

Market Maps

Monthly Performance Report



June 1, 2022 (Local Currency Edition)

For professional investors only

Risk-asset stresses persist in May as recession worries flare

Equities and corporate bonds continued to struggle in May as investors assessed the likely impact of high inflation, the Ukraine war, slowing Chinese growth and central bank tightening on global growth and profits. Amid extreme risk-on/risk-off swings, rallies in the US dollar and gold lost steam. Commodity-backed and Value stocks continued to outperform.

Global Asset Classes – Risk-off mood pervades markets

Equity and corporate bond markets ended May with small losses or gains; oil surged along with new bans on Russian crude imports, but copper and gold prices continued to fall. (page 3)

Global Equity Markets – Stocks end turbulent month roughly flat

Europe, Emerging and Asia Pacific indices posted small declines in May, lagging the FTSE All-World and the modest increases in the UK and Japan. (page 4)

Industry Performance – Commodity-fueled stocks remain top performers

Energy, materials & telecoms broadly gained, while discretionary, staples, tech and real estate lagged in most markets. (page 5)

Alternative Indices – FTSE4Good and Infrastructure extend gains

The FTSE4Good and Infrastructure indices continued their winning streaks in most markets in May, while the rally in REITs lost steam. Environmental Opportunities rebounded in most markets, led by Asia ex Japan. (page 8)

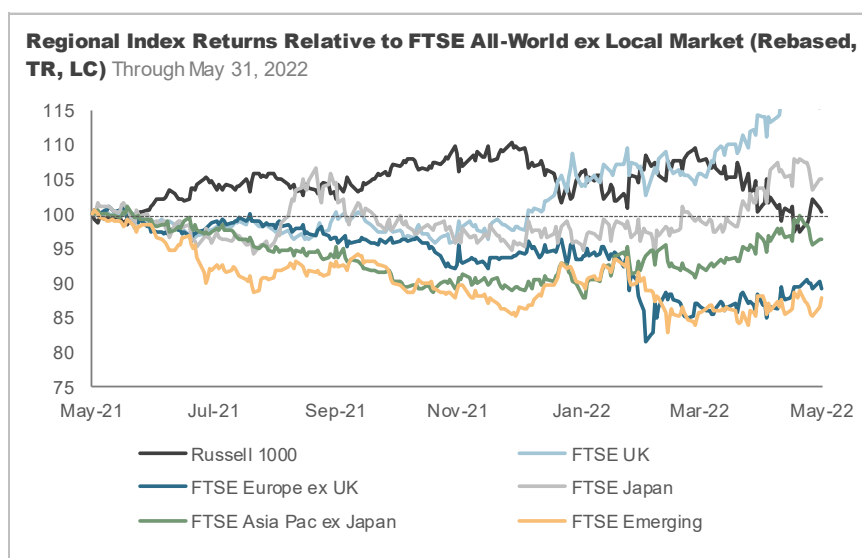
Regional Factors – Value rotation gains traction

The global rotation into Value that began last fall continued into May, mostly at the expense of Low Vol and Momentum. (page 9)

Foreign Exchange – US dollar rally fades

The US dollar lost ground in May, particularly vs the yen, euro and sterling, as yield differentials narrowed. (page 10)

Appendix - Asset Class Risk/Returns (1-Year and 5-Year Annualised), Correlation, Regional Performance and Country Exposures.



-0.2%

Russell 1000 (TR)
May 2022

+0.2%

Russell 2000 (TR)
May 2022

+13%

Move in Oil Price
May 2022

-13 bps

Move in 10yr
US Treasury Yield
May 2022

+15.1%

FTSE USA
Energy (TR)
May 2022

-5.3%

FTSE USA
Consumer Discretionary
(TR) May 2022

Source: FTSE Russell and Refinitiv. Data as of May 31, 2022. Past performance is no guarantee of future results. Please see the end for important legal disclosures.

Market Overview – May 2022

Highlights

Equity and bond markets remained volatile in May as investors sized up the potential economic fallout from multi-decade high inflation and increasingly aggressive central-bank efforts to tame it. This, and the ongoing supply shocks resulting from the Ukraine war and zero-Covid policies in China, stoked recession fears and bouts of extreme risk-off sentiment.

The 10-year US Treasury yield breached the 3% level in early May following the Fed's first rate hike since December 2018, before easing back by month-end. The pull-back coincide with a sharp downturn in market inflation expectations, implying confidence the Fed can bring prices under control, and nascent signs that tighter global financial conditions were starting to take an economic toll.

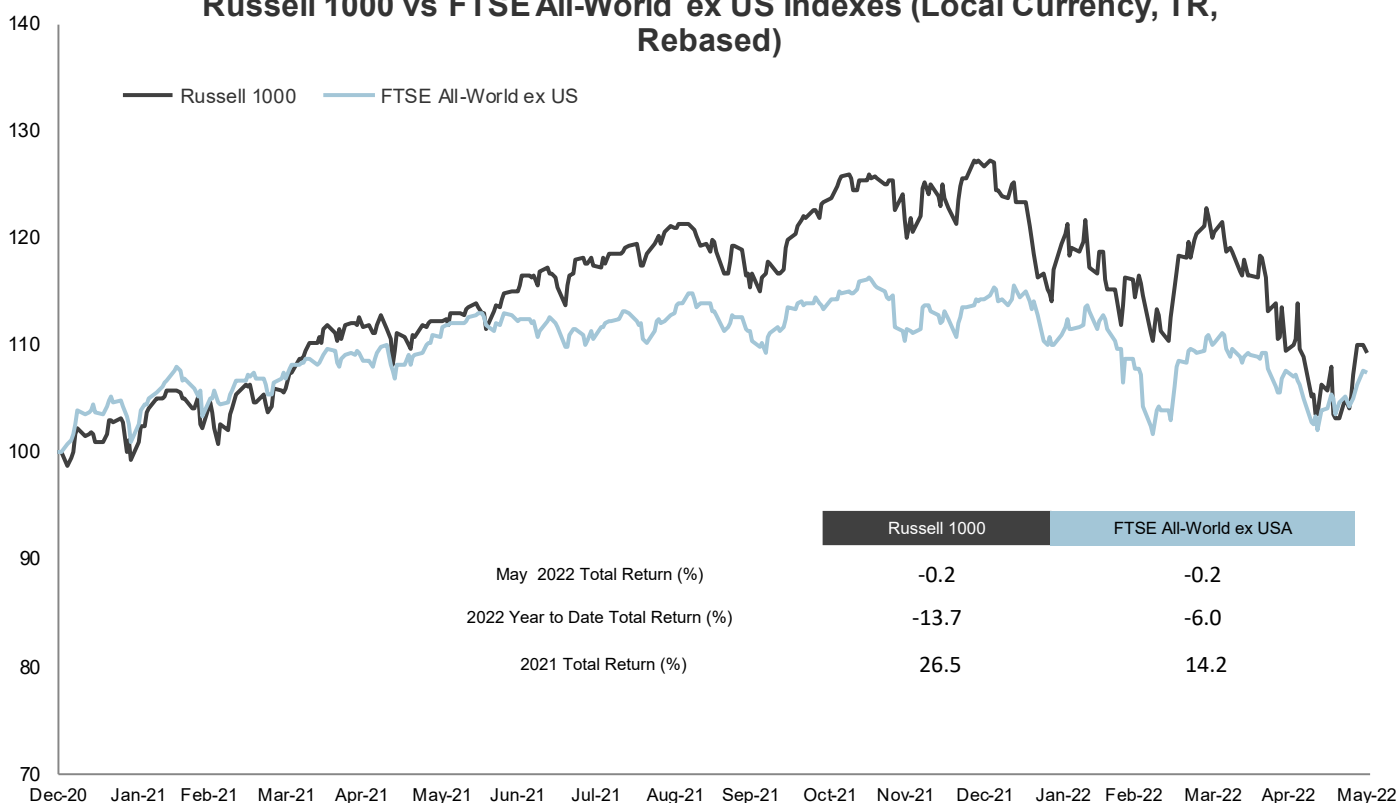
Oil renewed its surge in May, while copper and gold prices continued to fall as slowing China growth and increasingly hawkish central-bank messaging fanned demand worries.

The broad US dollar rally petered out in May, particularly vs the yen and euro, as yield differentials tightened. Emerging market currencies also strengthened vs USD, led by the Brazilian real and Mexican peso (see page 10).

Main Market-Moving Events

- US Fed lifts policy rate 50bps, first increase since Dec 2018; lays out plans to reduce assets holdings as soon as June.
- US unemployment was unchanged at 3.6% (Apr); avg. hourly wages rise 5.5% YoY vs 5.6% prior month.
- US headline CPI eases modestly to 8.3% YoY (Apr) vs 8.5% (Mar); core prices rise 0.6% MoM vs 0.3% pace prior month.
- BoE raises policy rate 25bps for fourth time and confirms plans to begin selling off gilt holdings as early as August.
- UK GDP rises 0.8% in Q1 vs Q4 '21; slows to 0.1% in March.
- UK CPI rises to 9.0% YoY (Apr) vs 7.0% in March.
- Eurozone CPI at 7.4% YoY (Mar) vs 5.9% (Feb); core prices rise 2.9% vs 2.7% prior month.
- ECB president Lagarde outlines plans for two rate hikes by September and to end bond purchases in July.
- China's Caixin services PMI falls for fourth straight month; second largest decline on record.
- PBOC slashes five-year loan prime rate, a key reference rate for mortgages, by a bigger-than-expected 15bps.
- May flash PMI output composite falls to 53.8 vs 56.0 (Apr) in the US, to 51.8 (vs 58.2) in the UK and to 54.9 (vs 55.8) in the Eurozone. Japan PMI improves to 51.4 (vs 51.1).
- US GDP falls 1.4% in Q1, below expectations for a 1% gain.
- PCE, the Fed's preferred inflation metric, rises 4.9% YoY (Apr) vs 5.2% pace in March.
- EU commits to new Russian sanctions, including partial phaseout of oil imports.

Russell 1000 vs FTSE All-World ex US Indexes (Local Currency, TR, Rebased)



Source: FTSE Russell. Data as of May 31, 2022. Past performance is no guarantee of future results. Please see the end for important legal disclosures.

Asset Class Returns – 1M vs YTD (LC, TR %)

Key Observations – May 2022

After month-long turbulence, most developed markets ended May with modest losses, led by Europe ex UK and Asia Pacific, while the UK and Japan posted small gains. Thanks to a late-month rebound, the Russell 2000 ended slightly higher, outperforming the Russell 1000. The Emerging index also continued to fall, as rebounds in Brazil, Taiwan, Mexico and China were more than offset by big drops in Saudi Arabia, Indonesia and India. Year to date, the UK's FTSE All-Share was by far the best performer, while the Russell 2000 and Russell 1000 continued to rank at the bottom of the performance list, with percentage declines in the mid-teens.

