

Fixed Income Insights

MONTHLY REPORT | DECEMBER 2024

Treasuries re-calibrate US monetary/fiscal balance

US yields proved volatile in November, as fears about further fiscal stimulus were eased by the new Treasury Secretary nomination, and the view his financial market experience may ease debt funding issues. The Fed and BoE are skewed towards higher for longer rates, while Bunds benefited from deflationary strains. China is the best YTD performer.

Macro and policy backdrop - Fed remains data-driven for December FOMC

Fed and BoE rate decisions are close calls in December, as central banks re-calibrate the shift in monetary/fiscal policy balance. ECB & BoC under more easing pressure. (pages 2-3)

Yields, curves & spreads - Curves prove volatile in Q4, flattening end-month

After curve steepening and US spread widening, post-US elections, the US Treasury curve bull flattened. Credit spreads widened later in month on lower govt yields. (pages 4-5)

IG credit & MBS - Credit remains in a sweet spot, as IG spreads dip below MBS Credit stabilized in November, but BBB issues outperformed. Mortgage refis stall. (page 6)

High yield credit analysis - HY credits remain best performing fixed income class Insurance and energy sectors lead HY returns in 2024. Telecoms recovered. (page 7)

SI sovereign bond analysis - Green Sovereigns outperformed over 3M and 1Y

Green sovereign bonds benefited from higher duration in 2024, as yields fell. (page 8)

Performance - long Eurozone bonds led 1 month returns, despite stronger USD

German deflation risks continue, driving yields lower. China and EM bonds remain best YTD performers. Long JGBs and gilts remain weakest YTD. (pages 9-10)

Appendix (from page 11) Global bond market returns, historical bond yields, bond market

US EDITION

CONTENTS

Macroeconomic backdrop	2
Financial Conditions	3
Global Yields & Curves	4
Yield Spread & Credit spread	5
Investment Grade Credit	6
High Yield Credit analysis	7
SI Sovereign Bond Analysis	8
Global Bond Market Returns	9
Inflation-Linked Bond Returns	10
Top and Bottom Bond Returns	11
Appendices 12	-17

AUTHORS

Robin Marshall Director, Global Investment Research Robin.Marshall@lseg.com

Sandrine Soubeyran Director, Global Investment Research Sandrine.Soubeyran@lseg.com

durations and market values and foreign exchange returns.

Chart 1: US yields proved volatile in November, rising on the election result, before falling later in the month. But yields fell elsewhere, led by Germany and Canada with more easing at hand.

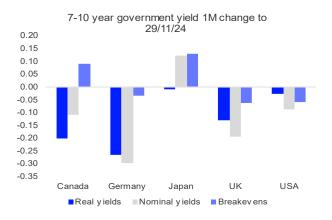
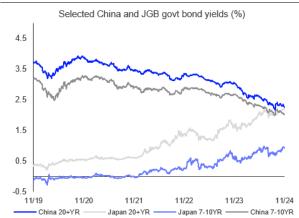


Chart 2: Deflationary strains in China, and the increase in BoJ interest rates, have driven China government bond yields down to JGB levels, and now below, in some areas of the yield curve.



Macroeconomic Backdrop - Growth and Inflation Expectations

Post-US elections, focus has shifted to the impact of higher trade tariffs, on growth and inflation. The pass-through on supply chains will affect final inflation outcomes, but clearly there is an intrinsic stagflation risk from higher tariffs, should they materialize. Greater fiscal stimulus, and sticky services inflation are other risks that may delay easing.

Consensus forecasts show lower growth divergence in 2025 (Chart 1), as growth recovers elsewhere versus the US, helped by lower rates, and fiscal stimulus in the UK and China particularly (though details on the program are still awaited). Germany's high savings ratio (20%) and weak domestic demand are compounding the problems caused by the slowdown in net exports.

Inflation above 2% levels persists, with core PCE, the Fed's 2% target, at 2.8% y/y, the highest for six months in October. Headline CPI is lower, at 2.3% y/y (Chart 2), thanks to lower energy prices. High dispersion in inflation continues, with US services inflation at 5.5% y/y and goods inflation negative - a global theme, apart from China and parts of the Eurozone, as deflation risks rise.

Hurricane effects affected the September and October labour market data, though overall, the unemployment rate remains around 4%, and the participation rate at 62.6%. Average earnings growth has stabilized around 4% also, as Chart 3 shows. Revisions lower to employment growth in August and September reduced employment by 112,000, and unemployment increased to 7m, from 6.4mn a year ago, though the labour market shows few signs of recessionary strain.

Trade shares in GDP are shown in Chart 4, and demonstrate how low US exports and imports are compared to other high income nations. China's export share below 20% of GDP indicates why a transition to domestic demand led growth is key for a sustainable economic recovery. Germany remains leveraged to global, and Eurozone, growth via its very high export share.

