GLOBAL INVESTMENT RESEARCH
MARKET MAPS

FTSE Russell
An LSEG Business

Fixed Income Insights

MONTHLY REPORT - **SEPTEMBER 2023 | JAPAN EDITION**

FOR PROFESSIONAL INVESTORS ONLY

JGB curve steepens on higher growth and flexing of curve control

Bond market focus shifted to resilient growth in August, as yields rose. Similarities with the Goldilocks era are emerging as inflation cools, and growth recovers. If 3-6% rates are the new normal, income and carry may supplant duration as key factors. Longer JGBs lost the most, with 10-year yields not hitting the 1% cap yet.

Macro and policy backdrop – Stronger Q2 growth boosted by net exports, and tourism

Exports led the Q2 growth, helped by a weak yen. Japan inflation remains above 3%, despite a recent slowdown. (pages 2-3)

Yields, curves and spreads – Yields, and curves start to resemble the Goldilocks era of 2002-06

Some signs of dis-inversion as longer yields rise, and markets begin to adjust to a new era of higher rates? (pages 4-5)

Sovereign and climate bonds – JGB underperformance, after curve control eases, may weigh on sovereign greenium

Increased country weights for longer duration sovereign bond markets, notably Japan and UK, key to spread moves. (page 6)

Performance – Longer duration sovereigns fell in August, apart from China and EM bonds, but short bonds gained

Duration proved the enemy again in August, as curves dis-inverted, and long ends re-priced to higher policy rates. (pages 7-8)

Appendix (from page 10)

Global bond market returns, historical bond yields, bond market durations and market values and foreign exchange returns.

Chart 1: German & US breakevens fell with inflation, but yields rose on stronger growth. JGBs stabilised after initial dip on curve control flex.

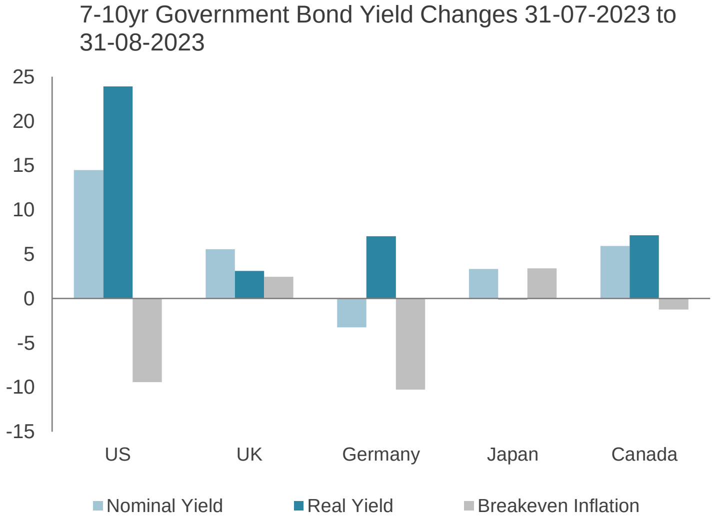
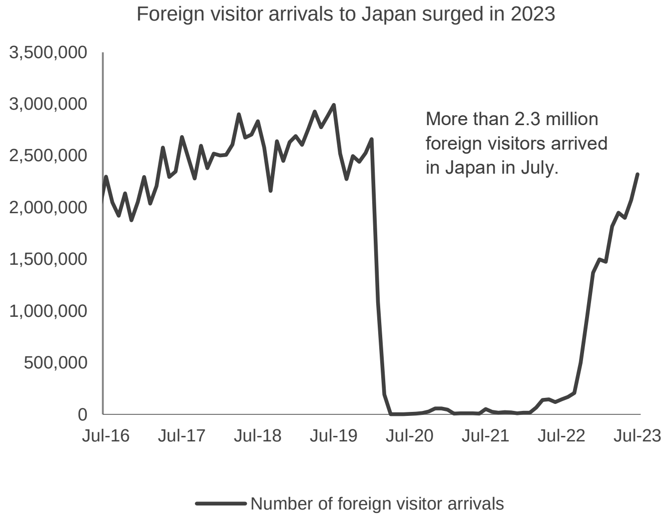


Chart 2: The number of foreign visitors to Japan recovered quickly in 2023, but visitors from China lagged most.



Source: FTSE Russell. All data as of August 31, 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

Global growth has withstood higher rates in 2022-23, without recessions (apart from a mild Eurozone version) helped by buoyant consumer spending. Japanese forecasts were upgraded after stronger-than-expected Q2 growth, driven by net exports (but not consumption). Chinese deflation risks rose as property sector woes, and consumer caution, continue.

G7 recessions have disappeared from 2023 Consensus Forecasts, after strong Q2 GDP readings, as Chart 1 shows. Japan's economy expanded strongly in Q2, at 6% annualised, helped by strong exports, despite weaker consumer spending. 2023 growth forecasts for Japan increased, boosted by stronger-than-expected Q2 growth.

Chart 2 shows steep disinflation in Q2 2023, helped by y/y base effects, but base effects deteriorate in Q3. Japan's core CPI rose 3.1% y/y in July, driven by consumer spending and recovering tourism, but slower than the 3.3% June. However, note that price increases y/y excluding fresh food and energy rebounded to 4.3% in July, a level last seen in May.

Japan's labour market tightness may have peaked, judged by the unemployment rate of 2.7% in July vs 2.5% in June. Japan's total cash earnings y/y growth slowed to 2.3% in June, adding pressures on the BoJ's attempt to meet the inflation target sustainably. A looser labour market doesn't bode well for wage growth, which is watched closely by the central bank to decide on policy (Chart 3).

Japan's 10s/2s yield curve steepened in August, with a sharper increase in 10-year yields, following the BoJ decision to raise the 10 -year yield cap. Short term yields also rose, approaching a zero rate (Chart 4). Japan's 10s/2s curve has some scope to steepen further, given the current 10-year yield level at 0.6+% is well below the yield cap of 1% set by the BoJ.

Chart 1: Consensus G7 GDP forecasts show no recessions in 2023-24. Japan's growth forecasts of 2023 were upgraded most significantly, after a strong growth in Q2 - 6% annualised.

Latest Consensus Real GDP Forecasts (%, August 2023)			
	2022	**2023**	**2024**
US	2.1	**1.9**	**0.9**
UK	4.1	**0.3**	**0.5**
Eurozone	3.3	**0.6**	**0.9**
Japan	1.6	**1.8**	**0.9**
China	3.0	**5.5**	**4.8**
Canada	3.5	**1.3**	**1.0**

Chart 2: July inflation data generally showed a modest uptick, as base effects turned less favourable. Japan inflation, excluding fresh food, slowed to 3.1% in July from 3.3% y/y.

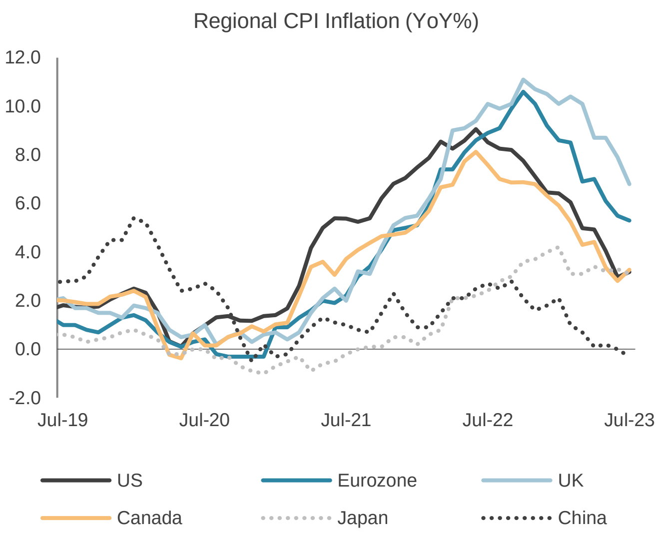


Chart 3: Japan's wage growth lost momentum in June, coupled with lower inflation. Labour market tightness in Japan may have peaked cyclically, judged by higher unemployment in July.

