

May 31, 2023

GLOBAL MARKETS PERFORMANCE REPORT

FT Wilshire 5000 - Sector, Style, Factors

FT Wilshire Global Equity Markets and Sectors

Fixed Income and FX

Alternatives



IN THIS REPORT

FT Wilshire Indexes Insights

- The FT Wilshire 5000 rose 0.4% in May, is up 1.5% QTD and has returned 8.8% YTD
- Growth style gained 5.6% in May vs Value which declined -4.1%. Large cap continues to outperform small cap
- Digital information and technology sectors the largest contributors to QTD and YTD returns

+0.4%

FT Wilshire 5000
return in May

+25.2%

Growth Style
outperformance
versus Value YTD

See [PAGE 4](#)

Global Equities

- US, Japan and Emerging ex China equities outperformed in May. European equities continued to lose momentum.
- Chinese equities saw further sizeable declines in May.
- The US outperformance vs Global ex US continued to be driven by large positive contribution from technology sector

-8.2%

Return of Chinese
equities in May

+7.3%

Return of the Global
Equity Index YTD

See [PAGE 16](#)

Fixed Income, Foreign Exchange

- US 10 year yields rose in May in response in debt ceiling brinkmanship
- The US 10-2yr yield curve inverted further in May with 2yr yields rising 44bps vs a rise in the 10yr yield of 25bps
- The dollar rose 2.6% in May, its largest monthly increase since September 2022

+25bps

Rise in US 10-year
yield in May

+2.6%

Appreciation of DXY
dollar index in May

See [PAGE 28](#)

Alternatives

- Economically-sensitive commodities (copper, oil and iron ore) saw further declines on global growth concerns
- US office REITS see further declines. Sector is now down -23.3% YTD
- FT Wilshire Digital Assets Index lost some momentum declining -5.5% in May

-13.9%

Decline in Industrial
Metals prices QTD

+58.3%

FT Wilshire Digital
Assets Index return
YTD

See [PAGE 33](#)

Multi-Asset Class returns: US large cap growth continues to lead the way. US bonds decline on debt ceiling brinkmanship.

Chart 1: US large cap growth continued to post strong returns. US and Japanese equities outperformed at a regional level, with China underperforming. US bonds declined on debt ceiling concerns. The DXY dollar rebounded from the lows in mid-April. Copper and oil have declined on global growth concerns.

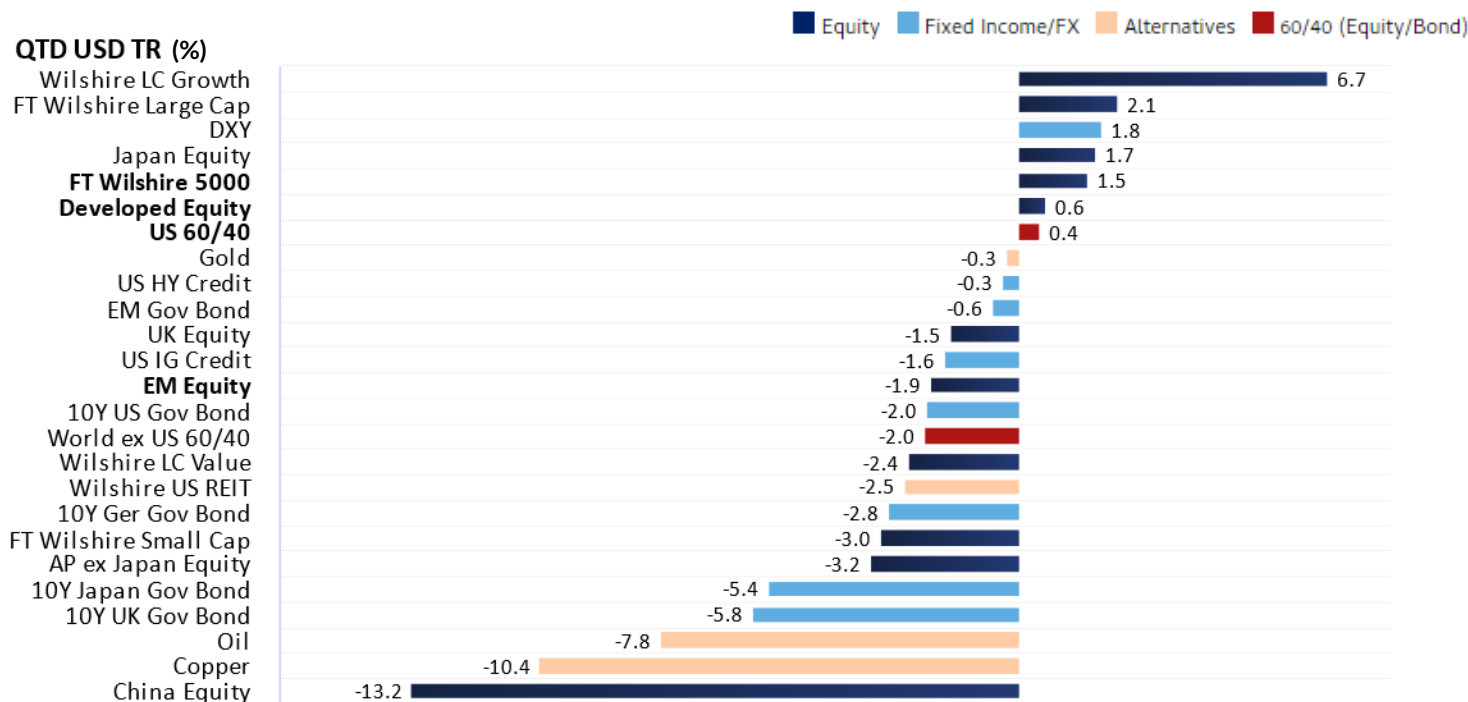
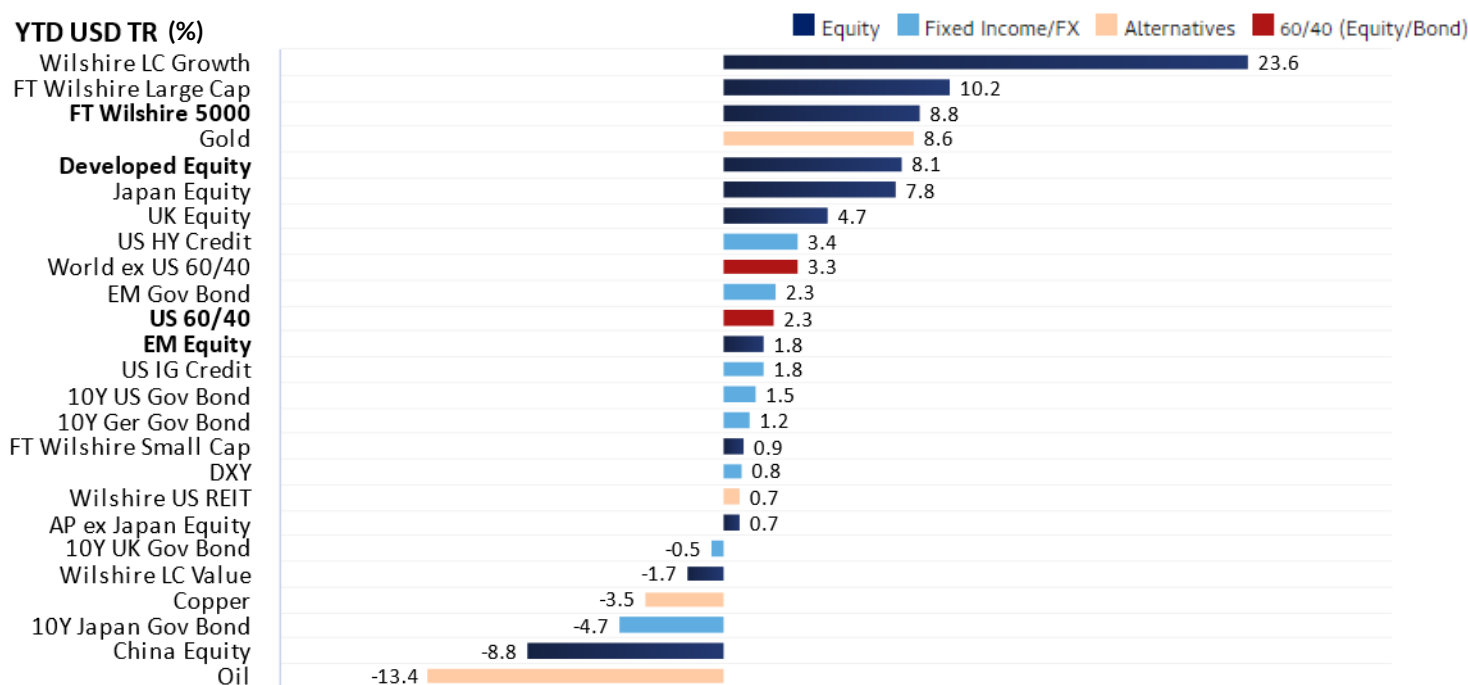


Chart 2: Year to date US large cap growth remains the standout performer. Developed markets have outperformed emerging, helped by strong US equity returns. Most bond markets have posted small positive returns. Despite the recent pullback gold has still seen relatively strong gains year to date.



FT Wilshire 5000 Index Insights

1

+0.4%

The return of the FT Wilshire 5000 in May

2

+8.8%

Appreciation of the FT Wilshire 5000 YTD

3

+25.2%

Outperformance of Growth style versus Value YTD

4

+39.6%

Performance of the Technology sector YTD

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- 05 FT Wilshire 5000 key observations
- 06 Perspectives: The Market Correction
- 07 Sector performance
- 08 Sector-weighted contribution
- 09 Style indexes performance
- 10 Style indexes relative returns

- 11 Pure Factor Indexes
- 12 Style vs Factors
- 13 Technical analysis
- 14 Dispersion
- 15 Risk/return analysis

The FT Wilshire 5000 index has lost some momentum since the end of March as markets absorb debt ceiling brinkmanship, regional bank concerns and an uncertain economic backdrop. The index is still up 8.0% from the recent March low.



Source: Wilshire, FactSet. Data as of May 31, 2023

FT Wilshire 5000 Key Observations: Market breadth deteriorates with technology stocks the dominant driver of returns

Market snapshot

- ◆ The FT Wilshire 5000 rose 0.4% in May and has delivered a return of 8.8% year to date in 2023 ([page 4](#))
- ◆ FT Wilshire large cap growth continued to significantly outperform large cap value in May. Large cap continued to outperform small cap ([page 9](#))
- ◆ Digital information and technology have delivered the strongest returns QTD and YTD. Financials and energy have underperformed ([page 8](#))
- ◆ Digital information and technology remain by far the biggest contributors to returns. Financials have been a negative contributor ([page 10](#))
- ◆ Within the Pure factor space Pure Momentum outperformed in May, with Beta the underperformer ([page 12](#))

Chronology of Key Market Events in 2023

- ◆ January: Risk appetite buoyed by Goldilocks optimism - avoidance of a recession and hopes about the visibility of peak rates
- ◆ February: Fed caution against excessive interest rate optimism - markets retreat
- ◆ March: Silicon Valley Bank (SVB) collapses with contagion concern impacting global bank stocks. Y/E 2023 US market rate expectations plummet by 160bps
- ◆ March: AI theme turbo charges US technology sector
- ◆ April: Risk appetite recovers on back of Technology Q1 results, the AI trade and less bank contagion concern
- ◆ May: Debt ceiling brinkmanship sees markets tread water

Chart 1: FT Wilshire 5000 Real vs nominal total return - despite the 2022 drawdown, US equities have still delivered an 8.6% real annualized return over the last 10 years



Perspectives : Ex technology sectors the FT Wilshire 5000 has declined -1.2% YTD. The semiconductor sector has been the clear AI winner within technology.

Chart 1: Excluding the technology and digital information sectors the FT Wilshire 5000 is down -1.2% so far this year

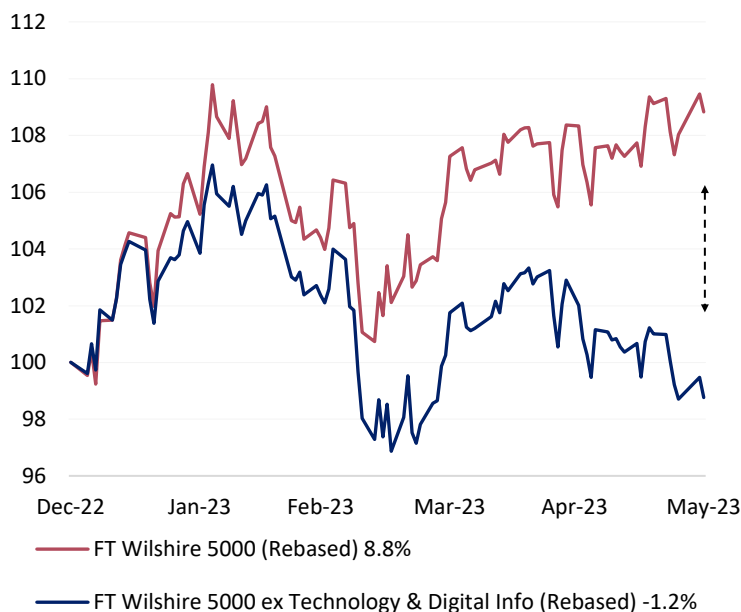


Chart 2: The Semiconductor sector has been the main AI trade amongst the technology sectors

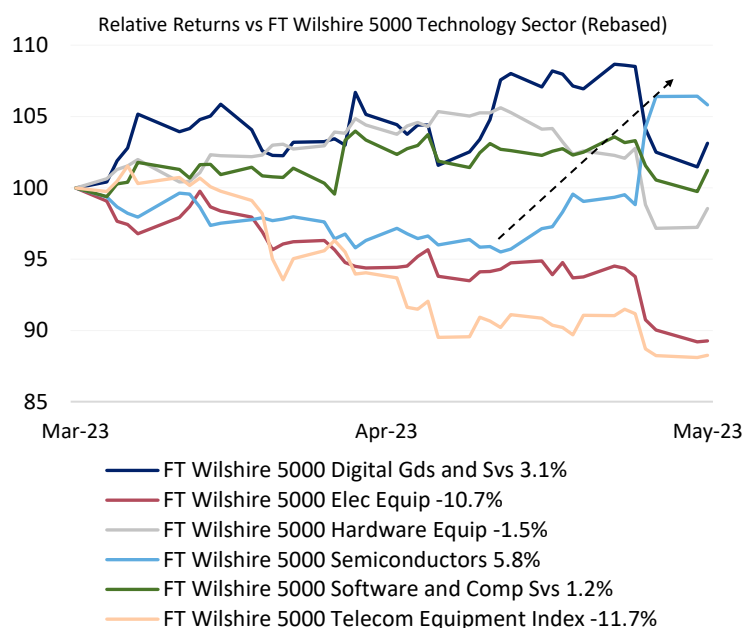


Chart 3: US bank contagion fears have dissipated leading to a recovery in large and small cap banks from the lows in early May

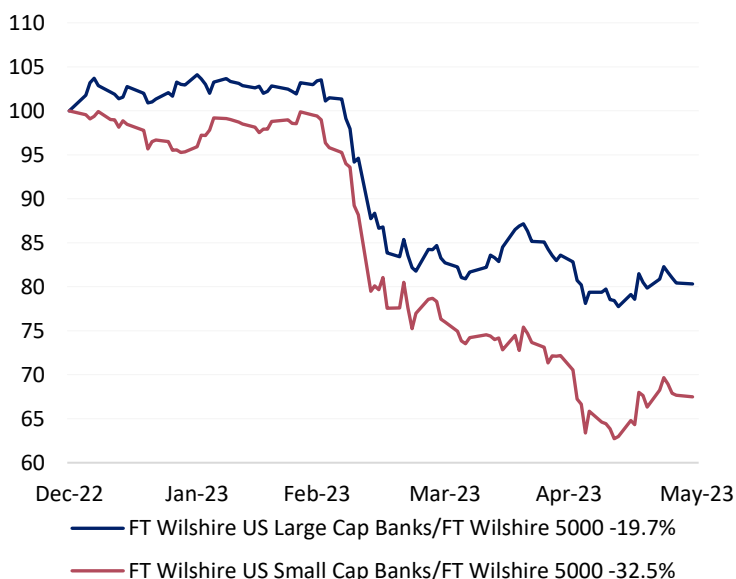
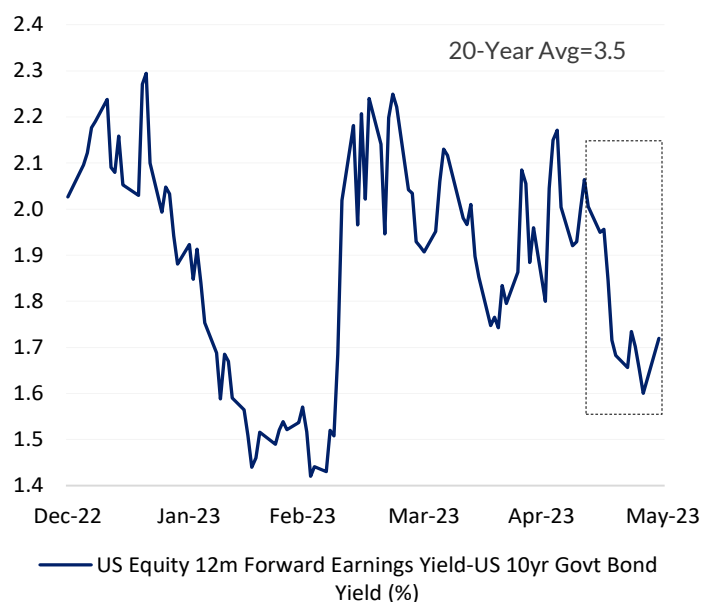


Chart 4: The impact of debt ceiling concerns has led to a rise in US bond yields, pulling the 'Fed Model' valuation lower, well below the 20 year average level of 3.5%

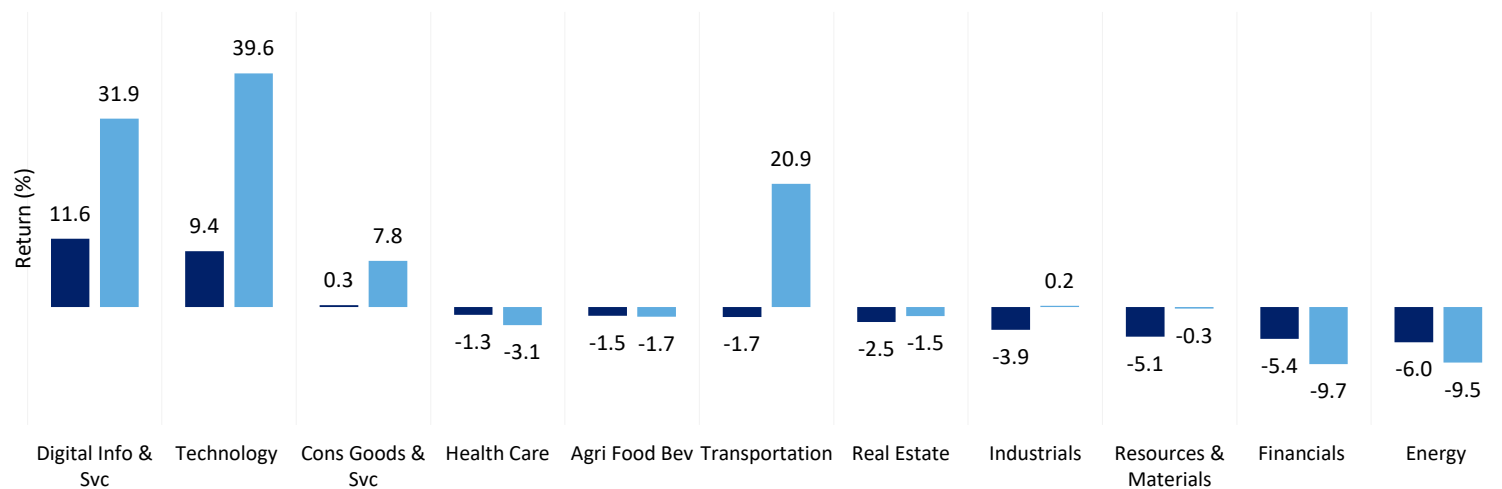


Sector performance and contributions: Technology and digital information sectors continue to dominate returns. Financials the largest negative contributor YTD.

Sector returns QTD digital information and technology significantly outperformed all other sectors. Transportation has lost momentum in the second quarter but has still delivered double-digit returns YTD. Financials and energy remain the laggards YTD after seeing further declines in Q2.

