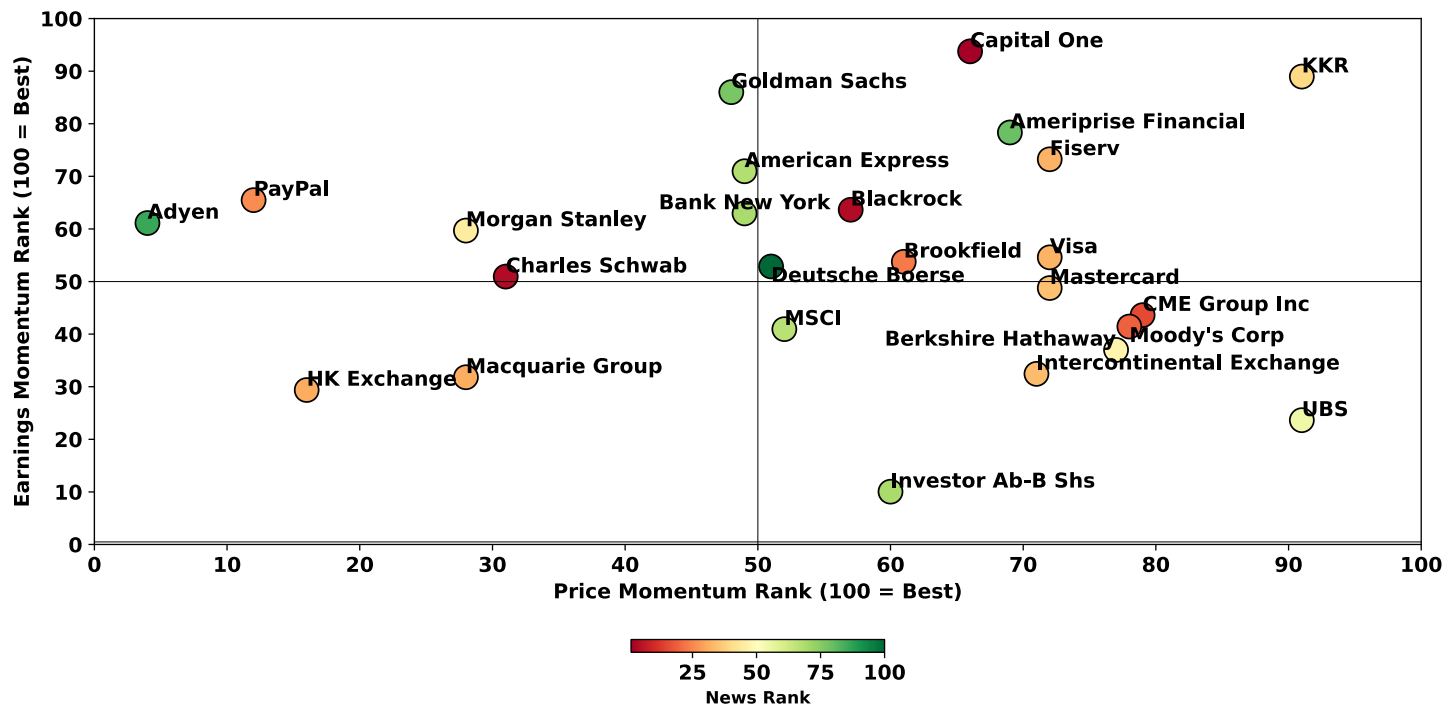


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

BofA GLOBAL RESEARCH

Chart 29: Diversified Financials: Earnings Momentum (vertical axis), Price Momentum (horizontal axis), News Momentum (colour)

Triple Momentum is most positive for Ameriprise Financial and Deutsche Boerse

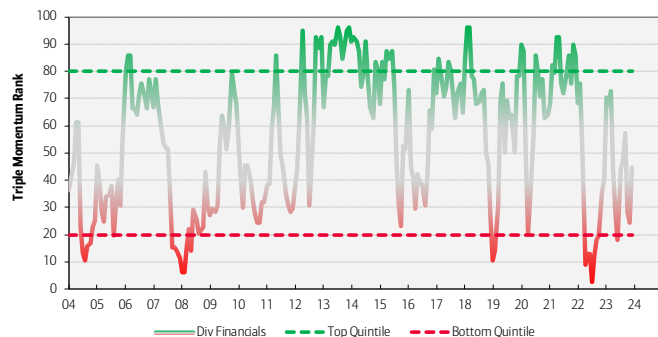


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

BofA GLOBAL RESEARCH

Chart 30: United States Diversified Financials: Triple Momentum Trend

The average stock Triple Momentum Rank for USA Diversified Financials is 45

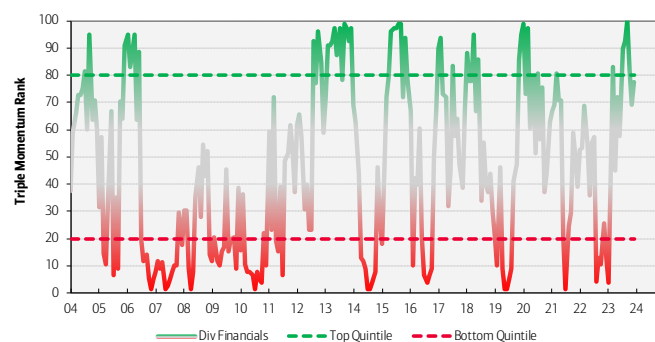


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

BofA GLOBAL RESEARCH

Chart 31: Japan Diversified Financials: Triple Momentum Trend

The average stock Triple Momentum Rank for Japan Diversified Financials is 78

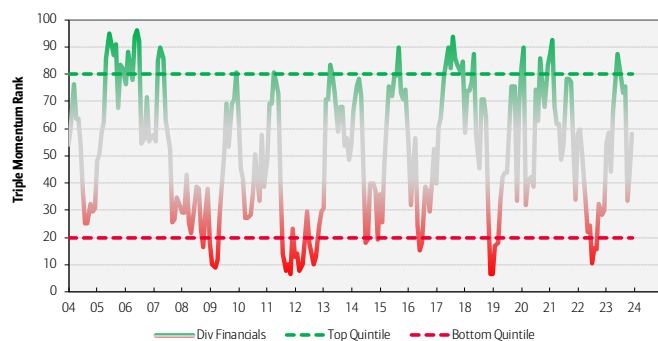


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

BofA GLOBAL RESEARCH

Chart 32: Europe Diversified Financials: Triple Momentum Trend

The average stock Triple Momentum Rank for Europe Diversified Financials is 58

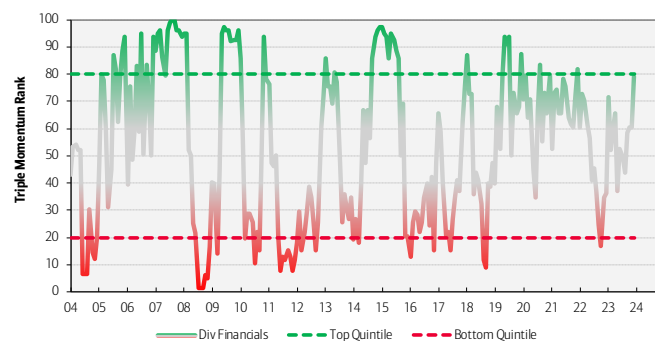


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

BofA GLOBAL RESEARCH

Chart 33: Asia Pac Diversified Financials: Triple Momentum Trend

The average stock Triple Momentum Rank for Asia Pac Diversified Financials is 79

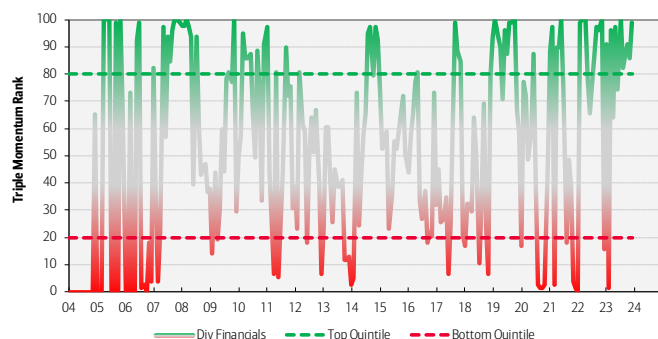


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

BofA GLOBAL RESEARCH

Chart 34: GEM ex-Asia Diversified Financials: Triple Momentum Trend

The average stock Triple Momentum Rank for Emerging ex-Asia Diversified Financials is 99



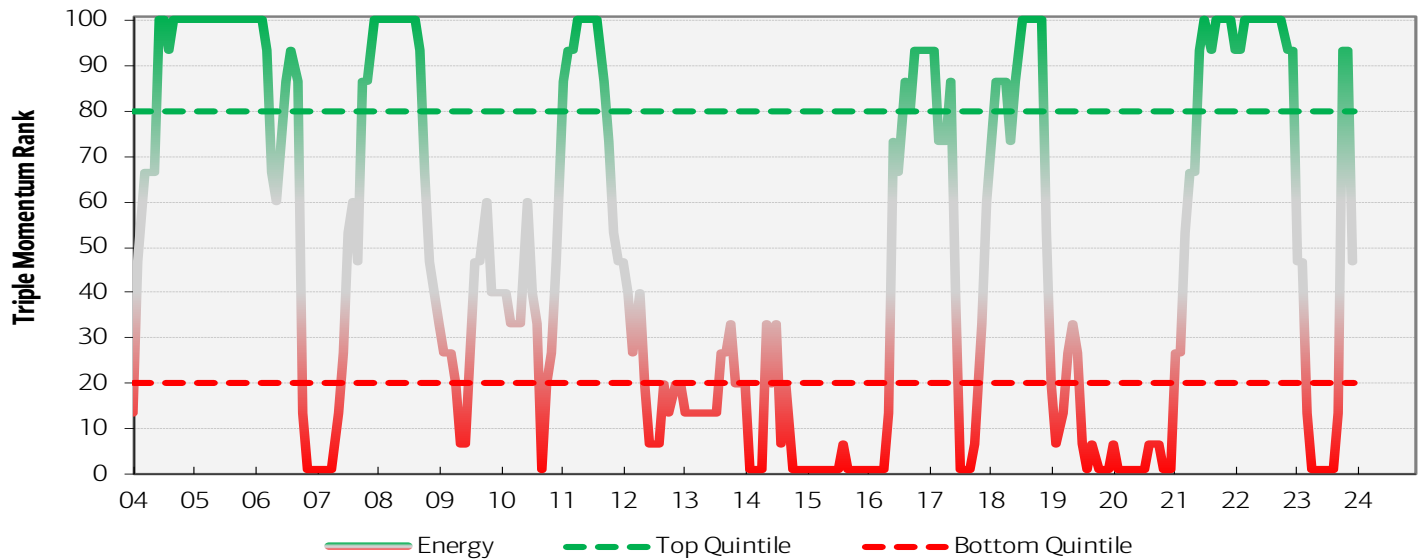
Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

BofA GLOBAL RESEARCH

Energy

Chart 35: Global Energy: Triple Momentum Trend

The Triple Momentum Rank for Global Energy is 47

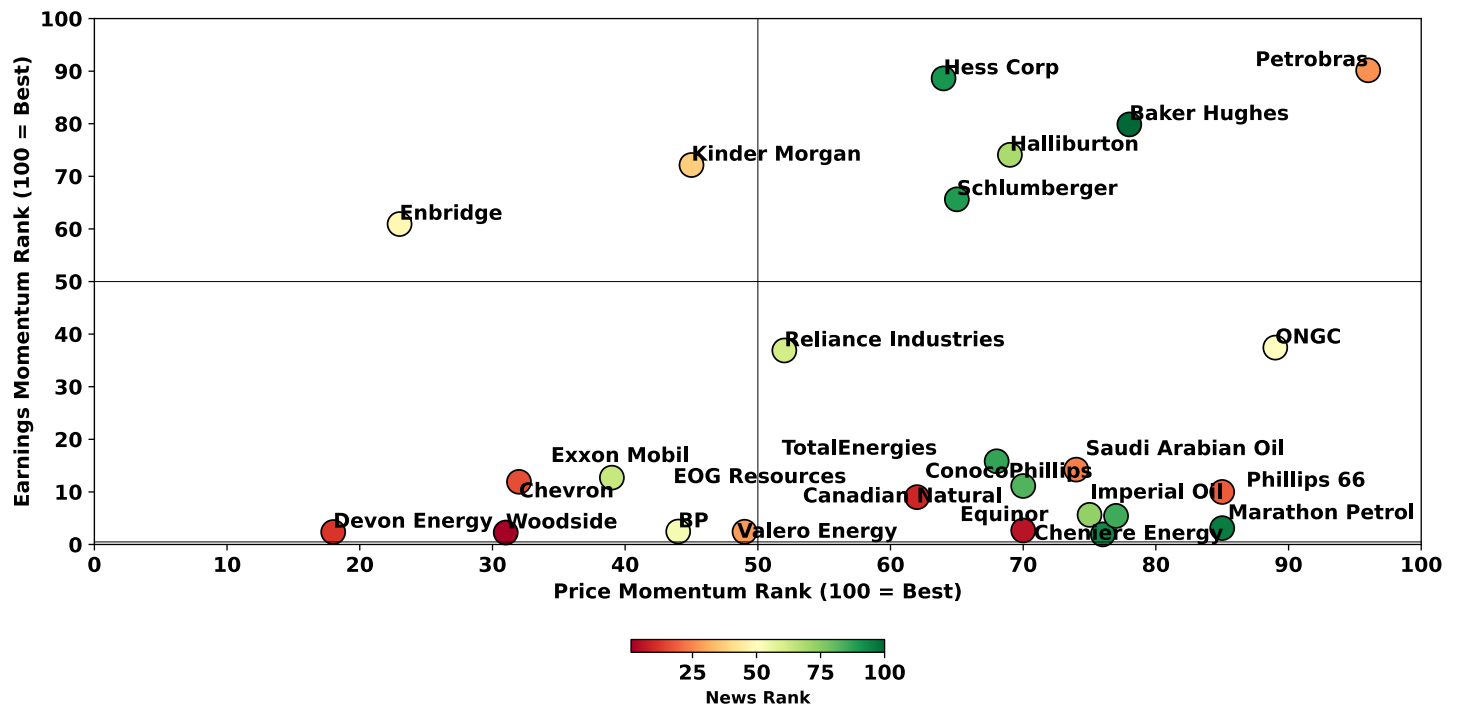


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

BofA GLOBAL RESEARCH

Chart 36: Energy: Earnings Momentum (vertical axis), Price Momentum (horizontal axis), News Momentum (colour)

