

# Triple Momentum Allocator

## Triple Momentum themes

### Triple Momentum Allocator is now a monthly report

Due to popular demand, the Triple Momentum analysis of sectors and region-sectors we [published in January](#) has morphed into this monthly “Triple Momentum Allocator” report. We apply our Triple Momentum analysis to identify the highest and lowest ranked stocks, countries, sectors, and region-sectors based on a combination of earnings momentum, price momentum, and news momentum. Changes in Triple Momentum highlight which signals are fading and when new opportunities are emerging. This month, [Software](#) remains the highest-ranked global sector (sixth month), and Triple Momentum improved the most for [Tech Hardware](#) and [Semis](#). Triple Momentum is now weakest for [Consumer Staples](#) and has recently deteriorated the most for [Energy](#).

### Triple Momentum hot spots across the world

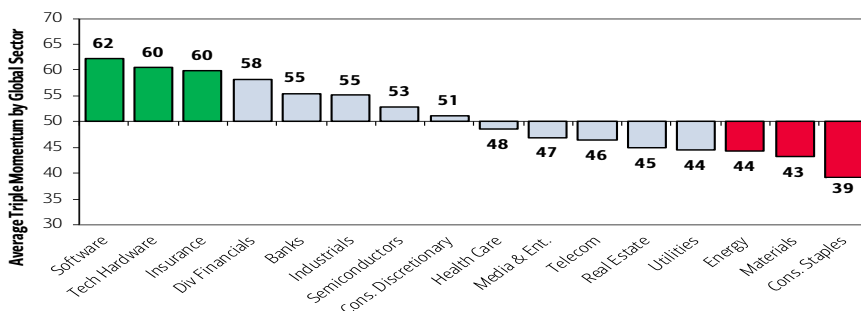
[Sector themes differ by region](#) but, generally, Triple Momentum is positive for Tech and negative for defensive sectors. In the US, Triple Momentum is most positive for Insurance and Software and negative for Telecom. In Europe, this signal is positive for Software and negative for Energy and Telecom. In Asia Pac ex-Japan, Triple Momentum is most positive for India and the Asia Pac ex-Japan Tech Hardware sector.

### Triple Momentum results

As published in January, back-testing since 2004 shows the top-quintile by Triple Momentum would have outperformed the bottom-quintile by 7.8% p.a. from [sector allocation](#), 8.2% p.a. from [region-sectors](#), and 9.7% p.a. from [stock selection](#), on average.

#### Chart 1: Global Sectors - Average Triple Momentum Rank

Average Triple Momentum Rank is strongest for Software, Tech Hardware, and Insurance



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

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08 February 2024

Quant Strategy  
Global

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

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

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

- [Stock screens](#)
- [Global Sectors](#)
- [Region-Sectors](#)
- [Heat Map](#)
- [Time series](#)

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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-Jan-2024 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.

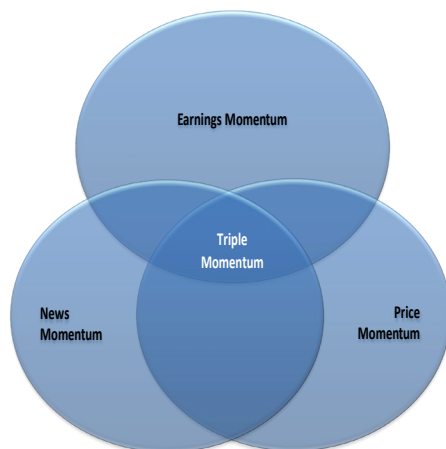
In this new analysis, we aggregate stock-level Triple Momentum Ranks by global sector and for each region-sector, and provide the back-testing results to support the efficacy of this methodology through time for Global Sector Allocation and Region-Sector Allocation. All analysis in the report starts 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

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# Stocks

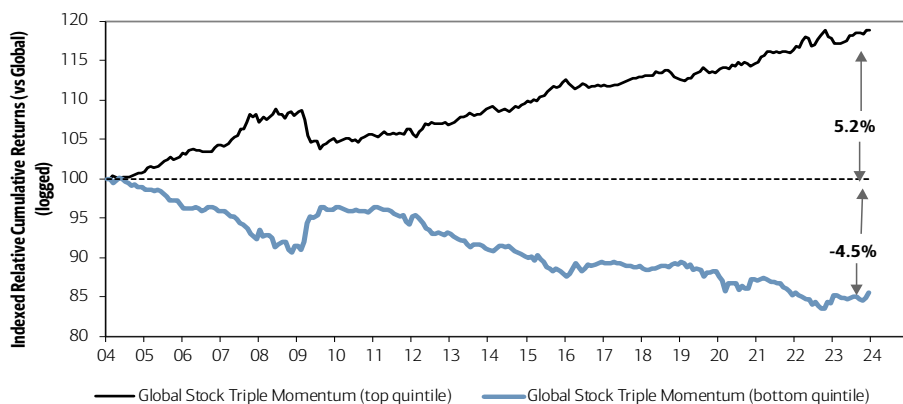
**Stock Triple Momentum Top Quintile** includes the top 20% of stocks in MSCI All Country World Index by the Stock Triple Momentum Rank.

**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 3: 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.

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**Table 1: Global Stock Triple Momentum - Stocks with the Highest Triple Momentum Rank**

Top global stocks with the highest Triple Momentum Rank

Company Name	BBG Code	Country	Sector	MCAP (Total \$USm)	Avg Daily TO (6m \$US m)
Bluescope Steel	BSL AU	Australia	Materials	6,879	23.8
Innovent Biologics	1801 HK	China	Health Care	6,582	52.0
AAC Tech	2018 HK	China	Tech Hardware	2,608	16.5
Credit Agricole	ACA FP	France	Banks	43,323	59.2
MunichRe	MUV2 GR	Germany	Insurance	57,624	111.3
Talanx	TLX GR	Germany	Insurance	18,201	11.2
Alpha Services	ALPHA GA	Greece	Banks	4,407	11.1
Mytilineos	MYTIL GA	Greece	Industrials	5,890	7.7
Chinasoft Int'l	354 HK	Hong Kong	Software	1,653	13.8
Hero Motor	HMCL IN	India	Cons. Discretionary	11,370	28.6
Indian Oil	IOCL IN	India	Energy	27,740	32.4
Aurobindo Pharma	ARBP IN	India	Health Care	7,537	25.0
Adani Ports	ADSEZ IN	India	Industrials	32,133	82.1
Jindal Steel	JSP IN	India	Materials	9,546	18.0
Macrotech Developers	LODHA IN	India	Real Estate	12,964	16.2
Gail India	GAIL IN	India	Utilities	14,105	35.8
Aisin	7259 JP	Japan	Cons. Discretionary	10,458	31.2
Tokio Marine	8766 JP	Japan	Insurance	51,268	108.1
Hulic Co	3003 JP	Japan	Real Estate	8,398	15.5
Advantest	6857 JP	Japan	Semiconductors	31,711	396.2
Inbursa	GFINBURO MM	Mexico	Banks	18,026	5.7
Cemex SAB	CEMEXCPO MM	Mexico	Materials	13,007	35.0
Budimex	BDX PW	Poland	Industrials	4,321	5.7
Sembcorp Ind	SCI SP	Singapore	Utilities	7,723	19.7
Kumba Iron Ore	KIO SJ	South Africa	Materials	9,708	6.8
Hankook Tire & Tech	161390 KS	South Korea	Cons. Discretionary	4,758	8.5
Ecopro	086520 KS	South Korea	Industrials	11,053	381.8
Hanwha Aerospace	012450 KS	South Korea	Industrials	5,061	43.8
HD Korea Shipbuilding	009540 KS	South Korea	Industrials	6,373	14.6
Hyundai Heavy Industries	329180 KS	South Korea	Industrials	7,645	8.9
Sandoz	SDZ SW	Switzerland	Health Care	14,236	67.9
Asustek	2357 TT	Taiwan	Tech Hardware	10,827	73.3
Gigabyte Tech	2376 TT	Taiwan	Tech Hardware	6,782	221.0
Quanta	2382 TT	Taiwan	Tech Hardware	31,308	393.6
Wistron	3231 TT	Taiwan	Tech Hardware	11,148	347.5
Wiiwynn	6669 TT	Taiwan	Tech Hardware	12,939	158.2
3i Group	III LN	United Kingdom	Div Financials	28,977	35.1
M&G Plc	MNG LN	United Kingdom	Div Financials	6,593	9.9
Rolls-Royce	RR/ LN	United Kingdom	Industrials	33,047	51.5
Doordash	DASH US	United States	Cons. Discretionary	40,058	345.9
Uber	UBER US	United States	Industrials	139,103	1316.4
Allstate	ALL US	United States	Insurance	41,164	201.0
Snap Inc-A	SNAP US	United States	Media & Ent.	23,335	283.5
GoDaddy	GDDY US	United States	Software	15,807	149.3
UiPath - Class A	PATH US	United States	Software	11,352	167.0

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

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**Table 2: Global Stock Triple Momentum - Stocks with the Lowest Triple Momentum Rank**

Bottom global stocks with the lowest Triple Momentum Rank

Company Name	BBG Code	Country	Sector	MCAP (Total \$USm)	Avg Daily TO (6m \$US m)
IGO	IGO AU	Australia	Materials	3,599	36.6
Pilbara Minerals	PLS AU	Australia	Materials	6,965	99.1
Mirvac	MGR AU	Australia	Real Estate	5,556	21.9
Umicore	UMI BB	Belgium	Materials	5,462	11.0
First Quantum	FM CN	Canada	Materials	6,390	64.1
Pan American Silver	PAAS CN	Canada	Materials	4,974	13.4
East Buy	1797 HK	China	Cons. Discretionary	3,146	48.8
China Feihe	6186 HK	China	Cons. Staples	4,140	7.8
Shandong Weigao-H	1066 HK	China	Health Care	2,949	7.0
China Overseas Land	688 HK	China	Real Estate	16,459	32.2
China Vanke-H	2202 HK	China	Real Estate	1,727	21.8
Yuexiu Property	123 HK	China	Real Estate	2,594	9.0
China Gas	384 HK	China	Utilities	4,866	6.8
Guangdong Invest.	270 HK	China	Utilities	3,679	7.7
Puma Se	PUM GR	Germany	Cons. Discretionary	6,266	27.2
Bayer	BAYN GR	Germany	Health Care	30,446	139.4
Wacker Chemie	WCH GR	Germany	Materials	5,741	12.0
MTR	66 HK	Hong Kong	Industrials	20,353	10.7
Xinyi Glass	868 HK	Hong Kong	Industrials	3,407	8.2
Hang Lung Prop	101 HK	Hong Kong	Real Estate	5,253	7.3
Bank of Ireland	BIRG ID	Ireland	Banks	9,412	15.2
ICL	ICL IT	Israel	Materials	5,905	9.9
Yamaha	7951 JP	Japan	Cons. Discretionary	4,084	25.2
Shiseido	4911 JP	Japan	Cons. Staples	11,107	95.1
Nippon Building Fund	8951 JP	Japan	Real Estate	6,860	15.2
Saudi Kayan Petro	KAYAN AB	Saudi Arabia	Materials	3,648	5.9
LG H&H	051900 KS	South Korea	Cons. Staples	3,708	22.8
L&F	066970 KS	South Korea	Industrials	3,990	91.5
NCSOFT	036570 KS	South Korea	Media & Ent.	3,386	24.3
Samsung SDI	006400 KS	South Korea	Tech Hardware	20,433	107.1
Enagas	ENG SM	Spain	Utilities	4,214	14.0
Getinge	GETIB SS	Sweden	Health Care	4,794	14.9
Boliden	BOL SS	Sweden	Materials	7,051	31.3
Julius Baer	BAER SW	Switzerland	Div Financials	11,478	31.7
Clariant	CLN SW	Switzerland	Materials	4,203	10.6
SIG Group	SIGN SW	Switzerland	Materials	7,989	17.6
Momo.com	8454 TT	Taiwan	Cons. Discretionary	3,376	8.7
Burberry	BRBY LN	United Kingdom	Cons. Discretionary	5,900	24.3
Pepco Group Nv	PCO PW	United Kingdom	Cons. Discretionary	3,282	8.7
Archer Daniels	ADM US	United States	Cons. Staples	29,856	267.5
APA Corp	APA US	United States	Energy	9,292	159.3
Humana	HUM US	United States	Health Care	46,945	674.2
Pfizer	PFE US	United States	Health Care	152,046	1079.8
UPS	UPS US	United States	Industrials	102,597	568.8
Albemarle	ALB US	United States	Materials	13,407	377.6

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

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# Global Sectors

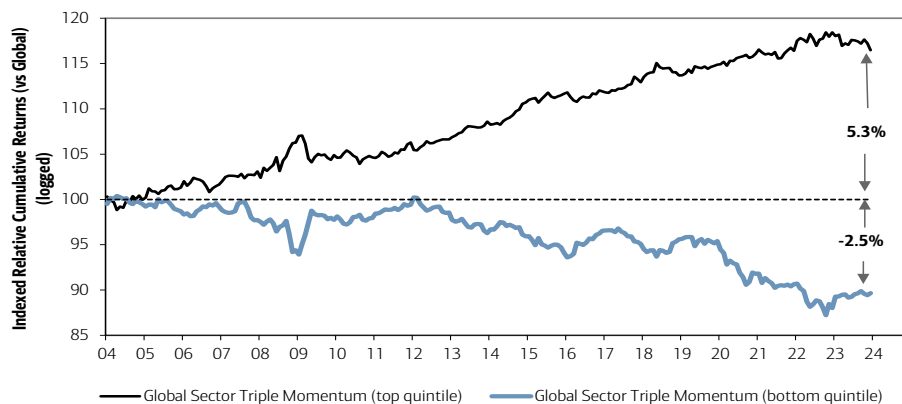
**Average Global Sector Triple Momentum Rank:** We calculate an arithmetic average of Triple Momentum Rank for all stocks by global sector, and re-rank these averages from 1 to 100 (where 100 represents the global sector with the strongest Triple Momentum).

**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 4: 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



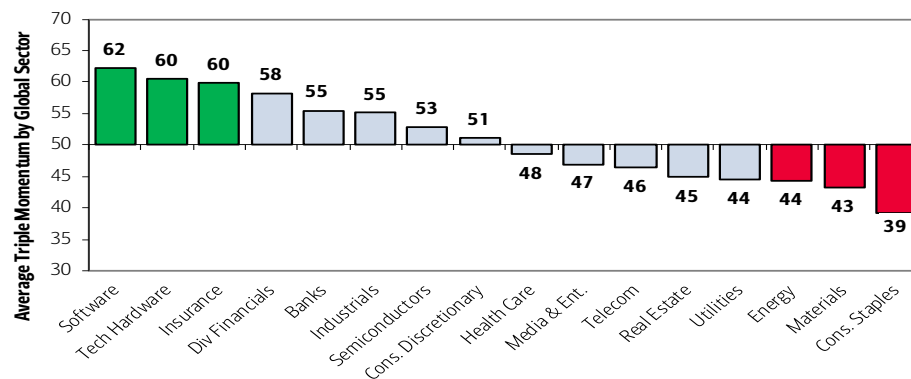
Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

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.

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## Chart 5: Global Sectors - Average Triple Momentum Rank

Triple Momentum is currently strongest for Software, Tech Hardware, and Insurance



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

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# Region-Sectors

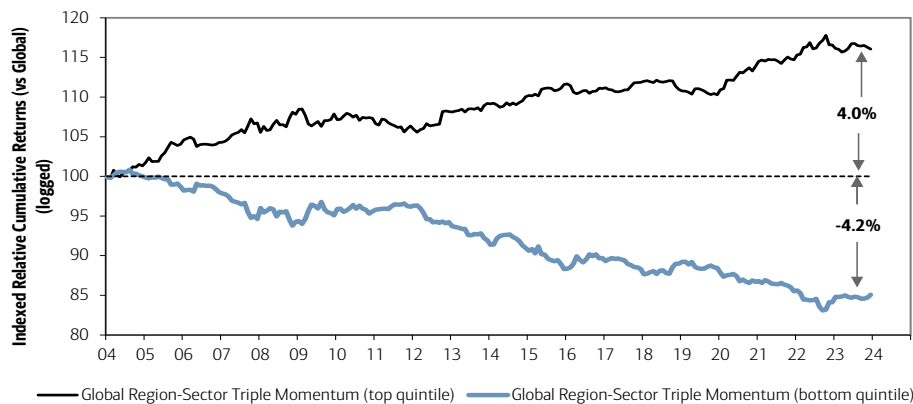
**Average Region-Sector Triple Momentum Rank:** We calculate an arithmetic average of Triple Momentum Rank for all stocks in the relevant global region-sector, and re-rank these averages from 1 to 100 (where 100 represents the relevant region-sector with the strongest Triple Momentum).

**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 6: 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

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### Chart 7: Regional-Sectors with the highest average (green) and lowest average (red) Triple Momentum Rank

Triple Momentum Rank is highest for Emerging ex-Asia - Real Estate and lowest for Europe - Energy



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

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## 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 Triple Momentum Rank by Region-Sector and Country-Sector**

Within regions, Triple Momentum is most positive on US Insurance, Europe Software, Japan Energy, and APxJ Tech Hardware

Average Triple Momentum Rank	Banks	Cons. Discretionary	Cons. Staples	Div Financials	Energy	Health Care	Industrials	Insurance	Materials	Media & Ent.	Real Estate	Semiconductors	Software	Tech Hardware	Telecom	Utilities	Region
Canada	31	52	51	66	46		45	70	21		57		60		36	28	45
United States	37	51	32	61	36	44	56	67	48	51	41	48	63	52	20	30	49
Belgium	34		43	28		49		59	1							84	43
Denmark	95	97	43			41	59		75							69	60
Finland			11		33		51	11	66					21	32	23	35
France	60	42	30	63	59	32	60	57	64	90	53	7	65		56	73	53
Germany	71	34	48	69		27	51	86	40	57	46	47	64		46	63	48
Italy	64	39			48	67	61	52							80	74	61
Netherlands	26	80	8	72		36	56	82	34	32		79			37		54
Spain	69	72			6	17	93								46	33	46
Sweden	45	23		57		3	50		22					21	18		38
Switzerland		23	37	40		49	48	60	46				93	84	20		47
United Kingdom	25	44	43	54	28	58	55	51	42	33	70		42	81		69	49
Australia	48	48	23	47	25	51	50	60	45	34	38		53		21	30	42
Hong Kong	19	44		14		85	44	65			27		100			18	36
Japan	82	57	41	72	85	52	57	69	50	38	63	72	50	60	45	51	56
Singapore	58	70	53	33			72			18	37				42	100	53
China	35	50	33	54	53	61	43	28	35	48	10	34	34	72		39	44
India	60	73	51	59	82	80	67	42	56	79	91		61		69	67	65
South Korea	69	55	27	45	34	46	44		37	52			51	38	57	83	47
Taiwan	68	31	26	53	5		48	52	26			58		77	29		57
Brazil	69	62	53		88	60	92	65	67						82	61	67
Mexico	83		56				34		82						66		59
Poland					17		100			28						87	52
South Africa	75	45	71	55	77	96	50	47	46		94				26		56
Asia Pac ex-Japan	55	54	37	48	53	62	53	44	43	48	34	50	60	68	48	47	50
Emerging ex-Asia	71	55	53	75	53	84	61	62	50	28	92				61	65	61
Europe	45	42	42	56	25	41	55	60	40	49	57	62	67	46	39	52	48
Japan	82	57	41	72	85	52	57	69	50	38	63	72	50	60	45	51	56
United States	37	51	32	61	36	44	56	67	48	51	41	48	63	52	20	30	49
Global	55	51	39	58	44	48	55	60	43	47	45	53	62	60	46	44	

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

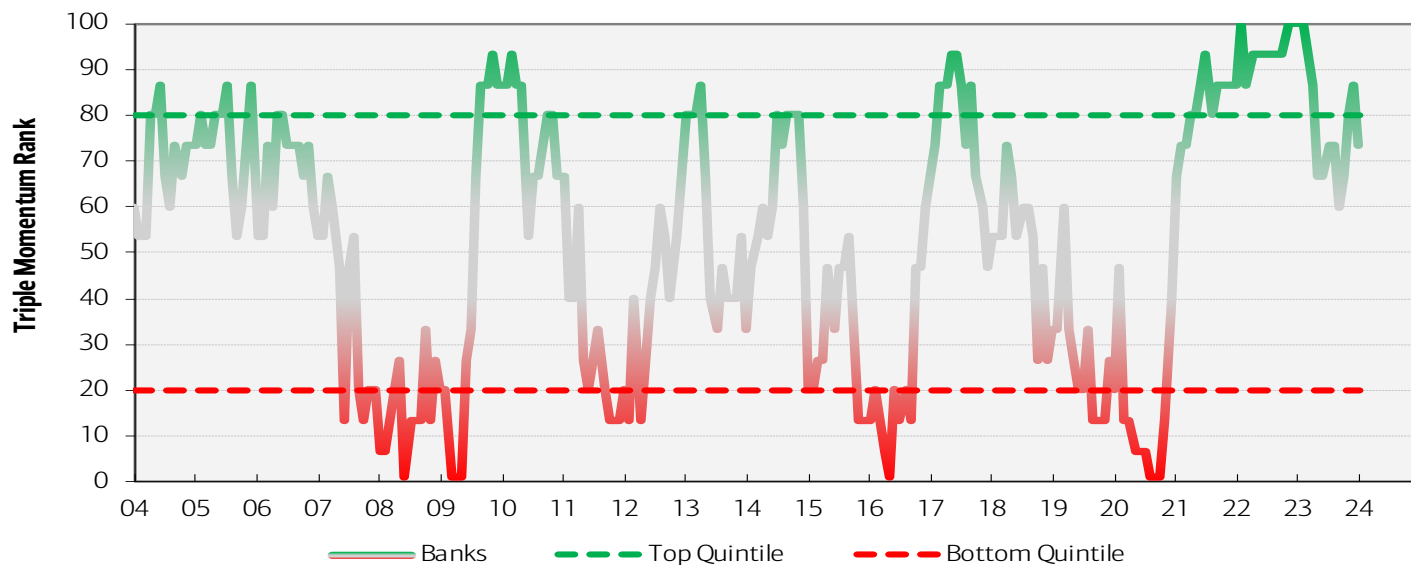
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# Global Sectors – Time Series

## Banks

**Chart 8: Global Banks: Triple Momentum Trend**

The average Triple Momentum Rank for Global Banks is 73

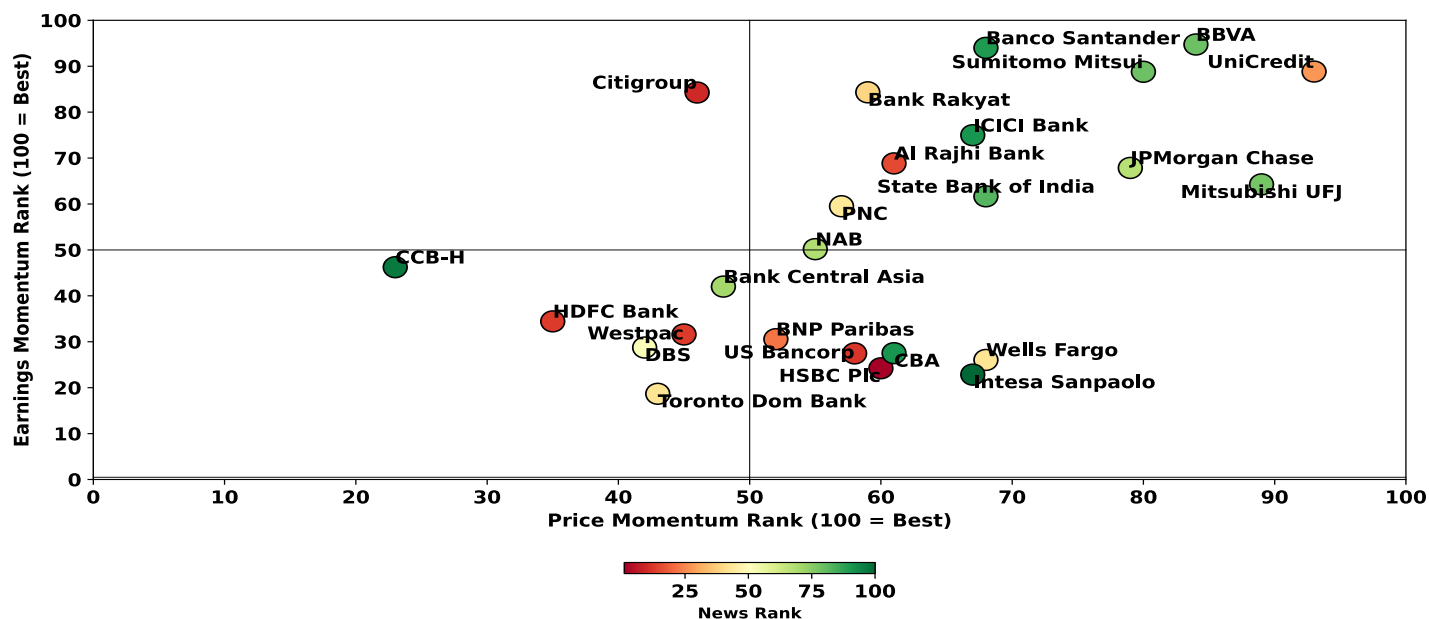


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

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**Chart 9: Banks: Earnings Momentum (vertical axis), Price Momentum (horizontal axis), News Momentum (colour)**