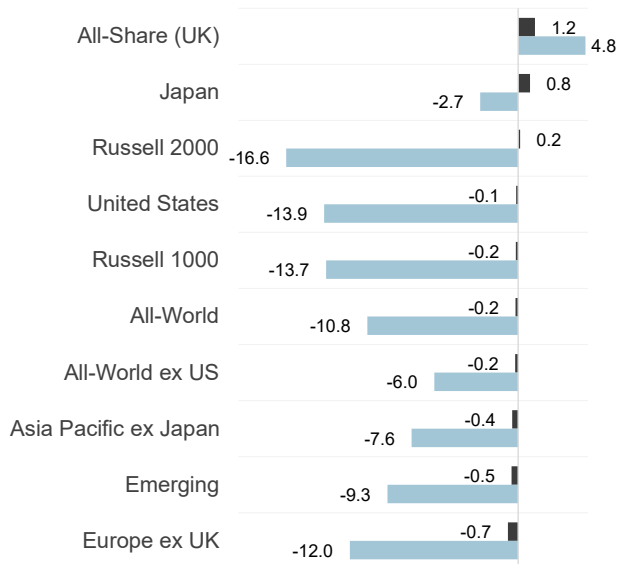
Global bond markets also remained under pressure in May. Investment-grade credits generally held up better than their high-yield counterparts, particularly in EM. Government bonds ended with small losses or gains, with Chinese and EM sovereigns outperforming equivalents elsewhere. Short-dated UK and US inflation-linked bonds significantly outperformed long-dated equivalents.

Oil prices surged in May following the EU's pledge to ban most Russian oil imports, but copper and other commodities continued to weaken on rising global demand concerns. Gold also fell, as central banks reaffirmed aggressive inflation-fighting plans.

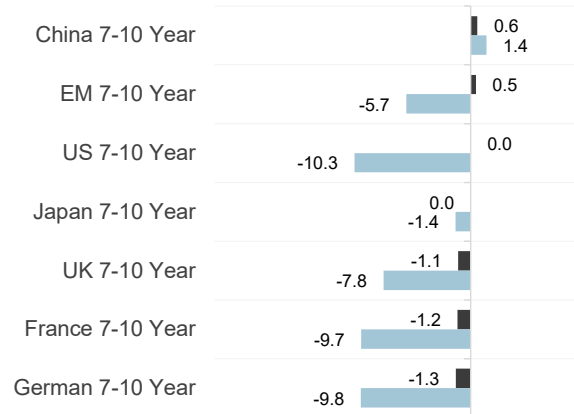
The US dollar weakened from earlier multi-year highs in May, particularly against the yen, euro and sterling. Sterling fell versus the euro as the UK growth outlook continued to deteriorate (also see page 10).

1M LCY YTD LCY

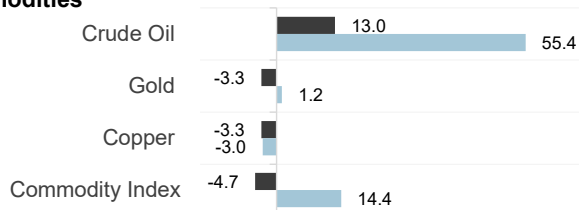
Equity Markets



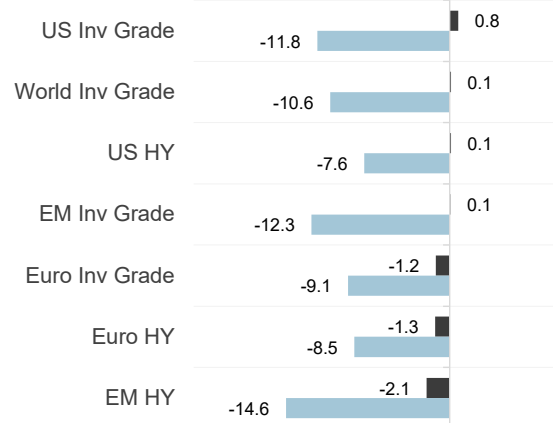
Government Bonds



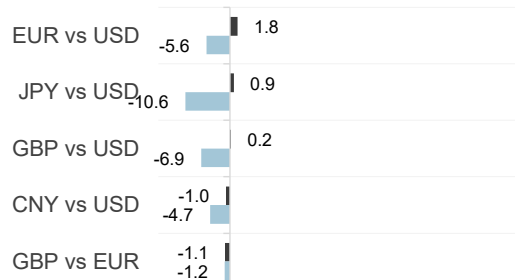
Commodities



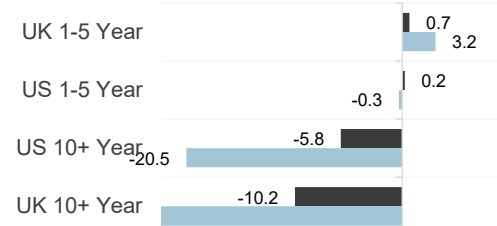
Corporate Bonds



Foreign Exchange



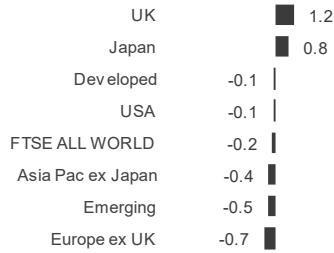
Inflation-Linked Bonds



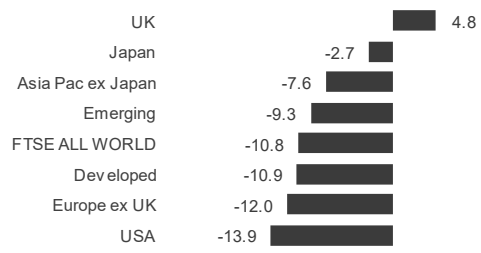
Source: FTSE Russell and Refinitiv. Data as of May 31, 2022. Equity markets data based on: FTSE All-World®, FTSE All-Share®, Russell 2000®, Russell 1000®, FTSE Europe ex UK, FTSE Japan, FTSE Asia Pacific ex Japan and FTSE Emerging indexes. Past performance is no guarantee of future results. Please see the end for important legal disclosures.

Global Equity Market Returns – 1M vs YTD (LC, TR %)

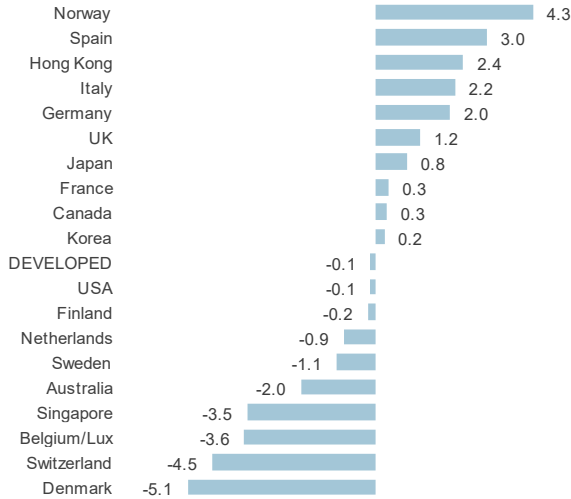
FTSE Regions 1M LCY



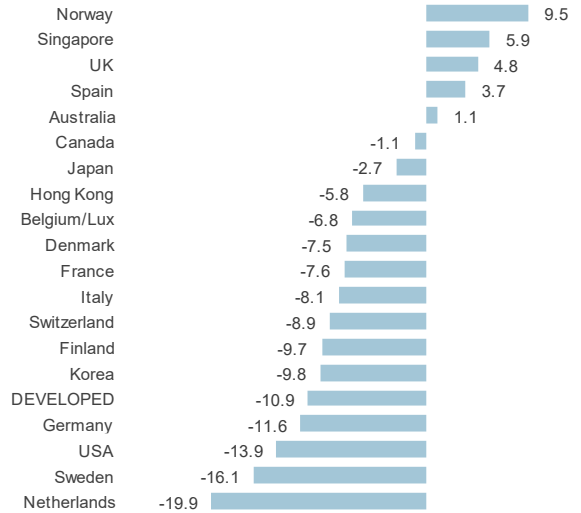
FTSE Regions YTD LCY



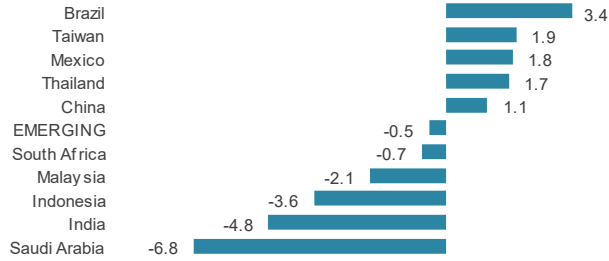
FTSE Developed 1M LCY



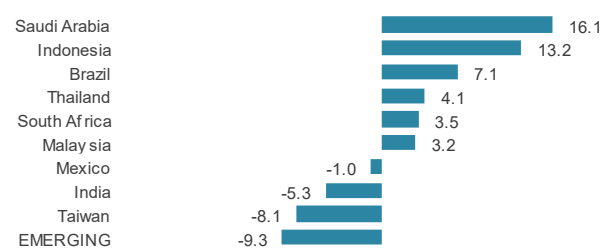
FTSE Developed YTD LCY



FTSE Emerging 1M LCY

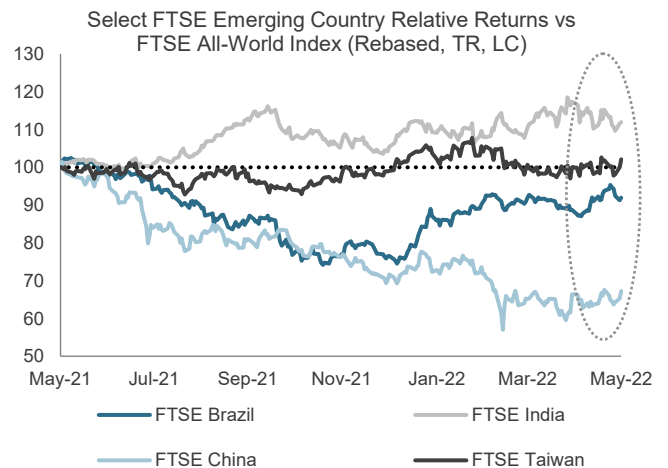
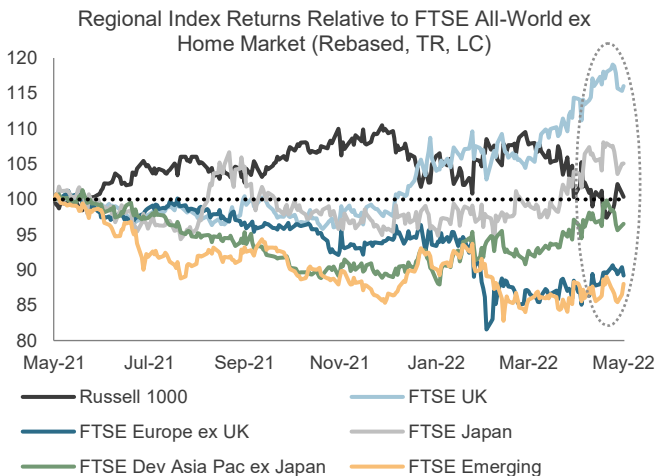


FTSE Emerging YTD LCY



Relative returns rose in the UK, Japan & Europe in May; the UK retained leadership for the YTD and 12 months.