Triple Momentum is most positive for Baker Hughes, Hess Corp and Schlumberger

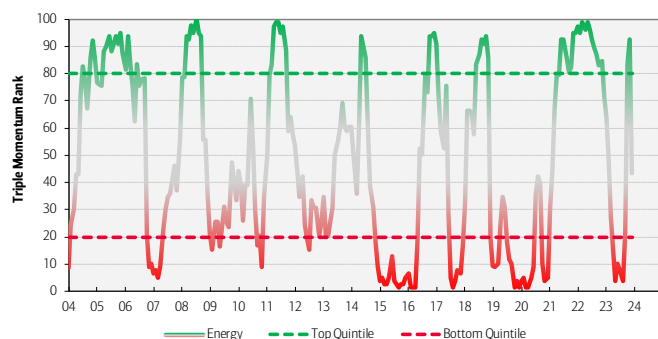


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

BofA GLOBAL RESEARCH

Chart 37: United States Energy: Triple Momentum Trend

The average stock Triple Momentum Rank for USA Energy is 43

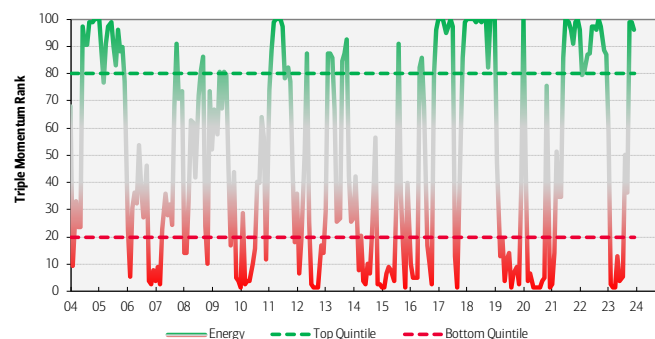


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

BofA GLOBAL RESEARCH

Chart 38: Japan Energy: Triple Momentum Trend

The average stock Triple Momentum Rank for Japan Energy is 96

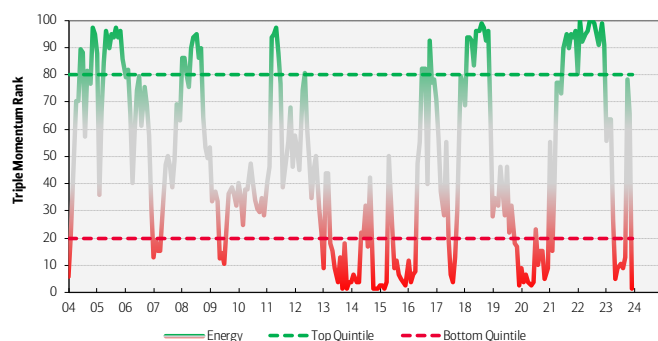


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

BofA GLOBAL RESEARCH

Chart 39: Europe Energy: Triple Momentum Trend

The average stock Triple Momentum Rank for Europe Energy is 1

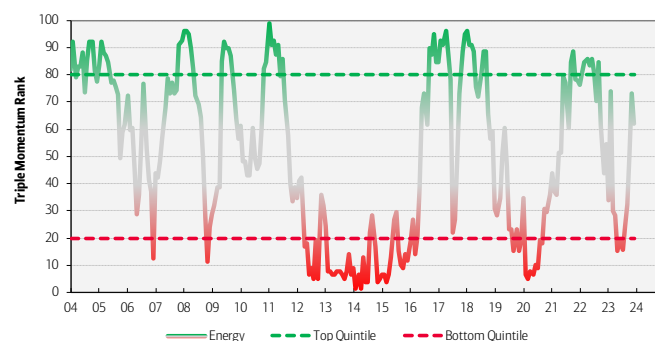


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

BofA GLOBAL RESEARCH

Chart 40: Asia Pac Energy: Triple Momentum Trend

The average stock Triple Momentum Rank for Asia Pac Energy is 62

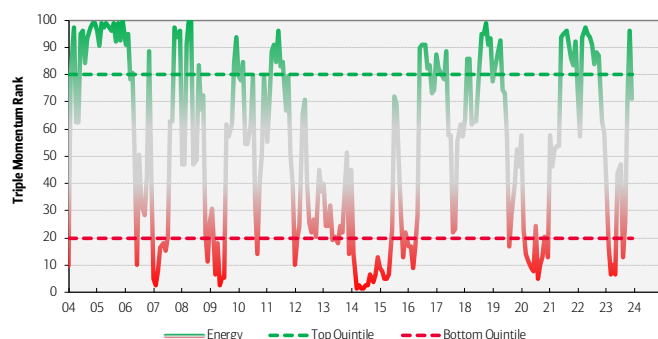


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

BofA GLOBAL RESEARCH

Chart 41: GEM ex-Asia Energy: Triple Momentum Trend

The average stock Triple Momentum Rank for Emerging ex-Asia Energy is 71



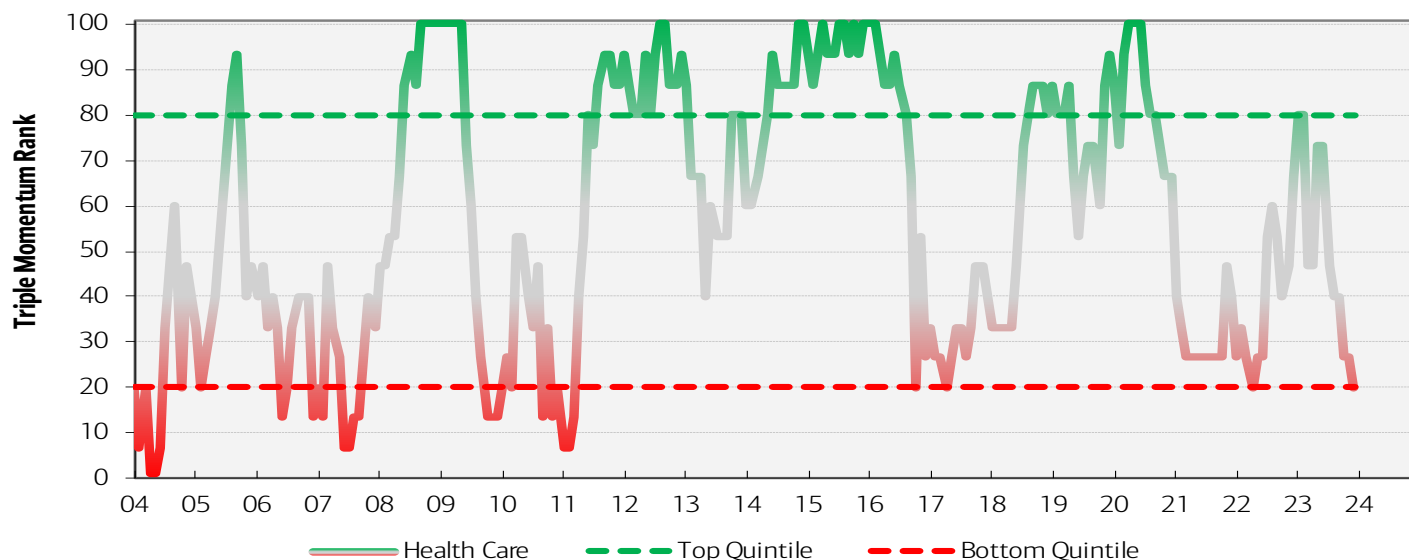
Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

BofA GLOBAL RESEARCH

Health Care

Chart 42: Global Health Care: Triple Momentum Trend

The Triple Momentum Rank for Global Health Care is 20

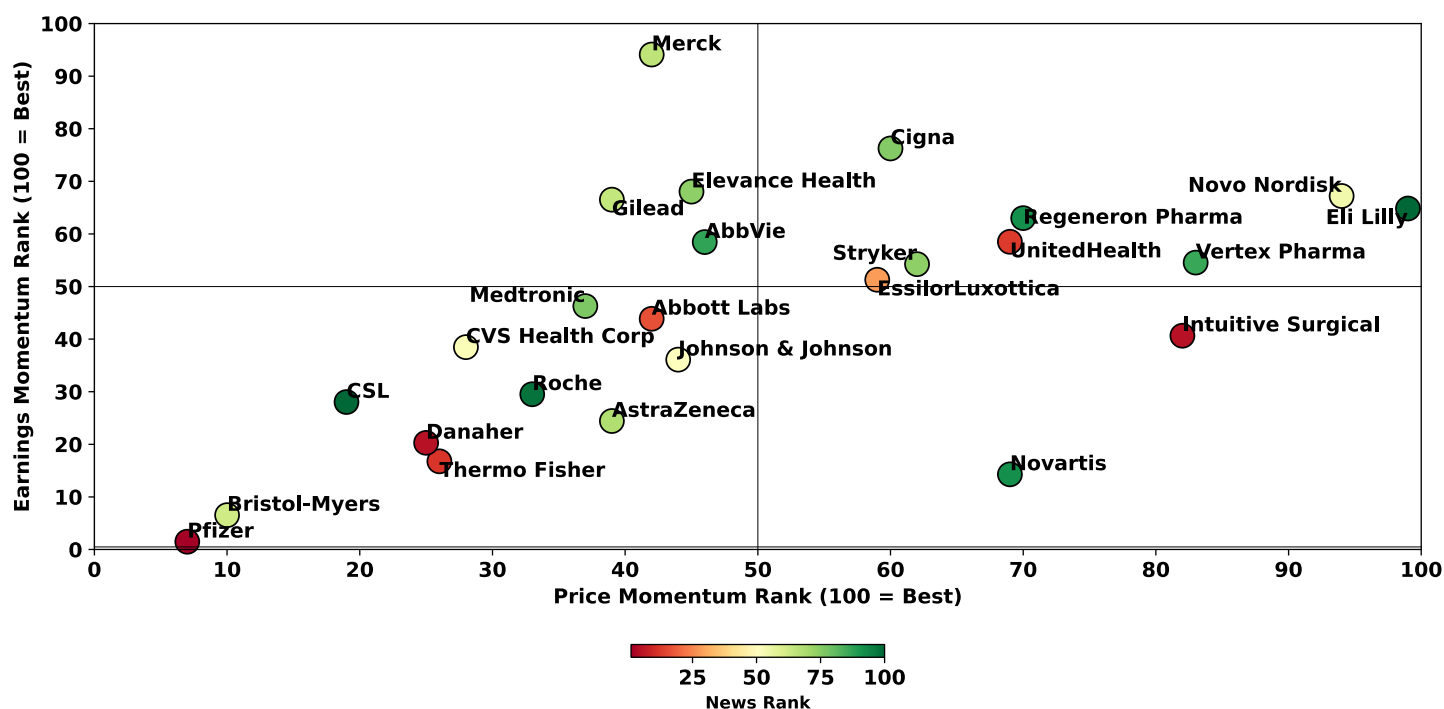


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

BofA GLOBAL RESEARCH

Chart 43: Health Care: Earnings Momentum (vertical axis), Price Momentum (horizontal axis), News Momentum (colour)

Triple Momentum is most positive for Eli Lilly, Regeneron Pharma and Vertex Pharma

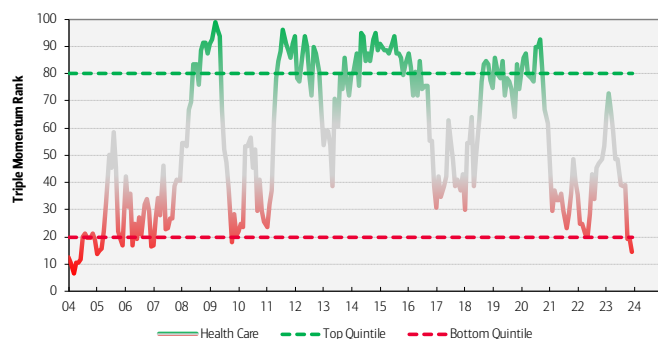


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

BofA GLOBAL RESEARCH

Chart 44: United States Health Care: Triple Momentum Trend

The average stock Triple Momentum Rank for USA Health Care is 14

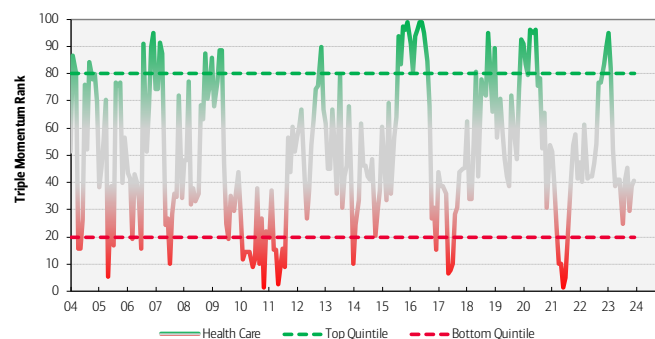


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

BofA GLOBAL RESEARCH

Chart 45: Japan Health Care: Triple Momentum Trend

The average stock Triple Momentum Rank for Japan Health Care is 41

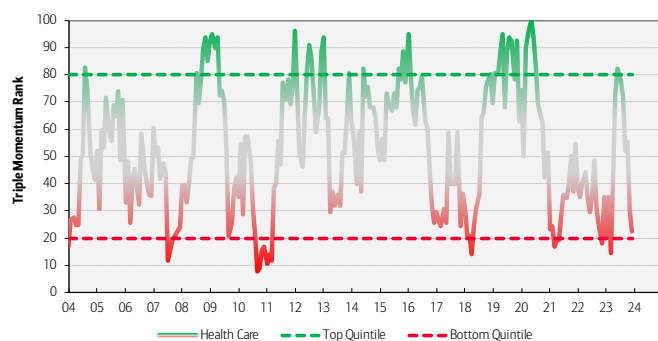


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

BofA GLOBAL RESEARCH

Chart 46: Europe Health Care: Triple Momentum Trend

The average stock Triple Momentum Rank for Europe Health Care is 22

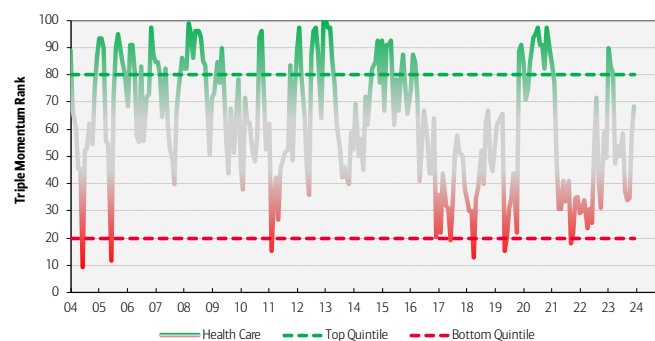


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

BofA GLOBAL RESEARCH

Chart 47: Asia Pac Health Care: Triple Momentum Trend

The average stock Triple Momentum Rank for Asia Pac Health Care is 68

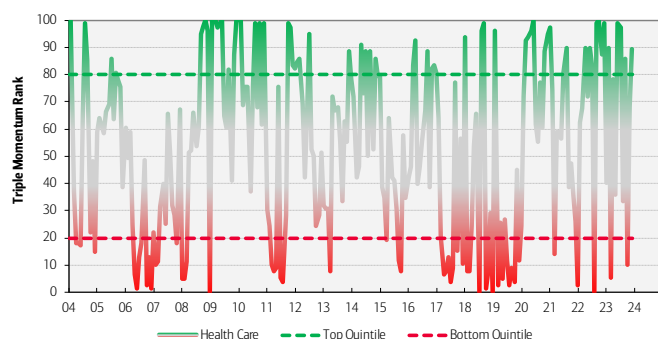


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

BofA GLOBAL RESEARCH

Chart 48: GEM ex-Asia Health Care: Triple Momentum Trend

The average stock Triple Momentum Rank for Emerging ex-Asia Health Care is 89



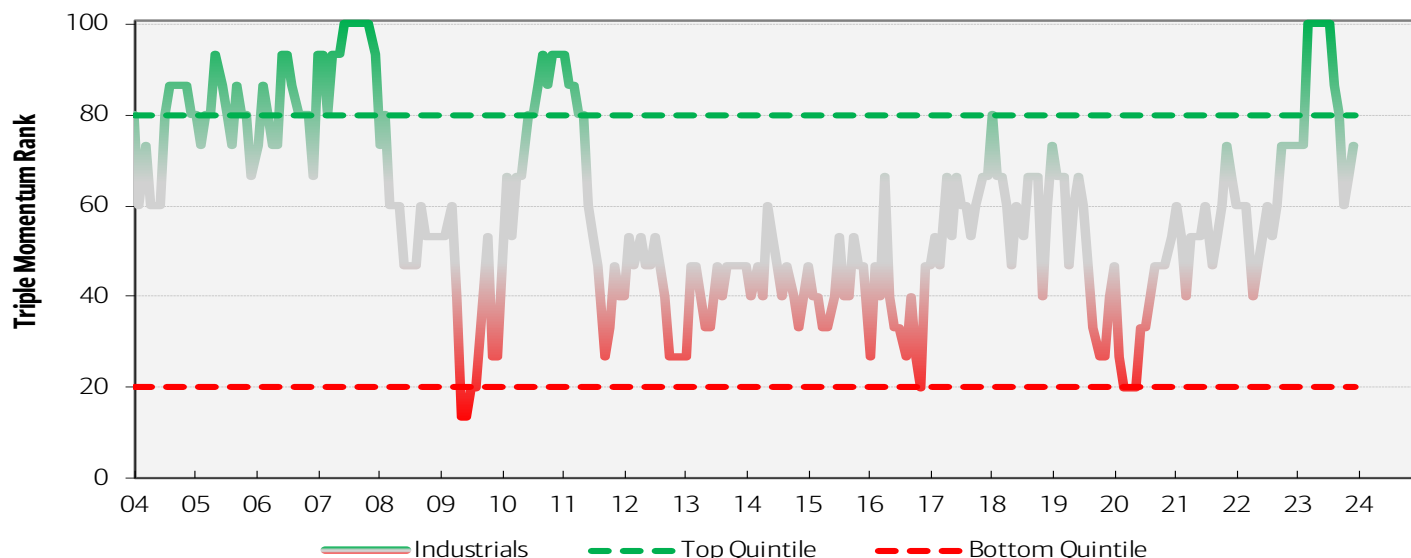
Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

BofA GLOBAL RESEARCH

Industrials

Chart 49: Global Industrials: Triple Momentum Trend

The Triple Momentum Rank for Global Industrials is 73

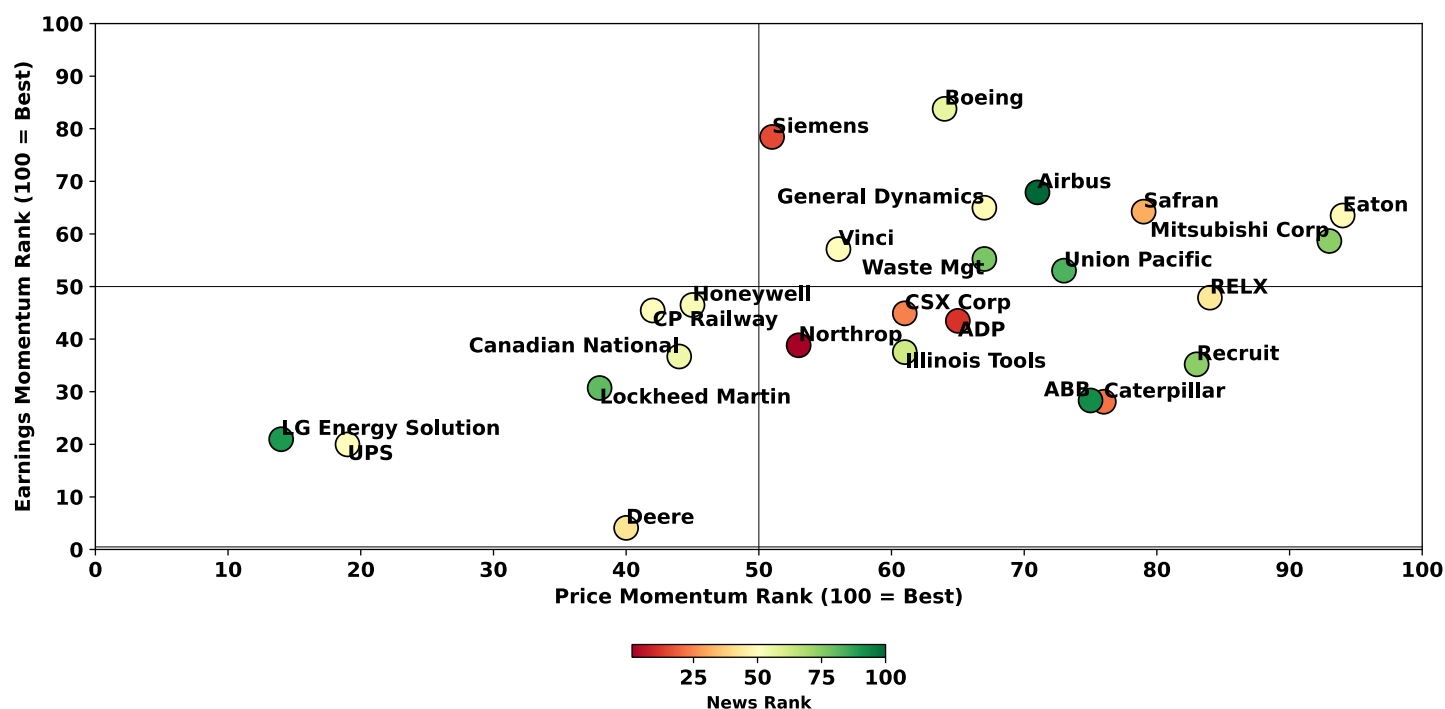


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

BofA GLOBAL RESEARCH

Chart 50: Industrials: Earnings Momentum (vertical axis), Price Momentum (horizontal axis), News Momentum (colour)