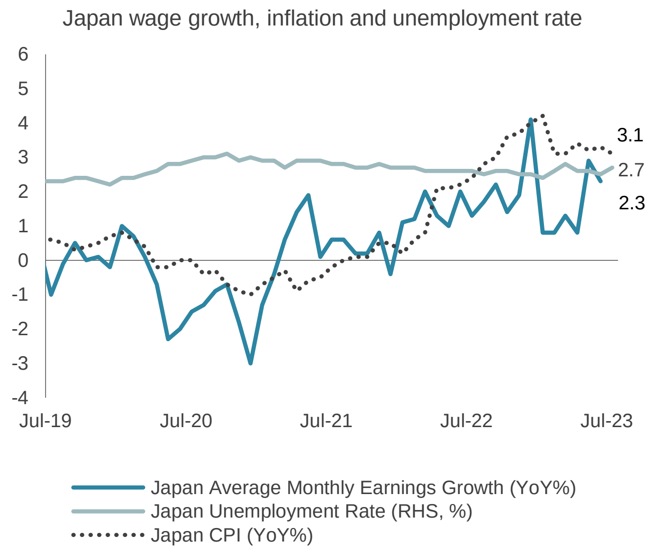
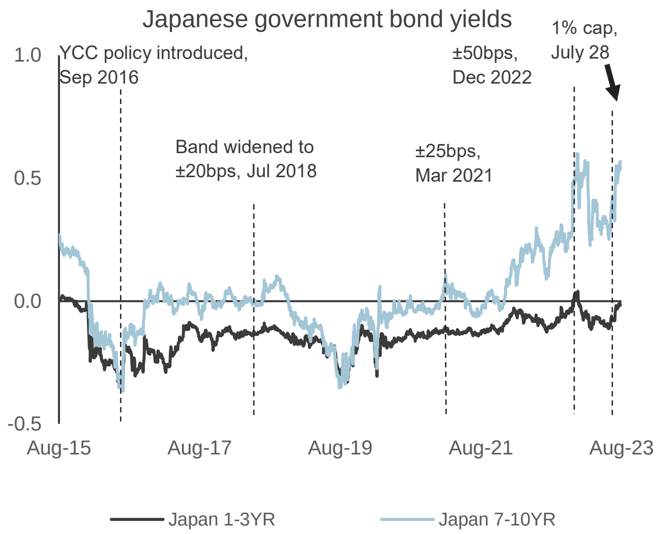


Chart 4: Japan's 10s/2s yield curve steepened in August, after the BoJ effectively lifted the 10-yr yield ceiling to 1% on July 28. But the yield curve control (YCC) regime remains in place.



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Financial Conditions and Monetary Policy Settings

G7 central banks, ex BoJ, have tightened financial conditions by raising rates since March 2022, but the tightening is not severe, particularly given accommodative starting conditions. Currency moves reflect rate differentials with the yen and renminbi weakest. The BoJ's balance sheet continued to grow, unlike other G7, although at a slower pace.

Japan's money supply growth y/y fell to 2.4% in July (Chart1), the lowest in recent four years, countering accommodative financial conditions. But the offsetting effect is modest for the time being, given the positively sloped and steepening yield curve, retention of a negative short rate target, weaker yen, and capped 10-year yields of JGBs. (Chart 4 shows the BoJ's balance sheet expansion.)

Interest rate differentials and policy settings have dominated FX movements in 2023 (Chart 2). Both the renminbi and yen fell back in August, after further policy easing by the PBoC, and after the initial yen rally on the easing of curve control evaporated, and more yen carry trades were implemented. The US dollar rallied across the board as the Fed refused to rule out further tightening.

G7 central banks left options open to tighten policy again, if needed, after the August moves, as the stronger pass-through of wage increases to service sector inflation is a challenge, given tight labour markets. The BoE's policy challenge is the most acute with inflation still close to 7% y/y. The BoJ retained short rates of -0.1%, and China cut policy rates again in August (Chart 3).

The Bank of Japan bought an additional 4 trillion yen of Japanese government bonds in August, a reduction from a purchase of 7.3 trillion in July, as a result of easing its curve control policy since July 28. Japan's expanding balance sheet remains in stark contrast to shrinking balance sheets elsewhere in the G7 (Chart 4).

Chart 1: Japan's M2 growth hit the lowest in 4 years, but relatively loose financial conditions remain, helped by other key factors. It also raises some doubts about the sustainability of 2%+ inflation.

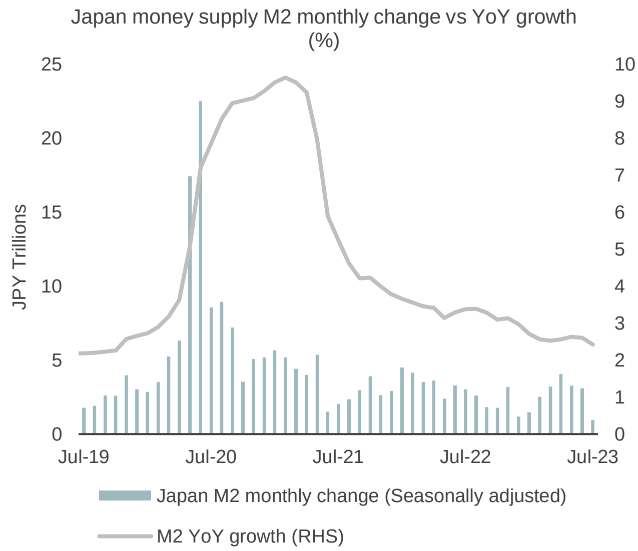


Chart 2: Currencies have been strongly correlated with interest rate differentials in 2023, with yen and renminbi the weakest vs USD. The yen's rally after the flexing of YCC proved short-lived.

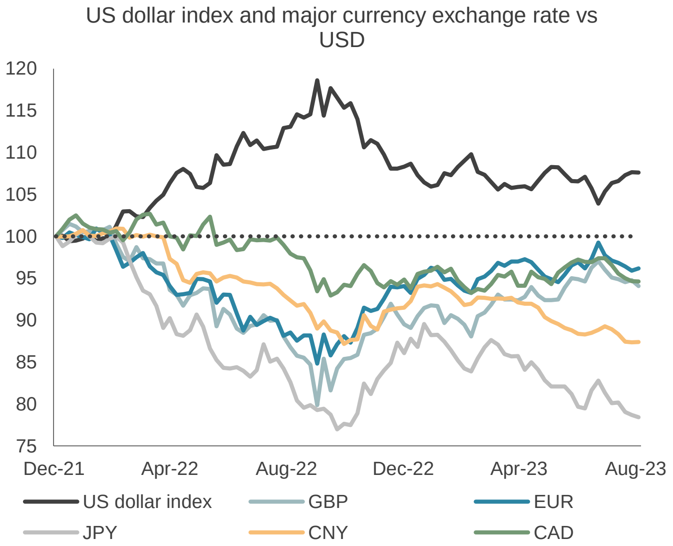


Chart 3: Central banks, excl. the BoJ and PBoC, remain reluctant to rule out more rate rises, as they seek to recover low inflation regimes, even if this increases the risk of doing too much, too late.

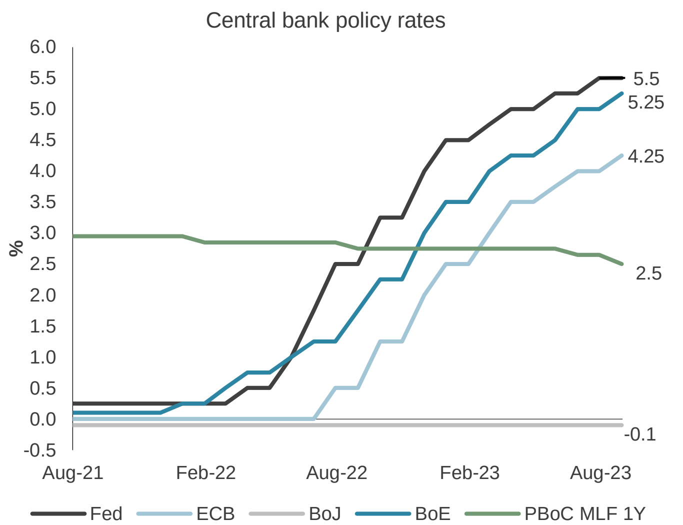
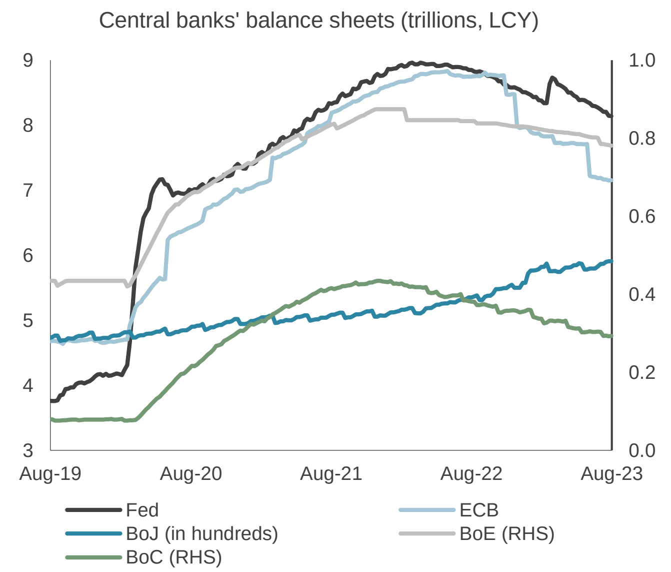


Chart 4: The BoJ was building up its balance sheet at a slower pace in August, relatively to July, as less JGBs buying was required to support a higher yield level.



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Global Yields, Curves and Spread Analysis

Chart 1: G7 7-10-year yields have trended higher in August, as markets price in the prospect of higher rates for longer, despite lower Q3 inflation. JGB yields increased as curve control was eased.