FT Wilshire 5000: Returns QTD vs YTD (USD, TR, %)

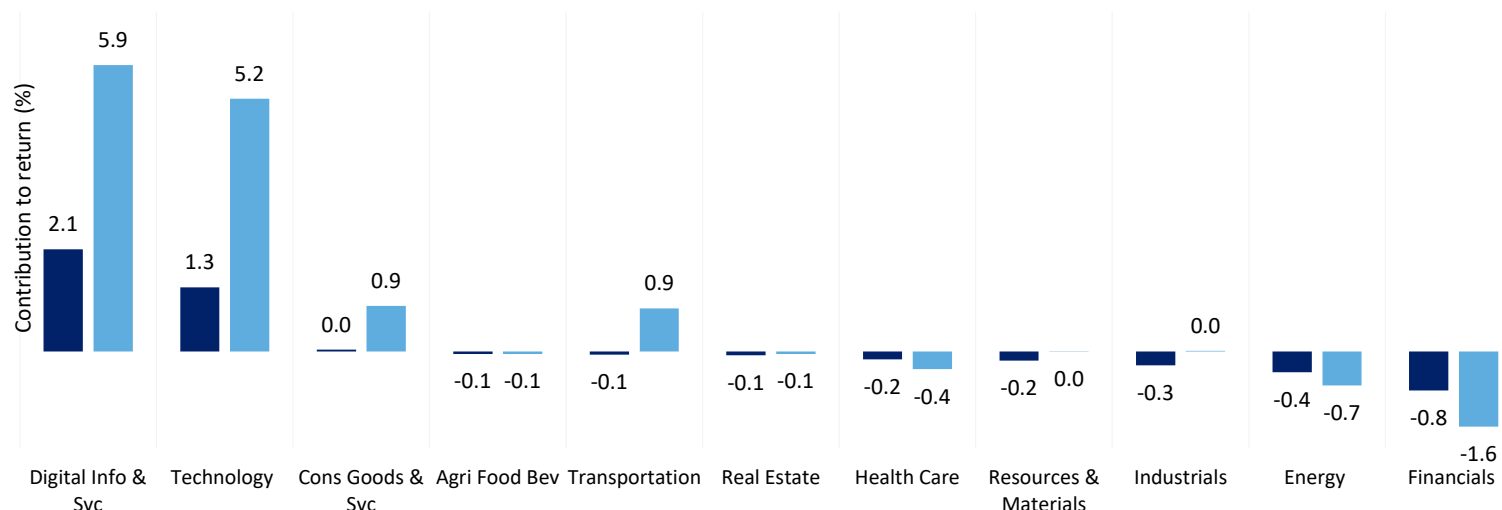
■ QTD: 1.5% ■ YTD: 8.8%



Sector weighted contributions blend sector performance with sector weighting to establish aggregate return drivers. QTD and YTD technology and digital information sectors have dominated returns. Financials and energy have been the largest negative contributions to returns.

FT Wilshire 5000: Contribution to returns QTD vs YTD (USD, TR, %)

■ QTD: 1.5% ■ YTD: 8.8%



Sector returns, weights and contributions across the FT Wilshire indexes: Technology and digital information sectors drive large cap and growth outperformance

Sector returns and weights across the FT Wilshire indexes: Large cap are heavily exposed to the technology and digital info sectors while small cap are more exposed to the cyclical industrials, resources and real estate sectors. Value is skewed to energy and financials while growth is more exposed to tech and consumer goods.

QTD	FTW 5000		Large Cap		Small Cap		Micro Cap		Growth		Value	
	Return	Wghts	Return	Wghts	Return	Wghts	Return	Wghts	Return	Wghts	Return	Wghts
Digital Info & Svc	11.6	18.2	12.8	19.4	-2.5	10.9	-9.8	7.6	13.0	30.9	1.0	7.6
Technology	9.4	14.0	9.6	15.2	5.3	6.0	6.5	5.1	13.1	21.1	1.8	9.2
Cons Goods & Svc	0.3	11.9	1.1	11.8	-4.9	13.0	-7.0	10.3	4.9	12.3	-2.9	11.1
Health Care	-1.3	12.3	-2.0	12.2	-1.4	11.4	5.0	24.3	-2.3	12.2	-1.3	12.2
Agri Food Bev	-1.5	3.5	-1.9	3.6	3.1	2.5	-0.2	1.5	2.6	0.6	-2.3	6.7
Transportation	-1.7	3.7	-0.9	3.6	-3.6	4.5	-19.4	3.4	-0.2	3.4	-5.6	3.9
Real Estate	-2.6	3.1	-2.0	2.4	-3.4	8.1	-3.5	6.9	-4.4	2.8	-3.0	2.1
Industrials	-3.9	7.3	-3.6	6.6	-5.5	12.3	-2.7	11.3	0.6	4.2	-5.3	9.1
Resources & Materials	-5.1	3.7	-6.1	3.0	-4.0	9.1	0.8	6.3	-3.9	1.9	-6.9	4.1
Financials	-5.4	15.0	-5.2	15.1	-6.4	13.5	-9.8	17.8	-1.6	9.3	-0.5	21.0
Energy	-6.0	7.2	-6.2	7.1	-3.7	8.6	-12.5	5.7	-4.2	1.3	-6.4	13.0
Market	1.5		2.1		-3.0		-3.1		6.7		-2.4	

Sector-weighted performance contributions across the FT Wilshire indexes: The large positive contribution from digital information has been the key driver behind large cap outperformance relative to small cap, and growth outperformance relative to value.

QTD	FTW 5000	Large Cap	Small Cap	Micro Cap	Growth	Value
	Contr	Contr	Contr	Contr	Contr	Contr
Digital Info & Svc	2.1	2.5	-0.3	-0.7	4.0	0.1
Technology	1.3	1.5	0.3	0.3	2.8	0.2
Cons Goods & Svc	0.0	0.1	-0.6	-0.7	0.6	-0.3
Agri Food Bev	-0.1	-0.1	0.1	0.0	0.0	-0.2
Transportation	-0.1	0.0	-0.2	-0.7	0.0	-0.2
Real Estate	-0.1	-0.1	-0.3	-0.2	-0.1	-0.1
Health Care	-0.2	-0.2	-0.2	1.2	-0.3	-0.2
Resources & Materials	-0.2	-0.2	-0.4	0.0	-0.1	-0.3
Industrials	-0.3	-0.2	-0.7	-0.3	0.0	-0.5
Energy	-0.4	-0.4	-0.3	-0.7	-0.1	-0.8
Financials	-0.8	-0.8	-0.9	-1.7	-0.1	-0.1
Market	1.5	2.1	-3.0	-3.1	6.7	-2.4

Source: Wilshire. Data as of May 31, 2023

FT Wilshire Size and Style Indexes: Growth outperformance relative to value widens further in May. Large cap continues to outperform small cap.

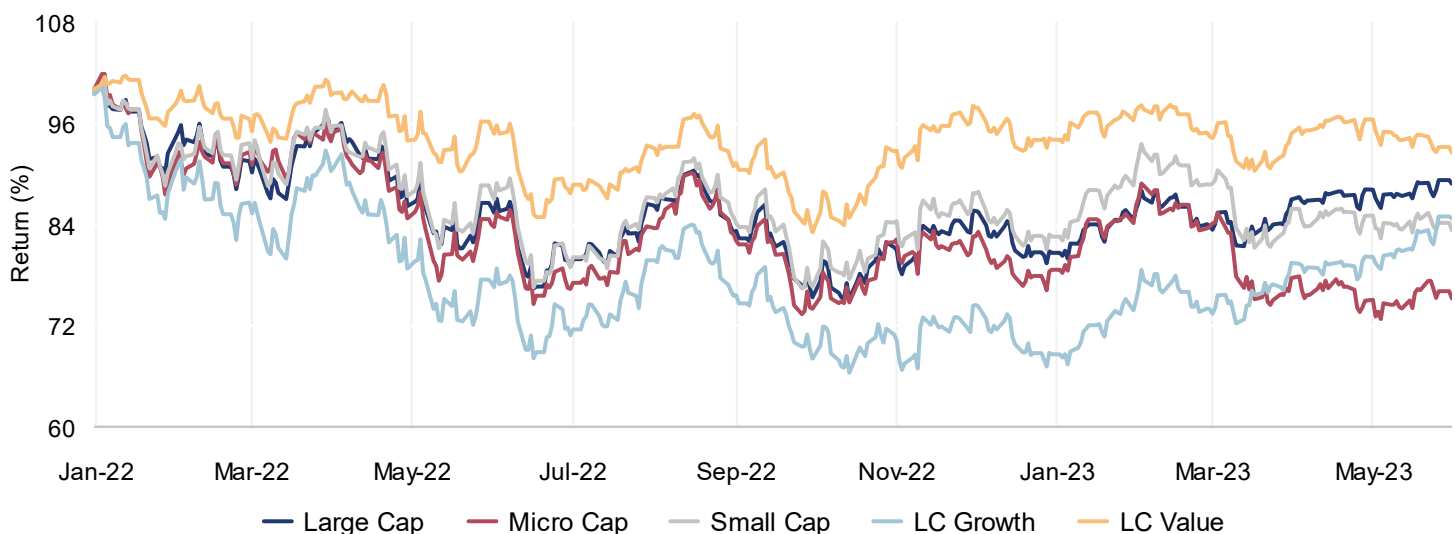
Table 1: Further strong gains for growth in May and so far in Q2 have seen outperformance relative to value widen further. Large cap continues to outperform small cap.

USD, TR %	Size			Style	
	Large Cap	Small Cap	Micro Cap	LC Growth	LC Value
1M	0.8	-2.0	0.4	5.6	-4.1
QTD	2.1	-3.0	-3.1	6.7	-2.4
YTD	10.2	0.9	-4.3	23.6	-1.6
2022	-19.2	-17.5	-21.4	-31.1	-6.0
2021	27.8	19.1	21.7	27.6	27.5

Table 2: Large cap have delivered a 10yr annualized return of 12.1% vs a small cap return of 8.5%

USD, TR %	Large Cap		Small Cap		Micro Cap		LC Growth		LC Value	
	Aggr	Ann	Aggr	Ann	Aggr	Ann	Aggr	Ann	Aggr	Ann
2Y	1.7	0.8	-14.4	-7.5	-27.2	-14.7	1.0	0.5	1.3	0.6
3Y	43.6	12.8	36.5	10.9	34.7	10.5	43.3	12.7	41.9	12.4
5Y	69.7	11.2	28.5	5.1	10.5	2.0	95.8	14.4	43.6	7.5
10Y	213.7	12.1	126.5	8.5	103.3	7.4				
20Y	556.9	9.9	568.9	10.0	403.5	8.4				

Chart 1: Size and style index returns - Since Dec 2021 (USD, TR %)



Style and Size Indexes: Growth relative to value gathers further momentum in May. Large cap continued to outperform small cap.

Chart 1: Growth vs Value (USD, TR, %).

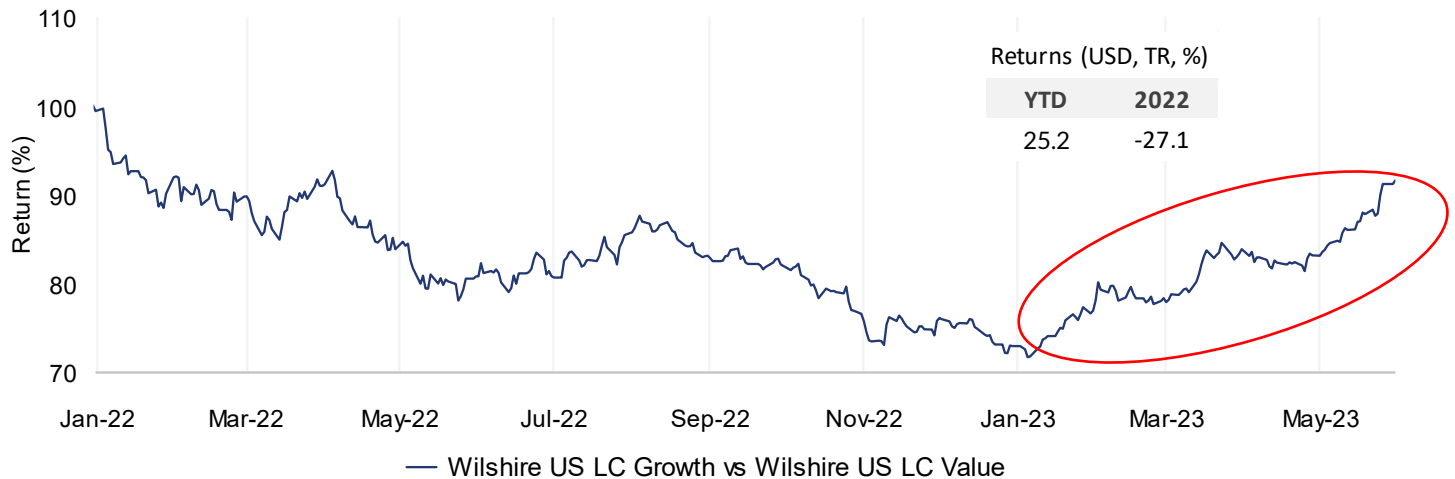
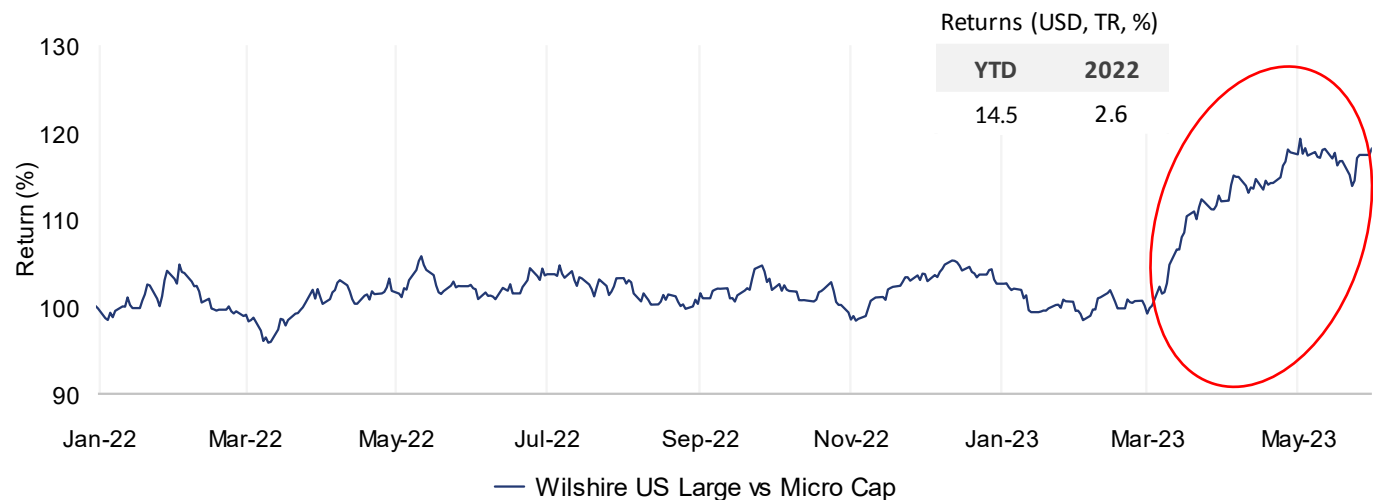


Chart 2: Large vs Small Cap (USD, TR, %).



Chart 3: Large vs Micro Cap (USD, TR, %).



Pure Factor Indexes: Momentum the strongest performer in May and YTD with Beta the laggard

Our “Pure Factors” are designed to eliminate the unintended sector and factor exposures incorporated into most conventional factor methodologies. In this regard they are designed to deliver “pure” factor premia.

Chart 1: 1M - Pure Momentum has outperformed with Beta the laggard. Value marginally outperformed quality

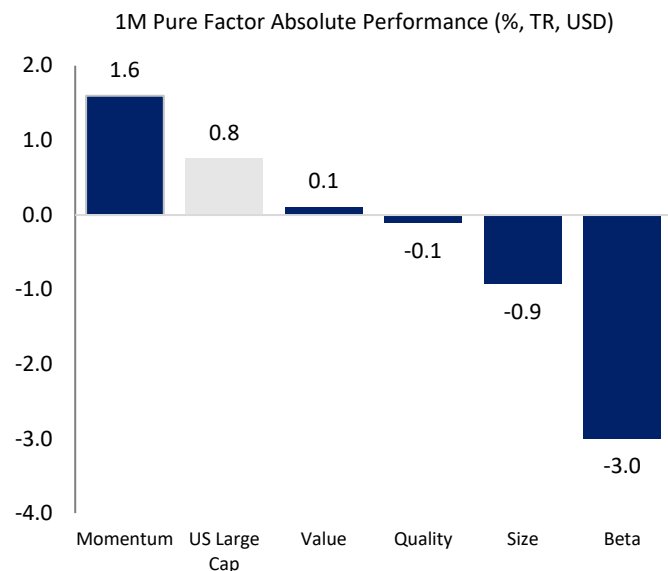


Chart 2: YTD 2023-Pure Momentum has been the strongest performer. Beta has delivered a negative return

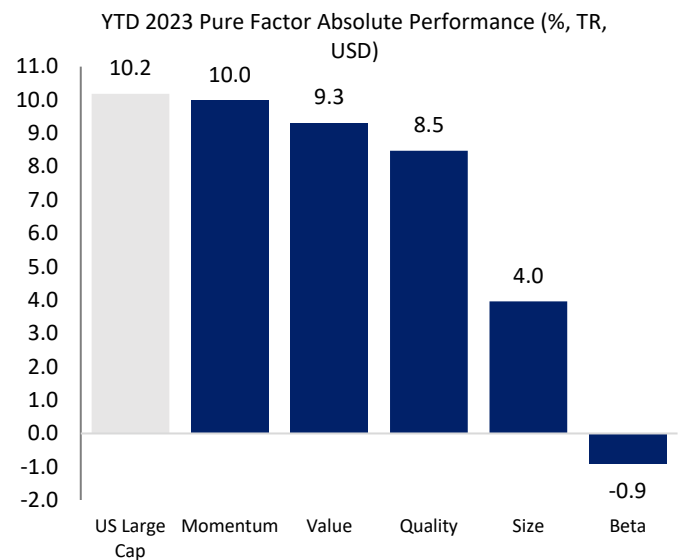


Chart 3: 2022-Only Pure Momentum underperformed US Large Cap in 2022

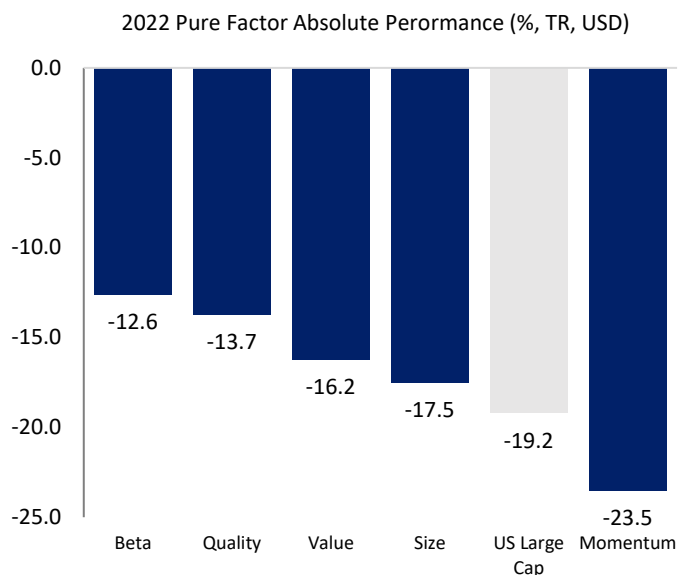
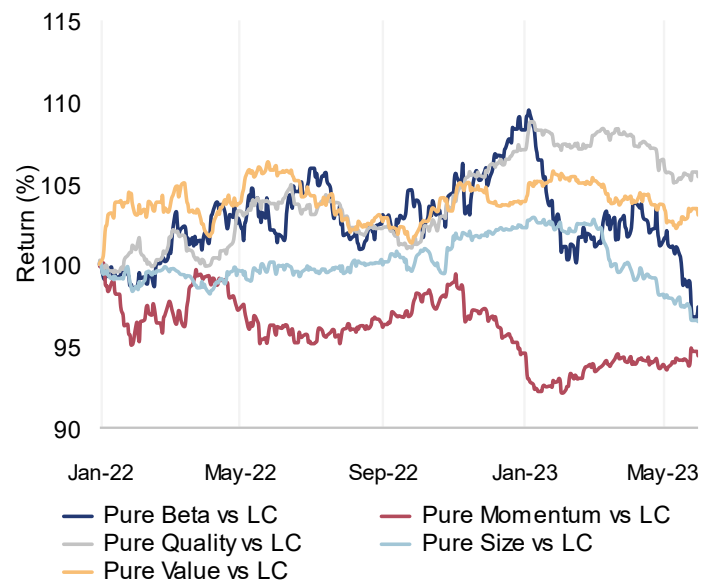


Chart 4: Pure Factor Indexes Relative to FT Wilshire US Large Cap Index from Dec 2021 (Rebased, TR, USD)



Comparing Factor vs Style returns: Pure Quality factor continues to lag growth style. Pure Value continues to outperform style value year to date.