Among the largest EMs, Brazil & Taiwan gained the most vs the global index in May. India remained the 12M leader.

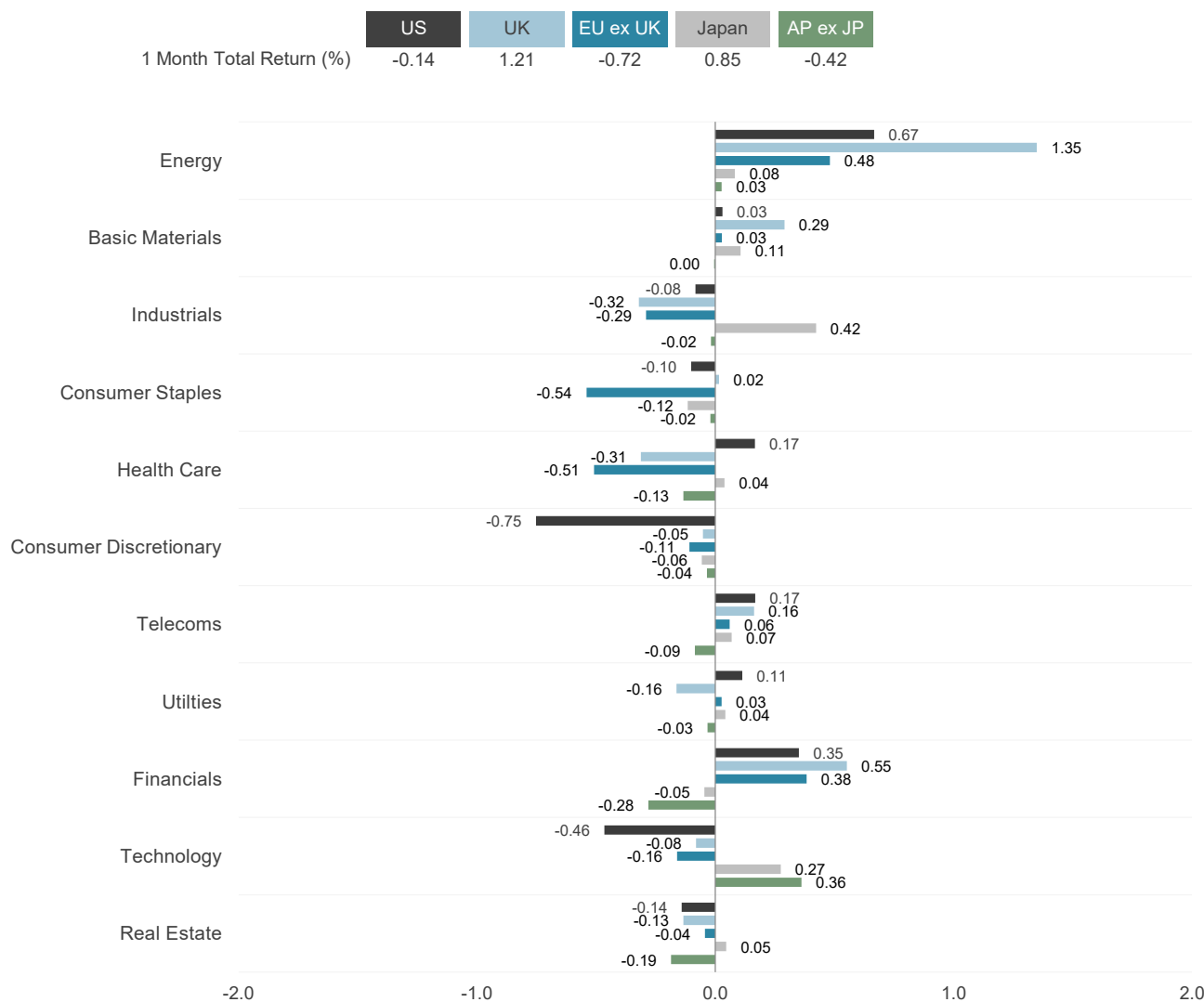


Source: FTSE Russell and Refinitiv. Data as of May 31, 2022. Equity markets data based on: FTSE All-World®, FTSE USA, Russell 1000®, FTSE UK, FTSE Europe ex UK, FTSE Japan, FTSE Asia Pacific ex Japan, and FTSE Emerging indexes. Past performance is no guarantee of future results. Please see the end for important legal disclosures.

Regional Industry-Weighted Contributions to Returns – 1M (LC, TR %)

Key Observations – May 2022

- Contributions diverged widely, with energy, materials & telecoms generally outperforming more growth-oriented stocks.
- In the US, discretionary and technology led May losses, offset by gains in energy, financials, health care and telecoms.
- In the UK, energy, financials & materials dominated May gains, while industrials and health care detracted the most. In Europe, staples and health care were the biggest drags on returns, offset by strong contributions from energy & financials.
- In Japan, contributions were broad based, led by industrials and tech; staples, financials & discretionary detracted modestly.
- In Asia Pac ex Japan, financials, real estate and health care led May losses; technology was the most additive.



Energy, materials & telecoms led gains in most markets in May; staples, health care, tech & real estate broadly lagged.

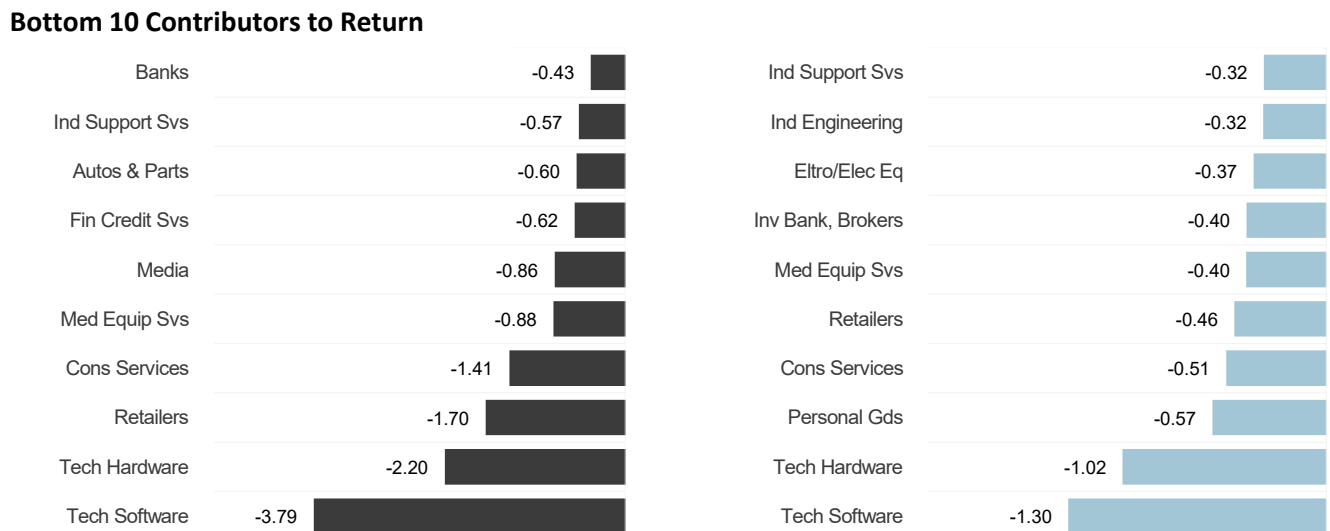
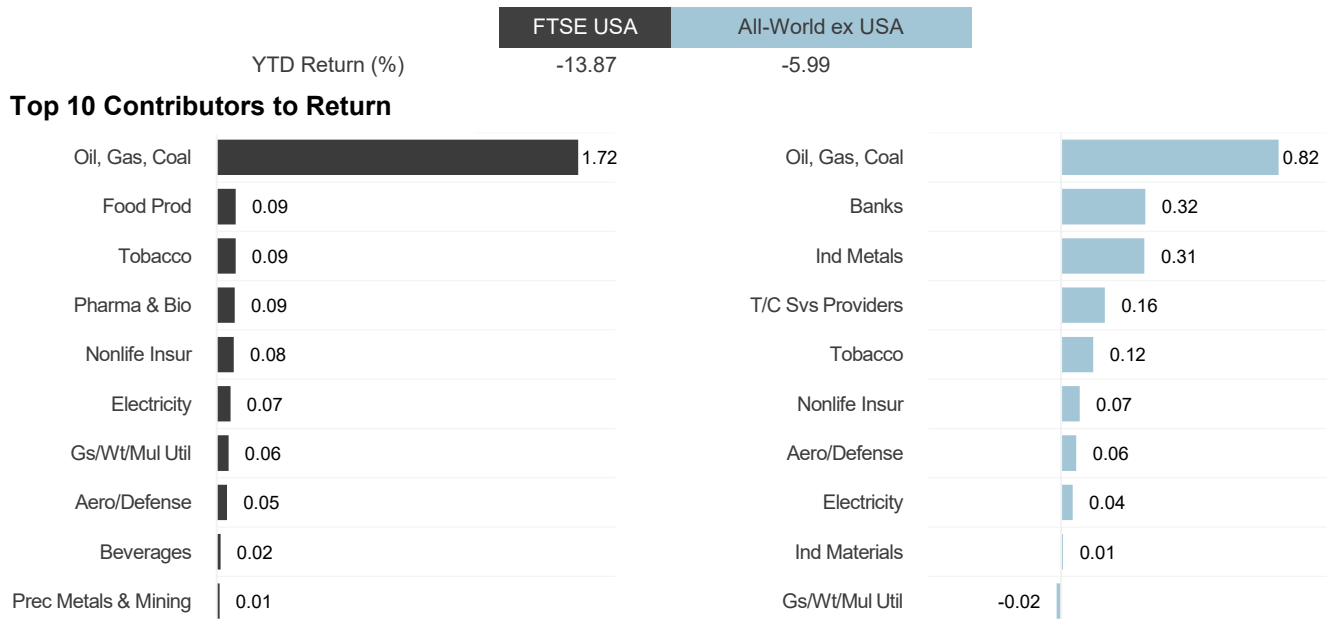
Tech dominates the US & Asia Pac; industrials is the largest weight in Europe & Japan; and staples is tops in the UK.