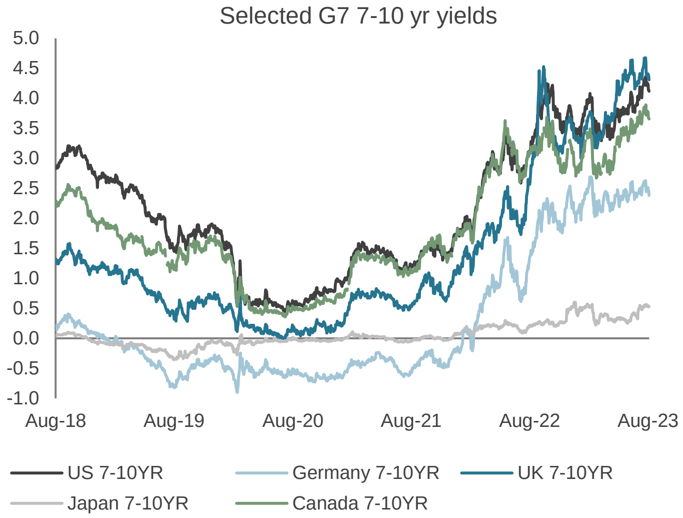


Chart 2: Real yields edged higher in August, as real growth proved resilient, and central banks signaled no early respite on rates. UK lower inflation helped linkers but wage inflation remains a key issue.

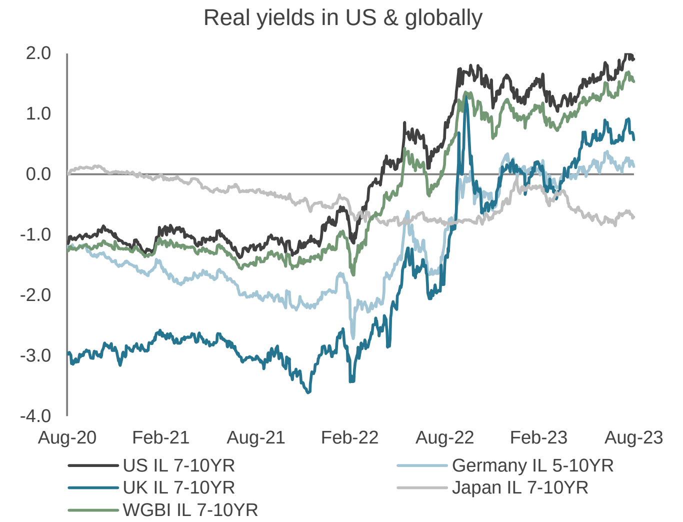


Chart 3: Yield curves dis-inverted somewhat, as longer yields rose. This may suggest markets are adjusting further to the end of zero rates. The JGB curve steepened on BoJ flexing of curve control.

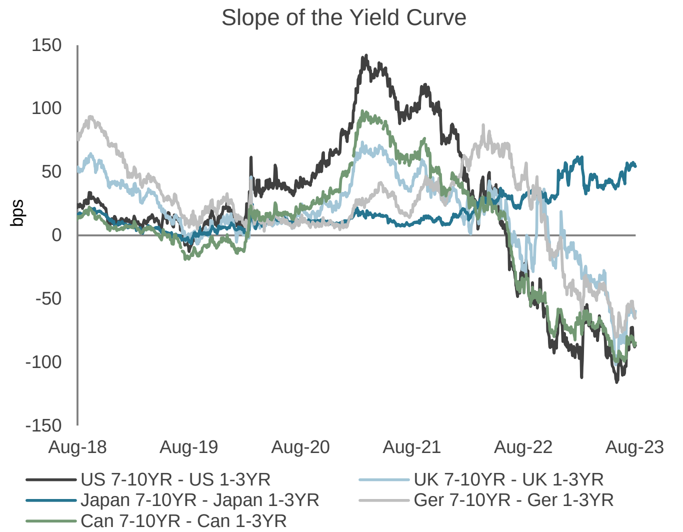


Chart 4: Long end yields also rose, as investor concerns about re-investment risk eased, on the view yields may now have entered higher trading ranges. However, curves remain inverted, ex JGBs.

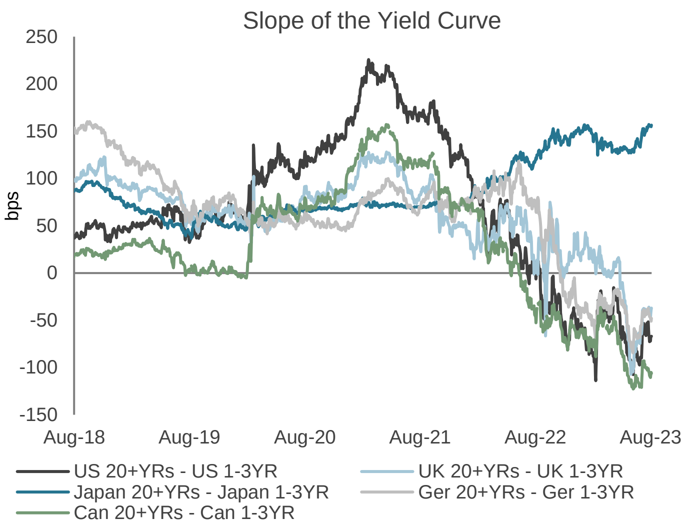


Chart 5: Germany and US led breakevens lower in August, as real yields rose more than nominals, followed by Canada. Japan and the UK breakevens edged higher.

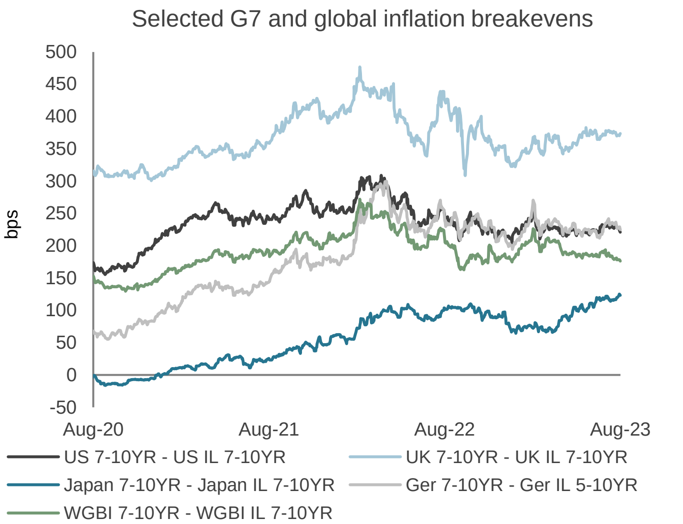
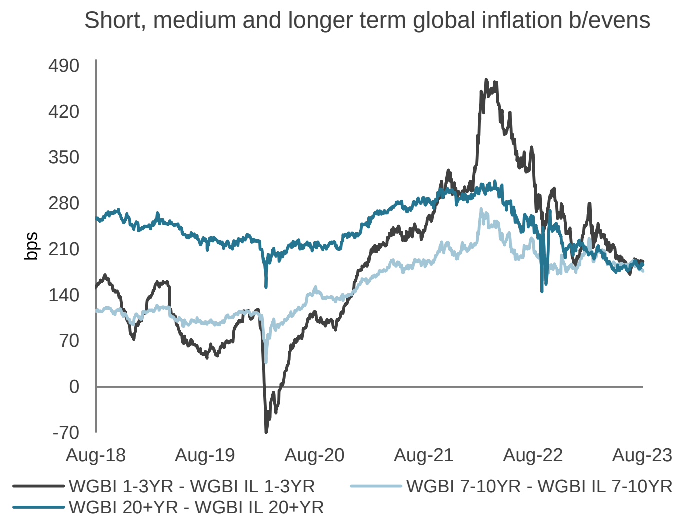


Chart 6: Overall, global inflation breakevens of all tenors remain stable around 2%, after a period of higher short-dated breakevens, with little evidence of inflation expectations de-stabilising.



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Yield Spread and Credit Spread Analysis

Chart 1: Treasuries led global yields higher in August, spooked by stronger Q3 US growth, with spreads widening accordingly. Apart from JGBs and gilts, Treasuries are returning to pre-Covid spreads.

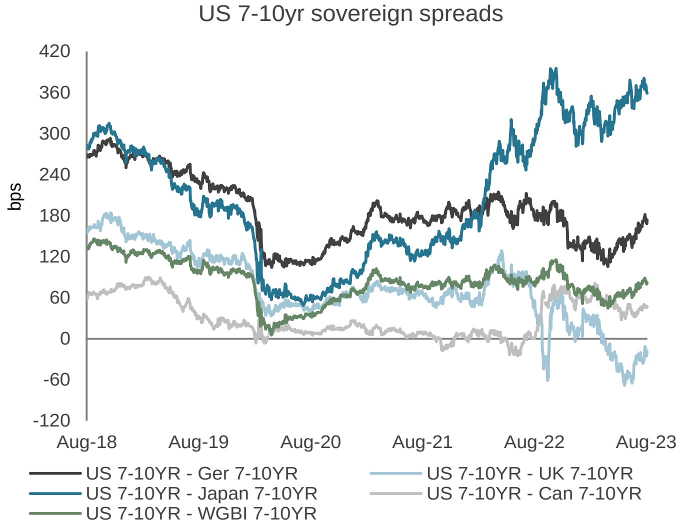

Chart 2: Italian sovereign spreads fell further in August, extending the decline of recent months, helped by increased foreign investment, and the continuing decline in the debt/GDP ratio.