Triple Momentum is most positive for Airbus, Mitsubishi Corp and Union Pacific

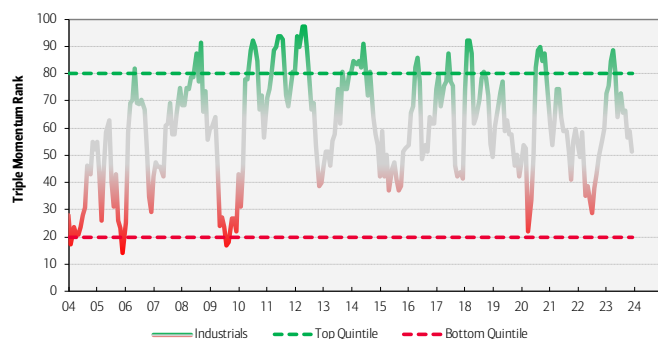


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

BofA GLOBAL RESEARCH

Chart 51: United States Industrials: Triple Momentum Trend

The average stock Triple Momentum Rank for USA Industrials is 51

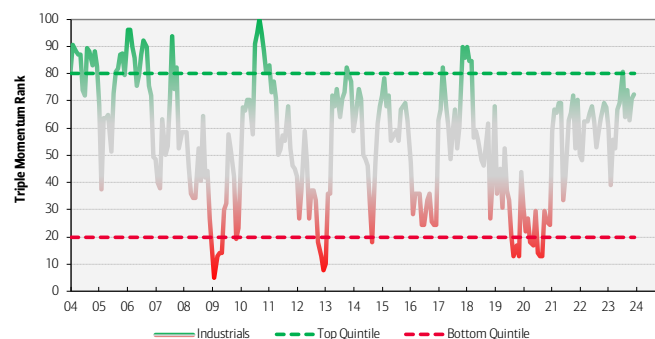


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

BoFA GLOBAL RESEARCH

Chart 52: Japan Industrials: Triple Momentum Trend

The average stock Triple Momentum Rank for Japan Industrials is 72

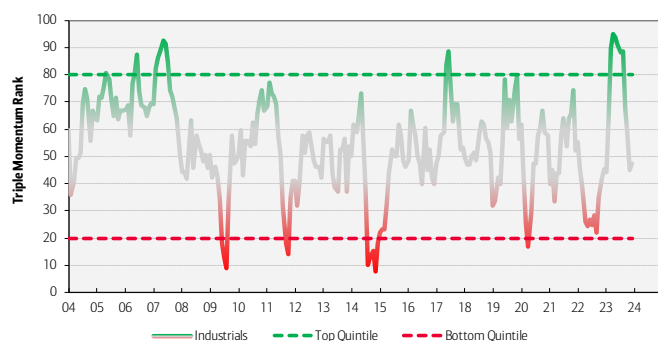


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

BoFA GLOBAL RESEARCH

Chart 53: Europe Industrials: Triple Momentum Trend

The average stock Triple Momentum Rank for Europe Industrials is 47

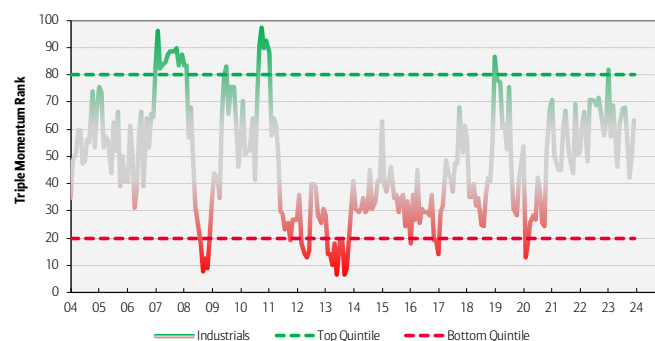


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

BoFA GLOBAL RESEARCH

Chart 54: Asia Pac Industrials: Triple Momentum Trend

The average stock Triple Momentum Rank for Asia Pac Industrials is 63

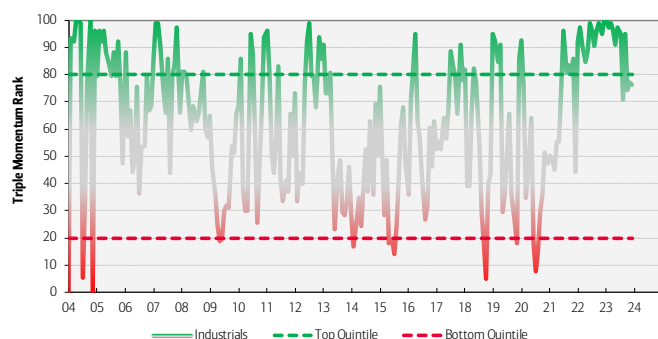


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

BoFA GLOBAL RESEARCH

Chart 55: GEM ex-Asia Industrials: Triple Momentum Trend

The average stock Triple Momentum Rank for Emerging ex-Asia Industrials is 76



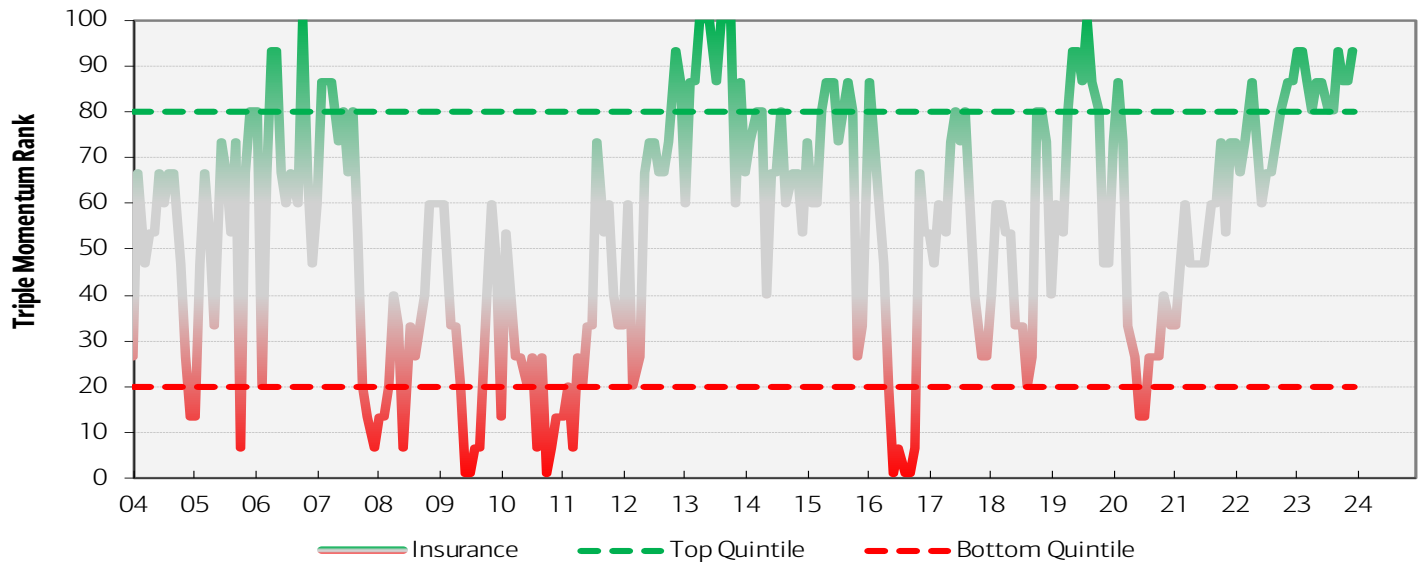
Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

BoFA GLOBAL RESEARCH

Insurance

Chart 56: Global Insurance: Triple Momentum Trend

The Triple Momentum Rank for Global Insurance is in the top quintile

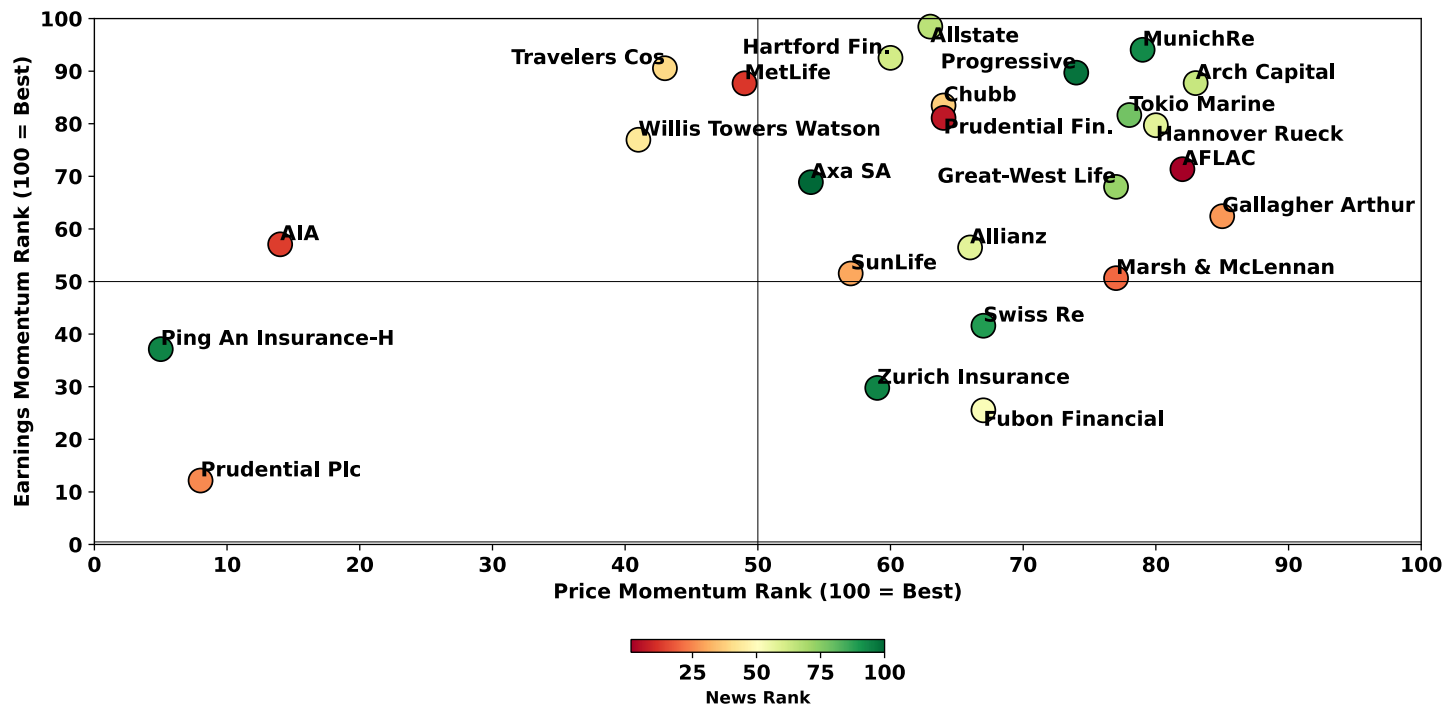


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

BofA GLOBAL RESEARCH

Chart 57: Insurance: Earnings Momentum (vertical axis), Price Momentum (horizontal axis), News Momentum (colour)

Triple Momentum is most positive for MunichRe, Progressive and Tokio Marine

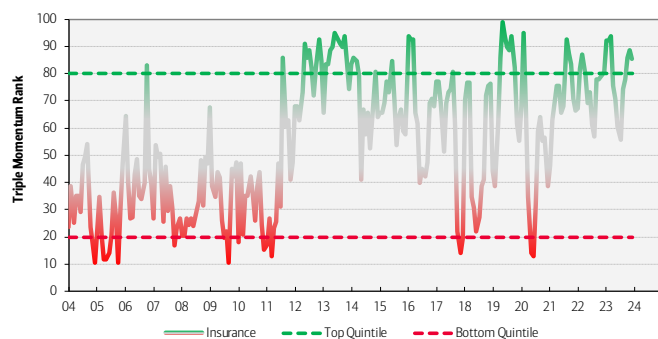


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

BofA GLOBAL RESEARCH

Chart 58: United States Insurance: Triple Momentum Trend

The average stock Triple Momentum Rank for USA Insurance is 86

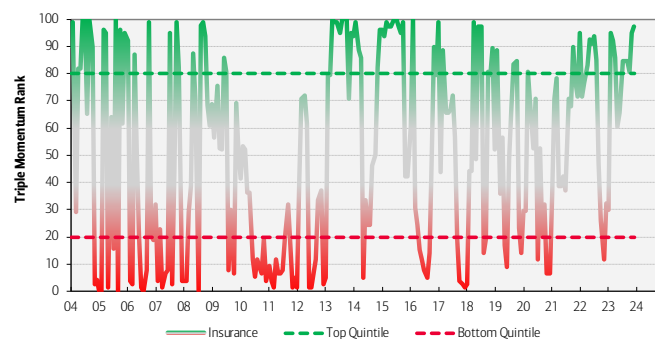


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

BofA GLOBAL RESEARCH

Chart 59: Japan Insurance: Triple Momentum Trend

The average stock Triple Momentum Rank for Japan Insurance is 97

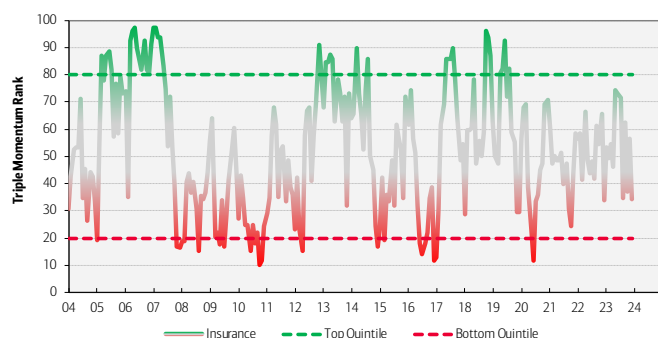


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

BofA GLOBAL RESEARCH

Chart 60: Europe Insurance: Triple Momentum Trend

The average stock Triple Momentum Rank for Europe Insurance is 34

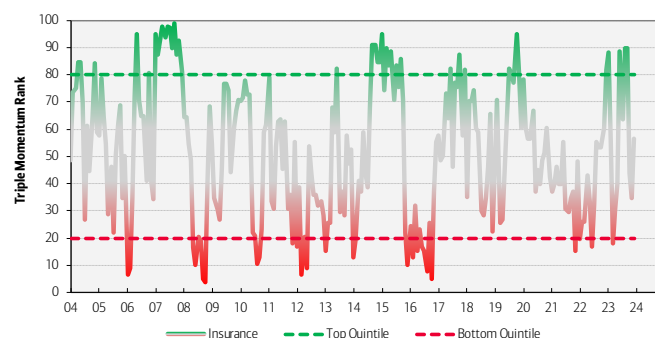


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

BofA GLOBAL RESEARCH

Chart 61: Asia Pac Insurance: Triple Momentum Trend

The average stock Triple Momentum Rank for Asia Pac Insurance is 57

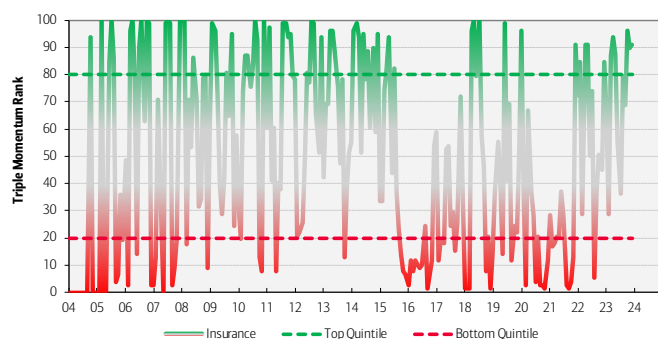


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

BofA GLOBAL RESEARCH

Chart 62: GEM ex-Asia Insurance: Triple Momentum Trend

The average stock Triple Momentum Rank for Emerging ex-Asia Insurance is 91



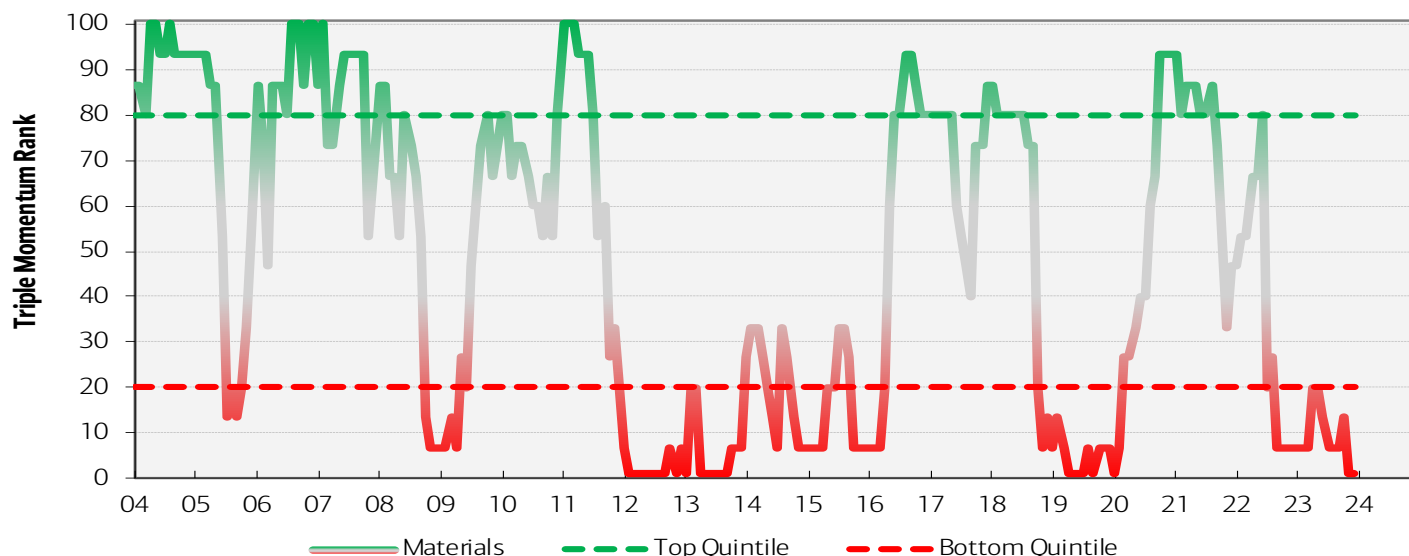
Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