Chart 1: Pure Factor and Style Absolute Performance - 1M, Q1, 2022 and 3YR

Returns (USD, TR %)	QTD	YTD	2022	3Y
Pure Factor Quality	-0.2	8.5	-13.7	48.9
Style Growth	6.7	23.6	-31.1	43.3
Pure Factor Value	1.2	9.3	-16.2	46.1
Style Value	-2.4	-1.6	-6.0	41.9
Pure Factor Size	-1.6	4.0	-17.5	36.9
Style Small Cap	-3.0	0.9	-17.5	36.5

Chart 2: Pure Factor Quality Index lagged the recovery in the Growth style index so far in 2023

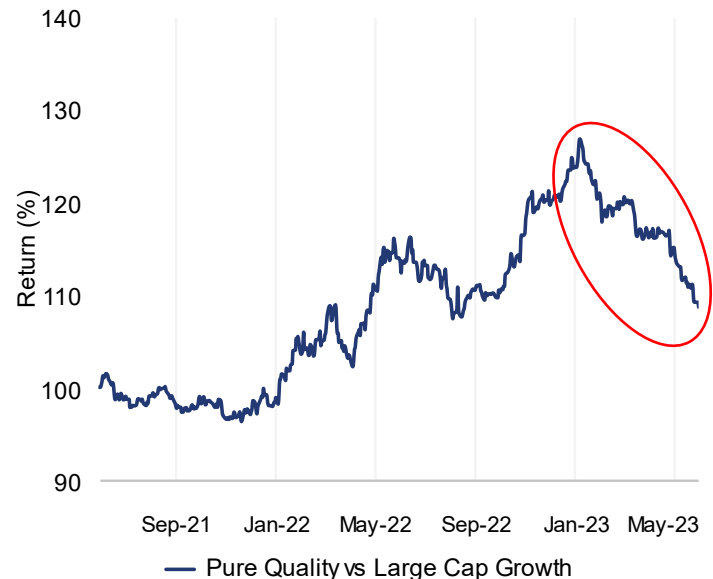


Chart 3: Pure value factor has continued to regain ground against value style since the start of 2023

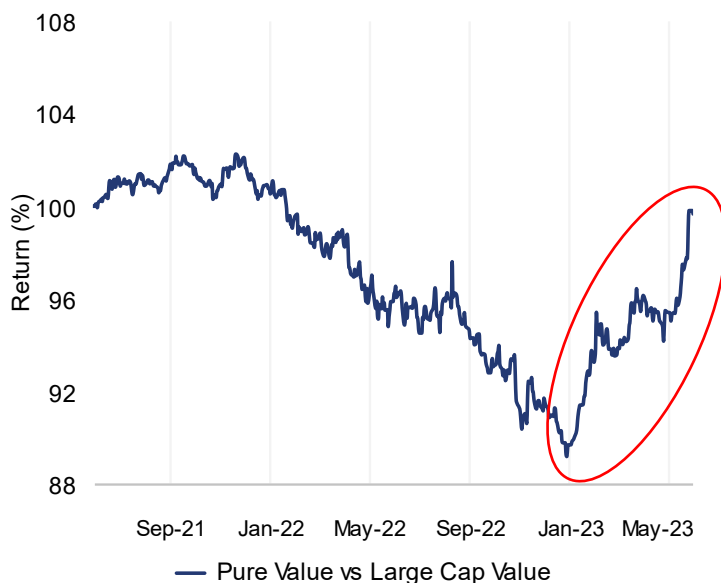
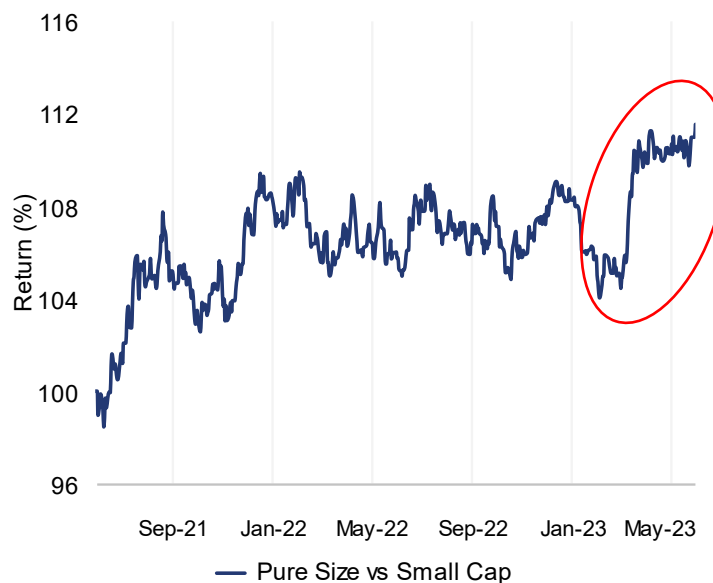


Chart 4: Pure Factor Size Index relative performance vs Style Small Cap Index - 5 years



Technical Analysis: FT Wilshire large cap value relative to growth approaching potential support levels. 'Death cross' moving average intersect for small cap.

Chart 1: FT Wilshire large cap value relative to growth is approaching the 61.8% Fibonacci retracement level from the highs in early January 2023



Chart 2: FT Wilshire US small cap index witnessed a 'death cross' pattern (50DMA falling below 200DMA) on May 16th indicating further downside

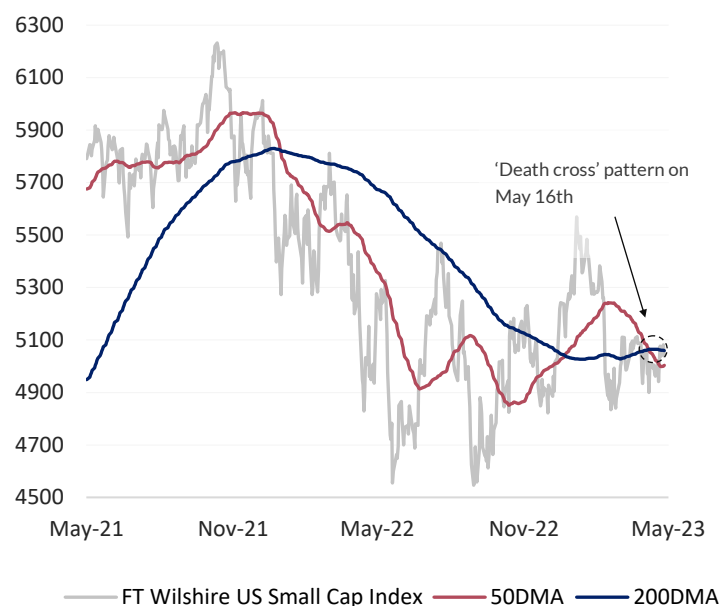


Chart 3: FT Wilshire 5000 sector Relative Strength Indexes (RSI) vs 1m ago-Digital info and tech looking overbought near-term. Food and beverages oversold

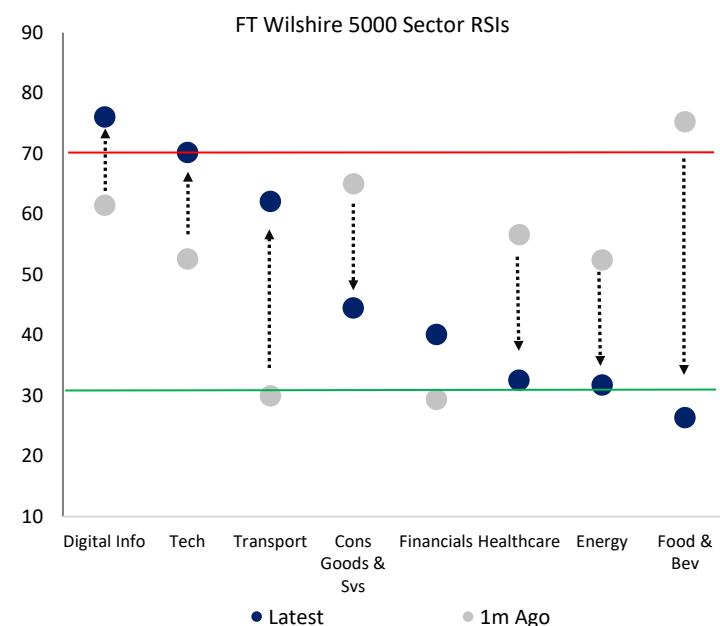
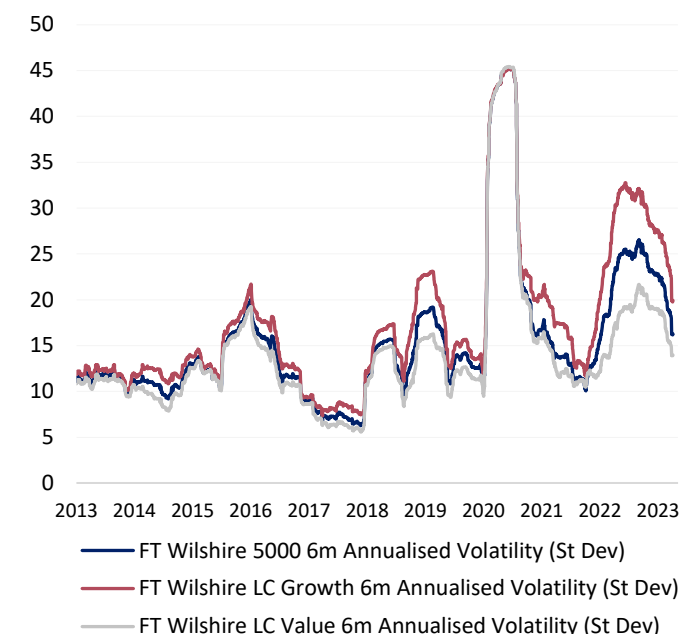


Chart 4: Volatility levels (6m annualised) have plummeted and are approaching pre-Covid levels



Performance Dispersion Analysis: Greater concentration to the top 10 stocks than during the TMT period and also more dependence on the return contribu-

Chart 1: The weighting of the top 10 largest stocks is now greater than at the peak of the TMT bubble

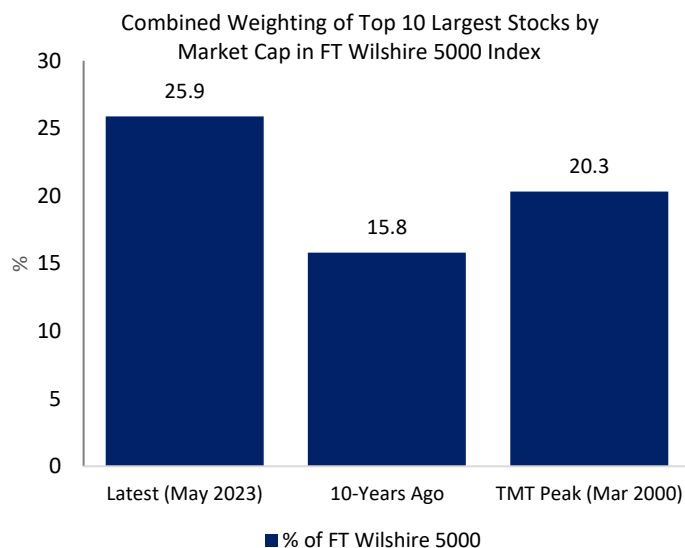
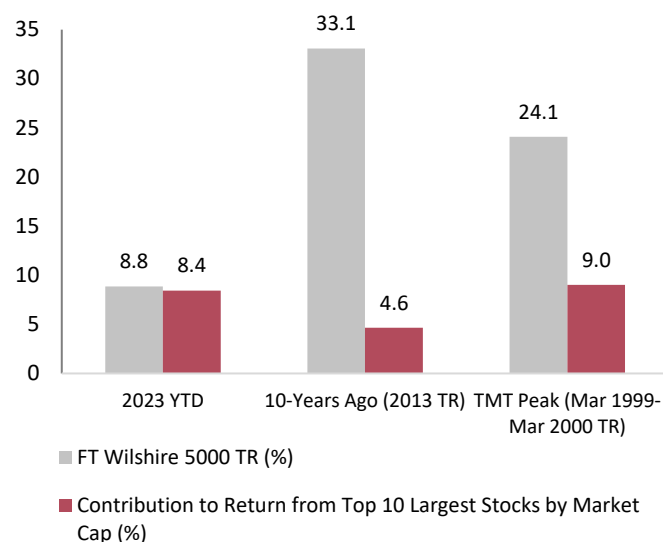


Chart 2: A higher dependence on the top 10 return contributions than in TMT period



1M Returns (USD, TR, %)

FT Wilshire 5000: .4%	Wght	Return (%)	Contrib (%)
Nvidia Corp	1.8	36.3	0.59
Microsoft Corp	5.7	7.1	0.39
Amazon Com Inc	2.5	14.3	0.34
Chevron Corp	0.7	-9.8	-0.08
Procter & Gamble Co	0.9	-8.9	-0.08
Exxon Mobil Corp	1.1	-12.9	-0.15

Wilshire Large Cap: .8%	Wght	Return (%)	Contrib (%)
Nvidia Corp	2.1	36.3	0.67
Microsoft Corp	6.5	7.1	0.45
Amazon Com Inc	2.8	14.3	0.39
Chevron Corp	0.8	-9.8	-0.09
Procter & Gamble Co	1.0	-8.9	-0.09
Exxon Mobil Corp	1.2	-12.9	-0.18

Wilshire Small Cap: -2.0%	Wght	Return (%)	Contrib (%)
Super Micro Computer In	0.2	112.4	0.12
Exact Sciences Corp	0.3	27.3	0.07
Twilio Inc	0.2	32.3	0.06
Bjs Whsl Club Hldgs Inc	0.2	-18.0	-0.04
Advance Auto Parts	0.2	-41.9	-0.07
First Horizon Natl C	0.1	-41.3	-0.08

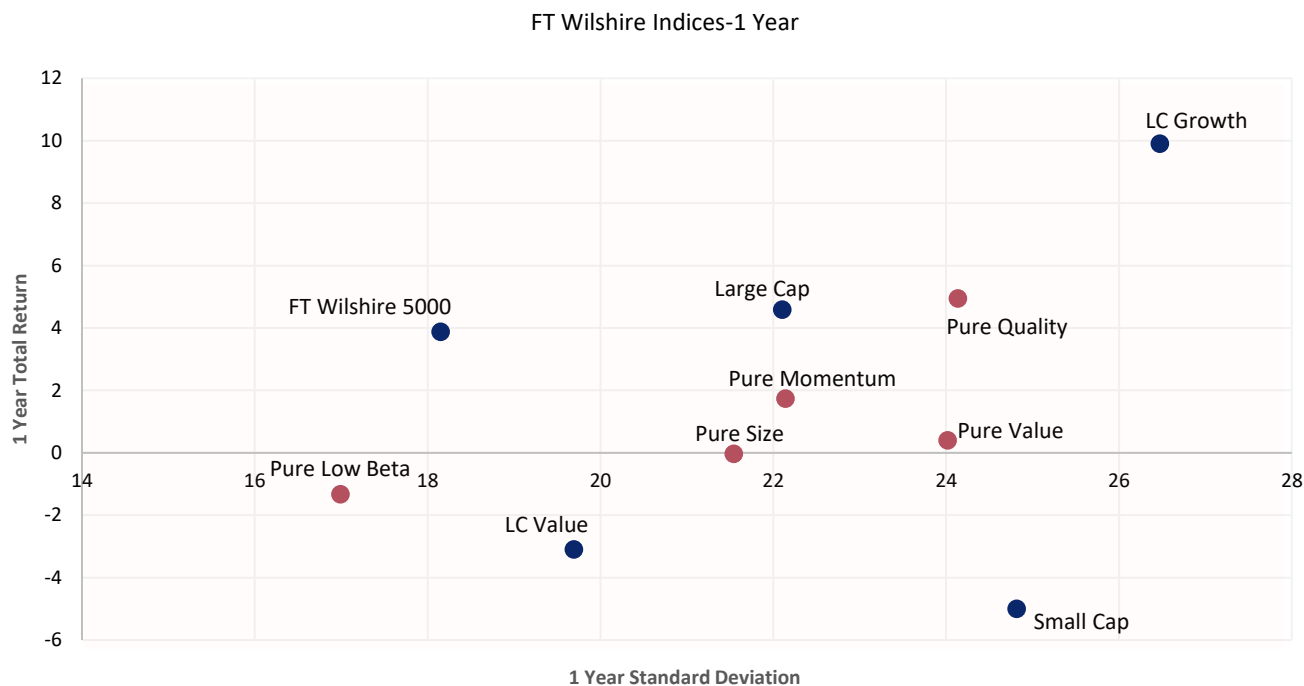
Wilshire Micro Cap: 0.4%	Wght	Return (%)	Contrib (%)
Immunogen Inc	0.5	153.1	0.33
Cti Biopharma Corp	0.2	86.2	0.09
Microvision Inc Del	0.1	134.5	0.08
Proassurance Corp	0.1	-32.4	-0.06
Community Health Sys In	0.1	-48.4	-0.07
Catalyst Pharm Partn	0.2	-27.5	-0.08

Wilshire Growth: 5.6%	Wght	Return (%)	Contrib (%)
Nvidia Corp	3.6	36.3	1.20
Microsoft Corp	11.4	7.1	0.80
Amazon Com Inc	5.0	14.3	0.69
Paypal Hldgs Inc	0.4	-18.4	-0.08
Thermo Fisher Scientifi	1.0	-8.4	-0.09
Visa Inc	1.9	-4.8	-0.09

Wilshire Value: -4.1%	Wght	Return (%)	Contrib (%)
Eli Lilly & Co	2.1	8.8	0.17
Oracle Corp	0.9	11.8	0.10
Marvell Technology Grou	0.2	48.2	0.09
Chevron Corp	1.7	-9.8	-0.18
Procter & Gamble Co	2.1	-8.9	-0.19
Exxon Mobil Corp	2.6	-12.9	-0.36

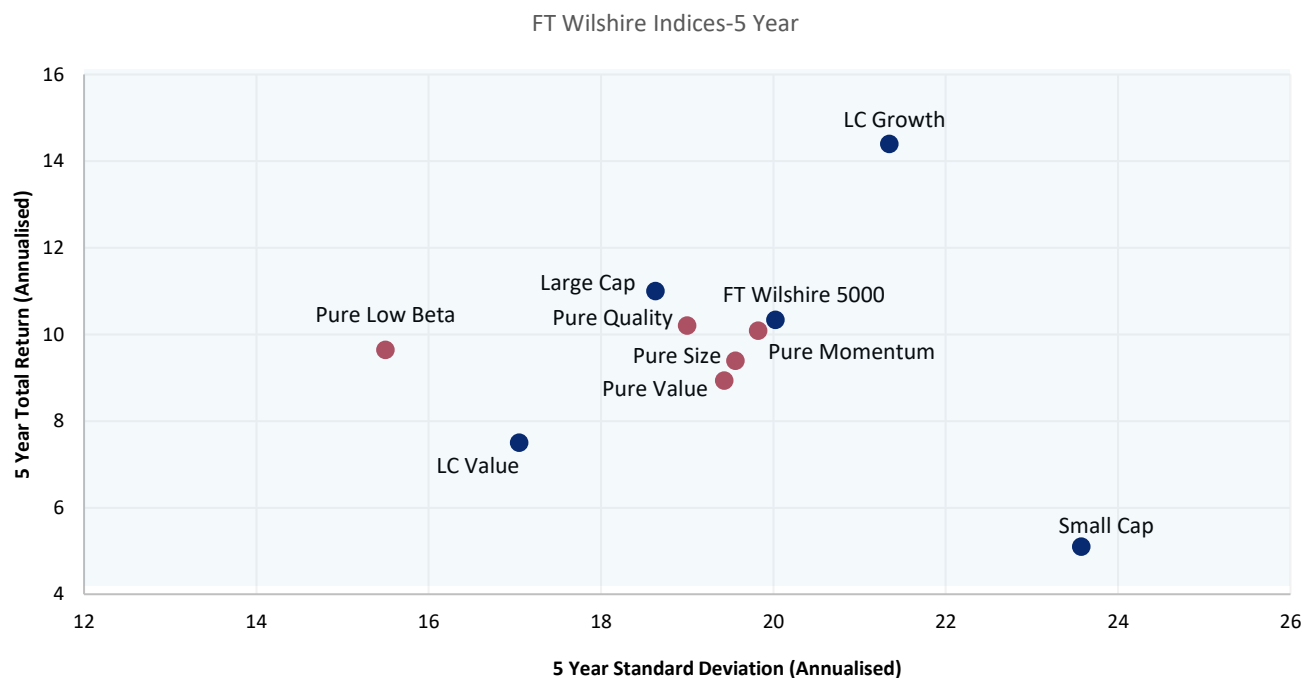
FT Wilshire Index Risk vs Return: 1 year and 5 year perspectives

FT Wilshire Indexes: Risk vs Return Over 1 Year



FT Wilshire Indexes: Risk vs Return Over 5 Years

Pure Factor ■ Style ■



FT Wilshire Global Equity Market Series (GEMS)

1

-8.2%

Decline in Chinese equities in May

2

+7.3%

Rise in Global Equity Index YTD

3

-6.2%

Decline in UK equities in May

4

+8.2%

10-year annualized return for the Global Equity Index

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US equities performance vs global non US equities. US equities have continued to close the gap with non-US equities after underperforming in 2022.