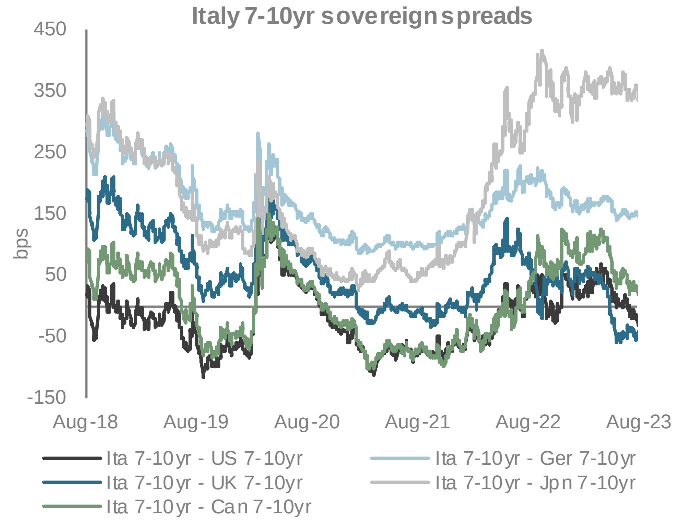

Chart 3: EM sovereign spreads remain near multi-year lows, reflecting EM success in early counter-inflation measures in 2021-22, and QE support during the initial Covid crisis in 2020.

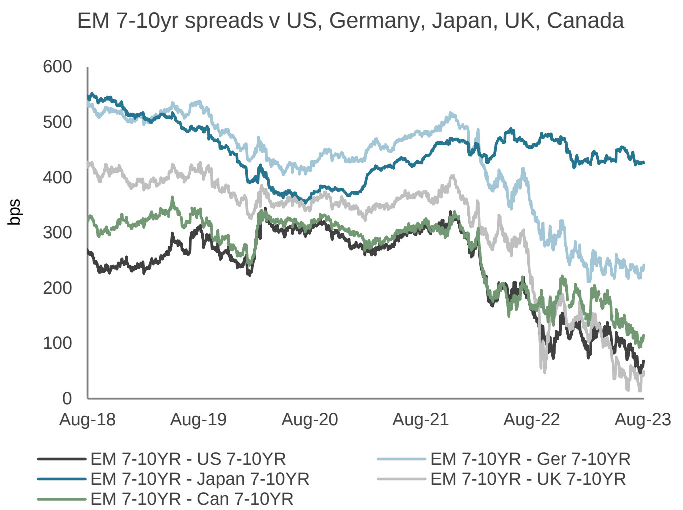

Chart 4: China's strong negative correlation with G7 yields continues, as concern about debt-deflation drove Chinese yields lower in August, while stronger growth drove G7 yields higher.

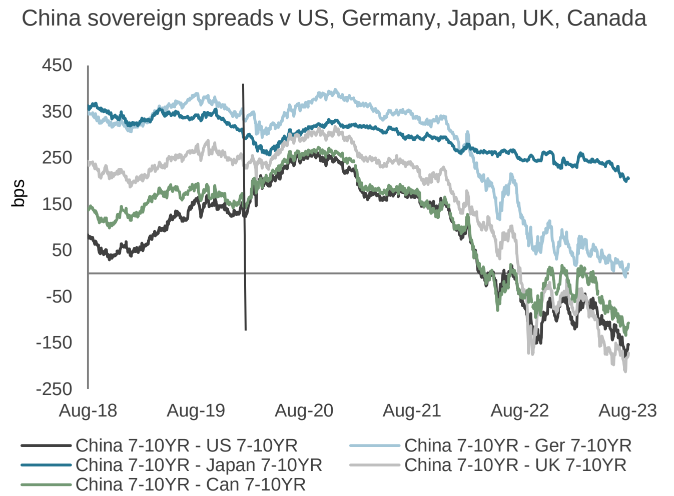

Chart 5: US high yield (HY) outperformed in August, as spreads tightened, while Eurozone HY spreads flatlined. Closer correlation of IG credit with govt bonds has meant more stable IG spreads.

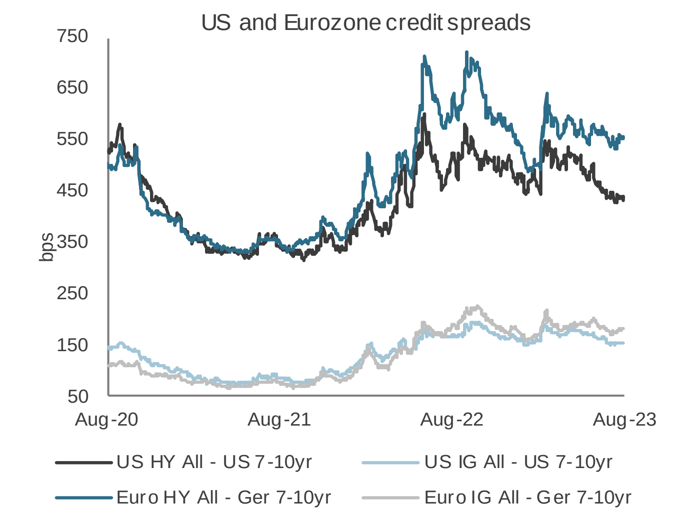

Chart 6: Chinese $ HY spreads surged back to November highs, completely reversing the Q1 tightening. Widening spreads didn't reflect the easier mortgage policies unveiled by the PBoC.

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Sovereign and Climate Bonds Analysis

Chart 1: Climate WGBI outperformed WGBI during the years of very low yields, helped by extra duration, but this reversed in 2022, when duration squeezed returns hard. This has stabilized in 2023.

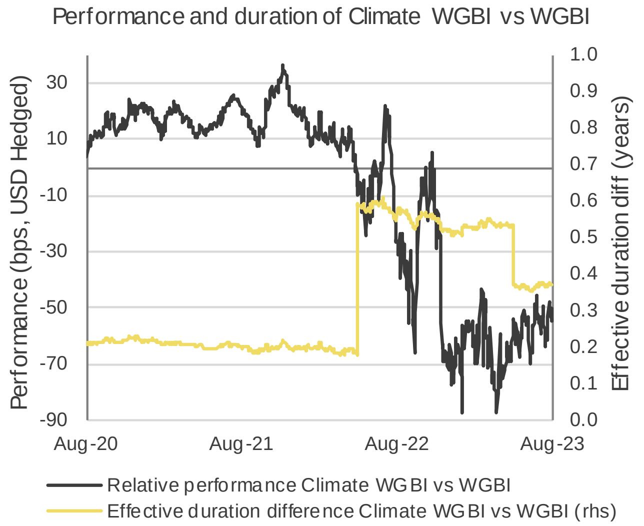


Chart 2: US underweight in the Climate WGBI fell in July's re-weighting, reducing the duration difference vs WGBI. China's 15% underweight prevented lower Chinese yields impacting significantly.

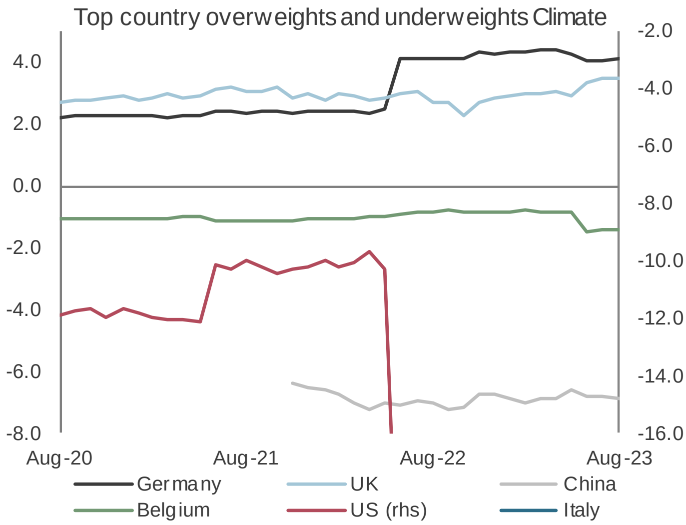


Chart 3: Climate WGBI yields remain below WGBI, though the differential narrowed after the increase in JGB yields since curve control was eased, due to Japan's high weight in the climate WGBI.

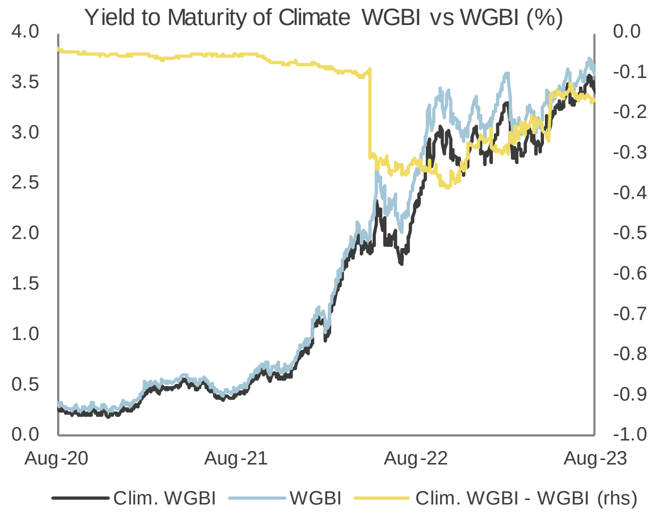


Chart 4: Climate WGBI's higher weighting in the Eurozone gives the index higher AAA weight, with Bunds rated AAA, but the lower US weighting in climate WGBI means the AA weight is notably lower.