BofA GLOBAL RESEARCH

Materials

Chart 63: Global Materials: Triple Momentum Trend

The Triple Momentum is weakest for Global Materials sector

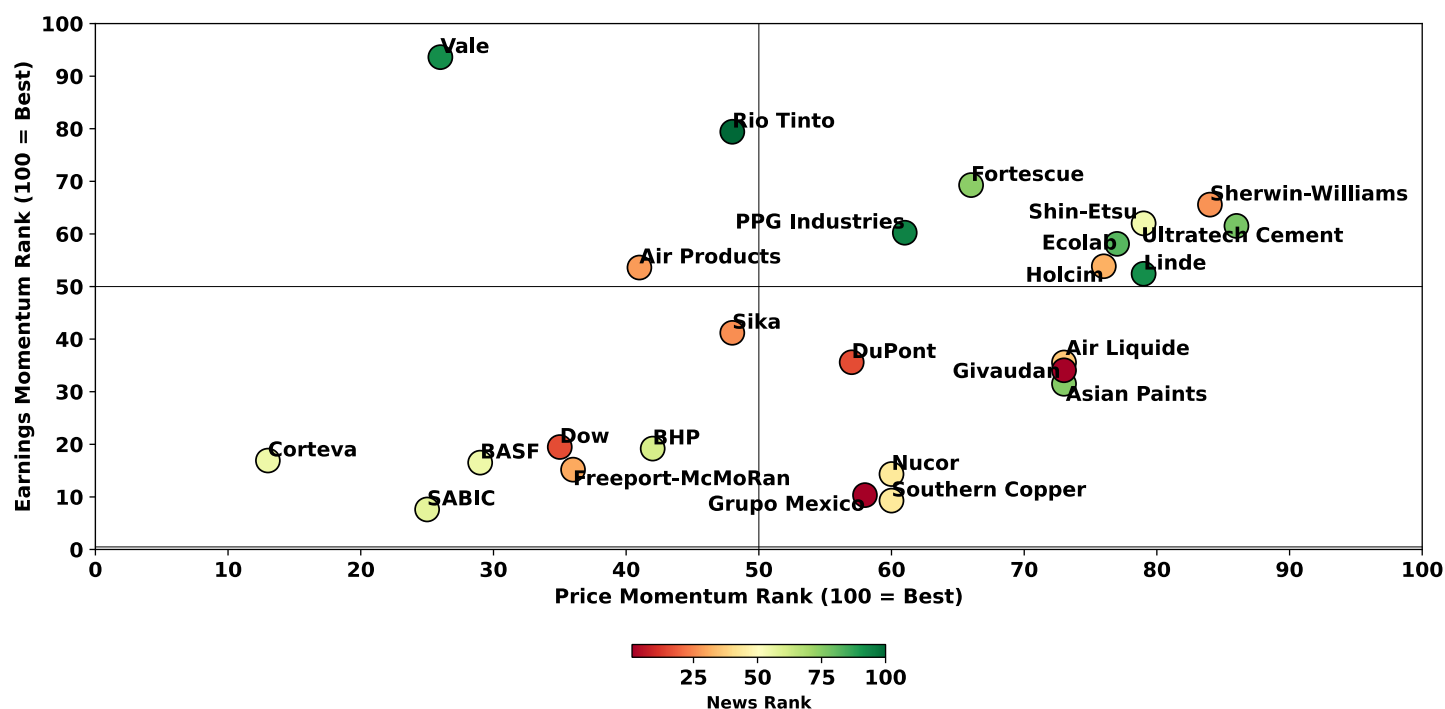


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

BofA GLOBAL RESEARCH

Chart 64: Materials: Earnings Momentum (vertical axis), Price Momentum (horizontal axis), News Momentum (colour)

Triple Momentum is most positive for Linde, PPG Industries and Ecolab

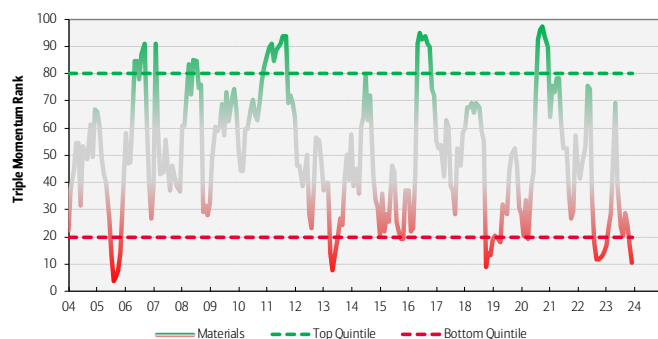


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

BofA GLOBAL RESEARCH

Chart 65: United States Materials: Triple Momentum Trend

The average stock Triple Momentum Rank for USA Materials is 11

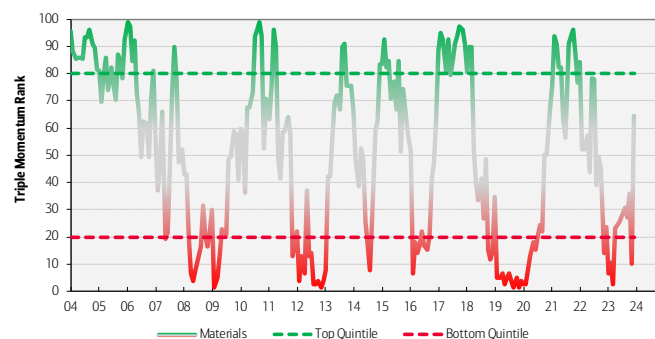


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

BofA GLOBAL RESEARCH

Chart 66: Japan Materials: Triple Momentum Trend

The average stock Triple Momentum Rank for Japan Materials is 64

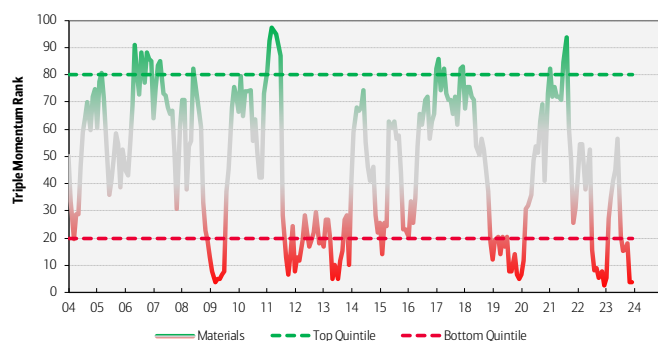


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

BofA GLOBAL RESEARCH

Chart 67: Europe Materials: Triple Momentum Trend

The average stock Triple Momentum Rank for Europe Materials is 4

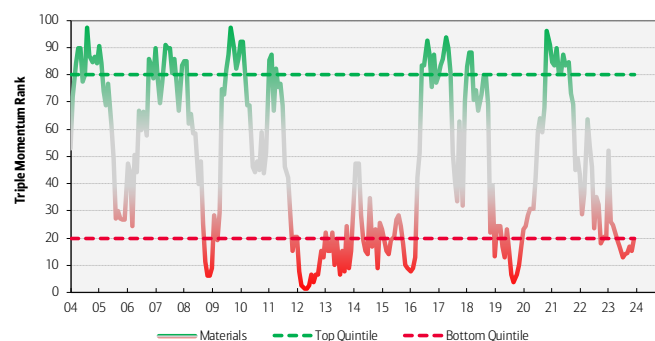


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

BofA GLOBAL RESEARCH

Chart 68: Asia Pac Materials: Triple Momentum Trend

The average stock Triple Momentum Rank for Asia Pac Materials is 20

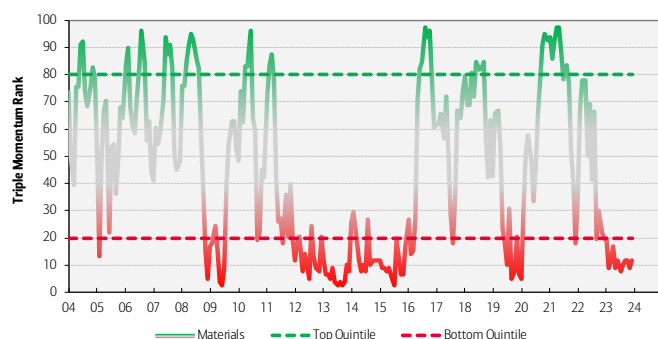


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

BofA GLOBAL RESEARCH

Chart 69: GEM ex-Asia Materials: Triple Momentum Trend

The average stock Triple Momentum Rank for Emerging ex-Asia Materials is 12



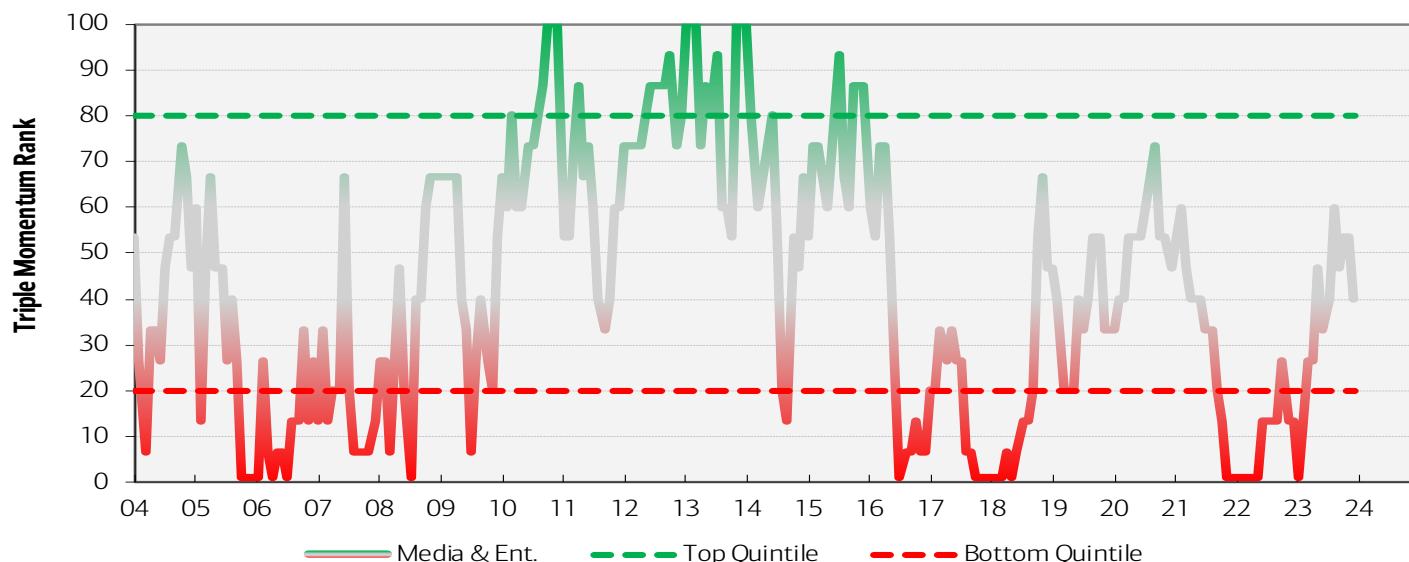
Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

BofA GLOBAL RESEARCH

Media & Entertainment

Chart 70: Global Media & Entertainment: Triple Momentum Trend

The Triple Momentum Rank for Global Media & Entertainment is 40

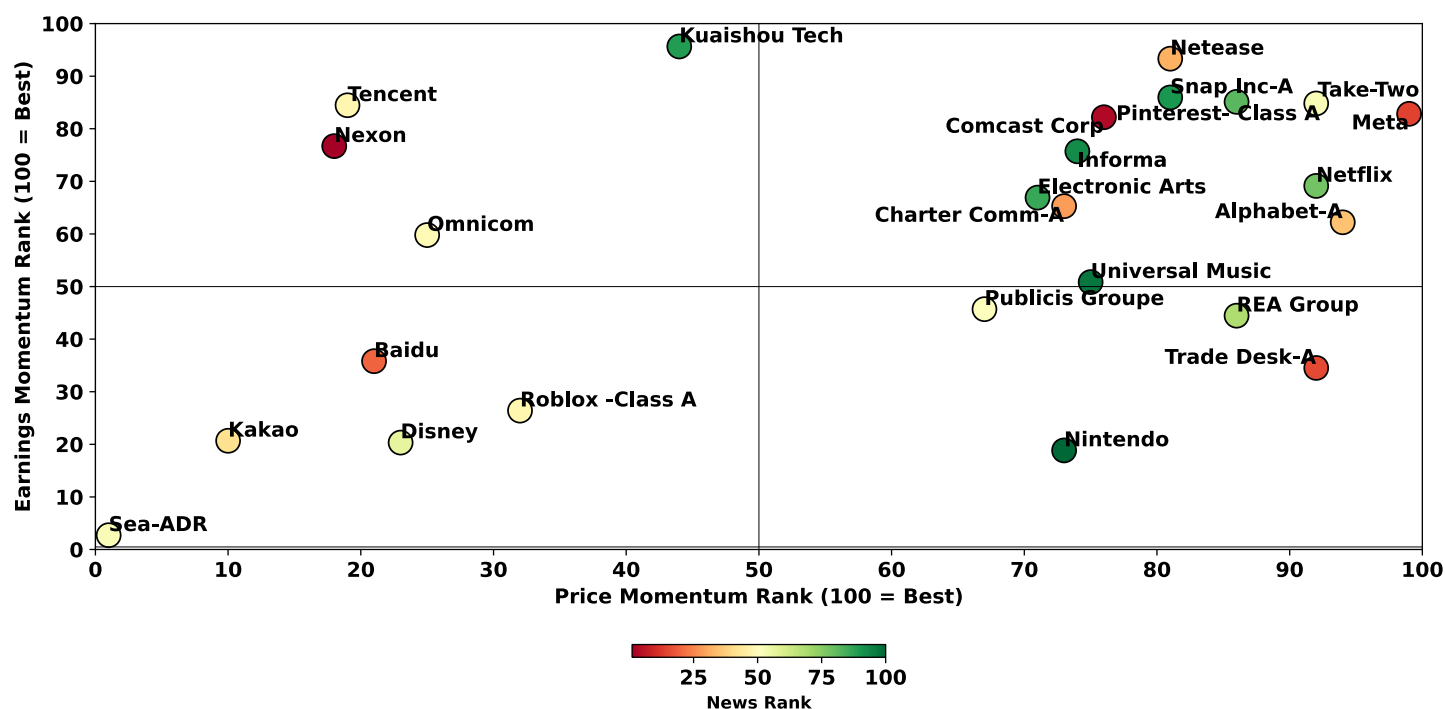


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

BofA GLOBAL RESEARCH

Chart 71: Media & Entertainment: Earnings Momentum (vertical axis), Price Momentum (horizontal axis), News Momentum (colour)

Triple Momentum is most positive for Snap Inc-A, Pinterest- Class A and Informa

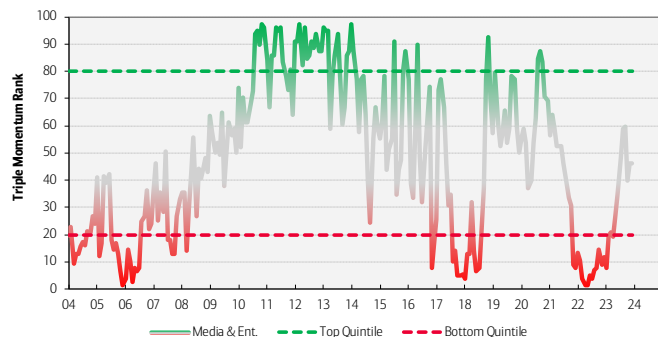


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

BofA GLOBAL RESEARCH

Chart 72: United States Media & Entertainment: Triple Momentum Trend

The average stock Triple Momentum Rank for USA Media & Entertainment is 46

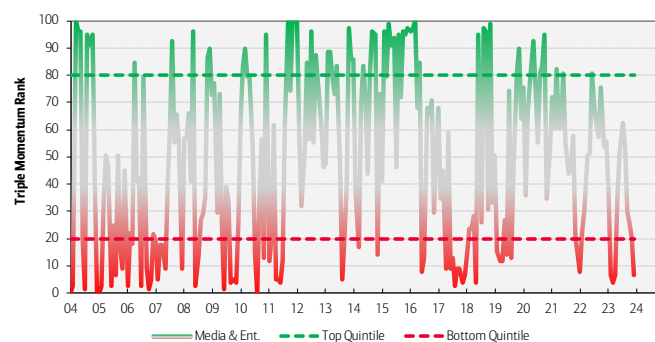


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

BofA GLOBAL RESEARCH

Chart 73: Japan Media & Entertainment: Triple Momentum Trend

The average stock Triple Momentum Rank for Japan Media & Entertainment is 7

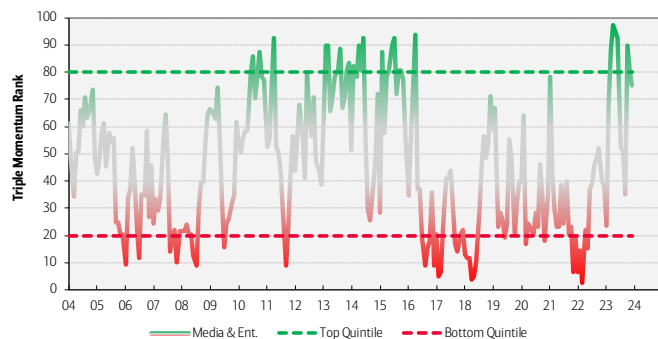


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

BofA GLOBAL RESEARCH

Chart 74: Europe Media & Entertainment: Triple Momentum Trend

The average stock Triple Momentum Rank for Europe Media & Entertainment is 75

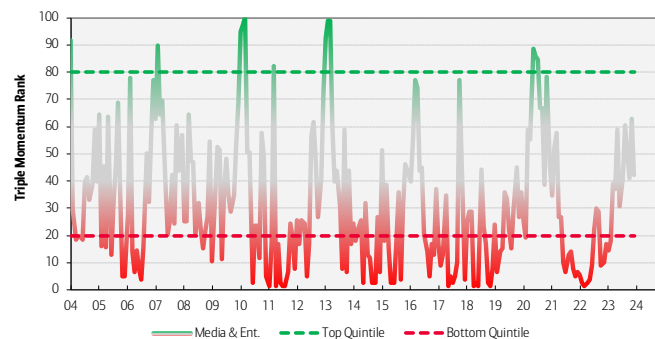


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

BofA GLOBAL RESEARCH

Chart 75: Asia Pac Media & Entertainment: Triple Momentum Trend

The average stock Triple Momentum Rank for Asia Pac Media & Entertainment is 42

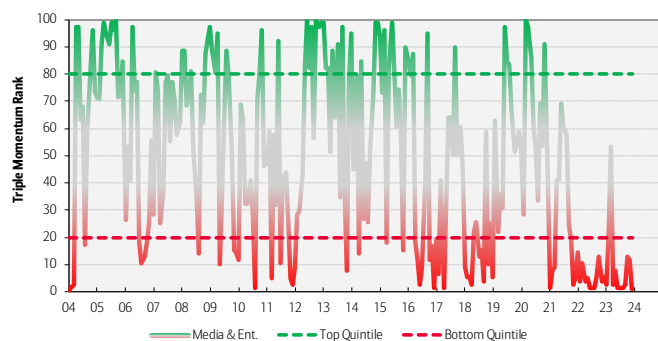


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

BofA GLOBAL RESEARCH

Chart 76: GEM ex-Asia Media & Entertainment: Triple Momentum Trend

The average stock Triple Momentum Rank for Emerging ex-Asia Media & Entertainment is 1