Chart 1: Growth forecasts show recoveries projected for 2025, helped by lower rates and inflation, and the US less of a growth outlier. German economic stagnation remains a major Eurozone risk.

Chart 2: Inflation rates remain above target in the US, due to services, and shelter, despite lower energy and durable goods prices particularly. UK inflation rebounded on the October electricity price increase.

Latest Consensus R	eal GDP Forecas	its (Median, %, N	ovember 2024)
	2023	2024	2025
US	2.5	2.7	2.0
UK	0.1	0.9	1.4
Eurozone	0.5	0.8	1.2
Japan	1.3	0.3	1.1
China	5.2	4.8	4.5
Canada	1.1	1.1	1.8

Chart 3: The US labour market shows few recessionary strains, though hurricanes distorted the data in September and October. Unemployment remains at 4.1% and the participation rate at 62.6%.

US average hourly earnings and unemployment

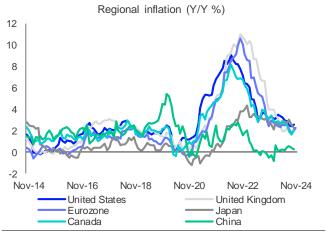


Chart 4: Trade shares in GDP vary considerably across high income nations but the main stand-outs are the low US share, and high German share. This leaves the US less exposed to a trade tariff war.

		r	ate		
16 14 12 10 8 6 4		V~	~		
0 Oct-19	Oct-20	Oct-21	Oct-22	Oct-23	Oct-24
			nourly earning		

Country	Exports% of GDP	Imports % of GDP	Trade to GDP ratio
Canada	33.5	34.0	67.5
US	11.6	15.4	27.0
Japan	21.5	25.3	46.8
China	19.7	17.6	37.3
Germany	47.1	43.0	90.1
France	32.7	34.9	67.6
Italy	35.0	33.7	68.7
UK	32.2	33.4	65.6
High income nation average	32.0	31.0	63.0

Financial Conditions and Monetary Policy Settings

US household debt service costs remain at 2015-19 levels, despite higher rates, thanks to the high fixed rate mortgage share. But Federal debt differs, with rapid growth in debt and higher rates transforming debt dynamics. If a version of Reaganomics re-emerges, a stronger dollar is a risk but offset by President-elect Trump's view that the dollar is overvalued.

With mortgage refis at low levels, and over 60% of 30 year mortgages with coupons below 4% (Yieldbook data), consumer debt service costs remain at 2015-19 levels (Chart 1). Indeed, they are well below post-GFC levels, helping explain robust consumer spending in 2023-24, and reducing the impact of higher rates. Perversely, Fed rates below 4% may trigger more refis and new mortgages pushing debt service costs higher, creating uncertain interest rate sensitivity for the Fed.

The prospect of further fiscal stimulus delaying Fed easing has helped underpin the US dollar since the elections on November 5, though the initial spike after the election has been partially unwound, as markets re-calibrate for President-elect Trump's stated view that the dollar is "overvalued", consistent with IMF calculations of 5-10% over-valuation.

After the November moves from the Fed and Bank of England, US and UK inflation data has cast some doubts over further easing in December. The Fed remains data-driven so November payrolls data will be key, with the decision to ease again finely balanced.

Chart 4 shows explosive growth in US Federal debt since 2016-17, when President-elect Trump was first elected, and means bond yields and interest rates now affects fiscal policy more directly, via the impact on interest payments (which now exceed Medicare payments annually). This increased inter-connectedness between monetary and fiscal policy moves Fed policy center stage.

Chart 1: US consumers have been protected against the steep rise in mortgage, and debt service, costs by the high proportion of lower coupon mortgages. Debt service costs are no higher than 2015-19.

Chart 2: The US dollar made initial gains on the US election result, based on fiscal policy preserving rate support, but this is offset by concerns about over-valuation, so more volatility may lie ahead.

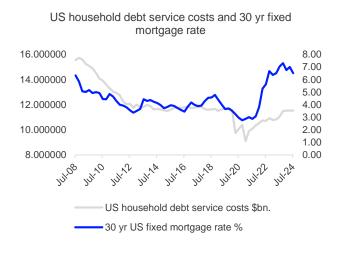


Chart 3: The Fed and BoE cut rates in November, though inflation data since raises doubts about December moves. The ECB and BoC are under more pressure to ease further from weaker growth and inflation.