Source: Wilshire. Data as of May 31, 2023

Global Equity Market Synopsis: Strong technology returns drive US outperformance. Wide divergence amongst emerging market performance

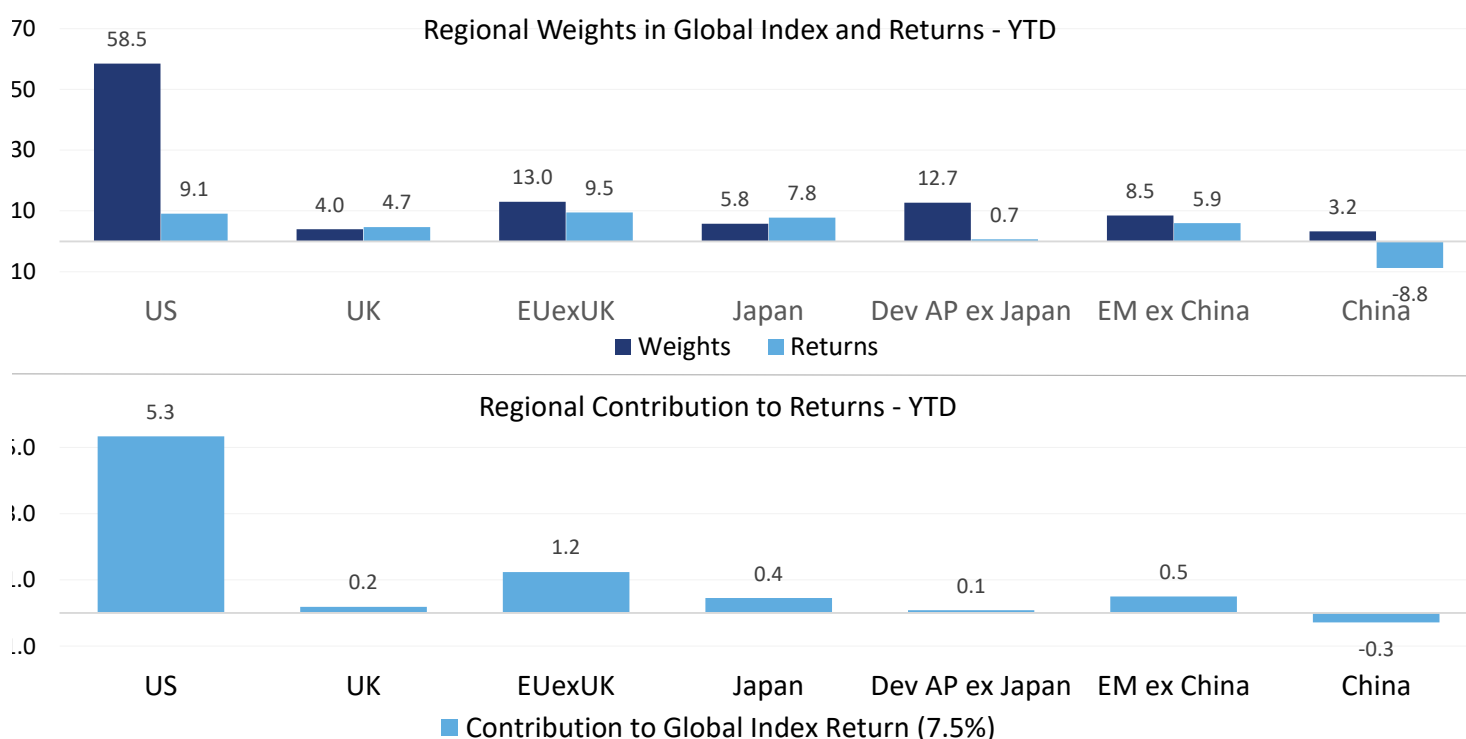
Global Markets Snapshot

- ◆ US and Japan posted small gains in May. UK and European equities continue to lose momentum (page 18)
- ◆ Sizeable FX impact on Japanese equity returns (page 18)
- ◆ Wide divergence amongst emerging markets with China continuing to underperform (page 21)
- ◆ US digital information and technology sector dominate returns and are the key drivers behind US outperformance vs Global ex US (page 23)
- ◆ Bank contagion fears ease with sector recovering from the lows in May (page 24)
- ◆ Regional Relative Strength Indexes (RSIs) showing Japan looking most overbought (page 25)

Key Market Events

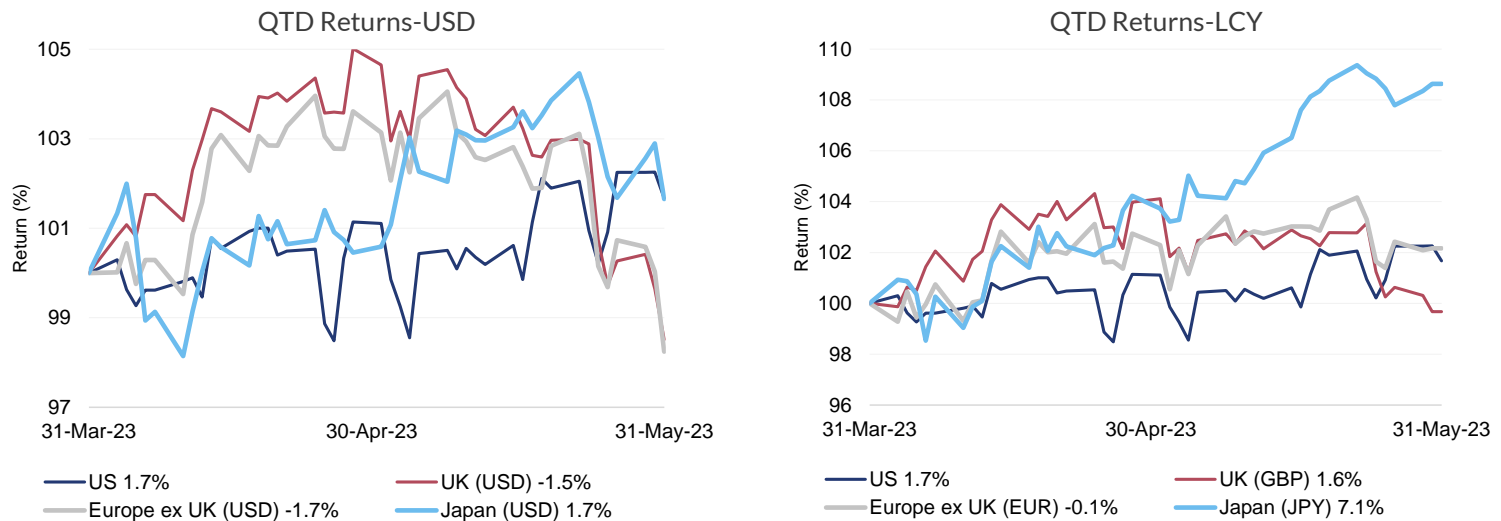
- ◆ January - Optimism over China reopening post-Covid helps buoy risk appetite
- ◆ February—Reassessment of US interest rate expectations see global bond yields rise, spooking markets
- ◆ March—Silicon Valley Bank (SVB) collapses with contagion fears rippling through to global markets. Credit Suisse turmoil weighs on European banks.
- ◆ March—Markets rebound as bank contagion fears ease. UBS agrees takeover of Credit Swiss
- ◆ April -Chinese equities pullback sharply on renewed US-China geopolitical tensions
- ◆ April-JPY weakens sharply on dovish BoJ, Japanese equities rally
- ◆ May—Weak Chinese economic data jolts European and China equities into further declines

Chart 1: Regional weights, returns and weighted-contribution to global index total return year to date (+7.5%).



Region and major market performance (USD returns): US, Japan and Emerging ex China equities outperform in May. China sees further declines.

QTD Regional returns-USD vs LCY- Whilst the FX impact has been limited for UK, European and Chinese equities, the sizeable decline in the Yen has meant a large difference in QTD Japanese equity returns when



Regional Returns - Short Term (USD, TR, %)	1M	QTD	YTD	12M	2022
Emerging ex China	1.5	2.4	5.9	-3.8	-15.5
Japan	1.2	1.7	7.8	5.0	-15.4
USA	0.5	1.7	9.1	2.5	-19.4
Global	-1.1	0.3	7.3	1.0	-17.9
Emerging	-1.1	-1.9	1.8	-6.2	-17.3
Asia Pacific ex Japan	-1.9	-3.2	0.7	-6.2	-17.4
Global ex US	-3.3	-1.7	4.7	-1.1	-15.8
Europe ex UK	-5.1	-1.7	9.4	5.8	-19.2
United Kingdom	-6.2	-1.5	4.7	-1.1	-10.6
China	-8.2	-13.2	-8.8	-13.1	-21.6

Regional Returns - Long Term (USD, TR, %)	3Y		5Y		10Y		20Y	
	Aggr	Ann	Aggr	Ann	Aggr	Ann	Aggr	Ann
USA	41.8	12.4	63.4	10.3	200.2	11.6	559.7	9.9
United Kingdom	32.6	9.9	7.8	1.5	36.6	3.2	194.5	5.5
Japan	13.6	4.3	9.0	1.7	74.0	5.7	328.0	7.5
Asia Pacific ex Japan	17.6	5.6	5.3	1.0	52.1	4.3	523.0	9.6
Europe ex UK	33.6	10.1	29.7	5.3	84.8	6.3	389.5	8.3
Emerging	19.4	6.1	3.3	0.6	36.3	3.1	529.1	9.6
Emerging ex China	47.0	13.7	20.5	3.8	42.0	3.6	547.4	9.8
China	-25.0	-9.1	-28.6	-6.5	42.3	3.6	622.8	10.4
Global ex US	25.8	8.0	15.0	2.8	59.1	4.8	354.7	7.9
Global	35.0	10.5	38.8	6.8	119.8	8.2	440.5	8.8

Source: Wilshire. Data as of May 31, 2023

The FX adjusted market returns - Producing very different perspectives

FX swings can have a large impact on unhedged regional equity returns depending on the location of investors. The largest FX impact YTD has been JPY returns for an unhedged Japanese based investor (due to weakness of the yen) .They have garnered 14.6% returns from Global equities compared to a 7.3% return for a USD based investor

Table 1: Regional returns in various FX - YTD

YTD Return (TR, %)	USD	GBP	EUR	JPY
Europe ex UK	9.4	8.7	11.5	17.9
USA	9.1	4.8	9.9	16.2
Developed	8.0	5.0	9.1	15.4
Japan	7.8	6.5	9.2	15.5
Global	7.3	4.4	8.4	14.6
United Kingdom	4.7	4.8	6.0	12.1
Emerging	1.8	0.2	3.0	8.9
Asia Pacific ex Japan	0.7	-0.9	2.0	7.9
China	-8.8	-7.5	-7.1	-1.8

Table 2: Regional returns in various FX - 2022

2022 Return (TR, %)	USD	GBP	EUR	JPY
United Kingdom	-10.6	-0.3	-5.4	2.3
Japan	-15.4	-5.5	-10.5	-3.2
Emerging	-17.3	-7.9	-12.5	-5.4
Asia Pacific ex Japan	-17.4	-7.5	-12.6	-5.5
Global	-17.9	-8.3	-13.2	-6.1
Developed	-18.0	-8.3	-13.2	-6.2
Europe ex UK	-19.2	-9.5	-14.5	-7.5
USA	-19.4	-9.9	-14.7	-7.7
China	-21.6	-13.6	-17.1	-10.3

Global Equity Relative Returns: US performance vs Global ex US has regained some momentum. Europe ex UK relative performance reverses direction

Chart 1 : US vs World ex US (USD, TR, %)

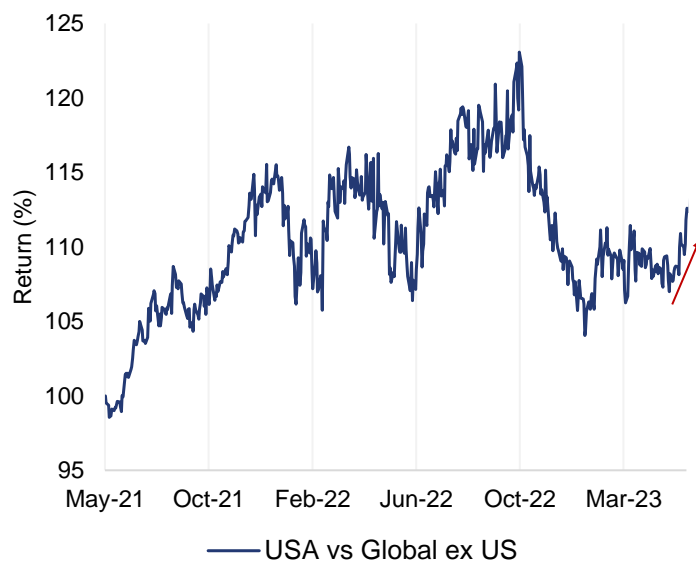


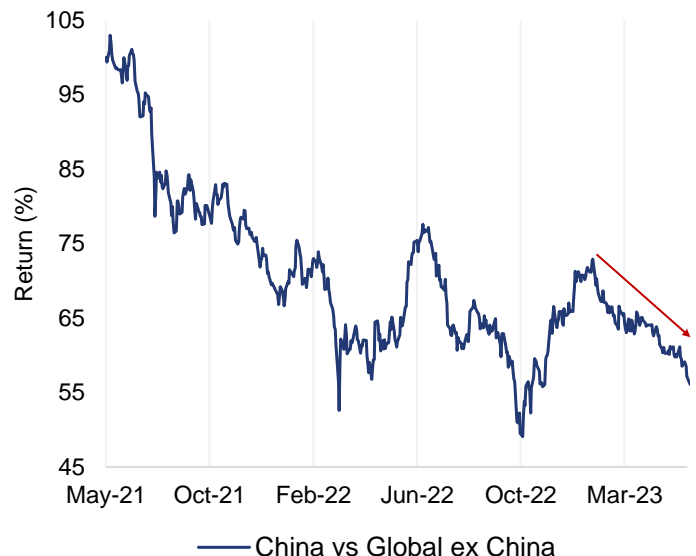
Chart 2: Emerging Markets vs Developed (USD, TR, %)



Chart 3: Europe ex UK vs Global ex Dev Europe (USD, TR, %)



Chart 4: China vs Global ex China (USD, TR, %)



Developed and Emerging market country level performance: European equities lose momentum. Wide divergence in performance amongst emerging markets

Chart 1: QTD 2023 - Despite strong gains for Brazil and India, emerging markets underperformed developed, dragged lower by double-digit declines for China. US and Japan were the strongest performers amongst developed markets with Hong Kong significantly underperforming. European equities posted negative returns.

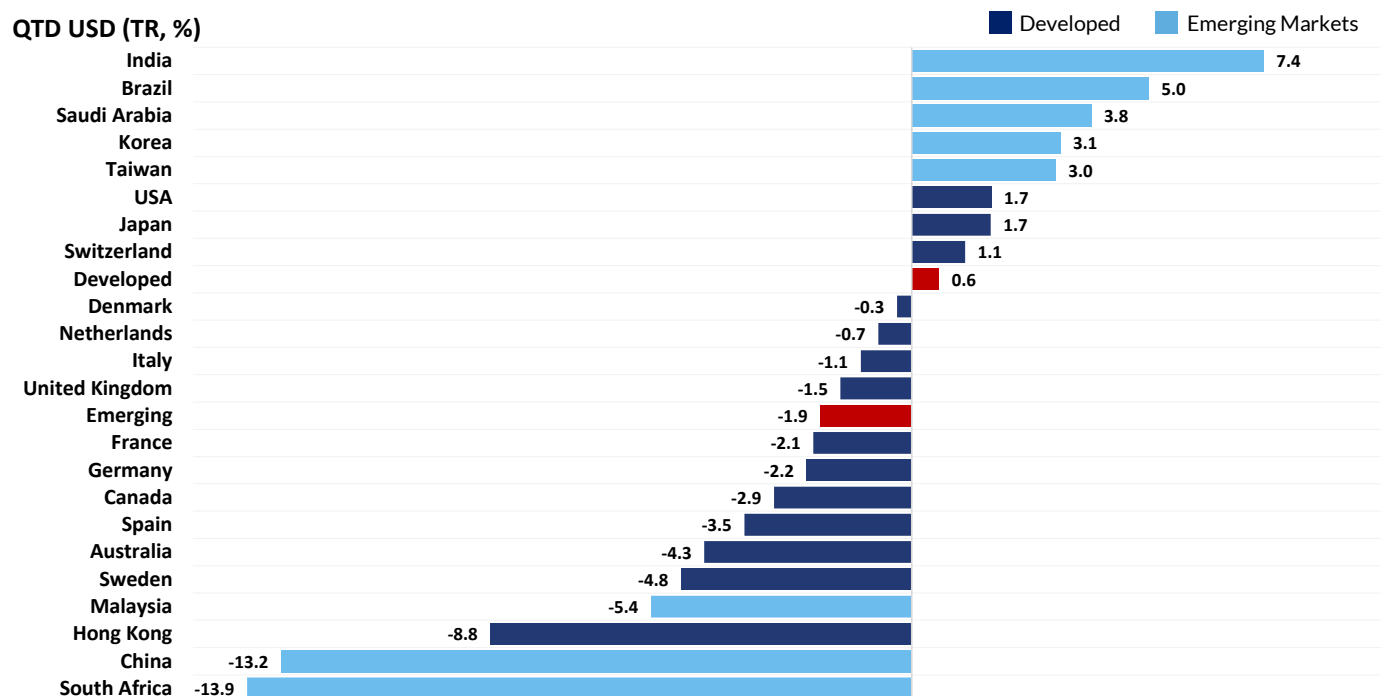
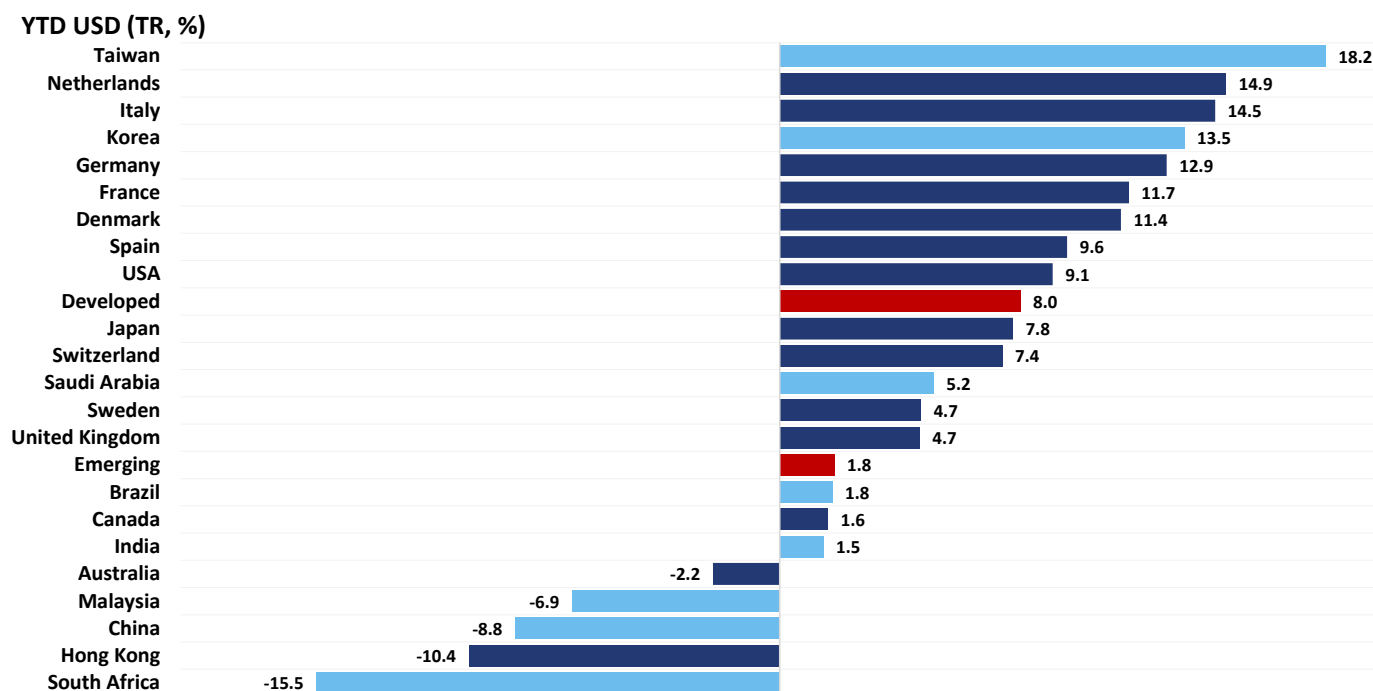
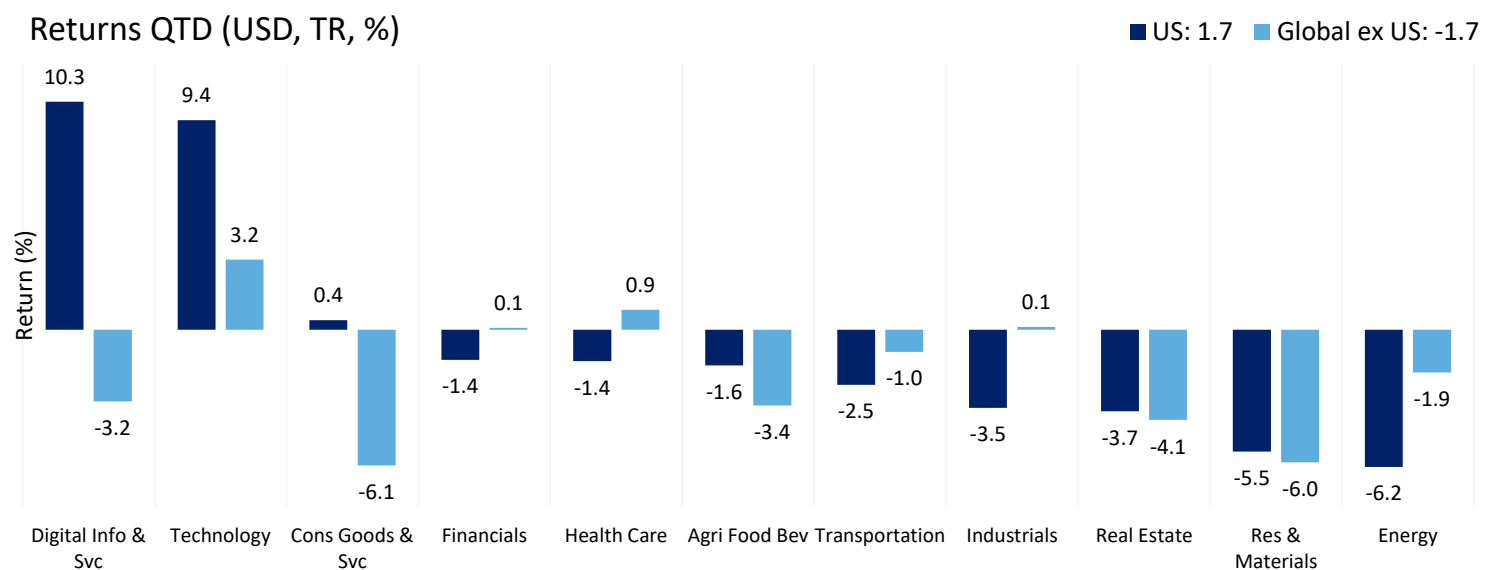


Chart 2: YTD 2023 - European markets remain amongst the strongest performers year to date despite losing some momentum in Q2. Solid gains for US equities have meant developed markets have outperformed emerging, with the latter held back by negative returns in China and South Africa.

