

Fixed Income Insights

MONTHLY REPORT - JANUARY 2023 | EUROZONE EDITION

FOR PROFESSIONAL INVESTORS ONLY

Stagflation challenge for ECB risks delaying policy pivot

The global bond rally lost steam in December after central banks implemented further rate hikes to control sticky inflation, despite softer inflation data. UK gilts (10/2s) recovered from the turmoil in September in Q4, while EM IL bonds outperformed in 2022. European corporates ended Q4 on a positive note.

Growth and inflation expectations – Further regional policy divergences likely?

Falling inflation and weaker growth increase the likelihood of a central bank tightening pause in H1, 2023. But regional divergences in inflation and the impact of energy shocks suggest further policy divergence in 2023. (page 2)

Yields, curves and spreads – Most G7 sovereign yield fell in Q4, despite the back-up in December

G7 conventional bond yields spiked up in December, after the November rally, following a series of central bank rate rises. JGBs reached the top of their newly-raised upper band. (pages 3-4)

Performance – Shorter UK gilts shone in Q4, but EM IL were the best performers in 2022 and long gilts the worst

EM inflation-linked bonds, up 13-27% in euros, gained the most in 2022, while long gilts lost up to 53%. (pages 5-7)

Sovereign and climate bonds – Climate WGBI outperformed WGBI in Q4, despite losses in December

Despite gains in Q4, Climate WGBI and WGBI ended 2022 with negative returns, notably in longer-dated maturities. (page 8)

Appendix

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

Chart 1: Peaking? YoY inflation has been easing in the US, Canada and China, but not in Japan, and very modestly so in the Eurozone and UK.

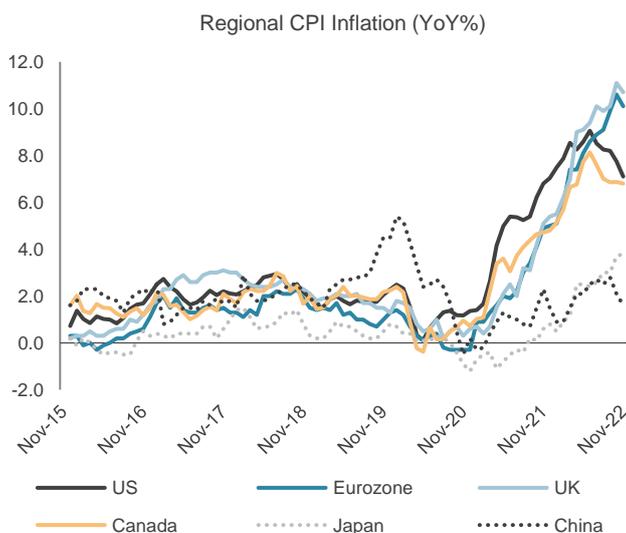
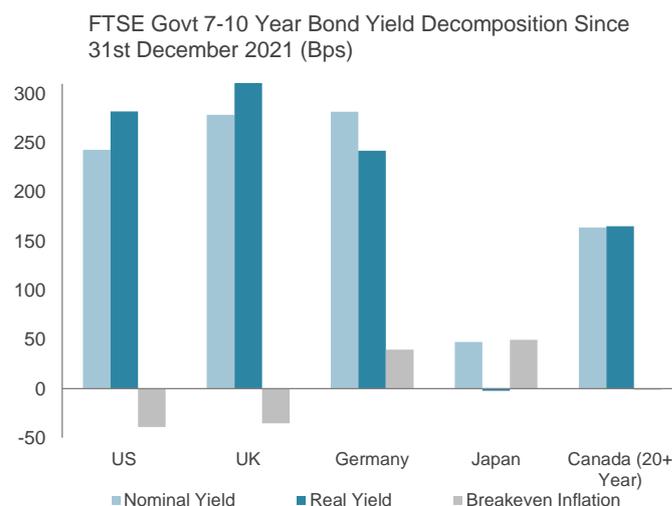


Chart 2: Inflation breakevens have not destabilised despite the inflation shock, with nominal and real yields both rising sharply.



Source: FTSE Russell. All data as of December 31, 2022. 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

As 2023 begins, G7 central banks continue to prioritise fighting inflation, despite recession risks with the Fed dashing hopes of an early pivot in December. The ECB is expected to maintain its aggressive policy as the HICP level remained one of the highest within G7. Overall though, recession risks, sizeable tightening in 2022, lags in its impact on inflation and lower energy prices make a pause in tightening more likely in 2023.

Consensus growth expectations highlight negative or weak economic growth for most G7 countries and China in 2023, reflecting the scale of 2022 policy tightening, and energy and Ukraine shocks. The UK and Eurozone are forecast to contract in 2023 (Chart 1).

G7 inflation levels eased a little due to weakening growth and lower energy prices in Q4 2022. German inflation fell for the second month in December to 8.6%, though remained one of the highest, along with the UK, in Europe (Chart 2).

Most G7 central banks tightened further to control inflation in December (Chart 3). The ECB said in December that “interest rates will still have to rise significantly at a steady pace to reach levels that are sufficiently restrictive to ensure a timely return of inflation to the 2% medium-term target”. The BoJ maintained its yield curve control policy in principle, but surprised markets by widening its tolerance band (to +/- 50bp) for the 10-year JGB yield.

Although the ECB has not formally begun QT, its balance sheet shrank by EUR 581 billion in 2022, after TLTRO repayments by banks. A modest E15bn monthly balance sheet reduction is planned from March 2023, so interest rates remain the key policy tool.

Chart 1: Consensus 2023 GDP growth expectations in December project a sharp slowdown, but with net contraction only in the UK and Eurozone. The Covid surge increases uncertainty in China.

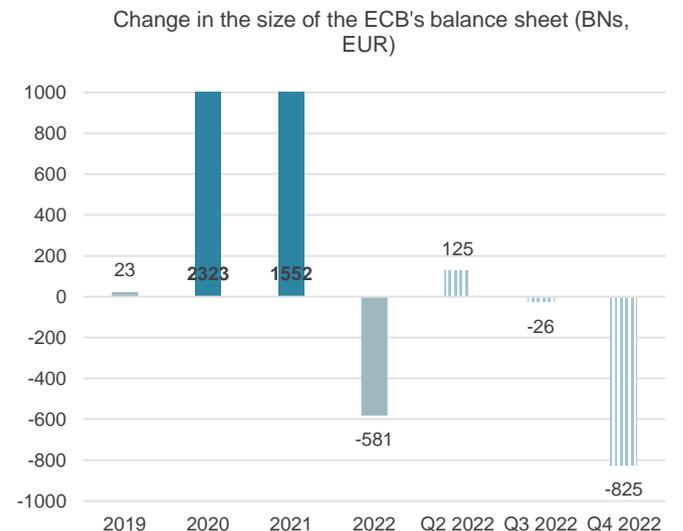
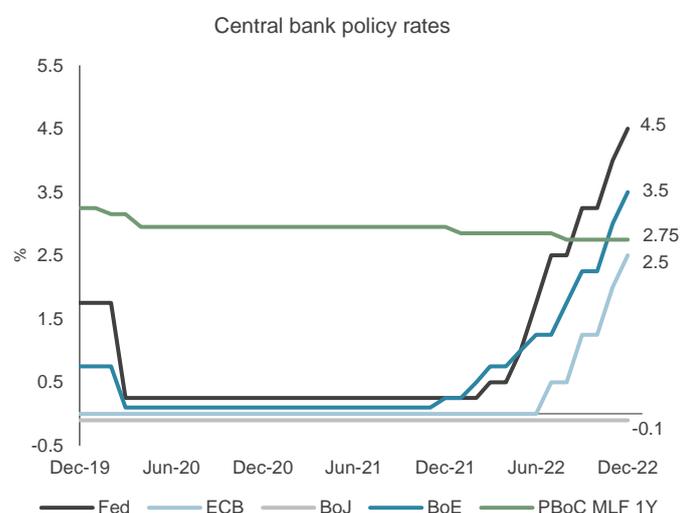
Latest Consensus GDP Forecasts (% December 2022)			
	2021	2022	2023
US	5.6	1.9	0.3
UK	7.2	4.4	-0.9
Eurozone	5.2	3.2	-0.1
Japan	1.6	1.6	1.1
China	8.1	3.2	5.0
Canada	4.7	3.2	0.8

Chart 2: Inflation for most G7 countries is expected to remain sticky in 2023, and well above target, especially in Europe, despite some signs of easing and steep rate rises.

Consensus Inflation Forecasts (% December 2022)				
	2022	Change Since Jan-22 (Bps)	2023	Change Since Jan-22 (Bps)
US	8.1	340	4.1	170
UK	9.1	460	7.4	520
Eurozone	8.5	550	6.0	430
Japan	2.8	190	1.8	110
China	2.2	0	2.3	20
Canada	6.8	330	3.6	140

Chart 3: Steep G7 central bank rate rises were main drivers of the tightening in financial conditions in 2022. But policies in Japan and China diverged, increasing the rate differentials with other nations.