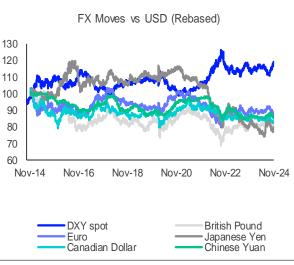
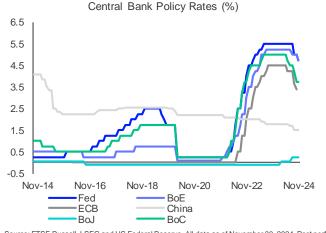
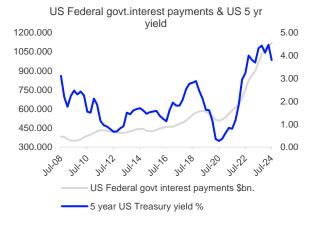


Chart 4: US Federal interest payments increased to over \$1trn per annum in response to higher rates and growth in Federal debt since 2016. These debt service costs are becoming central to fiscal policy.



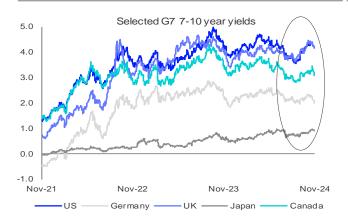


Source: FTSE Russell, LSEG and US Federal Reserve. All data as of November 30, 2024. Past performance is no guarantee of future results. This report should not be considered 'research' for the purposes of MIFID II. Please see the end of the report for important legal disclosures. Bond market data is derived from FTSE Fixed Income Indices. See Appendix for list of indices used for each market.

Global Yields, Curves and Breakevens

Chart 1: US Treasuries led G7 7-10 yr yields higher early in November, after the elections, on fears of a bigger fiscal boost. But Scott Bessent's nomination as Treas. Secretary. helped markets rally later in the month.

Chart 2: Real yields broadly tracked nominals, led by US Tips as markets focussed on the possible boost to real growth from more fiscal stimulus, as in the UK. But real yields fell late in the month.

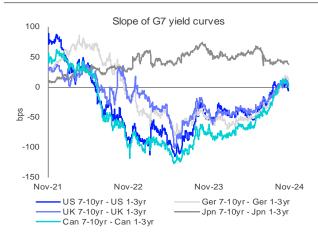


Regional and global real yields 3.0 2.0 1.0 0.0 -1.0 -2.0 -3.0 -4.0 Nov-2 Nov-22 Nov-23 Nov-24 US IL 7-10 yr UK IL 7-10 yr France IL 7-10yr Japan IL 7-10yr

Chart 3: The US curve was volatile in November, as initial steepening on the US election result was unwound later in the month, as the PCE deflator data proved more benign, and the 7-10 yr area rallied.

Chart 4: Initial steepening in longs was largely reversed over the course of November, as markets rallied on inflation data and Scott Bessent's nomination as US Treasury Secretary was well received.

WILSI 7-10yr



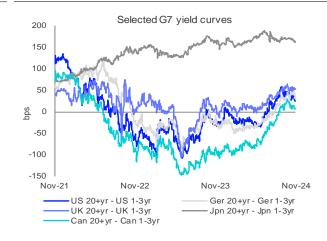
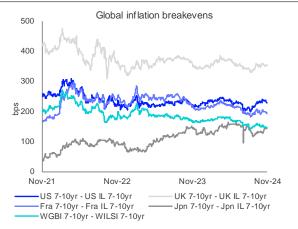


Chart 5: US inflation breakevens increased in November as markets priced in more fiscal stimulus, after the elections. Gilt breakevens increased, as increased issuance fears drove nominal yields higher.

Chart 6: Globally, inflation breakevens remain below 2%. Mediums and longs show only modest impact from the US elections, though short dated breakevens have rebounded from very low levels but remain below 2%.





Yield Spreads and Credit Spread Analysis

Chart 1: Treasury spreads widened on the US election result, before stabilizing somewhat, after the nomination of Scott Bessent as Treasury Secretary. Spreads versus Bunds are near cycle highs.

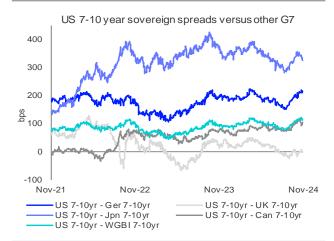


Chart 3: EM spreads first tightened in November, as G7 yields rose after the US election result. But the prospect of more easing in the Eurozone and Canada caused a modest reversal in spreads late on.

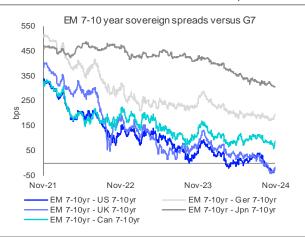


Chart 5: Credit spreads spent much of the month tightening further, before the recovery in Treasuries on Scott Bessent's nomination caused a partial reversal. US HY spreads now stand below 2019 levels.



Chart 2: Italian spreads fell to new lows in November, as yields rose elsewhere, led by the US, UK and JGBs. Spreads moved less vs Canada and Bunds with more easing likely from the BoC and ECB.