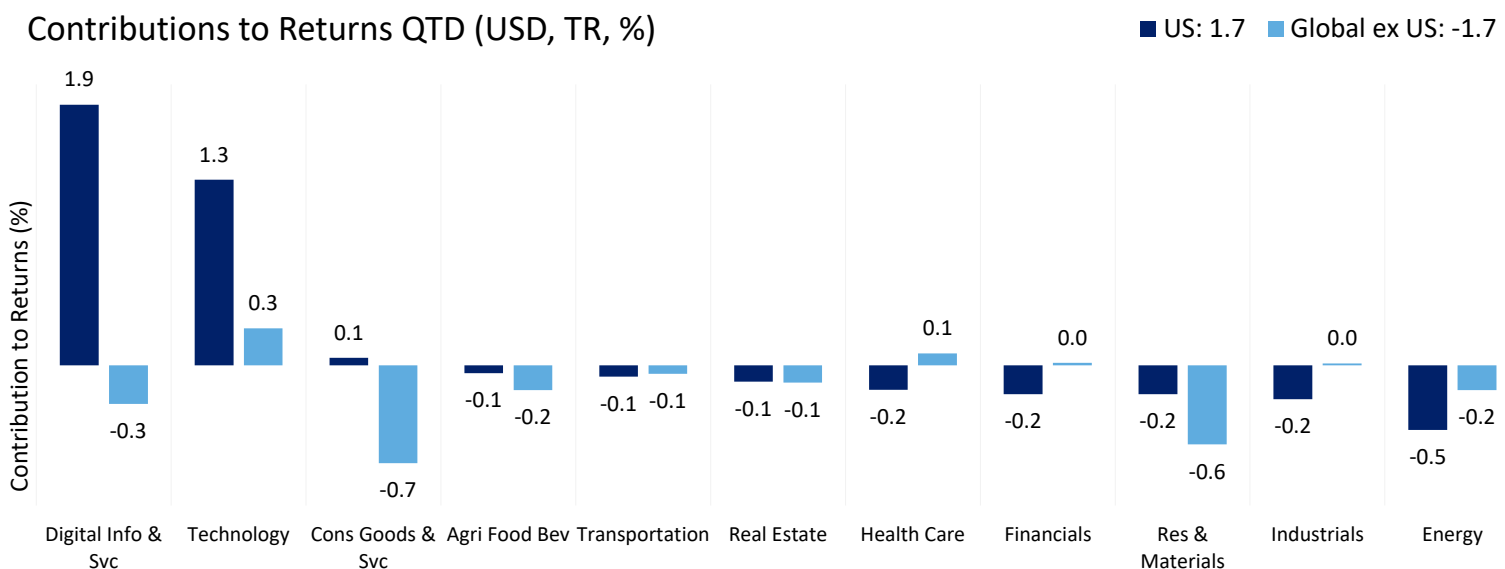


QTD-US vs Global ex US sector returns and sector-weighted contribution analysis: Digital information and technology drive US outperformance

US vs Global ex US QTD Sector Returns. US sees strong positive returns from digital information and technology, with consumer goods and services also outperforming. However US health care, financials, energy, industrials and transportation all underperformed Global ex US.

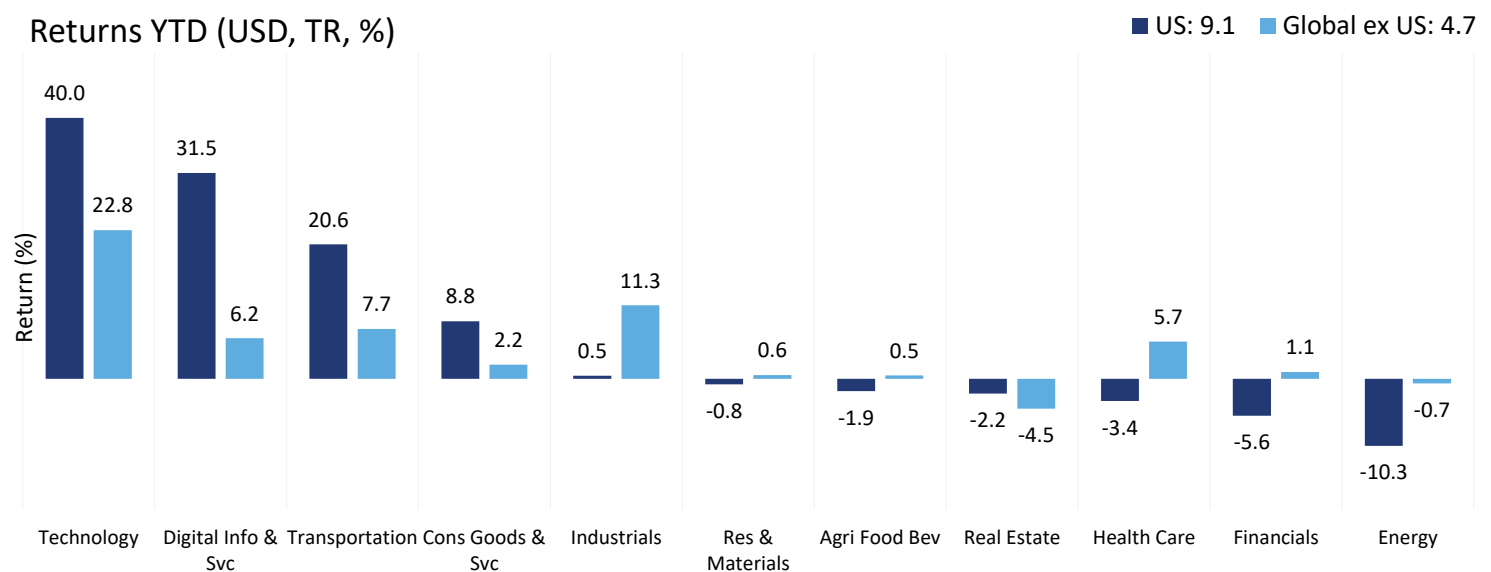


QTD US vs Global ex US Sector weighted regional contribution analysis. Positive contributions from the digital information, technology and consumer goods sectors drove US outperformance relative to Global ex US. These offset the negative contributions from health care, financials, industrials and energy.

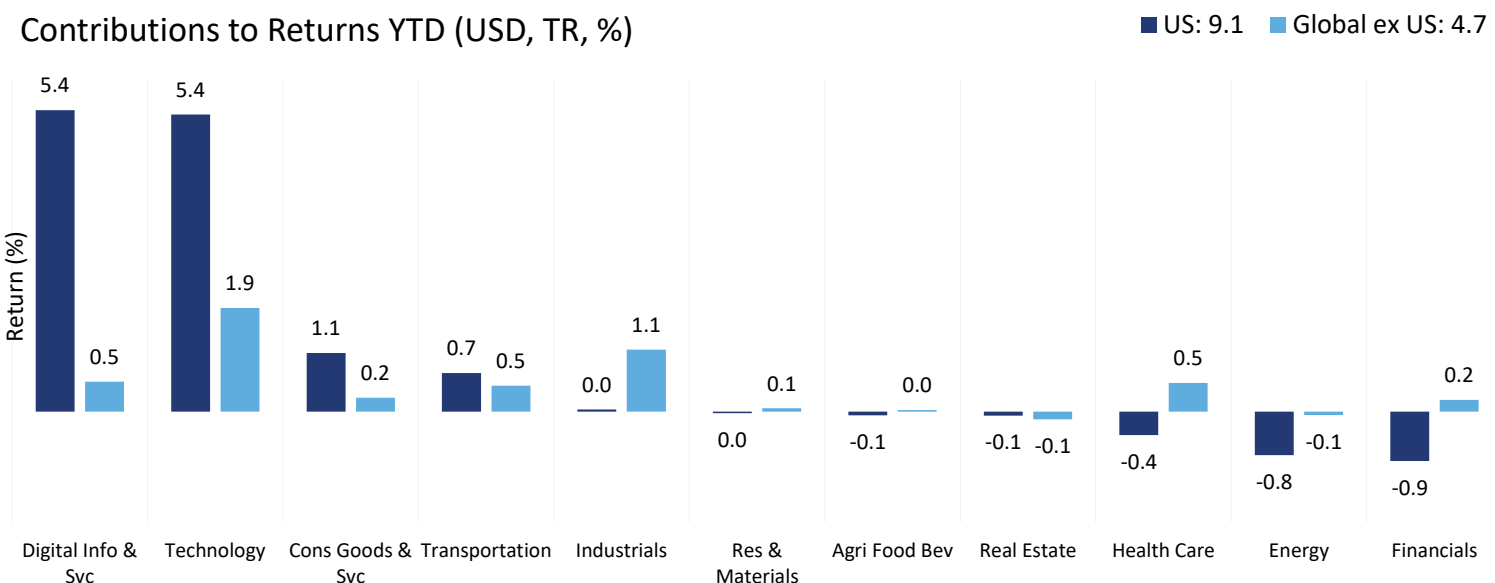


YTD-US vs Global ex US sector returns and sector-weighted contribution analysis: US digital info and technology more than offset the drag from financials and

US vs Global ex US YTD Sector Returns: US technology, digital information, transportation and consumer good and services have all outperformed Global ex US YTD. US Health care, financials and energy have significantly underperformed.



YTD US vs Global ex US Sector Weighted regional contribution analysis: Despite the negative contribution from health care, energy and financials, the superior positive contribution from digital info and technology have been the key drivers of YTD US outperformance vs Global ex US



QTD Regional level sector performance, weights and sector-weighted contribution to returns

Comparing the weightings of US sectors to the Global ex US index: The US is overweight digital information, technology and health care. Relative to the US the Global ex US has the largest overweights in financials, industrials and resources and materials.

QTD	US		Global ex US		UK		EU ex UK		Japan		AP ex Japan		China	
	Return	Wght	Return	Wght	Return	Wght	Return	Wght	Return	Wght	Return	Wght	Return	Wght
Digital Info & Svc	10.3	18.1	-3.2	8.6	-5.4	4.8	-0.9	6.0	2.2	13.5	-8.6	10.7	-17.6	21.2
Technology	9.4	14.0	3.2	8.3	6.7	0.6	-0.7	6.3	7.5	11.5	3.4	15.0	-12.9	3.8
Cons Goods & Svc	0.4	12.0	-6.1	11.5	-0.8	15.3	-4.3	12.4	-1.1	10.0	-13.5	11.2	-21.0	23.7
Financials	-1.4	15.2	0.1	19.3	3.5	18.0	-0.1	15.9	2.4	10.4	0.0	22.3	-1.0	18.0
Health Care	-1.4	12.5	0.9	9.2	2.8	13.7	1.7	15.0	-0.8	7.9	-1.5	5.7	-8.6	6.9
Agri Food Bev	-1.6	3.6	-3.4	5.2	-6.8	8.4	-3.1	7.3	2.1	3.5	-6.5	3.1	-16.5	3.7
Transportation	-2.5	3.3	-1.0	6.2	-2.5	0.8	-2.3	5.9	-0.2	11.7	0.3	5.5	-10.2	5.9
Industrials	-3.5	6.9	0.1	10.1	-0.2	12.2	-1.3	13.2	3.1	18.5	1.2	4.9	-7.2	2.9
Real Estate	-3.7	3.2	-4.1	3.1	-1.4	2.3	-5.9	1.1	1.5	4.4	-7.5	4.7	-22.5	3.1
Res & Materials	-5.5	3.8	-6.0	9.5	-10.3	7.6	-4.1	8.4	-5.3	6.5	-6.2	9.6	-14.9	3.7
Energy	-6.2	7.5	-1.9	9.2	-4.0	16.2	-3.8	8.5	3.0	2.0	-0.5	7.4	-1.3	7.2
Market Return	1.7		-1.7		-1.5		-1.8		1.7		-3.2		-13.2	

Regional sector-weighted contributions to QTD returns: Positive contributions from digital information technology and consumer goods and services help drive the superior QTD US return vs Global ex US.

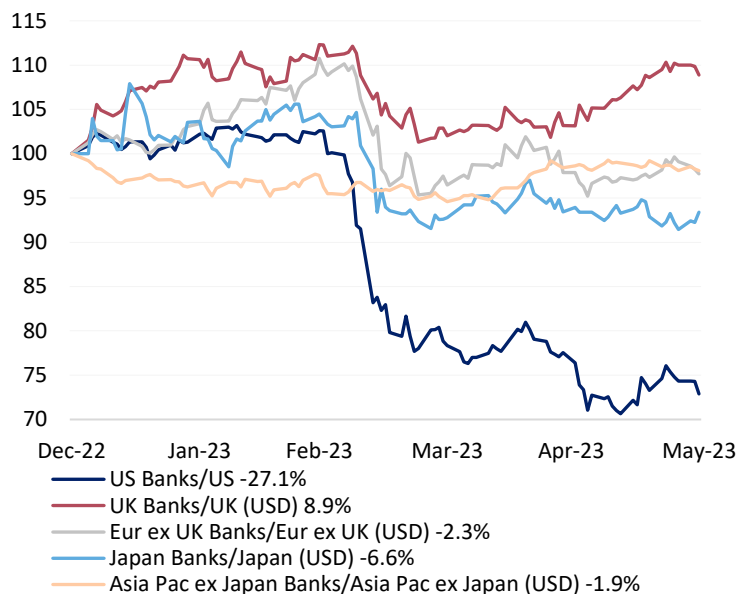
QTD	US	World ex US	UK	EU ex UK	Japan	AP ex Japan	China
							Contr
Digital Info & Svc	1.9	-0.3	-0.3	-0.1	0.3	-0.9	-3.8
Technology	1.3	0.3	0.0	0.0	0.9	0.5	-0.5
Cons Goods & Svc	0.1	-0.7	-0.1	-0.5	-0.1	-1.5	-5.0
Agri Food Bev	-0.1	-0.2	-0.6	-0.2	0.1	-0.2	-0.6
Transportation	-0.1	-0.1	0.0	-0.1	0.0	0.0	-0.6
Real Estate	-0.1	-0.1	0.0	-0.1	0.1	-0.4	-0.7
Health Care	-0.2	0.1	0.4	0.3	-0.1	-0.1	-0.6
Financials	-0.2	0.0	0.6	0.0	0.3	0.0	-0.2
Res & Materials	-0.2	-0.6	-0.8	-0.3	-0.3	-0.6	-0.5
Industrials	-0.2	0.0	0.0	-0.2	0.6	0.1	-0.2
Energy	-0.5	-0.2	-0.6	-0.3	0.1	0.0	-0.1
Market Return	1.7	-1.7	-1.5	-1.8	1.7	-3.2	-13.2

Source: Wilshire. Data as of May 31, 2023

Global perspectives-Regional bank relative performance, regional energy sector returns and drivers of Japanese equity outperformance

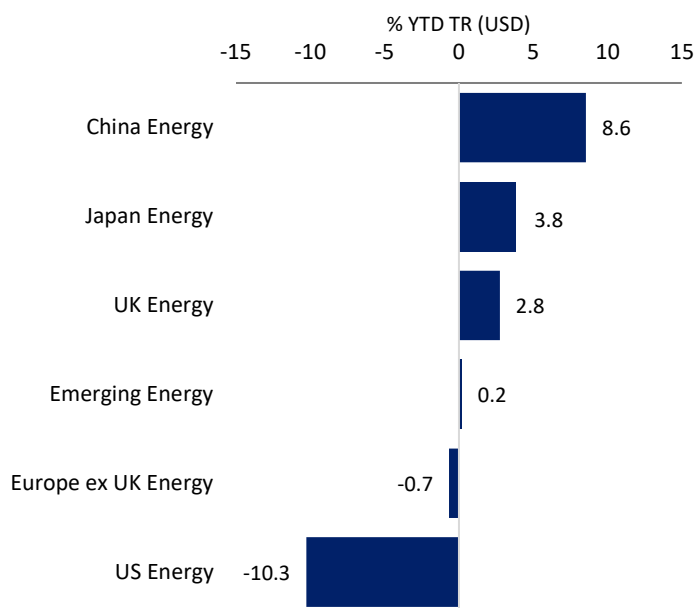
Regional banks relative performance YTD-

Markets have seen any potential global contagion from US bank concerns as limited



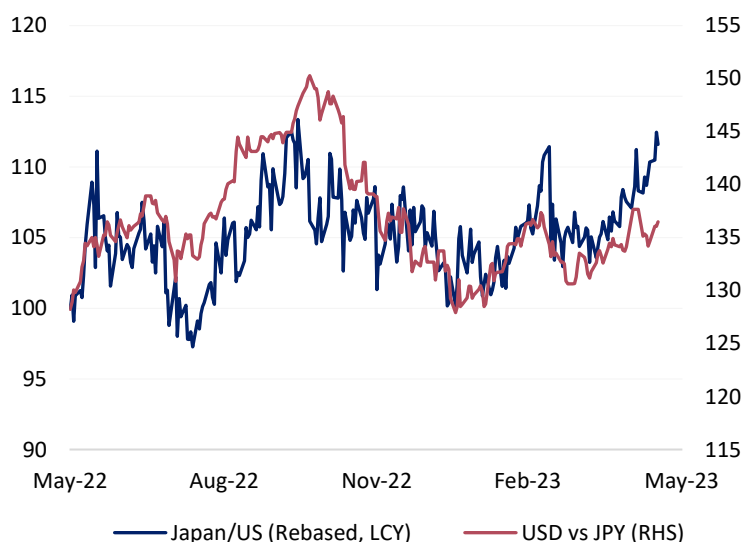
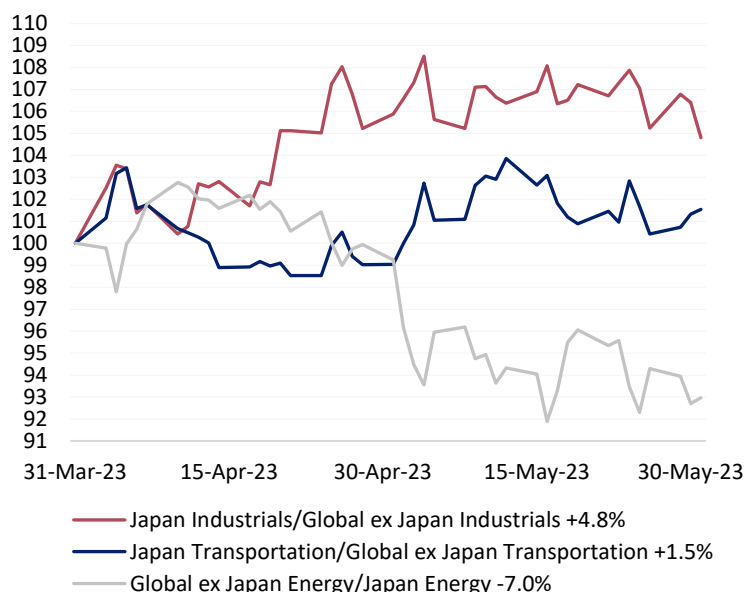
Regional energy sector returns YTD-We have

seen wide dispersion in regional energy sector returns so far in 2023



Japan has seen its two largest overweight sectors (industrials and transport) outperform. Global energy (overweight vs Japan) has underperformed vs Japan

A weaker JPY vs USD has also helped boost Japanese relative performance given Japan's abundance of large export-focused companies



Regional Equities sector performance dispersion-Greater dispersion in sector performance YTD in the US, Asia Pacific ex UK, EM and China

Chart 1: QTD vs YTD-FT Wilshire US, UK, Europe ex UK and Japan sector performance dispersion

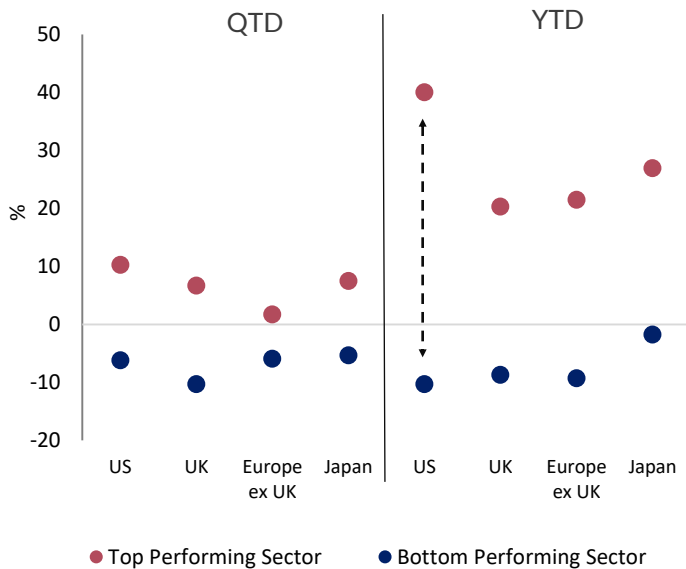


Chart 2: QTD vs YTD-FT Wilshire Asia Pacific ex Japan, Emerging and China sector performance dispersion