Chart 4: Despite not starting QT until March 2023, the ECB's balance sheet fell E581bn in 2022, following TLTRO repayments. Current QT plans are more modest than the Fed, or BoE.



Source: FTSE Russell and Refinitiv. All data as of December 31, 2022. 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 Yields, Curves and Spread Analysis

Chart 1: G7 conventional yields spiked in December after the November rally, following hawkish central bank messaging. JGB yields reached the top end of the new 10 yr yield band (0.50%).

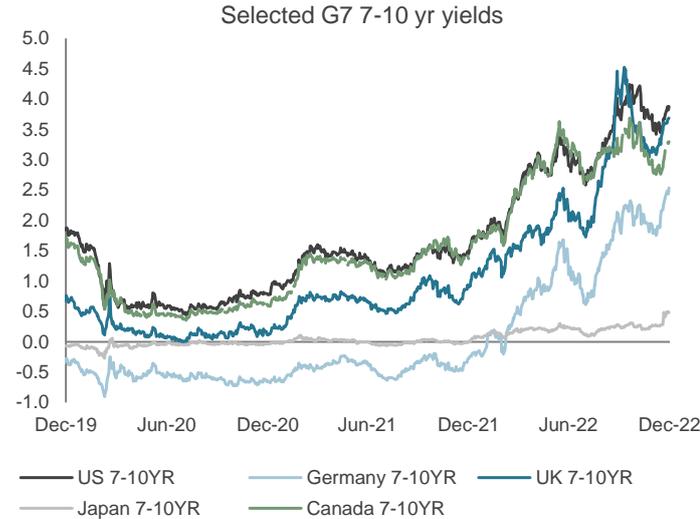


Chart 3: Despite spiking up as central banks raised rates further, G7 10/2s yield curves stayed inverted (except in Japan and the UK). JGB yields ticked up as the BoJ widened its curve control bands.

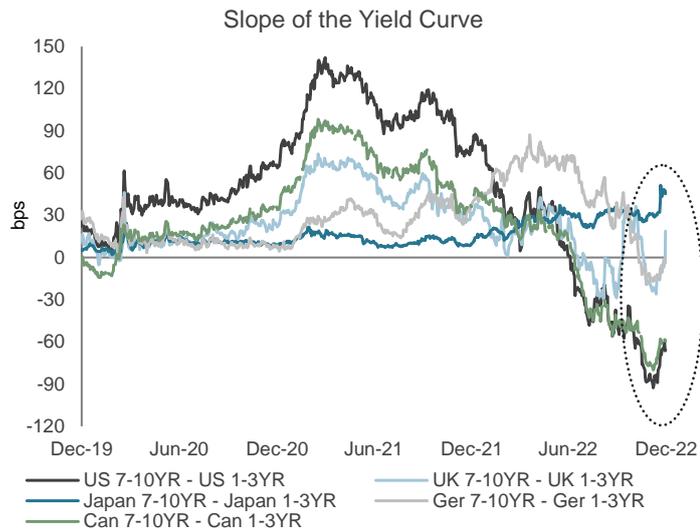


Chart 5: Apart from the UK, regional breakevens have stabilised after the 2021 rise during the reflation trade and brief spike after the Ukraine invasion. Fiscal consolidation reduced UK b/evens in Q4.

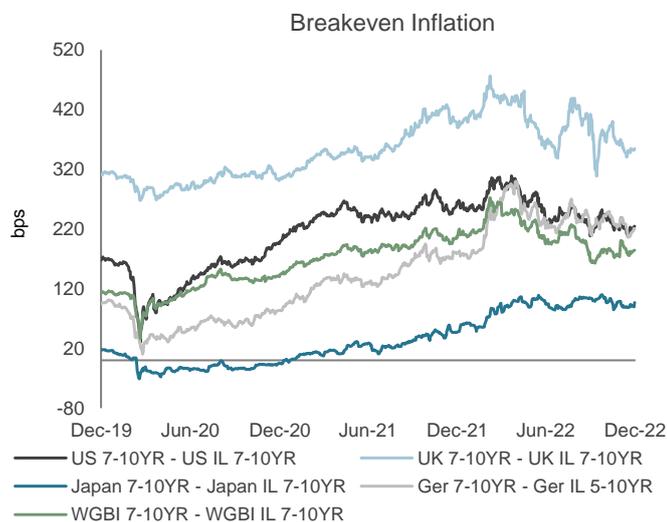


Chart 2: Inflation-linked bond yields have mostly risen in 2022, though there was an initial, short-lived, decline post the Ukraine invasion shock, as investors sought inflation protection.



Chart 4: A similar story applies to the long end, with the JGB curve having resisted the big flattening trend, due to BoJ curve control. Note the degree of curve flattening since policy tightening began.

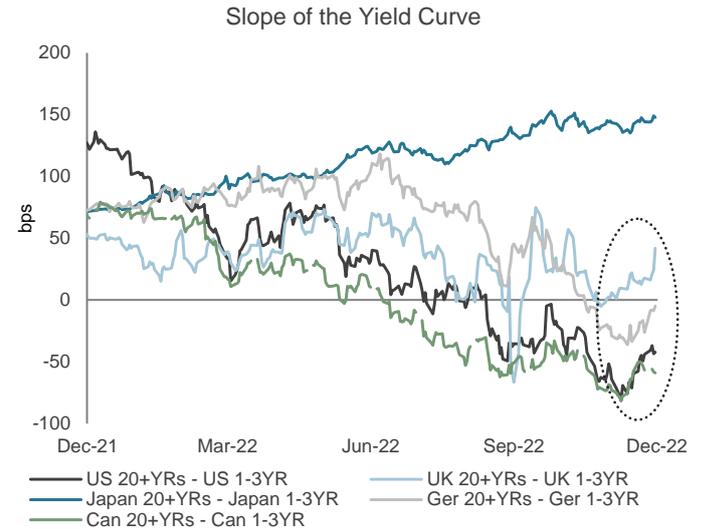


Chart 6: Short breakevens globally led longer ones lower since the Ukraine spike, as commodity prices fell. Short breakevens were often below long b/evens during the pre-Covid, low inflation era.



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Yield Spread and Credit Spread Analysis

Chart 1: US sovereign spreads proved pro-cyclical in 2020-2022, collapsing with US yields on Covid before increasing in the reflation trade as the Fed tightened. Recent moves may augur a repeat?

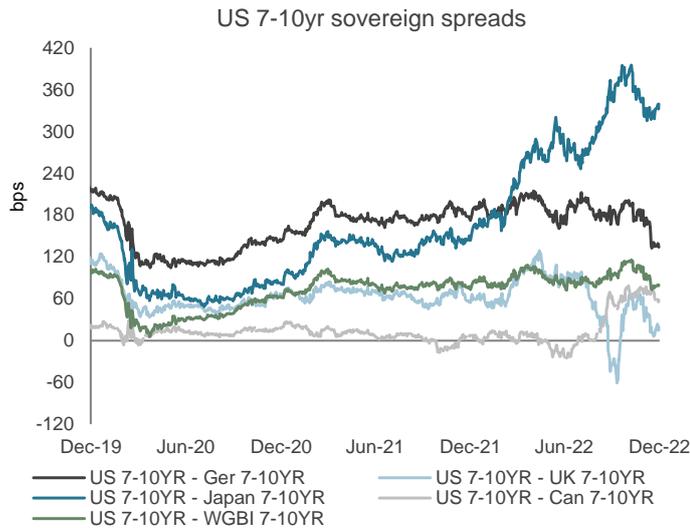


Chart 2: Despite support from ECB market operations, Italian sovereign spreads have been volatile in 2022 as systemic risk increased with the Ukraine invasion shock and rising rates.

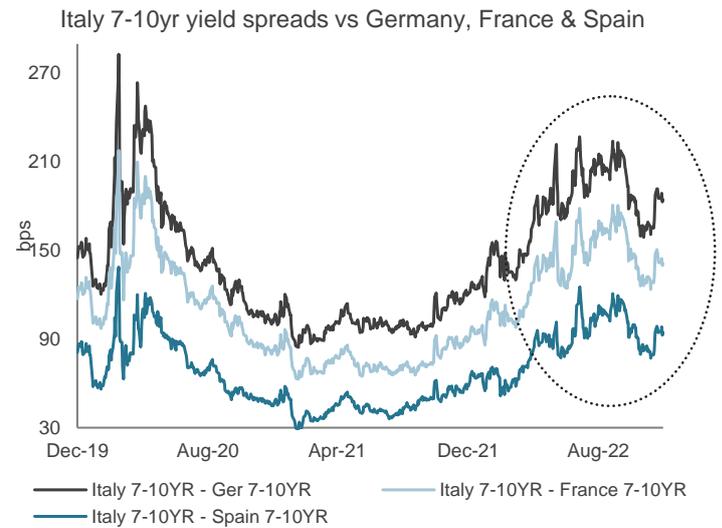


Chart 3: Crisis, what EM crisis? EM sovereign spreads have collapsed during 2022 versus their 7-10-year G7 peers, thanks to official support and regional policy divergences (i.e., China).