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

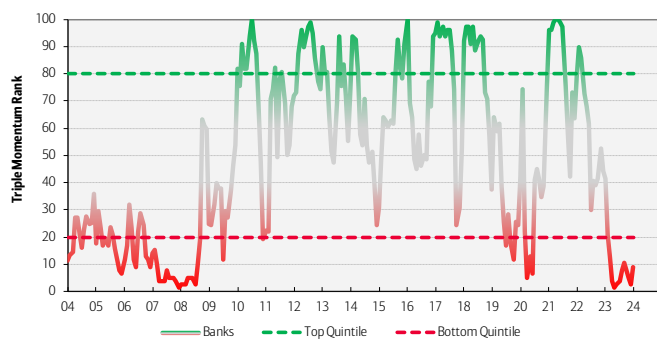


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

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**Chart 10: North America Banks: Triple Momentum Trend**

The average Triple Momentum Rank for the USA Banks is in the bottom quintile

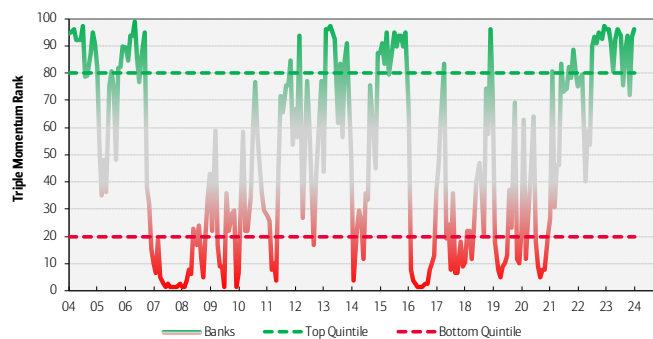


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

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**Chart 11: Japan Banks: Triple Momentum Trend**

The average Triple Momentum Rank for Japan Banks is in the top quintile

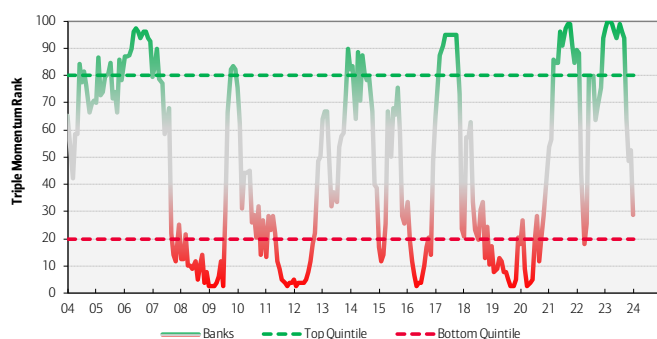


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

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**Chart 12: Europe Banks: Triple Momentum Trend**

The average Triple Momentum Rank for Europe Banks is 29

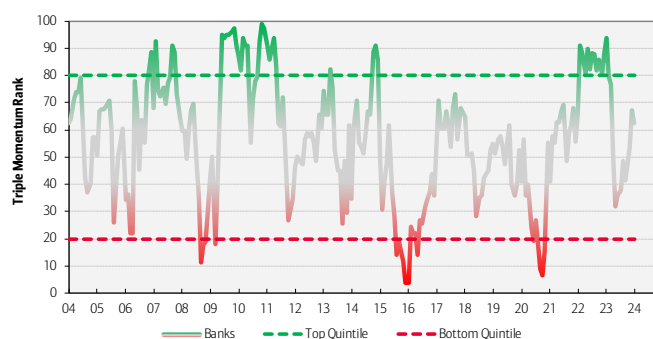


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

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**Chart 13: Asia Pac Banks: Triple Momentum Trend**

The average Triple Momentum Rank for Asia Pac ex-Japan Banks is 62

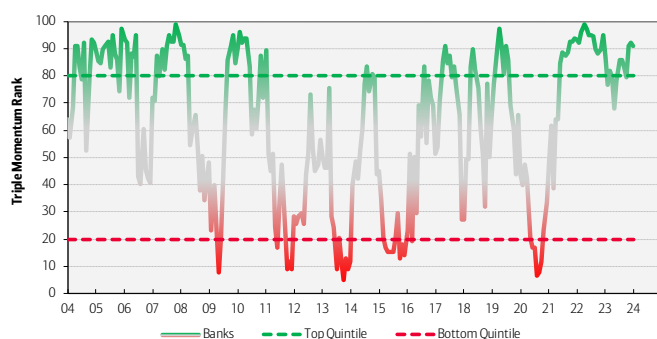


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

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**Chart 14: GEM ex-Asia Banks: Triple Momentum Trend**

The average Triple Momentum Rank for EM ex-Asia Banks is in the top quintile



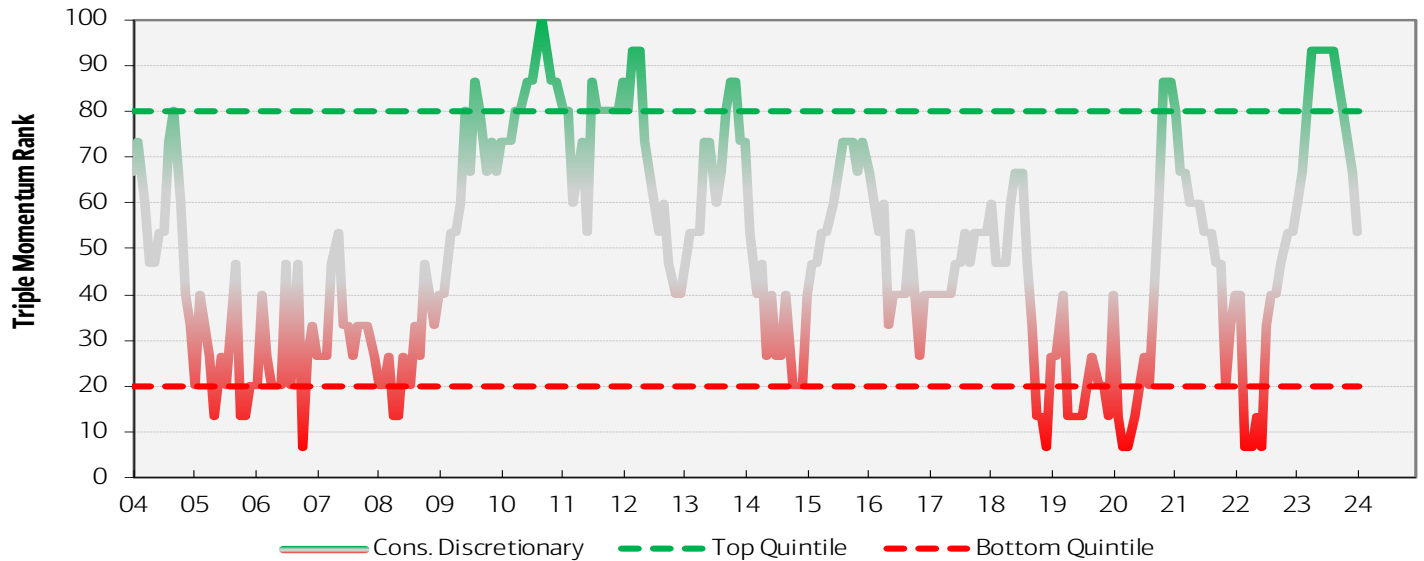
Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

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## Consumer Discretionary

**Chart 15: Global Consumer Discretionary: Triple Momentum Trend**

The average Triple Momentum Rank for Global Cons. Discretionary is 53

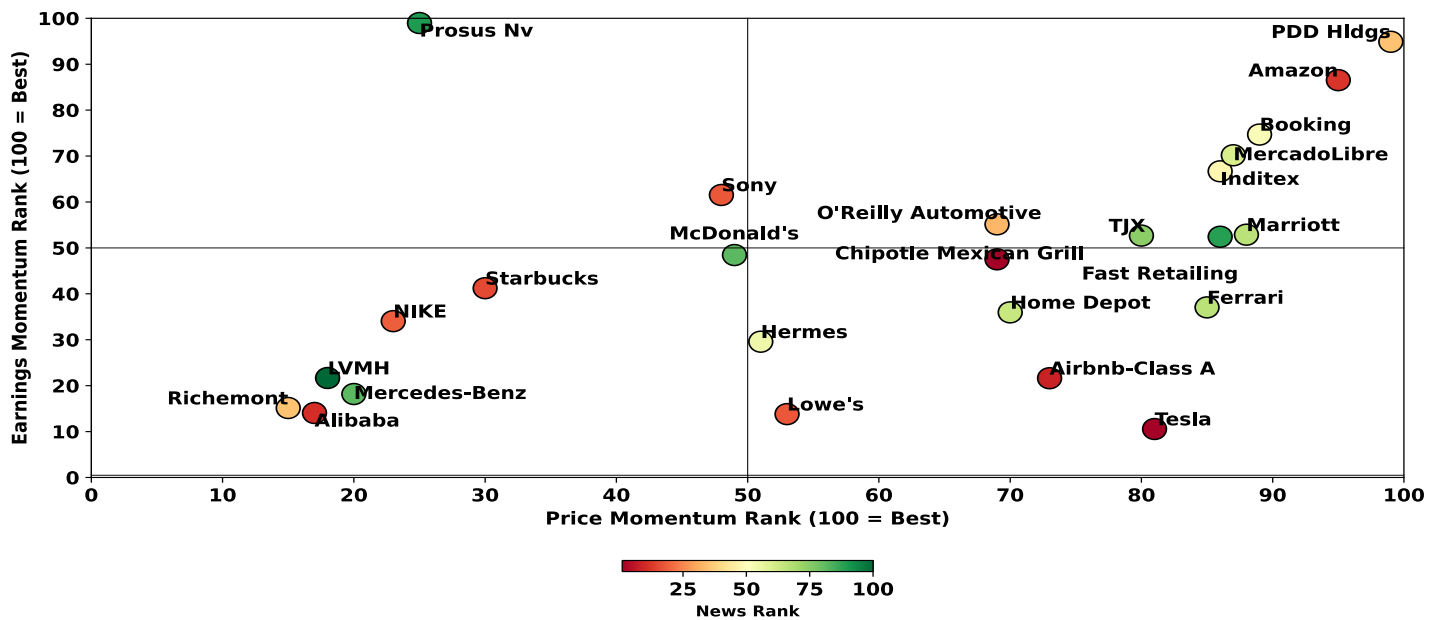


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

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**Chart 16: Consumer Discretionary: Earnings Momentum (vertical axis), Price Momentum (horizontal axis), News Momentum (colour)**

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

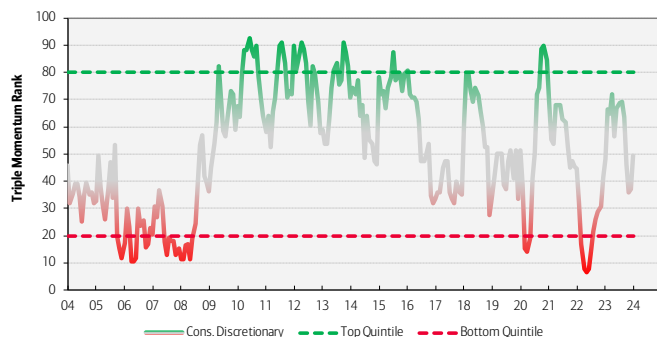


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

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### Chart 17: North America Consumer Discretionary: Triple Momentum Trend

The average Triple Momentum Rank for the USA Cons. Discretionary is 49

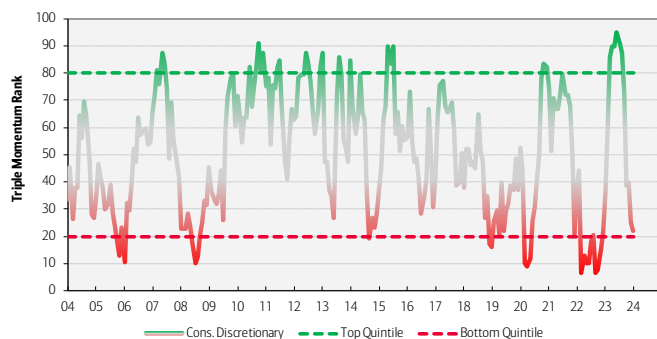


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

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### Chart 19: Europe Consumer Discretionary: Triple Momentum Trend

The average Triple Momentum Rank for Europe Cons. Discretionary is 22

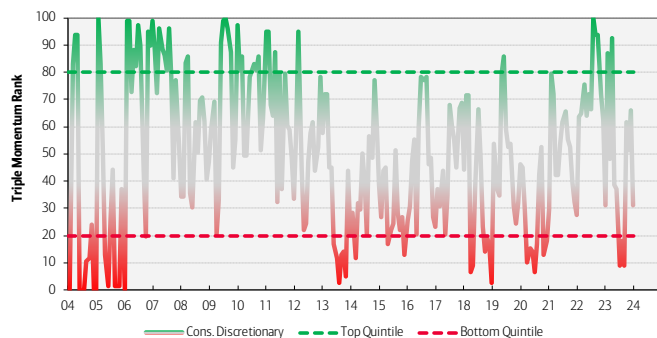


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

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### Chart 21: GEM ex-Asia Consumer Discretionary: Triple Momentum Trend

The average Triple Momentum Rank for EM ex-Asia Cons. Discretionary is 31

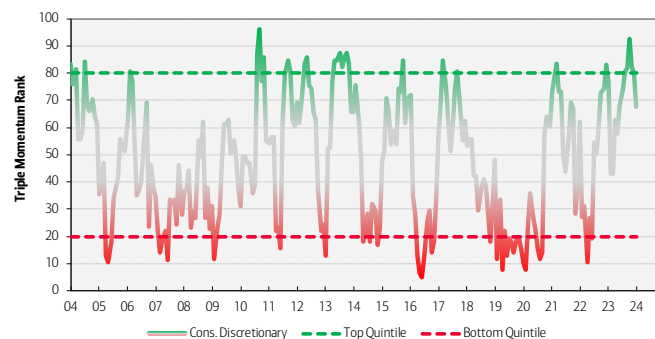


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

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### Chart 18: Japan Consumer Discretionary: Triple Momentum Trend

The average Triple Momentum Rank for Japan Cons. Discretionary is 68

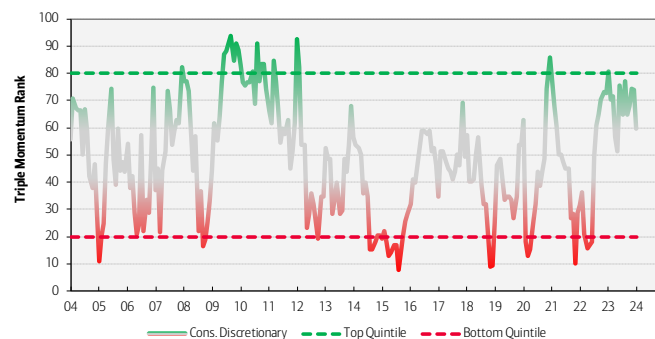


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

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### Chart 20: Asia Pac Consumer Discretionary: Triple Momentum Trend

The average Triple Momentum Rank for Asia Pac ex-Japan Cons. Discretionary is 60



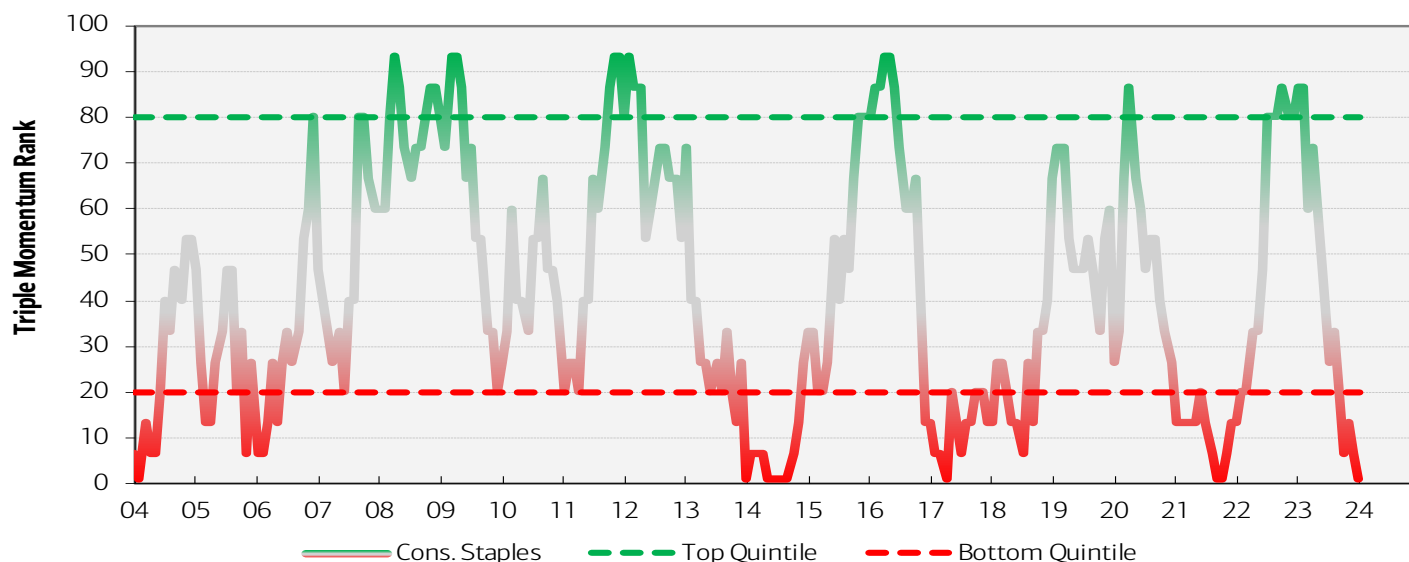
Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

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## Consumer Staples

**Chart 22: Global Consumer Staples: Triple Momentum Trend**

The Triple Momentum is weakest for Global Cons. Staples sector

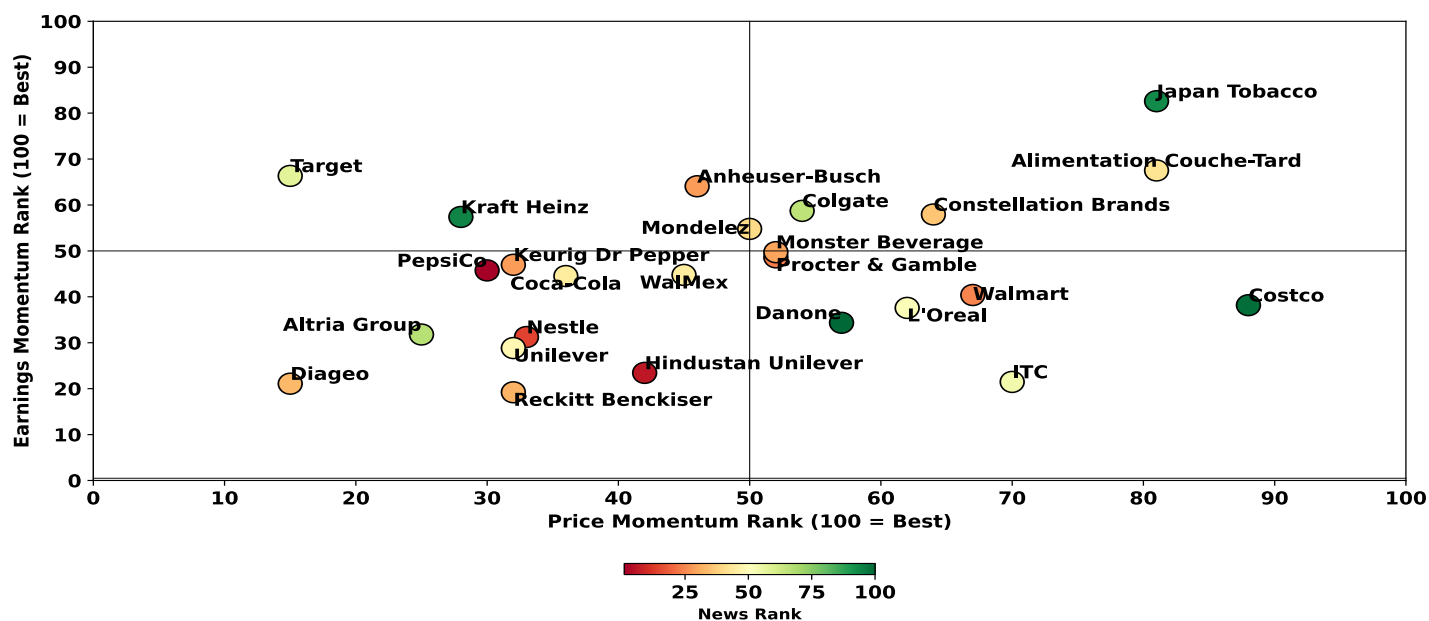


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

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**Chart 23: Consumer Staples: Earnings Momentum (vertical axis), Price Momentum (horizontal axis), News Momentum (colour)**

Triple Momentum is most positive for Japan Tobacco and Colgate



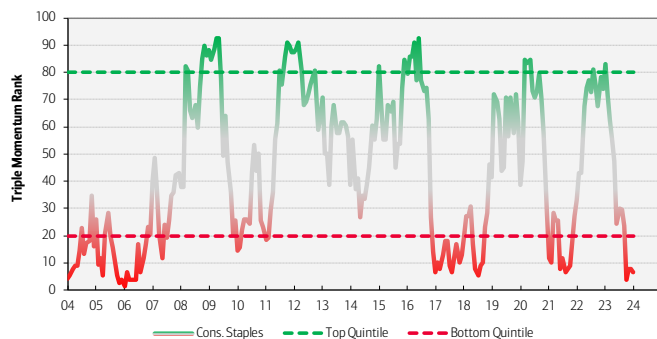
Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

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### Chart 24: North America Consumer Staples: Triple Momentum Trend

The average Triple Momentum Rank for the USA Cons. Staples is in the bottom quintile

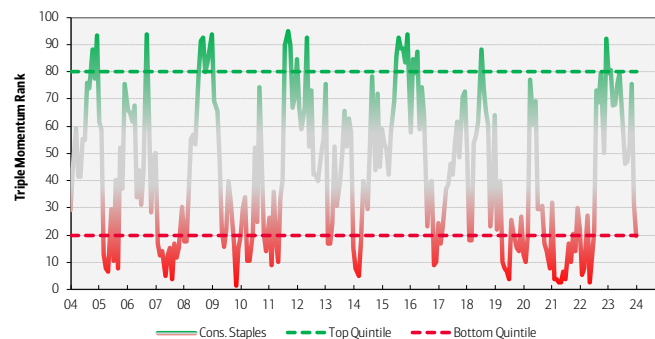


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

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### Chart 25: Japan Consumer Staples: Triple Momentum Trend