Industry	1 Month Regional Sector Returns (TR, LC)				
	US	UK	EU ex UK	Japan	AP ex JP
Energy	15.1	10.9	10.4	10.3	0.6
Basic Materials	1.6	3.0	0.5	2.0	-0.1
Industrials	-0.7	-2.8	-1.7	1.7	-0.2
Consumer Staples	-1.7	0.1	-5.5	-2.2	-0.4
Health Care	1.2	-2.3	-3.0	0.4	-2.7
Consumer Disc	-5.3	-0.5	-0.9	-0.2	-0.3
Telecoms	6.1	6.9	1.6	1.4	-3.3
Utilities	3.6	-3.9	0.6	3.1	-1.2
Financials	3.2	3.3	2.4	-0.5	-1.3
Technology	-1.7	-8.3	-1.9	2.4	1.5
Real Estate	-4.6	-8.2	-2.8	1.1	-4.0

Industry	Regional Industry Exposures (%)				
	US	UK	EU ex UK	Japan	AP ex JP
Energy	4.7	13.0	4.9	0.8	4.6
Basic Materials	2.0	9.7	5.1	5.5	7.8
Industrials	12.0	11.1	16.9	24.4	8.5
Consumer Staples	5.8	17.6	9.7	5.3	5.1
Health Care	13.6	13.2	16.7	9.0	4.9
Consumer Disc	13.9	9.9	12.3	23.3	12.5
Telecoms	2.8	2.4	3.8	4.9	2.6
Utilities	3.2	4.1	4.5	1.3	2.8
Financials	11.0	16.6	16.3	9.8	21.8
Technology	28.0	0.9	8.3	11.7	24.7
Real Estate	3.0	1.5	1.5	4.1	4.6

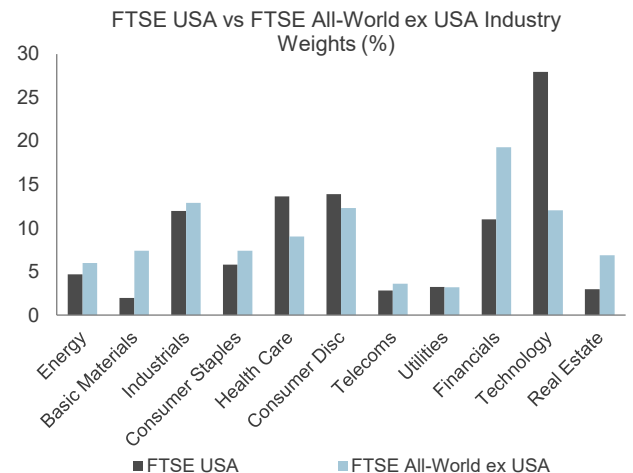
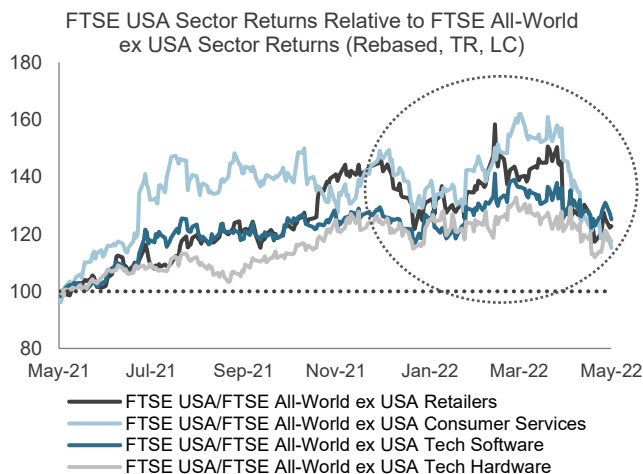
Source: FTSE Russell. All data as of May 31, 2022. Equity markets data based on: FTSE USA, FTSE UK, FTSE Europe ex UK, FTSE Japan and FTSE Asia Pacific ex Japan Indexes and Industry Classification Benchmark (ICB®) industry groups. Past performance is no guarantee of future results. Please see the end for important legal disclosures.

FTSE USA vs AW ex US: Sector-Weighted Performance Contributions – YTD (LC, TR %)



Bigger losses in tech, retail & consumer services contributed most to US underperformance vs non-US peers this year.

The US is tilted more to tech, health care & discretionary than overseas peers and less to financials, materials & staples.

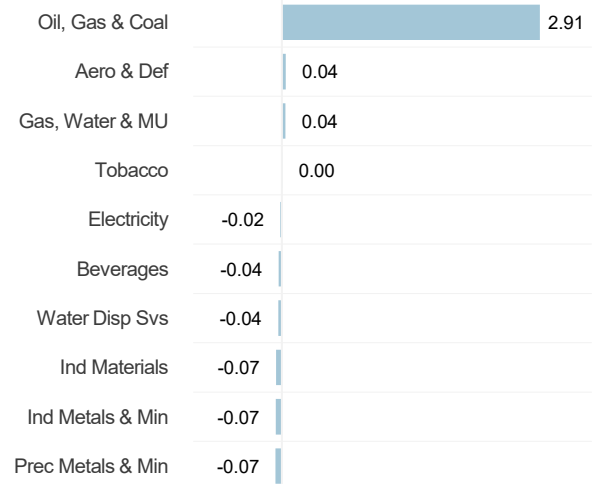
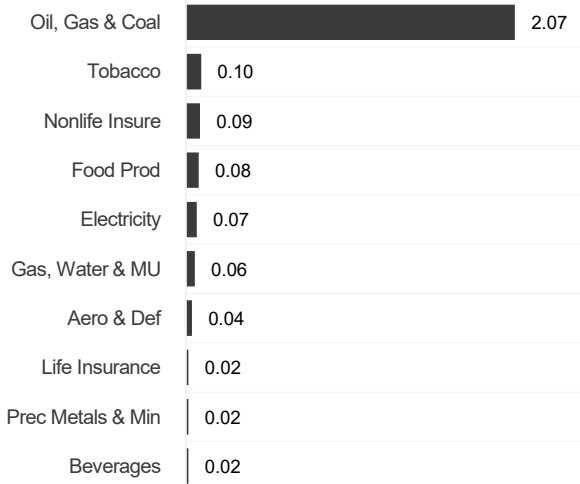


Source: FTSE Russell and Refinitiv. Data as of May 31, 2022. Equity markets data based on: FTSE USA, FTSE UK, FTSE Europe ex UK, FTSE Japan and FTSE Asia Pacific ex Japan Indexes and Industry Classification Benchmark (ICB®) industry and sector groups. Past performance is no guarantee of future results. Please see the end for important legal disclosures.

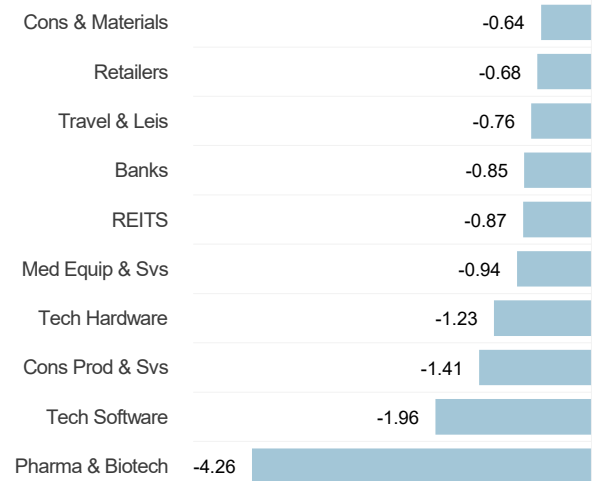
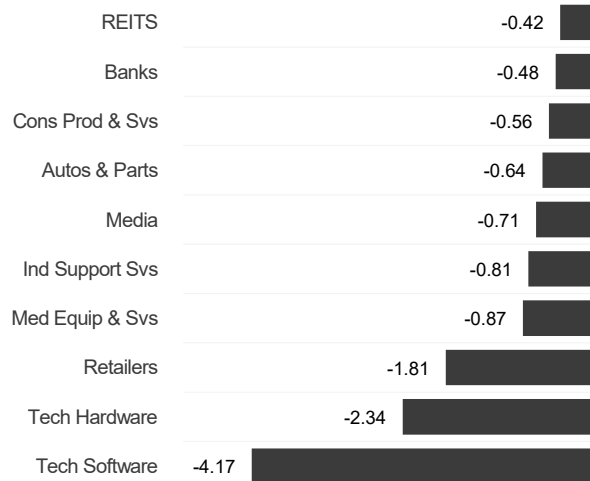
Russell 1000 vs 2000: Sector-Weighted Performance Contributions – YTD (LC, TR %)

	Russell 1000	Russell 2000
YTD Return (%)	-13.72	-16.56

Top 10 Contributors to Return

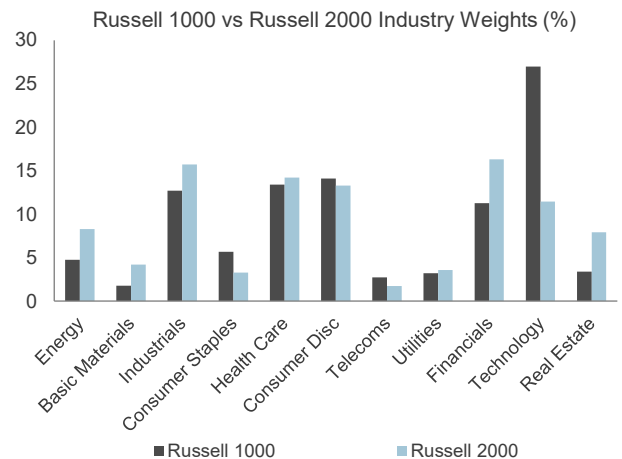
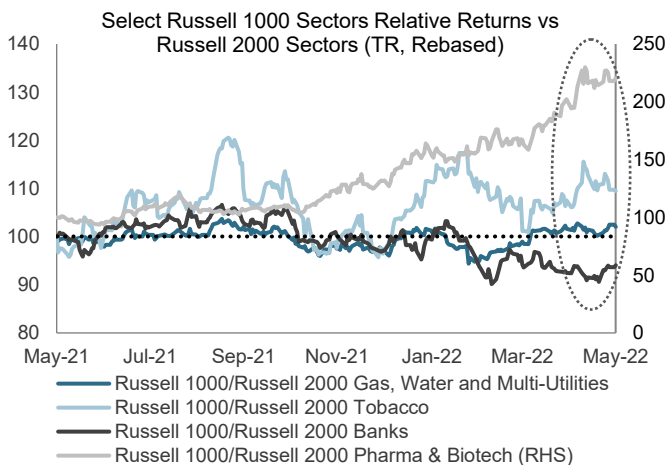


Bottom 10 Contributors to Return



Defensive sectors (staples, utilities & health care) helped buoy R1000 performance vs R2000 YTD, despite bigger tech losses.

US large caps are far more skewed to tech & staples than small caps and less so to financials, energy & other cyclicals.



Source: FTSE Russell and Refinitiv. Data based on Industry Classification Benchmark (ICB®) industry and sector groups. All data as of May 31, 2022. Past performance is no guarantee of future results. Please see the end for important legal disclosures.