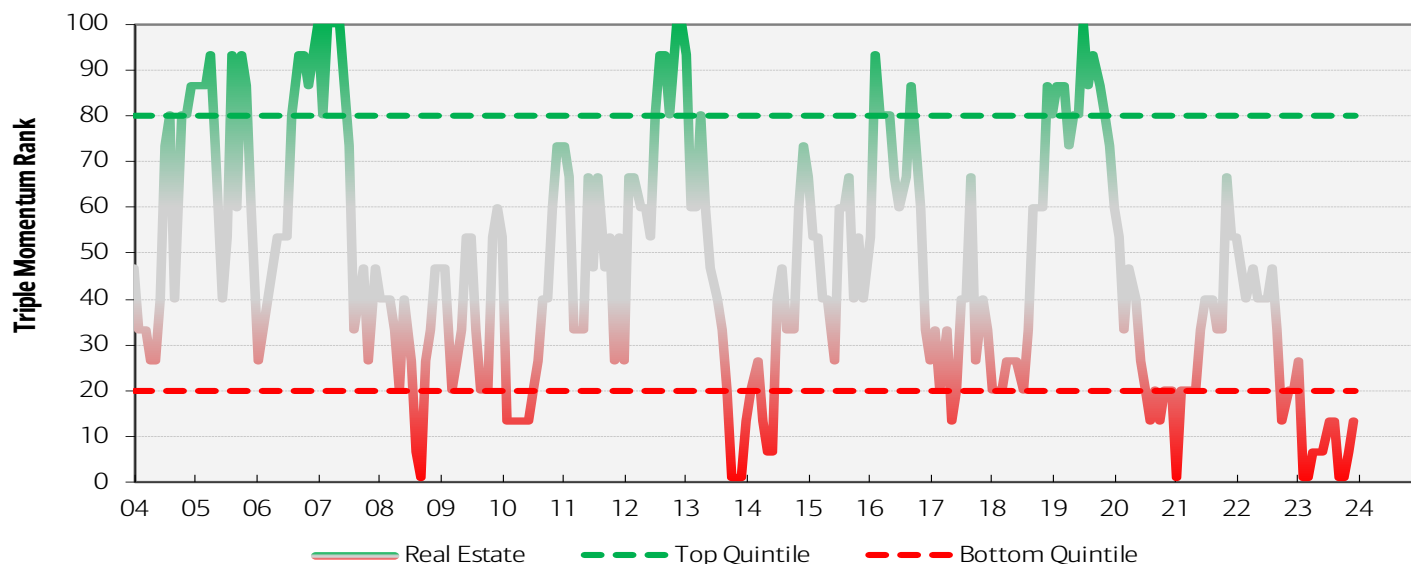
Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

BofA GLOBAL RESEARCH

Real Estate

Chart 77: Global Real Estate: Triple Momentum Trend

The Triple Momentum Rank for Global Real Estate is in the bottom quintile

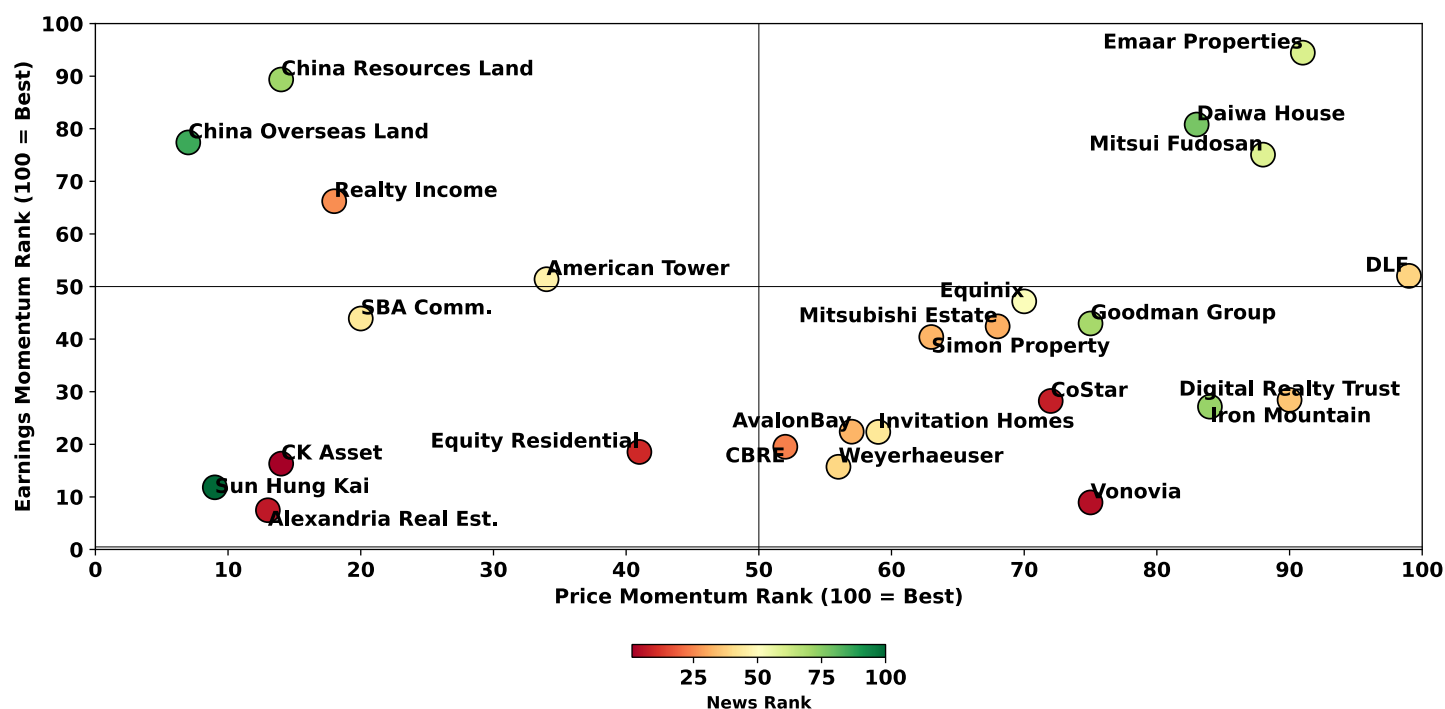


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

BofA GLOBAL RESEARCH

Chart 78: Real Estate: Earnings Momentum (vertical axis), Price Momentum (horizontal axis), News Momentum (colour)

Triple Momentum is most positive for Daiwa House, Emaar Properties and Mitsui Fudosan

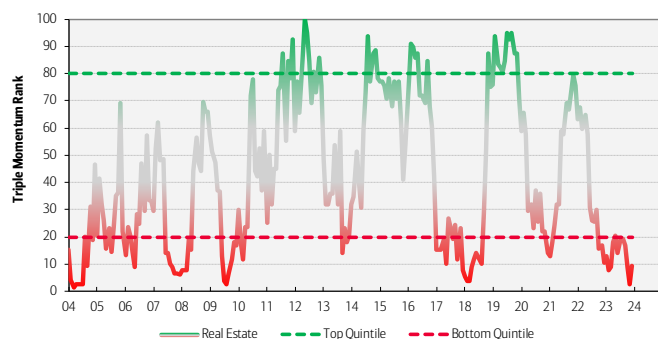


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

BofA GLOBAL RESEARCH

Chart 79: United States Real Estate: Triple Momentum Trend

The average stock Triple Momentum Rank for USA Real Estate is 9

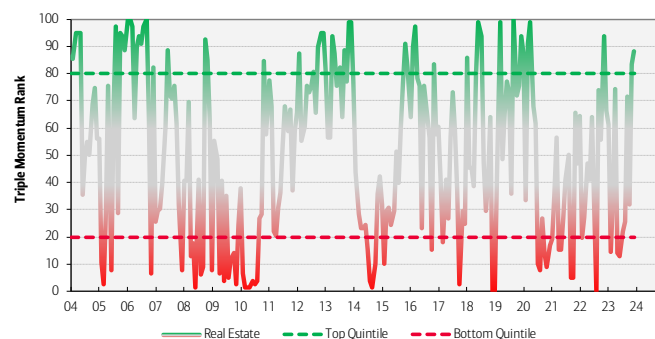


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

BofA GLOBAL RESEARCH

Chart 80: Japan Real Estate: Triple Momentum Trend

The average stock Triple Momentum Rank for Japan Real Estate is 88

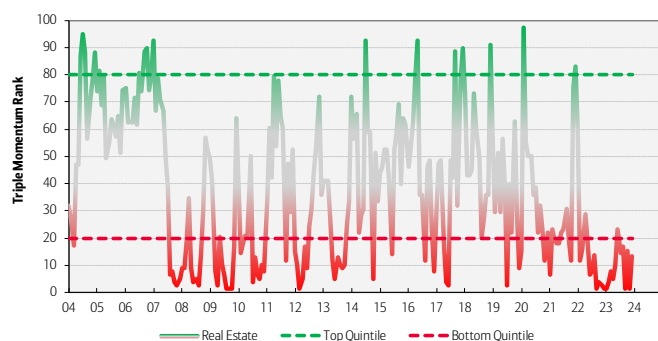


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

BofA GLOBAL RESEARCH

Chart 81: Europe Real Estate: Triple Momentum Trend

The average stock Triple Momentum Rank for Europe Real Estate is 13

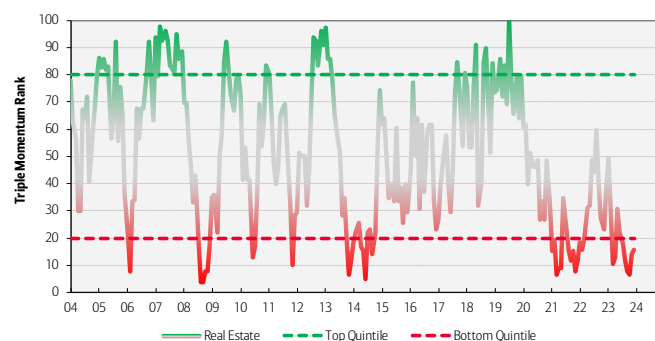


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

BofA GLOBAL RESEARCH

Chart 82: Asia Pac Real Estate: Triple Momentum Trend

The average stock Triple Momentum Rank for Asia Pac Real Estate is 16

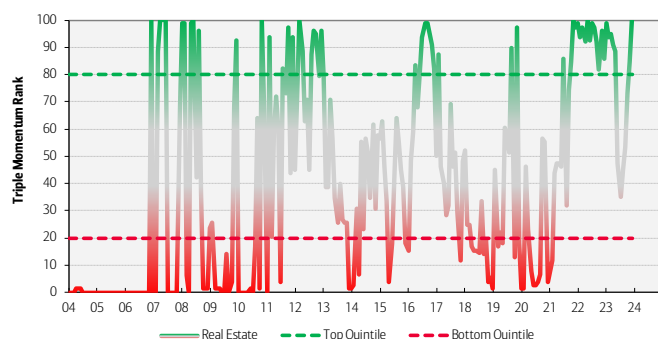


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

BofA GLOBAL RESEARCH

Chart 83: GEM ex-Asia Real Estate: Triple Momentum Trend

The average stock Triple Momentum Rank for Emerging ex-Asia Real Estate is 100



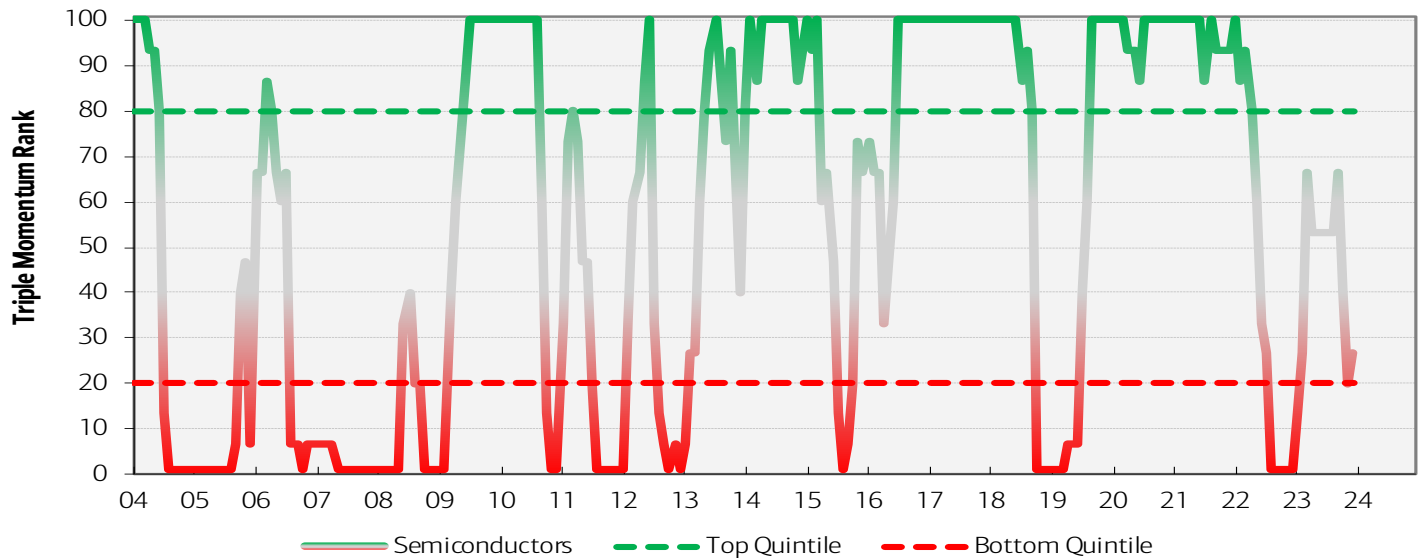
Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

BofA GLOBAL RESEARCH

Semiconductors

Chart 84: Global Semiconductors: Triple Momentum Trend

The Triple Momentum Rank for Global Semiconductors is 27

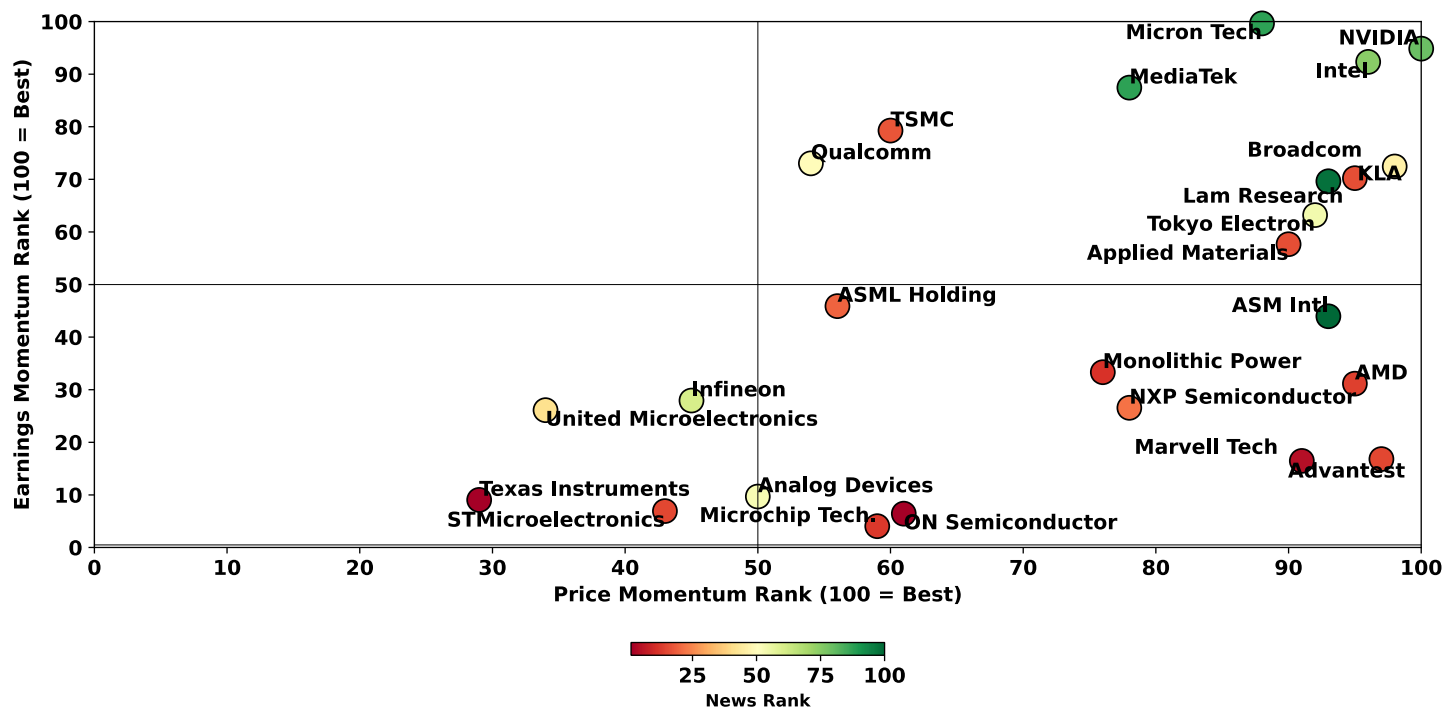


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

BofA GLOBAL RESEARCH

Chart 85: Semiconductors: Earnings Momentum (vertical axis), Price Momentum (horizontal axis), News Momentum (colour)