The average Triple Momentum Rank for Japan Cons. Staples is in the bottom quintile

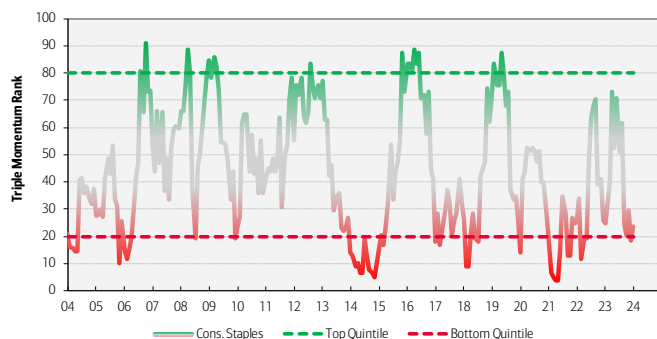


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

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### Chart 26: Europe Consumer Staples: Triple Momentum Trend

The average Triple Momentum Rank for Europe Cons. Staples is 23

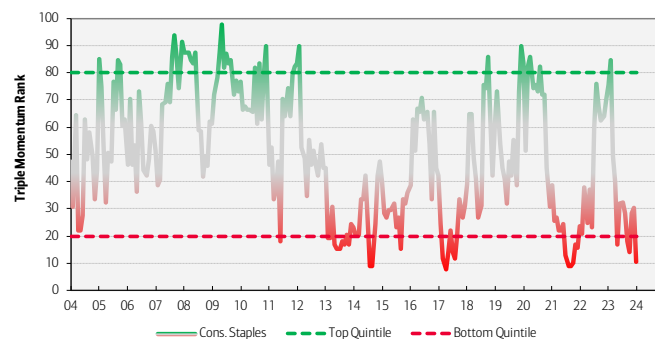


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

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### Chart 27: Asia Pac Consumer Staples: Triple Momentum Trend

The average Triple Momentum Rank for Asia Pac ex-Japan Cons. Staples is in the bottom quintile

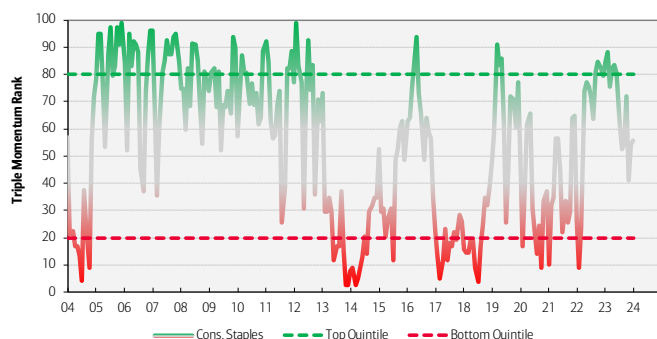


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

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### Chart 28: GEM ex-Asia Consumer Staples: Triple Momentum Trend

The average Triple Momentum Rank for EM ex-Asia Cons. Staples is 56



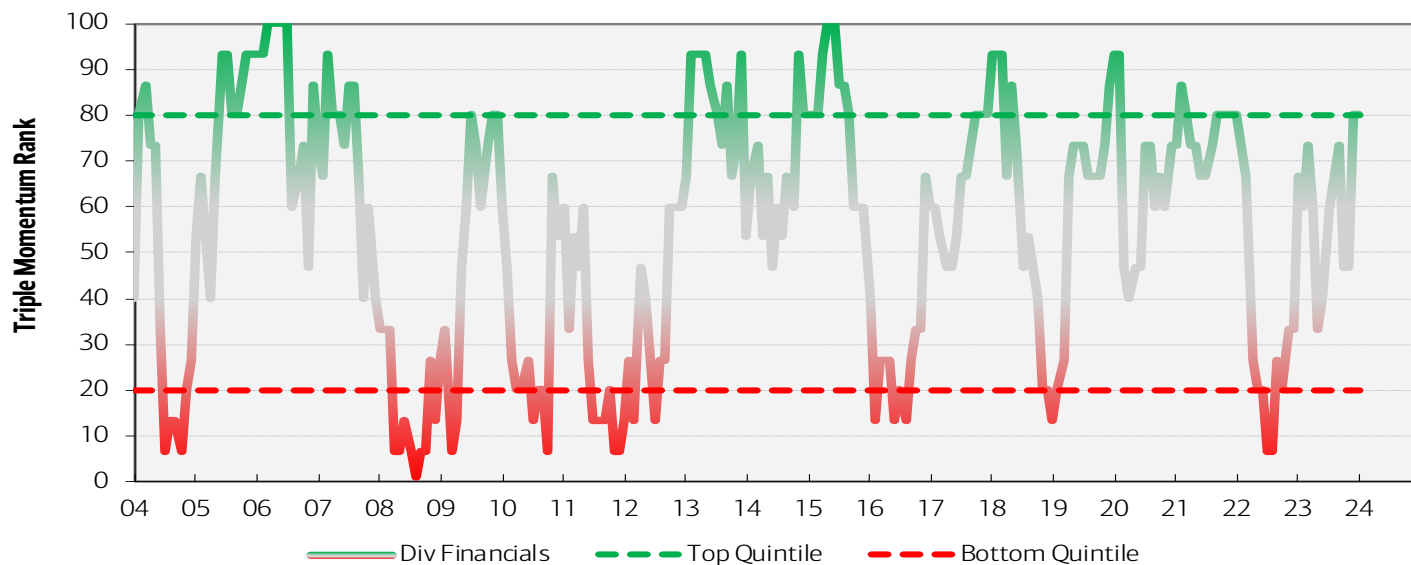
Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

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## Diversified Financials

**Chart 29: Global Diversified Financials: Triple Momentum Trend**

The average Triple Momentum Rank for Global Div Financials is 80

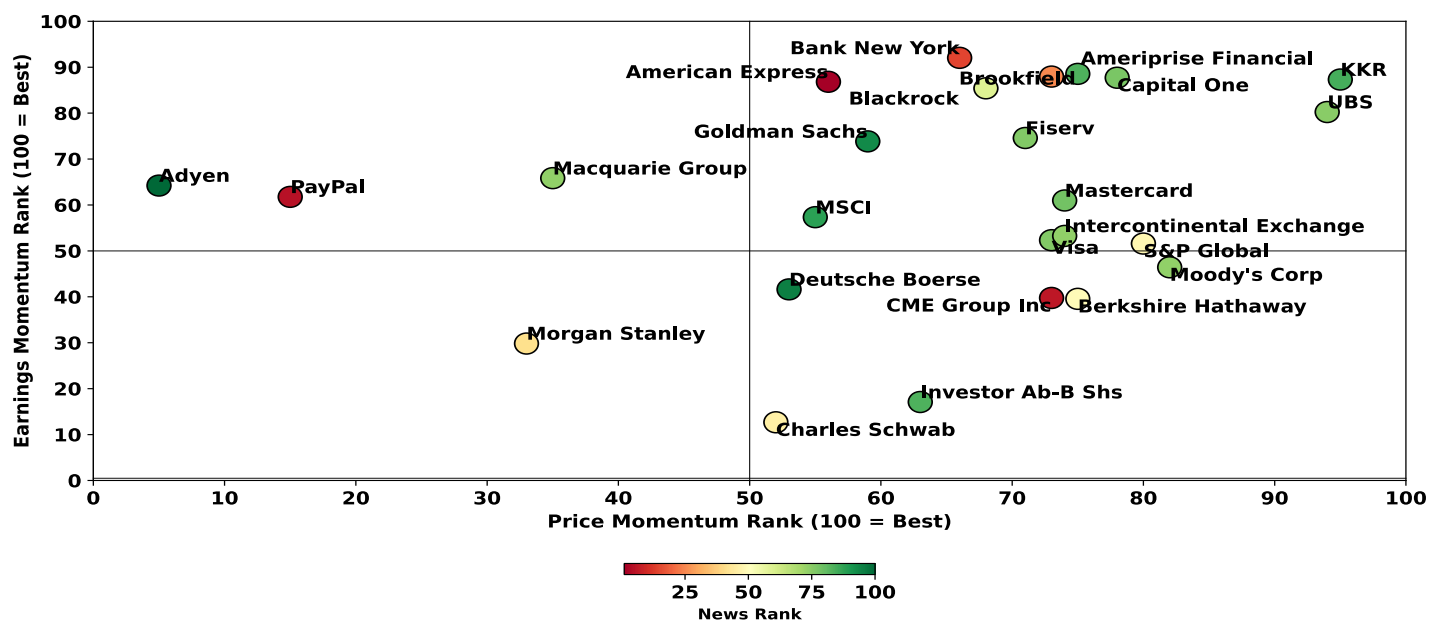


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

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**Chart 30: Diversified Financials: Earnings Momentum (vertical axis), Price Momentum (horizontal axis), News Momentum (colour)**

Triple Momentum is most positive for KKR, Ameriprise Financial and UBS

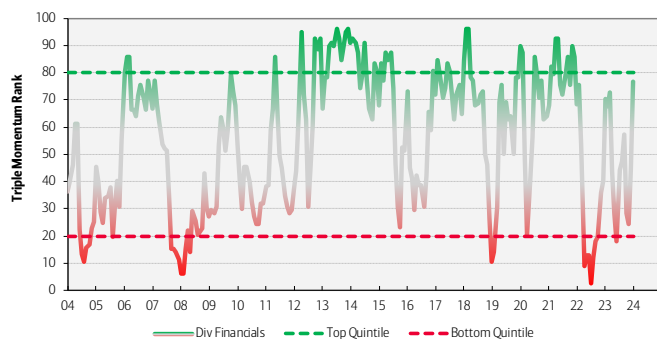


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

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### Chart 31: North America Diversified Financials: Triple Momentum Trend

The average Triple Momentum Rank for the USA Div Financials is 77

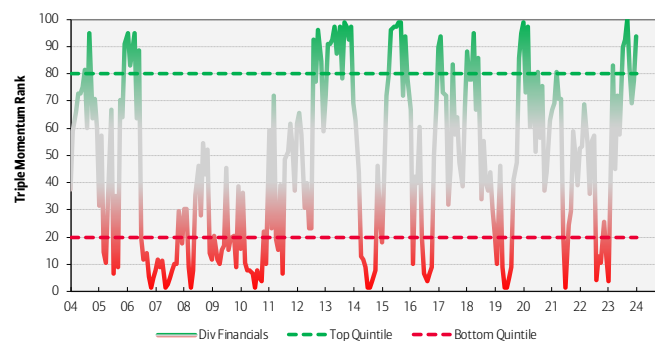


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

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### Chart 32: Japan Diversified Financials: Triple Momentum Trend

The average Triple Momentum Rank for Japan Div Financials is in the top quintile

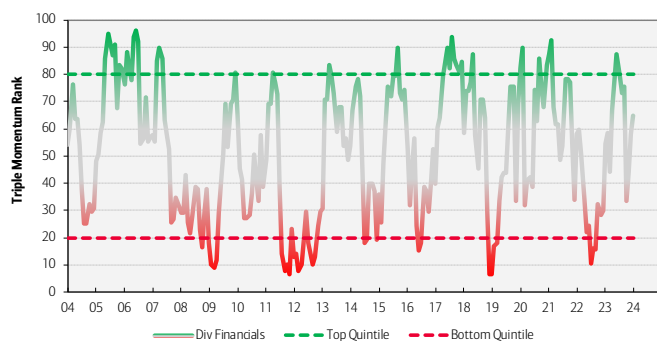


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

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### Chart 33: Europe Diversified Financials: Triple Momentum Trend

The average Triple Momentum Rank for Europe Div Financials is 65

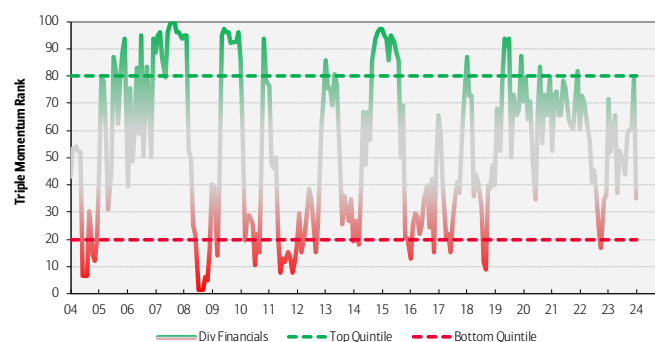


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

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### Chart 34: Asia Pac Diversified Financials: Triple Momentum Trend

The average Triple Momentum Rank for Asia Pac ex-Japan Div Financials is 35

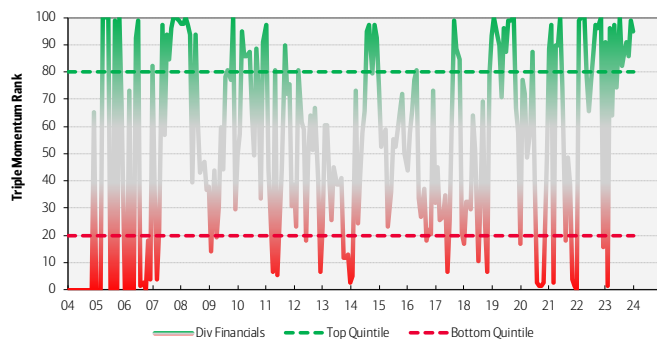


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

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### Chart 35: GEM ex-Asia Diversified Financials: Triple Momentum Trend

The average Triple Momentum Rank for EM ex-Asia Div Financials is in the top quintile



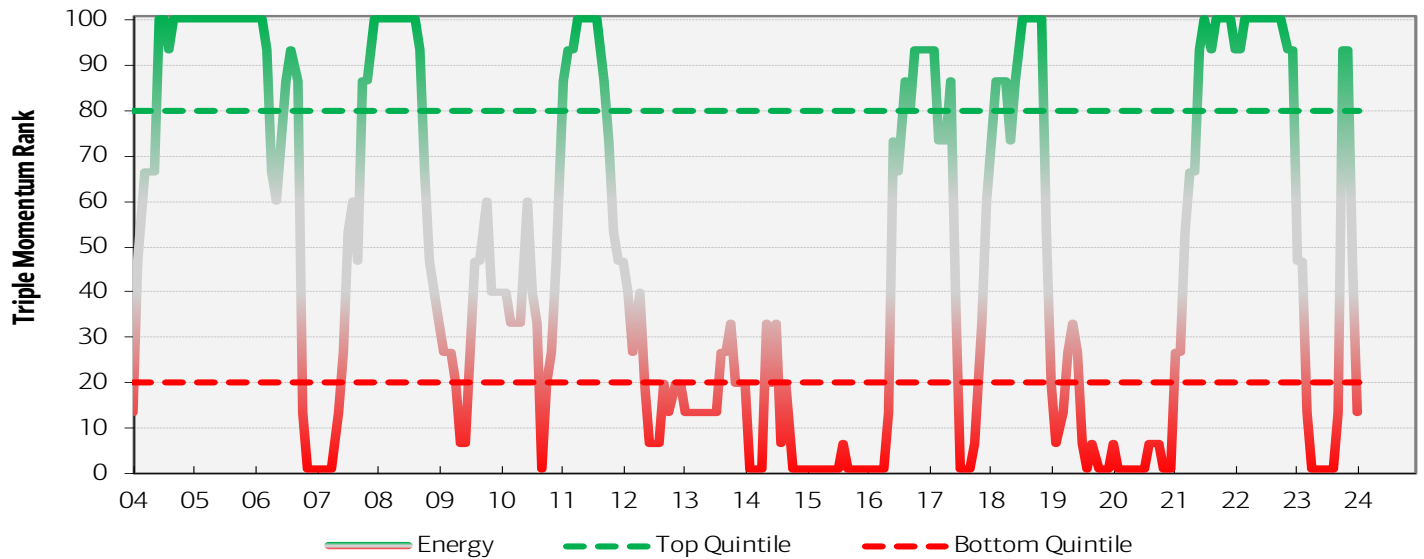
Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

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## Energy

**Chart 36: Global Energy: Triple Momentum Trend**

The average Triple Momentum Rank for Global Energy is in the bottom quintile

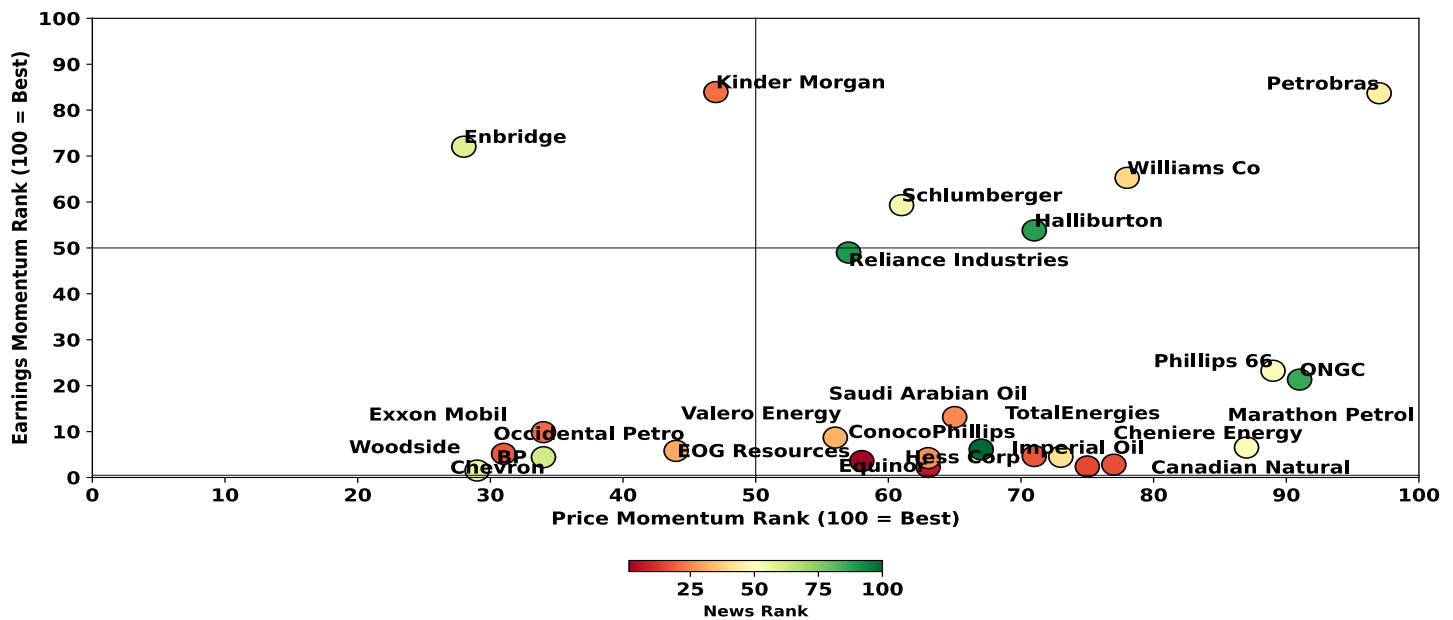


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

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**Chart 37: Energy: Earnings Momentum (vertical axis), Price Momentum (horizontal axis), News Momentum (colour)**

Triple Momentum is most positive for Halliburton and Schlumberger

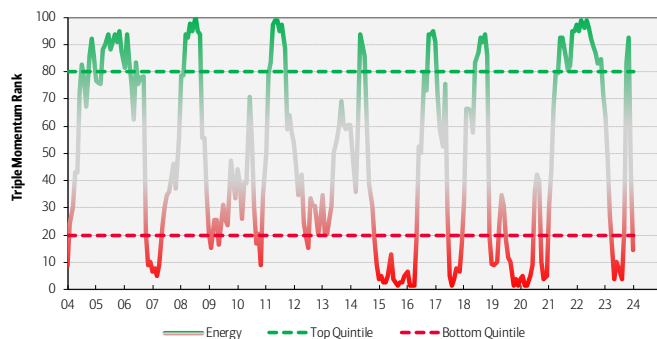


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

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**Chart 38: North America Energy: Triple Momentum Trend**

The average Triple Momentum Rank for the USA Energy is in the bottom quintile

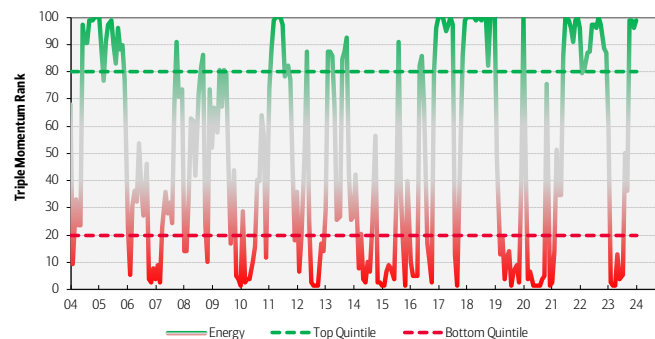


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

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**Chart 39: Japan Energy: Triple Momentum Trend**

The average Triple Momentum Rank for Japan Energy is in the top quintile

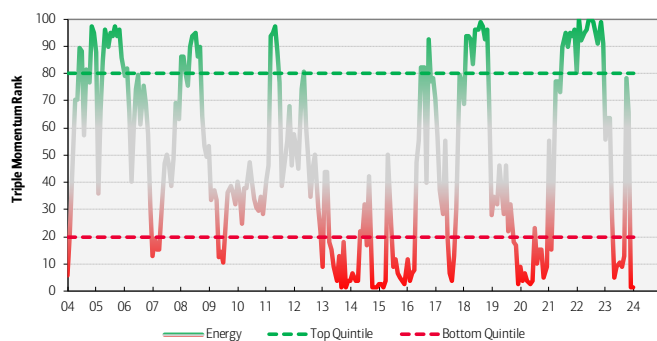


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

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**Chart 40: Europe Energy: Triple Momentum Trend**

The Triple Momentum is weakest for Europe Energy sector

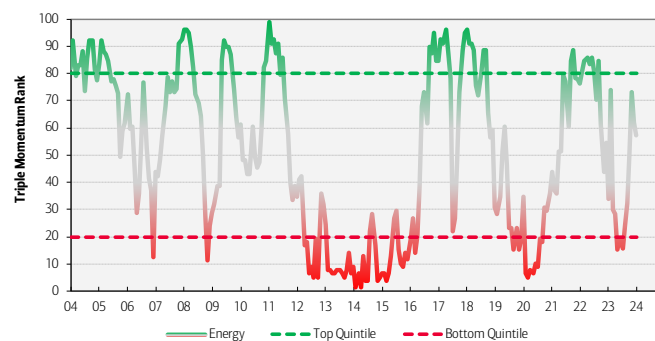


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

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**Chart 41: Asia Pac Energy: Triple Momentum Trend**

The average Triple Momentum Rank for Asia Pac ex-Japan Energy is 57

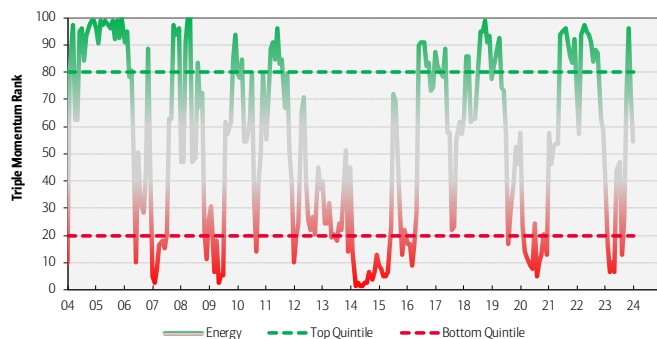


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

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**Chart 42: GEM ex-Asia Energy: Triple Momentum Trend**