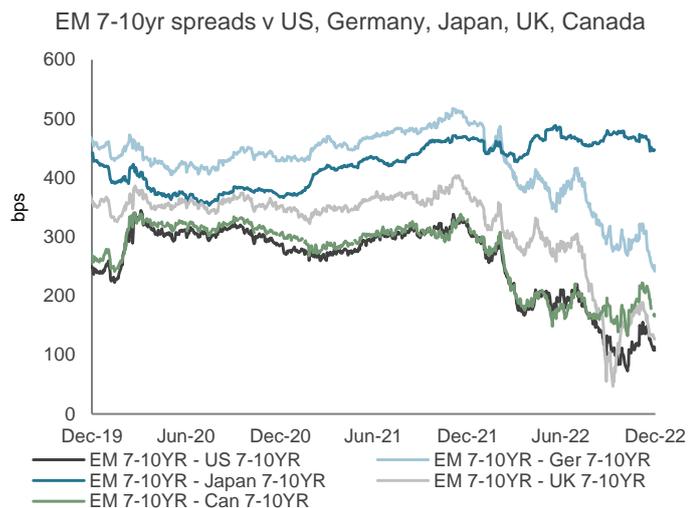


Chart 4: China sovereign spreads have fallen sharply in 2022 versus the G7, and less so vs Japan, where the BoJ retained curve control. China's correlation to the G7 financial cycle remains low.

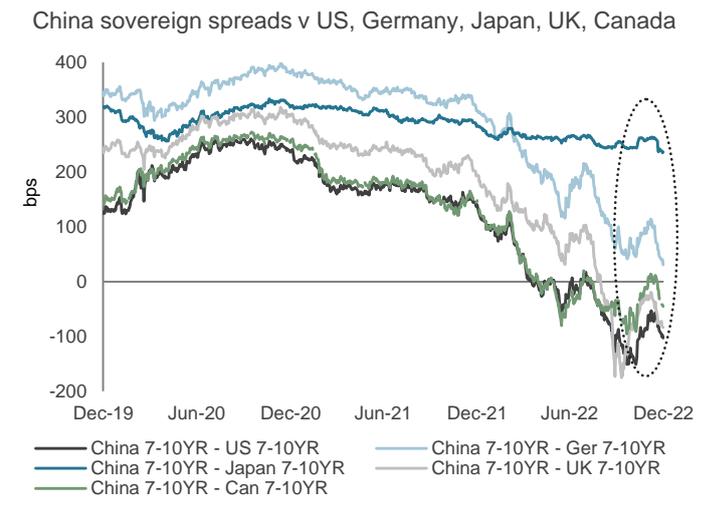


Chart 5: Euro and US credit spreads have declined in Q4 2022, with those in high yield credit seeing the largest moves on revival of risk appetite, and despite heightened recession fears.

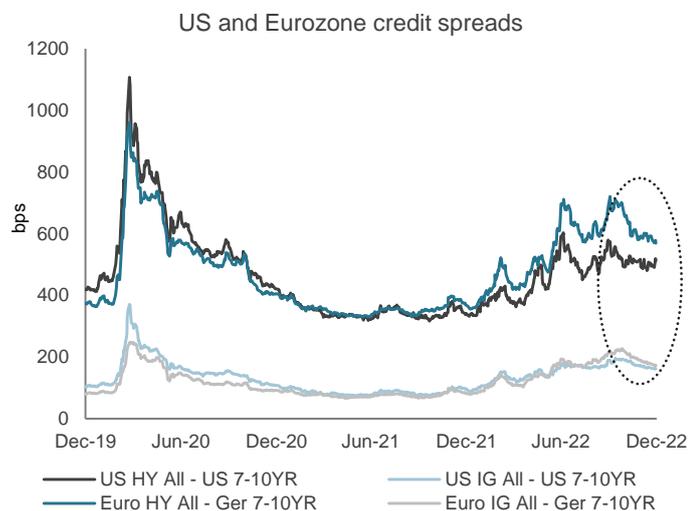
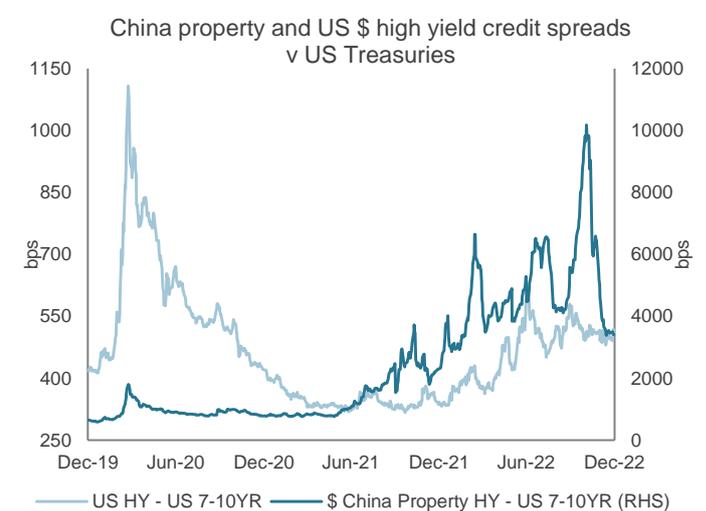


Chart 6: Chinese \$ high-yield spreads tightened further (3400bp) in December, after support measures for the property sector and the US HY rally, but remained well above pre-Covid levels.



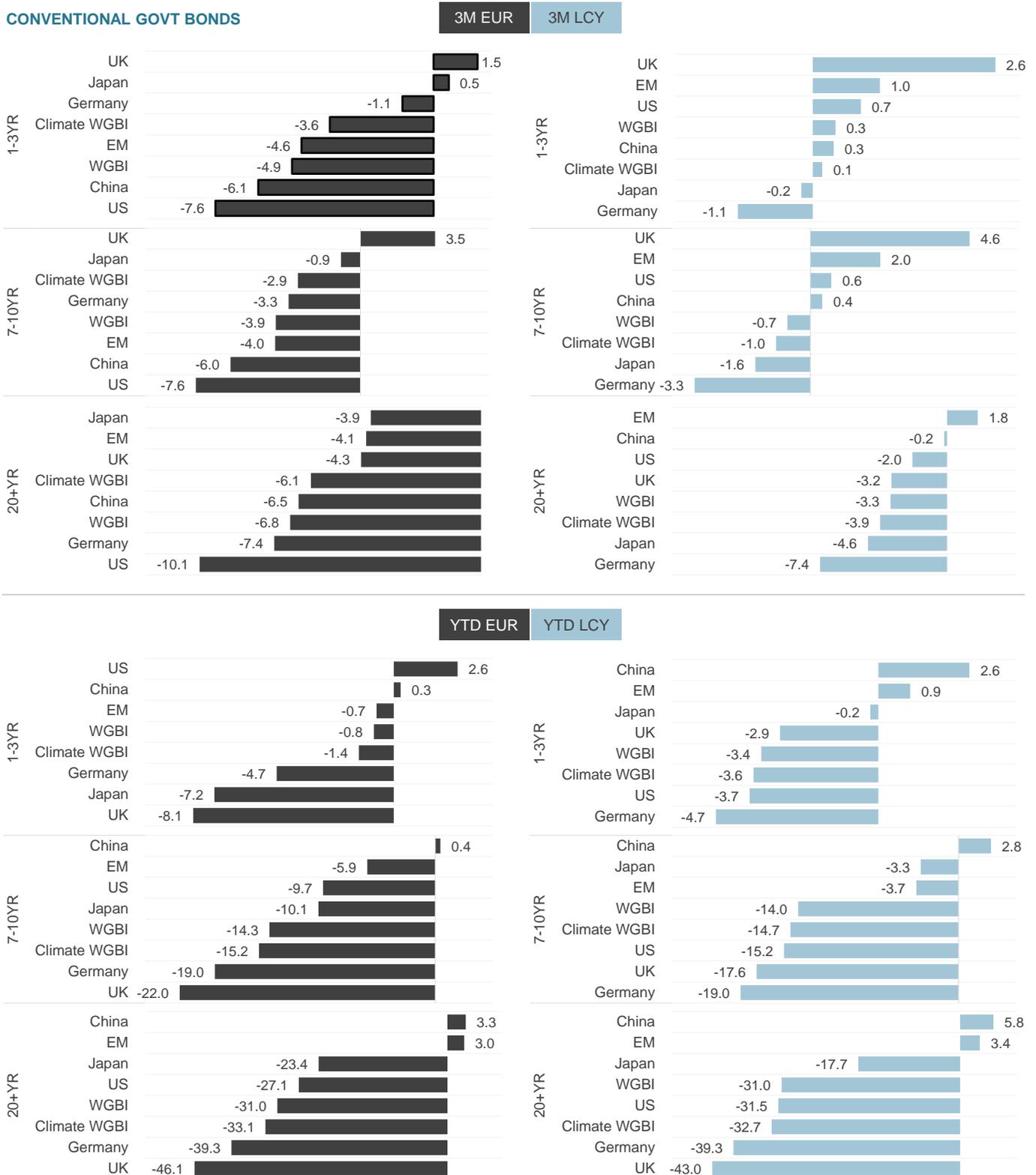
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Global Sovereign Bond Returns – 3M & YTD % (EUR & LC, TR) as of December 31, 2022

The global bond rally lost steam in December after central banks maintained their hawkish policy stances to tame inflation. However, softer economic data revived hopes future central bank tightening measures may be more modest in 2023. G7 bond returns were modest in Q4, as inflation eased, but euro strength eroded overseas returns in euros.