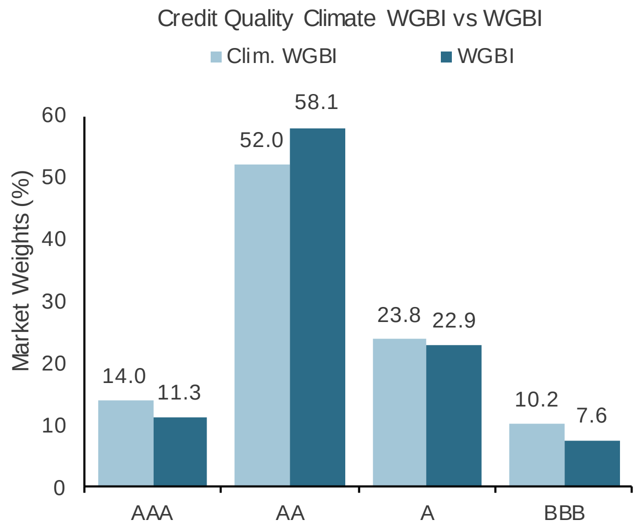


Chart 5: Although curves dis-inverted a little in August, with longer yields rising, yields remain close to 3% in both WGBI and climate WGBI in 2023, eliminating most of the "greenium" in climate WGBI.

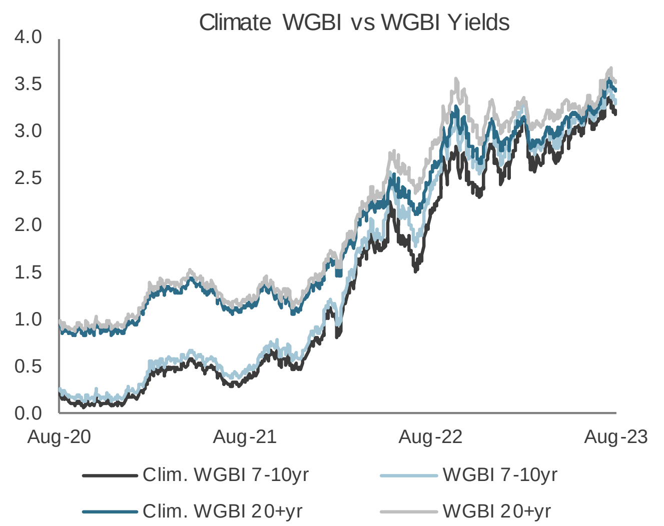
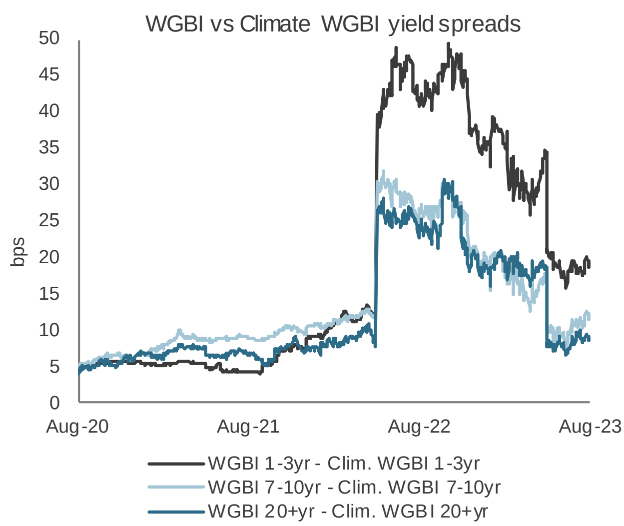


Chart 6: The "greenium" or yield discount on climate-WGBI increased when Japan's weight increased, and the US fell, in 2022. But this may unwind further as BoJ curve control is eased.



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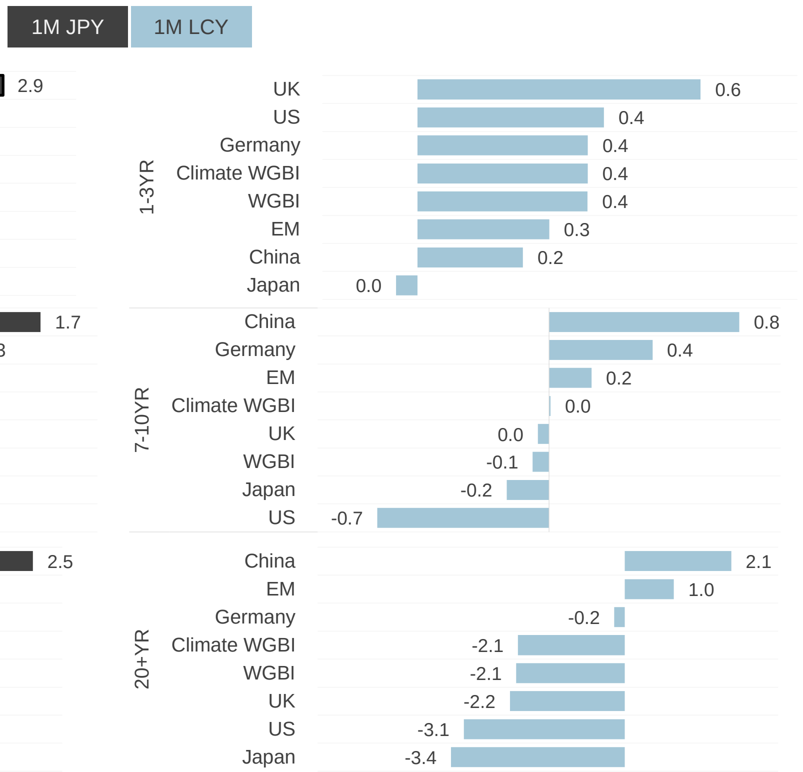
Global Sovereign Bond Returns – 1M and YTD % (JPY & LC, TR) as of August 31, 2023

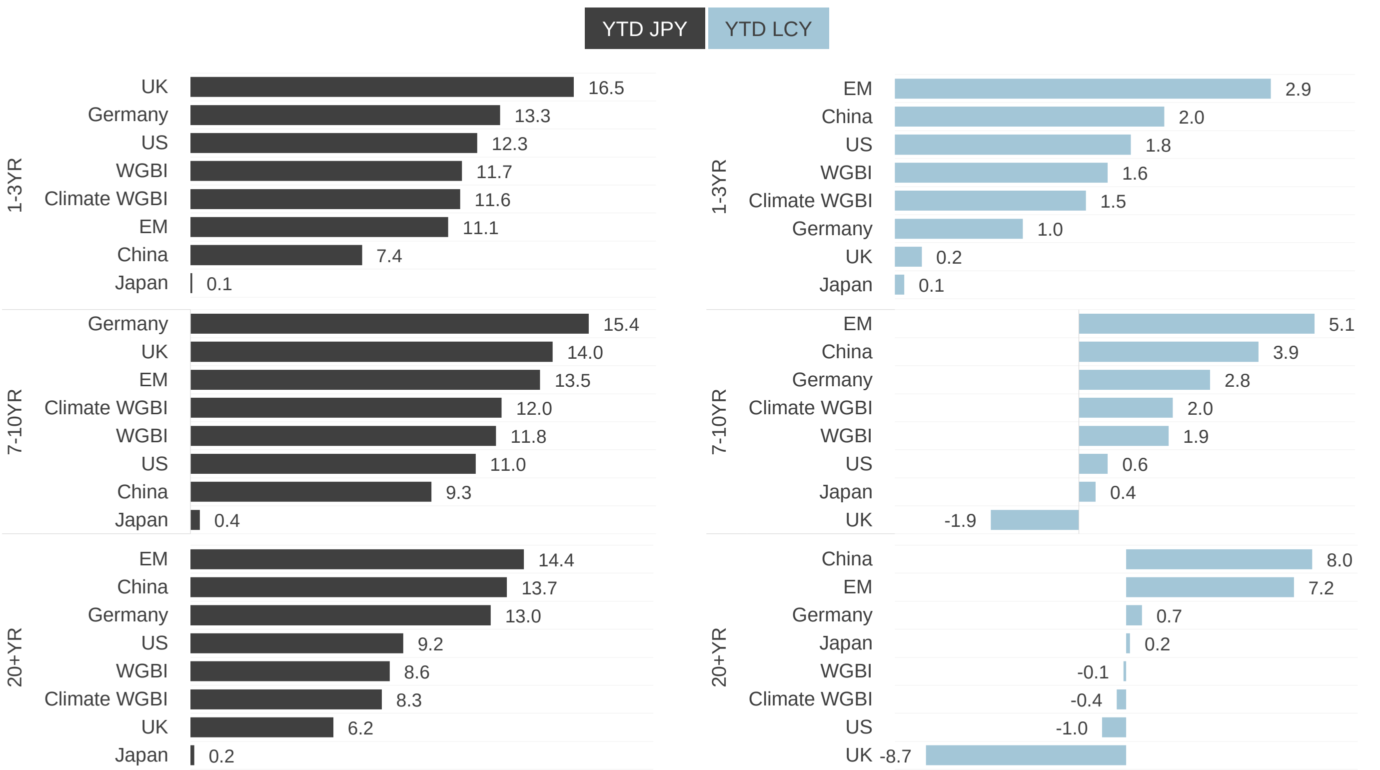
Longer duration sovereign bonds fell most in August, with only China and short US Treasuries resisting the trend. JGBs were weakest, losing up to 3.4%. Gilts underperformed YTD, losing 2-9% in longs. However, gilts made significant YTD returns in JPY terms (6-17%), driven by a weaker yen, and sterling strength, despite some retreat in 20+year in August.

