Fixed Income Insights

MONTHLY REPORT – **DECEMBER 2023 | EUROZONE EDITION**   FOR PROFESSIONAL INVESTORS ONLY

Surprise collapse in November inflation props Eurozone bond rally

Bond markets rallied in November after US, Eurozone and Canadian inflation levels dropped, suggesting central banks may not need to raise rates further and a peak is in sight. Long Bunds gained close to 9%, while high yields tracked the risk-on equity market rally, with Euro HY credits up 3% in Nov., and 10% since January.

Macro and policy backdrop – Sharp fall in Eurozone inflation suggests an end to policy tightening
Despite the scale of policy tightening, consensus growth forecasts show no G7 recessions in 2024. (pages 2-3)

Yields, curves and spreads – Yield curves re-inverted as markets anticipate policy easing
US and Italian spreads tightened in November after a bull inversion reversed the bear steepening of October. (pages 4-5)

Credit and MBS analysis – IG credit spreads narrowed in the November rally
Eurozone IG credits showed some unwinding of the spike in insurance spreads after the Ukraine war shock in 2022. (page 6)

Sovereign and climate bonds – EM ESG saw a strong recovery in 2023
The recovery in Emerging Markets ESG is the most striking in 2023 sovereign performance, but higher European and JGB yields overall dragged Climate and Advanced Climate WGBI lower. (page 7)

Performance – Long dated gilts and Bunds led the November rally, in reversal of the Q3 and October sell-off
G7 govt markets enjoyed their strongest month since tightening began, led by long bonds. Credits rallied. (pages 8-10)

Appendix (from page 11)
Global bond market returns, historical bond yields, bond market durations and market values and foreign exchange returns.

Chart 1: Increased divergence in nominal and real yields has been notable in 2023, particularly in Bunds vs Treasuries and gilts. Breakevens have been stable, apart from the increase in Japan.

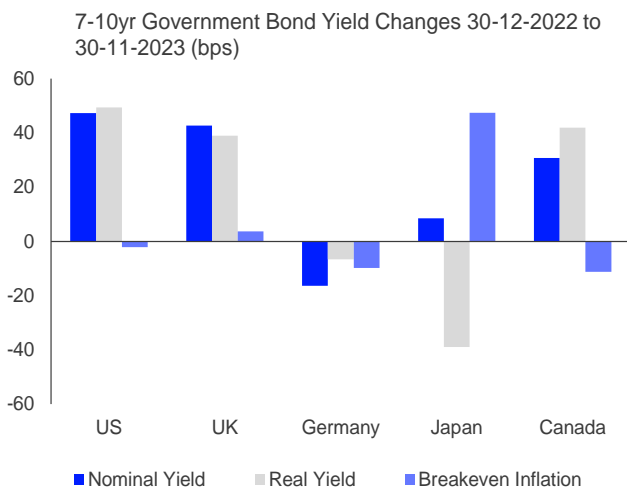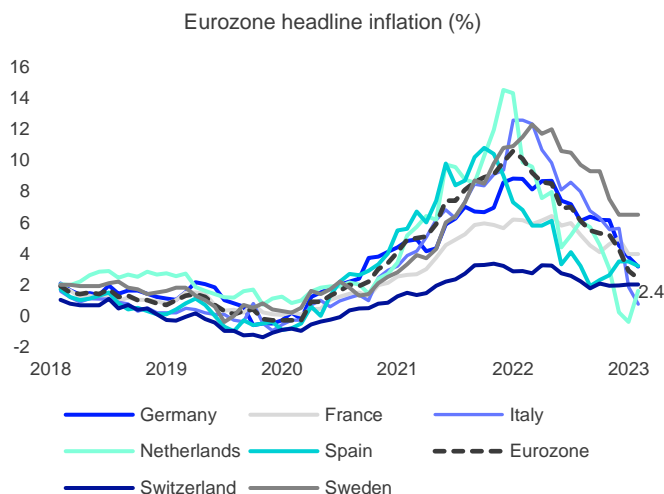7-10yr Government Bond Yield Changes 30-12-2022 to 30-11-2023 (bps)

Chart 2: Eurozone CPI fell sharply in November, down to 2.4% y/y, close to the ECB's 2% target. This reduces the risk of December tightening, even if ECB caution on easing rates is likely.

Eurozone headline inflation (%)

Source: FTSE Russel and LSEG. All data as of November 30, 2023. Past performance is no guarantee of future results. This report should not be considered 'research' for the purposes of MIFID II. Please see the end for important legal disclosures. Bond market data is derived from FTSE Fixed Income Indices. See Appendix for list of indices used for each market.

Macroeconomic Backdrop – Growth and Inflation Expectations

Expectations of soft landings across G7 economies continue to dominate forecasts for 2023-24, even if the prospects for the Eurozone economy deteriorated in November. Eurozone inflation has more than halved since the 2022 peaks (see cover), reducing pressure on the ECB for further tightening as the inflation rate gets closer to the 2% target.

Consensus forecasts show the Eurozone economy growing at less than 1% in 2023-24 but avoiding a technical recession. This is surprising, given the rate increases in Q3, and limited room for fiscal stimulus. The ECB cut its growth forecast to 0.6% for 2023, close to Consensus estimates of 0.5% y/y, after GDP contracted by 0.1% in the three months to September 2023, led by Germany (Chart 1).

In Chart 2, Consensus estimates show that most G7 economies are forecast to return 2% inflation targets in 2024. In the Eurozone, headline inflation has already fallen close to the 2% target, at 2.4% y/y in November, with core inflation at 3.6% y/y, suggesting a lag with Consensus estimates. But within the Eurozone, there is significant disparity; Italy's CPI is 0.8% y/y, while that of France, Germany and Spain is above target, and close to 3% y/y (also see cover).
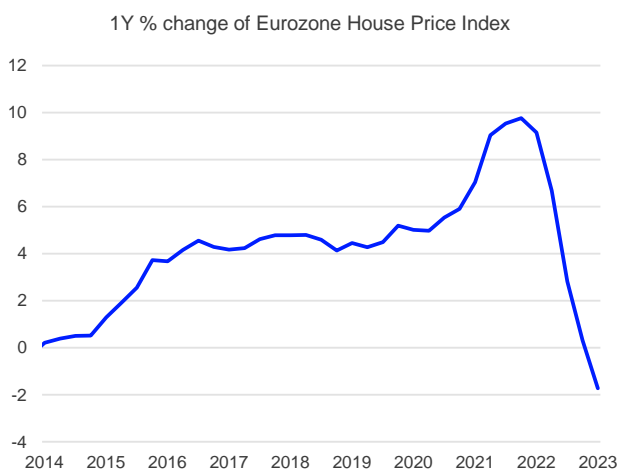
The 450bp of rate tightening implemented by the ECB since July 2022 has cooled European house prices, with the Eurozone House Price Index falling to one of its lowest levels in nearly a decade, though this follows a sharp appreciation in 2021-22, when Covid restricted housing supply (Chart 3).

Chart 4 shows regional manufacturing has remained weak, especially in the Eurozone, despite a modest improvement in November, as underlying demand – both domestic and export – slowed and inventories rose. Despite this improvement, manufacturing production declined for the eighth consecutive month, though at a pace less severe than in previous months.

Chart 1: 2023 proved to be a better year than expected for growth, with economies averting a recession. Forecasts for 2024 also suggest a soft landing, so far, with flattish Eurozone real growth.

Latest Consensus Real GDP Forecasts (%, November 2023)			
	2022	**2023**	**2024**
US	2.1	**2.3**	**1.1**
UK	4.1	**0.4**	**0.4**
Euro Area	3.5	**0.5**	**0.7**
Japan	1.6	**0.8**	**1.0**
China	2.8	**5.0**	**4.4**
Canada	3.5	**1.1**	**0.7**

Chart 2: Consensus inflation estimate for the Eurozone appears high, suggesting a lag effect, given the recent deterioration in growth and the drop in CPI to 2.4% y/y in November.

Consensus Inflation Forecasts (%, November 2023)				
	2023	*Change Since Jan-23 (Bps)*	**2024**	*Change Since Jan-23 (Bps)*
US	**4.2**	*50*	**2.7**	*20*
UK	**7.4**	*40*	**3.0**	*50*
Eurozone	**5.6**	*-40*	**2.7**	*20*
Japan	**2.9**	*110*	**2.2**	*90*
China	**0.5**	*-180*	**1.8**	*-50*
Canada	**3.9**	*20*	**2.5**	*30*

Chart 3: House prices have sharply contracted since 2022 with ECB policy tightening and are now well below pre-Covid levels as economic growth contracts.
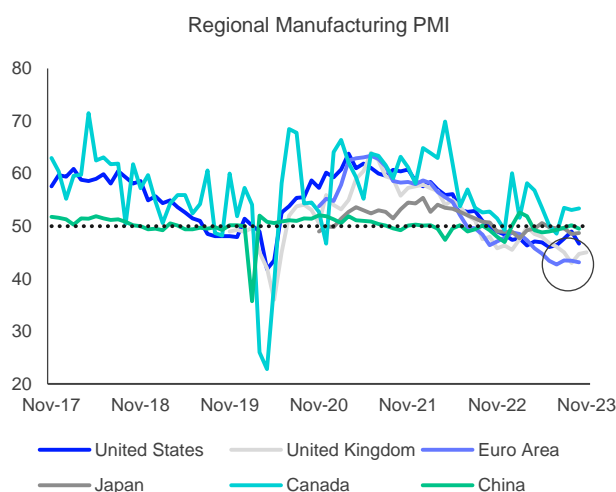
Chart 4: The Eurozone has taken a large hit in manufacturing, with PMI falling through 50 for most of 2023 as new orders decline. Canadian PMI has been the most robust among G7 economies in the last 12 months.

1Y % change of Eurozone House Price Index

Regional Manufacturing PMI

— United States   — United Kingdom   — Euro Area
— Japan   — Canada   — China

Financial Conditions and Monetary Policy Settings

Financial market sentiment shifted sharply in November, as risk appetite recovered, and financial conditions eased, helped by lower inflation. Markets are front-running policy easing again, with 10s/2s re-inverting, and Fed easing priced in by mid-2024. Central bank caution is likely on easing, but divergent economies suggest rate cuts will be less co-ordinated. Pressure for fiscal policy activism may increase in 2024, but debt/GDP ratios impose important constraints.

The Fed, BoE and ECB were given a little more room for manoeuvre by lower inflation data, signs labour markets are cooling, and inflation expectations remaining anchored. This would suggest more extended policy pauses until Q1 2024 at least. After criticism for reacting too slowly to higher inflation in 2021-22, it seems likely central banks will be cautious about easing policy quickly, and particularly the Fed, with the economy enjoying a relatively soft landing (Chart 1).

The US dollar fell sharply in November, as markets priced in Fed easing by mid-2024, after lower US inflation and signs of weaker growth in Q4 (Chart 2). The risk rally also favoured the Euro. More hints from the BoJ about the end of curve control helped the yen recover from the Y150 level versus the US dollar. Some easing in rate differentials also helped the renminbi (Chart 2).

After lower inflation numbers, and GDP growth near zero in Europe in Q3, G7 central banks are more firmly on hold, led by the US Fed. The PBoC faces a different deflationary challenge (Chart 3).

Debt service costs have already become a major element in public deficits, given low real growth. Infrastructure demands, and central bank counter-inflation policy suggests fiscal policy may become more active, or neo-Keynesian, in demand management, but Eurozone fiscal rules may constrain this. The fiscal policy debate seems set to deepen in the US in election year (Chart 4).

Chart 1: Eurozone unemployment remains close to historical lows, despite tight labour markets easing a little. As a result, the ECB has ruled out an earlier pivot than 2H 2024, for fear of reignited inflation.