The average Triple Momentum Rank for EM ex-Asia Energy is 55



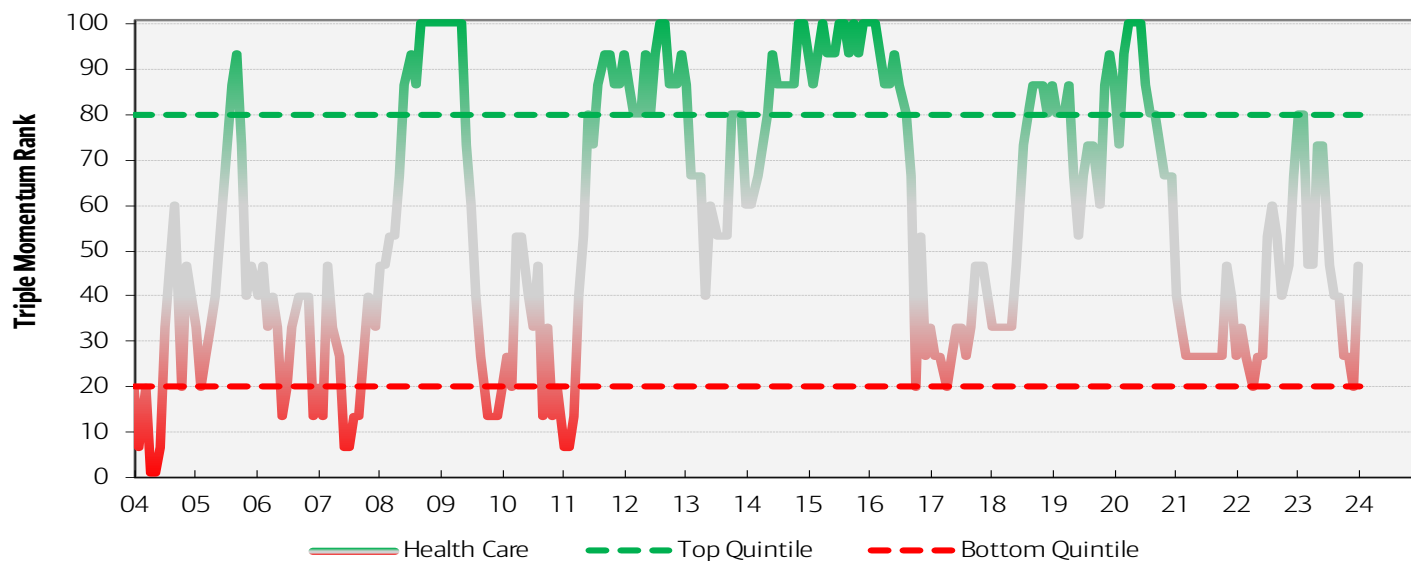
Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

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## Health Care

**Chart 43: Global Health Care: Triple Momentum Trend**

The average Triple Momentum Rank for Global Health Care is 47

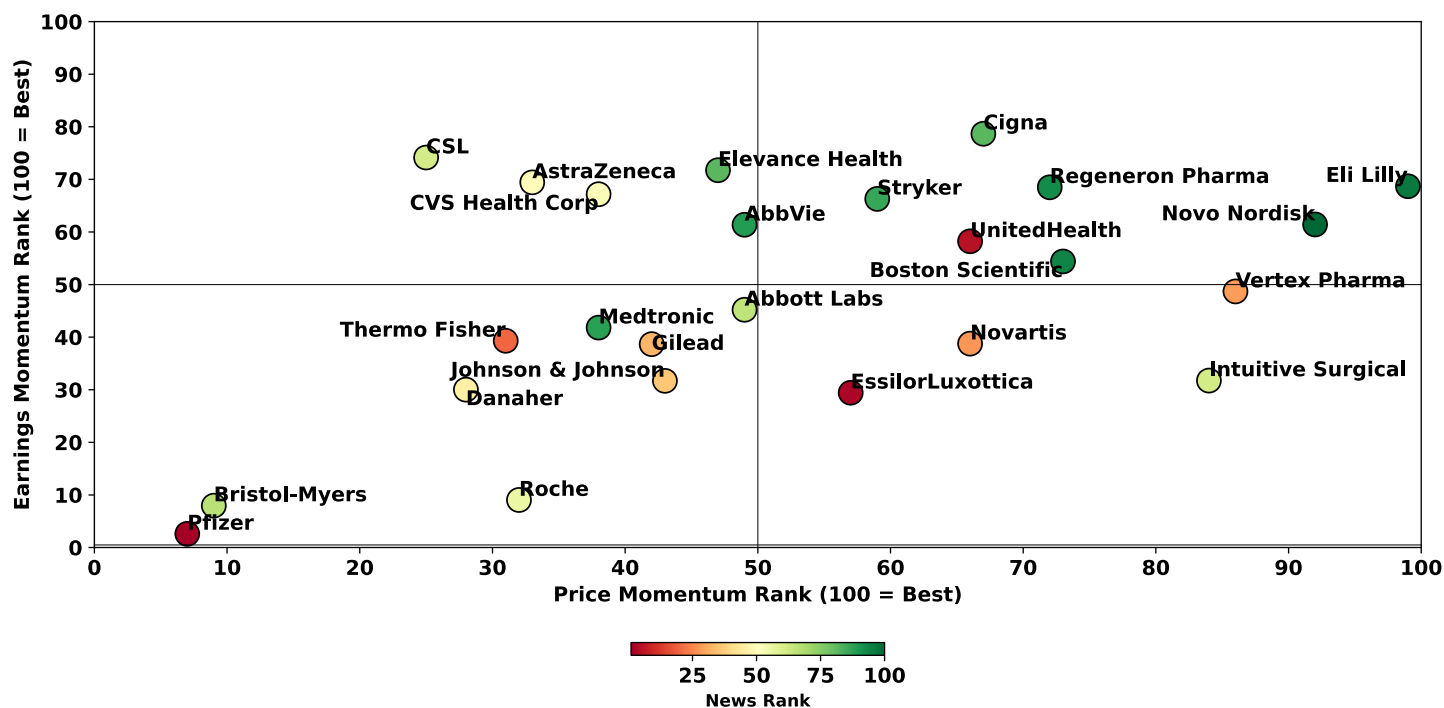


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

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**Chart 44: Health Care: Earnings Momentum (vertical axis), Price Momentum (horizontal axis), News Momentum (colour)**

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

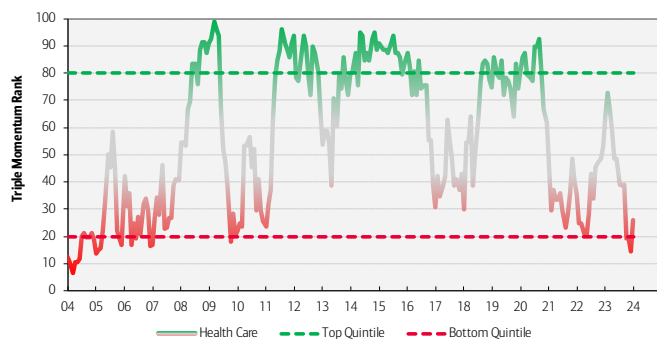


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

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**Chart 45: North America Health Care: Triple Momentum Trend**

The average Triple Momentum Rank for the USA Health Care is 26

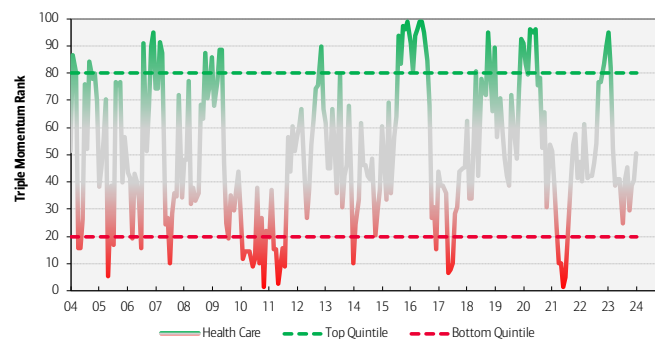


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

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**Chart 46: Japan Health Care: Triple Momentum Trend**

The average Triple Momentum Rank for Japan Health Care is 51

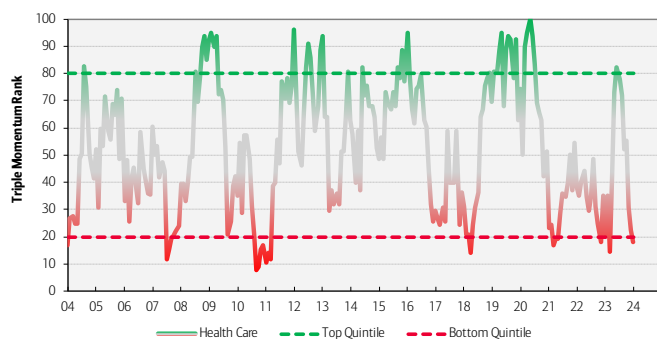


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

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**Chart 47: Europe Health Care: Triple Momentum Trend**

The average Triple Momentum Rank for Europe Health Care is in the bottom quintile

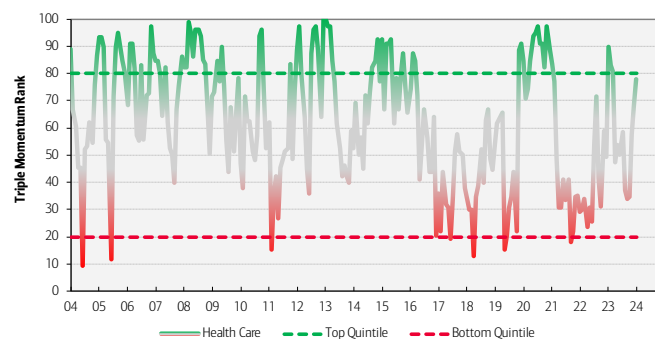


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

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**Chart 48: Asia Pac Health Care: Triple Momentum Trend**

The average Triple Momentum Rank for Asia Pac ex-Japan Health Care is 78

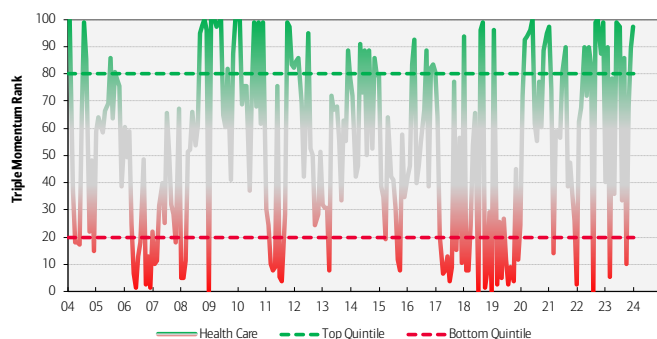


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

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**Chart 49: GEM ex-Asia Health Care: Triple Momentum Trend**

The average Triple Momentum Rank for EM ex-Asia Health Care is in the top quintile



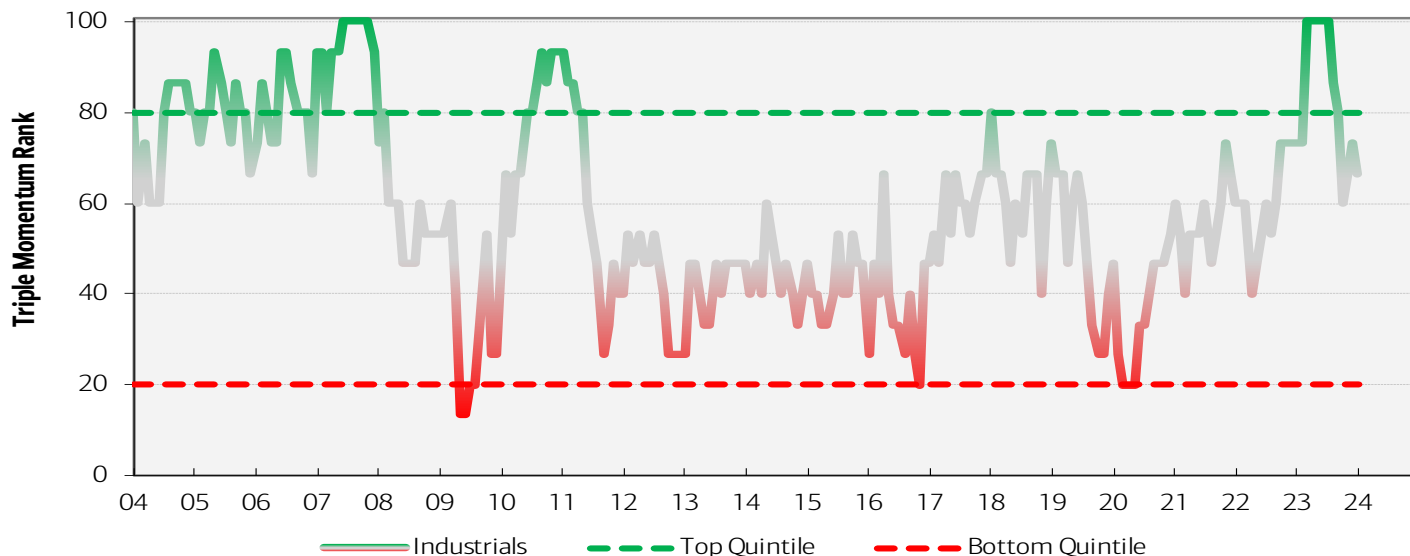
Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

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## Industrials

**Chart 50: Global Industrials: Triple Momentum Trend**

The average Triple Momentum Rank for Global Industrials is 67

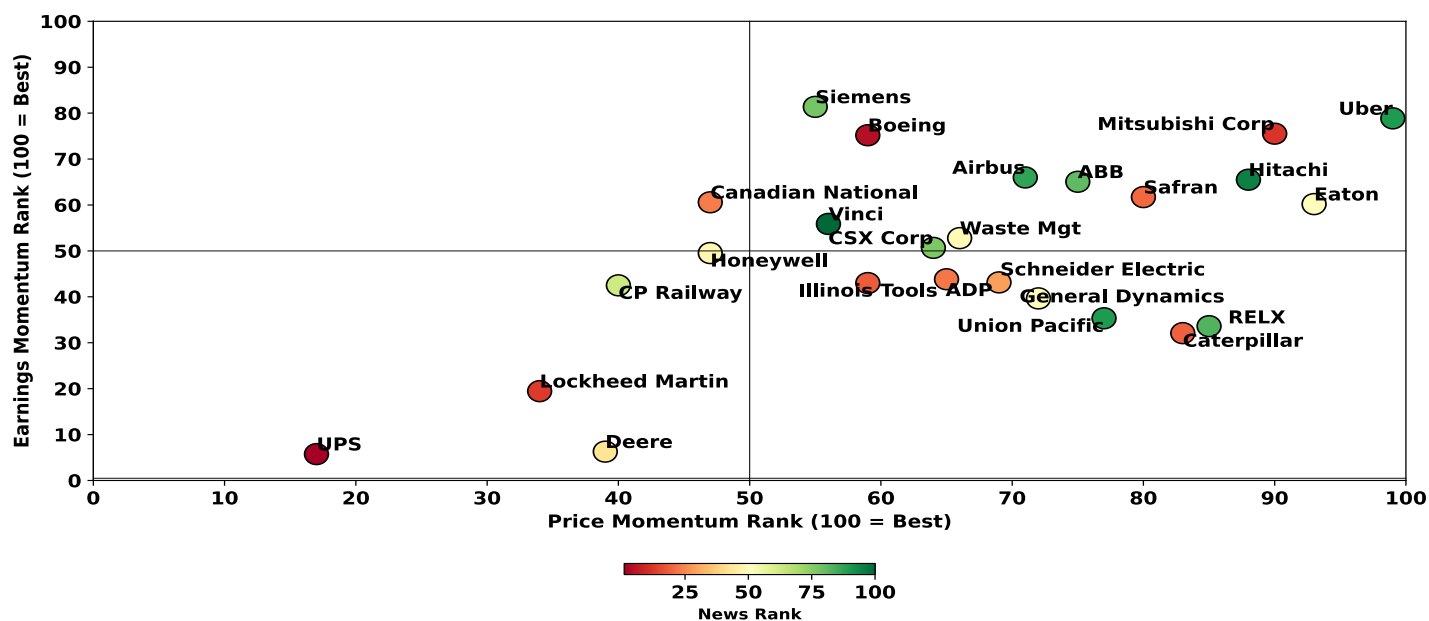


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

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**Chart 51: Industrials: Earnings Momentum (vertical axis), Price Momentum (horizontal axis), News Momentum (colour)**

Triple Momentum is most positive for Uber, Hitachi and Vinci



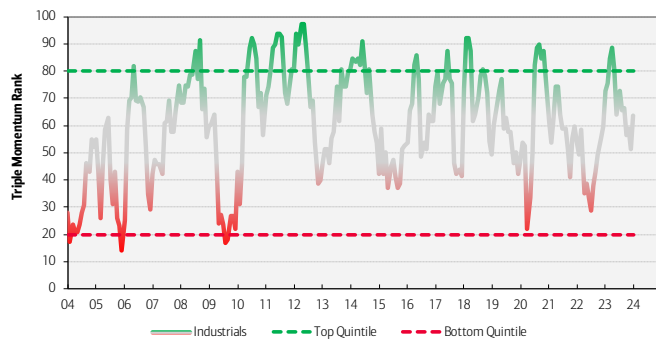
Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

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**Chart 52: North America Industrials: Triple Momentum Trend**

The average Triple Momentum Rank for the USA Industrials is 64

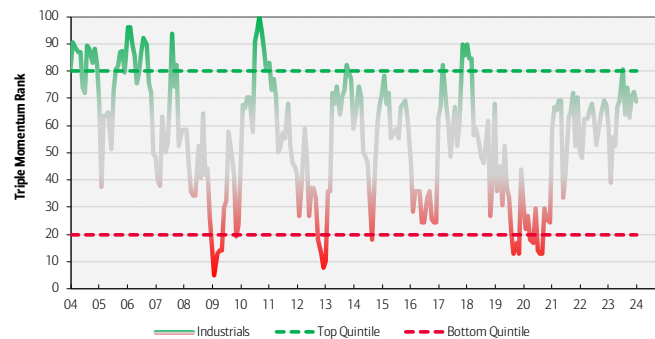


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

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**Chart 53: Japan Industrials: Triple Momentum Trend**

The average Triple Momentum Rank for Japan Industrials is 69

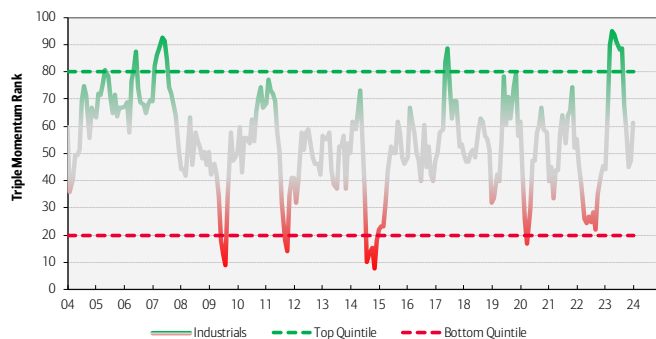


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

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**Chart 54: Europe Industrials: Triple Momentum Trend**

The average Triple Momentum Rank for Europe Industrials is 61

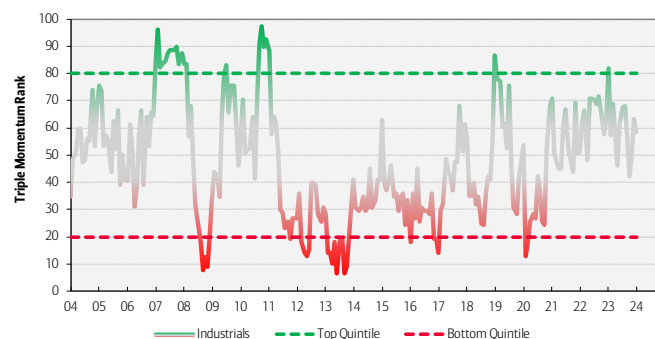


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

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**Chart 55: Asia Pac Industrials: Triple Momentum Trend**

The average Triple Momentum Rank for Asia Pac ex-Japan Industrials is 58

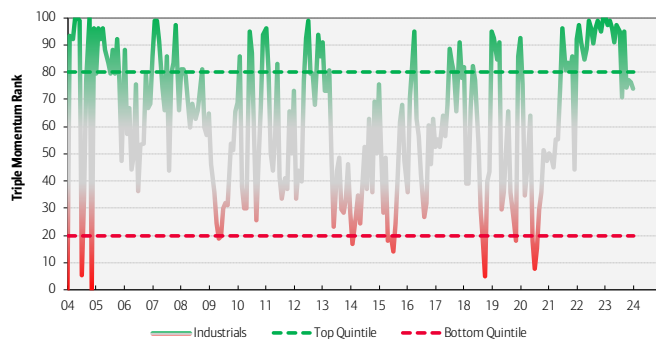


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

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**Chart 56: GEM ex-Asia Industrials: Triple Momentum Trend**

The average Triple Momentum Rank for EM ex-Asia Industrials is 74



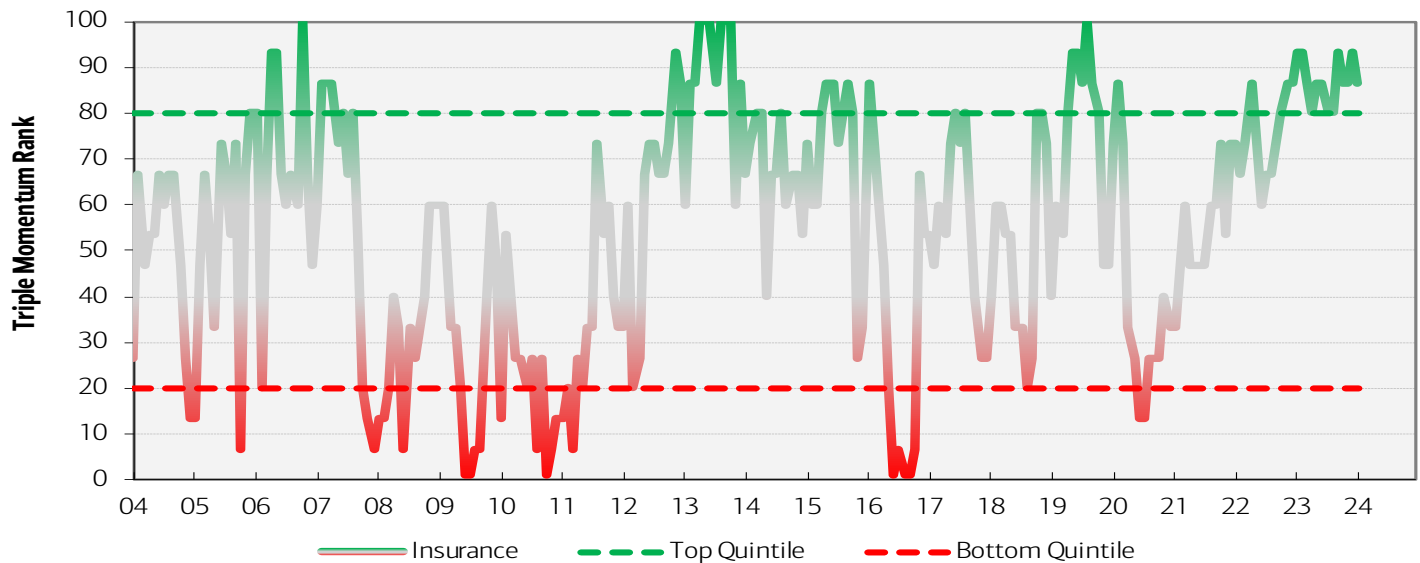
Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