Shorter-dated government bonds delivered positive returns in August, led by the UK and US, but China and EM outperformed in longs. JGBs underperformed across the curve, with the deepest losses of 3.4% in longs in August. A weaker yen helped overseas bond returns in yen terms, as currency movements in 2023 show high correlation with interest rate differentials.

Further PBoC easing and weak growth drove positive returns of long Chinese government bonds in August, to 2.5%. The renminbi depreciated less than yen, against the US dollar, boosting returns in yen terms. YTD, shorter-dated gilts and German Bunds outperformed in yen terms, with sterling and euro strength.

CONVENTIONAL GOVT BONDS





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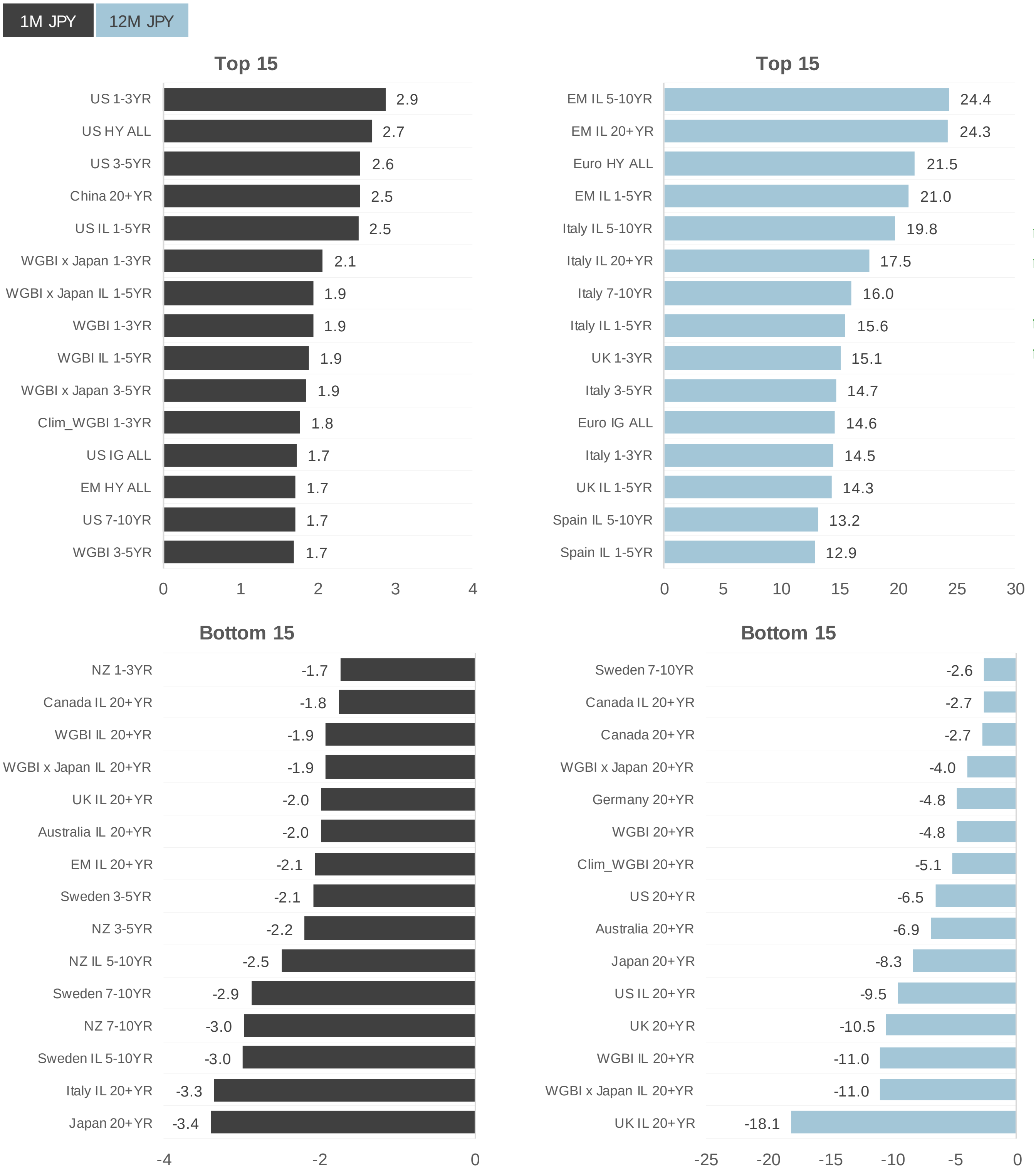
Top and Bottom Bond Returns – 1M & 12M % (JPY, TR) as of August 31, 2023

Shorter US Treasuries, US HY, and longer Chinese government bonds were the strongest performers in August, in yen terms, returning about 2.5-2.9%. Longer inflation-linked bonds fell broadly, as stronger growth boosted real yields. 12M returns, in yen terms, were led by EM and Italian bonds, with returns of 14-25%, helped by stronger currencies.

US bonds outperformed, helped by the stronger US dollar in August. Australasian bonds lost up to 3% on weaker commodity currencies. Swedish government bonds were also among the worst performers in August, when the Swedish krona depreciated.

On 12M, EM inflation linked returned 21-25%, continuing the outperformance in 2022-23, after some losses in August. Eurozone government and corporate bonds benefited from the stronger euro, returning up to 22%, led by Euro HY and Italian sovereigns (despite higher ECB rates). Longer UK conventional and inflation-linked bonds lost most, with the bulk of the losses in 2022.



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Appendix – Global Bond Market Returns % (JPY & LC, TR) – August 31, 2023

Government Bond Returns

Top 15% Bottom 15%

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

		3M		6M		YTD		12M	
		Local	JPY	Local	JPY	Local	JPY	Local	JPY
WGBI	1-3YR	0.29	4.65	1.61	8.57	1.62	11.66	0.96	7.54
	7-10YR	-1.12	3.30	1.62	8.64	1.95	11.81	-2.43	4.78
	20+YR	-3.79	-0.07	-1.70	4.38	-0.12	8.60	-10.45	-4.81
WGBI x Japan	1-3YR	-0.39	4.35	1.84	9.54	1.69	12.72	-0.20	7.40
	7-10YR	-1.11	3.88	1.76	9.71	2.23	13.47	-2.66	5.48
	20+YR	-2.90	1.87	-1.15	6.65	-0.29	10.94	-11.24	-3.96
US	1-3YR	0.26	4.47	1.78	8.78	1.80	12.32	1.33	6.42
	7-10YR	-2.59	1.50	0.40	7.30	0.62	11.03	-3.51	1.33
	20+YR	-5.37	-1.39	-3.33	3.32	-1.04	9.19	-11.00	-6.54
	IG All	-0.02	4.18	2.02	9.04	2.96	13.60	0.82	5.89
	HY All	3.51	7.85	4.71	11.91	7.36	18.45	6.75	12.11
UK	1-3YR	0.54	7.11	0.29	12.19	0.20	16.47	0.61	15.06
	7-10YR	-0.45	6.06	-2.22	9.38	-1.92	14.00	-7.59	5.69
	20+YR	-0.34	6.18	-6.33	4.79	-8.66	6.17	-21.73	-10.48
EUR	IG All	0.77	6.90	2.38	11.98	3.51	16.15	1.11	14.61
	HY All	2.10	8.36	2.88	12.82	6.47	19.93	7.06	21.50
Japan	1-3YR	-0.13	-0.13	-0.07	-0.07	0.07	0.07	-0.16	-0.16
	7-10YR	-1.26	-1.26	0.51	0.51	0.36	0.36	-1.73	-1.73
	20+YR	-7.19	-7.19	-3.88	-3.88	0.16	0.16	-8.29	-8.29
China	1-3YR	0.71	2.27	1.85	3.62	2.05	7.37	2.38	1.68
	7-10YR	1.60	3.17	3.54	5.34	3.90	9.32	3.57	2.85
	20+YR	4.36	5.97	8.53	10.42	8.04	13.67	7.22	6.48
EM	1-3YR	1.05	3.83	2.49	6.78	2.86	11.07	3.78	6.65
	7-10YR	1.14	4.27	3.94	8.79	5.11	13.52	5.57	7.99
	20+YR	3.44	6.46	6.86	10.63	7.24	14.40	7.38	8.79
	IG All	-0.12	4.08	1.92	8.93	2.89	13.53	2.07	7.19
	HY All	1.83	6.10	0.16	7.05	1.55	12.04	4.50	9.75
Germany	1-3YR	0.11	6.20	1.41	10.93	0.97	13.30	-1.10	12.11
	7-10YR	-0.78	5.26	2.91	12.57	2.85	15.40	-5.08	7.59
	20+YR	-2.58	3.34	1.48	11.00	0.67	12.96	-16.01	-4.79
Italy	1-3YR	0.50	6.62	1.97	11.54	2.05	14.51	0.98	14.47
	7-10YR	1.14	7.29	4.81	14.64	7.26	20.35	2.37	16.05
	20+YR	1.62	7.80	4.71	14.53	8.52	21.77	-3.38	9.52
France	1-3YR	0.08	6.17	1.43	10.95	1.31	13.68	-1.06	12.16
	7-10YR	-0.53	5.52	2.74	12.38	2.97	15.54	-4.48	8.28
	20+YR	-1.53	4.46	1.93	11.49	0.91	13.24	-13.30	-1.72
Australia	1-3YR	0.25	4.54	1.19	3.87	1.36	6.81	1.79	0.99
	7-10YR	-2.09	2.11	0.81	3.48	2.93	8.47	0.61	-0.18
	20+YR	-4.23	-0.12	-1.95	0.64	1.88	7.35	-6.14	-6.88
NZ	1-3YR	-0.20	3.32	1.11	3.86	1.82	5.77	1.14	3.16
	7-10YR	-3.41	0.00	-0.08	2.63	-0.22	3.66	-2.75	-0.80