Triple Momentum is most positive for Micron Tech, KLA and NVIDIA

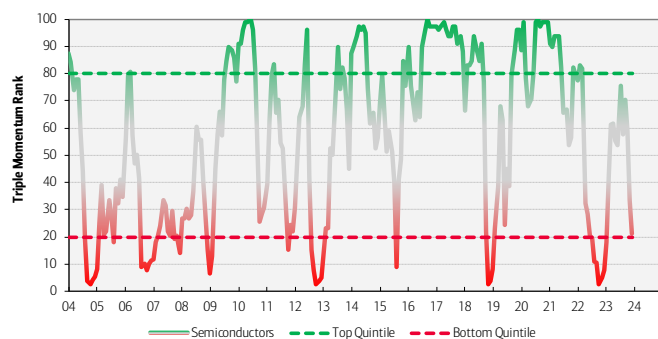


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

BofA GLOBAL RESEARCH

Chart 86: United States Semiconductors: Triple Momentum Trend

The average stock Triple Momentum Rank for USA Semiconductors is 21

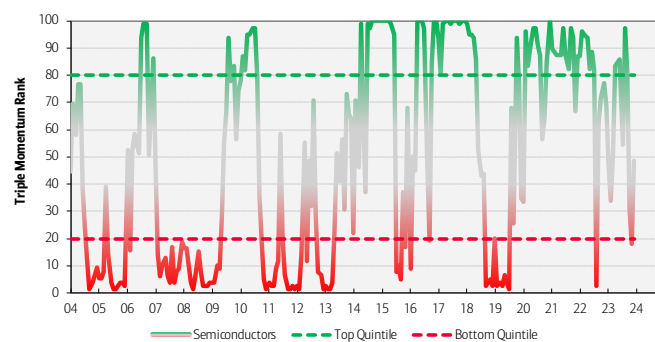


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

BofA GLOBAL RESEARCH

Chart 87: Japan Semiconductors: Triple Momentum Trend

The average stock Triple Momentum Rank for Japan Semiconductors is 49

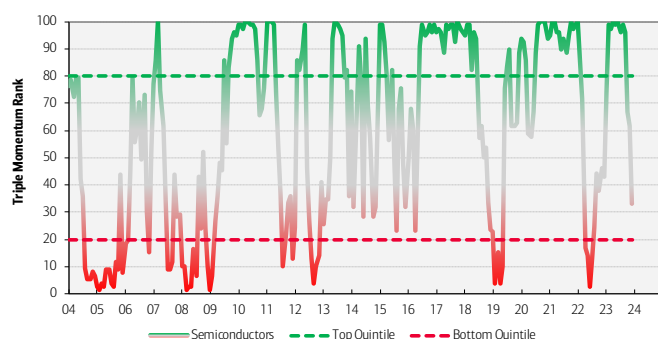


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

BofA GLOBAL RESEARCH

Chart 88: Europe Semiconductors: Triple Momentum Trend

The average stock Triple Momentum Rank for Europe Semiconductors is 33

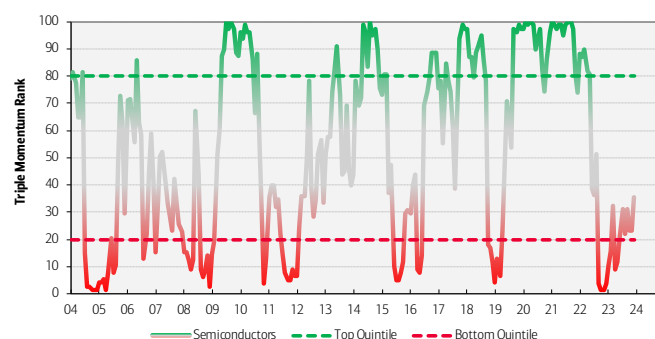


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

BofA GLOBAL RESEARCH

Chart 89: Asia Pac Semiconductors: Triple Momentum Trend

The average stock Triple Momentum Rank for Asia Pac Semiconductors is 36



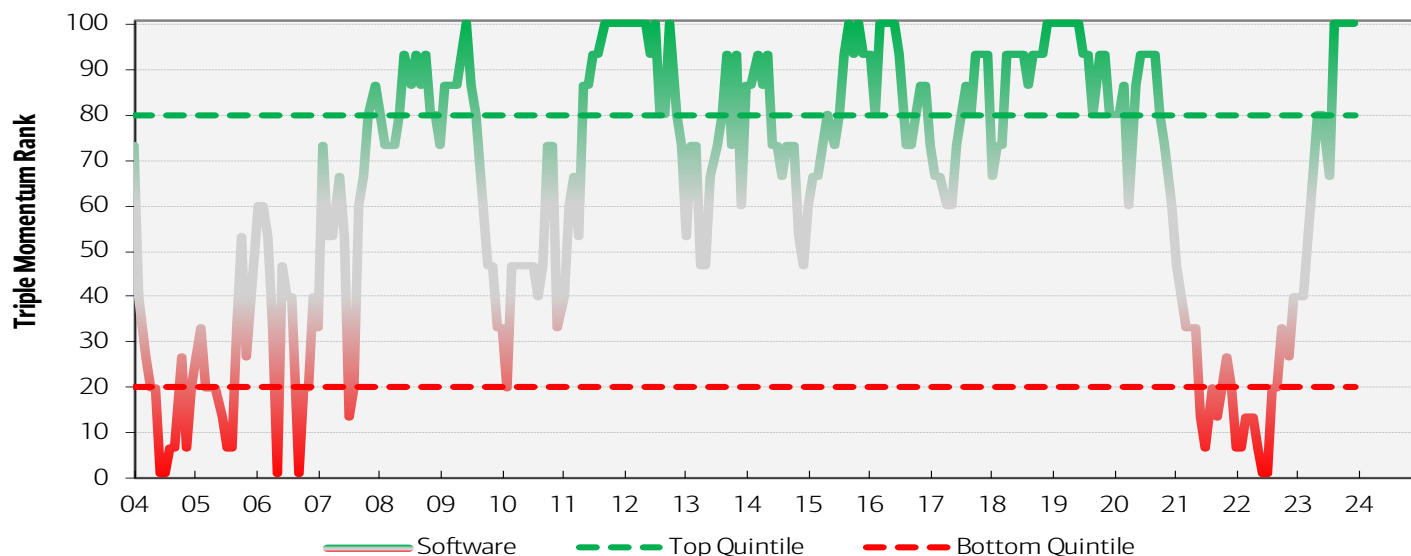
Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

BofA GLOBAL RESEARCH

Software

Chart 90: Global Software: Triple Momentum Trend

The Triple Momentum is strongest for Global Software sector

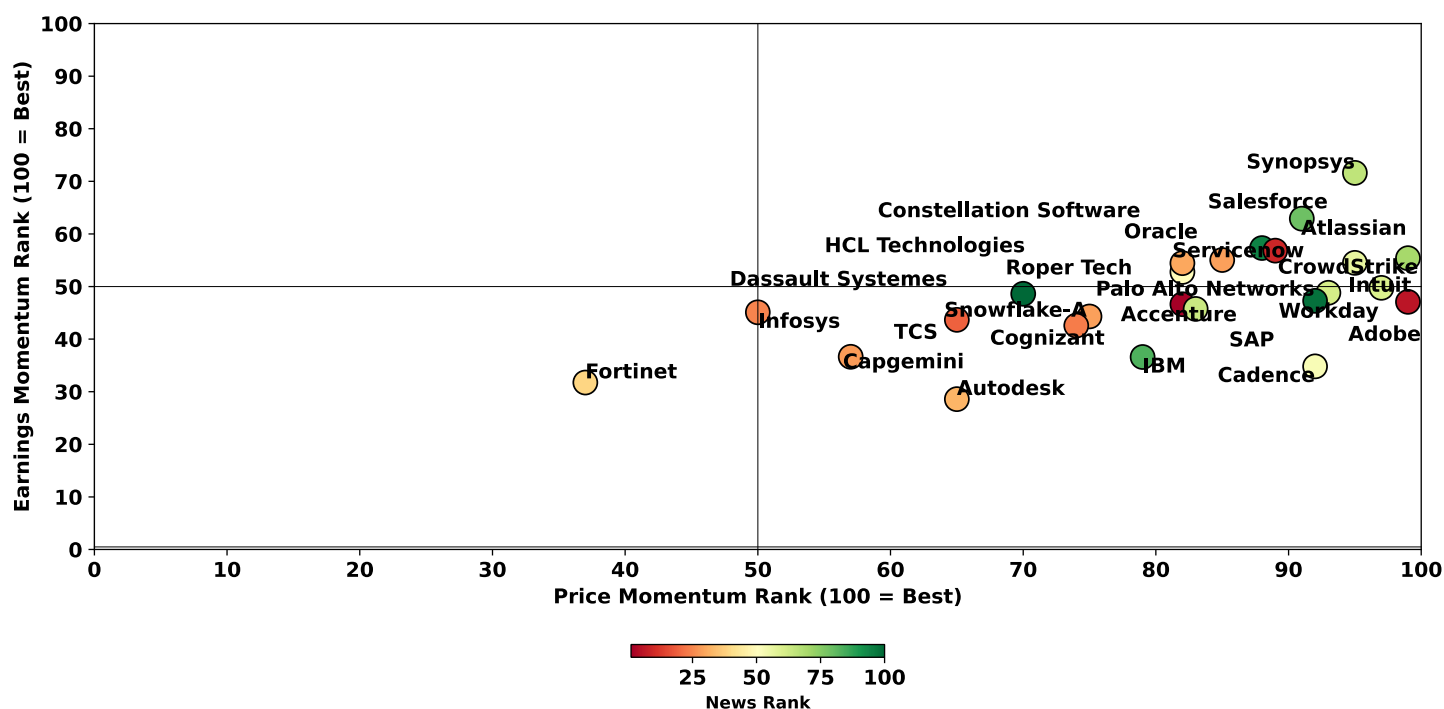


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

BofA GLOBAL RESEARCH

Chart 91: Software: Earnings Momentum (vertical axis), Price Momentum (horizontal axis), News Momentum (colour)

Triple Momentum is most positive for Constellation Software, Salesforce and CrowdStrike

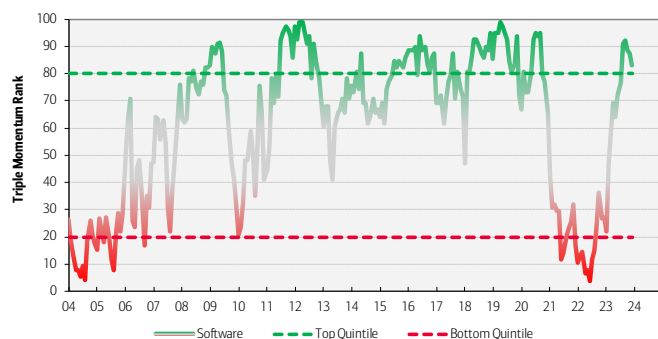


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

BofA GLOBAL RESEARCH

Chart 92: United States Software: Triple Momentum Trend

The average stock Triple Momentum Rank for USA Software is 83

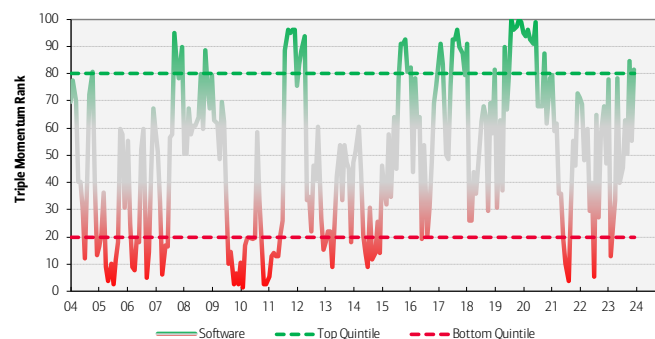


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

BofA GLOBAL RESEARCH

Chart 93: Japan Software: Triple Momentum Trend

The average stock Triple Momentum Rank for Japan Software is 82

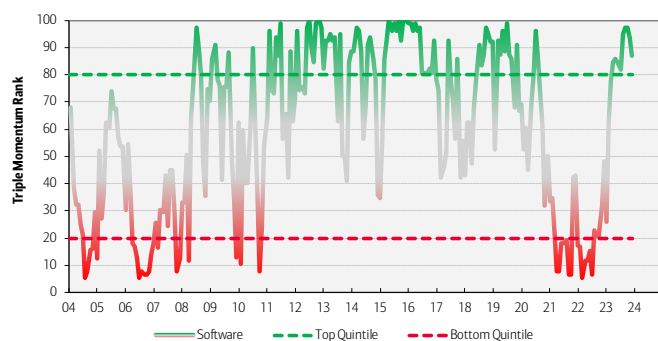


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

BofA GLOBAL RESEARCH

Chart 94: Europe Software: Triple Momentum Trend

The average stock Triple Momentum Rank for Europe Software is 87

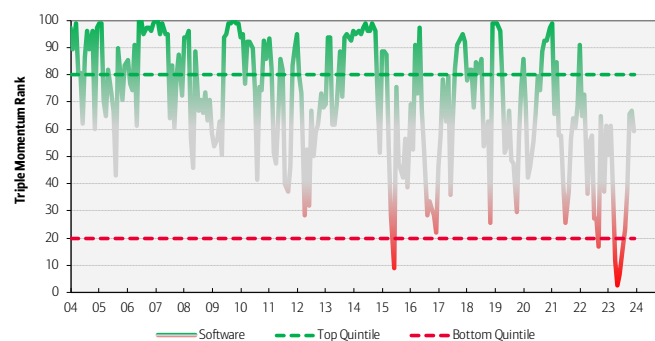


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

BofA GLOBAL RESEARCH

Chart 95: Asia Pac Software: Triple Momentum Trend

The average stock Triple Momentum Rank for Asia Pac Software is 59



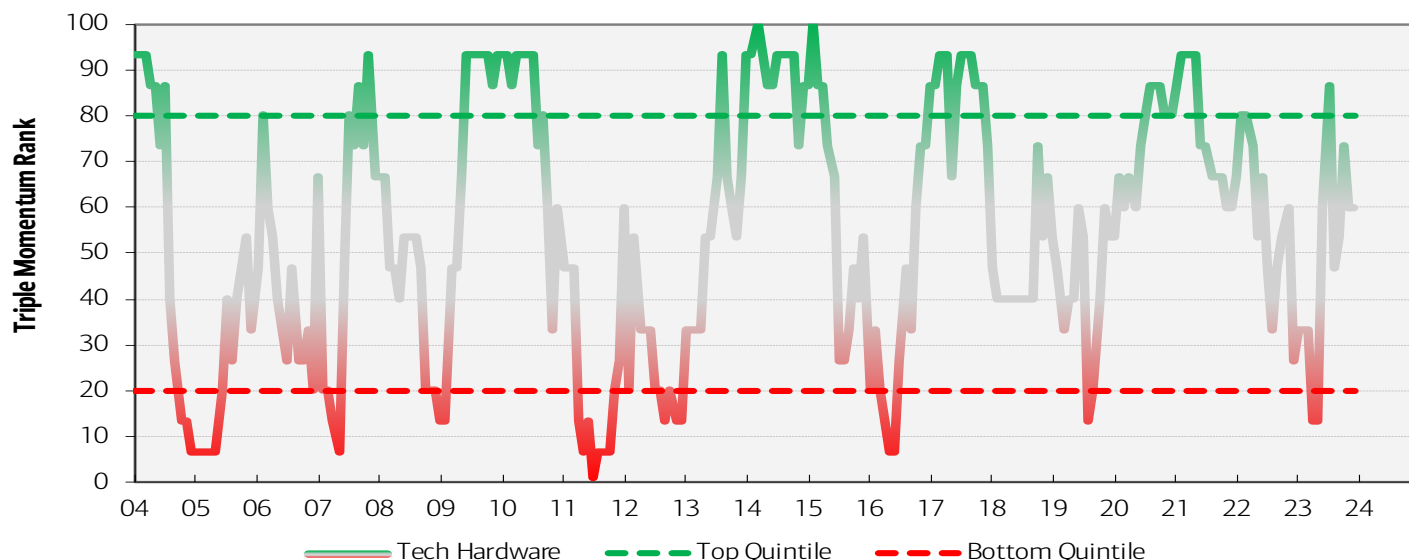
Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

BofA GLOBAL RESEARCH

Tech Hardware

Chart 96: Global Tech Hardware: Triple Momentum Trend

The Triple Momentum Rank for Global Tech Hardware is 60

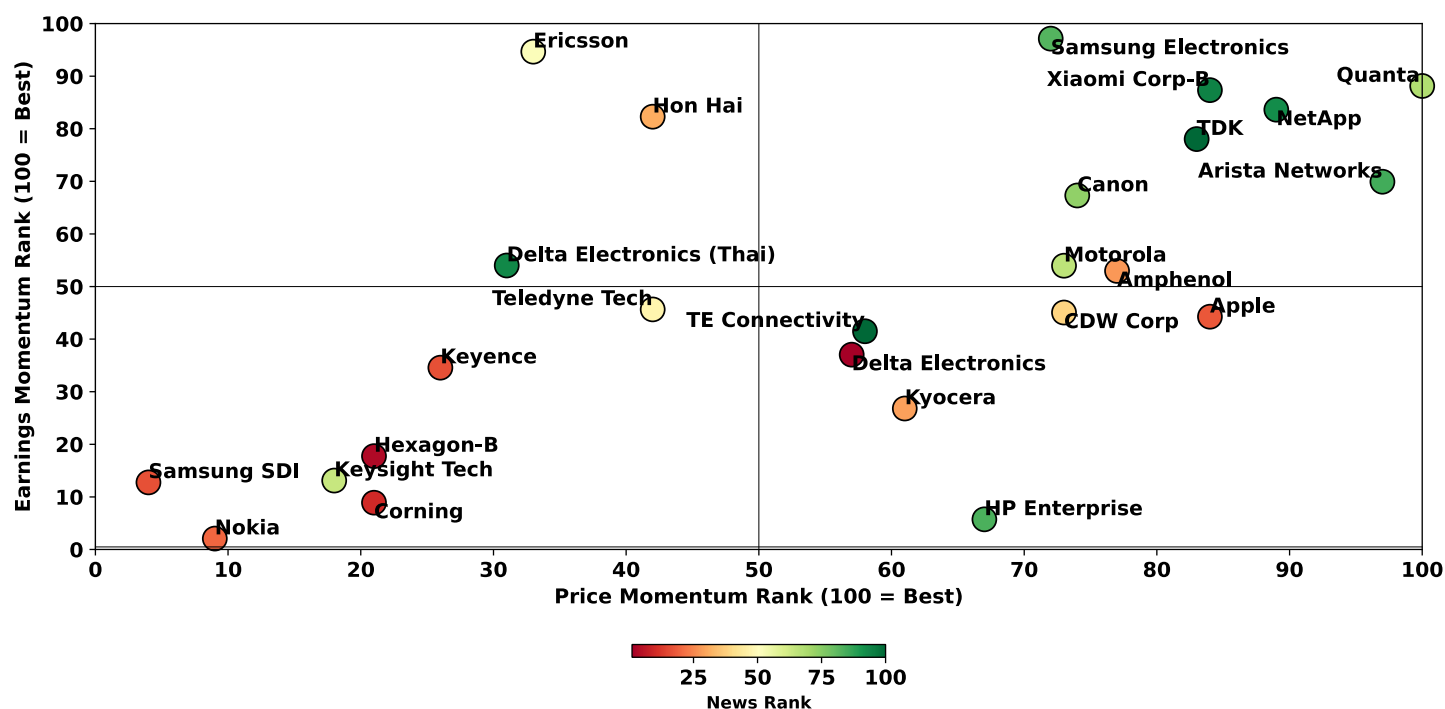


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

BofA GLOBAL RESEARCH

Chart 97: Tech Hardware: Earnings Momentum (vertical axis), Price Momentum (horizontal axis), News Momentum (colour)