Alternative Indices – REITs, FTSE4Good, Environmental Opportunities, Infrastructure

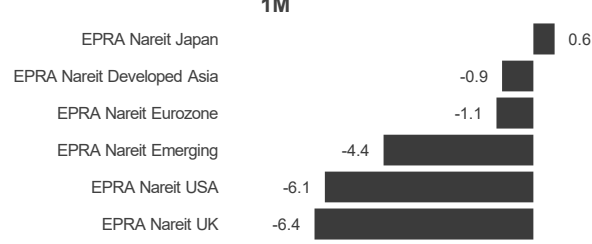
Benchmark Returns % - 1M LCY

US	UK	EU ex UK	Japan	AP ex JP	EM
-0.1	1.2	-0.7	0.8	-0.4	-0.5

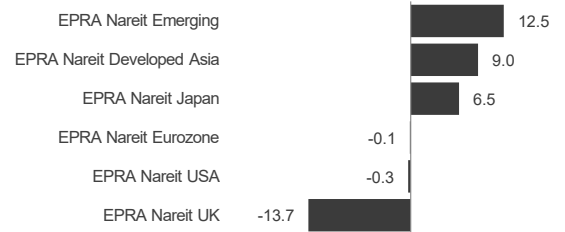
Benchmark Returns % - YTD LCY

US	UK	EU ex UK	Japan	AP ex JP	EM
-13.9	4.8	-12.0	-2.7	-7.6	-7.6

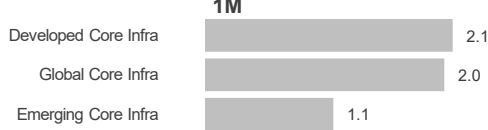
FTSE EPRA Nareit Global Real Estate Index Series (Relative to Market)



YTD



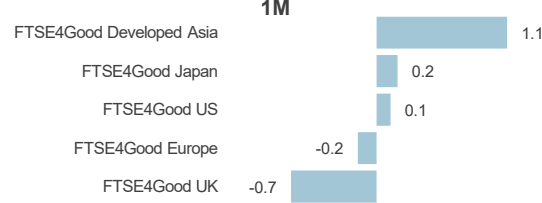
FTSE Core Infrastructure Index Series (Relative to Market)



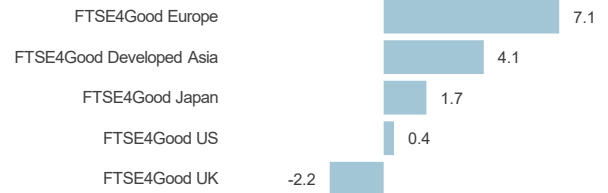
3M



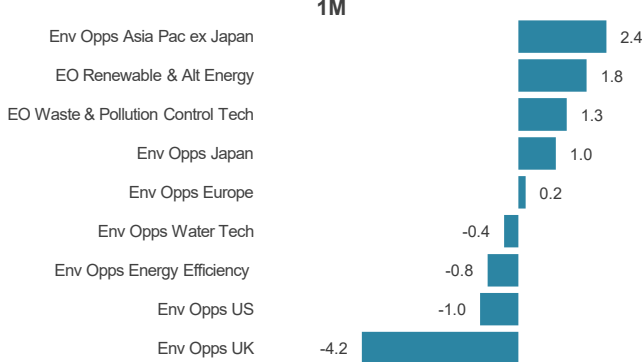
FTSE4Good Index Series (Relative to Market)



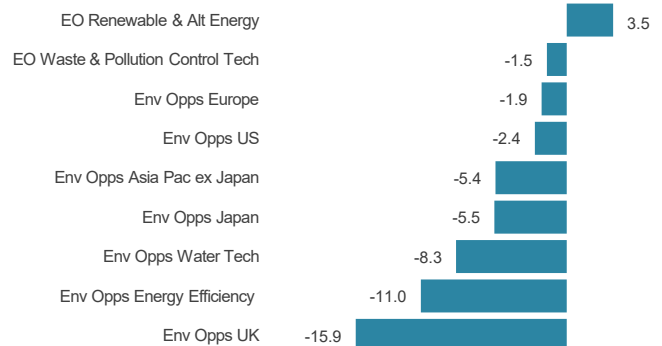
YTD



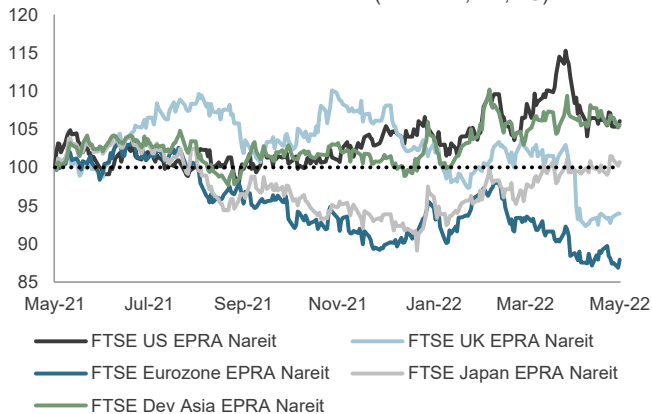
FTSE Environmental Opportunities Index Series (Relative to Market)



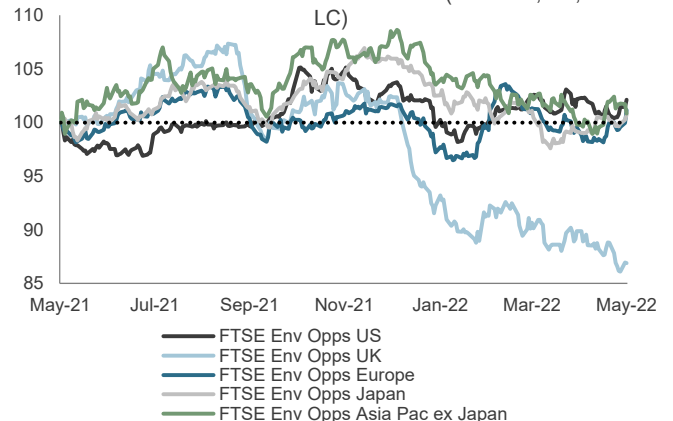
YTD



Regional FTSE EPRA Nareit Index Relative Performance vs Home Market (Rebased, TR, LC)



Regional FTSE Environmental Opportunities Index Relative Performance vs Home Market (Rebased, TR, LC)

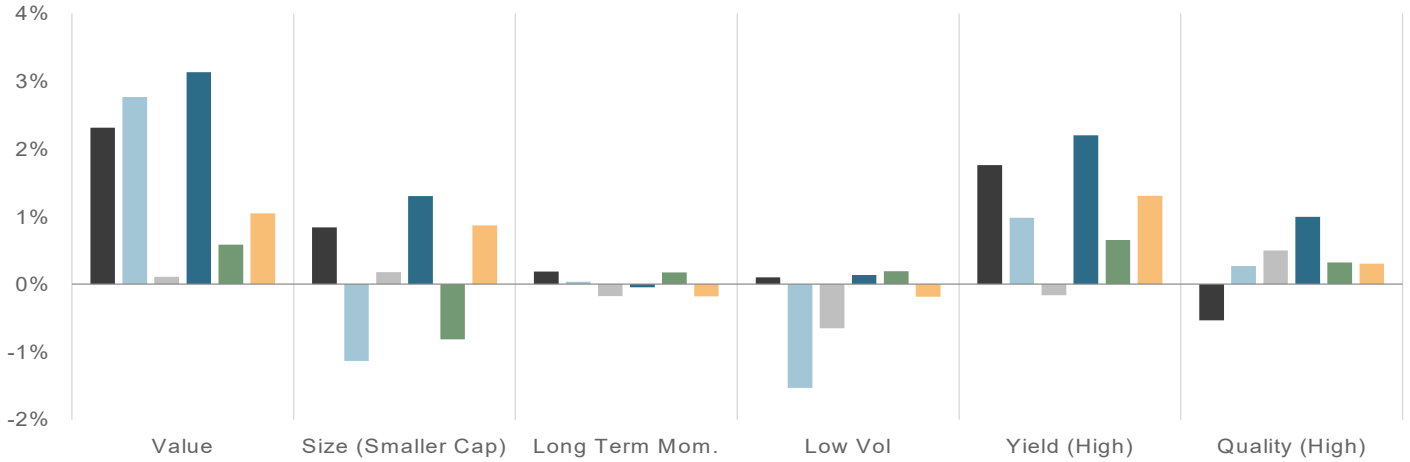


Source: FTSE Russell. All data as of May 31, 2022. Index data based on: FTSE USA, FTSE UK, FTSE Europe ex UK, FTSE Japan and FTSE Asia Pacific ex Japan Indexes and Industry Classification Benchmark (ICB®) industry groups. Past performance is no guarantee of future results. Please see the end for important legal disclosures.

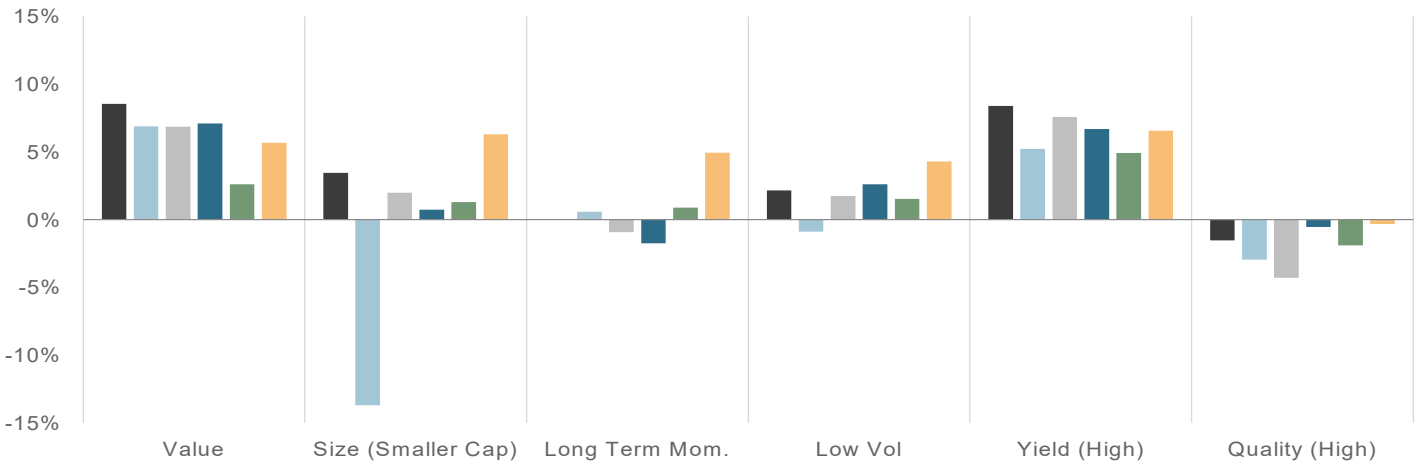
Regional Factor Indicator Relative Returns – 1M vs YTD% (Local Currency, TR)



One Month

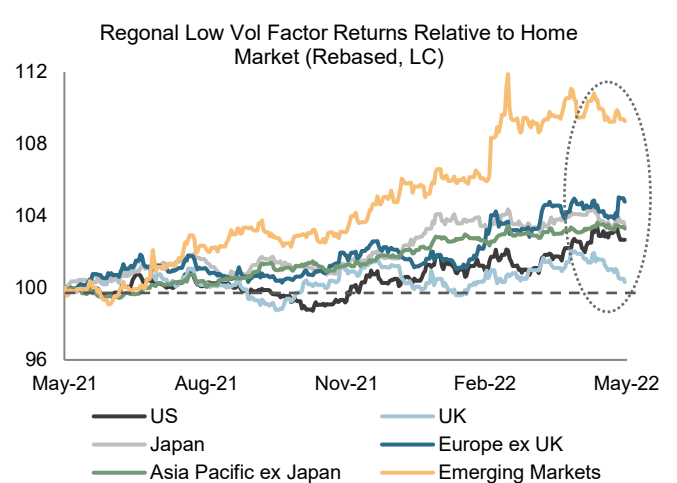
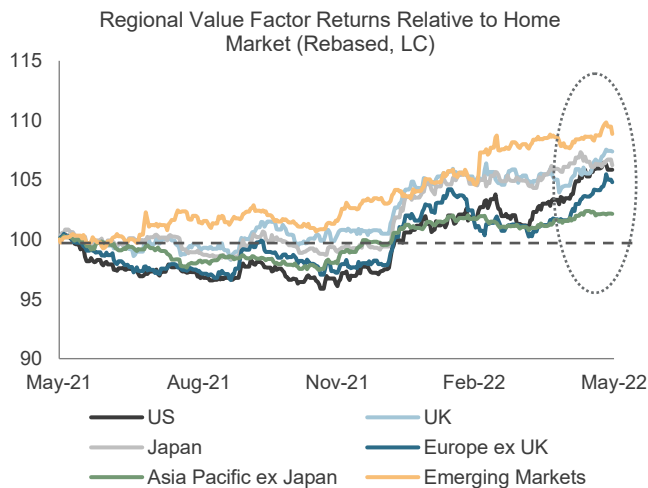


YTD 2022



Value remained the major beneficiary of commodity-price boom and rising rates in May and a global outperformer for the 12M.