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## Insurance

**Chart 57: Global Insurance: Triple Momentum Trend**

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

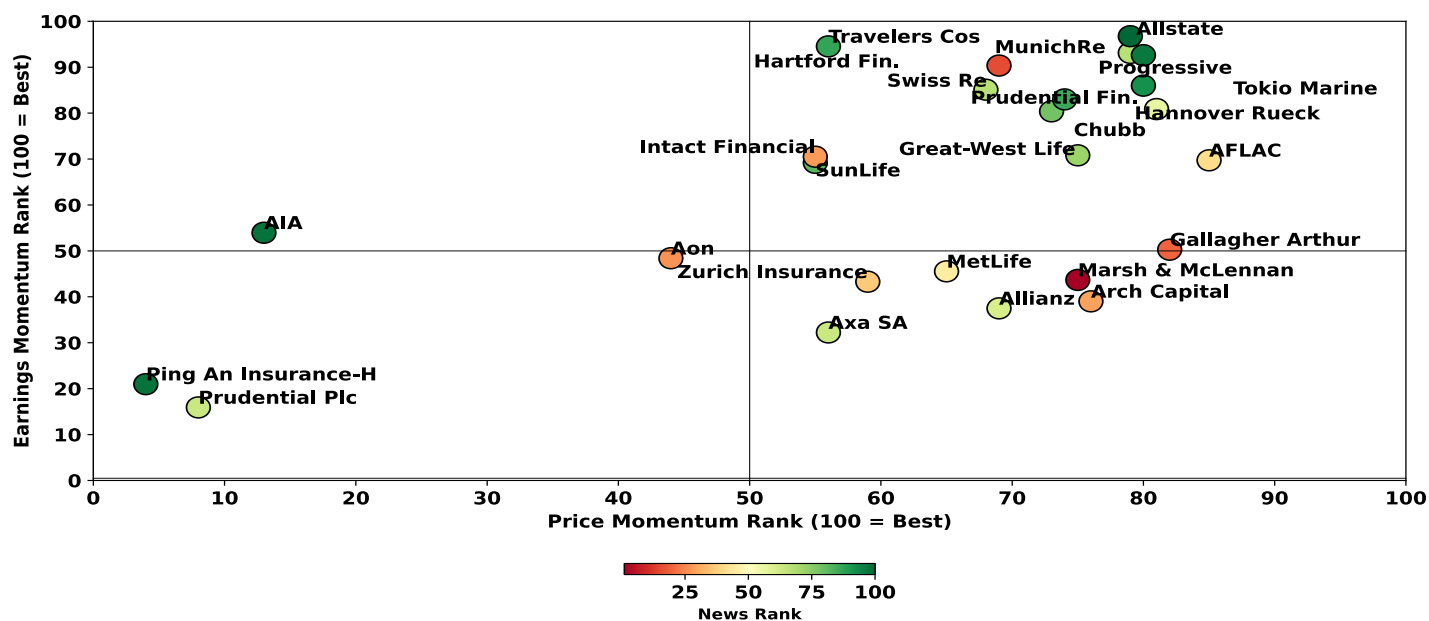


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

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**Chart 58: Insurance: Earnings Momentum (vertical axis), Price Momentum (horizontal axis), News Momentum (colour)**

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

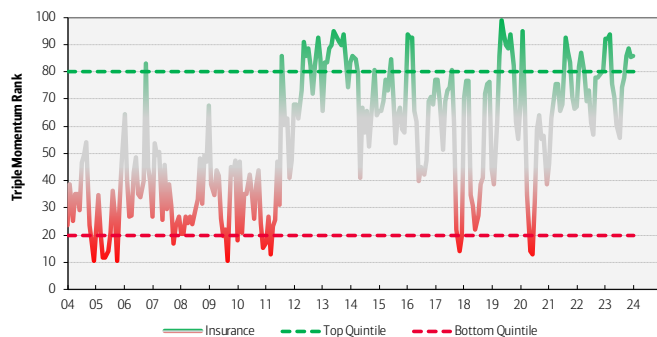


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

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**Chart 59: North America Insurance: Triple Momentum Trend**

The average Triple Momentum Rank for the USA Insurance is in the top quintile

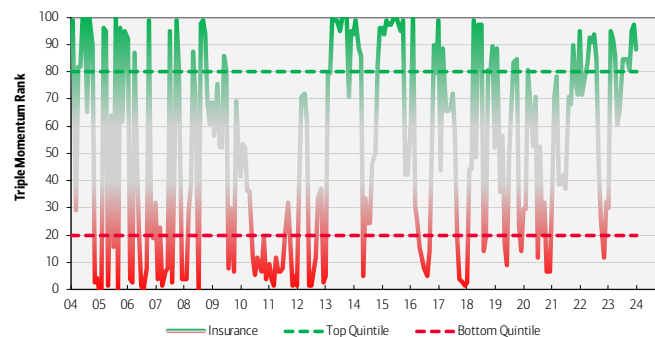


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

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**Chart 60: Japan Insurance: Triple Momentum Trend**

The average Triple Momentum Rank for Japan Insurance is in the top quintile

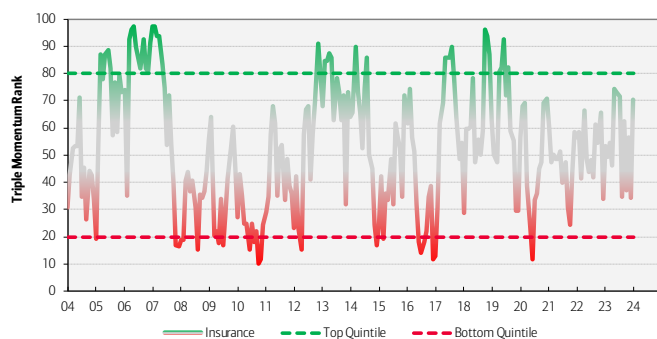


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

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**Chart 61: Europe Insurance: Triple Momentum Trend**

The average Triple Momentum Rank for Europe Insurance is 70

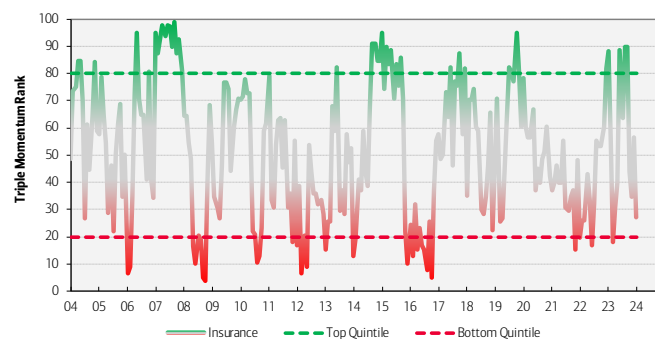


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

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**Chart 62: Asia Pac Insurance: Triple Momentum Trend**

The average Triple Momentum Rank for Asia Pac ex-Japan Insurance is 27

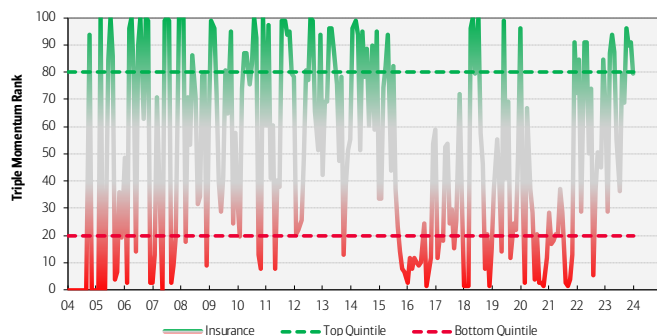


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

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**Chart 63: GEM ex-Asia Insurance: Triple Momentum Trend**

The average Triple Momentum Rank for EM ex-Asia Insurance is 79



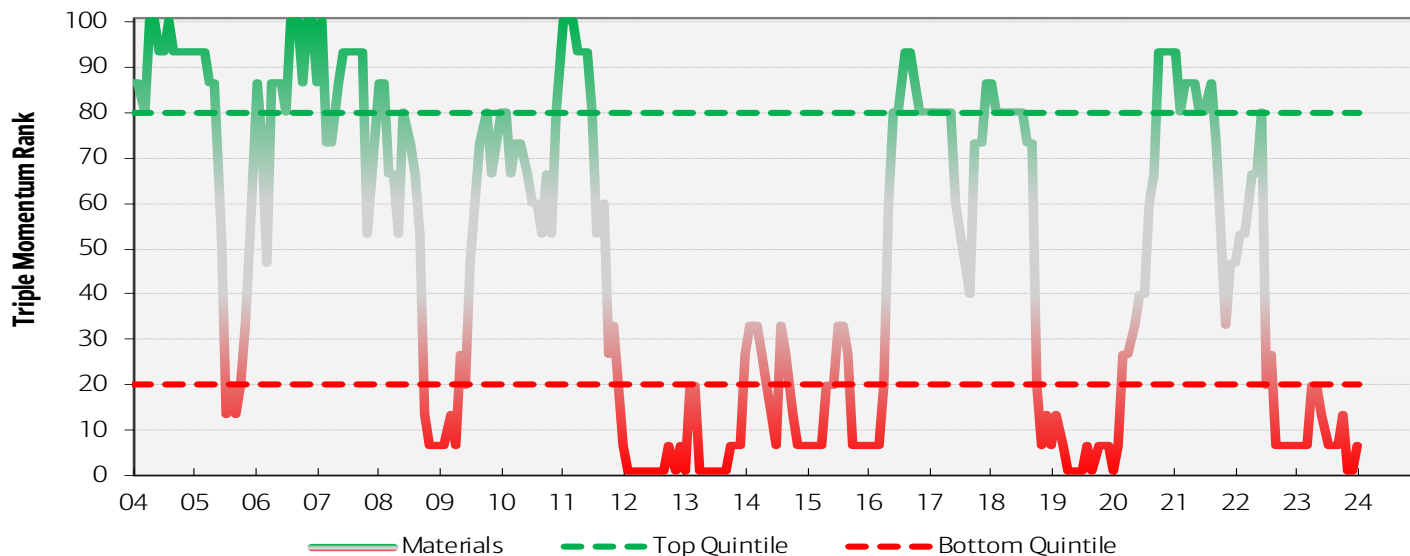
Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

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## Materials

**Chart 64: Global Materials: Triple Momentum Trend**

The average Triple Momentum Rank for Global Materials is in the bottom quintile

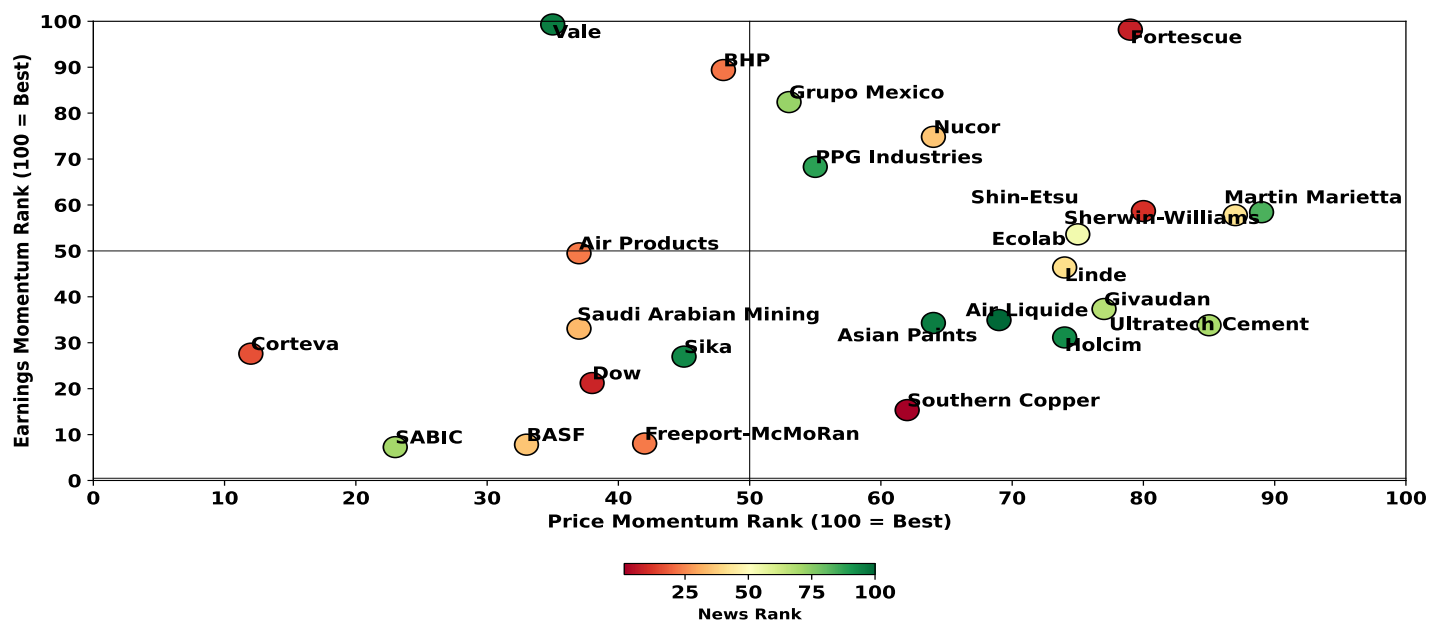


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

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**Chart 65: Materials: Earnings Momentum (vertical axis), Price Momentum (horizontal axis), News Momentum (colour)**

Triple Momentum is most positive for Martin Marietta, PPG Industries and Grupo Mexico

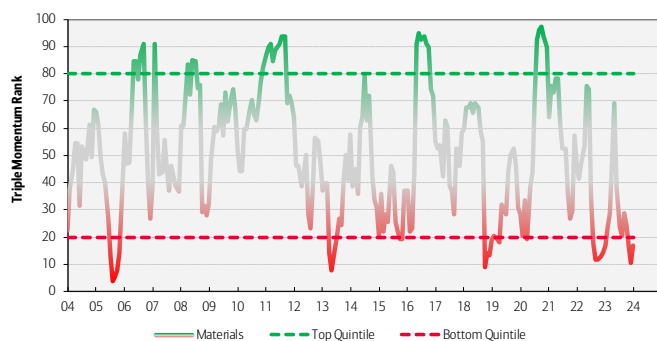


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

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**Chart 66: North America Materials: Triple Momentum Trend**

The average Triple Momentum Rank for the USA Materials is in the bottom quintile

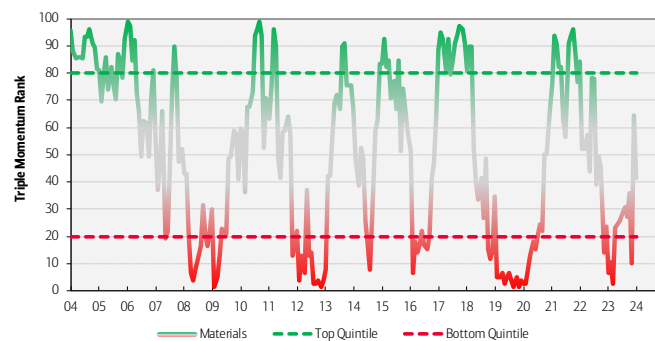


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

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**Chart 67: Japan Materials: Triple Momentum Trend**

The average Triple Momentum Rank for Japan Materials is 42

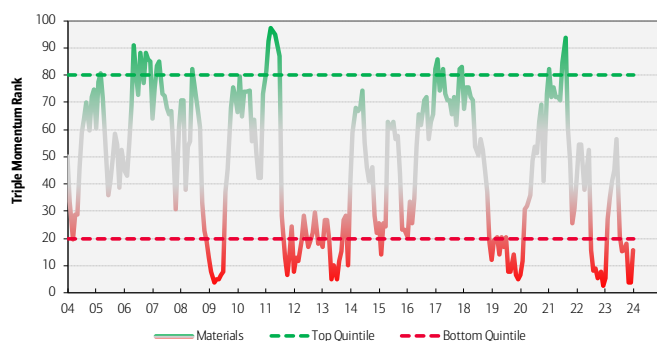


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

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**Chart 68: Europe Materials: Triple Momentum Trend**

The average Triple Momentum Rank for Europe Materials is in the bottom quintile

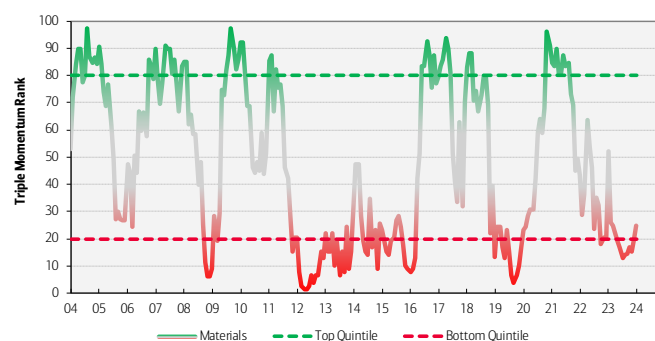


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

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**Chart 69: Asia Pac Materials: Triple Momentum Trend**

The average Triple Momentum Rank for Asia Pac ex-Japan Materials is 25

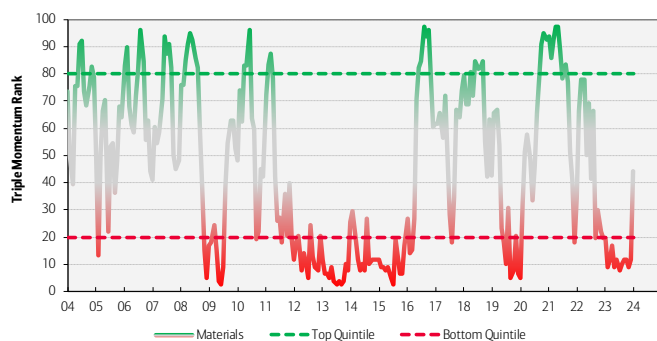


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

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**Chart 70: GEM ex-Asia Materials: Triple Momentum Trend**

The average Triple Momentum Rank for EM ex-Asia Materials is 44



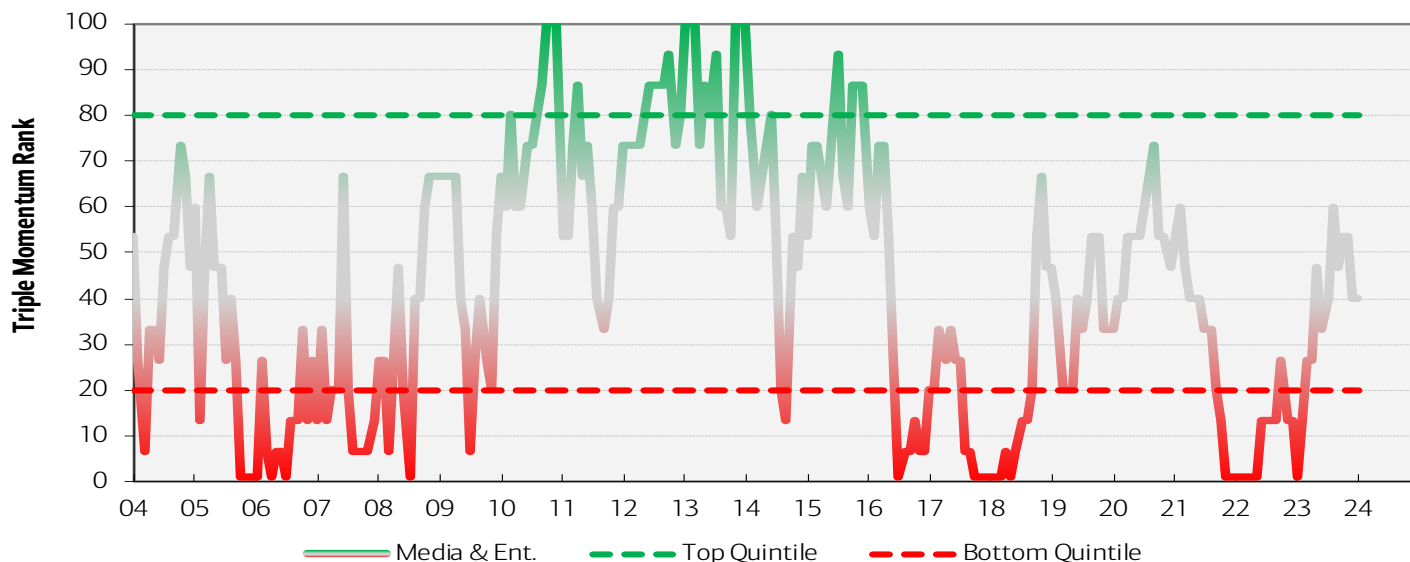
Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

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## Media & Entertainment

**Chart 71: Global Media & Entertainment: Triple Momentum Trend**

The average Triple Momentum Rank for Global Media & Ent. is 40

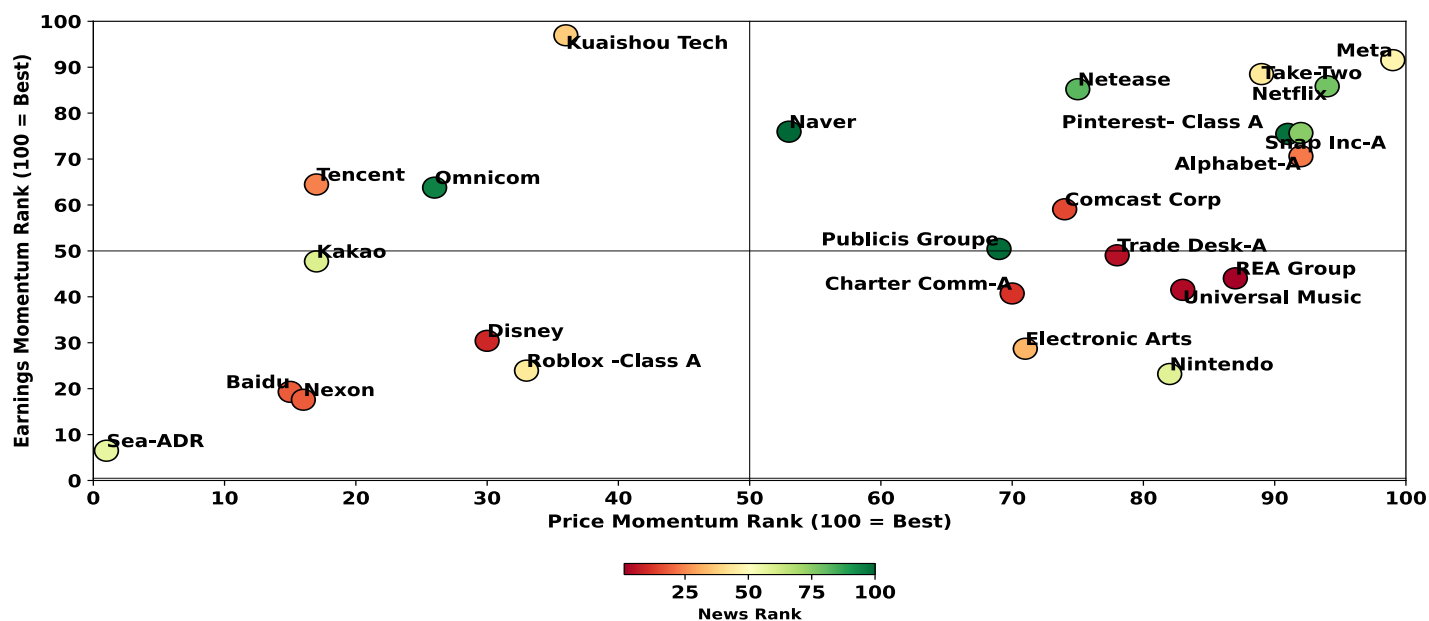


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

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**Chart 72: Media & Entertainment: Earnings Momentum (vertical axis), Price Momentum (horizontal axis), News Momentum (colour)**