Triple Momentum is most positive for Xiaomi Corp-B, TDK and NetApp

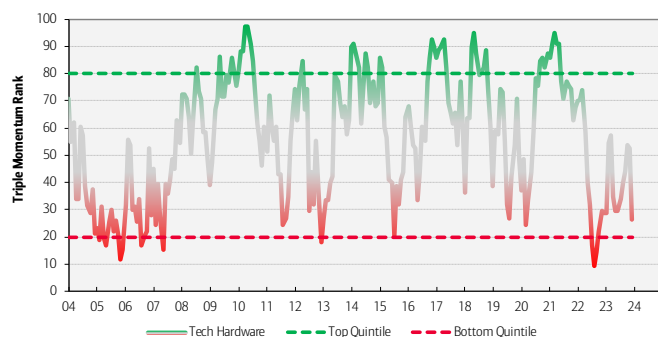


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

BofA GLOBAL RESEARCH

Chart 98: United States Tech Hardware: Triple Momentum Trend

The average stock Triple Momentum Rank for USA Tech Hardware is 26

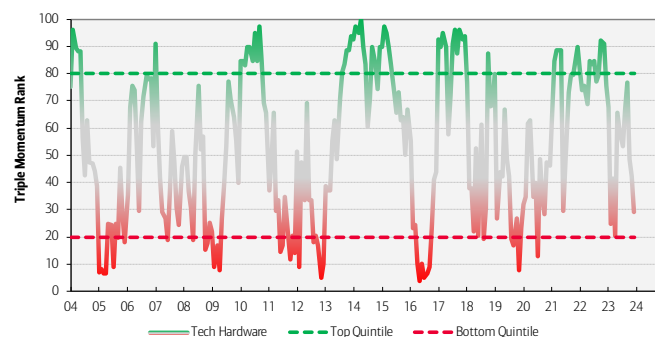


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

BofA GLOBAL RESEARCH

Chart 99: Japan Tech Hardware: Triple Momentum Trend

The average stock Triple Momentum Rank for Japan Tech Hardware is 29

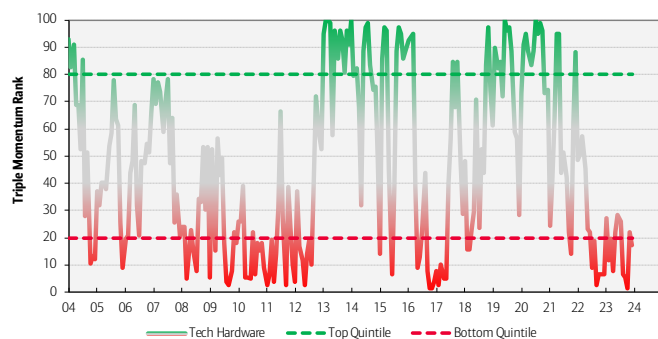


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

BofA GLOBAL RESEARCH

Chart 100: Europe Tech Hardware: Triple Momentum Trend

The average stock Triple Momentum Rank for Europe Tech Hardware is 17

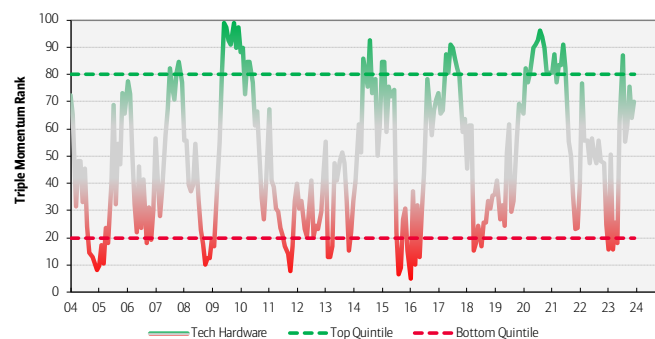


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

BofA GLOBAL RESEARCH

Chart 101: Asia Pac Tech Hardware: Triple Momentum Trend

The average stock Triple Momentum Rank for Asia Pac Tech Hardware is 70



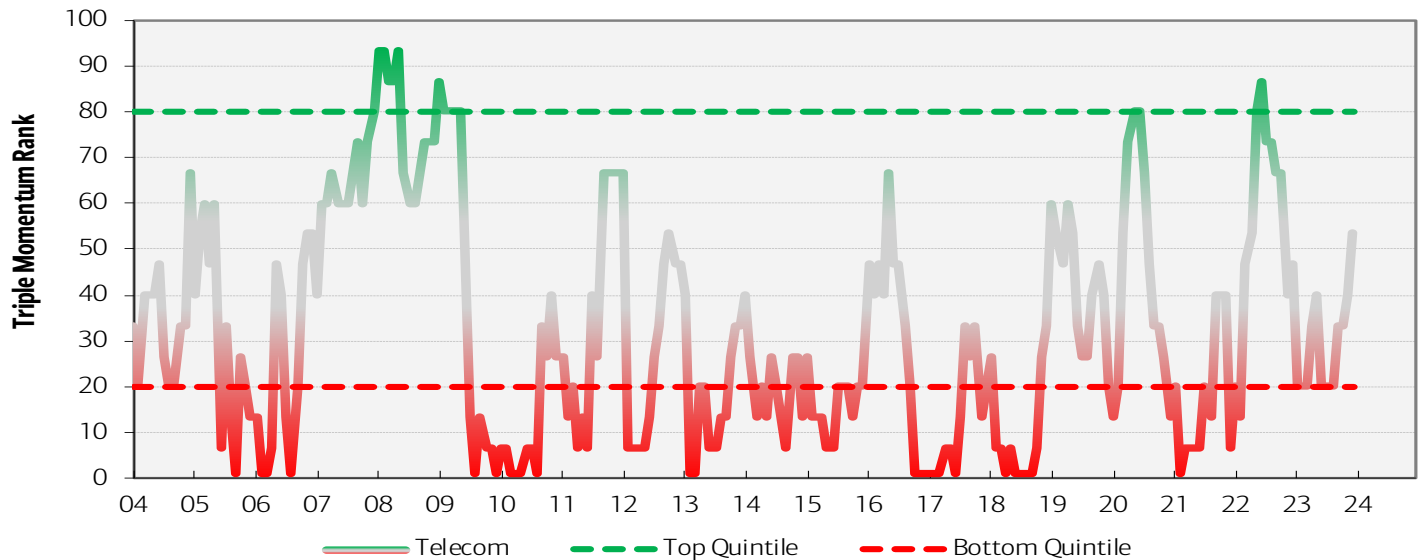
Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

BofA GLOBAL RESEARCH

Telecommunication Services

Chart 102: Global Telecom: Triple Momentum Trend

The Triple Momentum Rank for Global Telecom is 53

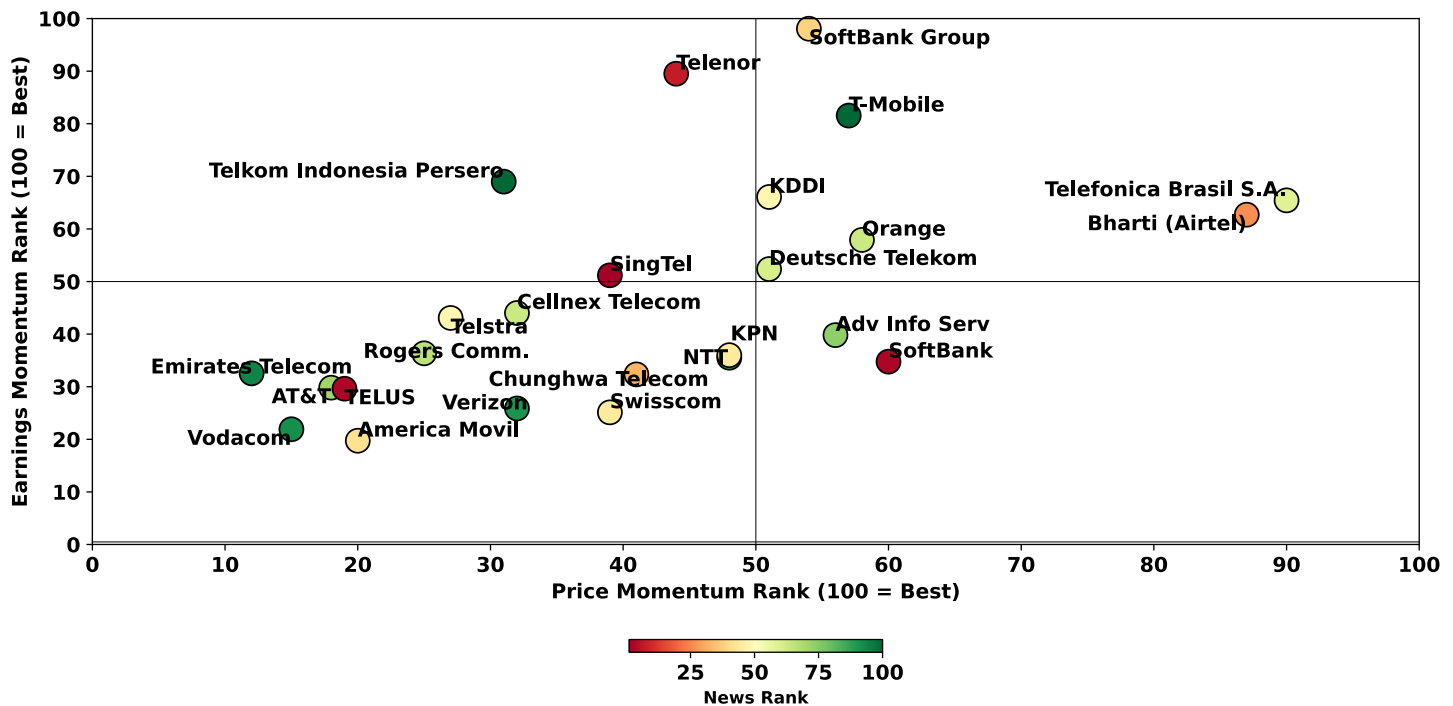


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

BofA GLOBAL RESEARCH

Chart 103: Telecom: Earnings Momentum (vertical axis), Price Momentum (horizontal axis), News Momentum (colour)

Triple Momentum is most positive for T-Mobile, Telefonica Brasil S.A. and Orange

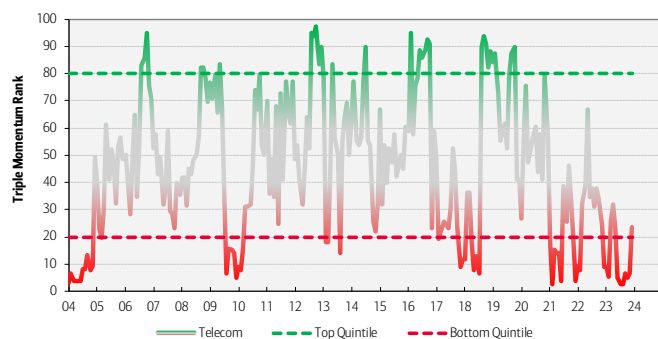


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

BofA GLOBAL RESEARCH

Chart 104: United States Telecom: Triple Momentum Trend

The average stock Triple Momentum Rank for USA Telecom is 24

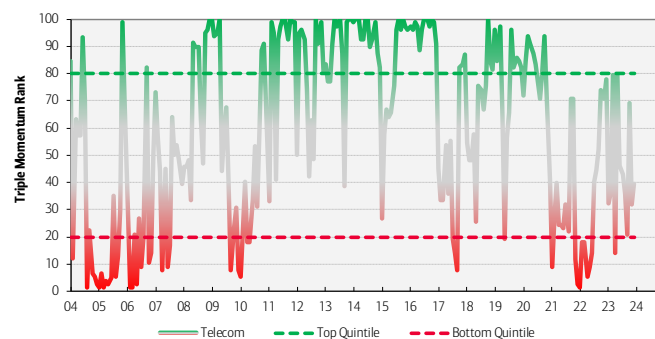


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

BofA GLOBAL RESEARCH

Chart 105: Japan Telecom: Triple Momentum Trend

The average stock Triple Momentum Rank for Japan Telecom is 39

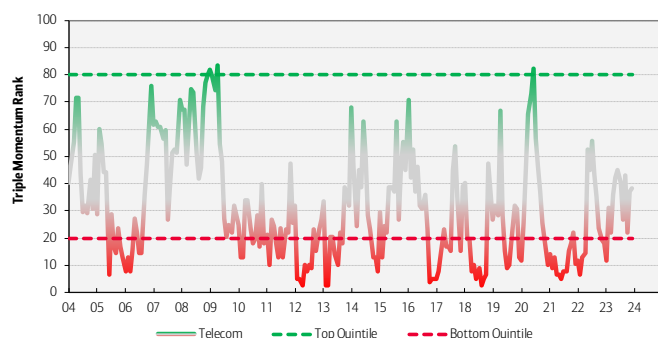


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

BofA GLOBAL RESEARCH

Chart 106: Europe Telecom: Triple Momentum Trend

The average stock Triple Momentum Rank for Europe Telecom is 38

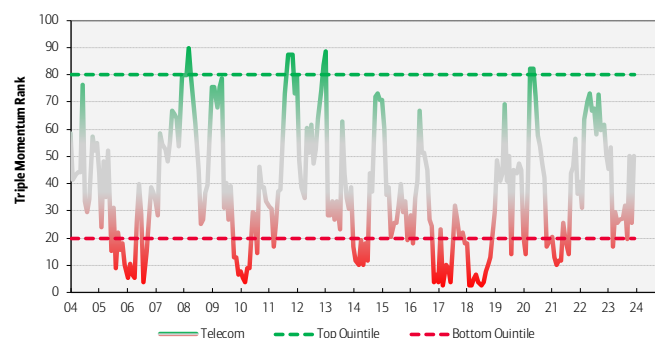


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

BofA GLOBAL RESEARCH

Chart 107: Asia Pac Telecom: Triple Momentum Trend

The average stock Triple Momentum Rank for Asia Pac Telecom is 50

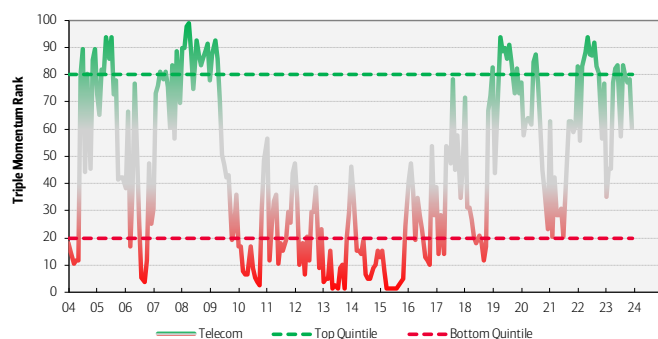


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

BofA GLOBAL RESEARCH

Chart 108: GEM ex-Asia Telecom: Triple Momentum Trend

The average stock Triple Momentum Rank for Emerging ex-Asia Telecom is 61



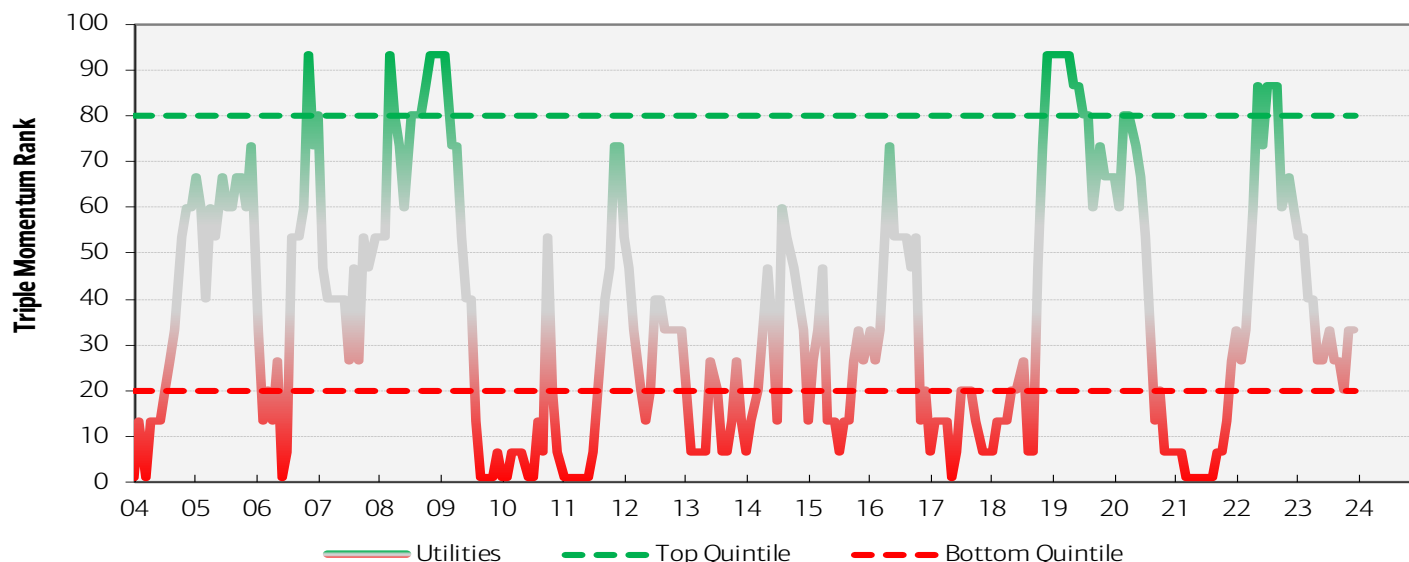
Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