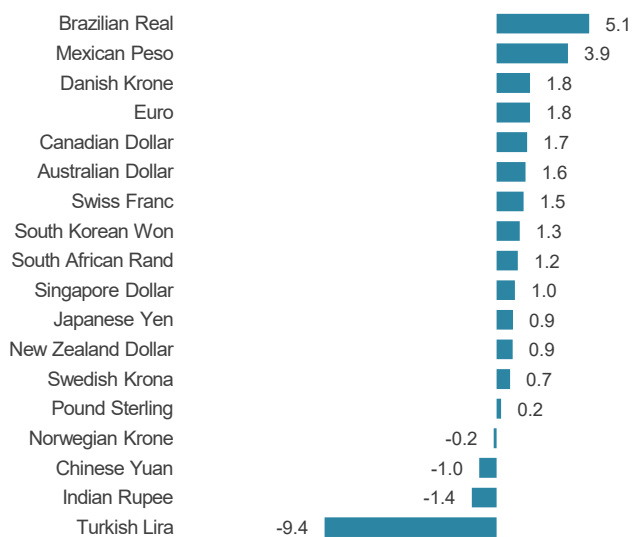
Despite faltering in May, Low Vol remained a YTD outperformer in most markets as investors sought shelter in stabler stocks.



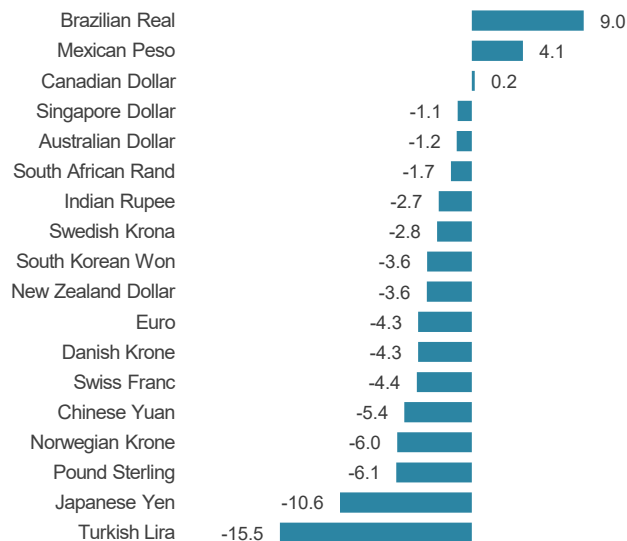
Source: FTSE Russell and Refinitiv. All data as of May 31, 2022. Past performance is no guarantee of future results. Please see the end for important legal disclosures.

Foreign Exchange Returns %

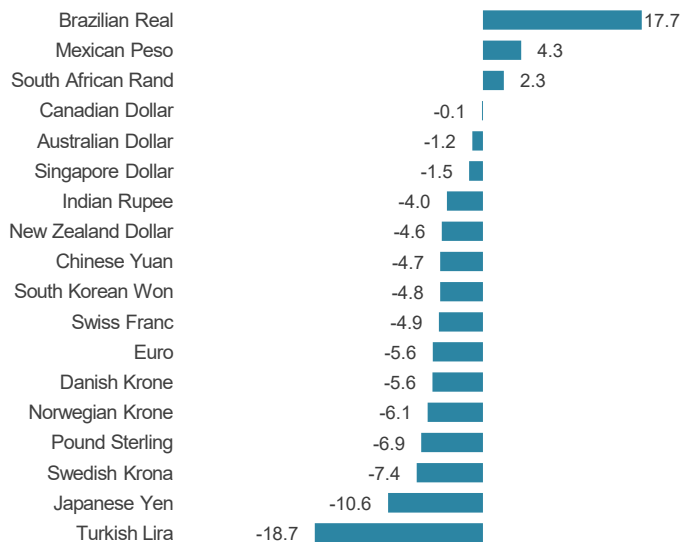
FX Moves vs USD - 1M



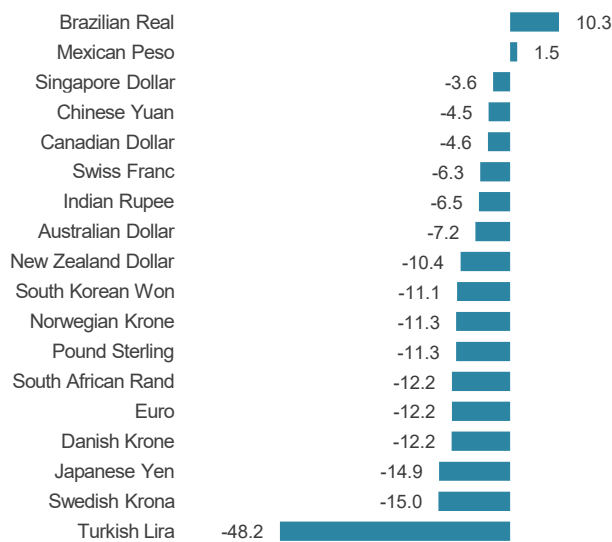
FX Moves vs USD - 3M



FX Moves vs USD - YTD

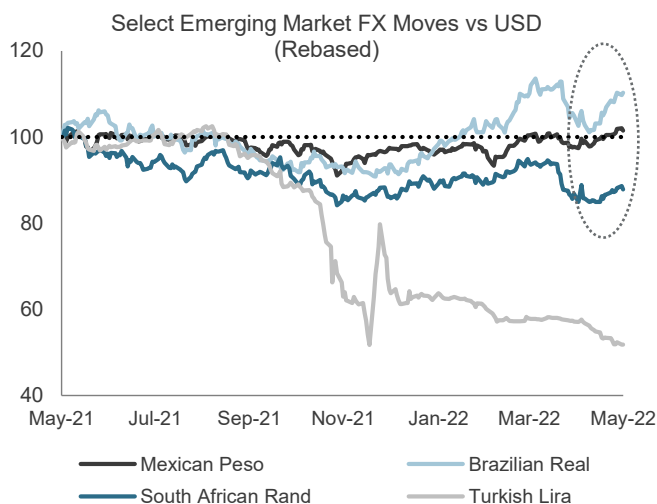
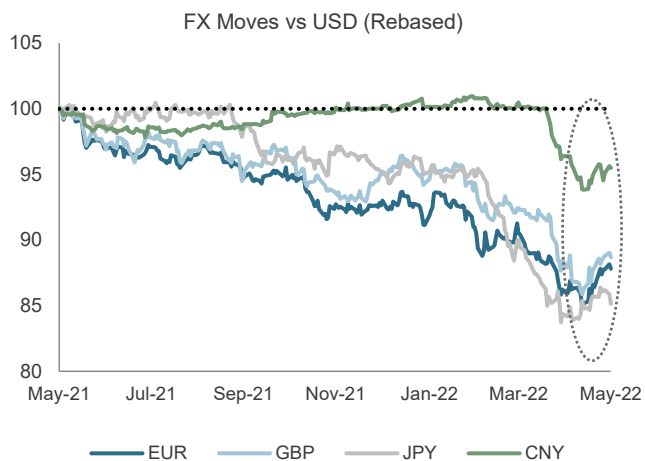


FX Moves vs USD - 12M



The broad US dollar rally faded in May, particularly vs the yen, euro and sterling, trimming their YTD and 12M depreciations.

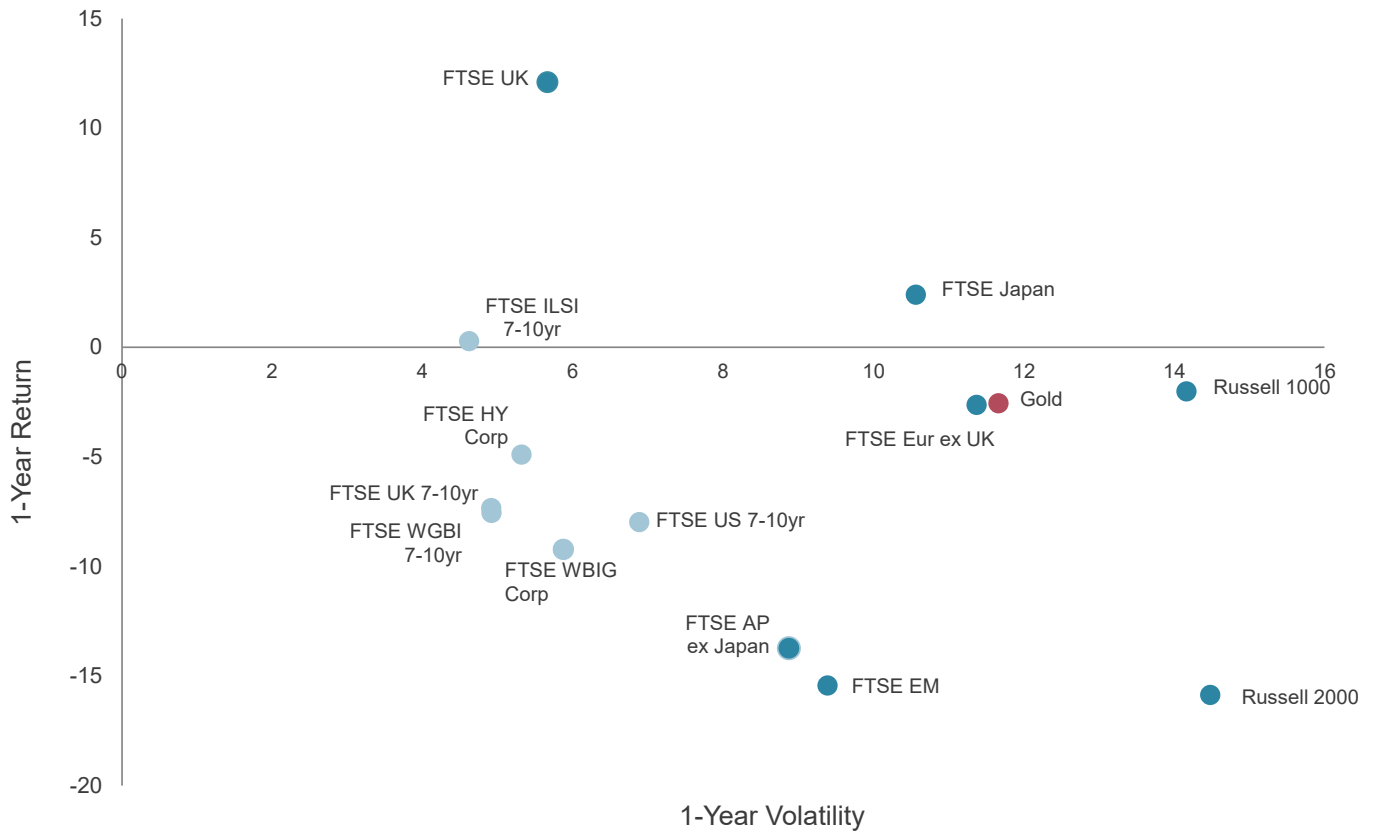
Most EM currencies bounced back vs the USD in May, led by the Brazilian real & Mexican peso. The Turkish lira fell.