Triple Momentum is most positive for Snap Inc-A, Netflix and Netease

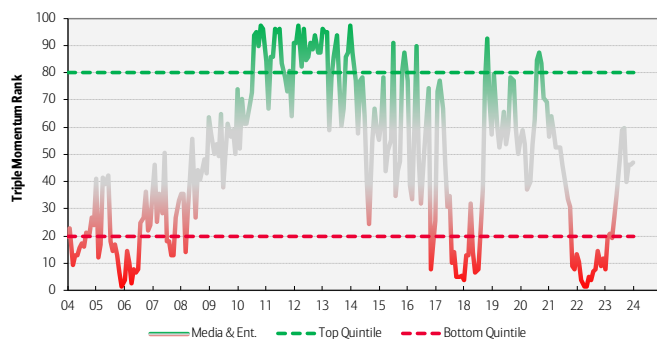


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

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### Chart 73: North America Media & Entertainment: Triple Momentum Trend

The average Triple Momentum Rank for the USA Media & Ent. is 47

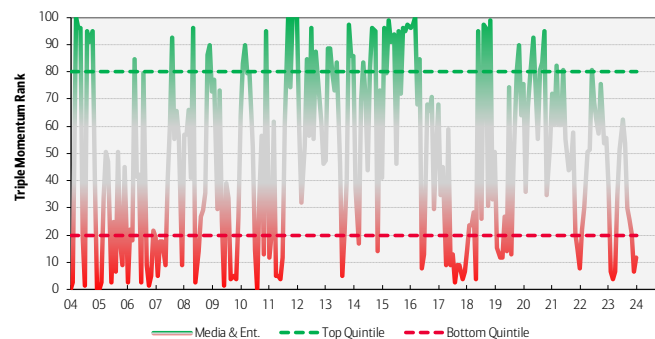


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

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### Chart 74: Japan Media & Entertainment: Triple Momentum Trend

The average Triple Momentum Rank for Japan Media & Ent. is in the bottom quintile

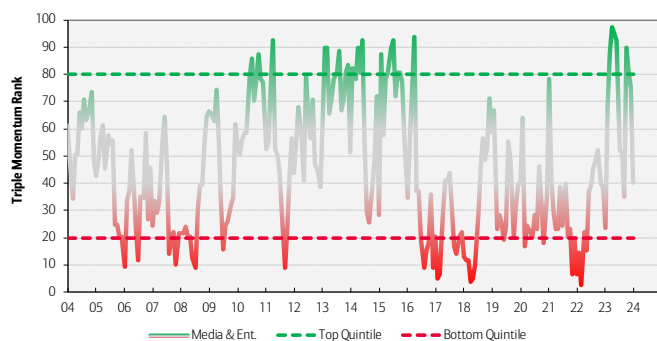


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

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### Chart 75: Europe Media & Entertainment: Triple Momentum Trend

The average Triple Momentum Rank for Europe Media & Ent. is 40

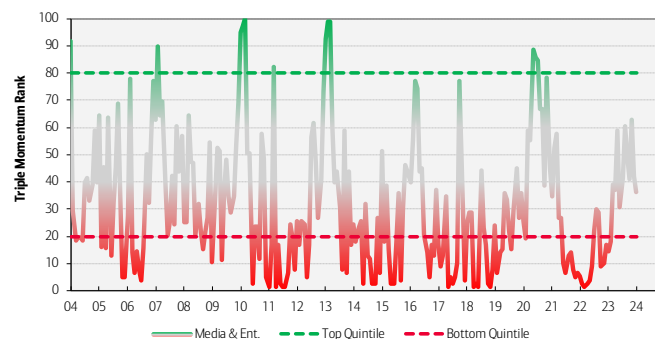


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

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### Chart 76: Asia Pac Media & Entertainment: Triple Momentum Trend

The average Triple Momentum Rank for Asia Pac ex-Japan Media & Ent. is 36

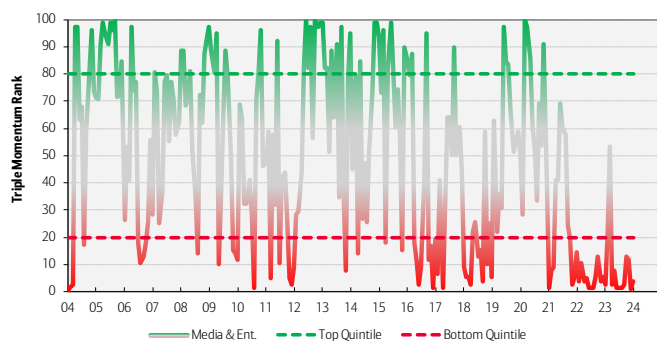


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

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### Chart 77: GEM ex-Asia Media & Entertainment: Triple Momentum Trend

The average Triple Momentum Rank for EM ex-Asia Media & Ent. is in the bottom quintile



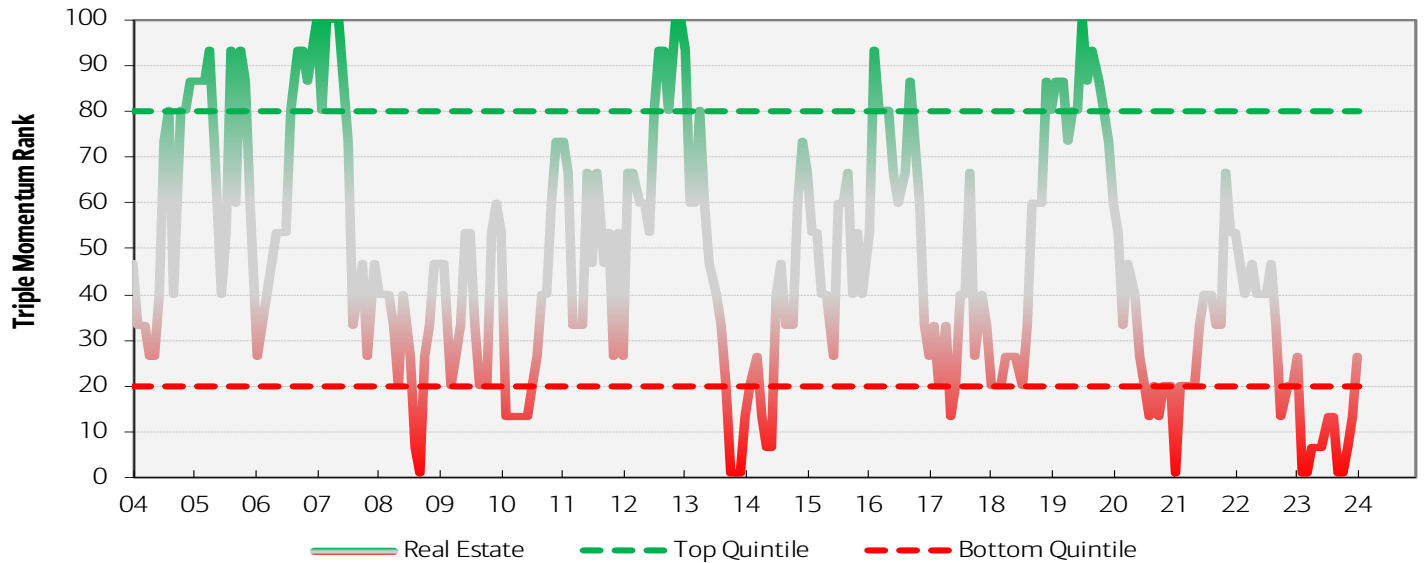
Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

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## Real Estate

**Chart 78: Global Real Estate: Triple Momentum Trend**

The average Triple Momentum Rank for Global Real Estate is 27

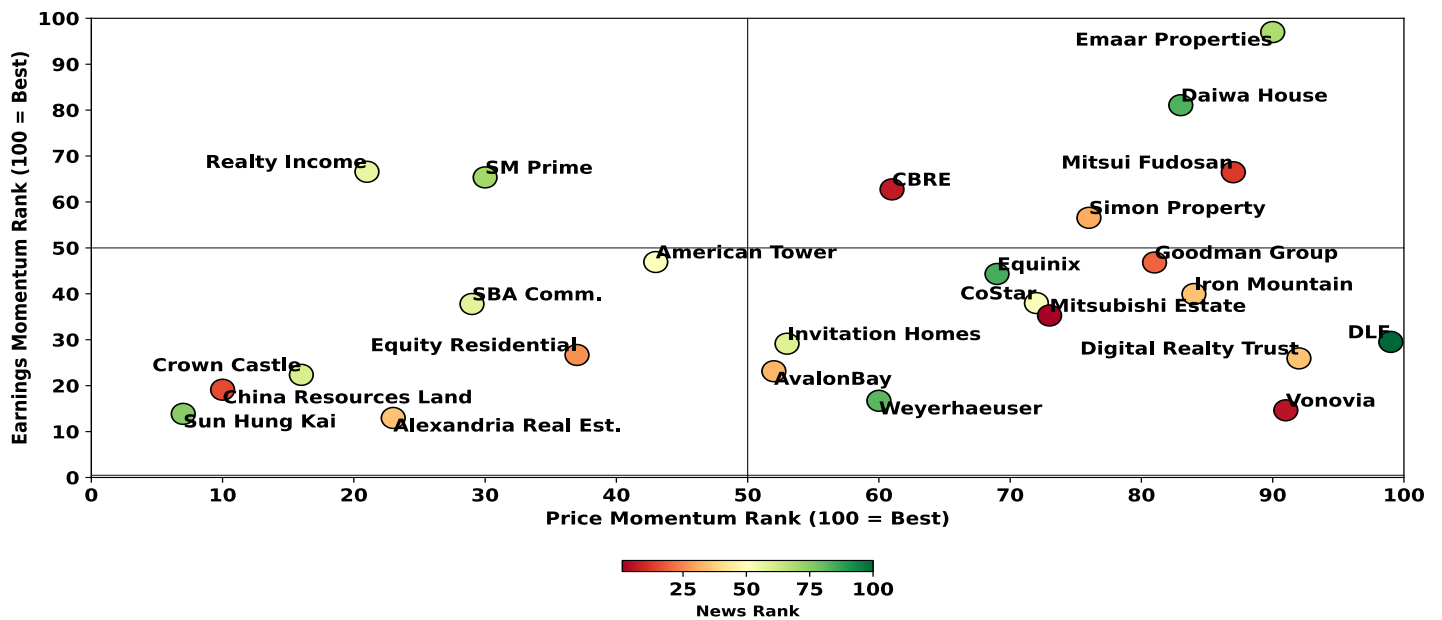


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

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**Chart 79: Real Estate: Earnings Momentum (vertical axis), Price Momentum (horizontal axis), News Momentum (colour)**

Triple Momentum is most positive for Daiwa House and Emaar Properties



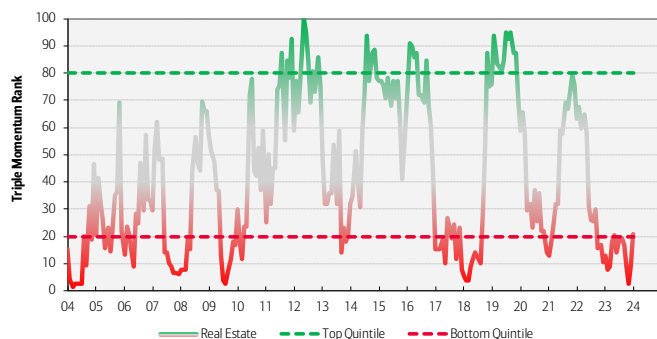
Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

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**Chart 80: North America Real Estate: Triple Momentum Trend**

The average Triple Momentum Rank for the USA Real Estate is 21

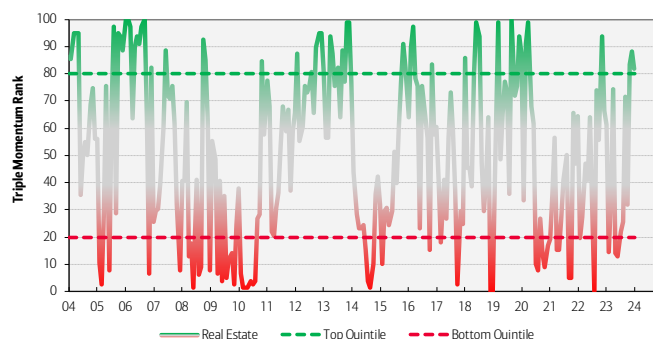


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

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**Chart 81: Japan Real Estate: Triple Momentum Trend**

The average Triple Momentum Rank for Japan Real Estate is in the top quintile

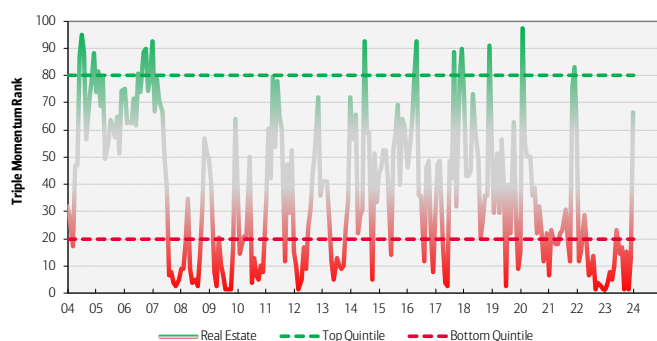


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

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**Chart 82: Europe Real Estate: Triple Momentum Trend**

The average Triple Momentum Rank for Europe Real Estate is 66

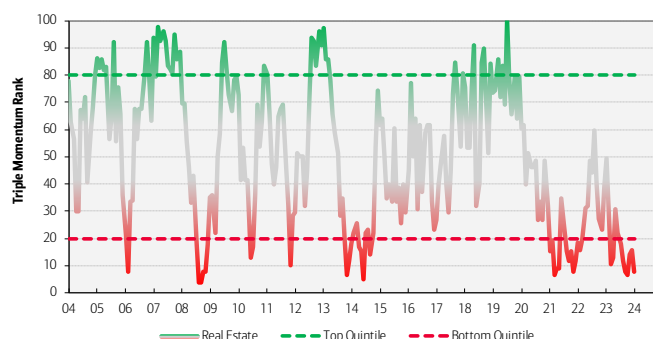


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

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**Chart 83: Asia Pac Real Estate: Triple Momentum Trend**

The average Triple Momentum Rank for Asia Pac ex-Japan Real Estate is in the bottom quintile

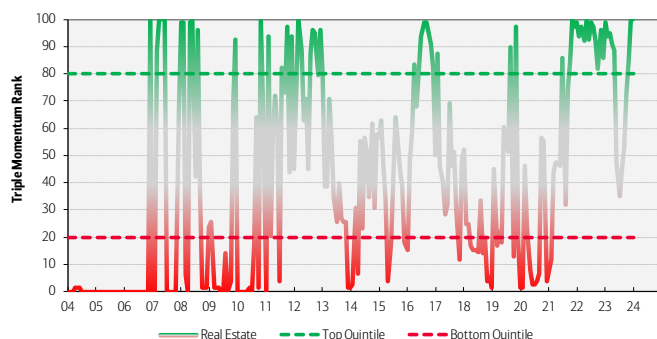


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

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**Chart 84: GEM ex-Asia Real Estate: Triple Momentum Trend**

The Triple Momentum is strongest for EM ex-Asia Real Estate sector



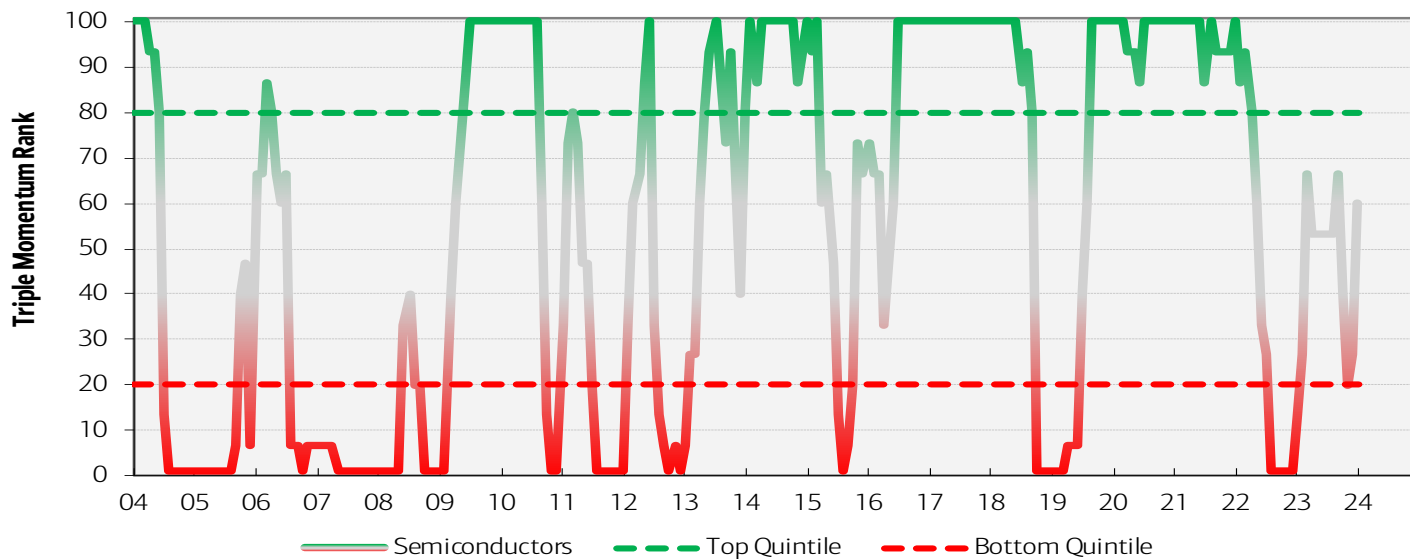
Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

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## Semiconductors

**Chart 85: Global Semiconductors: Triple Momentum Trend**

The average Triple Momentum Rank for Global Semiconductors is 60

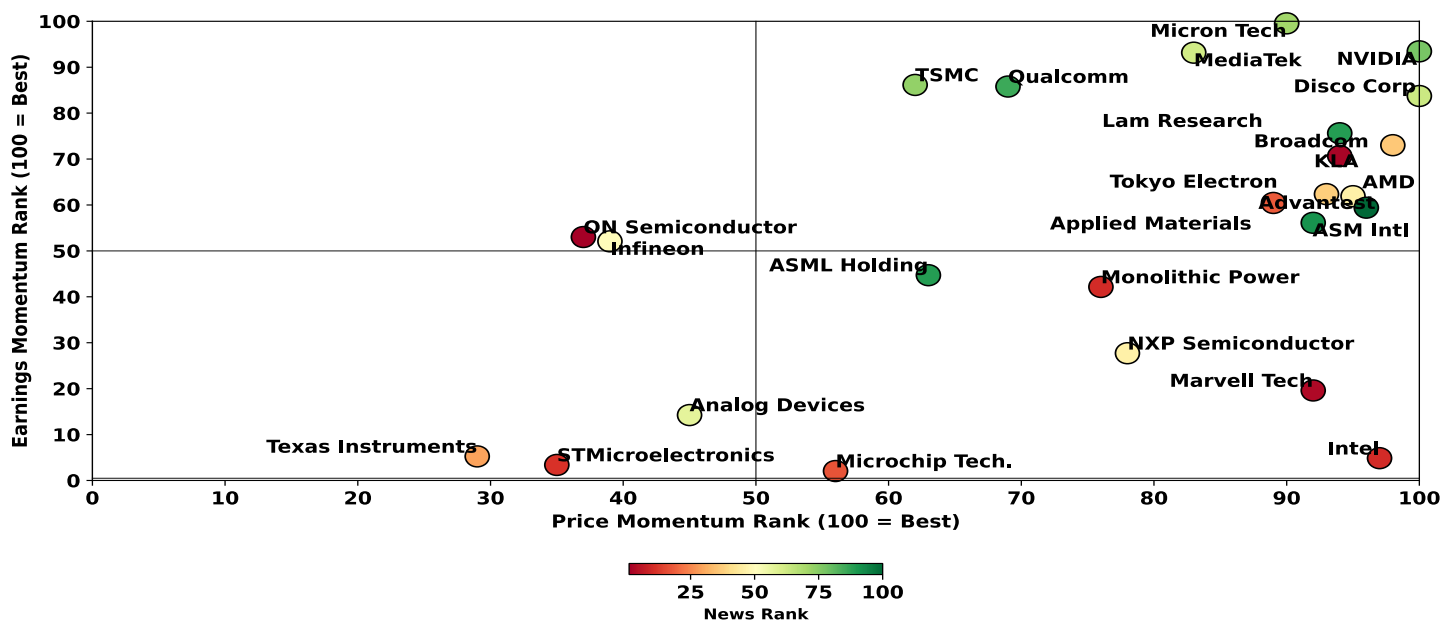


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

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**Chart 86: Semiconductors: Earnings Momentum (vertical axis), Price Momentum (horizontal axis), News Momentum (colour)**

Triple Momentum is most positive for Advantest, Lam Research and NVIDIA

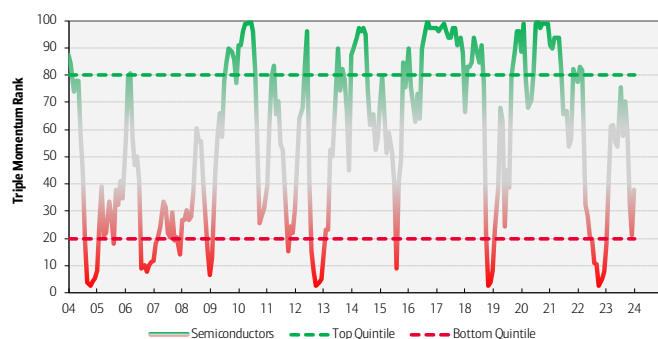


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

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**Chart 87: North America Semiconductors: Triple Momentum Trend**

The average Triple Momentum Rank for the USA Semiconductors is 38

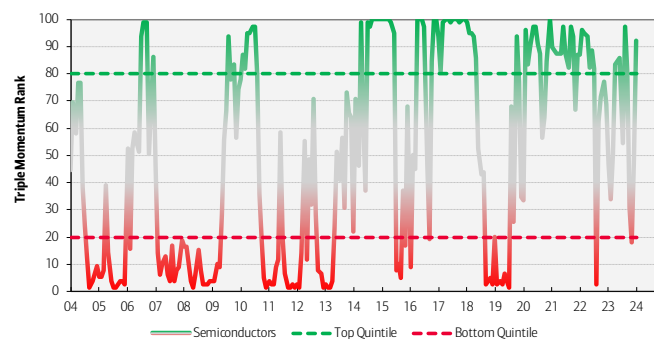


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

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**Chart 88: Japan Semiconductors: Triple Momentum Trend**

The average Triple Momentum Rank for Japan Semiconductors is in the top quintile

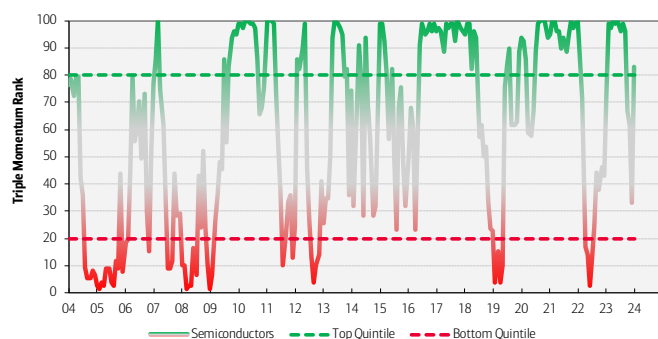


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

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**Chart 89: Europe Semiconductors: Triple Momentum Trend**

The average Triple Momentum Rank for Europe Semiconductors is in the top quintile

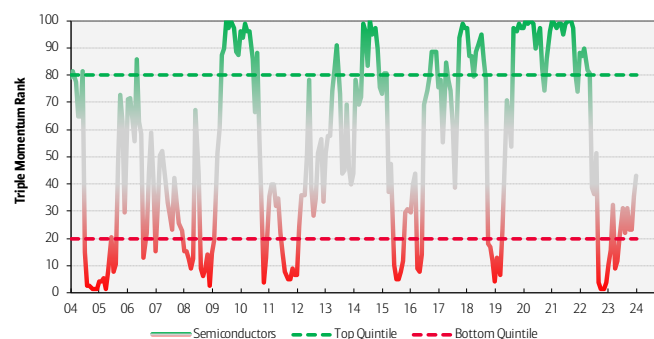


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

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**Chart 90: Asia Pac Semiconductors: Triple Momentum Trend**