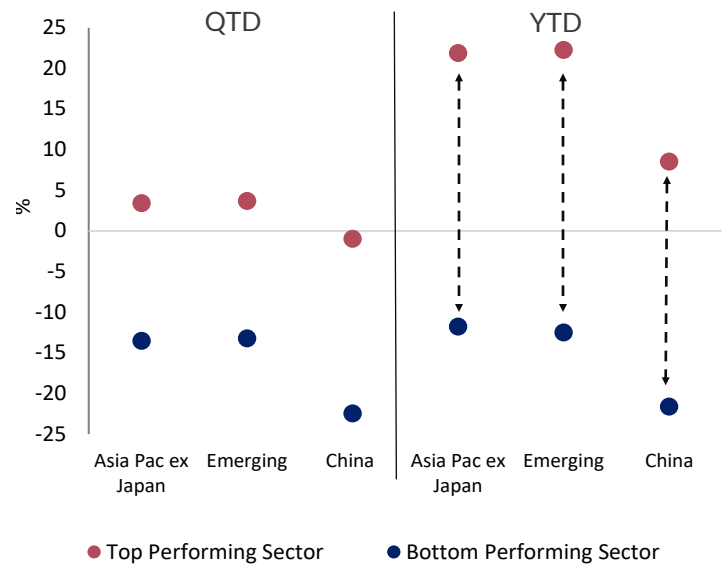


Chart 3: 2023 YTD total return decomposition*-PE re-rating drives returns in the US, UK and Japan

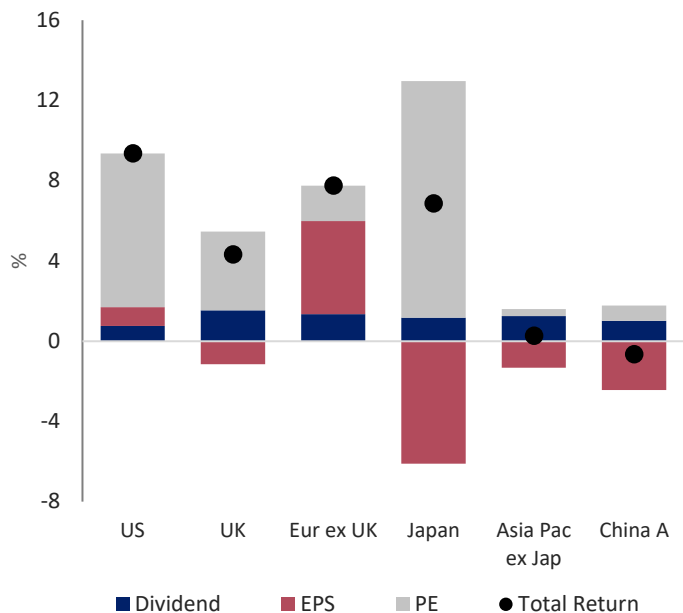
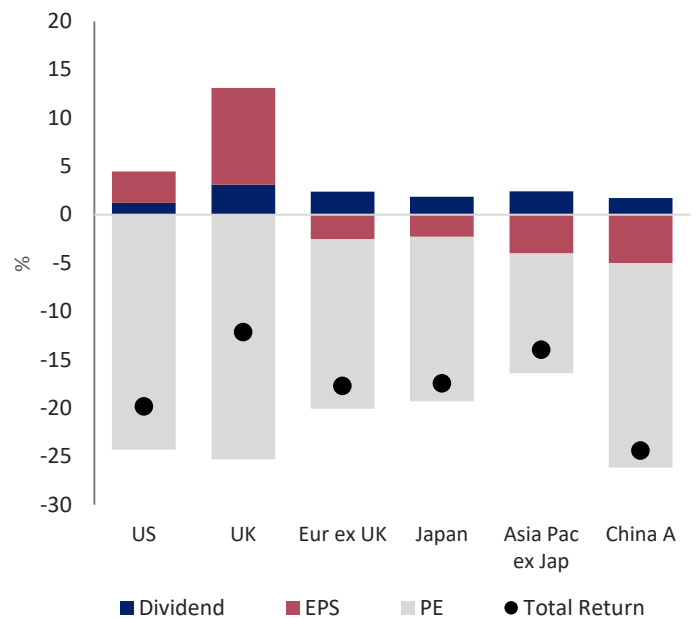


Chart 4: 2022 total return decomposition*-PE de-rating main driver behind market declines



*Based on Refinitiv and Factset data

Technical and sentiment Analysis: Developed relative to emerging continues to show momentum. Japan approaching an overbought signal on a relative RSI ba-

Chart 1: FT Wilshire developed relative to emerging displayed a positive 50DMA vs 200DMA intersect in late April

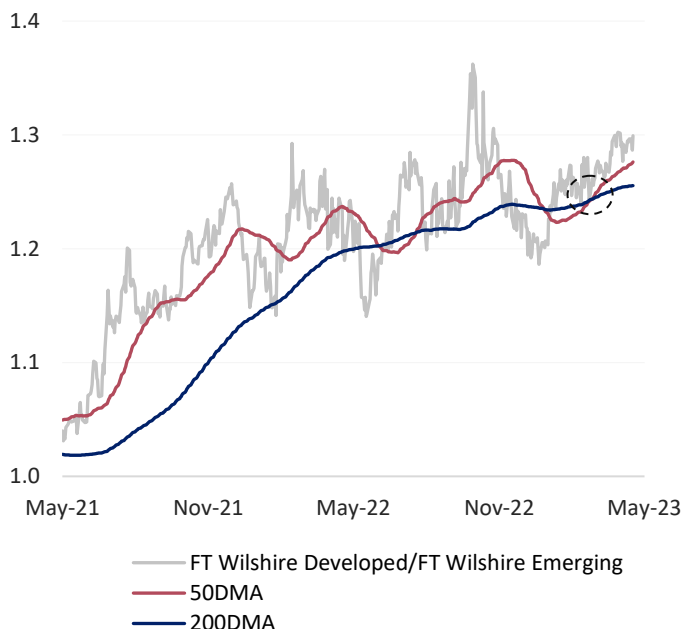


Chart 2: FT Wilshire regional relative RSIs (Relative Strength Index) readings-absolute and relative

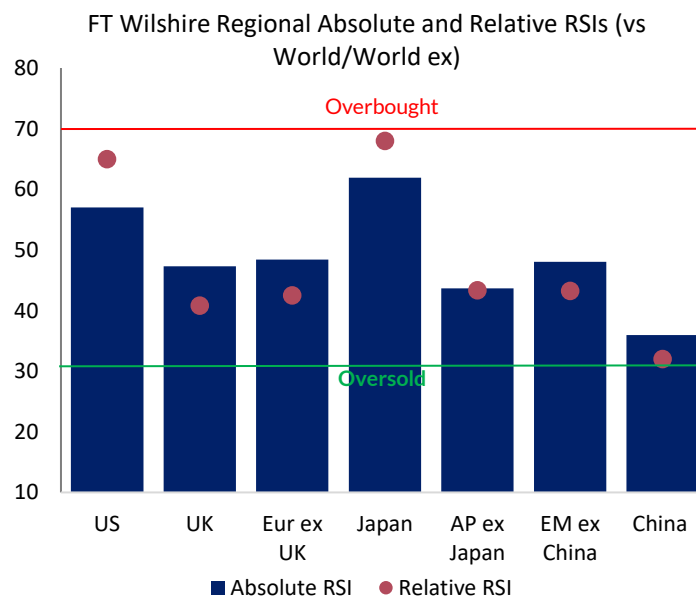


Chart 3: FT Wilshire regional indexes-Positioning of 50 day moving average vs 200 day moving average

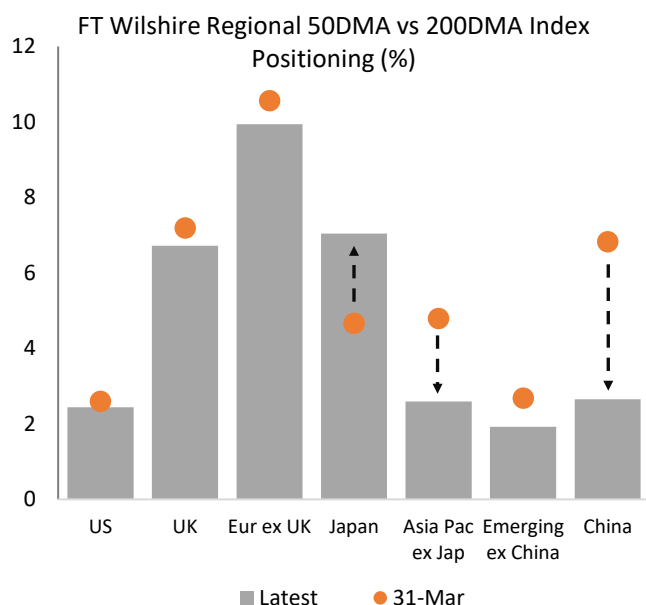
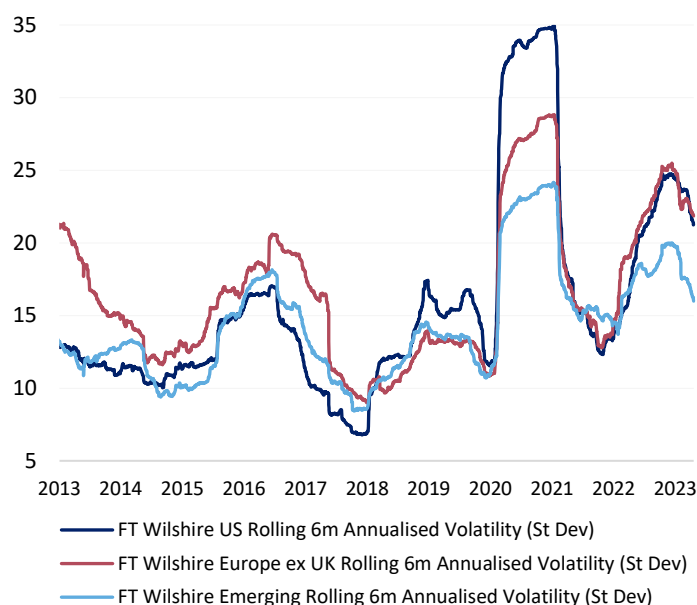


Chart 4: Volatility levels (rolling 6m annualised) in the US, Europe and Emerging markets have continued to decline from their highs in late 2022



Market Capitalization of major markets and Regional sector weighting comparisons

Chart 1: Markets size (USD, Bn) and weights - Top 12 countries

	Latest	% Global Index	10Y Ago	% Global Index
USA	39,494	59.7	17,899	50.8
Japan	3,873	5.9	2,717	7.7
UK	2,521	3.8	2,750	7.8
Canada	2,052	3.1	1,480	4.2
China	1,881	2.8	651	1.8
Switzerland	1,738	2.6	1,148	3.3
France	1,732	2.6	1,159	3.3
India	1,336	2.0	457	1.3
Australia	1,291	2.0	1,135	3.2
Taiwan	1,286	1.9	516	1.5
Germany	1,274	1.9	1,103	3.1
Korea	943	1.4	622	1.8
Global	66,106		35,249	

Chart 2: Markets size (USD, Bn) and weights - Regions as % of Global Index

	Latest	% Global Index	10Y Ago	% Global Index
Developed	58,530	88.5	30,810	87.4
USA	39,494	59.7	16,422	46.6
Europe ex UK	8,447	12.8	6,107	17.3
Asia Pacific ex Japan	8,078	12.2	4,920	14.0
Emerging	7,576	11.5	4,439	12.6
Japan	3,873	5.9	2,698	7.7
UK	2,521	3.8	2,320	6.6
China	1,881	2.8	617	1.7
Global	66,106		35,249	

Chart 3: Markets size (USD, Bn) and weights - Developed and Emerging markets

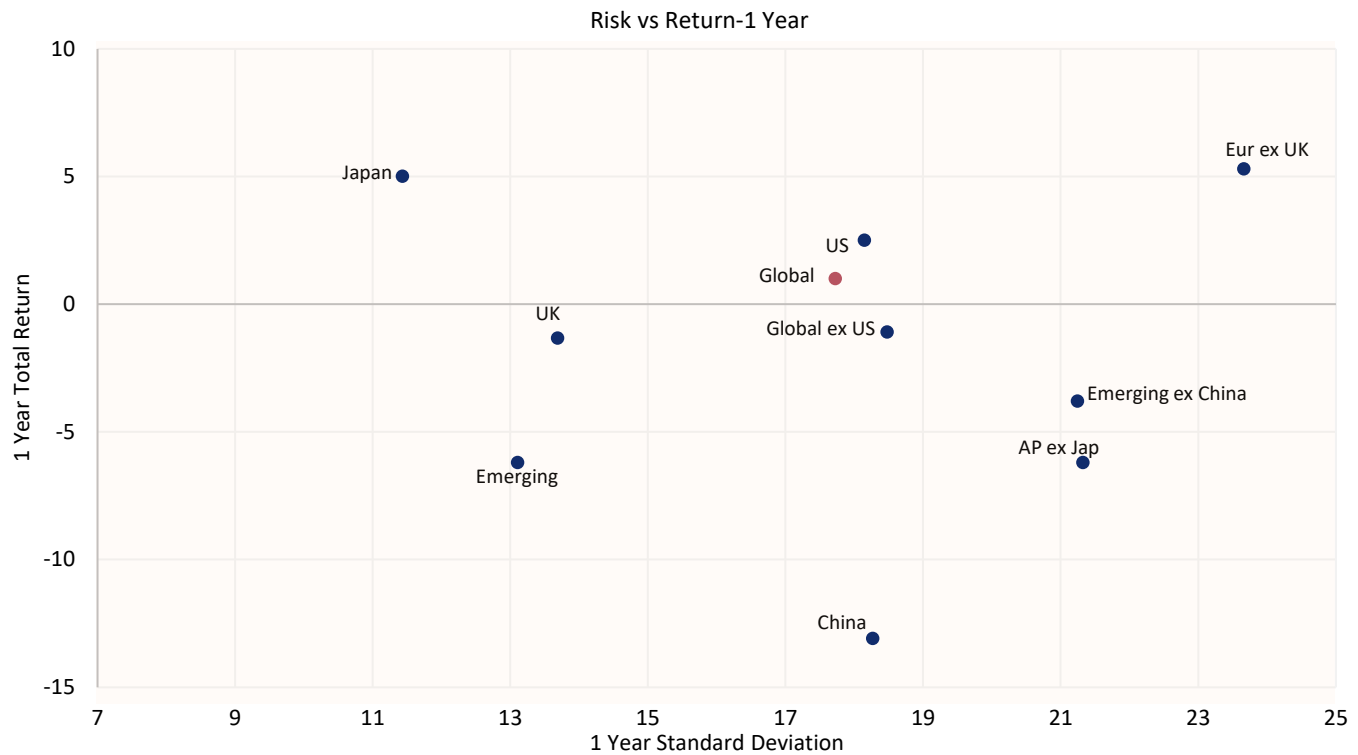
Developed	Latest	% Developed	10Y Ago	% Developed
USA	39,494	67.5	17,899	58.1
Japan	3,873	6.6	2,717	8.8
UK	2,521	4.3	2,750	8.9
Canada	2,052	3.5	1,480	4.8
Switzerland	1,738	3.0	1,148	3.7
Developed	49,679		17,899	

Emerging	Latest	% Emerging	10Y Ago	% Emerging
China	1,881	24.8	651	14.7
India	1,336	17.6	457	10.3
Taiwan	1,286	17.0	516	11.6
Korea	943	12.4	622	14.0
Brazil	363	4.8	489	11.0
Emerging	5,809		2,734	

Chart 4: Markets size (USD, Bn) - US vs Global ex US sectors

	US		Global ex US	
	Latest	%	Latest	%
Sector				
Digital Info	7,653	19.3	2,450	9.0
Technology	6,072	15.3	2,311	8.5
Financials	5,860	14.8	5,230	19.3
Cons Goods & Sv	4,708	11.9	3,046	11.2
Health Care	4,696	11.8	2,474	9.1
Energy	2,751	6.9	2,464	9.1
Industrials	2,679	6.7	2,756	10.2
Res & Materials	1,431	3.6	2,490	9.2
Agriculture	1,354	3.4	1,389	5.1
Transportation	1,326	3.3	1,686	6.2
	38,531		26,296	

Risk vs Return: FT Wilshire Global Equity Market Series (GEMS)



Source: Refinitiv. Data as of May 31, 2023

Fixed Income and FX

1

25bps

Rise in US 10-year yield
in May

2

53bps

Rise in UK 10-year yield
in May

3

+2.6%

Rise in DXY dollar index in
May

4

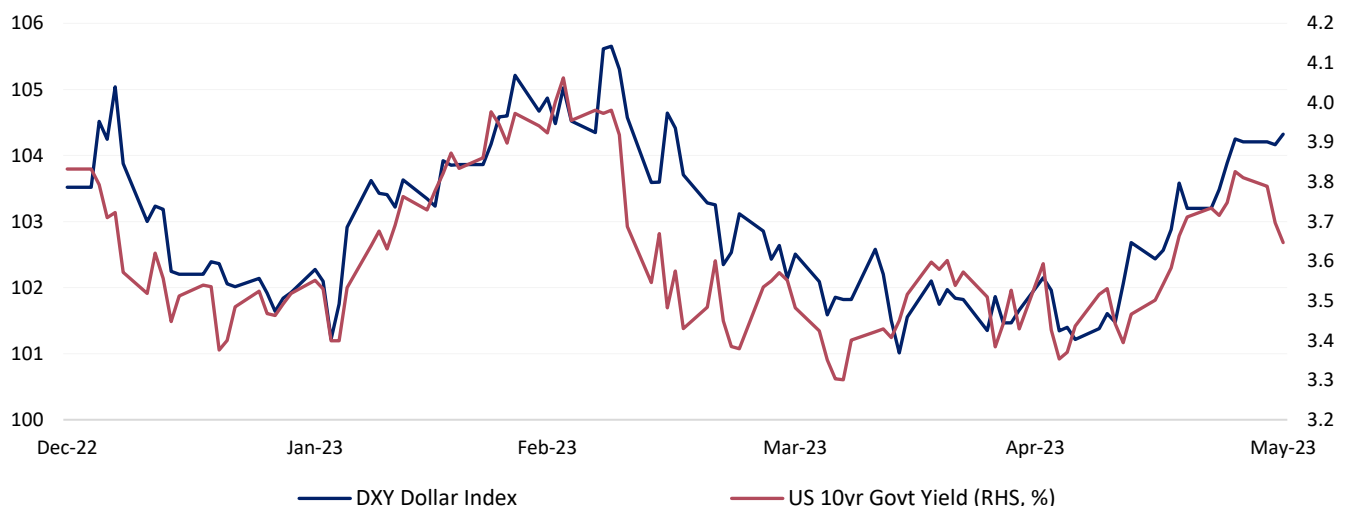
-5.2%

Decline in JPY vs USD in
May

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- 29 Fixed income performance
- 30 Fixed income market commentary
- 31 Foreign exchange - REER, key spot rates
- 32 Regional spot rate returns

DXY dollar index vs US 10 year government bond yield: The 10yr yield initially rose in May in response to debt ceiling concerns. The dollar has risen on the back of a renewed rise in US market interest rate expectations



Source: Refinitiv. Data as of May 31, 2023

Regional fixed income performance summary: Government bonds, Inflation linked and Corporates

Chart 1: 1-3 year government bond returns

USD (TR, %)	QTD	2022
US (1-3yr)	-0.5	-3.7
Can (1-3yr)	-1.3	-8.9
UK (1-3yr)	-1.5	-14.0
Italy (1-3yr)	-1.5	-10.1
EURO* (1-3yr)	-1.5	-10.5
China (1-3yr)	-1.9	-6.0
Aus (1-3yr)	-3.6	-9.1
Japan (1-3yr)	-5.3	-13.0

Chart 2: 7-10 year government bond returns

USD (TR, %)	QTD	2022
China (3-5yr)	-1.5	-5.9
US (7-10yr)	-2.0	-14.7
EURO* (7-10yr)	-2.8	-23.6
Italy (7-10yr)	-3.0	-24.6
Can (7-10yr)	-3.9	-17.6
Japan (7-10yr)	-5.4	-15.6
Aus (7-10yr)	-5.5	-19.9
UK (7-10yr)	-5.8	-26.4

Chart 3: Inflation Linked bond returns

USD (TR, %)	QTD	2022
EURO* IL (5-10yr)	-1.8	-14.8
Italy IL (All)	-2.0	-14.4
US IL (5-10yr)	-2.3	-11.8
Can IL (All)	-2.3	-19.8
Japan* IL (5-10yr)	-3.7	-9.9
Aus IL (All)	-4.1	-17.4
UK IL (5-10yr)	-6.9	-25.0

Chart 4: Investment grade & high yield returns

USD (TR, %)	QTD	2022
UK HY (All)	0.2	-21.0
US HY (All)	-0.3	-11.2
EURO HY (All)	-0.6	-16.9
US IG (All)	-1.6	-15.5
EURO IG (All)	-1.7	-19.2
UK IG (All)	-3.5	-28.9
Japan BBB (All)	-5.0	-14.8
Japan IG (All)	-5.0	-14.9

Fixed Income key observations: US yields rise in response to US debt ceiling brinkmanship. UK 10-year yield back to Q42022 'mini budget trauma' levels

Chart 1: The US 10 year yield rose in May in response to debt ceiling concerns. The UK 10 year is now back to the 'mini budget' highs reached in October 2022.