UK government bonds rallied in Q4 with the best performance in shorts and mediums, with gains of 2-4% in euros. Fiscal consolidation restored calm to the gilt market. Bunds continued to suffer after the ECB dashed hopes of an early policy pivot.

Returns remained mostly negative across all regions and maturities in 2022, in euros. China (and EM) sovereigns have been the most resilient, benefiting from a divergent monetary regime and low inflation, as Covid lockdowns restricted economic growth.



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Global Inflation-Linked Bond Returns – 3M & YTD % (EUR, LC, TR) as of December 31, 2022

Shorter inflation-linked rallied in Q4, reversing some of their losses in 2022, though Euro strength reduced some gains. Short and medium UK IL gilts performed strongly after the Autumn Statement reassured markets, but long gilt returns remained negative after the mini-budget trauma. High yield credits also gained from some renewal of risk appetite.

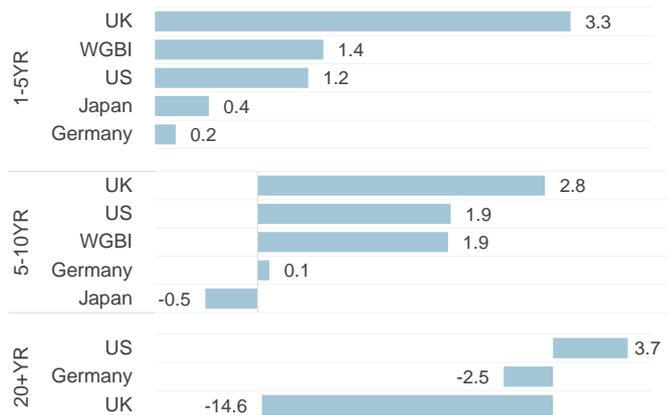
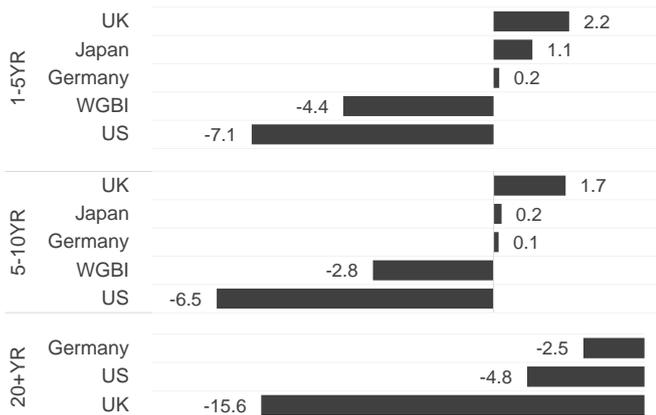
Short and medium-dated UK index-linked bonds rallied in Q4, supported by expectations of a modest index-linked issuance calendar in 2022-23, but losses remained substantial for 2022. Returns for inflation-linked Bunds were either flat or lower in Q4.

Risk appetite recovered in Q4, underpinning rallies notably in Euro high yield credits and investment grade corporates. However, the 2022 returns remained deeply negative in euro terms.

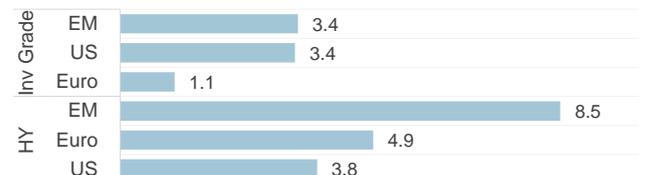
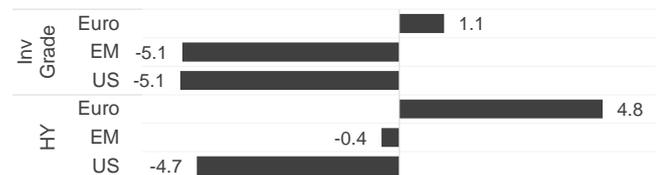
INFLATION LINKED BONDS

3M EUR

3M LCY



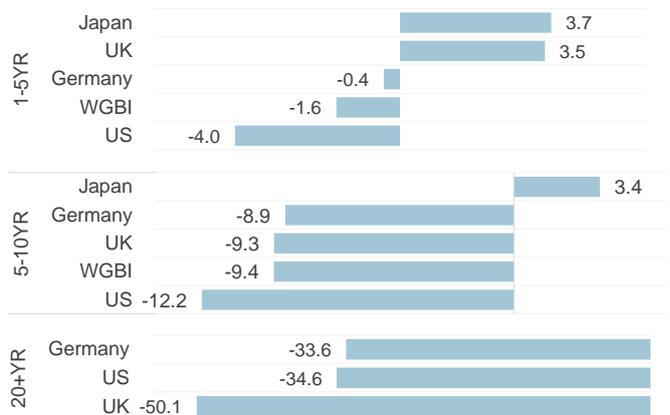
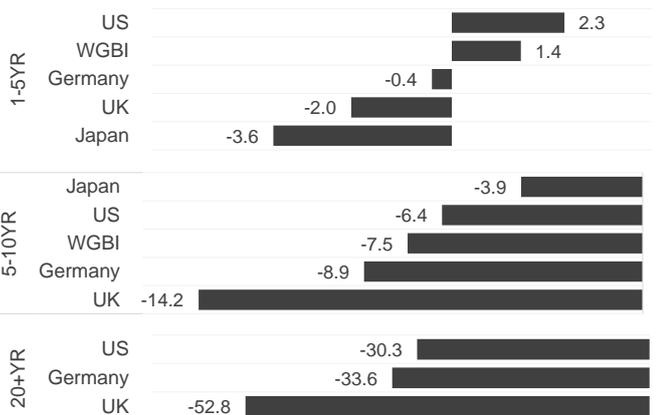
CORPORATE BONDS



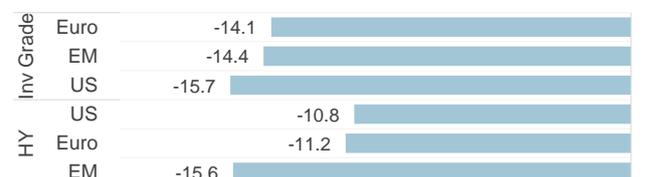
INFLATION LINKED BONDS

YTD EUR

YTD LCY



CORPORATE BONDS



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Top and Bottom Bond Returns – 3M & YTD % (EUR,TR) as of December 31, 2022

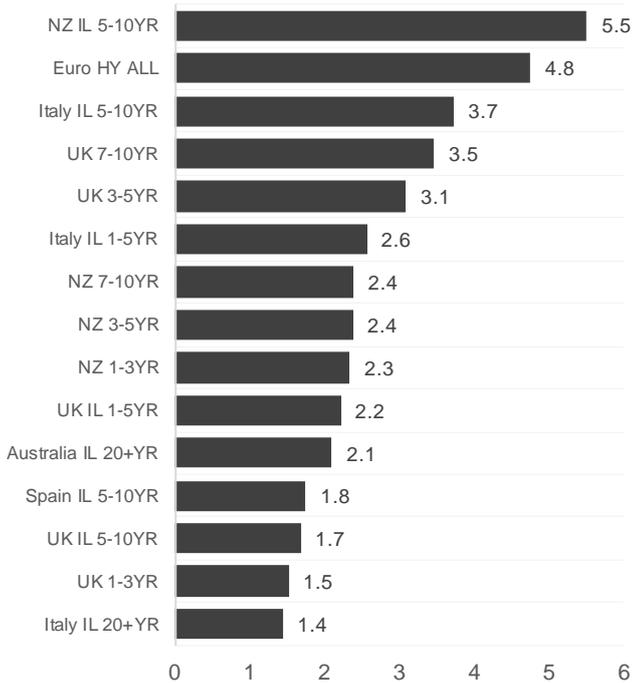
The Q4 bond rally saw long-dated New Zealand and Australian inflation-linked bonds, peripheral European sovereigns IL, euro high yield credit and gilts take up the lead, but EM inflation-linked bonds have returned the most in 2022.

A revival in risk appetite in Q4 saw peripheral European sovereigns gain 1-4% in euros, though long-dated New Zealand inflation-linked bonds outperformed with a nearly 6% return, followed closely by European high yield credit, up 5%.