The average Triple Momentum Rank for Asia Pac ex-Japan Semiconductors is 43



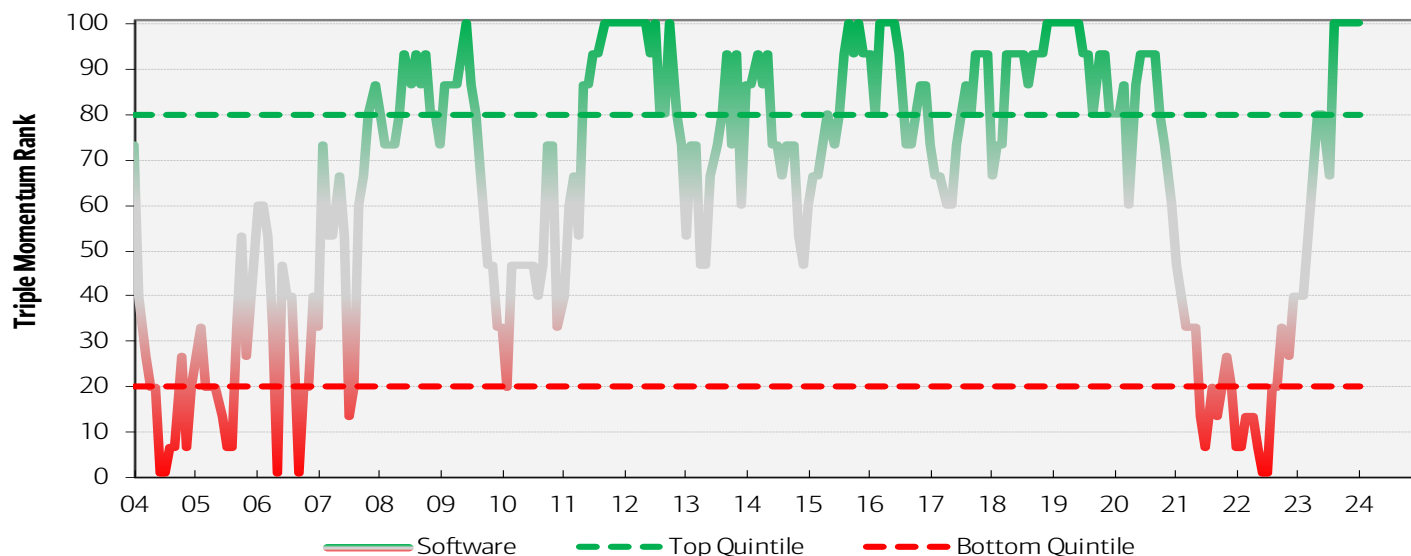
Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

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## Software

**Chart 91: Global Software: Triple Momentum Trend**

The Triple Momentum is strongest for Global Software sector

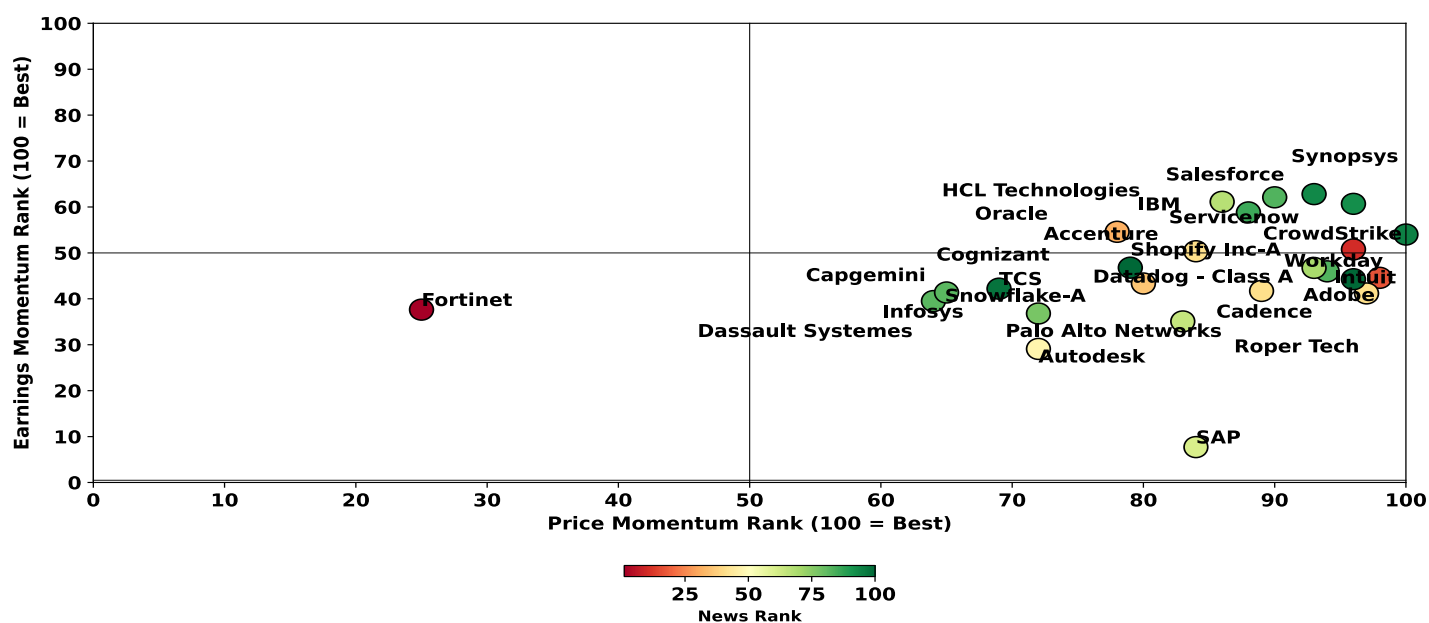


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

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**Chart 92: Software: Earnings Momentum (vertical axis), Price Momentum (horizontal axis), News Momentum (colour)**

Triple Momentum is most positive for Servicenow, Synopsys and CrowdStrike

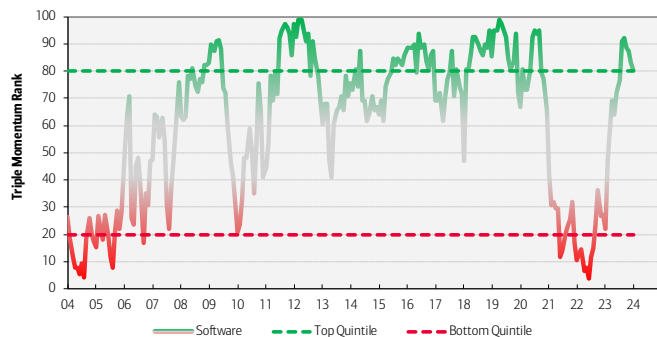


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

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**Chart 93: North America Software: Triple Momentum Trend**

The average Triple Momentum Rank for the USA Software is 81

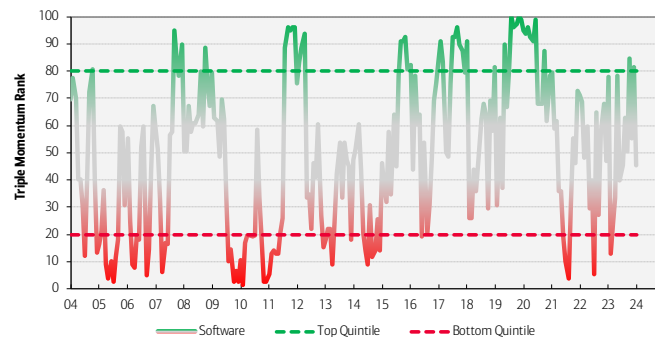


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

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**Chart 94: Japan Software: Triple Momentum Trend**

The average Triple Momentum Rank for Japan Software is 45

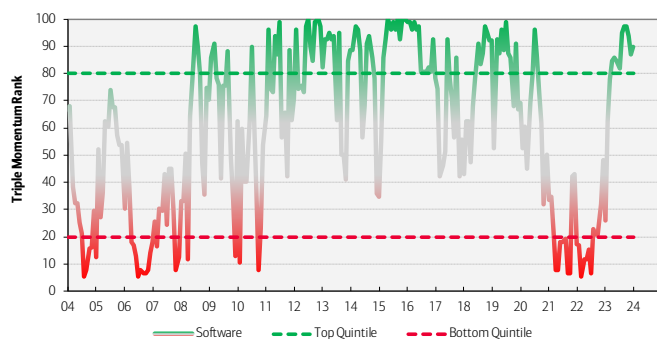


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

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**Chart 95: Europe Software: Triple Momentum Trend**

The average Triple Momentum Rank for Europe Software is in the top quintile

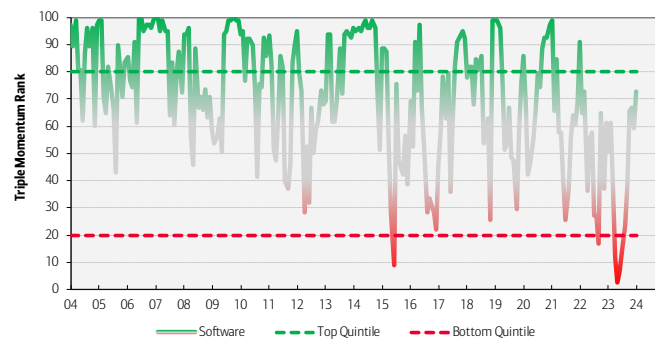


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

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**Chart 96: Asia Pac Software: Triple Momentum Trend**

The average Triple Momentum Rank for Asia Pac ex-Japan Software is 73

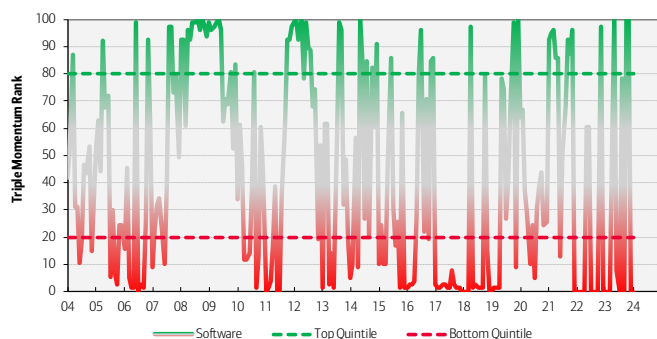


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

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**Chart 97: GEM ex-Asia Software: Triple Momentum Trend**

The average Triple Momentum Rank for EM ex-Asia Software is in the bottom quintile



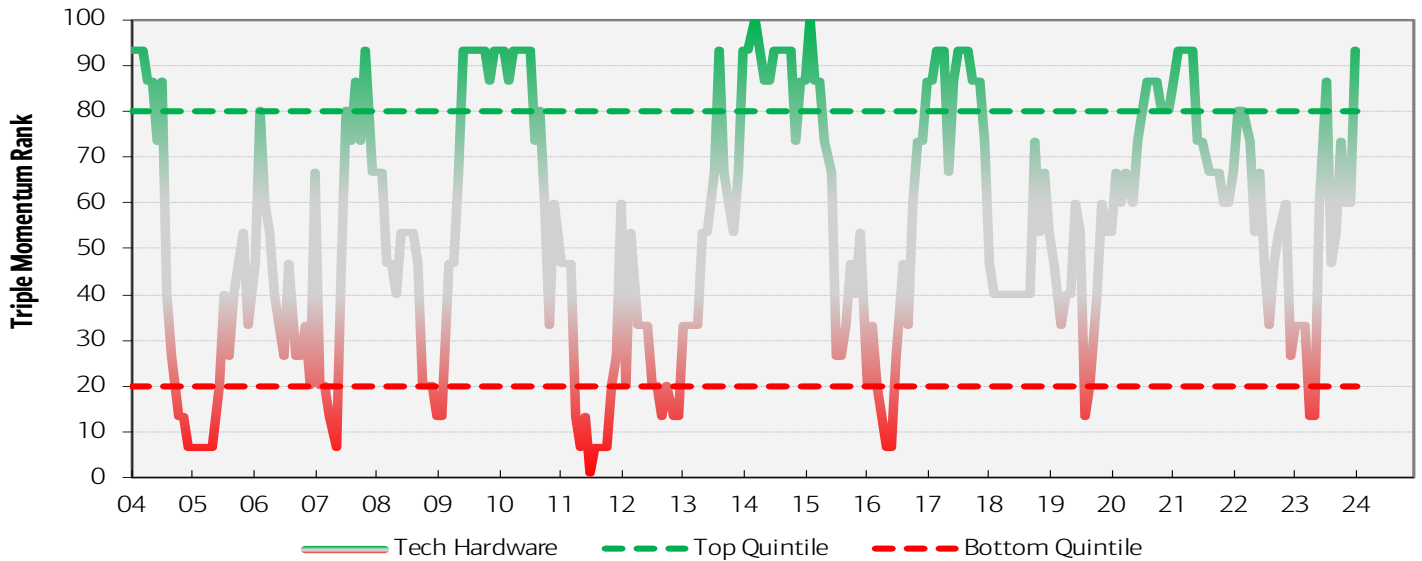
Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

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## Tech Hardware

**Chart 98: Global Tech Hardware: Triple Momentum Trend**

The average Triple Momentum Rank for Global Tech Hardware is in the top quintile

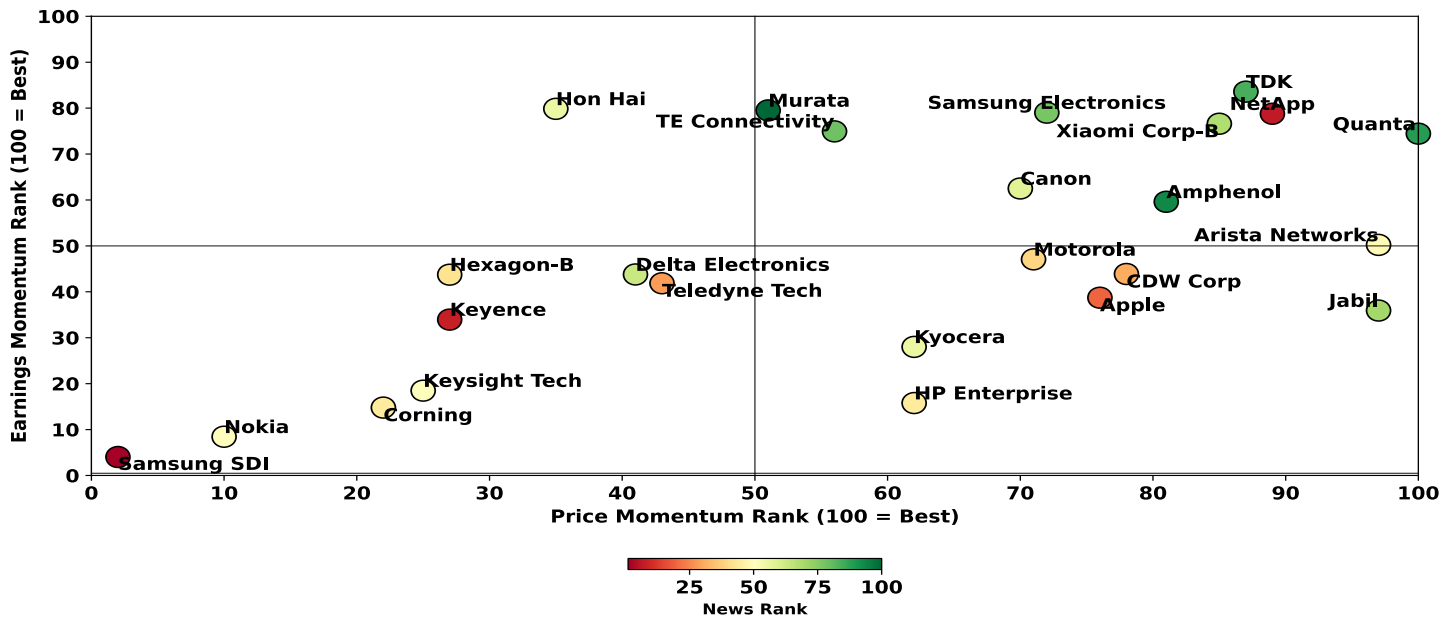


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

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**Chart 99: Tech Hardware: Earnings Momentum (vertical axis), Price Momentum (horizontal axis), News Momentum (colour)**

Triple Momentum is most positive for Quanta, TDK and Murata

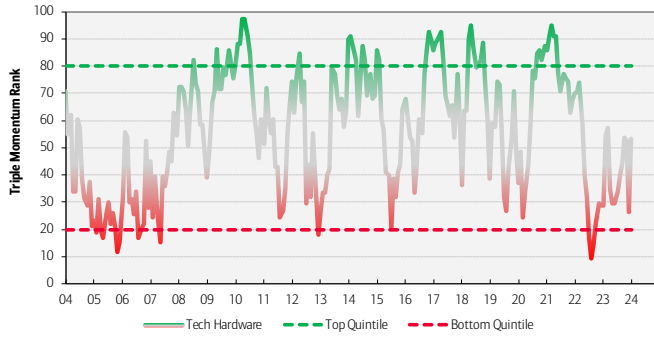


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

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**Chart 100: North America Tech Hardware: Triple Momentum Trend**

The average Triple Momentum Rank for the USA Tech Hardware is 53

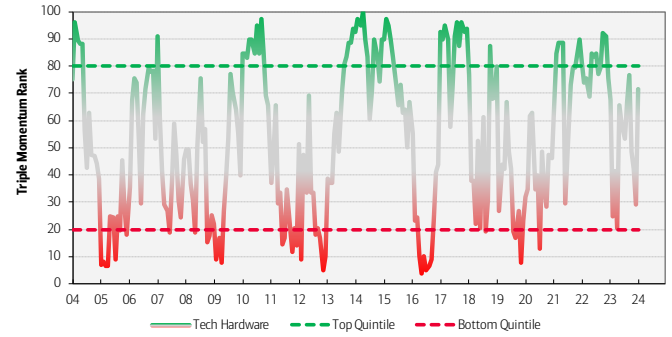


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

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**Chart 101: Japan Tech Hardware: Triple Momentum Trend**

The average Triple Momentum Rank for Japan Tech Hardware is 71

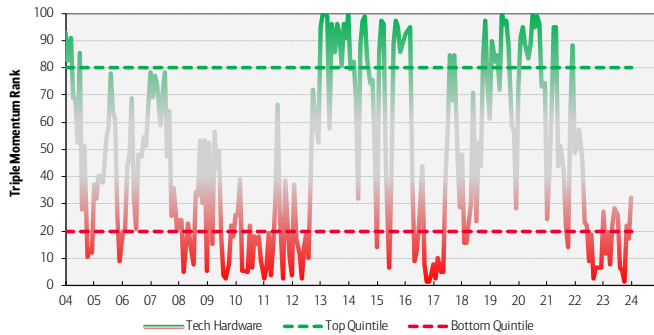


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

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**Chart 102: Europe Tech Hardware: Triple Momentum Trend**

The average Triple Momentum Rank for Europe Tech Hardware is 32

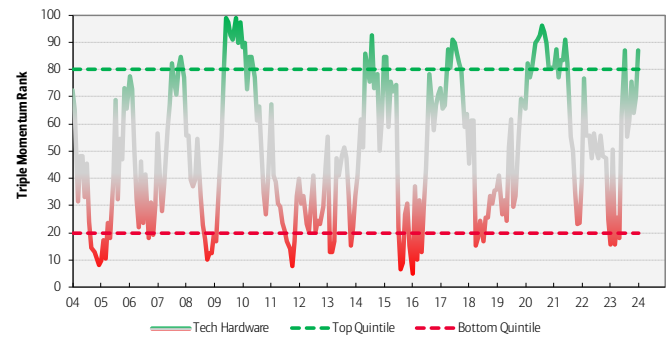


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

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**Chart 103: Asia Pac Tech Hardware: Triple Momentum Trend**

The average Triple Momentum Rank for Asia Pac ex-Japan Tech Hardware is in the top quintile



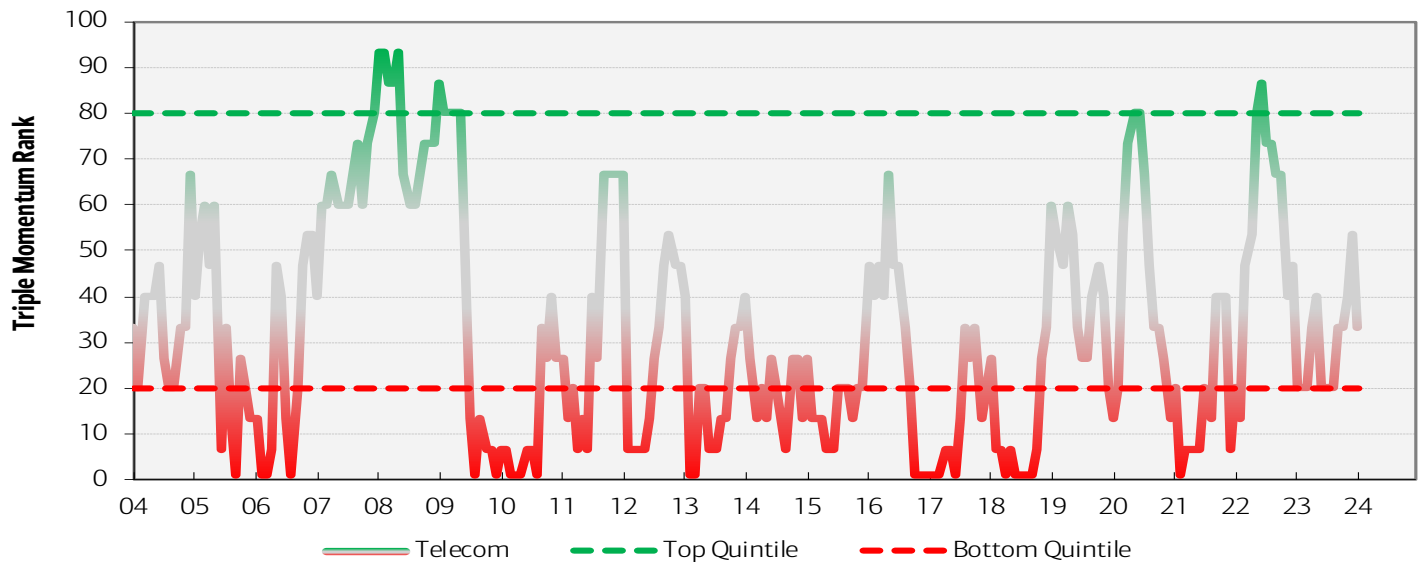
Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

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## Telecommunication Services

**Chart 104: Global Telecom: Triple Momentum Trend**

The average Triple Momentum Rank for Global Telecom is 33

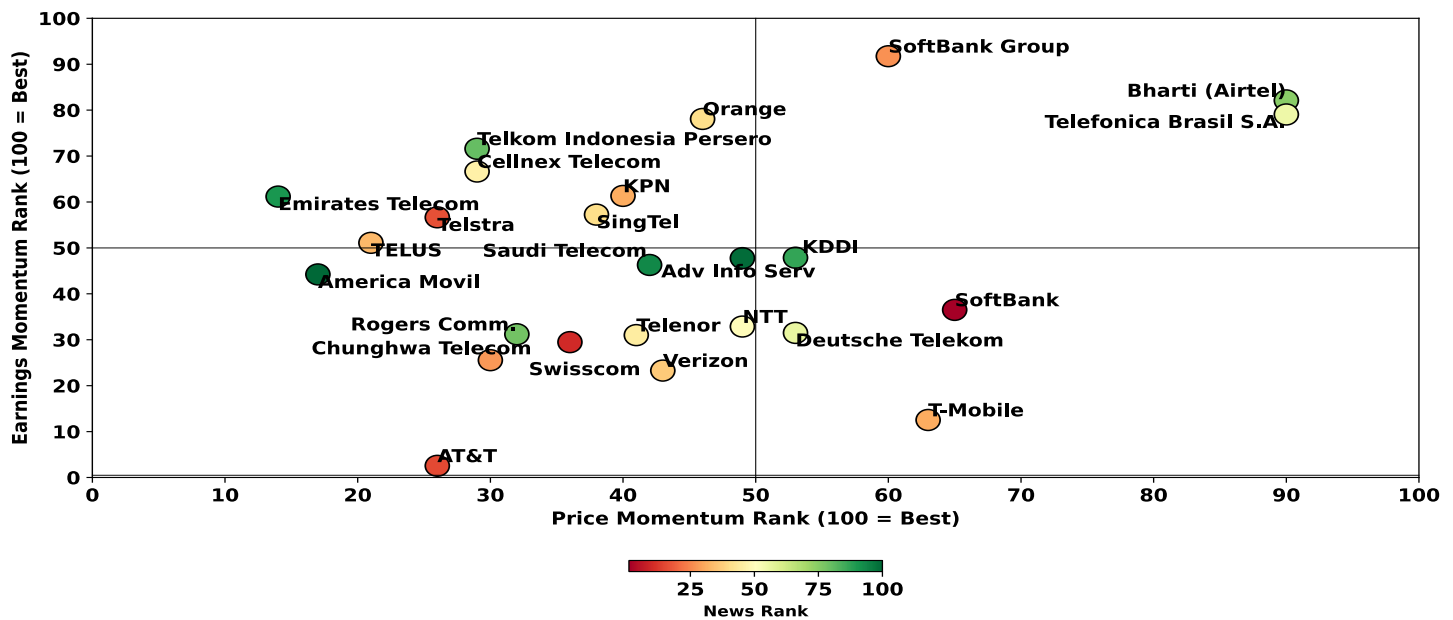


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

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**Chart 105: Telecom: Earnings Momentum (vertical axis), Price Momentum (horizontal axis), News Momentum (colour)**

Triple Momentum is most positive for Bharti (Airtel) and Telefonica Brasil S.A.