Eurozone inflation and labour market (%)

- - - - Eurozone, CPI Y/Y, Standardised
——— Eurostat, Eurozone, Labour Cost Y/Y, Current Prices
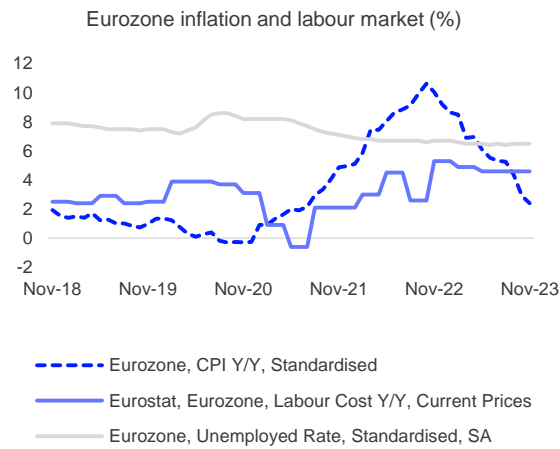——— Eurozone, Unemployed Rate, Standardised, SA

Chart 2: The US dollar retreated against most currencies in 2023 and Nov., including the euro, on expectations of Fed easing policy from mid-2024 after both headline and core inflation continued to decline.

US dollar index and major currency vs USD

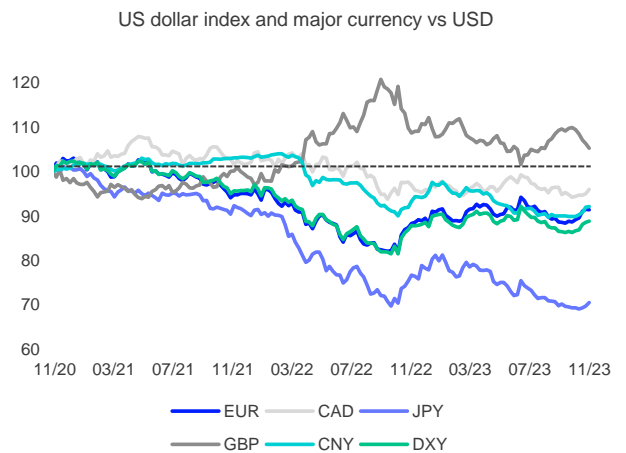——— EUR   ——— CAD   ——— JPY
——— GBP   ——— CNY   ——— DXY

Chart 3: Central banks paused policy in November after inflation rates decelerated sharply, more than halving since their peak in 2022. Still, most G7 central banks have ruled out early pivots so far?

Central bank policy rates (%)

——— Fed   ——— BoE   ——— BoC
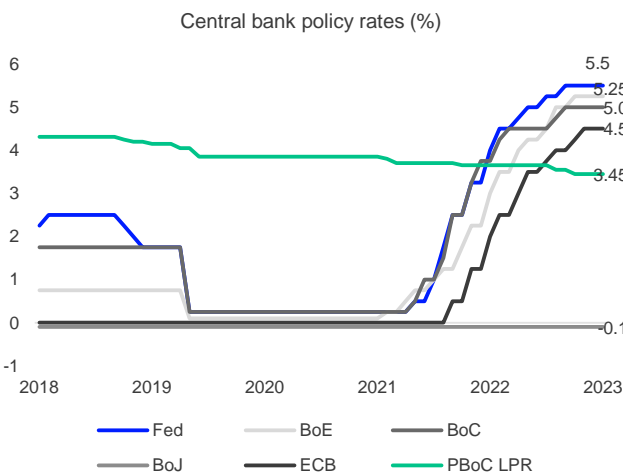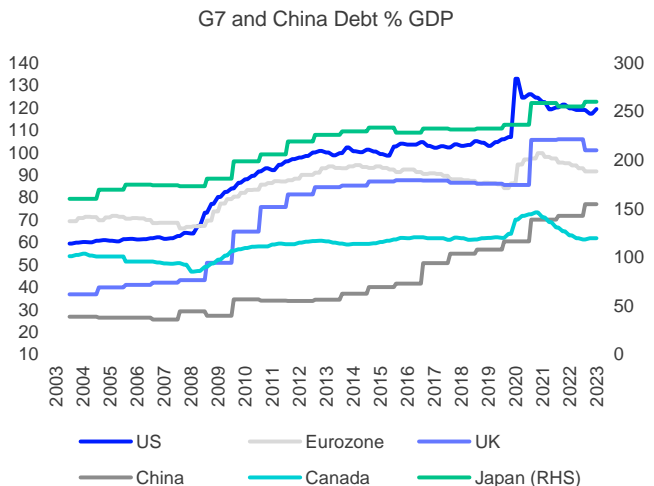——— BoJ   ——— ECB   ——— PBoC LPR

Chart 4: Although there are similarities in 2023 with the Goldilocks era, a key difference for policymakers is the level of public sector debt to GDP. Eurozone debt GDP was 70% of GDP 10Y ago vs 90% today.

G7 and China Debt % GDP

——— US   ——— Eurozone   ——— UK
——— China   ——— Canada   ——— Japan (RHS)

Global Yields, Curves and Spread Analysis

Chart 1: G7 yields fell sharply on lower inflation and the central bank policy pause, despite central banks keeping interest rates higher for longer and so far, ruling out early pivots.
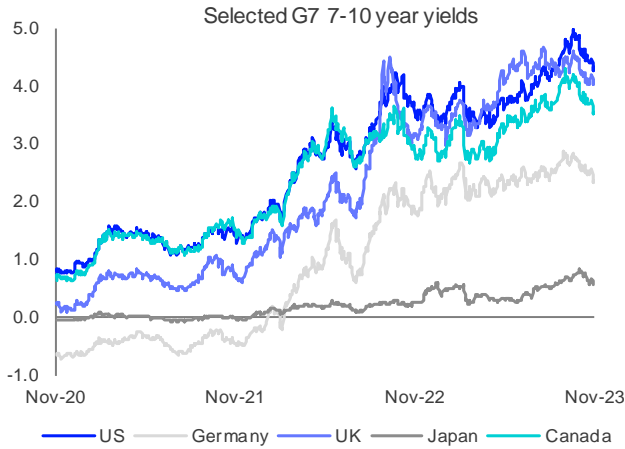
Chart 2: Inflation linked bond yields fell, as investors modestly revised down rate expectations in 2024. Lower inflation and weak growth in Europe helped keep real yields below US Tips levels.

Selected G7 7-10 year yields

Legend: US, Germany, UK, Japan, Canada

Regional and global real yields

Legend: US IL 7-10yr, UK IL 7-10yr, WILSI 7-10yr, Germany IL 7-10yr, Japan IL 7-10yr
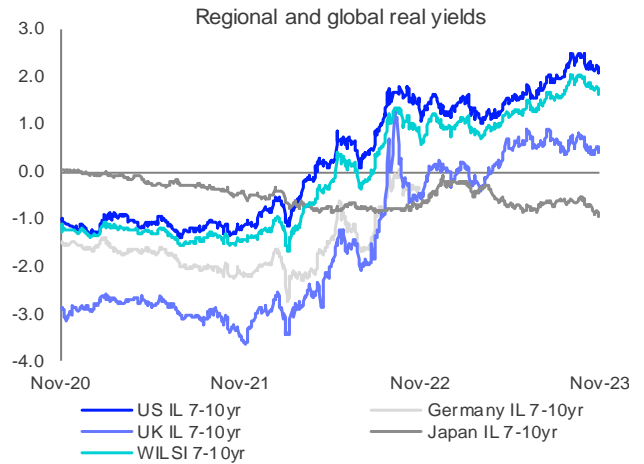
Chart 3: G7 yield curves re-inverted as 7-10yr yields fell sharply in the rally, and 1-3yr yields were constrained by central bank policy rates. The JGB curve flattened after months of testing its 1% yield curve ceiling.
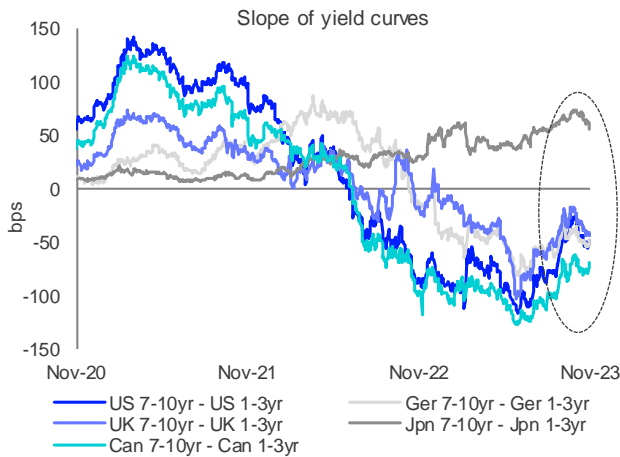
Chart 4: Long maturities also rallied, unwinding some of the recent dis-inversion, as investors began to re-focus on re-investment risks. The Canadian curve remains the most inverted in 20+yrs vs 1-3 yrs.

Slope of yield curves

Legend: US 7-10yr - US 1-3yr, UK 7-10yr - UK 1-3yr, Can 7-10yr - Can 1-3yr, Ger 7-10yr - Ger 1-3yr, Jpn 7-10yr - Jpn 1-3yr

Selected G7 yield curves

Legend: US 20+yr - US 1-3yr, UK 20+yr - UK 1-3yr, Can 20+yr - Can 1-3yr, Ger 20+yr - Ger 1-3yr, Jpn 20+yr - Jpn 1-3yr
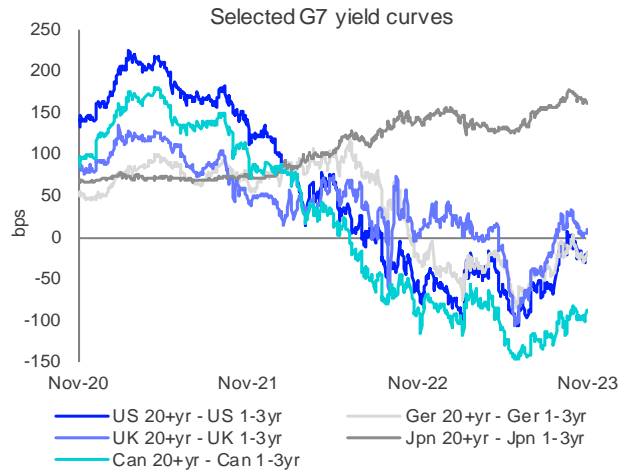
Chart 5: JGB breakevens continue to increase, relative to other G7 breakevens. US 7-10 yr breakevens fell in November as nominal yields dropped relative to real yields, after lower inflation data, as in the UK.
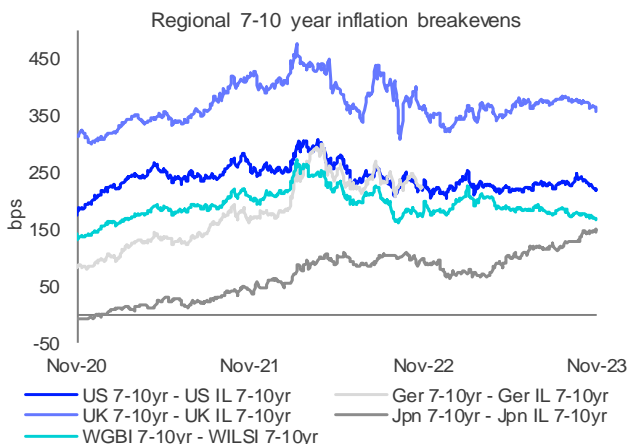
Chart 6: Short-dated inflation breakevens fell sharply in November, after lower-than-expected inflation data, showing the normal strong correlation with spot inflation rates.