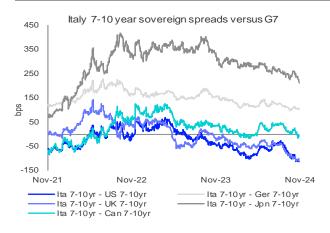
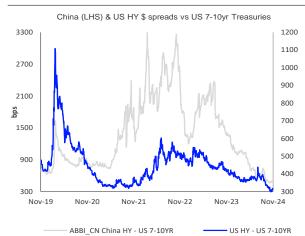


Chart 4: The lack of policy details on the Chinese fiscal stimulus announced in late-September and further weak economic data drove spreads to new lows, before G7 bonds stabilised late in the month.



Chart 6: China HY spreads tightened substantially, and drew support from the recent outline Chinese govt. support package (end-Sept). Convergence in US spreads and the global risk rally has also helped.



Source: FTSE Russell and LSEG. All data as of November 30, 2024. 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 of the report for important legal disclosures. Bond market data is derived from FTSE Fixed Income Indices. See Appendix for list of indices used for each market.

Investment Grade Credit and RMBS analysis

Chart 1: Outright IG yields remain at the high end of ranges since 2019, even if IG spreads tightened sharply in the 2023-24 risk rally. This has helped credit remain in a sweet spot through most of 2024.

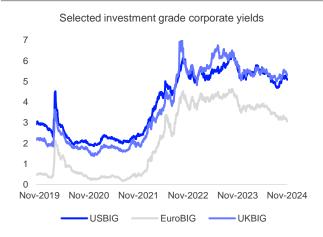


Chart 3: Yield spreads have tightened across sectors, with BBB spreads converging most. The share of BBB issues in IG has fallen a little since the spike before, and during, the early stages of Covid.

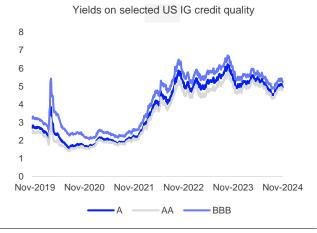


Chart 5: IG credit spreads briefly traded through RMBS 30yr spreads in November, for the first time in over 10 years. This partly reflects improved credit metrics in IG, and improved risk appetite in 2023-24.

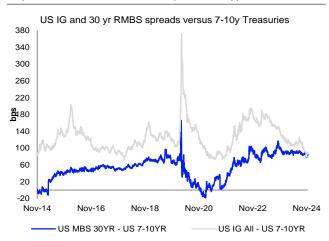


Chart 2: Looking at sector performance, there has been broad convergence in spreads across sectors. Financials have benefited from higher for longer rates and now hopes for lighter regulation.

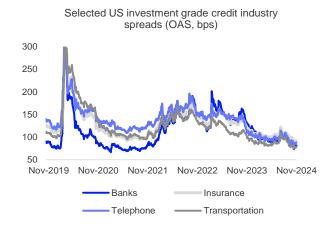
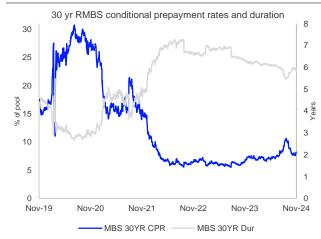


Chart 4: After the sell-off early in Covid, BBB has consistently outperformed A and AA issues, and particularly in the 2023-24 risk rally. AA issues have suffered from close correlation to Treasuries.



Chart 6: The bounce in mortgage refis and prepayments in Q3 was short-lived, as Treasury yields backed up in October/early Nov. This widened the gap between current mortgage rates and existing coupon.



High Yield Credit Analysis

Chart 1: HY markets have shown strong returns globally in the 2023-24 risk rally, helped by improved credit quality. The Eurozone lagged, in US dollar returns, due to a weaker currency and exchange rate.

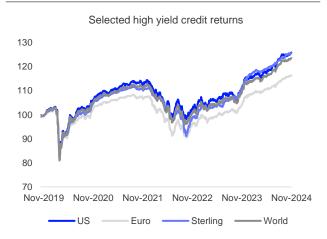


Chart 3: Longer maturities in HY are a smaller asset class and after some outperformance in 2020-21, have underperformed 1-3 yrs since late-2021. 5-7 yr maturities also underperformed short HY.

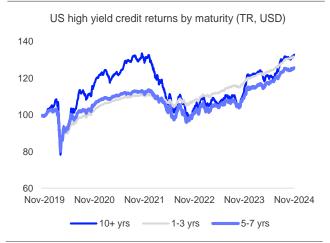


Chart 5: The Energy sector has performed strongly since the risk rally began in earnest in 2023, and has only been outperformed by Insurance. HY bank issues have not done as well as in IG.