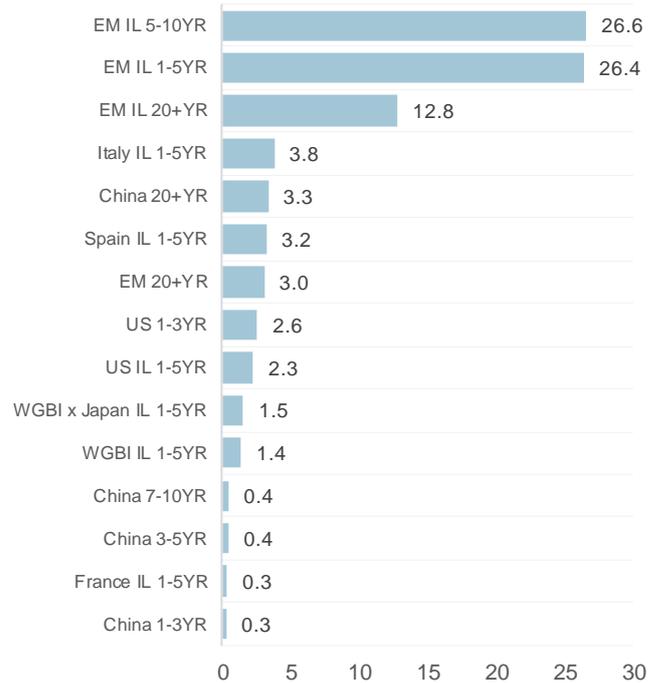
EM inflation-linked bonds have maintained their lead in 2022, with returns of 13-27% in euros. Long-dated gilts have underperformed the most, with returns of minus 46-53%, and the biggest negative returns were all in long duration bonds.

3M EUR YTD EUR

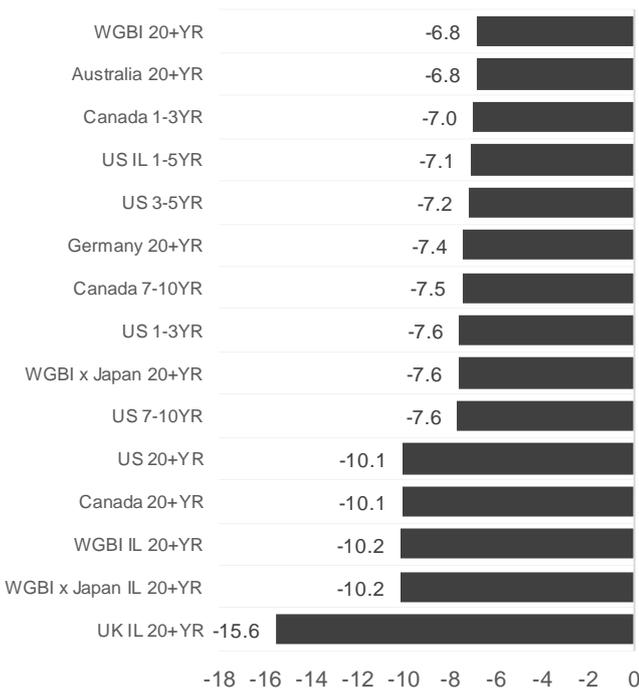
Top 15



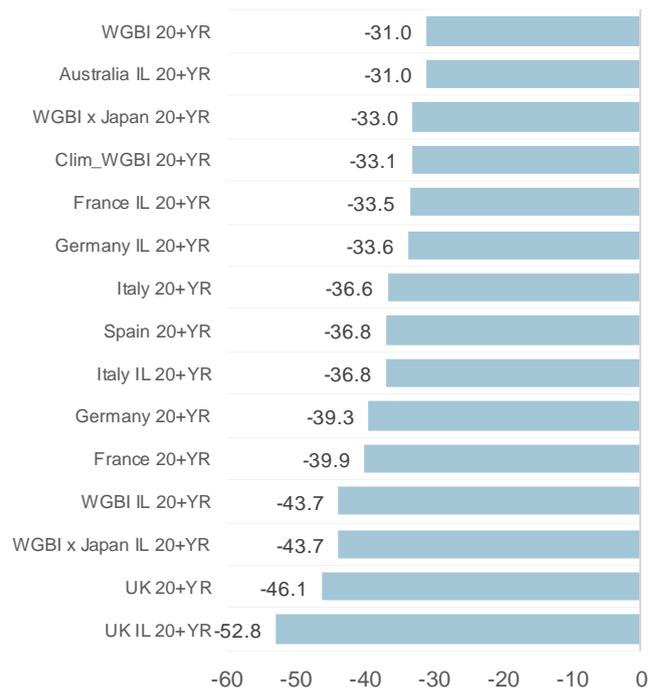
Top 15



Bottom 15



Bottom 15



Source: FTSE Russell. All data as of December 31, 2022. 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.

Sovereign and Climate Bonds Analysis

Chart 1: Climate WGBI reversed its gains vs WGBI in December, returning to levels last seen in early Q4, amid a volatile period.

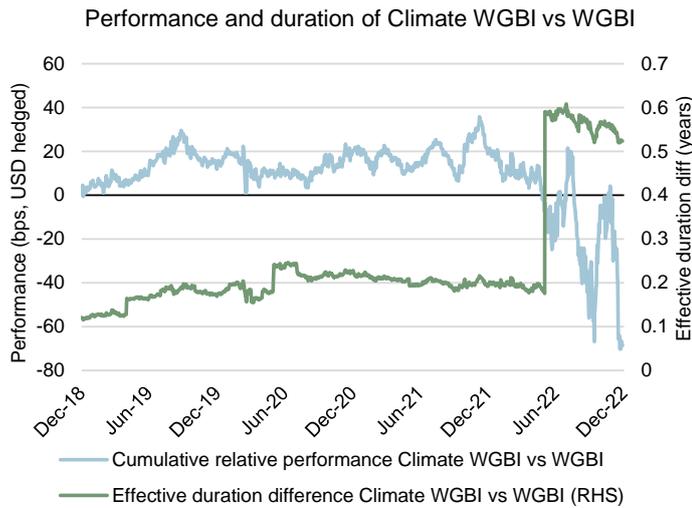


Chart 2: Overweights in the UK and Italy helped relative performance of Climate WGBI but the US underweight did not.

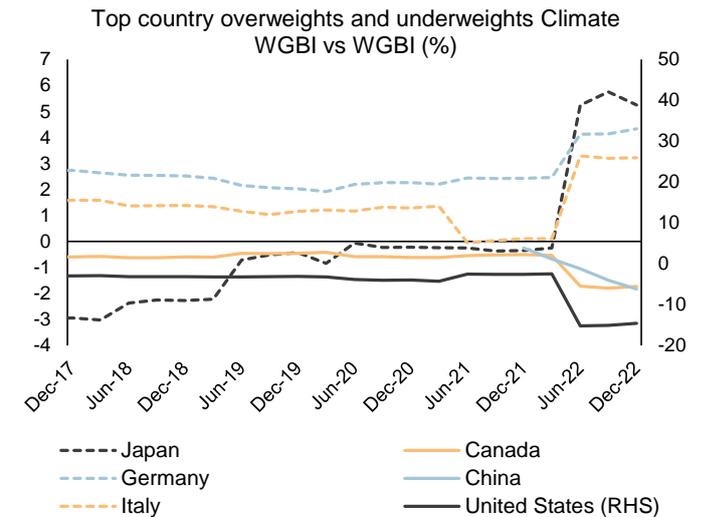


Chart 3: Climate WGBI has a lower yield to maturity versus WGBI, reflecting the higher weight of lower yield European issuers.

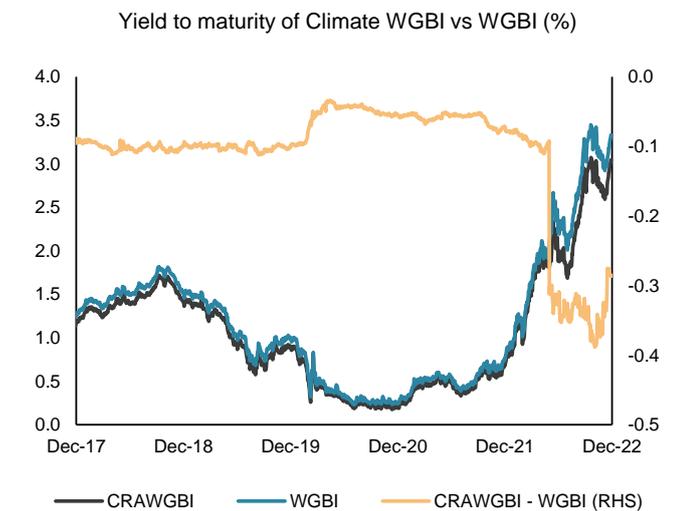


Chart 4: Big differences in Credit Quality: Climate WGBI has a lower weight in AA and a higher weight in AAA, A & BBB vs WGBI.