Regional 7-10 year inflation breakevens

Legend: US 7-10yr - US IL 7-10yr, UK 7-10yr - UK IL 7-10yr, WGBI 7-10yr - WILSI 7-10yr, Ger 7-10yr - Ger IL 7-10yr, Jpn 7-10yr - Jpn IL 7-10yr

Short, medium and long global breakevens

Legend: WGBI 1-3yr - WILSI 1-3yr, WGBI 20+yr - WILSI 20+yr, WGBI 7-10yr - WILSI 7-10yr

Source: FTSE Russell and LSEG. All data as of November 30, 2023. Past performance is no guarantee of future results. Please see the end for important legal disclosures. Bond market data is derived from FTSE Fixed Income Indices. See Appendix Glossary for list of indices used for each market. For professional investors only.

Yield Spread and Credit Spread Analysis

Chart 1: US Treasury spreads narrowed in November, and repeated the normal pro-cyclical pattern, rising during periods of rising yields and vice versa. The biggest moves were versus Bunds and gilts.
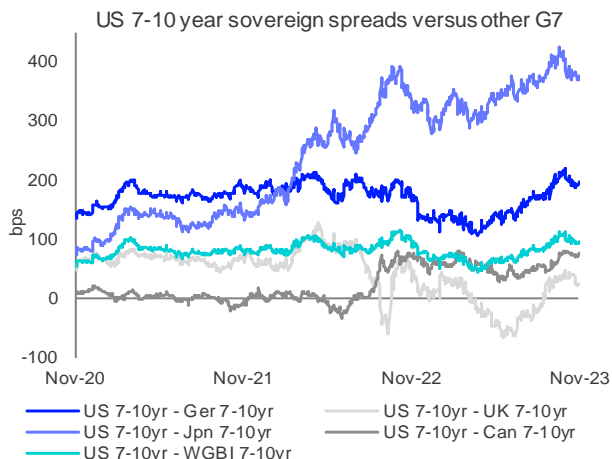
Chart 2: Italian sovereign spreads fell sharply in November versus peers, after the sharp decline in Eurozone inflation, notably in Italy, down 0.8% y/y. Italy's core inflation was still high at 3.65% y/y.

US 7-10 year sovereign spreads versus other G7

Legend: US 7-10yr - Ger 7-10yr; US 7-10yr - UK 7-10yr; US 7-10yr - Jpn 7-10yr; US 7-10yr - Can 7-10yr; US 7-10yr - WGBI 7-10yr

Italian 7-10 year spreads

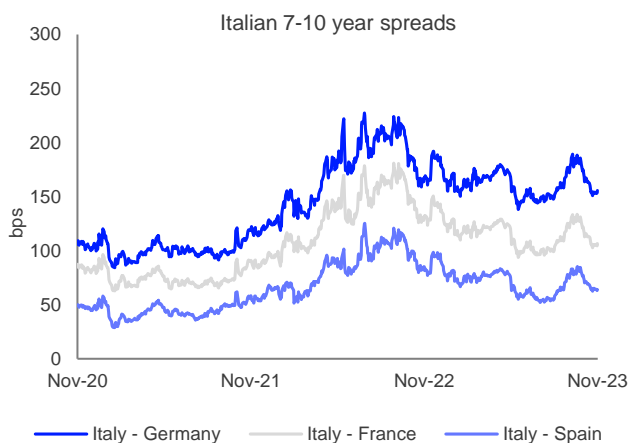Legend: Italy - Germany; Italy - France; Italy - Spain

Chart 3: EM sovereign spreads widened a little in the 7-10yr area, mainly because G7 yields fell sharply in the November rally, though this follows general spread tightening since 2021, apart from vs Japan.
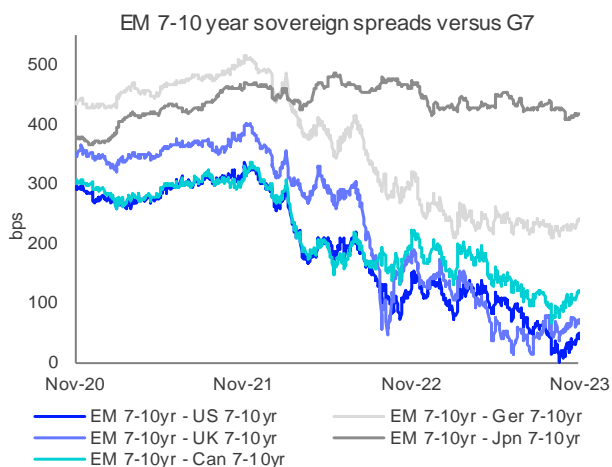
Chart 4: It is a similar story in China on sovereign spreads, which widened vs the G7 in November, following protracted tightening in 2023. Moves were limited vs Bunds, since yields fell less in Germany.
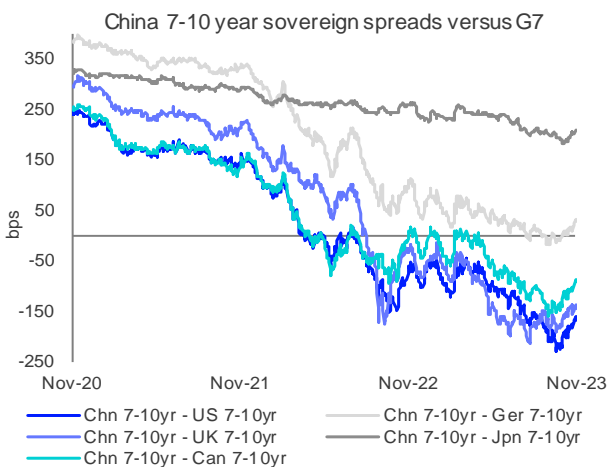
EM 7-10 year sovereign spreads versus G7

Legend: EM 7-10yr - US 7-10yr; EM 7-10yr - Ger 7-10yr; EM 7-10yr - UK 7-10yr; EM 7-10yr - Jpn 7-10yr; EM 7-10yr - Can 7-10yr

China 7-10 year sovereign spreads versus G7

Legend: Chn 7-10yr - US 7-10yr; Chn 7-10yr - Ger 7-10yr; Chn 7-10yr - UK 7-10yr; Chn 7-10yr - Jpn 7-10yr; Chn 7-10yr - Can 7-10yr

Chart 5: Credit spreads fell in November, despite the sharp drop in govt bond yields in the 7-10 year area. High yield joined the rally, reflecting a recovery in risk appetite and strong stock markets.
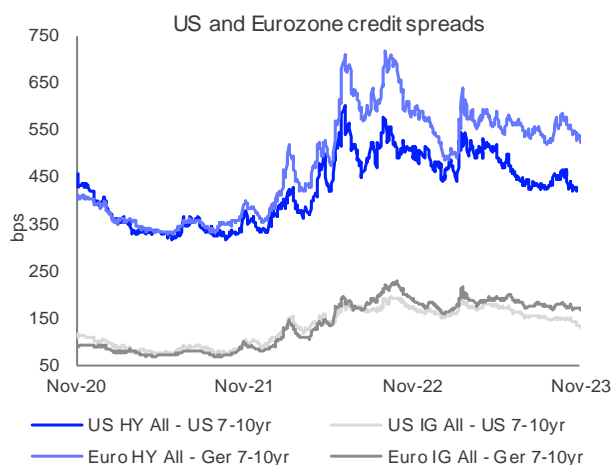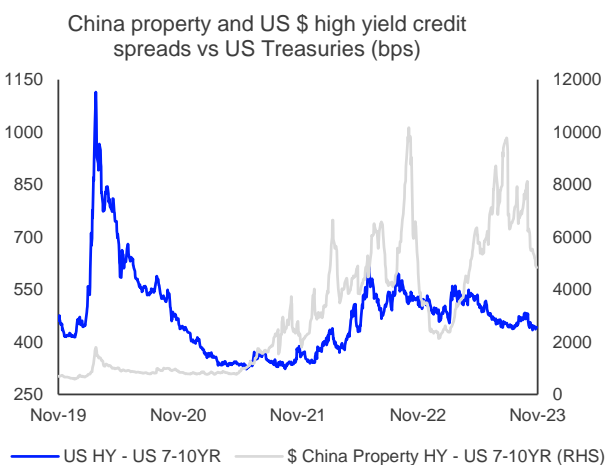
Chart 6: Chinese $ HY spreads declined sharply, and fell below 5000bp, in November, after regulators suggested measures to help property developers access funding from Chinese banks.

US and Eurozone credit spreads

Legend: US HY All - US 7-10yr; US IG All - US 7-10yr; Euro HY All - Ger 7-10yr; Euro IG All - Ger 7-10yr

China property and US $ high yield credit spreads vs US Treasuries (bps)

Legend: US HY - US 7-10YR; $ China Property HY - US 7-10YR (RHS)

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Credit sector and MBS analysis

Chart 1: Eurozone credit spreads show some unwinding of the spike in insurance spreads after the Ukraine war shock in 2022. But IG spreads are still above pre-Ukraine war levels.
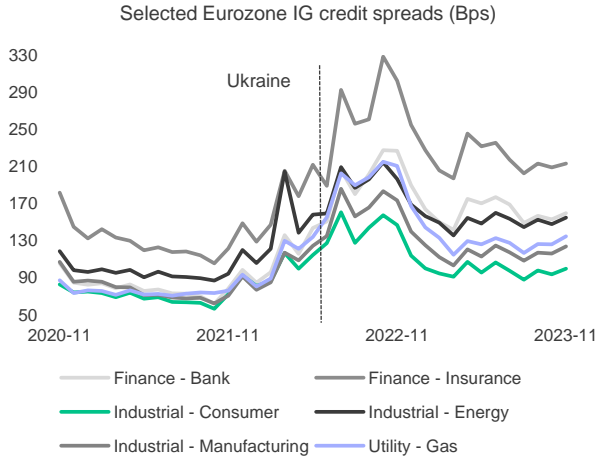
Chart 2: UK credit sector spreads have all widened in recent months, reversing months of declines. Consumer spreads have remained the most stable, underpinned by improved consumer demand.

Selected Eurozone IG credit spreads (Bps)
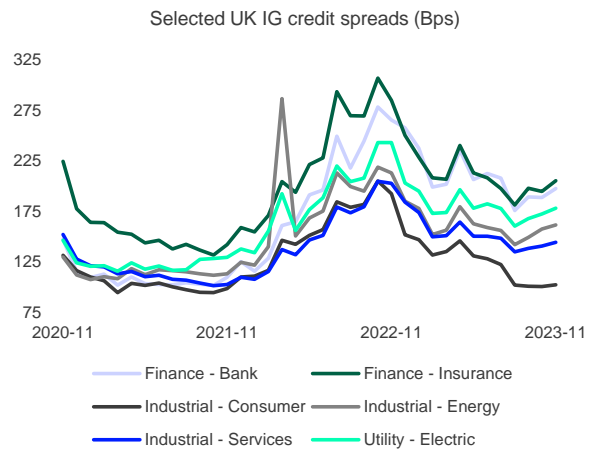

Selected UK IG credit spreads (Bps)

Chart 3: Energy spreads continue to show high volatility but tightened in November, with gas utilities. Bank spreads widened as yields declined on US Treasuries and the yield curve re-inverted.
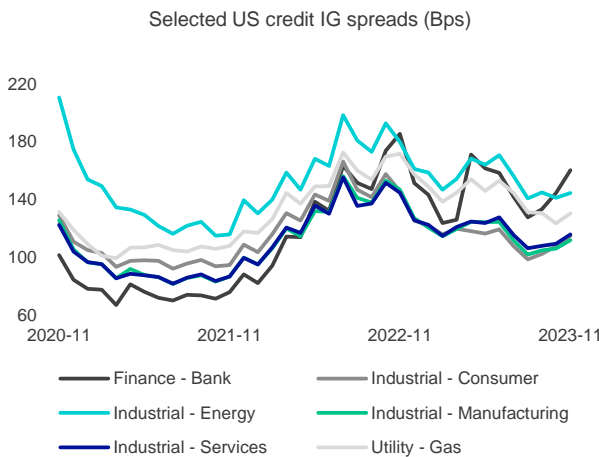
Chart 4: US real estate spreads have widened recently, tracking Financials, after tightening in recent months and widening sharply in 2022 on structural concerns over office space, and higher rates.