Source: FTSE Russell. All data as of August 31, 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 − Historical Bond Yields % as of August 31, 2023

Global Bond Yields

Top 15% Bottom 15%

Green highlight indicates top 15%, red indicates bottom 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	4.99	4.39	4.12	4.32	2.50	1.94	2.01	5.65	8.44
	3M Ago	4.61	3.92	3.65	3.94	2.08	1.52	1.68	5.43	8.86
	6M Ago	4.90	4.34	3.93	4.01	1.82	1.57	1.65	5.55	8.62
	12M Ago	3.49	3.44	3.19	3.46	0.87	0.75	1.14	4.86	8.37
UK	Current	4.91	4.63	4.31	4.53	1.11	0.67	1.12		
	3M Ago	4.55	4.33	4.10	4.45	1.18	0.54	1.06		
	6M Ago	3.95	3.79	3.72	4.07	0.45	0.18	0.67		
	12M Ago	3.04	2.99	3.00	3.33	-1.97	-1.34	-0.31		
Japan	Current	-0.02	0.14	0.53	1.55	-1.82	-0.76			
	3M Ago	-0.08	0.01	0.33	1.22	-1.51	-0.77			
	6M Ago	-0.04	0.11	0.53	1.35	-1.25	-0.36			
	12M Ago	-0.10	-0.02	0.24	1.18	-1.28	-0.81			
China	Current	2.06	2.28	2.59	2.93					
	3M Ago	2.13	2.36	2.70	3.14					
	6M Ago	2.38	2.62	2.86	3.32					
	12M Ago	1.96	2.35	2.71	3.14					
EM	Current	3.50	4.22	4.80	4.34	2.84	4.28	5.01	6.14	
	3M Ago	3.74	4.16	4.62	4.44	4.34	4.24	5.00	5.78	
	6M Ago	3.71	4.48	4.88	4.57	1.46	3.33	5.35	5.95	
	12M Ago	3.49	4.18	4.90	4.68	2.63	3.35	5.09	5.25	
Germany	Current	3.03	2.53	2.38	2.55	0.64	0.13	0.11		
	3M Ago	2.71	2.30	2.20	2.40	0.37	-0.04	-0.13		
	6M Ago	3.09	2.78	2.59	2.57	0.22	0.08	0.03		
	12M Ago	0.97	1.91	2.07	2.06	-0.64	-0.20	-0.17		
Italy	Current	3.56	3.53	3.87	4.41	1.37	1.72	1.86		
	3M Ago	3.35	3.42	3.89	4.43	1.11	1.62	1.80		
	6M Ago	3.65	3.81	4.18	4.55	0.84	1.69	1.90		
	12M Ago	2.11	3.13	3.83	4.11	0.34	1.78	1.82		
France	Current	3.09	2.85	2.87	3.36	0.48	0.37	0.71		
	3M Ago	2.83	2.63	2.68	3.24	0.22	0.20	0.53		
	6M Ago	3.18	3.03	3.01	3.37	-0.05	0.24	0.69		
	12M Ago	1.21	2.26	2.64	3.15	-0.59	0.28	0.72		
Sweden	Current	3.43	3.00	2.75		1.33	1.14			
	3M Ago	2.97	2.62	2.31		0.74	0.55			
	6M Ago	3.18	2.96	2.65		0.64	0.72			
	12M Ago	2.24	2.38	2.24		-0.93	-0.36			
Australia	Current	3.85	3.75	3.99	4.42	0.97	1.43	1.84		
	3M Ago	3.51	3.38	3.58	4.12	0.42	1.03	1.59		
	6M Ago	3.66	3.65	3.83	4.19	0.50	1.26	1.78		
	12M Ago	3.11	3.71	4.03	4.37	0.67	1.53	2.05		
NZ	Current	5.30	4.96	4.89	5.07	2.15	2.58			
	3M Ago	5.08	4.35	4.28	4.46	1.23	1.85			
	6M Ago	5.06	4.68	4.57	4.67	1.40	2.07			
	12M Ago	3.85	4.51	4.48	4.78	1.57	2.22			
Canada	Current	4.50		3.65	3.44			1.88	5.55	
	3M Ago	4.04		3.22	3.18			1.44	5.24	
	6M Ago	4.04		3.35	3.26			1.34	5.16	
	12M Ago	3.56		3.14	3.06			1.23	4.96	

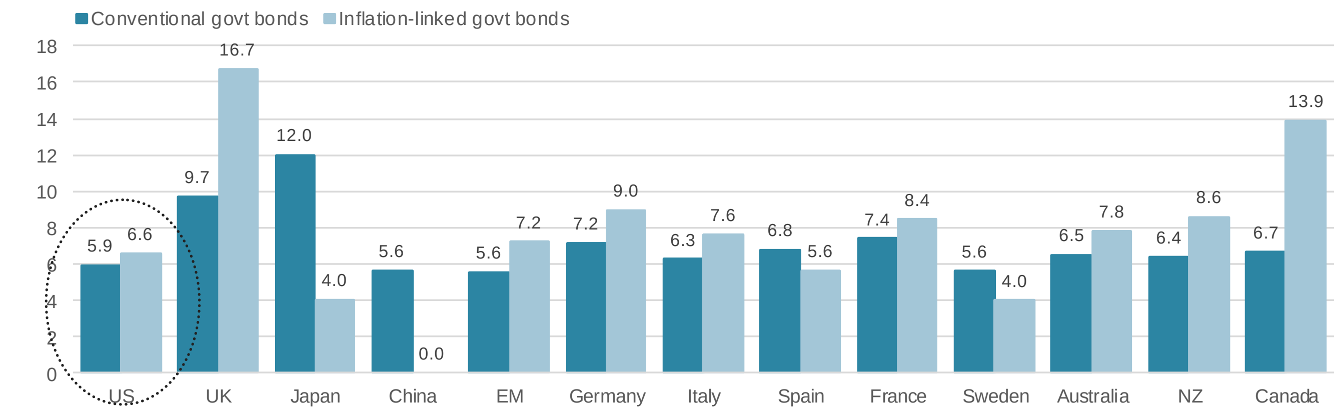
Source: FTSE Russell. All data as of August 31, 2023. Past performance is no guarantee of future results. Please see the end for important legal disclosures. Bond market data is derived from FTSE Fixed Income Indices. See Appendix Glossary for list of indices used for each market. For professional investors only.