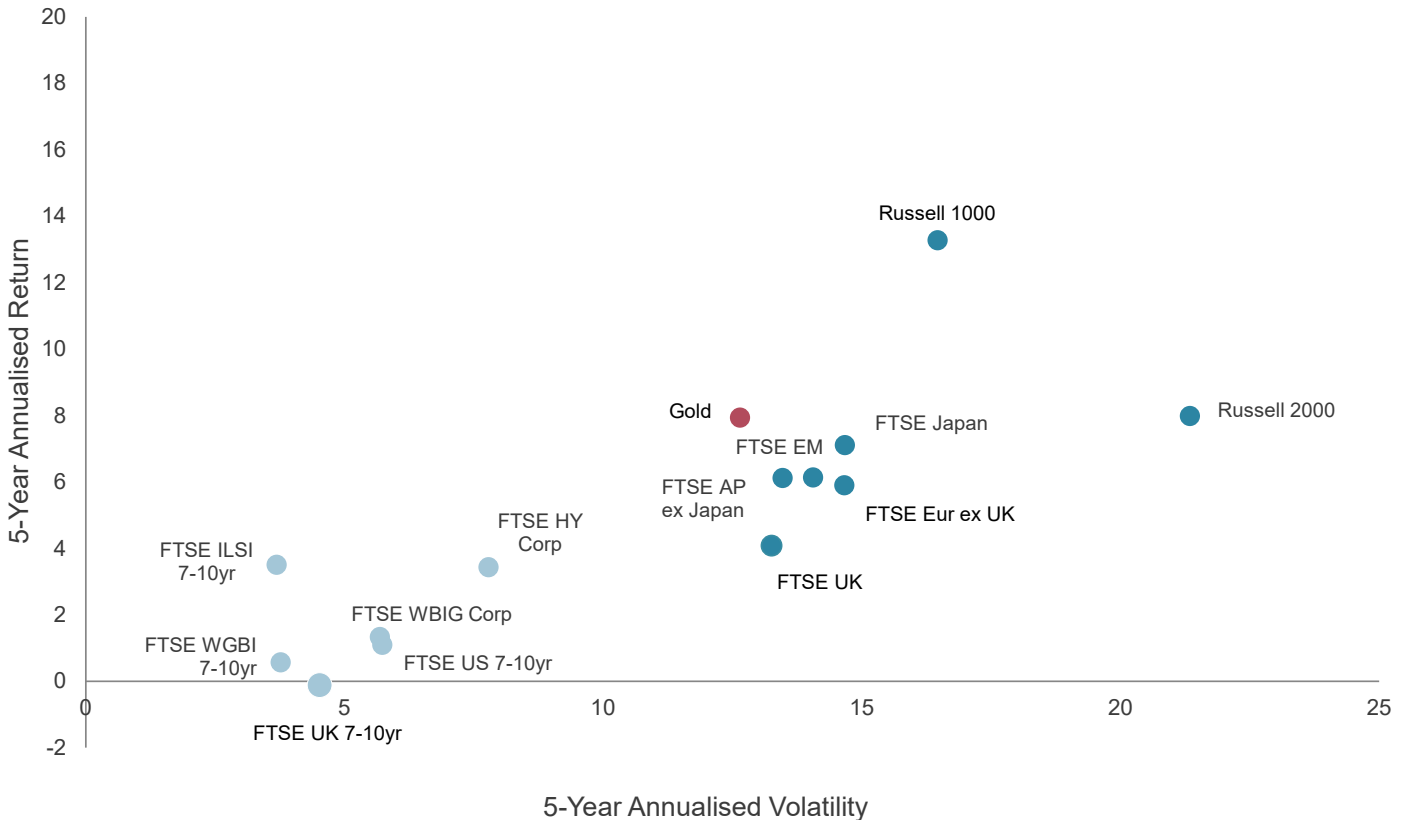
Source: FTSE Russell and Refinitiv. All data as of May 31, 2022. Past performance is no guarantee of future results. Please see the end for important legal disclosures.

Asset Class Risk/Return – 1-Year and 5-Year Annualised (LC)

1-Year Risk vs Return



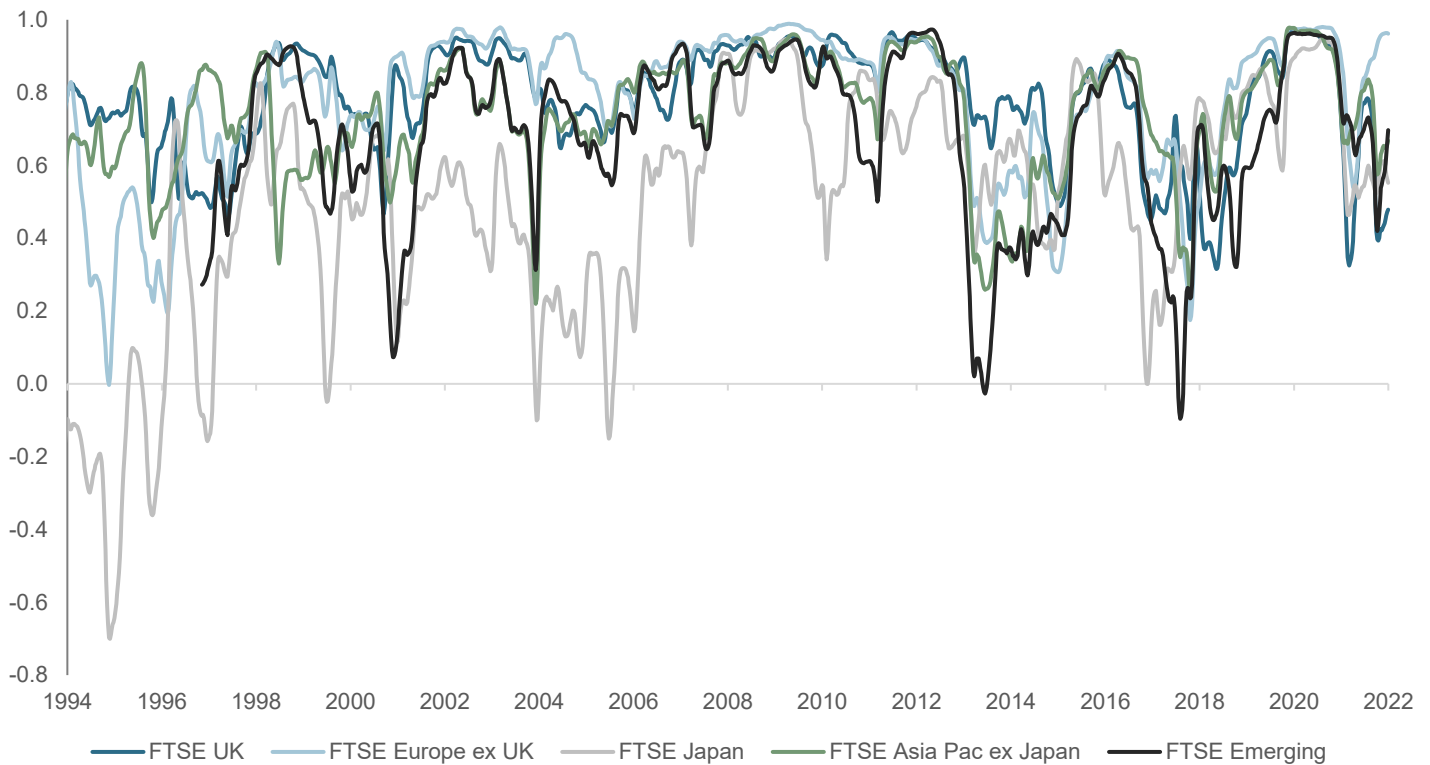
5-Year Risk vs Return



Source: FTSE Russell and Refinitiv. All data as of May 31, 2022. Equity market data based on: FTSE Regional, and FTSE Developed Indexes. Returns shown for UK, Europe ex UK, Japan, and Asia Pacific ex Japan Factor Indicators represent hypothetical, historical performance. Past performance is no guarantee of future results. Please see the end for important legal disclosures.

Correlations

Regional Equity Market Correlations with Russell 1000 Index (LC, 3-Month Returns, Rolling 12-Month Correlation)



3-Year Asset Class Correlation Matrix

3-Year Correlations

Russell 1000	-														
Russell 2000	0.90	-													
FTSE All-World	0.98	0.91	-												
FTSE All-World ex USA	0.90	0.89	0.95	-											
FTSE UK	0.72	0.71	0.79	0.87	-										
FTSE Europe ex UK	0.88	0.83	0.92	0.95	0.86	-									
FTSE Japan	0.65	0.68	0.75	0.80	0.66	0.74	-								
FTSE Asia Pacific ex Japan	0.84	0.87	0.88	0.93	0.79	0.84	0.64	-							
FTSE Emerging	0.78	0.78	0.79	0.85	0.63	0.70	0.53	0.89	-						
FTSE US Govt 7-10yr	-0.15	-0.24	-0.20	-0.31	-0.33	-0.23	-0.41	-0.25	-0.23	-					
FTSE US ILSI	0.40	0.29	0.37	0.28	0.18	0.31	-0.07	0.35	0.32	0.65	-				
FTSE USBIG Corp	0.53	0.48	0.50	0.46	0.35	0.46	0.07	0.53	0.52	0.51	0.77	-			
FTSE US High Yield	0.80	0.81	0.80	0.81	0.68	0.76	0.49	0.81	0.77	-0.12	0.45	0.71	-		
Gold	0.07	-0.07	0.03	-0.04	-0.11	-0.06	-0.26	0.06	0.12	0.35	0.50	0.27	0.11	-	
	Russell 1000	Russell 2000	FTSE All-World	FTSE All-World ex USA	FTSE UK	FTSE Europe ex UK	FTSE Japan	FTSE Asia Pac ex Japan	FTSE Emerging	FTSE US Govt 7-10yr	FTSE US ILSI	FTSE USBIG Corp	FTSE US High Yield	Gold	

Source: FTSE Russell and Refinitiv. All data as of May 31, 2022. Equity market data based on: FTSE Regional, and FTSE Developed Indexes. Returns shown for UK, Europe ex UK, Japan, and Asia Pacific ex Japan Factor Indicators represent hypothetical, historical performance. Past performance is no guarantee of future results. Please see the end for important legal disclosures.