Selected US credit IG spreads (Bps)

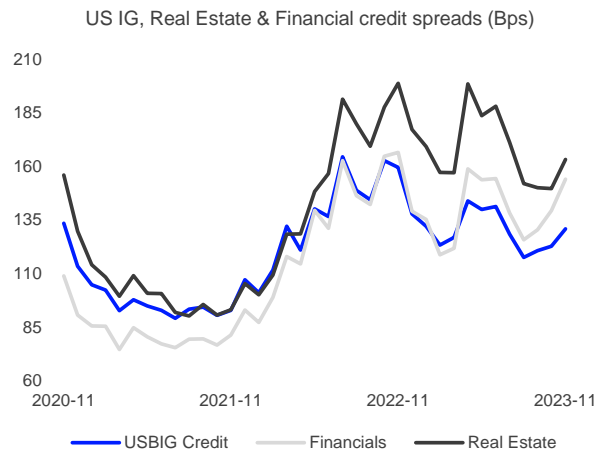### US IG, Real Estate & Financial credit spreads (Bps)

Chart 5: Mortgage refinancings remain depressed by high mortgage rates, as homeowners sit tight with low coupon mortgages from 2020-21. Prepayment rate estimates remain very low for mortgage pools.
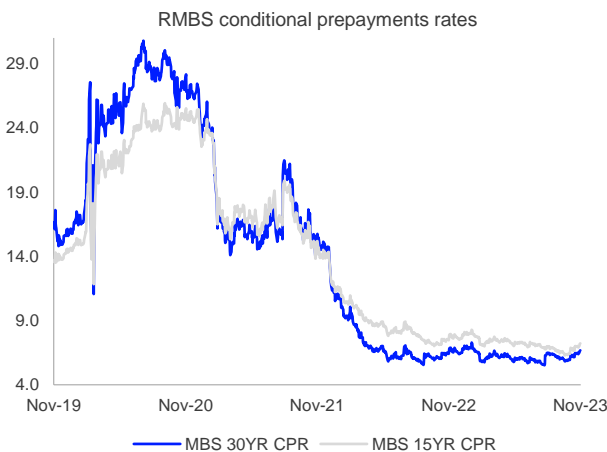
Chart 6: The Fed targeted faster reduction of its larger US Treasury holdings, relative to MBS holdings when QT began. Lower mortgage refis have also slowed the pace of RMBS run-offs.

RMBS conditional prepayments rates

Fed MBS and US Treasury holdings ($ mn.)
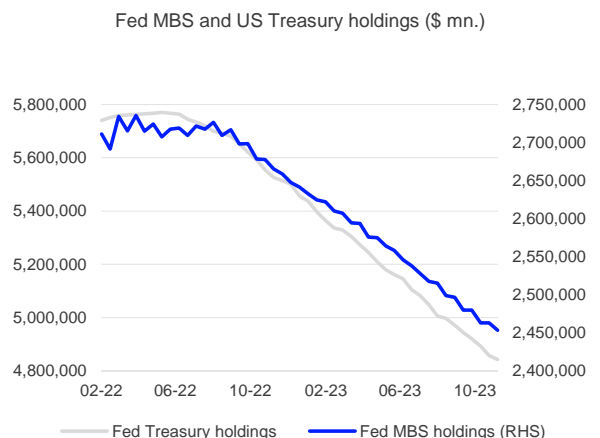
Source: FTSE Russell and LSEG. Data as of end-November 2023. Past performance is no guarantee of future results. Please see the end for important legal disclosures. Bond market data is derived from FTSE Fixed Income Indices. See Appendix Glossary for list of indices. For professional investors only.

Sovereign and Climate Bonds Analysis

Chart 1: The recovery in Emerging Markets ESG is the most striking in 2023 performance. Higher European and JGB yields dragged CWGCI and ACWGBI lower, but adjusted climate WGBI recovered.

Chart 2. ESG WGBI has a higher US weighting, and big underweight in China, reflected in its underperformance in 2022-23. Adjusted climate WGBI outperformed WGBI in 2023 after a re-weighting towards Europe.

Selected SI Sovereign Relative Performance
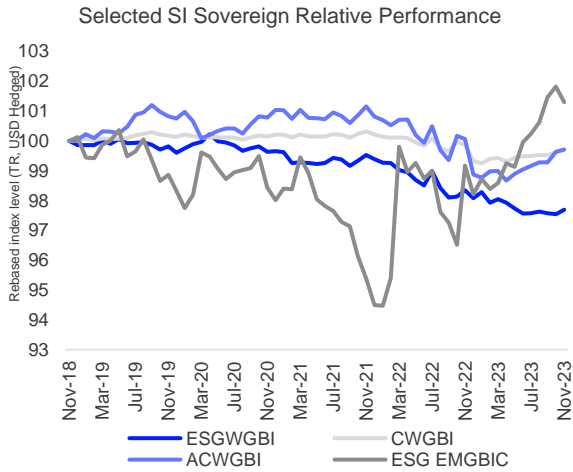

Selected SI Sovereign Spread to WGBI

Chart 3: The Paris-aligned benchmark index (PAB Corp), with its heavy tilt away from carbon, outperformed strongly in the early Covid period, but underperformed since as energy recovered.
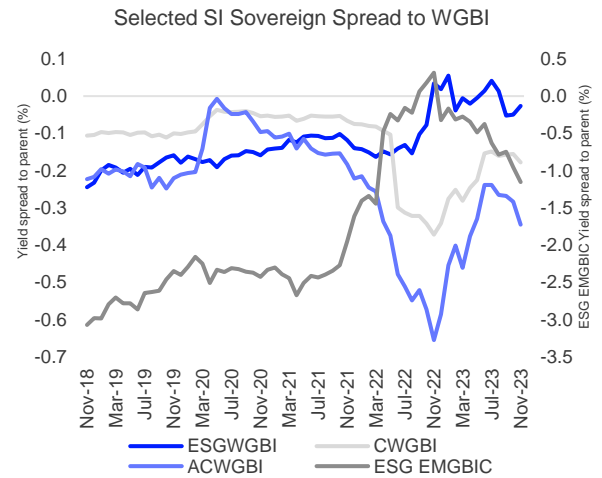
Chart 4: The "greenium" largely disappeared in Green corporates in 2022, after heavy issuance, as yields rose, as the Green WBIG spread move shows vs WBIG. But this has been restored in 2023.

Selected SI corporate and aggregated relative performance

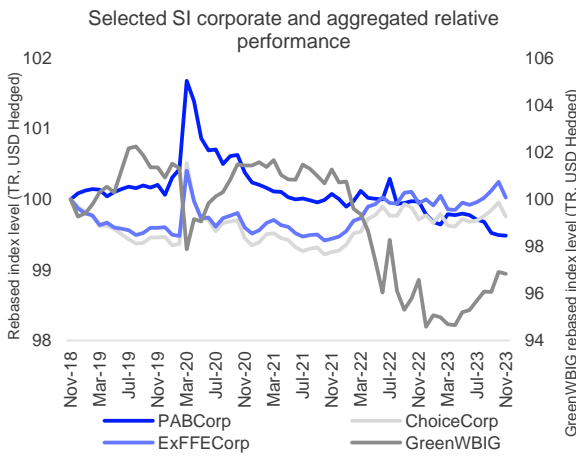### Selected SI corporate & aggregate spread to parent

Chart 5: The November rally in govt bonds, and yield declines, favoured climate WGBI over WGBI, due to the extra duration in lower yielding Bunds and JGBs, though the moves were modest.
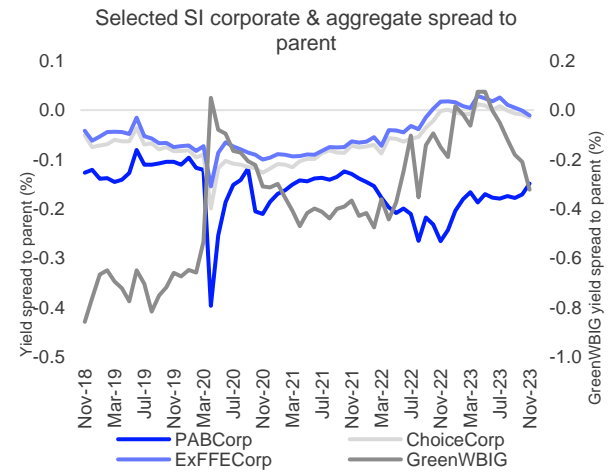
Chart 6: Changes in country weights in Climate WGBI (CW) impacted performance; the underweight in China & overweight in Europe caused the underperformance of CW vs WGBI in 2022-23.
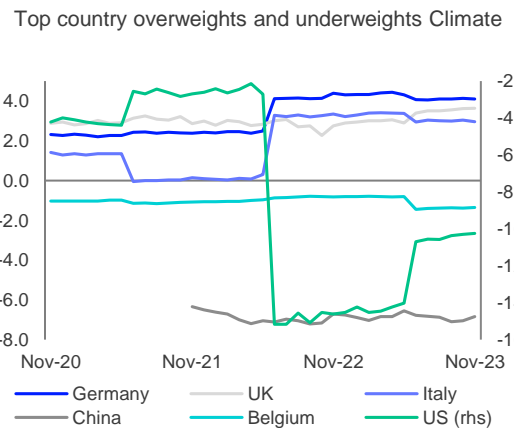
Yield to Maturity of Climate WGBI vs WGBI (%)

Top country overweights and underweights Climate

Source: FTSE Russell and LSEG. All data as of November 30, 2023. Past performance is no guarantee of future results. Please see the end for important legal disclosures. Bond market data is derived from FTSE Fixed Income Indices. See Appendix Glossary for list of indices used for each market. For professional investors only.

Global Bond Market Returns − 1M &YTD % (EUR, LC, TR)

Global bond markets rallied in November on lower inflation, oil prices and weaker economic activity. US Treasuries outperformed other markets in local currency terms, but weakness in the US dollar reduced Euro-based US returns. UK gilts recovered on better inflation data, hopes the BoE would not raise rates again and sterling strength boosted returns.

Most G7 sovereign bonds gained in November in local currency terms, but dollar weakness squeezed euro-based returns for US Treasuries, with losses of -1.7% in shorts. German Bunds gained across all maturities, with returns of 1-9% in November. Longs outperformed generally, returning 2-9% in Euros, with long gilts the strongest gainers.

JGBs rallied in local currency terms in November but extended the double-digit losses (as low as -14%) since January, in Euros, mainly due to yen currency weakness. China also underperformed in November.