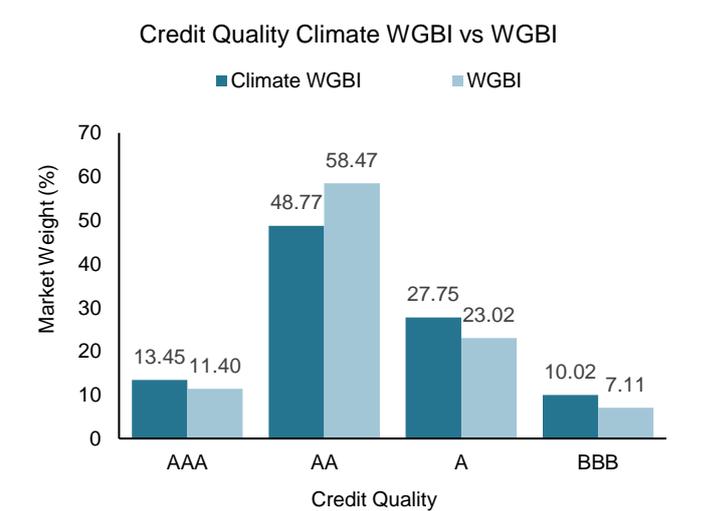


Chart 5: Yield differentials between 20yr+ Climate WGBI and WGBI have widened in 2022 compared to previous years.

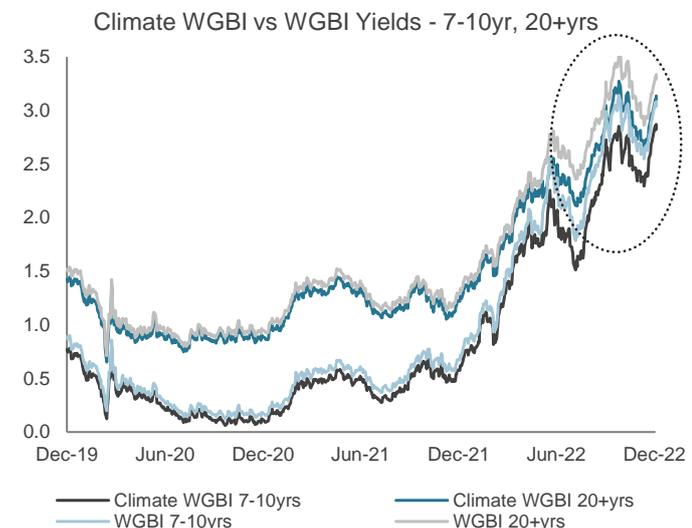
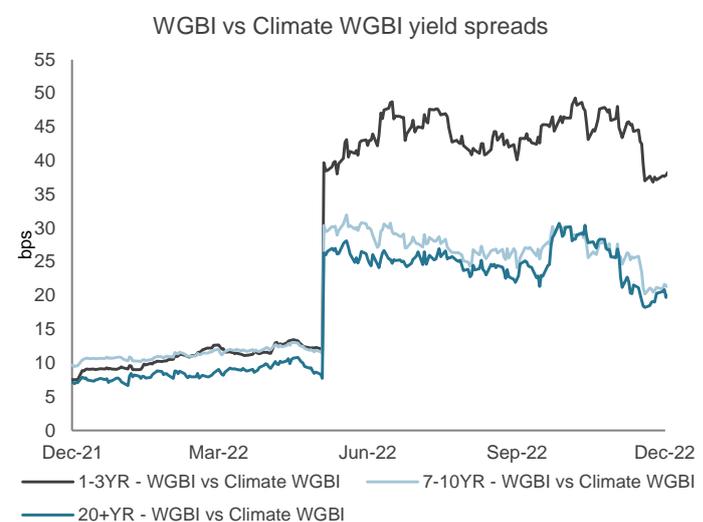


Chart 6: Longer-dated spreads between Climate WGBI and WGBI have remained relatively stable at around 25bp.



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Appendix – Global Bond Market Returns % (EUR & LC, TR) – December 31, 2022

Government Bond Returns

Top 15% Bottom 15%

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

		3M		6M		YTD		12M	
		Local	EUR	Local	EUR	Local	EUR	Local	EUR
US	1-3YR	0.69	-7.57	-0.88	-2.90	-3.74	2.57	-3.74	2.57
	7-10YR	0.61	-7.65	-5.22	-7.15	-15.22	-9.66	-15.22	-9.66
	20+YR	-2.02	-10.06	-12.60	-14.39	-31.54	-27.05	-31.54	-27.05
	IG All	3.37	-5.11	-1.78	-3.79	-15.68	-10.16	-15.68	-10.16
	HY All	3.80	-4.72	3.32	1.21	-10.83	-4.99	-10.83	-4.99
UK	1-3YR	2.64	1.52	-1.28	-4.22	-2.86	-8.07	-2.86	-8.07
	7-10YR	4.60	3.47	-9.74	-12.42	-17.61	-22.03	-17.61	-22.03
	20+YR	-3.24	-4.29	-22.13	-24.45	-43.00	-46.06	-43.00	-46.06
EUR	IG All	1.05	1.05	-2.09	-2.09	-14.09	-14.09	-14.09	-14.09
	HY All	4.88	4.75	4.25	3.93	-11.17	-11.66	-11.17	-11.66
Japan	1-3YR	-0.17	0.53	-0.19	0.67	-0.23	-7.22	-0.23	-7.22
	7-10YR	-1.59	-0.90	-1.65	-0.80	-3.29	-10.07	-3.29	-10.07
	20+YR	-4.60	-3.94	-7.67	-6.87	-17.67	-23.44	-17.67	-23.44
China	1-3YR	0.30	-6.08	1.16	-4.58	2.65	0.28	2.65	0.28
	7-10YR	0.35	-6.04	1.61	-4.15	2.82	0.45	2.82	0.45
	20+YR	-0.16	-6.52	3.26	-2.59	5.77	3.33	5.77	3.33
EM	1-3YR	0.97	-4.58	1.97	-2.59	0.93	-0.69	0.93	-0.69
	7-10YR	2.03	-3.96	2.99	-1.99	-3.68	-5.87	-3.68	-5.87
	20+YR	1.78	-4.11	4.08	-0.73	3.41	3.04	3.41	3.04
	IG All	3.43	-5.06	-0.32	-2.36	-14.39	-8.78	-14.39	-8.78
	HY All	8.49	-0.41	4.84	2.70	-15.59	-10.06	-15.59	-10.06
Germany	1-3YR	-1.08	-1.08	-2.61	-2.61	-4.71	-4.71	-4.71	-4.71
	7-10YR	-3.34	-3.34	-8.59	-8.59	-19.01	-19.01	-19.01	-19.01
	20+YR	-7.39	-7.39	-16.96	-16.96	-39.32	-39.32	-39.32	-39.32
Italy	1-3YR	0.03	0.03	-1.99	-1.99	-4.23	-4.23	-4.23	-4.23
	7-10YR	-0.43	-0.43	-7.29	-7.29	-19.91	-19.91	-19.91	-19.91
	20+YR	-4.57	-4.57	-15.30	-15.30	-36.62	-36.62	-36.62	-36.62
Spain	1-3YR	-0.83	-0.83	-2.72	-2.72	-5.25	-5.25	-5.25	-5.25
	7-10YR	-2.17	-2.17	-7.45	-7.45	-19.02	-19.02	-19.02	-19.02
	20+YR	-4.65	-4.65	-13.08	-13.08	-36.83	-36.83	-36.83	-36.83
France	1-3YR	-1.24	-1.24	-2.95	-2.95	-5.21	-5.21	-5.21	-5.21
	7-10YR	-3.05	-3.05	-7.83	-7.83	-18.78	-18.78	-18.78	-18.78
	20+YR	-5.43	-5.43	-14.17	-14.17	-39.93	-39.93	-39.93	-39.93
Sweden	1-3YR	-0.37	-2.60	-0.91	-4.54	-3.59	-10.74	-3.59	-10.74
	7-10YR	-1.24	-3.45	-4.55	-8.04	-15.32	-21.59	-15.32	-21.59
	20+YR					0.00	0.00	0.00	0.00
Australia	1-3YR	0.85	-2.36	0.55	-2.86	-2.52	-3.11	-2.52	-3.11
	7-10YR	-0.24	-3.41	-1.19	-4.54	-14.25	-14.78	-14.25	-14.78
	20+YR	-3.77	-6.83	-6.92	-10.08	-28.52	-28.95	-28.52	-28.95
NZ	1-3YR	-0.28	2.34	-0.68	-1.03	-1.76	-3.31	-1.76	-3.31
	7-10YR	-0.23	2.39	-2.66	-3.00	-11.78	-13.16	-11.78	-13.16
Canada	1-3YR	0.44	-6.97	-0.01	-6.75	-3.84	-4.48	-3.84	-4.48
	7-10YR	-0.10	-7.47	0.81	-5.98	-11.53	-12.12	-11.53	-12.12
	20+YR	-2.91	-10.07	-1.10	-7.77	-24.41	-24.91	-24.41	-24.91

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Inflation-Linked Bond Returns

Top 15% Bottom 15%

Green highlight indicates top 15%, red indicates bottom 15%.