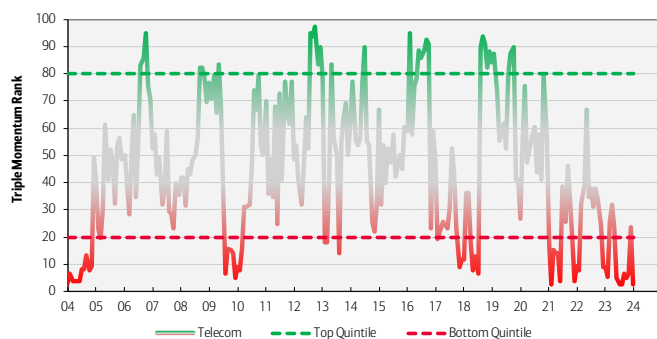
Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

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**Chart 106: North America Telecom: Triple Momentum Trend**

The average Triple Momentum Rank for the USA Telecom is in the bottom quintile

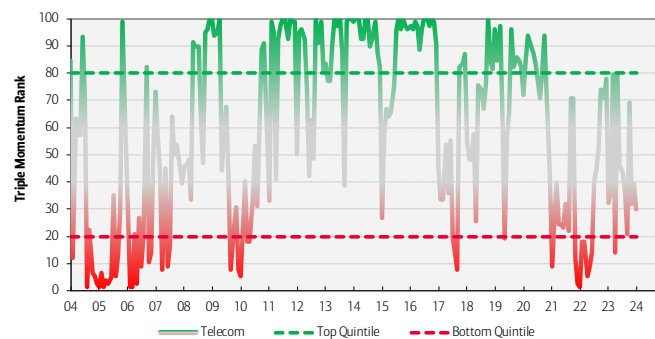


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

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**Chart 107: Japan Telecom: Triple Momentum Trend**

The average Triple Momentum Rank for Japan Telecom is 30

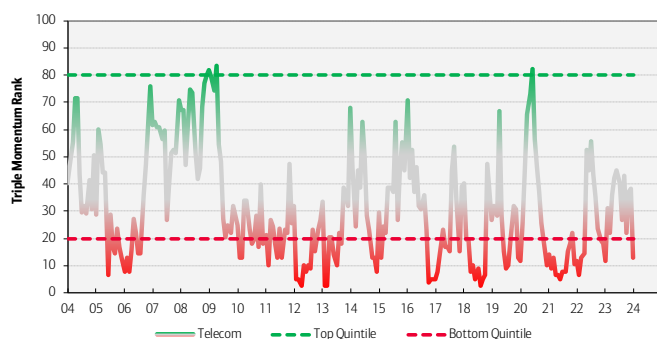


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

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**Chart 108: Europe Telecom: Triple Momentum Trend**

The average Triple Momentum Rank for Europe Telecom is in the bottom quintile

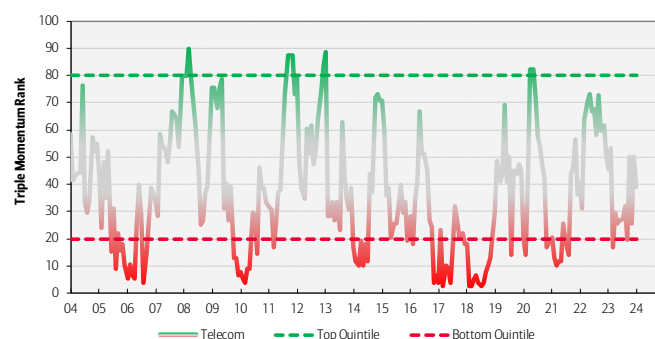


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

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**Chart 109: Asia Pac Telecom: Triple Momentum Trend**

The average Triple Momentum Rank for Asia Pac ex-Japan Telecom is 39

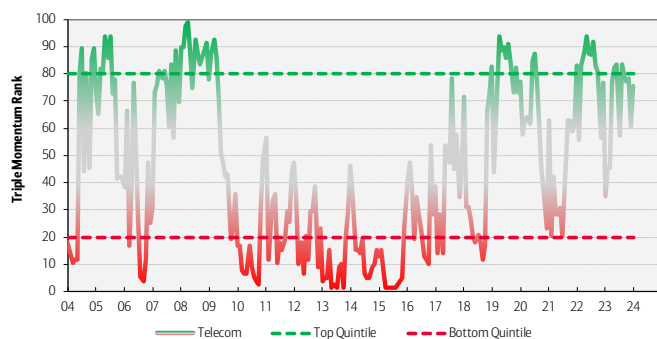


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

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**Chart 110: GEM ex-Asia Telecom: Triple Momentum Trend**

The average Triple Momentum Rank for EM ex-Asia Telecom is 75



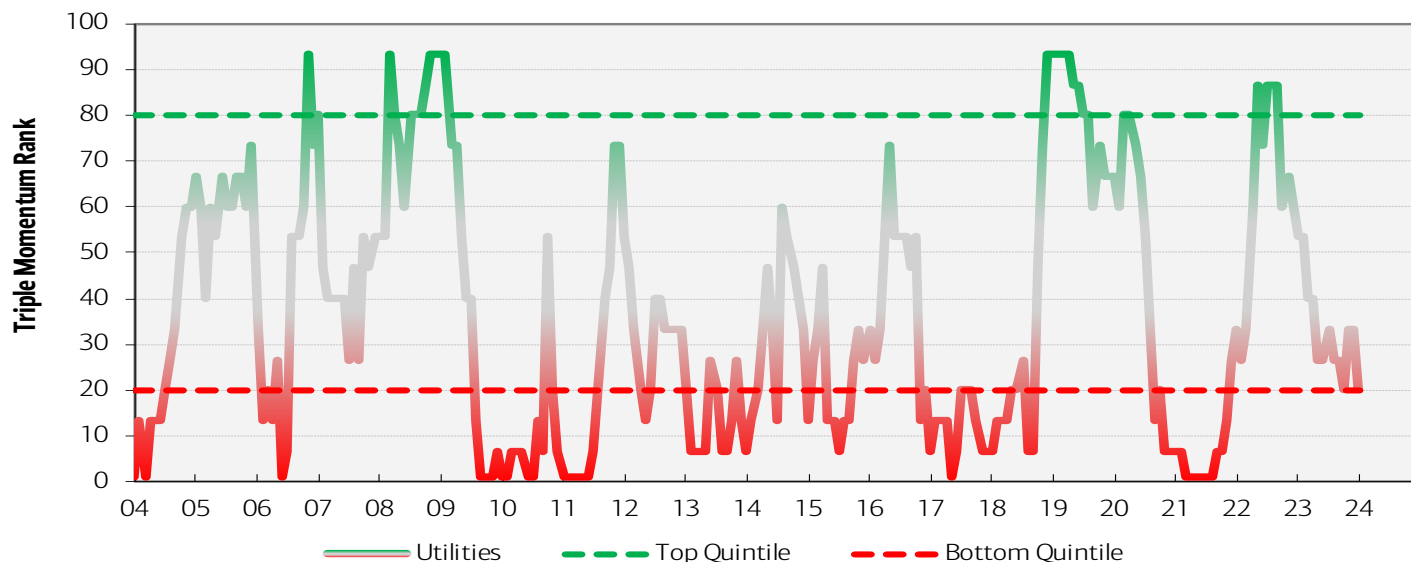
Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

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## Utilities

**Chart 111: Global Utilities: Triple Momentum Trend**

The average Triple Momentum Rank for Global Utilities is 20

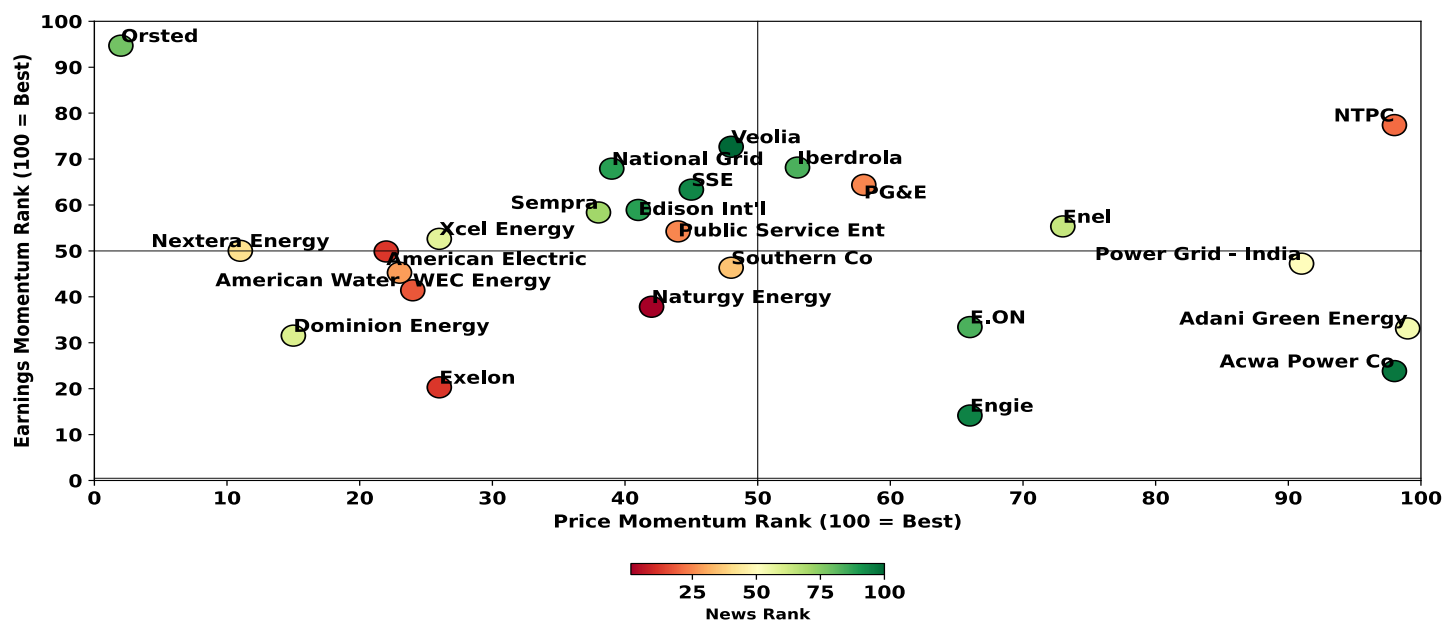


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

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**Chart 112: Utilities: Earnings Momentum (vertical axis), Price Momentum (horizontal axis), News Momentum (colour)**

Triple Momentum is most positive for Iberdrola and Enel

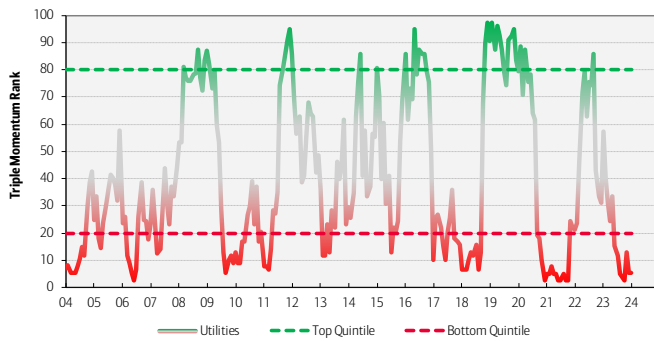


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

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**Chart 113: North America Utilities: Triple Momentum Trend**

The average Triple Momentum Rank for the USA Utilities is in the bottom quintile

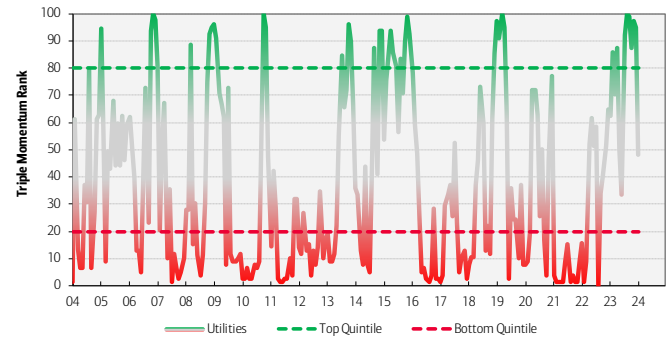


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

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**Chart 114: Japan Utilities: Triple Momentum Trend**

The average Triple Momentum Rank for Japan Utilities is 48

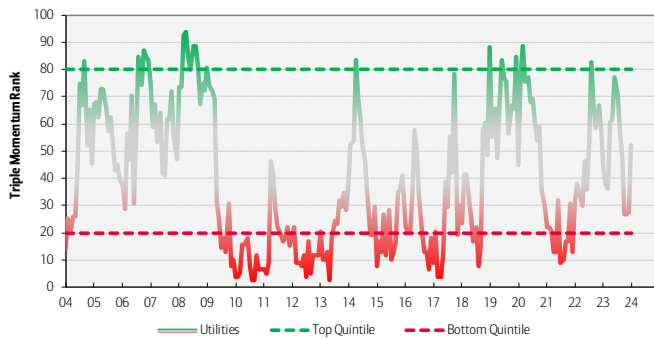


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

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**Chart 115: Europe Utilities: Triple Momentum Trend**

The average Triple Momentum Rank for Europe Utilities is 52

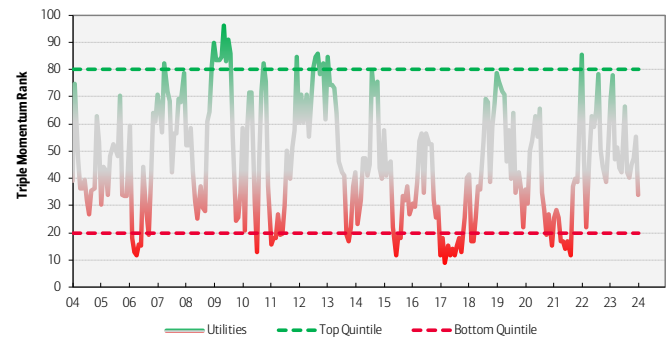


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

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**Chart 116: Asia Pac Utilities: Triple Momentum Trend**

The average Triple Momentum Rank for Asia Pac ex-Japan Utilities is 34

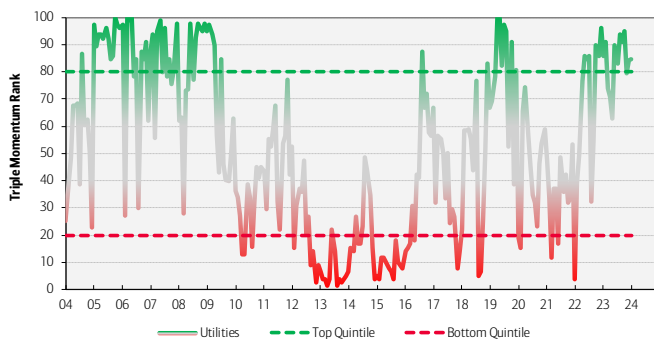


Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

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**Chart 117: GEM ex-Asia Utilities: Triple Momentum Trend**

The average Triple Momentum Rank for EM ex-Asia Utilities is in the top quintile



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

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# 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 Jan-24.

**Table 4: 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	Percentage of times sector in Top 3
Semiconductors	41%
Software	34%
Energy	34%
Health Care	28%
Tech Hardware	24%
Materials	22%
Banks	17%
Insurance	17%
Div Financials	16%
Industrials	15%
Real Estate	13%
Media & Ent.	9%
Cons. Staples	9%
Cons. Discretionary	9%
Utilities	7%
Telecom	3%

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

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**Table 5: 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	Percentage of times sector in Bottom 3
Utilities	33%
Telecom	33%
Energy	33%
Materials	32%
Semiconductors	32%
Media & Ent.	25%
Cons. Staples	23%
Banks	16%
Real Estate	12%
Div Financials	12%
Tech Hardware	12%
Insurance	11%
Cons. Discretionary	9%
Software	9%
Health Care	8%
Industrials	1%

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

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**Table 6: 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
Div Financials	4
Cons. Discretionary	4
Insurance	4
Media & Entertainment	4
Real Estate	3
Cons. Staples	3

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

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**Table 7: 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 & Ent.	7
Utilities	6
Telecom	5
Real Estate	5
Cons. Staples	5
Software	4
Banks	4
Tech Hardware	4
Insurance	4
Div Financials	4
Health Care	3
Cons. Discretionary	3
Industrials	2

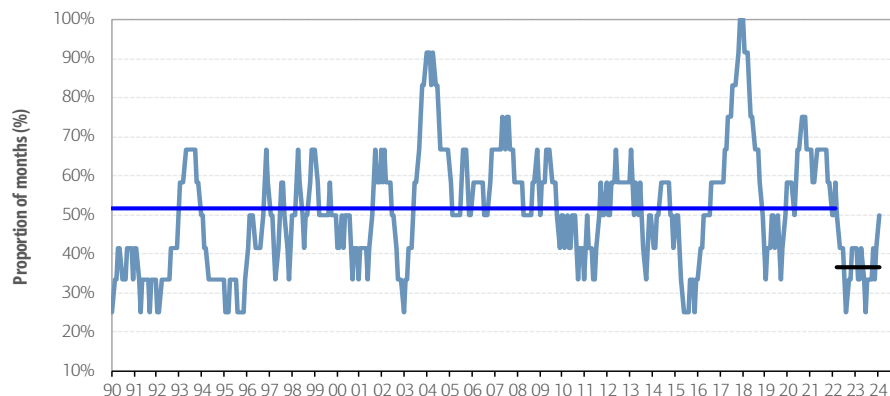
Source : BofA Global Quantitative Strategy, MSCI, IBES, ExShare, RavenPack

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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 52%. In contrast, the average over the last two years has been 37%, 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 118: 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 37% in the last two years from 52% over the long-term



Source : BofA Global Quantitative Strategy, MSCI, ExShare

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## Appendix B: Triple Momentum Performance Summary

**Table 8: Global Sectors Triple Momentum back-testing results: Jan-04 to Dec-23**

Global Sectors 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.

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**Table 9: Global Region-Sectors Triple Momentum back-testing results: Jan-04 to Dec-23**

Global Region-Sectors 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

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

Global Stocks 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.

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# Global Quant Publications

## Monthly reports schedule

### Day 1: Contenders & Defenders

A popular visual stock selection model. For each stock, this report graphically shows how consensus earnings expectations have changed over the long term versus the market, and whether recent earnings revisions appear to have been reflected in relative share price performance. Popular ways of using this analysis include 1) reviewing the Contenders (buys) and Defenders (Sells) lists, 2) perusing individual stock charts, 3) monitoring region, country and sector themes using the “quadrant charts”, and 4) reviewing stock rankings. Regional versions are published monthly in these linked reports for [Global Contenders & Defenders](#) and Asia Pac ex-Japan Contenders & Defenders.

### Day 1: [Global Performance Monitor](#)

The above linked monthly report analysing the performance of global regions, countries, sectors and identifying the major stock contributors to global equity market performance.

### Day 2/3: Quantessential Style

Style rotation. Different investment styles outperform at various stages of the cycle. This investment style analysis relates performance of seven Quantessential Styles (Value, Growth, Quality, Risk, Momentum, Dividend and Size) to trends in global macro data. Popular uses include 1) when to buy “Deep Value”, “Growthiest of Growth”, and other styles, 2) identifying stocks with various style characteristics, 3) monitoring style performance, and 4) explaining out/under-performance due to style tilts. Regional versions are published in these linked monthly reports for [Global Quantessential Style](#) and [Asia Pac ex-Japan Quantessential Style](#).

### Week 1: [Global Fund Performance Monitor](#)

The above linked monthly report analysing the relative returns of large long-only equity funds in order to help fund managers understand how returns have been affected by fund characteristics. Funds are grouped by Region, Investment Style, Active/Passive, Active Share Ratio, Funds Under Management, Stock Size, Number of Stocks, and Portfolio Turnover.

### Week 2: [Global Wave](#)

The Global Wave (report link above) quantifies turning points and multi-year trends in global economic activity. The direction of the global cycle influences equity market performance, regional allocation, country allocation, style allocation, and stock selection. The Bunkers are stocks for a downturn and the Boosters are stocks for an upturn.

### Week 2: [NewsAlpha](#)

The above linked monthly report: 1) quantifies alpha opportunities using news for both short-term and long-term investors, 2) Leverages big data – a) to identify the most significant news events, b) to highlight which stocks are driven by news and c) to create an indicator- The Global News Pulse - to monitor trends in news sentiment globally.

### Week 2: Positioning in Stocks

Quantifies how large investors are positioned in terms of stocks, regions, countries and sectors. Popular uses include 1) identifying extreme positioning for contrarian trade ideas, and 2) identifying developing trends in investor positioning. Regional versions are published in these linked monthly reports for [Global Positioning in Stocks](#) and [Pacific Positioning](#).



**Week 3: Quant Panorama**

Summary report. In this monthly report, we present all our views and recent research on regional allocation, country and sector allocation, style allocation, and stock selection. One-stop shopping. Regional versions are published in these linked monthly reports for [Global Quant Panorama](#) and Asia Pac ex-Japan Quant Panorama.

**Week 4: Earnings Revision Ratio**

Shows trends in earnings expectations at the regional, country and sector level. Regional versions are published in these linked monthly reports for [Global Earnings Revision Ratio](#) and [Asia Pac ex-Japan Earnings Revision Ratio](#).

**Weekly: [High Frequency Monitor](#)**

In this above linked weekly report, we monitor high frequency data to help equity investors track short-term changes in market-moving data in order to swiftly identify hot topics and turning points.

**Occasional: [Focus Point](#)**

The report above contains brief comments on topical issues and new research.

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Buy	≥ 10%	≤ 70%
Neutral	≥ 0%	≤ 30%
Underperform	N/A	≥ 20%

<sup>R1</sup> Ratings dispersions may vary from time to time where BofA Global Research believes it better reflects the investment prospects of stocks in a Coverage Cluster.

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