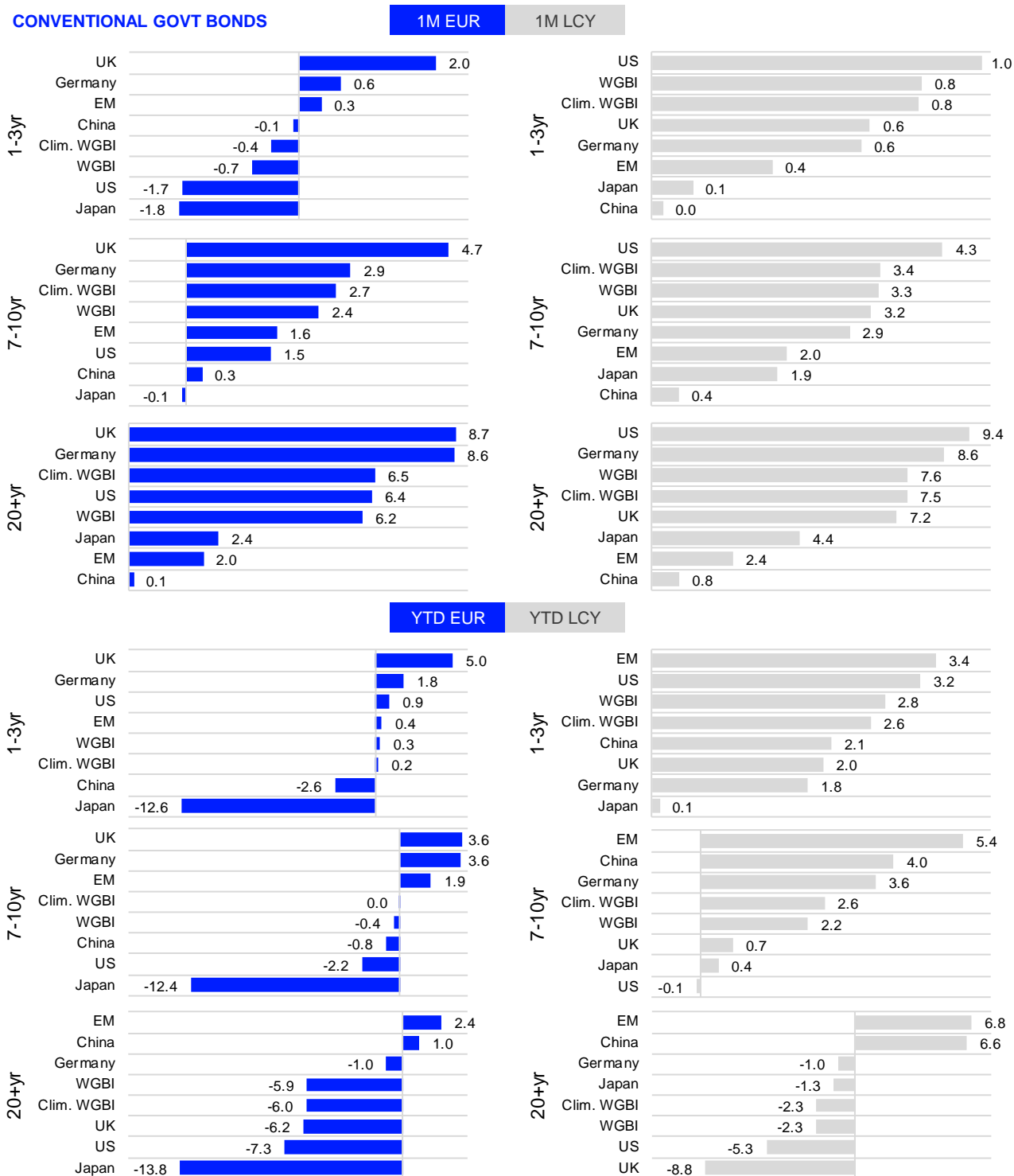**CONVENTIONAL GOVT BONDS**

1M EUR / 1M LCY

1-3yr (1M EUR)
Market	Value
UK	2.0
Germany	0.6
EM	0.3
China	-0.1
Clim. WGBI	-0.4
WGBI	-0.7
US	-1.7
Japan	-1.8

1-3yr (1M LCY)
Market	Value
US	1.0
WGBI	0.8
Clim. WGBI	0.8
UK	0.6
Germany	0.6
EM	0.4
Japan	0.1
China	0.0

7-10yr (1M EUR)
Market	Value
UK	4.7
Germany	2.9
Clim. WGBI	2.7
WGBI	2.4
EM	1.6
US	1.5
China	0.3
Japan	-0.1

7-10yr (1M LCY)
Market	Value
US	4.3
Clim. WGBI	3.4
WGBI	3.3
UK	3.2
Germany	2.9
EM	2.0
Japan	1.9
China	0.4

20+yr (1M EUR)
Market	Value
UK	8.7
Germany	8.6
Clim. WGBI	6.5
US	6.4
WGBI	6.2
Japan	2.4
EM	2.0
China	0.1

20+yr (1M LCY)
Market	Value
US	9.4
Germany	8.6
WGBI	7.6
Clim. WGBI	7.5
UK	7.2
Japan	4.4
EM	2.4
China	0.8

YTD EUR / YTD LCY

1-3yr (YTD EUR)
Market	Value
UK	5.0
Germany	1.8
US	0.9
EM	0.4
WGBI	0.3
Clim. WGBI	0.2
China	-2.6
Japan	-12.6

1-3yr (YTD LCY)
Market	Value
EM	3.4
US	3.2
WGBI	2.8
Clim. WGBI	2.6
China	2.1
UK	2.0
Germany	1.8
Japan	0.1

7-10yr (YTD EUR)
Market	Value
UK	3.6
Germany	3.6
EM	1.9
Clim. WGBI	0.0
WGBI	-0.4
China	-0.8
US	-2.2
Japan	-12.4

7-10yr (YTD LCY)
Market	Value
EM	5.4
China	4.0
Germany	3.6
Clim. WGBI	2.6
WGBI	2.2
UK	0.7
Japan	0.4
US	-0.1

20+yr (YTD EUR)
Market	Value
EM	2.4
China	1.0
Germany	-1.0
WGBI	-5.9
Clim. WGBI	-6.0
UK	-6.2
US	-7.3
Japan	-13.8

20+yr (YTD LCY)
Market	Value
EM	6.8
China	6.6
Germany	-1.0
Japan	-1.3
Clim. WGBI	-2.3
WGBI	-2.3
US	-5.3
UK	-8.8

Global Inflation-Linked Bond Returns − 1M & YTD % (EUR, LC, TR)

Longer inflation linked (IL) bonds rallied in November, as markets reversed some of the YTD losses, with UK returns boosted by currency gains vs the Euro. Credit also did well, with Euro HY continuing to outperform IG, though Euro HY remained the strongest performer YTD, with returns of 10%.
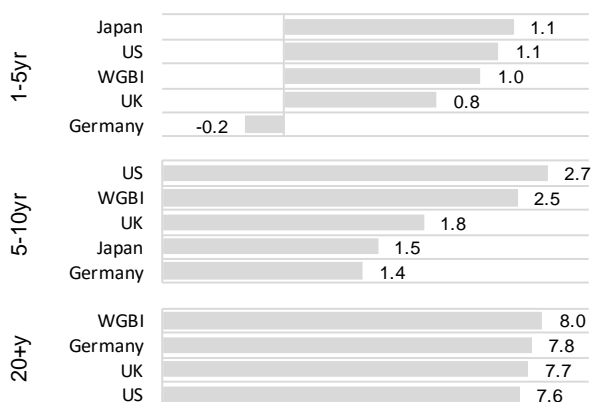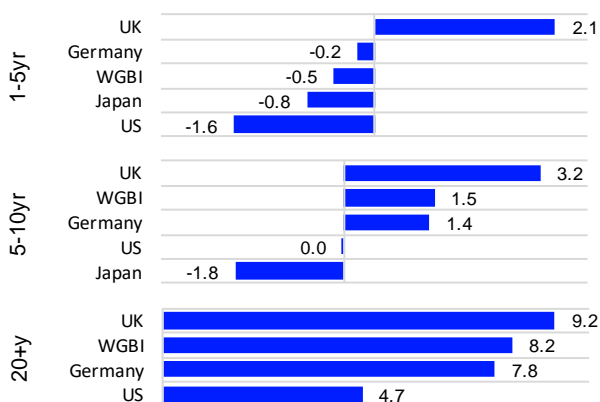
Long inflation linked bonds boradly matched long conventional returns in the November rally, with inflation breakevens stable, and gains of up to 8-9% in UK and Bund IL bonds. Long Tips also gained nearly 5%. Credit joined the rally, as risk assets rallied, and yields fell across the board, led by Euro HY.

YTD losses were pared to 7-13% in long Tips and UK IL in Euros, though 5-10y gilts and Bunds IL show positive returns of 1-3%.
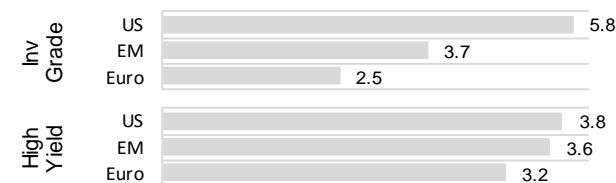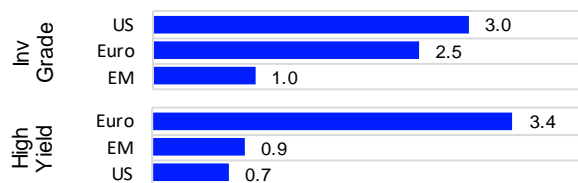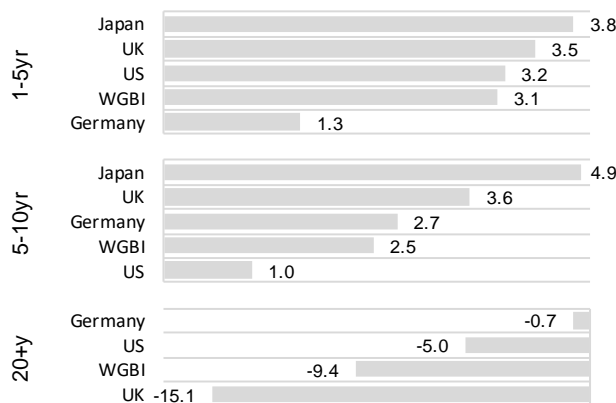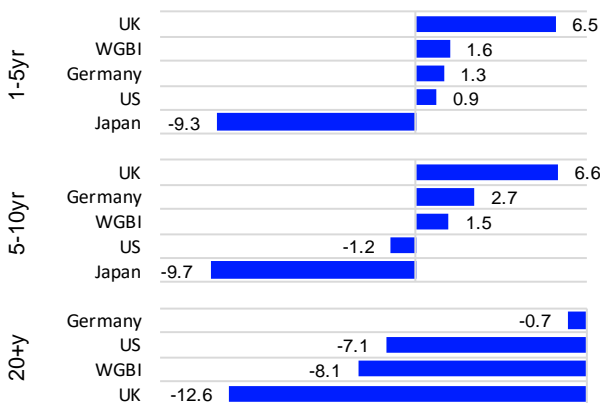
INFLATION LINKED BONDS [1M EUR] [1M LCY]

1-5yr (1M EUR)
UK	2.1
Germany	-0.2
WGBI	-0.5
Japan	-0.8
US	-1.6

1-5yr (1M LCY)
Japan	1.1
US	1.1
WGBI	1.0
UK	0.8
Germany	-0.2

5-10yr (1M EUR)
UK	3.2
WGBI	1.5
Germany	1.4
US	0.0
Japan	-1.8

5-10yr (1M LCY)
US	2.7
WGBI	2.5
UK	1.8
Japan	1.5
Germany	1.4

20+y (1M EUR)
UK	9.2
WGBI	8.2
Germany	7.8
US	4.7

20+y (1M LCY)
WGBI	8.0
Germany	7.8
UK	7.7
US	7.6

CORPORATE BONDS

Inv Grade (1M EUR)
US	3.0
Euro	2.5
EM	1.0

Inv Grade (1M LCY)
US	5.8
EM	3.7
Euro	2.5

High Yield (1M EUR)
Euro	3.4
EM	0.9
US	0.7

High Yield (1M LCY)
US	3.8
EM	3.6
Euro	3.2

INFLATION LINKED BONDS [YTD EUR] [YTD LCY]
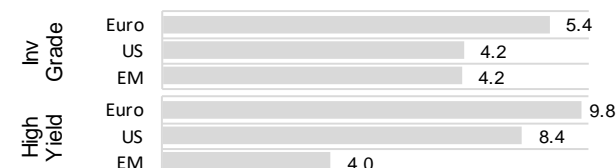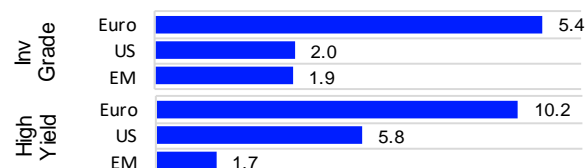
1-5yr (YTD EUR)
UK	6.5
WGBI	1.6
Germany	1.3
US	0.9
Japan	-9.3

1-5yr (YTD LCY)
Japan	3.8
UK	3.5
US	3.2
WGBI	3.1
Germany	1.3

5-10yr (YTD EUR)
UK	6.6
Germany	2.7
WGBI	1.5
US	-1.2
Japan	-9.7

5-10yr (YTD LCY)
Japan	4.9
UK	3.6
Germany	2.7
WGBI	2.5
US	1.0

20+y (YTD EUR)
Germany	-0.7
US	-7.1
WGBI	-8.1
UK	-12.6

20+y (YTD LCY)
Germany	-0.7
US	-5.0
WGBI	-9.4
UK	-15.1

CORPORATE BONDS

Inv Grade (YTD EUR)
Euro	5.4
US	2.0
EM	1.9

Inv Grade (YTD LCY)
Euro	5.4
US	4.2
EM	4.2

High Yield (YTD EUR)
Euro	10.2
US	5.8
EM	1.7

High Yield (YTD LCY)
Euro	9.8
US	8.4
EM	4.0

Source: FTSE Russell. All data as of November 30, 2023. Past performance is no guarantee of future results. Please see the end for important legal disclosures. Bond market data is derived from FTSE Fixed Income Indices. See Appendix Glossary for list of Indices used for each market. For professional investors only.