		3M		6M		YTD		12M	
		Local	EUR	Local	EUR	Local	EUR	Local	EUR
US	1-5YR	1.23	-7.08	-2.04	-4.04	-4.04	2.25	-4.04	2.25
	5-10YR	1.89	-6.48	-3.69	-5.66	-12.17	-6.42	-12.17	-6.42
	20+YR	3.75	-4.77	-10.94	-12.76	-34.61	-30.33	-34.61	-30.33
UK	1-5YR	3.34	2.22	1.12	-1.89	3.55	-2.01	3.55	-2.01
	5-10YR	2.80	1.69	-5.12	-7.94	-9.35	-14.21	-9.35	-14.21
	20+YR	-14.63	-15.56	-24.15	-26.41	-50.08	-52.76	-50.08	-52.76
EUxUK	1-5YR	0.17	0.17	-2.36	-2.36	-0.40	-0.40	-0.40	-0.40
	5-10YR	0.12	0.12	-4.53	-4.53	-8.91	-8.91	-8.91	-8.91
	20+YR	-2.48	-2.48	-12.12	-12.12	-33.59	-33.59	-33.59	-33.59
Japan	1-5YR	0.43	1.13	1.00	1.87	3.70	-3.57	3.70	-3.57
	5-10YR	-0.51	0.18	0.43	1.30	3.35	-3.89	3.35	-3.89
EM	1-5YR	3.35	-3.00	7.26	2.79	21.36	26.40	21.36	26.40
	5-10YR	5.36	-0.85	9.91	5.68	23.64	26.58	23.64	26.58
	20+YR	2.34	-2.70	4.81	3.12	2.17	12.81	2.17	12.81
Germany	1-5YR	0.17	0.17	-2.36	-2.36	-0.40	-0.40	-0.40	-0.40
	5-10YR	0.12	0.12	-4.53	-4.53	-8.91	-8.91	-8.91	-8.91
	20+YR	-2.48	-2.48	-12.12	-12.12	-33.59	-33.59	-33.59	-33.59
Italy	1-5YR	2.56	2.56	0.15	0.15	3.77	3.77	3.77	3.77
	5-10YR	3.73	3.73	-2.07	-2.07	-7.27	-7.27	-7.27	-7.27
	20+YR	1.45	1.45	-12.29	-12.29	-36.84	-36.84	-36.84	-36.84
Spain	1-5YR	0.89	0.89	-0.41	-0.41	3.20	3.20	3.20	3.20
	5-10YR	1.75	1.75	-1.88	-1.88	-6.67	-6.67	-6.67	-6.67
France	1-5YR	0.80	0.80	-3.12	-3.12	0.35	0.35	0.35	0.35
	5-10YR	0.70	0.70	-4.26	-4.26	-7.45	-7.45	-7.45	-7.45
	20+YR	0.03	0.03	-9.41	-9.41	-33.45	-33.45	-33.45	-33.45
Sweden	1-5YR	1.86	-0.42	2.22	-1.53	2.19	-5.38	2.19	-5.38
	5-10YR	0.26	-1.98	-2.99	-6.54	-6.21	-13.16	-6.21	-13.16
Australia	1-5YR	3.28	0.00	1.31	-2.13	-0.07	-0.68	-0.07	-0.68
	5-10YR	3.43	0.14	1.80	-1.65	-8.05	-8.61	-8.05	-8.61
	20+YR	5.46	2.11	-1.03	-4.39	-30.57	-31.00	-30.57	-31.00
NZ	5-10YR	2.80	5.51	2.38	2.01	-5.20	-6.69	-5.20	-6.69
	20+YR	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Canada	20+YR	2.97	-4.63	3.96	-3.05	-14.78	-15.35	-14.78	-15.35

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Appendix – Historical Bond Yields % as of December 31, 2022

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	4.54	4.13	3.88	4.11	2.09	1.68	1.82	5.50	9.00
	3M Ago	4.31	4.18	3.83	3.95	2.11	1.82	1.95	5.72	9.55
	6M Ago	2.96	3.03	2.97	3.28	-0.04	0.64	1.14	4.74	8.86
	12M Ago	0.69	1.14	1.45	1.91	-2.21	-1.30	-0.45	2.41	4.87
UK	Current	3.50	3.65	3.69	3.92	-0.68	0.15	0.49		
	3M Ago	4.39	4.44	4.16	3.72	-0.88	0.08	-0.16		
	6M Ago	1.94	1.91	2.15	2.57	-2.66	-1.56	-0.70		
	12M Ago	0.60	0.89	1.10	1.25	-3.49	-2.94	-2.18		
Japan	Current	0.03	0.15	0.48	1.50	-1.22	-0.54			
	3M Ago	-0.07	0.01	0.26	1.27	-1.37	-0.78			
	6M Ago	-0.09	-0.02	0.24	1.12	-1.29	-0.73			
	12M Ago	-0.09	-0.06	0.06	0.65	-0.63	-0.61			
China	Current	2.28	2.53	2.85	3.26					
	3M Ago	2.06	2.42	2.79	3.21					
	6M Ago	2.19	2.53	2.87	3.36					
	12M Ago	2.35	2.43	2.79	3.39					
EM	Current	3.78	4.38	4.95	4.61	2.79	3.04	5.15	5.92	11.40
	3M Ago	3.70	4.31	5.05	4.78	2.51	3.42	5.19	6.09	13.35
	6M Ago	3.64	4.45	5.07	4.92	2.79	3.28	5.25	5.08	12.30
	12M Ago	3.39	3.73	4.69	4.70	3.13	3.41	4.79	2.71	7.95
Germany	Current	2.56	2.53	2.54	2.51	0.40	0.34	0.18		
	3M Ago	1.66	1.82	2.03	2.11	-0.52	-0.10	-0.07		
	6M Ago	0.56	0.93	1.26	1.61	-1.62	-0.95	-0.59		
	12M Ago	-0.65	-0.44	-0.18	0.12	-2.54	-1.94	-1.79		
Italy	Current	3.34	3.72	4.38	4.72	1.16	2.19	2.18		
	3M Ago	2.87	3.45	4.16	4.37	-0.14	2.02	2.10		
	6M Ago	1.34	2.12	3.04	3.60	-1.94	0.78	1.49		
	12M Ago	-0.16	0.67	1.38	2.21	-1.99	-0.44	0.48		
France	Current	2.85	2.82	2.97	3.30	0.15	0.44	0.77		
	3M Ago	1.91	2.12	2.46	2.99	-0.58	0.21	0.63		
	6M Ago	0.81	1.23	1.76	2.49	-2.85	-0.79	0.17		
	12M Ago	-0.57	0.05	0.47	1.12	-2.53	-1.52	-0.90		
Sweden	Current	2.80	2.65	2.37		-0.24	0.25			
	3M Ago	2.31	2.41	2.22		-0.72	-0.23			
	6M Ago	1.74	1.82	1.75		-1.30	-1.01			
	12M Ago	-0.18	0.43	0.65		-1.73	-1.51			
Australia	Current	3.43	3.62	4.01	4.37	0.60	1.45	1.88		
	3M Ago	3.44	3.64	3.87	4.10	0.80	1.58	2.01		
	6M Ago	2.92	3.30	3.62	3.86	-0.46	0.97	1.65		
	12M Ago	0.66	1.79	2.18	2.78	-1.06	-0.28	0.63		
NZ	Current	5.00	4.62	4.46	4.54	1.54	2.06			
	3M Ago	4.20	4.25	4.30	4.62	1.21	2.13			
	6M Ago	3.54	3.67	3.87	4.17	0.81	1.78			
	12M Ago	1.78	2.61	2.79	3.13	-0.13	0.60			
Canada	Current	3.90		3.30	3.31			1.33	5.27	7.34
	3M Ago	3.65		3.19	3.13			1.43	5.20	7.38
	6M Ago	3.08		3.21	3.18			1.23	4.83	6.98
	12M Ago	1.01		1.37	1.67			-0.32	2.45	4.49

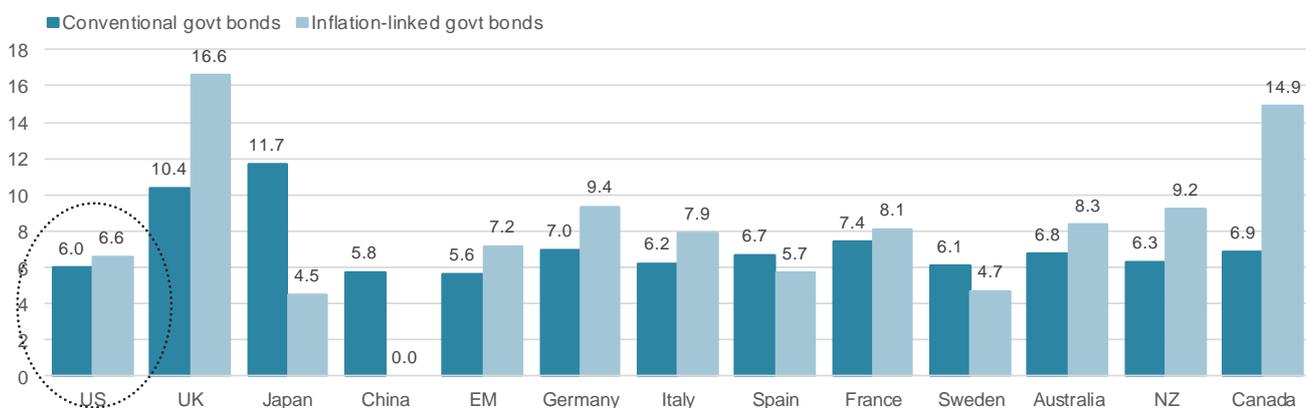
Source: FTSE Russell. All data as of December 31, 2022. Past performance is no guarantee of future results. Please see the end for important legal disclosures. Bond market data is derived from FTSE Fixed Income Indices. See Appendix Glossary for list of indices used for each market. For professional investors only.