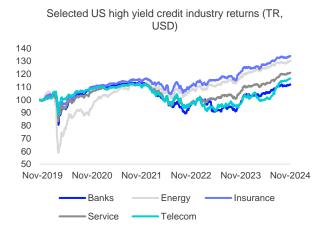


Chart 2: CCC credits have outperformed in the risk rally in 2023-24, reflecting low default rates and successful refinancing. Single B rated credits have also performed well, while BB has lagged.

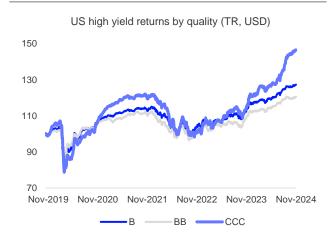


Chart 4: Yields are actually a little higher in the 1-3 year maturity bucket in US HY, so investors are not rewarded for taking on a bit more duration in longer HY issues, which carry higher default risks.

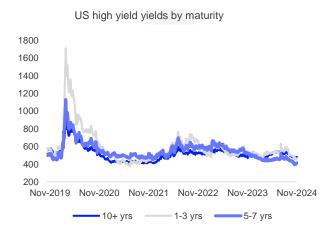
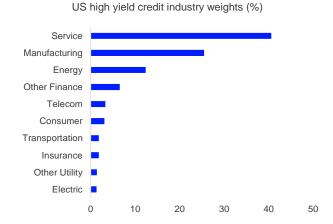


Chart 6: The HY market is dominated by Services and Manufacturing sector issuers. Financial issues have low weights, and Energy a sector weight of only 12%, despite a widespread perception of a higher weight.



SI Sovereign and Corporate Bond Analysis

Chart 1: Green bond performance has been positive in absolute terms over 12M. Green Sov have outperformed over both 3M and 1Y, with returns benefitting from the index's high duration as yields have fallen.

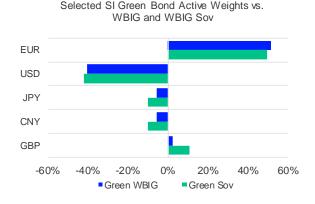
Chart 2: Green Bonds recovered in November, thanks to an underweight in USD bonds, which underperformed most other DM economies, following the US election, though Treasuries rallied in late-November.





Chart 3: Due to the large amount of green bond issuance in Europe versus the US, both Green Sov and Green WBIG are heavily underweight USD bonds in favour of EUR bonds.

Chart 4: Banks and other financial institutions have been strong issuers of green bonds in recent years, leading to a modest overweight in those industries. Electric utilities are also overweight.



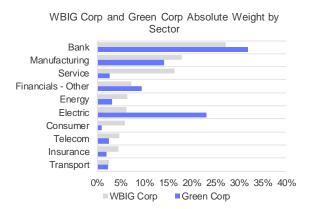
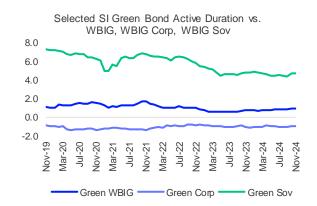


Chart 5: Green bond yields fell vs WBIG equivalents in October and November due to the US underweight, as US bond yields rose vs other DM economies before, and after, the US election.

Chart 6: Despite trending lower, Green Sov still exhibit significant positive active duration. In contrast, corporate green bonds have seen a consistently lower duration than their non-green bond counterparts.





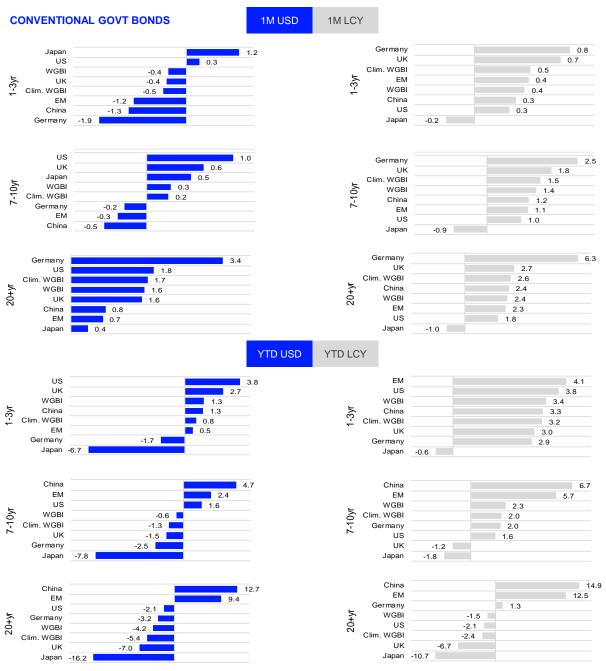
Conventional Government Bond Returns - 1M and YTD % (USD & LC, TR)

Despite an initial sell-off after the elections, Treasuries finished November marginally ahead, helped by coupon effects (with 4% yields). Longer Bunds performed best in USD terms, helped by more prospective rate cuts and flat growth. The stronger USD squeezed overseas returns, though the yen rallied a little. China and EM remain best YTD performers in USD.