Appendix − Duration and Market Value (USD, Bn) as of August 31, 2023

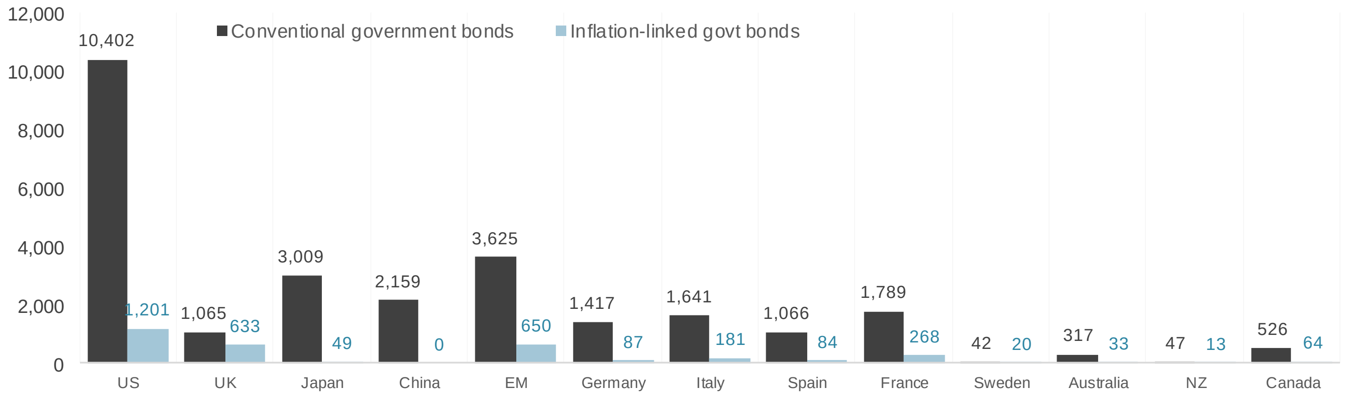
	Conventional government bonds								Inflation-linked government bonds					
	Duration				Market Value				Duration			Market Value		
	3-5YR	7-10YR	20+YR	Overall	3-5YR	7-10YR	20+YR	Total	5-10YR	20+YR	Overall	5-10YR	20+YR	Total
US	3.7	7.4	17.1	**5.9**	2,326.2	1,094.2	1,242.6	**10,402.0**	7.1	21.4	**6.6**	382.6	116.3	**1201.4**
UK	3.5	7.3	18.4	**9.7**	132.1	161.5	295.6	**1,065.1**	6.5	27.6	**16.7**	130.3	249.1	**632.8**
Japan	3.9	8.1	23.8	**12.0**	353.3	356.3	646.4	**3,009.1**	7.0		**4.0**	16.8		**48.5**
China	3.7	7.5	17.7	**5.6**	479.2	337.8	256.1	**2,158.8**						
EM	3.5	6.9	15.9	**5.6**	768.00	653.74	352.94	**3,624.9**	5.5	13.8	**7.2**	139.0	166.9	**650.0**
Germany	3.7	7.6	20.7	**7.2**	310.85	235.78	158.24	**1,416.7**	7.2	21.8	**9.0**	43.2	18.7	**87.4**
Italy	3.7	7.2	16.1	**6.3**	283.47	258.54	153.74	**1,641.2**	7.9	26.3	**7.6**	58.7	5.5	**181.3**
Spain	3.8	7.6	17.4	**6.8**	200.98	184.88	98.31	**1,065.8**	6.7		**5.6**	22.6		**83.6**
France	3.7	7.6	20.1	**7.4**	319.78	308.58	209.84	**1,789.5**	6.7	24.4	**8.4**	103.8	21.1	**268.2**
Sweden	3.7	7.6		**5.6**	13.17	8.43		**41.6**	5.7		**4.0**	9.3		**20.1**
Australia	3.5	7.7	17.4	**6.5**	50.47	86.01	14.76	**317.1**	7.2	22.4	**7.8**	9.5	2.6	**32.6**
NZ	3.8	7.6	16.7	**6.4**	9.43	13.16	2.26	**47.4**	6.2		**8.6**	3.0		**13.2**
Canada		7.0	17.7	**6.7**		193.00	91.60	**526.3**		13.9	**13.9**		64.2	**64.2**

	Investment grade bonds										High Yield	
	Duration					Market Value					Duration	MktVal
	AAA	AA	A	BBB	Overall	AAA	AA	A	BBB	Overall		
US	10.7	8.5	7.2	6.5	**7.0**	72.1	448.8	2,610.9	3,256.9	**6,388.7**	3.9	1,170.8
Euro	6.2	4.9	4.6	4.3	**4.5**	9.6	184.5	1,188.1	1,427.5	**2,809.7**	3.1	416.0
EM		5.7	4.8	5.1	**5.0**		45.00	220.04	320.1	**585.1**	3.4	186.0

Average Duration



Total Market Value (USD Billions)

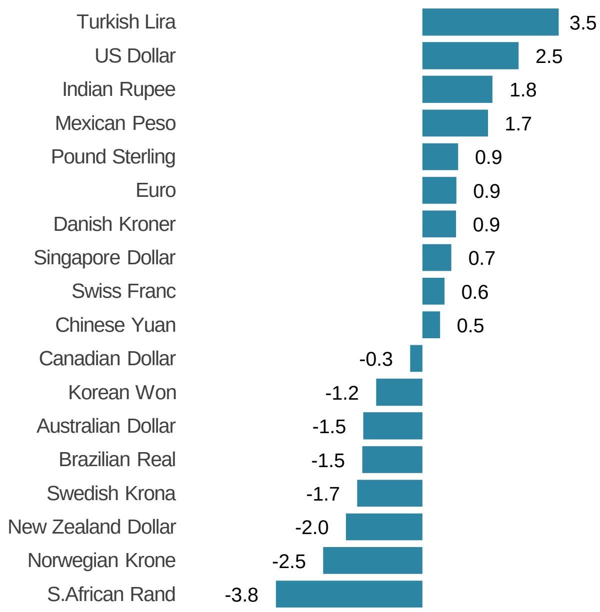


Data as of 2023-08-31

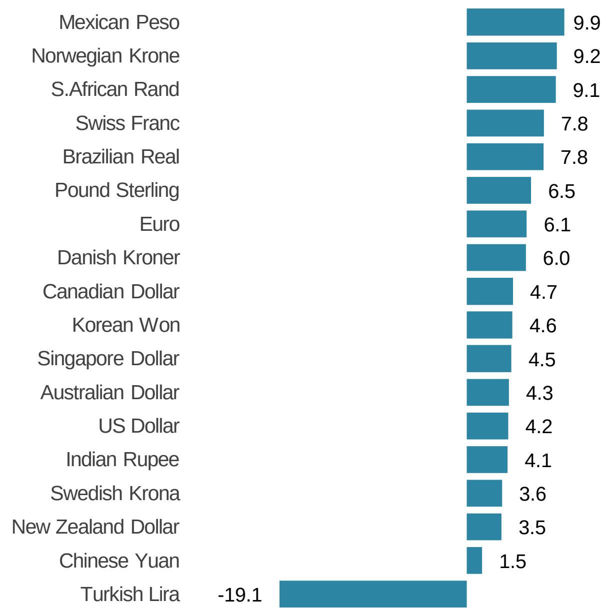
Source: FTSE Russell. All data as of August 31, 2023. Past performance is no guarantee of future results. Please see the end for important legal disclosures. Bond market data is derived from FTSE Fixed Income Indices. See Appendix Glossary for list of indices used for each market. For professional investors only.

Appendix − Foreign Exchange Returns % as of August 31, 2023

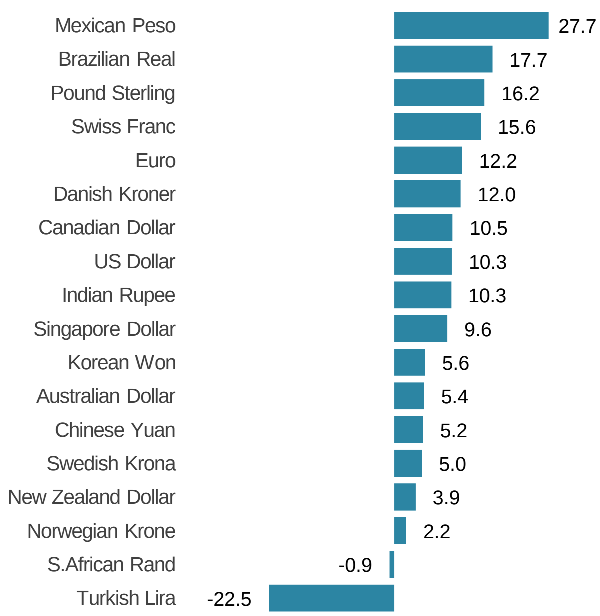
FX Moves vs JPY - 1M



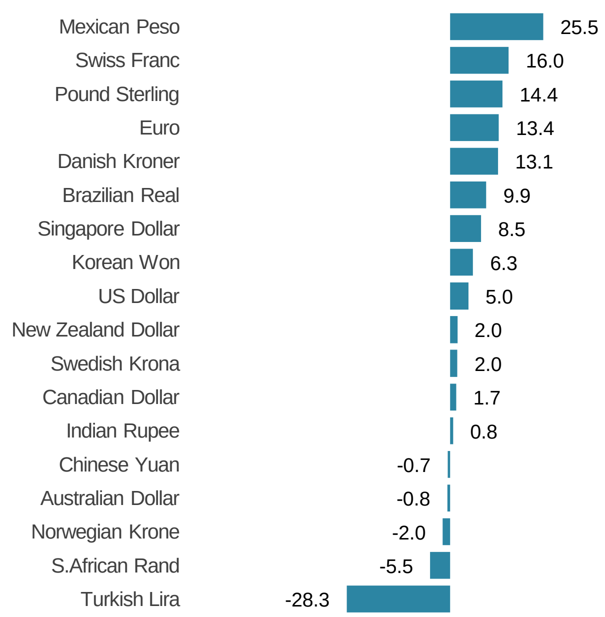
FX Moves vs JPY - 3M



FX Moves vs JPY - YTD



FX Moves vs JPY - 12M



Source: FTSE Russell and Refinitiv. All data as of August 31, 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 − 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

Source: FTSE Russell. All data as of August 31, 2023. Past performance is no guarantee of future results. Please see the end for important legal disclosures. For professional investors only.