Appendix – Duration and Market Value (USD, Bn) as of December 31, 2022

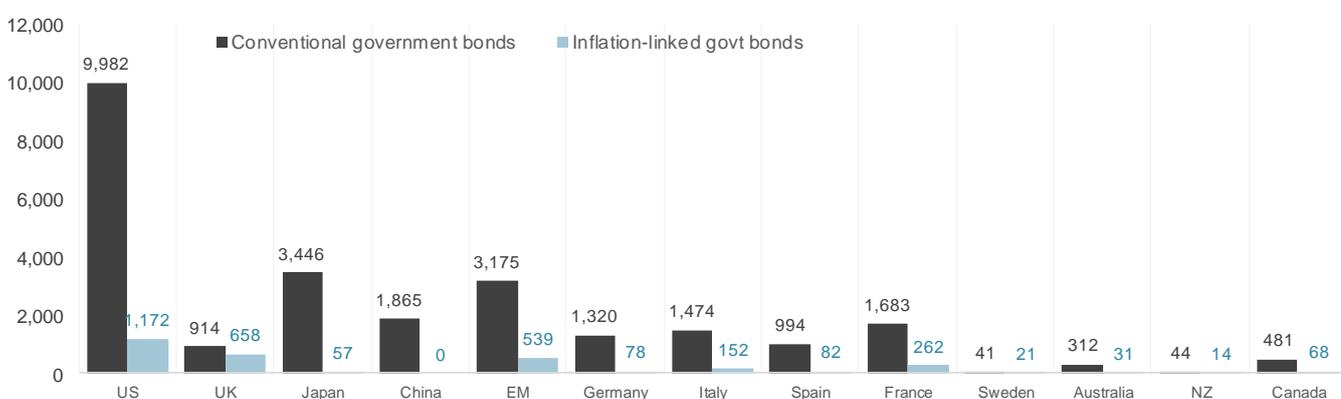
	Conventional government bonds								Inflation-linked government bonds					
	Duration				Market Value				Duration			Market Value		
	3-5YR	7-10YR	20+YR	Overall	3-5YR	7-10YR	20+YR	Total	5-10YR	20+YR	Overall	5-10YR	20+YR	Total
US	3.7	7.6	17.4	6.0	2,144.7	1,003.3	1,185.5	9,981.6	6.9	21.5	6.6	415.0	122.1	1172.0
UK	3.6	7.8	18.9	10.4	83.9	117.2	282.4	913.6	7.1	29.0	16.6	118.0	247.6	657.7
Japan	3.9	7.9	23.7	11.7	387.1	498.9	685.1	3,445.7	6.9		4.5	25.5		56.6
China	3.6	7.6	17.5	5.8	424.1	295.4	227.4	1,865.1						
EM	3.5	7.0	15.7	5.6	691.81	560.63	319.52	3,175.2	5.4	13.7	7.2	109.5	133.6	539.0
Germany	3.9	7.6	20.6	7.0	269.59	218.98	131.18	1,319.5	6.9	22.4	9.4	29.2	16.4	78.1
Italy	3.6	7.3	16.3	6.2	307.87	215.22	122.30	1,474.5	6.9	26.9	7.9	51.8	4.8	152.5
Spain	3.7	7.7	17.7	6.7	189.43	175.51	93.12	994.0	6.1		5.7	38.6		81.7
France	3.7	7.8	20.2	7.4	318.42	300.09	190.65	1,682.8	6.9	24.8	8.1	109.8	18.8	262.4
Sweden	3.7	8.2		6.1	7.58	9.02		40.6	6.0		4.7	12.5		20.6
Australia	3.7	8.0	17.8	6.8	54.86	85.31	14.73	312.5	7.7	22.9	8.3	9.1	2.6	31.5
NZ	3.6	7.9	17.6	6.3	8.40	6.26	2.21	44.2	6.8		9.2	3.1		13.8
Canada		7.5	18.1	6.9		161.50	85.10	481.2		14.9	14.9		68.0	68.0

	Investment grade bonds					High Yield						
	Duration					Market Value					Duration	MktVal
	AAA	AA	A	BBB	Overall	AAA	AA	A	BBB	Overall		
US	10.4	8.6	7.2	6.8	7.1	77.2	422.1	2,349.2	3,235.8	6,084.3	4.3	1,121.8
Euro	6.5	5.1	4.7	4.4	4.6	8.5	165.3	1,027.4	1,380.7	2,581.9	3.2	413.7
EM		5.7	4.8	5.1	5.0		37.20	211.57	353.0	601.7	3.6	209.1

Average Duration



Total Market Value (USD Billions)

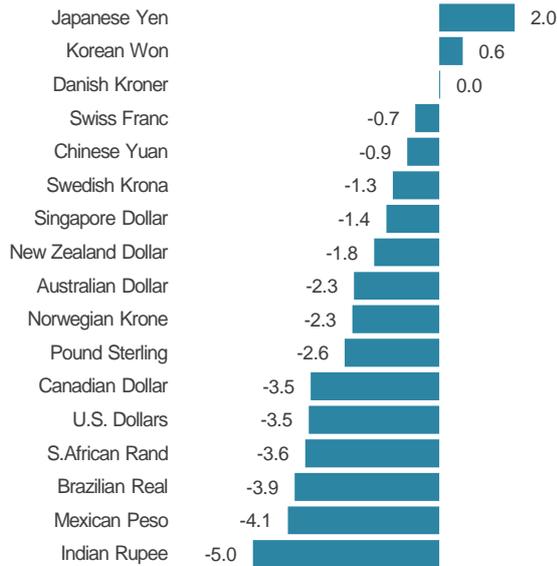


Data as of 2022-12-30

Source: FTSE Russell. All data as of December 31, 2022. 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 December 31, 2022

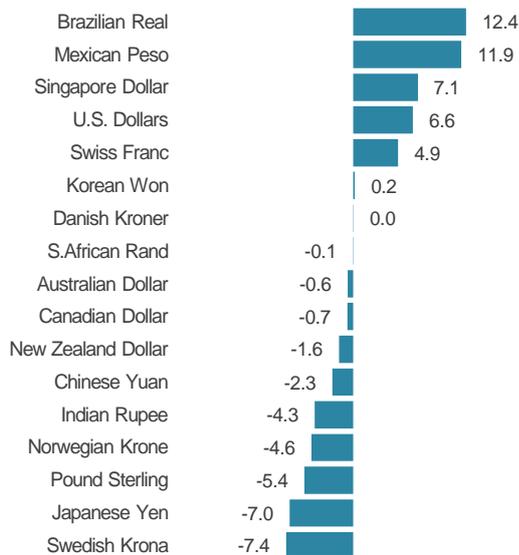
FX Moves vs EUR - 1M



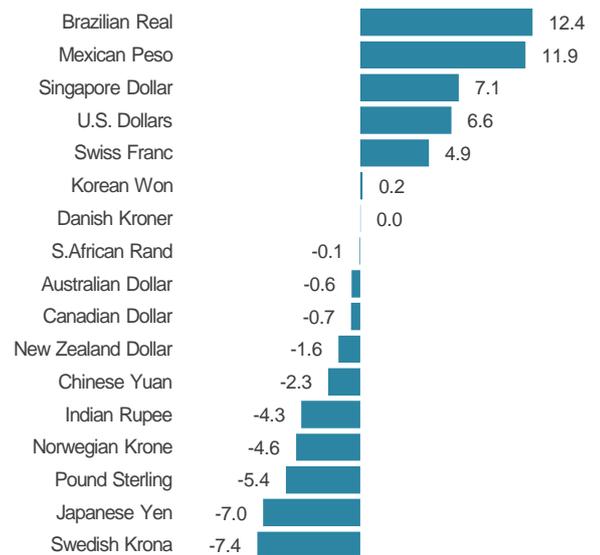
FX Moves vs EUR - 3M



FX Moves vs EUR - YTD



FX Moves vs EUR - 12M



Source: FTSE Russell and Refinitiv. All data as of December 31, 2022. 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



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