After the October sell-off, G7 bonds made a modest recovery in November, rallying after Scott Bessent's nomination as the new US Treasury Secretary. Since the outcome of the elections were less of a surprise than 2016, market reactions were less extreme.

The dollar rallied, despite President-elect Trump's statement it is overvalued, though the yen recovered giving small positive JGB returns on the month. But YTD JGB returns remain strongly negative, from 7-16%, on the end of curve control and a weak yen.

Chinese and EM govt bonds gained most YTD, in USD, despite weaker currencies, with 9-13% gains in longs. Short and medium Treasuries gained 2-4%, mainly on Fed easing, and higher coupons. Long gilts lost about 7% in USD, only exceeded by long JGBs.



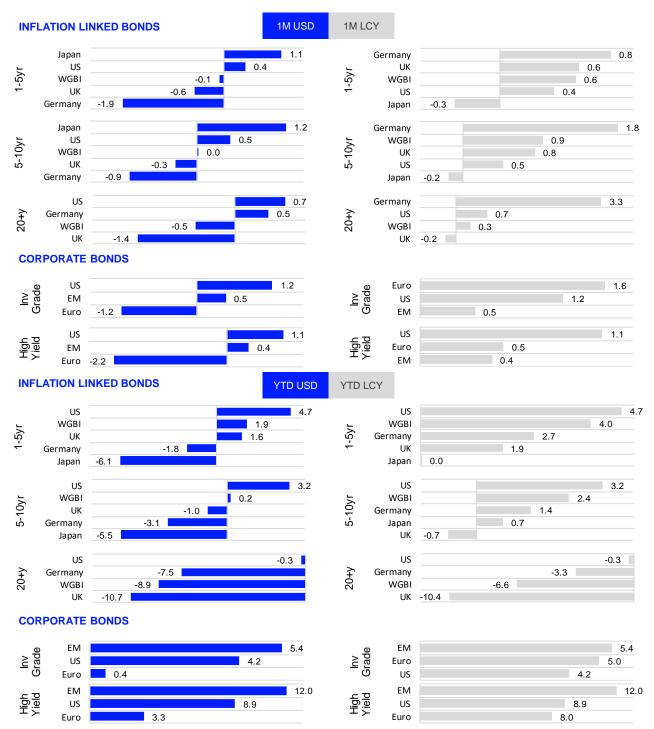
Global Inflation-Linked Bond Returns - 1M & YTD % (USD, LC, TR)

Inflation-linked moved little overall in November, with currency effects from the stronger USD mostly squeezing returns in overseas markets, notably in Bunds. JGBs managed small net gains of about 1%, due to the yen rallying. Long UK linkers are weakest YTD, while HY credit is the strongest performer, gaining 9-12% in US and EM, out-performing IG.

Bund linkers were strong performers in local currency terms, gaining up to 3% in November, but Euro weakness crimped USD returns, with net losses of 1-2% in short and medium Bunds, as currency markets priced in more ECB easing.

YTD, short and medium Tips have gained 3-5%, helped by lower Fed rates though long Tips still show a net loss, as the curve disinverted. With most real yield curves disinverting, longer duration markets like the UK have suffered, losing 11% in USD.

Credit has been in a sweet spot for much of 2024, with benefiting from HY's correlation to equities, and improved financial metrics.



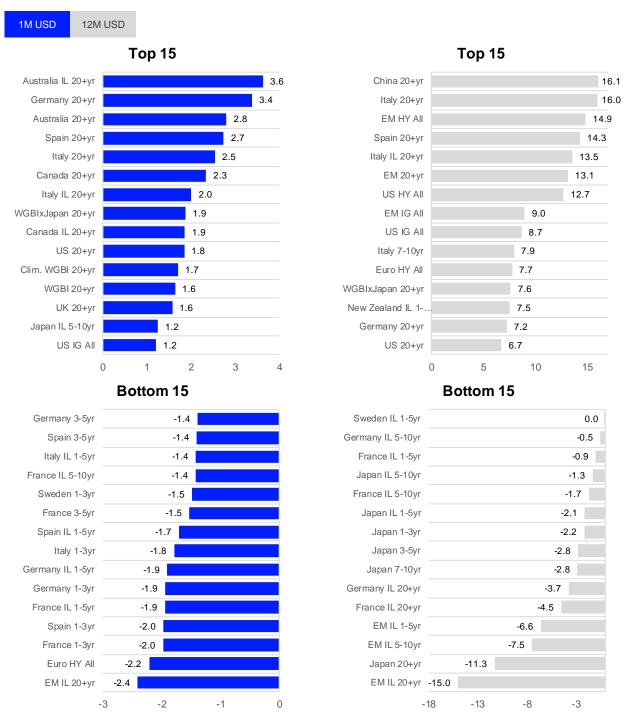
Top and Bottom Bond Returns - 1M & 12M % (USD, TR)

Long Eurozone and Australian govt bonds led 1 month returns in USD, despite Euro weakness, gaining up to 4%, as signs of deflationary strains in Germany drove Eurozone yields lower. EM inflation linked were weakest on both 1M and 12M as the peso and real fell, even exceeding long JGB losses of 11% on 12M. Long China and Italian bonds led 12M returns.