Appendix

Regions

	Wgt (%)	Mkt Cap (USD bn)	1M return (%)			3M return (%)			12M return (%)		
			LCY	USD	GBP	LCY	USD	GBP	LCY	USD	GBP
FTSE ALL WORLD	100.0	61,506	-0.2	0.2	-0.2	-4.1	-5.7	0.4	-2.7	-6.4	5.6
Developed	89.6	55,112	-0.1	0.2	-0.2	-3.9	-5.5	0.6	-1.2	-5.0	7.1
USA	59.2	36,355	-0.1	-0.1	-0.5	-6.0	-6.0	0.1	-2.4	-2.4	10.1
Europe ex UK	12.3	7,535	-0.7	0.6	0.2	-2.5	-6.9	-0.9	-3.8	-14.8	-3.9
Emerging	10.4	6,394	-0.5	0.0	-0.4	-6.2	-7.1	-1.1	-14.4	-16.9	-6.3
Japan	6.1	3,805	0.8	1.6	1.2	3.0	-7.8	-1.8	1.9	-13.3	-2.2
UK	4.1	2,573	1.2	1.6	1.2	3.4	-2.8	3.4	12.2	-0.5	12.2
Asia Pac ex Japan	7.2	4,490	-0.4	-0.1	-0.4	-3.5	-5.3	0.8	-13.0	-17.2	-6.6

Developed - Top 20 by % weight (TR)

	Wgt (%)	Mkt Cap	1M return (%)			3M return (%)			12M return (%)		
			LCY	USD	GBP	LCY	USD	GBP	LCY	USD	GBP
DEVELOPED	100.0	55,112	-0.1	0.2	-0.2	-3.9	-5.5	0.6	-1.3	-5.3	6.7
USA	66.1	36,355	-0.1	-0.1	-0.5	-6.0	-6.0	0.1	-2.4	-2.4	9.2
Japan	6.8	3,805	0.8	1.6	1.2	3.0	-7.8	-1.8	1.9	-15.4	-2.3
UK	4.6	2,573	1.2	1.6	1.2	3.4	-2.8	3.4	10.9	-0.5	10.9
Canada	3.1	1,741	0.3	1.3	1.0	-1.0	-0.8	5.7	8.9	4.6	15.4
France	3.0	1,654	0.3	1.9	1.5	-0.6	-5.2	1.0	2.5	-11.2	1.4
Switzerland	2.9	1,538	-4.5	-3.3	-3.6	-1.3	-5.6	0.6	2.9	-3.5	8.3
Australia	2.5	1,369	-2.0	-1.1	-1.5	4.6	3.4	10.1	6.2	-1.6	11.0
Germany	2.3	1,277	2.0	3.6	3.2	-2.8	-7.3	-1.3	-10.0	-21.1	-11.0
Korea	1.6	901	0.2	1.7	1.4	-1.8	-4.5	1.6	-15.4	-24.1	-14.3
Netherlands	1.2	648	-0.9	0.7	0.3	-6.7	-11.0	-5.3	-8.1	-19.5	-9.1
Sweden	1.0	524	-1.1	-1.0	-1.4	-2.1	-5.5	0.6	-6.7	-20.9	-10.8
Hong Kong	0.9	521	2.4	2.4	2.0	-3.5	-3.9	2.3	-19.4	-20.3	-10.1
Spain	0.7	396	3.0	4.6	4.2	6.3	1.4	7.9	1.1	-11.4	-0.1
Italy	0.7	396	2.2	3.7	3.3	-1.7	-6.3	-0.2	0.1	-12.3	-1.1
Denmark	0.7	396	-5.1	-3.7	-4.1	1.6	-3.1	3.2	9.1	-4.5	7.8
Singapore	0.4	216	-3.5	-2.8	-3.2	2.2	1.2	7.7	7.8	3.9	17.2
Finland	0.4	208	-0.2	1.3	0.9	2.6	-2.2	4.2	0.3	-12.1	-0.9
Belgium/Lux	0.3	153	-3.6	-2.1	-2.5	-1.7	-6.3	-0.2	-3.7	-15.6	-4.8
Norway	0.2	134	4.3	3.4	3.0	8.5	1.5	8.0	20.7	6.8	20.5
Israel	0.2	119	-5.9	-5.6	-5.9	-5.0	-8.5	-2.6	16.1	13.3	27.7

Emerging - Top 10 by % weight (TR)

	Wgt (%)	Mkt Cap	1M return (%)			3M return (%)			12M return (%)		
			LCY	USD	GBP	LCY	USD	GBP	LCY	USD	GBP
EMERGING	100.0	6,394	-0.5	0.0	-0.4	-6.2	-7.1	-1.1	-14.4	-16.9	-6.3
China	33.3	2,152	1.1	1.1	0.8	-10.6	-11.0	-5.2	-34.6	-35.3	-27.0
Taiwan	17.3	1,150	1.9	3.5	3.1	-5.1	-8.3	-2.4	-0.7	-5.6	6.5
India	16.6	996	-4.8	-6.2	-6.6	-0.9	-3.8	2.4	8.9	1.8	14.9
Brazil	6.6	447	3.4	8.1	7.7	-1.0	7.6	14.5	-10.6	-1.0	11.7
Saudi Arabia	5.6	336	-6.8	-6.8	-7.1	3.3	3.3	10.0	28.8	28.8	45.2
South Africa	4.4	286	-0.7	0.8	0.4	-3.7	-4.5	1.7	6.0	-6.7	5.2
Mexico	2.6	174	1.8	5.4	5.0	-1.0	2.6	9.3	6.8	7.8	21.6
Thailand	2.5	165	1.7	1.8	1.4	0.1	-4.4	1.7	9.2	-0.3	12.4
Indonesia	2.0	124	-3.6	-4.1	-4.5	6.3	4.8	11.5	22.7	20.1	35.5
Malaysia	1.9	119	-2.1	-2.6	-3.0	0.1	-4.0	2.2	3.2	-2.7	9.7

As of: May 31, 2022

Notes

Notes



© 2022 London Stock Exchange Group plc and its applicable group undertakings (the "LSE Group"). The LSE Group includes (1) FTSE International Limited ("FTSE"), (2) Frank Russell Company ("Russell"), (3) FTSE Global Debt Capital Markets Inc. and FTSE Global Debt Capital Markets Limited (together, "FTSE Canada"), (4) FTSE Fixed Income Europe Limited ("FTSE FI Europe"), (5) FTSE Fixed Income LLC ("FTSE FI"), (6) The Yield Book Inc ("YB") and (7) Beyond Ratings S.A.S. ("BR"). All rights reserved.

FTSE Russell® is a trading name of FTSE, Russell, FTSE Canada, FTSE FI, FTSE FI Europe, YB and BR. "FTSE®", "Russell®", "FTSE Russell®", "FTSE4Good®", "ICB®", "The Yield Book®", "Beyond Ratings®" and all other trademarks and service marks used herein (whether registered or unregistered) are trademarks and/or service marks owned or licensed by the applicable member of the LSE Group or their respective licensors and are owned, or used under licence, by FTSE, Russell, FTSE Canada, FTSE FI, FTSE FI Europe, YB or BR. FTSE International Limited is authorised and regulated by the Financial Conduct Authority as a benchmark administrator.

All information is provided for information purposes only. All information and data contained in this publication is obtained by the LSE Group, from sources believed by it to be accurate and reliable. Because of the possibility of human and mechanical error as well as other factors, however, such information and data is provided "as is" without warranty of any kind. No member of the LSE Group nor their respective directors, officers, employees, partners or licensors make any claim, prediction, warranty or representation whatsoever, expressly or impliedly, either as to the accuracy, timeliness, completeness, merchantability of any information or of results to be obtained from the use of FTSE Russell products, including but not limited to indexes, data and analytics, or the fitness or suitability of the FTSE Russell products for any particular purpose to which they might be put. Any representation of historical data accessible through FTSE Russell products is provided for information purposes only and is not a reliable indicator of future performance.

No responsibility or liability can be accepted by any member of the LSE Group nor their respective directors, officers, employees, partners or licensors for (a) any loss or damage in whole or in part caused by, resulting from, or relating to any error (negligent or otherwise) or other circumstance involved in procuring, collecting, compiling, interpreting, analysing, editing, transcribing, transmitting, communicating or delivering any such information or data or from use of this document or links to this document or (b) any direct, indirect, special, consequential or incidental damages whatsoever, even if any member of the LSE Group is advised in advance of the possibility of such damages, resulting from the use of, or inability to use, such information.

No member of the LSE Group nor their respective directors, officers, employees, partners or licensors provide investment advice and nothing in this document should be taken as constituting financial or investment advice. No member of the LSE Group nor their respective directors, officers, employees, partners or licensors make any representation regarding the advisability of investing in any asset or whether such investment creates any legal or compliance risks for the investor. A decision to invest in any such asset should not be made in reliance on any information herein. Indexes cannot be invested in directly. Inclusion of an asset in an index is not a recommendation to buy, sell or hold that asset nor confirmation that any particular investor may lawfully buy, sell or hold the asset or an index containing the asset. The general information contained in this publication should not be acted upon without obtaining specific legal, tax, and investment advice from a licensed professional.

The information contained in this report should not be considered "research" as defined in recital 28 of the Commission Delegated Directive (EU) 2017/593 of 7 April 2016 supplementing Directive 2014/65/EU of the European Parliament and of the Council ("MiFID II") and is provided for no fee.

Past performance is no guarantee of future results. Charts and graphs are provided for illustrative purposes only. Index returns shown may not represent the results of the actual trading of investable assets. Certain returns shown may reflect back-tested performance. All performance presented prior to the index inception date is back-tested performance. Back-tested performance is not actual performance, but is hypothetical. The back-test calculations are based on the same methodology that was in effect when the index was officially launched. However, back-tested data may reflect the application of the index methodology with the benefit of hindsight, and the historic calculations of an index may change from month to month based on revisions to the underlying economic data used in the calculation of the index.

This document may contain forward-looking assessments. These are based upon a number of assumptions concerning future conditions that ultimately may prove to be inaccurate. Such forward-looking assessments are subject to risks and uncertainties and may be affected by various factors that may cause actual results to differ materially. No member of the LSE Group nor their licensors assume any duty to and do not undertake to update forward-looking assessments.

No part of this information may be reproduced, stored in a retrieval system or transmitted in any form or by any means, electronic, mechanical, photocopying, recording or otherwise, without prior written permission of the applicable member of the LSE Group. Use and distribution of the LSE Group data requires a licence from FTSE, Russell, FTSE Canada, FTSE FI, FTSE FI Europe, YB, BR and/or their respective licensors.

Refinitiv content is the intellectual property of Refinitiv. Any copying, republication or redistribution of Refinitiv content, including by caching, framing or similar means, is expressly prohibited without the prior written consent of Refinitiv. Refinitiv is not liable for any errors or delays in content, or for any actions taken in reliance on any content.