Top and Bottom Bond Returns − 1M & 12M % (EUR, TR)

Long NZ, Australian, Canadian and European govts with long maturities outperformed most in November, after inflation fell sharply and despite central banks cautioning on early pivots. Over 12M, long EM inflation bonds and Euro high yield credits still dominate the performance ranking, while long govt. returns remain (though less) deeply negative.
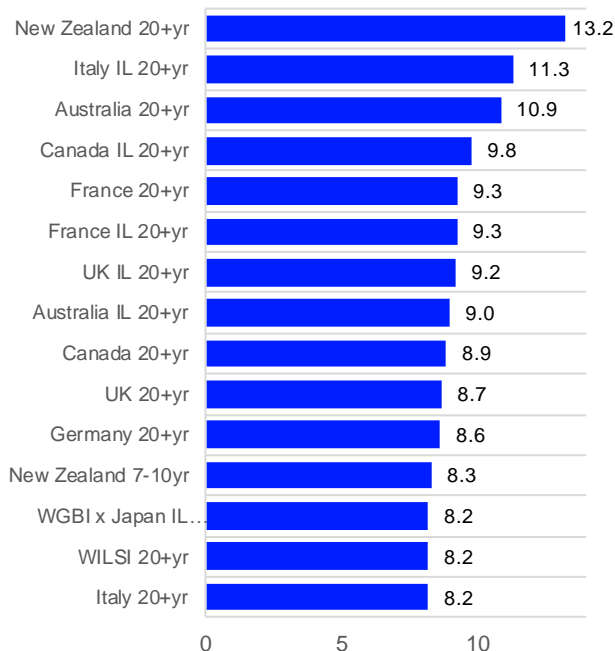
Eurozone, New Zealand, Australian, Canadian with 20-year maturities outperformed in November with returns of 9-13% in euro terms. Short JGBs and US Treasuries lost 1-2% mostly on account of currency weakness versus the Euro.

The scale of the November rally reduced 12M losses significantly in longer maturity bonds, but the Bottom 15 returns are still completely dominated by long duration bonds. Conversely, short bonds pre-dominate in the Bottom 15 returns.
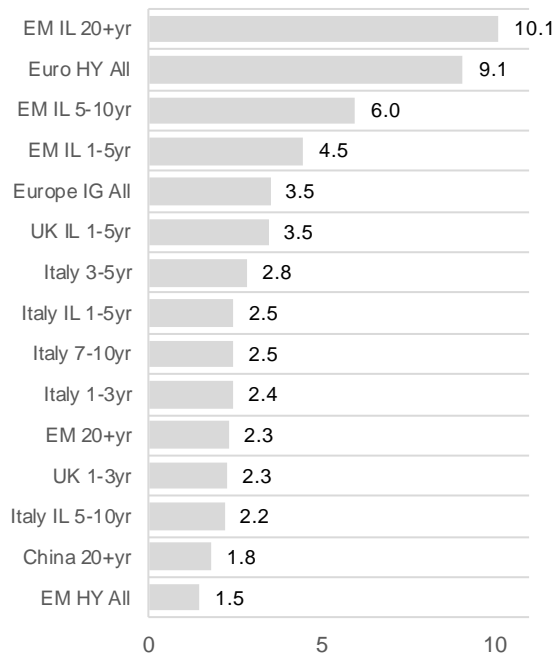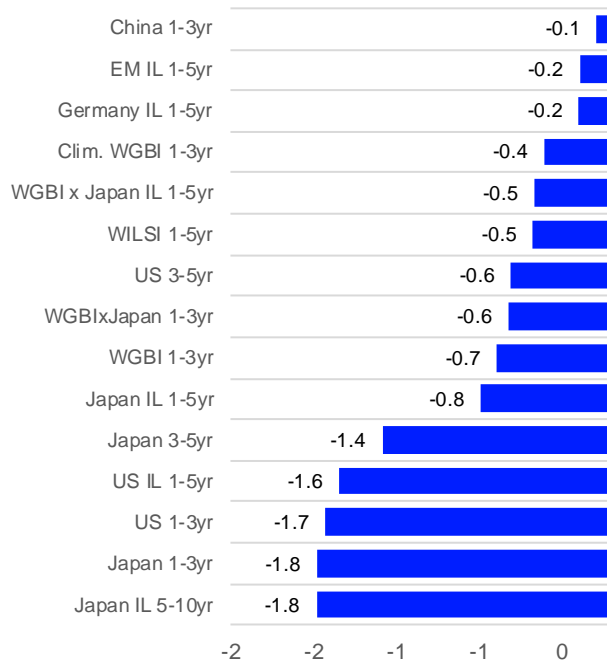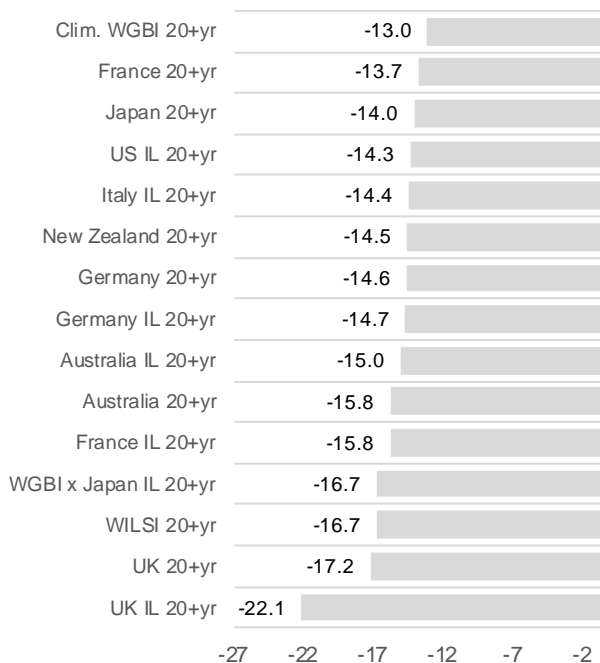
1M EUR	12M EUR

Top 15 (1M EUR)

New Zealand 20+yr	13.2
Italy IL 20+yr	11.3
Australia 20+yr	10.9
Canada IL 20+yr	9.8
France 20+yr	9.3
France IL 20+yr	9.3
UK IL 20+yr	9.2
Australia IL 20+yr	9.0
Canada 20+yr	8.9
UK 20+yr	8.7
Germany 20+yr	8.6
New Zealand 7-10yr	8.3
WGBI x Japan IL...	8.2
WILSI 20+yr	8.2
Italy 20+yr	8.2

Top 15 (12M EUR)

EM IL 20+yr	10.1
Euro HY All	9.1
EM IL 5-10yr	6.0
EM IL 1-5yr	4.5
Europe IG All	3.5
UK IL 1-5yr	3.5
Italy 3-5yr	2.8
Italy IL 1-5yr	2.5
Italy 7-10yr	2.5
Italy 1-3yr	2.4
EM 20+yr	2.3
UK 1-3yr	2.3
Italy IL 5-10yr	2.2
China 20+yr	1.8
EM HY All	1.5

Bottom 15 (1M EUR)

China 1-3yr	-0.1
EM IL 1-5yr	-0.2
Germany IL 1-5yr	-0.2
Clim. WGBI 1-3yr	-0.4
WGBI x Japan IL 1-5yr	-0.5
WILSI 1-5yr	-0.5
US 3-5yr	-0.6
WGBIxJapan 1-3yr	-0.6
WGBI 1-3yr	-0.7
Japan IL 1-5yr	-0.8
Japan 3-5yr	-1.4
US IL 1-5yr	-1.6
US 1-3yr	-1.7
Japan 1-3yr	-1.8
Japan IL 5-10yr	-1.8

Bottom 15 (12M EUR)

Clim. WGBI 20+yr	-13.0
France 20+yr	-13.7
Japan 20+yr	-14.0
US IL 20+yr	-14.3
Italy IL 20+yr	-14.4
New Zealand 20+yr	-14.5
Germany 20+yr	-14.6
Germany IL 20+yr	-14.7
Australia IL 20+yr	-15.0
Australia 20+yr	-15.8
France IL 20+yr	-15.8
WGBI x Japan IL 20+yr	-16.7
WILSI 20+yr	-16.7
UK 20+yr	-17.2
UK IL 20+yr	-22.1

Source: FTSE Russell. All data as of November 30, 2023. This analysis is taken from 100+ FTSE Russell sub-indices. Past performance is no guarantee of future results. Please see the end for important legal disclosures. Bond market data is derived from FTSE Fixed Income Indices. See Appendix Glossary for list of Indices used for each market. For professional investors only.