Concerns about trade tariffs and the USCMA trade deal in 2026 weighed on the peso and real in November, taking 12M EM inflation linked losses up to 15% in USD. Euro HY lost 2% on growth fears in November, but gained 8% on 12M.

Renewed convergence trades in Spain and Italy versus Bunds and OATs drove gains of 8-16% over 12M, in USD terms, despite the Euro losing 3% versus the USD. EM and US HY led credit returns in the risk rally with gains of 13 – 15%.

Long Chinese bonds have gained 16% on 12M in USD, despite the large fiscal stimulus mooted by the authorities in late-Q3, and attempts to curb speculative purchases. China's high EM weighting also drove long end EM gains of 13% on 12M in USD.



Appendix - Global Bond Market Returns % (USD & LC, TR) - Nov 29, 2024

Government Bond Returns

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

Top 15% Bottom 15%

		31	/I	6N		YT	D	12	M
		Local	USD	Local	USD	Local	USD	Local	USD
US	1-3yr	0.51	0.51	3.16	3.16	3.82	3.82	5.01	5.01
	7-10yr	-1.10	-1.10	4.50	4.50	1.61	1.61	5.66	5.66
	20+yr	-1.86	-1.86	5.84	5.84	-2.12	-2.12	6.74	6.74
	IG All	0.58	0.58	5.26	5.26	4.20	4.20	8.67	8.67
	HY All	2.31	2.31	7.09	7.09	8.85	8.85	12.71	12.71
UK	1-3yr	0.80	-2.51	2.74	2.57	2.96	2.66	4.47	4.89
UK Euro Japan China EM Germany Italy Spain France Sweden Australia New Zealand Canada	7-10yr	-0.75	-4.01	2.74	2.57	-1.23	-1.53	3.98	4.40
	20+yr	-2.87	-6.06	2.49	2.31	-6.69	-6.96	3.37	3.79
Euro	IG All	2.49	-2.21	5.23	2.38	5.05	0.44	7.94	4.49
	HY All	2.20	-2.48	5.16	2.31	8.05	3.31	11.30	7.74
Japan	1-3yr	-0.28	-3.32	-0.10	4.53	-0.61	-6.70	-0.60	-2.15
	7-10yr	-0.91	-3.94	0.95	5.63	-1.81	-7.83	-1.28	-2.82
	20+yr	-2.82	-5.78	-0.75	3.85	-10.71	-16.18	-9.92	-11.32
China	1-3yr	0.73	-1.29	1.61	1.76	3.27	1.26	3.82	2.36
	7-10yr	1.65	-0.39	3.66	3.81	6.75	4.67	7.76	6.23
	20+yr	2.87	0.81	8.07	8.23	14.90	12.66	17.74	16.08
EM	1-3yr	0.97	-1.45	2.32	1.34	4.11	0.54	4.81	2.05
	7-10yr	1.31	-1.05	4.34	3.86	5.66	2.44	7.57	5.37
	20+yr	2.49	0.30	7.99	7.40	12.53	9.40	15.20	13.14
	IG All	0.21	0.21	4.56	4.56	5.39	5.39	8.97	8.97
	HY All	1.53	1.53	6.03	6.03	11.99	11.99	14.85	14.85
Germany	1-3yr	1.30	-3.34	3.06	0.27	2.85	-1.66	3.82	0.50
Cermany	7-10yr	2.01	-2.67	5.94	3.08	1.96	-2.51	5.45	2.08
	20+yr	5.29	0.47	11.65	8.62	1.27	-3.18	10.79	7.25
Italy	1-3yr	1.57	-3.08	3.48	0.68	3.75	-0.80	4.83	1.47
	7-10yr	4.15	-0.62	7.51	4.60	7.22	2.51	11.50	7.93
	20+yr	7.84	2.90	11.83	8.80	11.44	6.55	19.82	15.99
Spain	1-3yr	1.38	-3.27	3.22	0.42	3.45	-1.08	4.52	1.18
	7-10yr	2.85	-1.86	6.23	3.35	4.77	0.17	8.93	5.45
	20+yr	7.11	2.20	11.81	8.78	8.60	3.84	18.08	14.30
France	1-3yr	1.40	-3.24	3.16	0.36	2.79	-1.72	4.01	0.68
	7-10yr	1.42	-3.23	3.85	1.04	0.51	-3.90	4.39	1.05
	20+yr	2.90	-1.81	4.62	1.78	-3.11	-7.35	6.65	3.23
Sweden	1-3yr	0.90	-5.37	3.66	-0.15	3.94	-4.07	5.22	0.98
	7-10yr	1.37	-4.92	5.75	1.86	3.06	-4.88	8.41	4.04
Australia	1-3yr	0.37	-3.63	2.26	0.17	3.05	-1.61	4.22	2.40
	7-10yr	-1.38	-5.31	3.07	0.96	1.53	-3.07	5.49	3.65
	20+yr	-3.61	-7.45	2.34	0.25	-3.91	-8.27	3.55	1.73
New Zealand	1-3yr	1.24	-4.28	4.31	0.43	5.72	-1.23	6.91	2.39
	7-10yr	0.35	-5.12	5.69	1.76	4.20	-2.64	9.19	4.57
	20+yr	-2.50	-7.81	4.17	0.30	-1.64	-8.10	7.31	2.77
Canada	1-3yr	1.15	-2.63	3.30	0.57	4.31	-1.76	5.21	1.88
Canada	7-10yr	0.81	-2.96	5.81	3.01	3.15	-2.86	7.15	3.76
Canada	7-10y1								