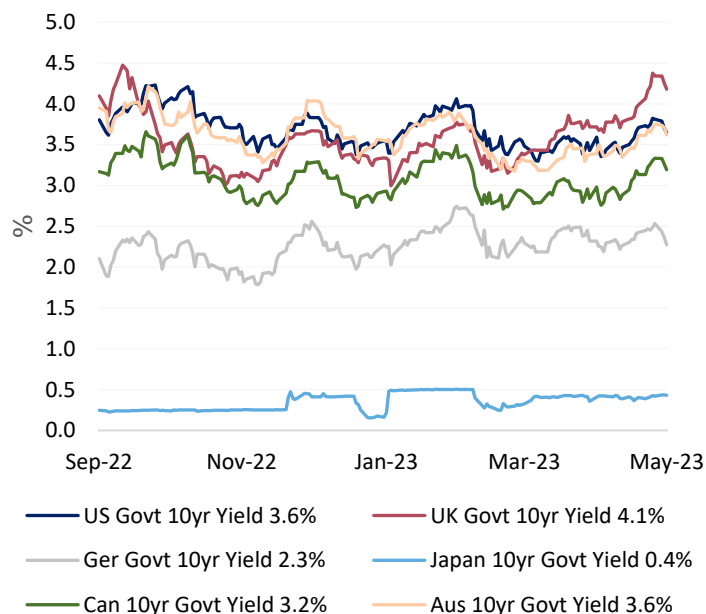


Chart 2: US 10-2yr curve inverted further in May as 2 year yields rose 44bps vs a rise of 25bps in the 10 year yield



Chart 3: The rise in US and UK 10 year yields in May was driven predominately by real yields increasing

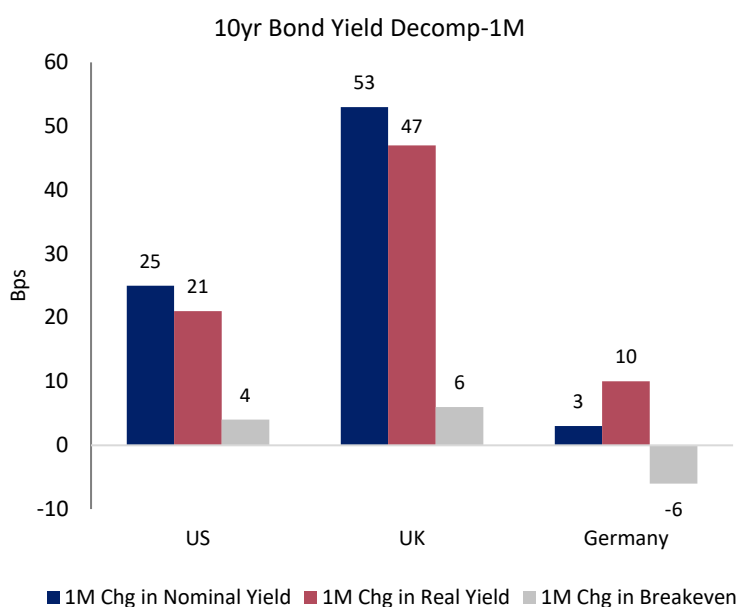
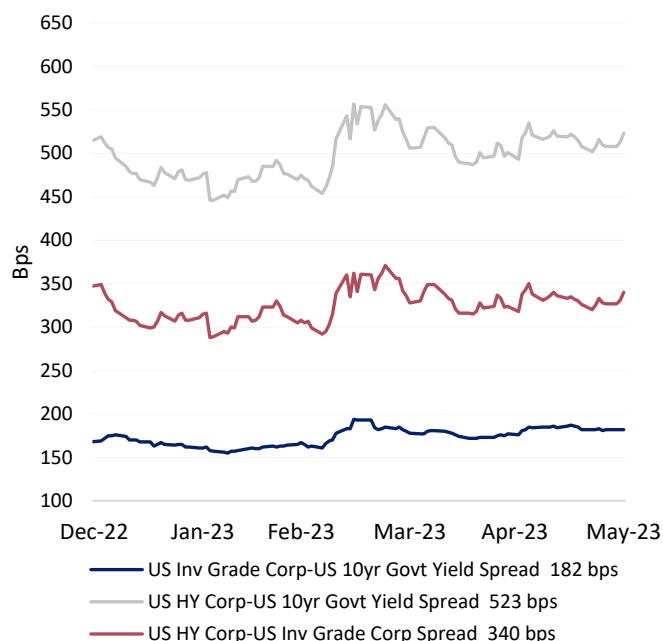


Chart 4: The debt ceiling brinkmanship has had very little impact on US corporate spreads in recent weeks



FX return perspectives: The DXY dollar index rebounds in May driven by a rise in US market interest rate expectations.

Chart 1: In May the DXY Dollar Index saw its largest monthly increase since September 2022

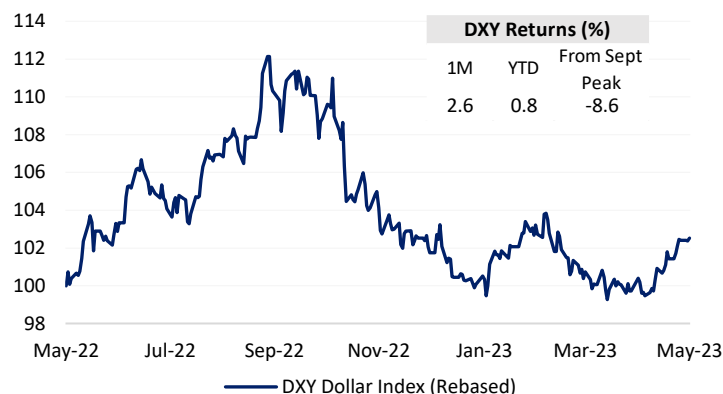


Chart 2: Long term view of the DXY Dollar Index

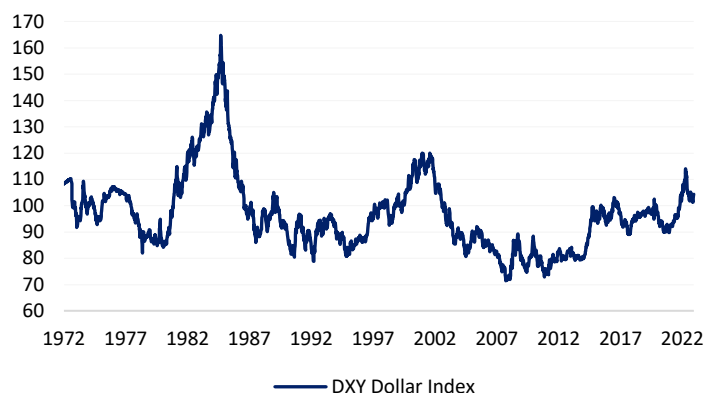


Chart 3: Regional Real Effective Exchange Rate returns-12 months (rebased)

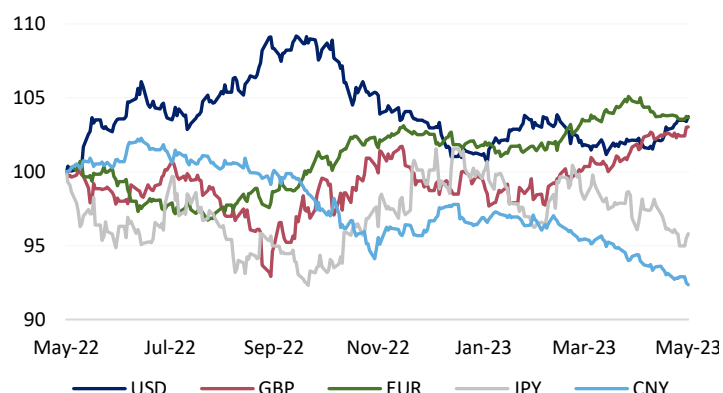


Chart 4: Regional Real Effective Exchange Rate returns over 10 years (rebased)

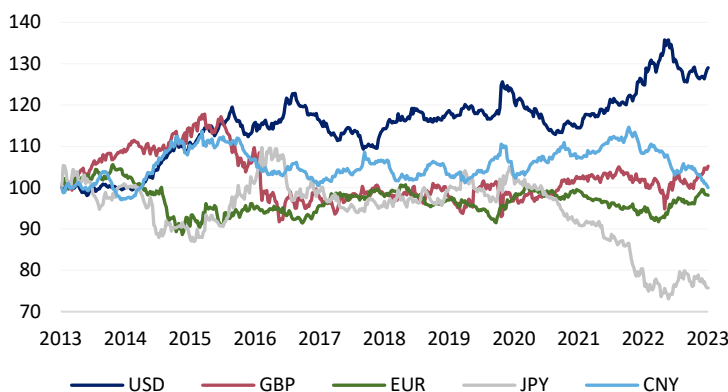


Chart 5: USD returns vs JPY, Euro, GBP and Renminbi spot rate-12 months (rebased)

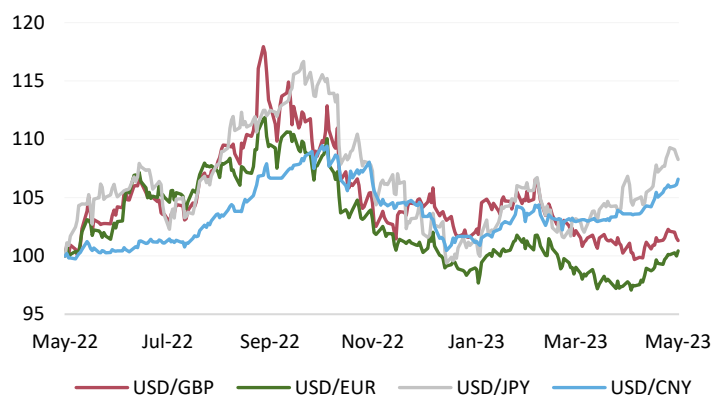


Chart 6: USD returns vs JPY, Euro, GBP and Renminbi spot rate returns over 10 years (rebased)



FX spot rate returns from a regional perspective

The dollar regained some ground in May appreciating against all major currencies, most notably the Yen. Weakness in the Yen has continued largely driven by interest rate differentials between Japan and other regions

Moves vs USD (TR, %)	1M	QTD	YTD	12M
CAD	-0.2	-0.4	-0.2	-6.8
GBP	-1.0	0.8	2.8	-1.3
AUD	-1.6	-2.7	-4.6	-9.4
CHF	-1.8	0.5	1.5	5.4
CNY	-2.2	-3.0	-1.7	-6.0
EUR	-3.0	-1.4	-0.1	-0.4
JPY	-4.2	-4.5	-5.2	-8.3

Moves vs GBP (TR, %)	1M	QTD	YTD	12M
USD	1.0	-0.8	-2.8	1.3
CAD	0.8	-1.3	-2.9	-5.6
AUD	-0.7	-3.6	-7.4	-8.3
CHF	-1.3	-0.3	-1.8	6.6
CNY	-1.6	-3.2	-4.5	-4.2
EUR	-2.1	-2.1	-3.1	1.2
JPY	-3.4	-4.6	-7.8	-6.8

Moves vs EUR (TR, %)	1M	QTD	YTD	12M
USD	3.0	1.4	0.1	0.4
CAD	2.9	1.0	0.0	-6.4
GBP	2.1	2.2	3.1	-1.2
AUD	1.4	-1.5	-4.5	-9.4
CHF	0.8	1.8	1.3	5.4
CNY	0.7	-1.5	-2.8	-5.6
JPY	-1.5	-2.9	-5.6	-8.2

Moves vs JPY (TR, %)	1M	QTD	YTD	12M
USD	4.2	4.5	5.2	8.3
GBP	3.4	4.6	7.8	6.8
CHF	2.8	5.6	7.4	15.6
AUD	2.4	1.5	1.7	-1.0
CAD	2.1	4.5	6.1	0.9
EUR	1.5	2.9	5.6	8.2
CNY	-0.6	1.3	3.1	1.6

Moves vs CNY (TR, %)	1M	QTD	YTD	12M
USD	2.2	3.0	1.7	6.0
GBP	1.6	3.3	4.7	4.4
AUD	0.7	0.0	-1.5	-3.7
JPY	0.6	-1.3	-3.1	-1.6
CHF	0.1	3.4	4.3	11.8
EUR	-0.7	1.6	2.9	6.0
CAD	-2.7	-3.0	-2.8	0.7

Moves vs CHF (TR, %)	1M	QTD	YTD	12M
USD	1.8	-0.5	-1.5	-5.4
CAD	1.7	0.0	-1.7	-11.6
GBP	1.3	0.3	1.8	-6.6
CNY	-0.1	-3.4	-4.3	-11.8
EUR	-0.8	-1.8	-1.3	-5.4
JPY	-2.8	-5.6	-7.4	-15.6

Moves vs AUD (TR, %)	1M	QTD	YTD	12M
USD	1.6	2.7	4.6	9.4
CAD	1.6	2.4	4.6	2.8
GBP	0.7	3.6	7.4	8.3
CNY	-0.7	0.0	1.5	3.7
EUR	-1.4	1.5	4.5	9.4
JPY	-2.4	-1.5	-1.7	1.0

Trade Weighted (TR, %)	1M	QTD	YTD	12M
DXY	2.6	1.8	0.8	2.5
AUD	0.9	-0.2	-2.3	-5.4
GBP	0.9	1.4	3.2	0.3
EUR	-1.0	-0.3	0.4	1.6
CNY	-1.2	-1.4	-1.5	-2.6
JPY	-1.8	-3.5	-4.9	-5.3

Source: Refinitiv. Data as of May 31, 2023

Alternatives: Commodity, digital asset, REITS and absolute return asset categories

1

-13.9%

Decline in Industrial Metals prices QTD

2

+7.1%

YTD rise in gold price

3

+4.8%

Return of the Wilshire US Industrial REITS YTD

4

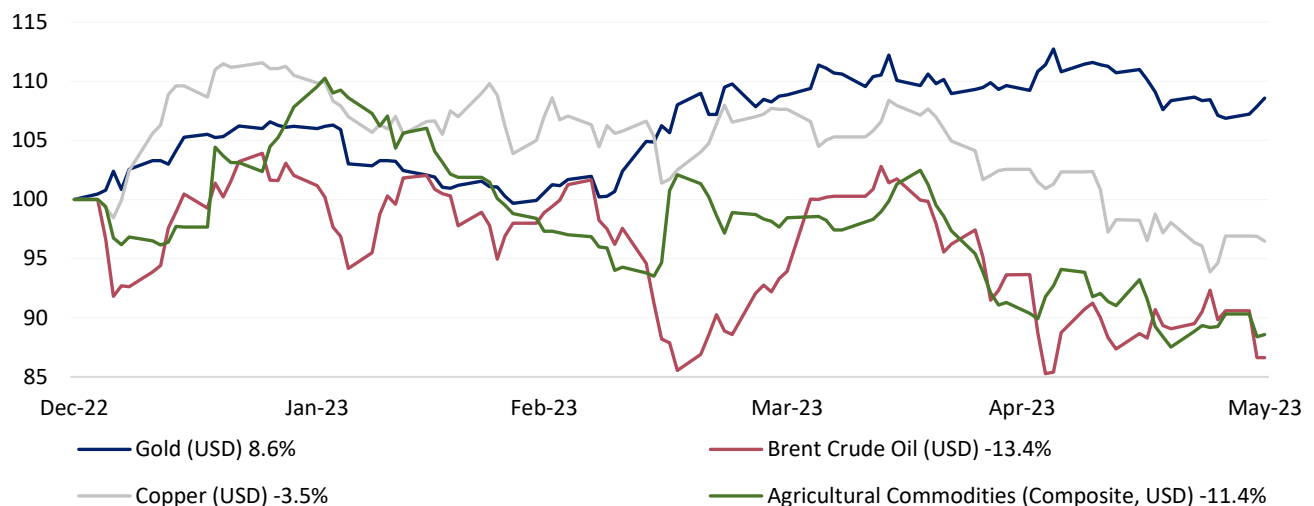
+58.3%

Rise in the FT Wilshire Digital assets index in YTD

CONTENTS

- 34 Commodities
- 35 Property (Wilshire REIT indexes)
- 36 Absolute Return (Wilshire Liquid Alt)
- 37 Digital Assets
- 38 Risk/return analysis

Commodity prices (rebased): Year to date movements in gold, copper, oil and agricultural commodities



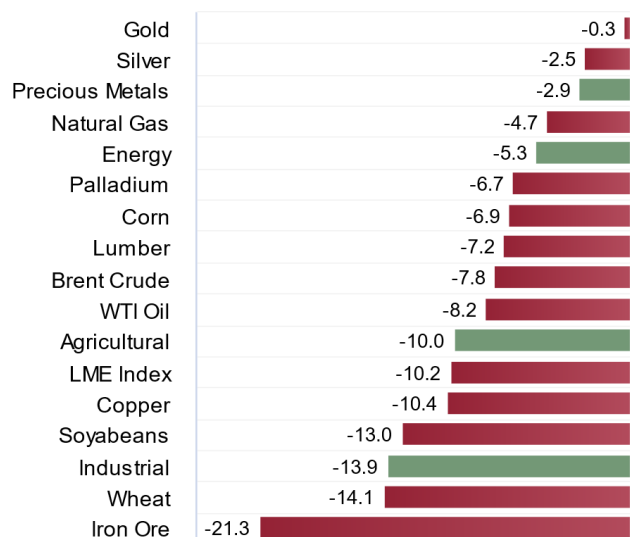
Source: Wilshire and Refinitiv. Data as of May 31, 2023

Wilshire Advisors LLC - Performance Report (May 2023)

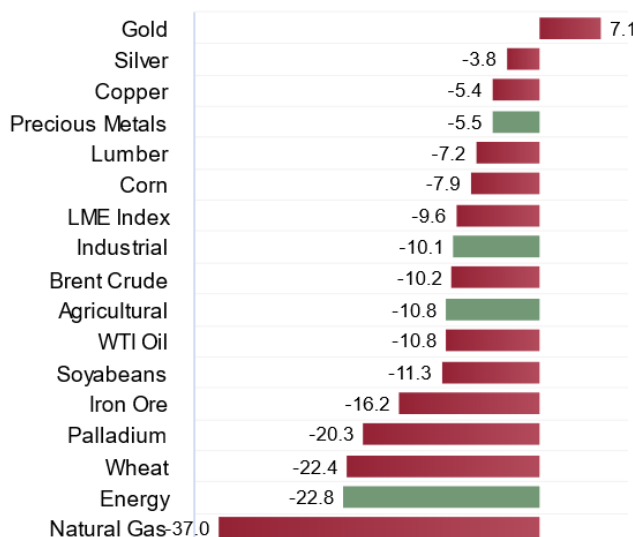
Commodities: Global growth concerns drives continued weakness in economically-sensitive commodities. Gold remains standout performer YTD

Commodity prices have continued to decline on weaker demand from China and wider global growth concerns. Iron ore prices have seen large double-digit declines in the second quarter so far. Gold has lost some momentum since early April on the back of a pick up in real yields but remains the standout performer year to date.

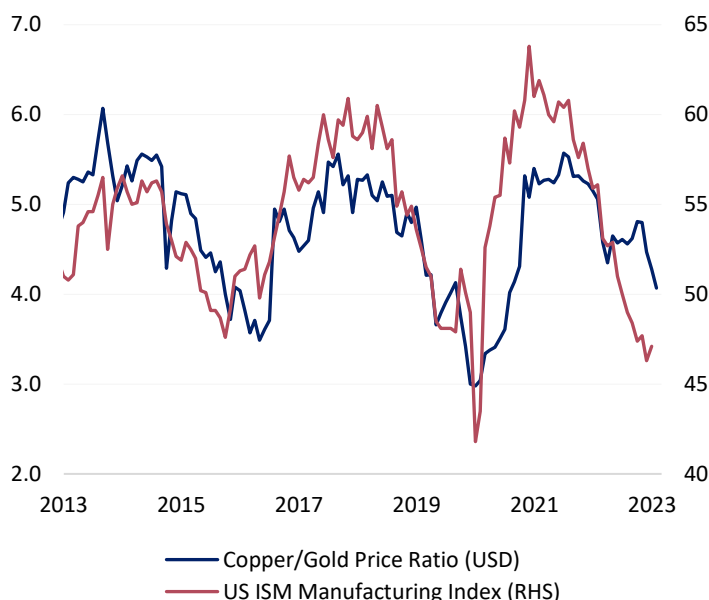
QTD US (TR, %)



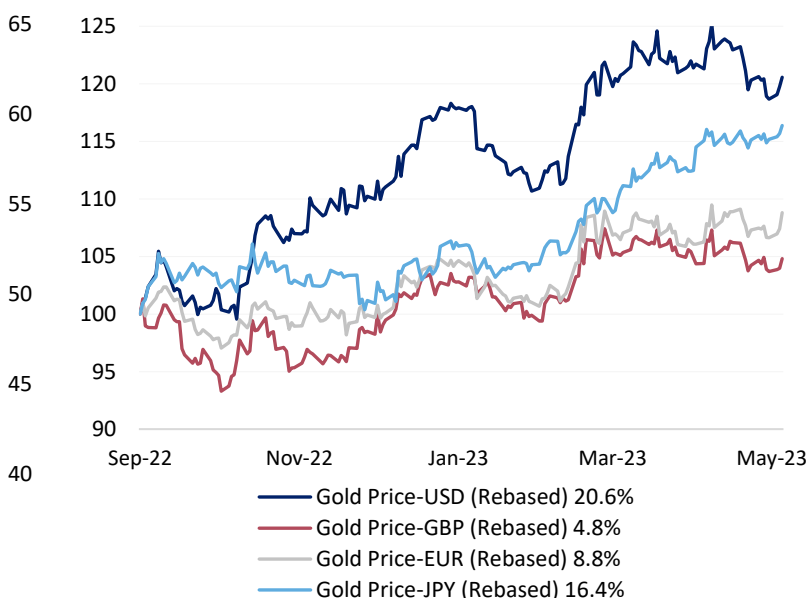
YTD USD (TR, %)



The copper/gold price ratio responds to shifts in the US ISM manufacturing index



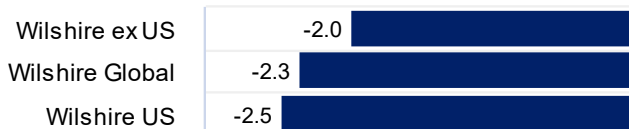
Gold price move adjusted for different FX impact since dollar peak on 27 September 2022



Property (Wilshire REIT indexes): US Office REITS see further declines. US REITS still outperforming non-US REITS year to date.