Appendix − Global Bond Market Returns % (EUR & LC, TR) – November 30, 2023

Government Bond Returns

Green highlight indicates highest 15%, red indicates lowest 15%

Top 15% Bottom 15%

|		3M		6M		YTD		12M	
		Local	EUR	Local	EUR	Local	EUR	Local	EUR
US	1-3yr	1.42	1.58	1.72	0.01	3.17	0.92	3.34	-2.48
	7-10yr	-0.52	-0.36	-2.90	-4.53	-0.06	-2.25	-1.51	-7.06
	20+yr	-3.88	-3.72	-8.53	-10.07	-5.26	-7.33	-7.69	-12.89
	IG All	1.45	1.61	1.53	-0.18	4.24	1.96	3.76	-2.08
	HY All	1.12	1.01	4.47	2.44	8.45	5.79	7.62	1.29
UK	1-3yr	1.97	1.59	2.59	2.89	2.02	5.03	1.95	2.27
	7-10yr	3.13	2.75	2.79	3.09	0.68	3.64	-2.79	-2.49
	20+yr	0.80	0.42	0.96	1.26	-8.85	-6.17	-17.45	-17.19
Euro	IG All	2.25	2.25	2.95	2.95	5.45	5.45	3.51	3.51
	HY All	3.25	3.21	5.35	5.39	9.84	10.20	9.03	9.10
Japan	1-3yr	0.04	-1.15	-0.11	-7.13	0.09	-12.62	-0.02	-10.94
	7-10yr	0.06	-1.13	-1.16	-8.10	0.38	-12.37	-1.18	-11.98
	20+yr	-1.66	-2.83	-8.58	-15.00	-1.28	-13.82	-3.50	-14.04
China	1-3yr	0.11	2.54	0.85	-1.44	2.12	-2.62	2.34	-3.27
	7-10yr	0.13	2.55	1.83	-0.47	4.00	-0.83	4.57	-1.16
	20+yr	-1.46	0.34	3.03	0.12	6.55	1.01	8.34	1.81
EM	1-3yr	0.51	2.10	1.58	-0.31	3.35	0.44	3.78	-0.47
	7-10yr	0.32	1.25	1.62	-0.50	5.43	1.86	6.17	0.80
	20+yr	-0.47	0.89	3.19	1.29	6.84	2.39	8.37	2.32
	IG All	1.42	1.58	1.39	-0.32	4.21	1.94	5.42	-0.52
	HY All	2.49	2.65	4.58	2.83	3.96	1.69	7.53	1.48
Germany	1-3yr	1.02	1.02	1.12	1.12	1.84	1.84	1.09	1.09
	7-10yr	1.38	1.38	0.60	0.60	3.62	3.62	-1.10	-1.10
	20+yr	-0.65	-0.65	-3.10	-3.10	-1.02	-1.02	-14.57	-14.57
Italy	1-3yr	1.38	1.38	1.90	1.90	3.28	3.28	2.44	2.44
	7-10yr	1.19	1.19	2.51	2.51	8.01	8.01	2.45	2.45
	20+yr	-0.96	-0.96	0.70	0.70	6.75	6.75	-7.12	-7.12
Spain	1-3yr	1.17	1.17	1.33	1.33	2.36	2.36	1.41	1.41
	7-10yr	1.64	1.64	1.48	1.48	4.69	4.69	-0.38	-0.38
	20+yr	0.46	0.46	0.10	0.10	1.79	1.79	-10.23	-10.23
France	1-3yr	1.14	1.14	1.19	1.19	2.27	2.27	1.23	1.23
	7-10yr	1.41	1.41	0.80	0.80	3.76	3.76	-1.58	-1.58
	20+yr	-0.02	-0.02	-1.84	-1.84	-0.28	-0.28	-13.71	-13.71
Sweden	1-3yr	1.15	4.59	1.14	3.13	1.90	-0.89	1.32	-2.69
	7-10yr	2.23	5.70	-0.65	1.30	0.31	-2.44	-3.46	-7.29
Australia	1-3yr	0.60	2.86	0.85	0.89	1.87	-2.58	1.50	-5.16
	7-10yr	-1.35	0.86	-3.24	-3.20	1.15	-3.26	-2.57	-8.97
	20+yr	-3.54	-1.38	-7.53	-7.50	-2.50	-6.76	-9.83	-15.76
New Zealand	1-3yr	1.83	5.37	1.52	1.96	3.56	-1.08	3.40	-2.97
	7-10yr	1.76	5.29	-2.03	-1.60	1.04	-3.48	-1.34	-7.41
	20+yr	1.89	5.44	-8.01	-7.61	-5.09	-9.34	-8.93	-14.53
Canada	1-3yr	1.85	1.80	2.07	0.71	3.04	0.72	3.08	-2.74
	7-10yr	1.24	1.19	-0.78	-2.10	0.61	-1.66	-1.65	-7.20
	20+yr	1.94	1.89	-1.10	-2.42	0.59	-1.67	-3.86	-9.29

Source: FTSE Russell. All data as of November 30, 2023. Past performance is no guarantee of future results. Please see the end for important legal disclosures. Bond market data is derived from FTSE Fixed Income Indices. See Appendix Glossary for list of indices used for each market. For professional investors only.

Inflation-Linked Bond Returns

Top 15% Bottom 15%

Green highlight indicates highest 15%, red indicates lowest 15%v

		3M		6M		YTD		12M	
		Local	JPY	Local	JPY	Local	JPY	Local	JPY
US	1-5yr	1.32	1.48	1.53	-0.18	3.20	0.94	2.81	-2.98
	5-10yr	-0.03	0.13	-1.54	-3.20	1.04	-1.17	-0.44	-6.05
	20+yr	-3.99	-3.84	-9.37	-10.89	-5.00	-7.07	-9.20	-14.31
UK	1-5yr	2.56	2.18	3.58	3.89	3.49	6.53	3.13	3.46
	5-10yr	2.01	1.63	3.42	3.72	3.59	6.64	0.79	1.10
	20+yr	-3.31	-3.68	-1.66	-1.37	-15.10	-12.60	-22.35	-22.10
Japan	1-5yr	1.34	0.13	2.36	-4.83	3.85	-9.34	3.71	-7.63
	5-10yr	1.53	-1.06	2.38	-6.13	4.91	-9.68	3.74	-8.87
EM	1-5yr	0.03	-2.15	6.40	1.60	10.51	7.54	11.50	4.48
	5-10yr	1.00	-1.50	5.39	1.68	9.31	8.31	11.06	5.98
	20+yr	0.56	-1.08	2.55	2.62	9.62	14.17	9.55	10.12
Germany	1-5yr	-0.14	-0.14	0.09	0.09	1.29	1.29	-0.51	-0.51
	5-10yr	-0.35	-0.35	-0.57	-0.57	2.74	2.74	-1.21	-1.21
	20+yr	-3.86	-3.86	-7.89	-7.89	-0.69	-0.69	-14.65	-14.65
Italy	1-5yr	0.94	0.94	1.98	1.98	3.74	3.74	2.45	2.45
	5-10yr	-0.60	-0.60	1.38	1.38	6.88	6.88	2.19	2.19
	20+yr	-5.86	-5.86	-6.17	-6.17	5.68	5.68	-14.42	-14.42
Spain	1-5yr	0.35	0.35	0.67	0.67	2.19	2.19	1.33	1.33
	5-10yr	0.04	0.04	0.50	0.50	3.50	3.50	-0.03	-0.03
France	1-5yr	-0.01	-0.01	0.02	0.02	1.46	1.46	-0.31	-0.31
	5-10yr	-0.60	-0.60	-0.83	-0.83	2.67	2.67	-1.98	-1.98
	20+yr	-4.39	-4.39	-8.07	-8.07	-1.40	-1.40	-15.77	-15.77
Sweden	1-5yr	1.17	4.61	1.42	3.42	2.73	-0.09	2.76	-1.32
	5-10yr	1.14	4.58	-0.49	1.47	1.37	-1.41	-1.67	-5.57
Australia	1-5yr	0.81	3.07	1.08	1.12	4.98	0.40	4.37	-2.48
	5-10yr	-0.62	1.61	-1.64	-1.60	4.82	0.24	2.47	-4.26
	20+yr	-4.85	-2.71	-8.84	-8.81	0.51	-3.88	-9.03	-15.01
New Zealand	5-10yr	1.80	5.34	-0.63	-0.20	4.46	-0.21	4.58	-1.86
Canada	20+yr	4.57	4.52	-2.46	-3.76	-6.38	-8.48	-5.97	-11.27

Appendix − Historical Bond Yields % as of November 30, 2023

Global Bond Yields

Top 15% Bottom 15%

Green highlight indicates highest 15%, red indicates lowest 15%

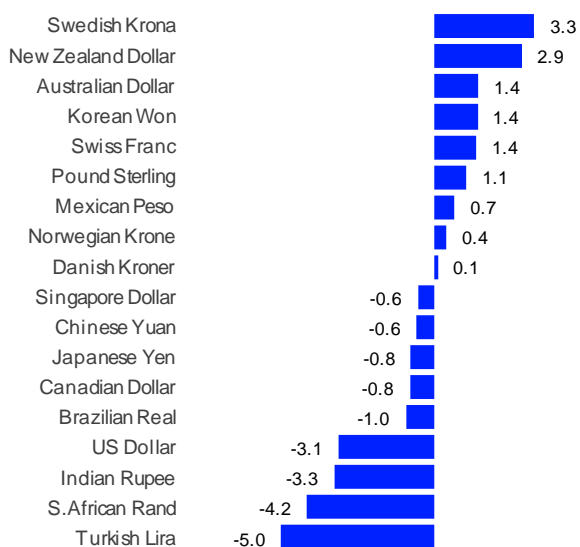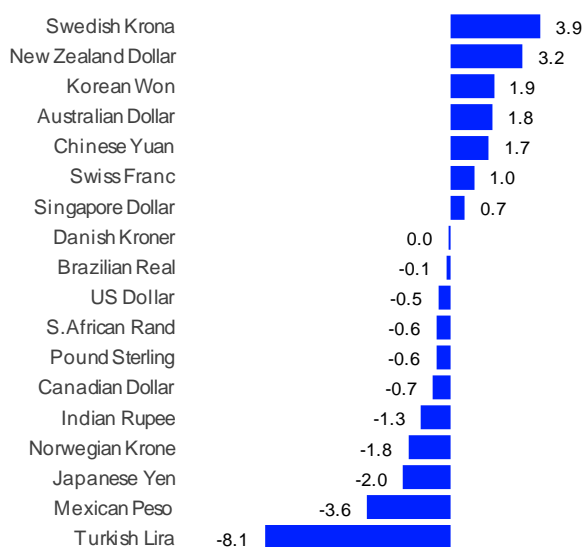|		Conventional government bonds				Inflation-linked bonds			Inv Grade	High Yld
		1-3YR	3-5YR	7-10YR	20+YR	1-5YR	5-10YR	20+YR	All Mat	All Mat
US	Current	4.82	4.39	4.35	4.63	2.57	2.14	2.27	5.64	8.71
	3M Ago	5.01	4.43	4.14	4.34	2.53	1.95	2.02	5.68	8.44
	6M Ago	4.66	3.98	3.69	4.00	2.09	1.54	1.68	5.47	8.82
	12M Ago	4.47	3.97	3.64	3.95	1.76	1.40	1.59	5.38	8.80
UK	Current	4.52	4.16	4.11	4.61	0.62	0.53	1.30		
	3M Ago	4.98	4.71	4.37	4.59	1.21	0.76	1.16		
	6M Ago	4.66	4.44	4.18	4.53	1.25	0.60	1.12		
	12M Ago	3.36	3.26	3.20	3.39	-1.95	-0.58	0.10		
Japan	Current	0.00	0.17	0.57	1.63	-2.08	-0.87			
	3M Ago	-0.01	0.15	0.53	1.54	-1.81	-0.77			
	6M Ago	-0.08	0.01	0.34	1.22	-1.53	-0.77			
	12M Ago	-0.04	0.05	0.28	1.40	-1.44	-0.76			
China	Current	2.37	2.47	2.66	3.05					
	3M Ago	2.08	2.30	2.59	2.93					
	6M Ago	2.16	2.39	2.72	3.14					
	12M Ago	2.26	2.54	2.87	3.34					
EM	Current					4.42	4.45	5.10	6.08	10.41
	3M Ago					2.83	4.26	4.99	6.17	11.42
	6M Ago					4.31	4.24	5.00	5.83	12.19
	12M Ago					2.45	3.14	5.10	6.08	12.18
Germany	Current	2.86	2.41	2.37	2.67	1.16	0.34	0.34		
	3M Ago	3.11	2.62	2.46	2.60	0.69	0.17	0.13		
	6M Ago	2.79	2.39	2.28	2.45	0.38	0.02	-0.10		
	12M Ago	2.04	1.95	1.91	1.81	-0.59	-0.41	-0.54		
Italy	Current	3.39	3.40	3.93	4.59	1.60	1.97	2.15		
	3M Ago	3.64	3.61	3.94	4.45	1.40	1.75	1.88		
	6M Ago	3.44	3.52	3.97	4.48	1.16	1.69	1.81		
	12M Ago	2.73	3.09	3.59	3.86	0.12	1.32	1.35		
France	Current	3.01	2.73	2.87	3.46	0.84	0.63	0.95		
	3M Ago	3.18	2.94	2.95	3.41	0.53	0.41	0.73		
	6M Ago	2.90	2.71	2.76	3.28	0.22	0.23	0.54		
	12M Ago	2.25	2.19	2.27	2.59	-0.94	-0.39	0.09		
Sweden	Current	3.27	2.70	2.61		1.30	1.12			
	3M Ago	3.48	3.07	2.81		1.34	1.15			
	6M Ago	3.01	2.66	2.37		0.71	0.57			
	12M Ago	2.52	2.21	1.93		-0.29	-0.26			
Australia	Current	4.15	4.04	4.36	4.73	1.28	1.81	2.19		
	3M Ago	3.91	3.80	4.03	4.47	1.02	1.49	1.90		
	6M Ago	3.55	3.44	3.65	4.17	0.46	1.08	1.62		
	12M Ago	3.12	3.22	3.49	3.92	-0.08	0.90	1.43		
New Zealand	Current	5.07	4.78	4.89	5.09	1.91	2.59			
	3M Ago	5.35	5.02	4.95	5.13	2.17	2.58			
	6M Ago	5.08	4.36	4.30	4.46	1.28	1.90			
	12M Ago	4.67	4.39	4.12	4.28	1.49	1.97			
Canada	Current	4.27	3.71	3.58	3.38	1.80	1.81	1.69		
	3M Ago	4.74	4.05	3.63	3.44	2.09	1.88	1.84		
	6M Ago	4.32	3.62	3.27	3.25	1.64	1.42	1.44		
	12M Ago	3.90	3.33	2.95	3.03	1.33	1.10	1.16		

Source: FTSE Russell. All data as of November 30, 2023. Past performance is no guarantee of future results. Please see the end for important legal disclosures. Bond market data is derived from FTSE Fixed Income Indices. See Appendix Glossary for list of indices used for each market. For professional investors only.