BofA GLOBAL RESEARCH

Utilities

Chart 109: Global Utilities: Triple Momentum Trend

The Triple Momentum Rank for Global Utilities is 33

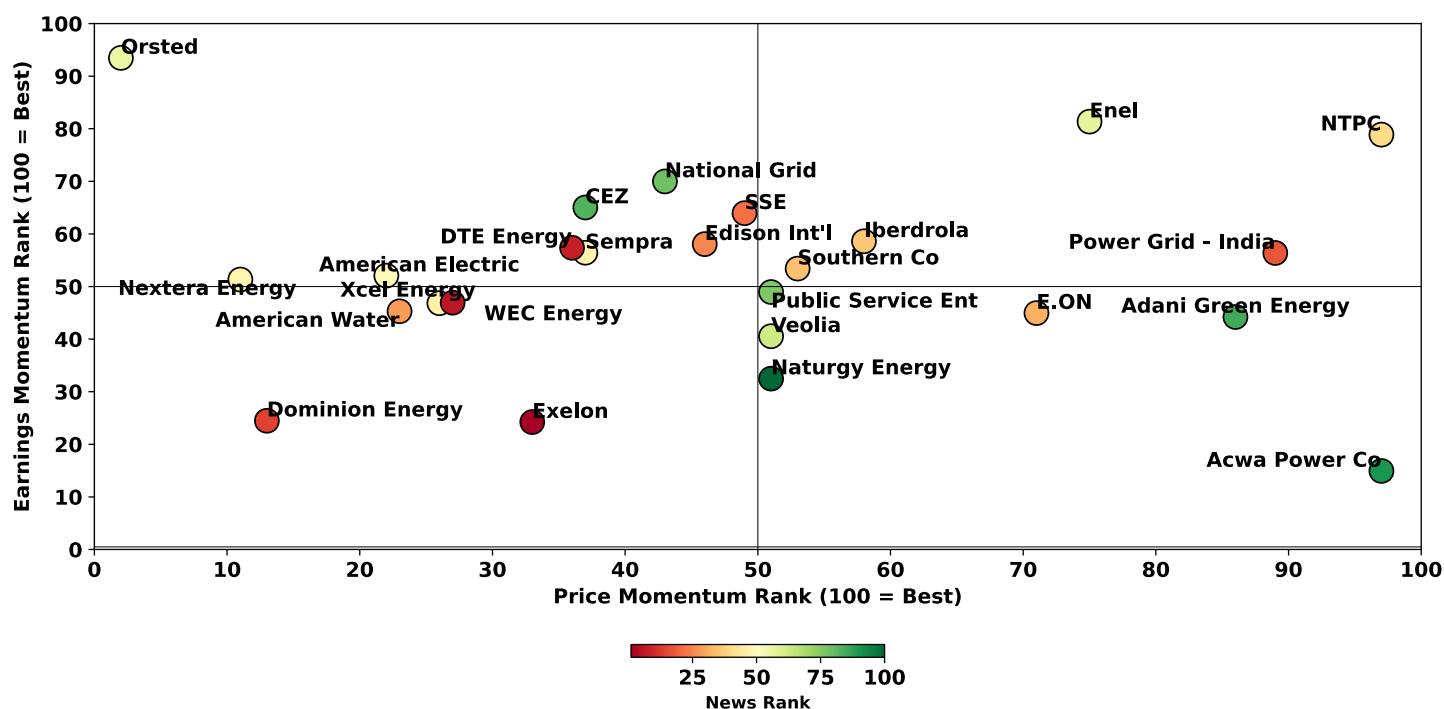


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

BofA GLOBAL RESEARCH

Chart 110: Utilities: Earnings Momentum (vertical axis), Price Momentum (horizontal axis), News Momentum (colour)

Triple Momentum is most positive for Enel

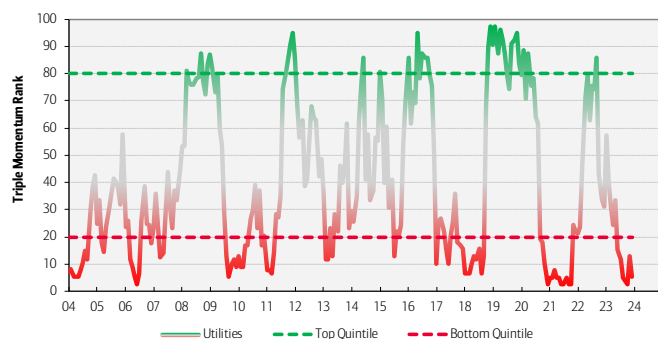


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

BofA GLOBAL RESEARCH

Chart 111: United States Utilities: Triple Momentum Trend

The average stock Triple Momentum Rank for USA Utilities is 5

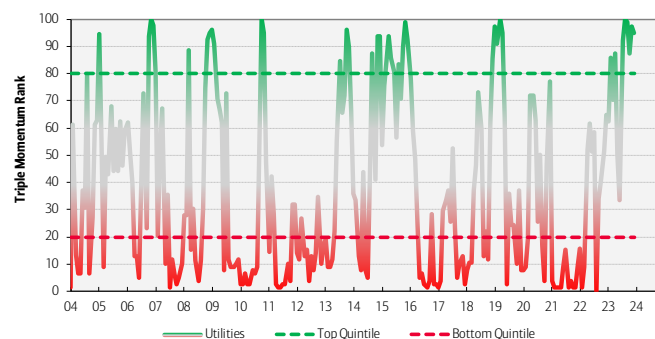


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

BofA GLOBAL RESEARCH

Chart 112: Japan Utilities: Triple Momentum Trend

The average stock Triple Momentum Rank for Japan Utilities is 95

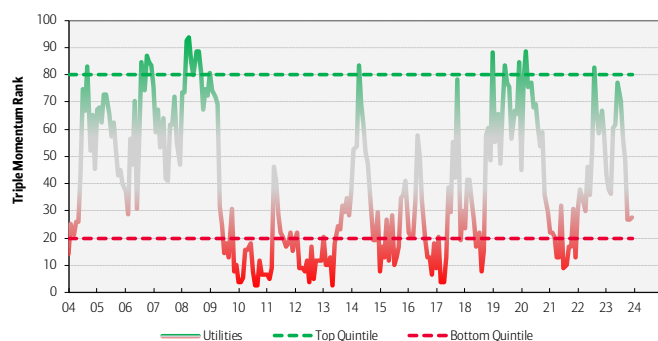


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

BofA GLOBAL RESEARCH

Chart 113: Europe Utilities: Triple Momentum Trend

The average stock Triple Momentum Rank for Europe Utilities is 28

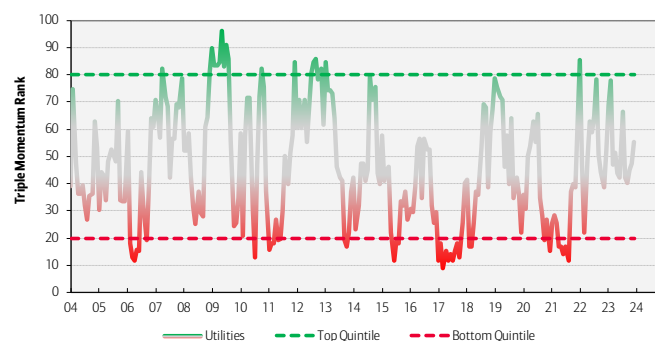


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

BofA GLOBAL RESEARCH

Chart 114: Asia Pac Utilities: Triple Momentum Trend

The average stock Triple Momentum Rank for Asia Pac Utilities is 55

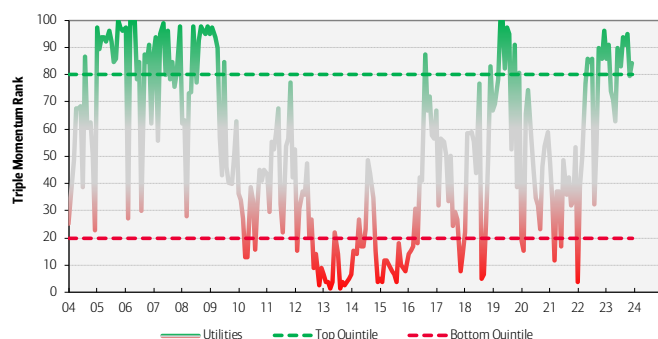


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

BofA GLOBAL RESEARCH

Chart 115: GEM ex-Asia Utilities: Triple Momentum Trend

The average stock Triple Momentum Rank for Emerging ex-Asia Utilities is 84



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

BofA GLOBAL RESEARCH

Triple Momentum Methodology

In this analysis, we highlight the benefits of combining three types of momentum, including Earnings Momentum, Price Momentum, and News Momentum. This helps identify current investment themes and can be used to monitor for emerging themes.

Construction Methodology

The back-testing in this analysis is from Jan-04 to Dec-23 and we introduced the current version of the analysis in Jan-24.

This analysis includes all stocks in the MSCI AC World Index as at each month-end. Stocks on BofA Restricted List are not included in this analysis. We also decided not to exclude the region-sectors with a small number of stocks because 1) we wanted to include all possible ideas, and 2) any one region-sector will have very limited impact on the overall results. The screens are determined at the end of each month using month-end data from MSCI and RavenPack databases.

Performance Calculation Methodology

Refer to appendix [“Global Triple Momentum Performance”](#) for detailed performance data.

Rebalancing and backtested 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. Backtested performance is computed on the basis of price return. Global Sector performance is presented relative to the equal-weighted global sector performance of the MSCI AC World Index sectors. Global Region-sector performance is presented relative to the equal-weighted region-sector performance of the MSCI AC World Index region-sectors. Stock performance is presented relative to the equal-weighted MSCI AC World Index.

We have decided to use equal-weighted performance as it eliminates the possibility of a few very large stocks skewing the results. This is more important now than ever given the "Magnificent Seven" have been dominating market performance.

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.

Appendix A: Triple Momentum Summary Stats

Below summary tables are based on data since Jan-04 to Dec-23.

Table 6: Proportion of months Global Sectors are in the Top Quintile by Triple Momentum

Semiconductors, Energy and Software have most consistently been in top quintile by Triple Momentum

Sector	Proportion of months Sector in Top 3
Semiconductors	41%
Energy	35%
Software	34%
Health Care	28%
Tech Hardware	24%
Materials	23%
Banks	17%
Insurance	17%
Diversified Financials	16%
Industrials	15%
Real Estate	13%
Media & Entertainment	9%
Consumer Staples	9%
Consumer Discretionary	9%
Utilities	8%
Telecom	3%

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

BofA GLOBAL RESEARCH

Table 7: Proportion of months Global Sectors are in the Bottom Quintile by Triple Momentum

Utilities, Telecom and Energy are in bottom quintile by Triple Momentum Rank most often

Sector	Proportion of months Sector in Bottom 3
Utilities	33%
Telecom	33%
Energy	33%
Semiconductors	32%
Materials	32%
Media & Entertainment	25%
Consumer Staples	23%
Banks	16%
Diversified Financials	13%
Real Estate	12%
Tech Hardware	12%
Insurance	11%
Consumer Discretionary	9%
Software	9%
Health Care	8%
Industrials	1%

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

BofA GLOBAL RESEARCH

Table 8: Persistence of Global Sectors with High Triple Momentum Rank

Semiconductors and Energy persists in top quintile for 14 and 9 months, on average

Sector	Average number of months the sector stays in Top 3
Semiconductors	14
Energy	9
Banks	9
Health Care	8
Tech Hardware	7
Software	6
Utilities	5
Telecom	5
Industrials	5
Materials	5
Diversified Financials	4
Consumer Discretionary	4
Insurance	4
Media & Entertainment	4
Real Estate	3
Consumer Staples	3

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

BofA GLOBAL RESEARCH

Table 9: Persistence of Global Sectors with Low Triple Momentum Rank

Semiconductors and Materials persists in bottom quintile for 8 months, on average

Sector	Average number of months the sector stays in Bottom 3
Semiconductors	8
Materials	8
Energy	7
Media & Entertainment	7
Utilities	6
Telecom	5
Real Estate	5
Consumer Staples	4
Software	4
Banks	4
Tech Hardware	4
Insurance	4
Diversified Financials	4
Health Care	3
Consumer Discretionary	3
Industrials	2

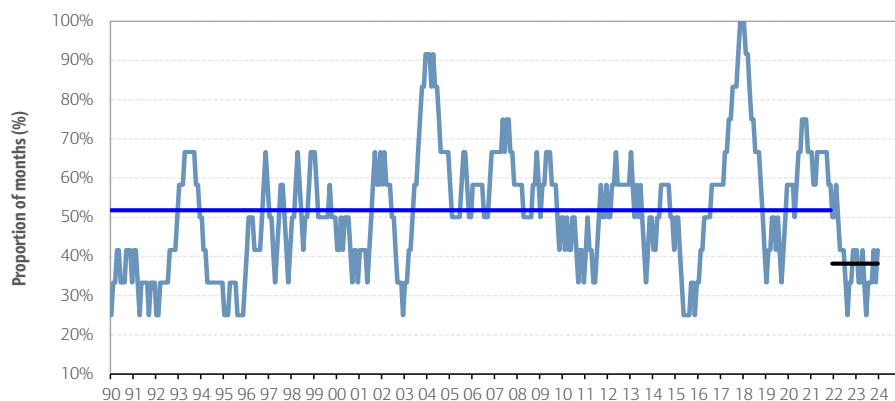
Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

BofA GLOBAL RESEARCH

The following chart measures the persistence of equity market performance. The line shows the proportion of months in the last year in which the performance of the MSCI AC World Index moved in the same direction as the preceding month. The average over the last 34 years has been 57%. In contrast, the average over the last two years has been 38%, suggesting equity market performance has been less persistent in recent years than in recent decades. We believe momentum-based strategies potentially perform better when persistence in equity market performance is higher.

Chart 116: Persistence: Proportion of months equity markets move in the same direction as previous month

Proportion of months equity markets move in the same direction as previous month has dropped to 38% in the last two years from 57% over the long-term



Source : BofA Global Quantitative Strategy, MSCI, ExShare

BofA GLOBAL RESEARCH

Appendix B: Triple Momentum Performance Summary

Table 10: Global Sector Triple Momentum back-testing results: Jan-04 to Dec-23

Global Sector Triple Momentum back-testing performance across different periods (1m, 3m, 12m, YTD)

Strategy	1mth	3mth	6mth	12mth	YTD	Last 5yr	Since Inception	
							Jan-04	Annualised
Global Sector Triple Momentum (top quintile)	0.9%	7%	1%	8%	8%	82%	536%	10.7%
Global Sector Triple Momentum (bottom quint)	5.6%	9%	8%	28%	28%	21%	85%	2.7%
Global (equal-weighted)	4.5%	11%	6%	19%	19%	60%	198%	5.6%

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

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 11: Global Region-Sector Triple Momentum back-testing results: Jan-04 to Dec-23

Global Region-Sector Triple Momentum back-testing performance across different periods (1m, 3m, 12m, YTD)

Strategy	1mth	3mth	6mth	12mth	YTD	Last 5yr	Since Inception	
							Jan-04	Annualised
Global Region-Sector Triple Momentum (top quintile)	3.8%	8%	3%	13%	13%	70%	89%	6.9%
Global Region-Sector Triple Momentum (bottom quintile)	6.7%	13%	9%	21%	21%	12%	0%	-1.4%
Global (equal-weighted)	4.9%	10%	7%	16%	16%	34%	38%	3.3%

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

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 12: Global Stock Triple Momentum back-testing results: Jan-04 to Dec-23

Global Stock Triple Momentum back-testing performance across different periods (1m, 3m, 12m, YTD)

Strategy	1mth	3mth	6mth	12mth	YTD	Last 5yr	Since Inception	
							Jan-04	Annualised
Global Stock Triple Momentum (top quintile)	4.5%	9%	6%	12%	12%	68%	533%	10.2%
Global Stock Triple Momentum (bottom quintil)	7.4%	11%	6%	13%	13%	7%	37%	0.2%
MSCI AC World (equal-weighted)	4.3%	7%	3%	7%	7%	27%	167%	5.0%

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

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

Disclosures

Important Disclosures

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

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

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

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

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

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

Other Important Disclosures

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

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

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

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

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

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

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

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

This information has been approved for publication and is distributed in the United Kingdom (UK) to professional clients and eligible counterparties (as each is defined in the rules of the FCA and the PRA) by MLI (UK), which is authorized by the PRA and regulated by the FCA and the PRA - details about the extent of our regulation by the FCA and PRA are available from us on request; has been approved for publication and is distributed in the European Economic Area (EEA) by BofASE (France), which is authorized by the ACPR and regulated by the ACPR and the AMF; has been considered and distributed in Japan by BofAS Japan, a registered securities dealer under the Financial Instruments and Exchange Act in Japan, or its permitted affiliates; is issued and distributed in Hong Kong by Merrill Lynch (Hong Kong) which is regulated by HKSF; is issued and distributed in Taiwan by Merrill Lynch (Taiwan); is issued and distributed in India by BofAS

India; and is issued and distributed in Singapore to institutional investors and/or accredited investors (each as defined under the Financial Advisers Regulations) by Merrill Lynch (Singapore) (Company Registration No 198602883D). Merrill Lynch (Singapore) is regulated by MAS. Merrill Lynch Equities (Australia) Limited (ABN 65 006 276 795), AFS License 235132 (MLEA) distributes this information in Australia only to 'Wholesale' clients as defined by s.761G of the Corporations Act 2001. With the exception of Bank of America N.A., Australia Branch, neither MLEA nor any of its affiliates involved in preparing this information is an Authorised Deposit-Taking Institution under the Banking Act 1959 nor regulated by the Australian Prudential Regulation Authority. No approval is required for publication or distribution of this information in Brazil and its local distribution is by Merrill Lynch (Brazil) in accordance with applicable regulations. Merrill Lynch (DIFC) is authorized and regulated by the DFSA. Information prepared and issued by Merrill Lynch (DIFC) is done so in accordance with the requirements of the DFSA conduct of business rules. BofA Europe (Frankfurt) distributes this information in Germany and is regulated by BaFin, the ECB and the CBI. BofA Securities entities, including BofA Europe and BofASE (France), may outsource/delegate the marketing and/or provision of certain research services or aspects of research services to other branches or members of the BofA Securities group. You may be contacted by a different BofA Securities entity acting for and on behalf of your service provider where permitted by applicable law. This does not change your service provider. Please refer to the [Electronic Communications Disclaimers](#) for further information.

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

General Investment Related Disclosures:

Taiwan Readers: Neither the information nor any opinion expressed herein constitutes an offer or a solicitation of an offer to transact in any securities or other financial instrument. No part of this report may be used or reproduced or quoted in any manner whatsoever in Taiwan by the press or any other person without the express written consent of BofA Securities.

This document provides general information only, and has been prepared for, and is intended for general distribution to, BofA Securities clients. Neither the information nor any opinion expressed constitutes an offer or an invitation to make an offer, to buy or sell any securities or other financial instrument or any derivative related to such securities or instruments (e.g., options, futures, warrants, and contracts for differences). This document is not intended to provide personal investment advice and it does not take into account the specific investment objectives, financial situation and the particular needs of, and is not directed to, any specific person(s). This document and its content do not constitute, and should not be considered to constitute, investment advice for purposes of ERISA, the US tax code, the Investment Advisers Act or otherwise. Investors should seek financial advice regarding the appropriateness of investing in financial instruments and implementing investment strategies discussed or recommended in this document and should understand that statements regarding future prospects may not be realized. Any decision to purchase or subscribe for securities in any offering must be based solely on existing public information on such security or the information in the prospectus or other offering document issued in connection with such offering, and not on this document.

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

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

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

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

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

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

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

Copyright and General Information:

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

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

This information has been prepared independently of any issuer of securities mentioned herein and not in connection with any proposed offering of securities or as agent of any issuer of any securities. None of BofAS or 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.