US Manufactured homes and apartment REITS have posted small positive returns so far in the second quarter. Industrial REITS have pulled back but have still seen double-digit returns YTD. Office REITS have seen further declines in recent months and have substantially underperformed YTD.

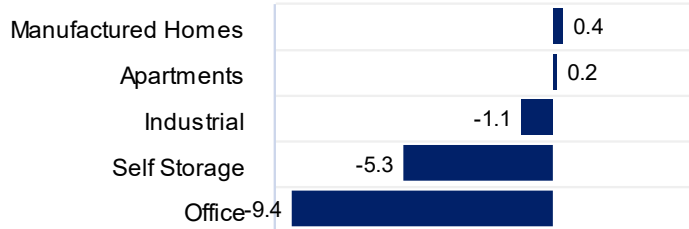
QTD US (TR, %)



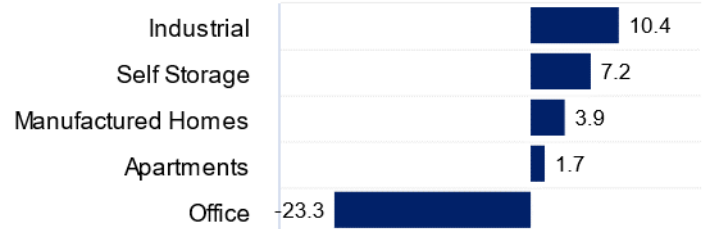
YTD USD (TR, %)



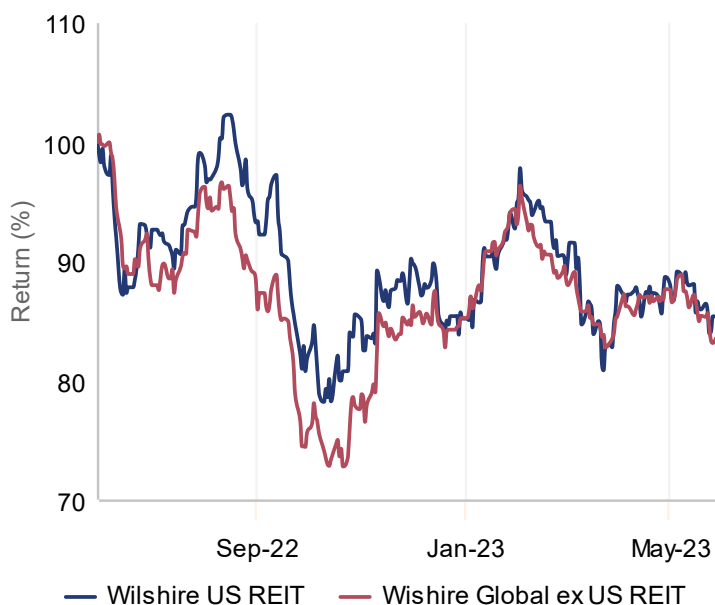
QTD US (TR, %)



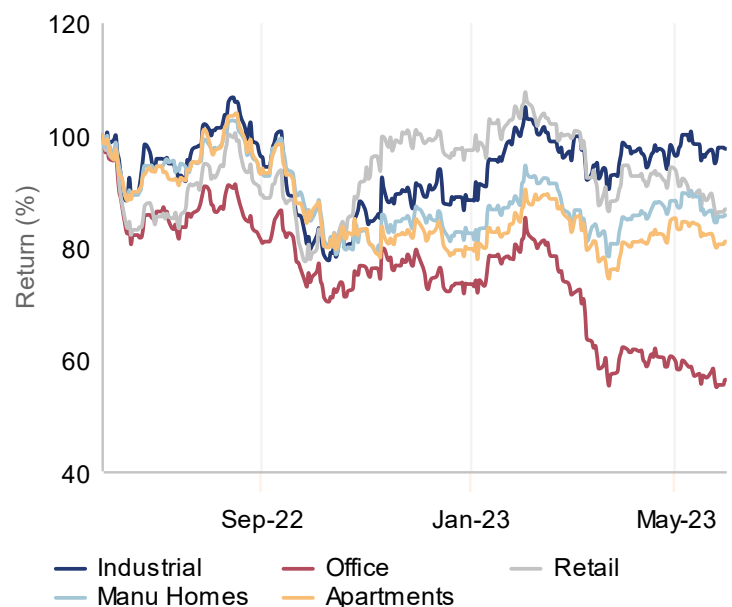
YTD USD (TR, %)



Wilshire US REIT vs Global ex US REIT - 12M
(Rebased, TR)



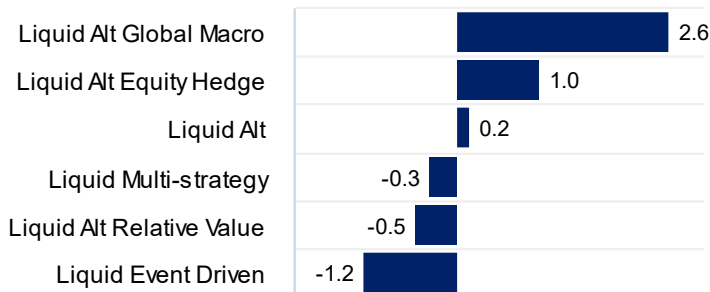
Wilshire US REIT sector performance - 12M
(Rebased, TR)



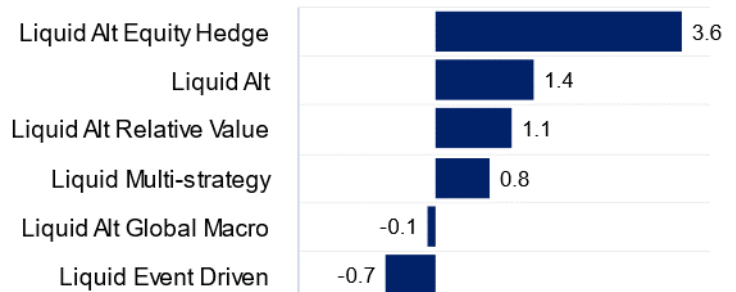
Wilshire Liquid Alternative Indexes (Absolute Return): Global macro outperforms QTD. Event driven remains the laggard.

Global macro and equity hedge have posted small gains for the quarter so far. Equity hedge remains the standout performer YTD amongst the Wilshire Liquid Alternative indexes. Event driven remains the laggard YTD.

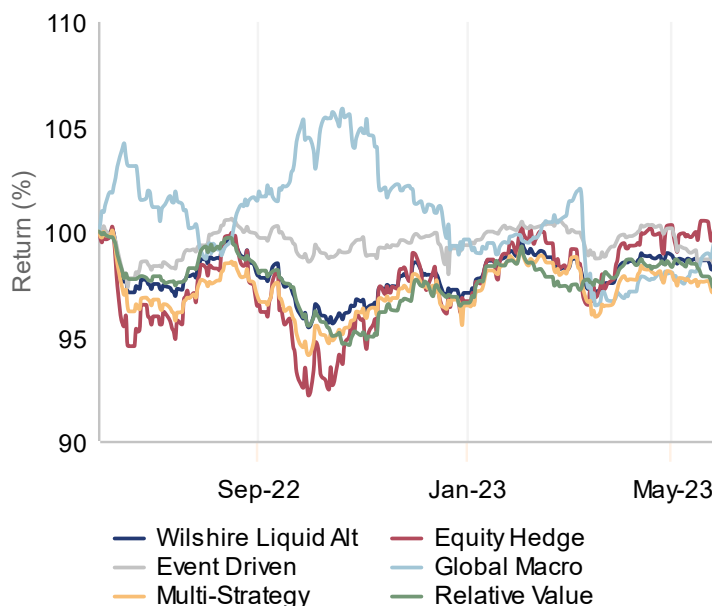
QTD US (TR, %)



YTD USD (TR, %)



Wilshire Liquid Alternative Index performance - total returns (rebased)

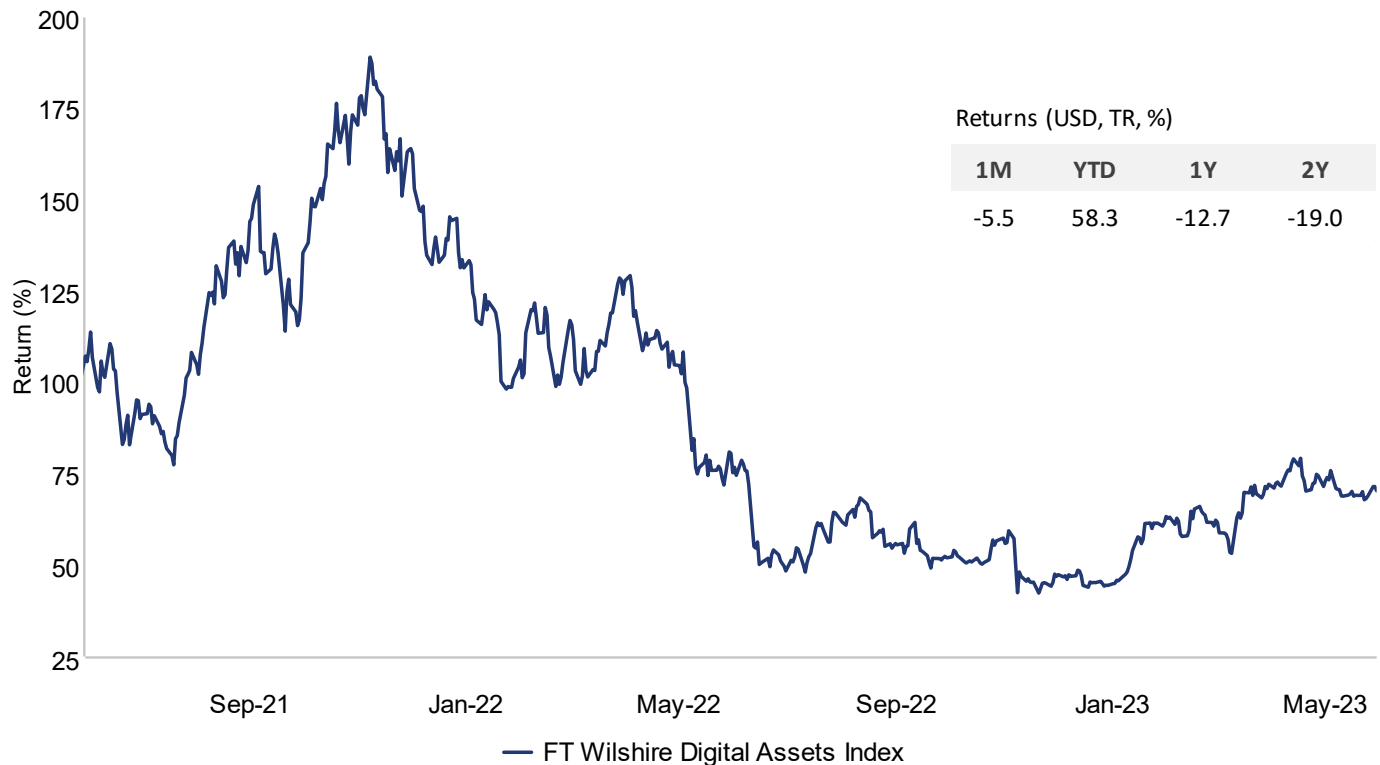


Wilshire Liquid Alternative Index relative performance vs FT Wilshire 5000 Index - total returns (rebased)

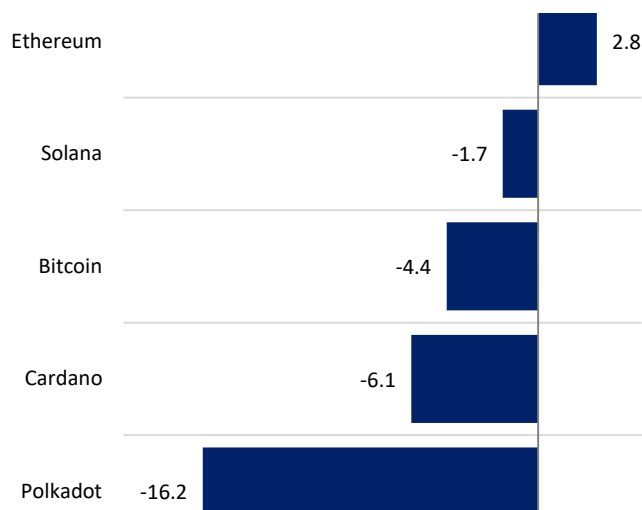


Digital Assets Index—lost some momentum in May but is still up substantially YTD

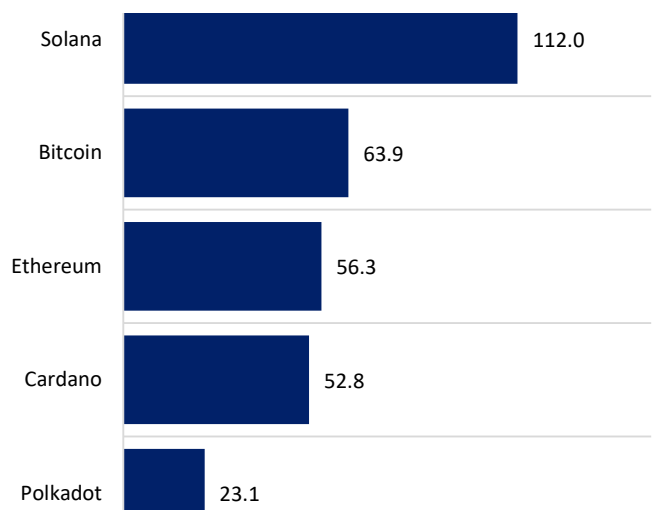
The FT Wilshire Digital Assets Index lost some momentum in May, declining –5.5%. The index is still up 58.3% in 2023 so far.



FT Wilshire Top 5 Digital Assets Index constituent performance - 1M (% ,USD)

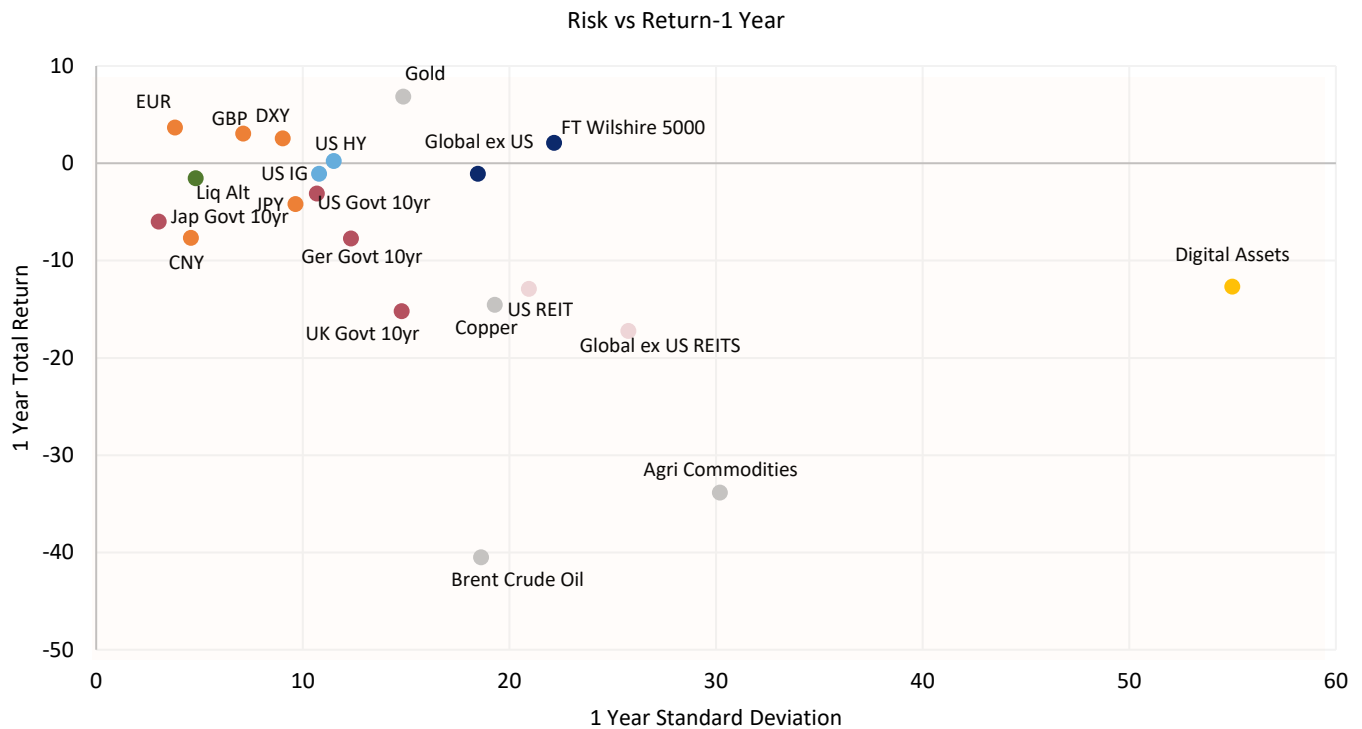


FT Wilshire Top 5 Digital Assets Index constituent performance - YTD 2023 (% ,USD)

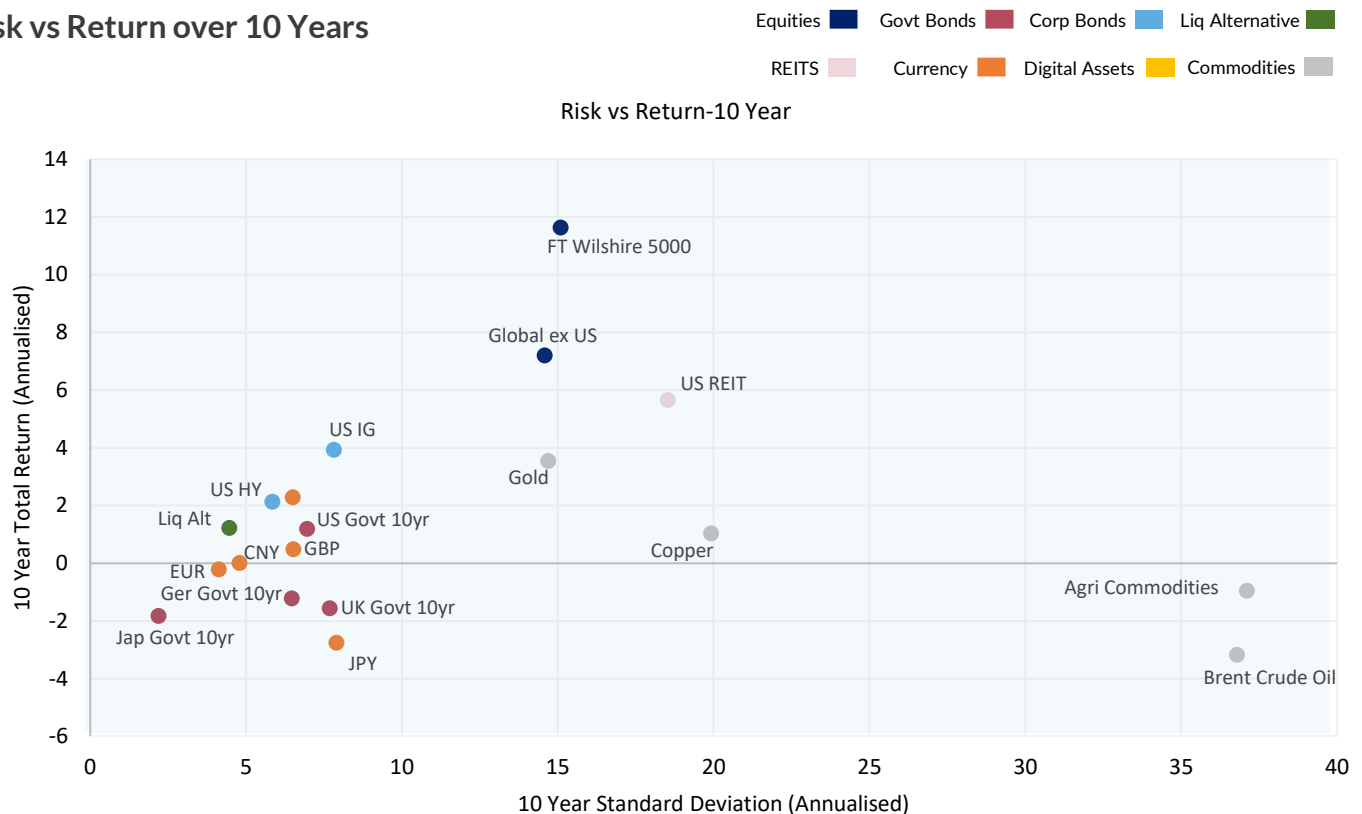


Multi Asset Class: Risk vs Return

Risk vs Return over 1 Year



Risk vs Return over 10 Years



Source: Wilshire, FactSet. Data as of May 31, 2023

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