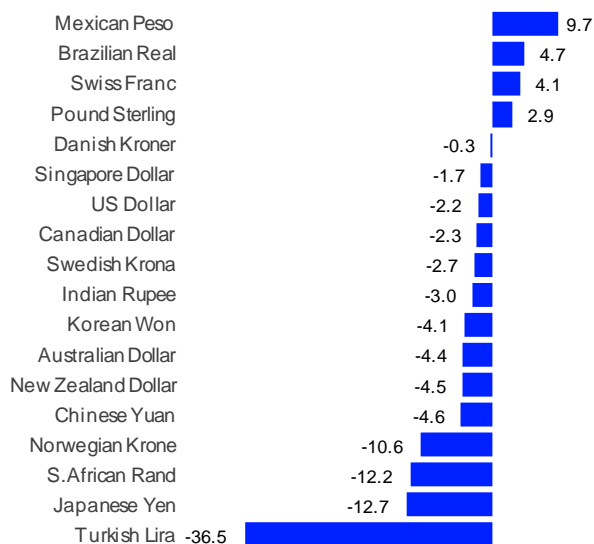## Appendix – Duration and Market Value (USD, Bn) as of November 30, 2023

| | Conventional government bonds | | | | | | | | Inflation-linked government bonds | | | | | |
| | Duration | | | | Market Value | | | | Duration | | | Market Value | | |
	3-5YR	7-10YR	20+YR	Overall	3-5YR	7-10YR	20+YR	Total	5-10YR	20+YR	Overall	5-10YR	20+YR	Total
US	3.7	7.3	16.7	**5.8**	2,428.2	1,102.6	1,219.7	**10,559.2**	7.0	21.1	**6.5**	396.0	118.4	**1,207.2**
UK	3.6	7.5	18.2	**9.6**	128.7	179.5	309.5	**1,122.5**	6.8	27.1	**16.1**	101.8	238.1	**632.8**
Japan	3.9	8.0	23.7	**12.0**	354.7	348.3	632.9	**2,951.4**	7.1		**4.4**	18.4		**44.8**
China	3.7	7.5	17.6	**5.6**	548.0	387.3	260.5	**2,307.4**						
EM	3.6	6.9	15.8	**5.5**	836.6	695.8	361.2	**3,790.4**	5.8	13.6	**7.4**	112.3	169.9	**616.9**
Germany	3.8	7.5	20.5	**7.2**	317.4	235.3	163.8	**1,443.7**	7.0	21.5	**8.7**	44.2	18.6	**88.5**
Italy	3.6	7.1	16.1	**6.1**	312.9	273.5	139.2	**1,672.4**	7.6	26.1	**8.1**	61.1	5.2	**165.7**
Spain	3.6	7.4	17.6	**6.6**	210.4	189.8	96.9	**1,106.6**	6.6		**5.8**	23.2		**88.2**
France	3.6	7.5	19.7	**7.1**	297.5	327.4	214.9	**1,876.4**	6.4	24.2	**8.1**	106.3	20.2	**272.8**
Sweden	3.5	7.4		**5.5**	14.2	9.1		**45.3**	5.5		**3.8**	10.0		**21.6**
Australia	3.6	7.5	16.7	**6.4**	36.9	86.3	19.8	**327.5**	6.9	22.1	**7.5**	9.8	2.5	**33.3**
New Zealand	3.7	7.5	16.8	**6.2**	10.4	14.5	2.5	**52.5**	6.0		**8.4**	3.1		**13.8**
Canada	3.8	7.3	19.5	**6.7**	58.7	111.1	63.2	**442.0**	6.7	20.6	**13.4**	8.2	19.8	**48.7**

| | Investment grade bonds | | | | | | | | | | High Yield | |
| | Duration | | | | | Market Value | | | | | Duration | MktVal |
	AAA	AA	A	BBB	Overall	AAA	AA	A	BBB	Overall		
US	10.4	8.3	7.1	6.5	6.9	71.5	445.0	2587.7	3328.5	6432.7	3.9	1029.3
Europe	5.7	4.8	4.6	4.2	4.4	10.8	195.0	1216.0	1472.0	2893.8		
EM		5.8	4.7	5.0	4.9		37.1	220.7	309.7	567.5	3.3	182.7

Average Duration
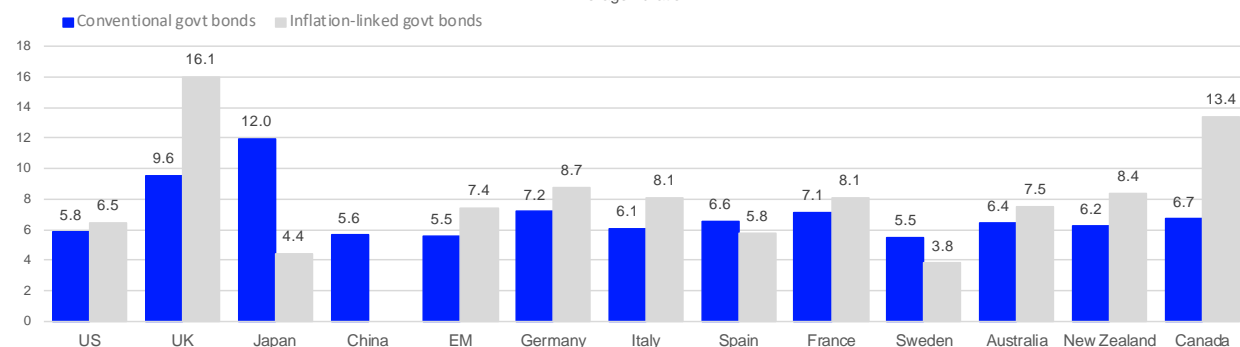
Total Market Value (USD Billions)

Source: FTSE Russell. All data as of November 30, 2023. Past performance is no guarantee of future results. Please see the end for important legal disclosures. Bond market data is derived from FTSE Fixed Income Indices. See Appendix Glossary for list of indices used for each market. For professional investors only.

FX Moves vs EUR - 1M

Currency	Value
Swedish Krona	3.3
New Zealand Dollar	2.9
Australian Dollar	1.4
Korean Won	1.4
Swiss Franc	1.4
Pound Sterling	1.1
Mexican Peso	0.7
Norwegian Krone	0.4
Danish Kroner	0.1
Singapore Dollar	-0.6
Chinese Yuan	-0.6
Japanese Yen	-0.8
Canadian Dollar	-0.8
Brazilian Real	-1.0
US Dollar	-3.1
Indian Rupee	-3.3
S.African Rand	-4.2
Turkish Lira	-5.0

FX Moves vs EUR - 3M

Currency	Value
Swedish Krona	3.9
New Zealand Dollar	3.2
Korean Won	1.9
Australian Dollar	1.8
Chinese Yuan	1.7
Swiss Franc	1.0
Singapore Dollar	0.7
Danish Kroner	0.0
Brazilian Real	-0.1
US Dollar	-0.5
S.African Rand	-0.6
Pound Sterling	-0.6
Canadian Dollar	-0.7
Indian Rupee	-1.3
Norwegian Krone	-1.8
Japanese Yen	-2.0
Mexican Peso	-3.6
Turkish Lira	-8.1

FX Moves vs EUR - YTD

Currency	Value
Mexican Peso	9.7
Brazilian Real	4.7
Swiss Franc	4.1
Pound Sterling	2.9
Danish Kroner	-0.3
Singapore Dollar	-1.7
US Dollar	-2.2
Canadian Dollar	-2.3
Swedish Krona	-2.7
Indian Rupee	-3.0
Korean Won	-4.1
Australian Dollar	-4.4
New Zealand Dollar	-4.5
Chinese Yuan	-4.6
Norwegian Krone	-10.6
S.African Rand	-12.2
Japanese Yen	-12.7
Turkish Lira	-36.5

FX Moves vs EUR - 12M

Currency	Value
Mexican Peso	5.2
Swiss Franc	3.4
Brazilian Real	0.6
Pound Sterling	0.3
Danish Kroner	-0.2
Singapore Dollar	-3.1
Korean Won	-3.5
Swedish Krona	-4.0
Chinese Yuan	-5.5
US Dollar	-5.6
Canadian Dollar	-5.6
New Zealand Dollar	-6.2
Australian Dollar	-6.6
Indian Rupee	-7.8
Japanese Yen	-10.9
Norwegian Krone	-12.7
S.African Rand	-15.4
Turkish Lira	-39.2

Appendix - Glossary

Bond markets are based on the following indices:

FTSE World Government Bond Index (WGBI) for all global government bond markets

FTSE World Inflation-Linked Securities Index (WorldILSI) for all global inflation-linked bond markets

FTSE US Broad Investment-Grade Bond Index (USBIG®) for the US corporate bond market

FTSE US High-Yield Market Index for the US high yield bond market

FTSE Euro Broad Investment-Grade Bond Index (EuroBIG®) for the Euro-denominated corporate bond market

FTSE European High-Yield Market Index for the European high yield market

FTSE Chinese Government and Policy Bank Bond Index (CNGPBI) for the Chinese government bond market

FTSE Emerging Markets Inflation-Linked Securities Index (EMILSI) for the emerging markets inflation-linked bond market

FTSE Emerging Markets Government Bond Index (EMGBI) for the emerging markets government bond market. Please note that over 50% of this index is invested in China

FTSE Emerging Markets Broad Bond Index (EMUSDBBI) for the emerging markets corporate bond market

FTSE ESG World Government Bond Index for the global government bond markets with an ESG tilt

FTSE Climate Risk-Adjusted World Government Bond Index (Climate WGBI) and FTSE Advanced Climate Risk-Adjusted World Government Bond Index (Advanced Climate WGBI) for each country's relative exposure to climate risk, with respect to resilience and preparedness to the risks of climate change

List of Abbreviations used in charts:

IL = Inflation-linked bonds

IG = Investment-grade bonds

HY = High-yield bonds

BPS = Basis points

EM = Emerging market

LC = Local currency

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CONTACT US
To learn more, visit lseg.com/ftse-russell; email info@ftserussell.com; or call your regional Client Service team office:
EMEA +44 (0) 20 7866 1810
North America +1 877 503 6437

Asia-Pacific
Hong Kong +852 2164 3333
Tokyo +81 3 6441 1430
Sydney +61 (0) 2 7228 5659