Appendix - Global Bond Market Returns % (USD & LC, TR) - Nov 29, 2024

Inflation-Linked Bond Returns

Гор 15% Bottom 15%

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

	Local							
	Lucai	JPY	Local	JPY	Local	JPY	Local	JPY
1-5yr	0.86	0.86	3.27	3.27	4.71	4.71	6.04	6.04
5-10yr	-0.38	-0.38	3.63	3.63	3.20	3.20	6.44	6.44
20+yr	-1.52	-1.52	4.90	4.90	-0.29	-0.29	6.68	6.68
1-5yr	0.61	-2.70	1.77	1.60	1.91	1.61	4.22	4.64
5-10yr	-0.58	-3.84	0.86	0.69	-0.71	-1.01	3.08	3.50
20+yr	-4.28	-7.43	-1.55	-1.72	-10.42	-10.68	-0.35	0.05
1-5yr	-0.32	-3.36	0.64	5.31	0.02	-6.11	-0.52	-2.08
5-10yr	-0.55	-3.58	0.91	5.58	0.68	-5.49	0.27	-1.30
1-5yr	2.45	-1.75	5.53	-6.55	8.57	-9.32	10.41	-6.58
5-10yr	0.85	-3.11	4.30	-6.27	3.54	-11.39	6.19	-7.46
20+yr	-2.33	-6.45	-0.31	-11.84	-5.54	-20.76	-0.63	-15.05
1-5yr	1.38	-3.27	2.74	-0.05	2.66	-1.85	3.41	0.10
5-10yr	1.92	-2.75	3.78	0.97	1.39	-3.06	2.81	-0.48
20+yr	3.24	-1.49	4.65	1.82	-3.30	-7.54	-0.57	-3.75
1-5yr	2.15	-2.53	3.91	1.10	4.17	-0.40	5.62	2.24
5-10yr	3.77	-0.99	5.49	2.63	6.38	1.71	9.51	6.01
20+yr	8.63	3.65	8.31	5.38	9.02	4.24	17.30	13.55
1-5yr	1.50	-3.15	3.10	0.30	2.95	-1.57	4.01	0.68
5-10yr	2.30	-2.38	3.87	1.06	3.95	-0.61	6.16	2.76
1-5yr	1.18	-3.45	2.19	-0.58	1.23	-3.21	2.32	-0.95
5-10yr	1.03	-3.60	1.59	-1.16	-0.61	-4.97	1.58	-1.67
20+yr	1.47	-3.17	-1.98	-4.64	-8.96	-12.95	-1.34	-4.50
1-5yr	1.08	-5.20	3.21	-0.58	3.16	-4.79	4.17	-0.02
5-10yr	1.87	-4.46	4.95	1.09	3.63	-4.35	7.36	3.03
1-5yr	-0.44	-4.40	1.57	-0.50	1.88	-2.74	3.55	1.73
5-10yr	-0.60	-4.57	2.53	0.43	1.10	-3.48	5.57	3.72
20+yr	-3.78	-7.62	0.24	-1.81	-9.47	-13.57	3.72	1.90
5-10yr	0.87	-4.63	2.76	-1.06	4.75	-2.13	8.48	3.90
20+yr	4.09	0.20	8.05	5.19	4.45	-1.63	8.75	5.31
	5-10yr 20+yr 1-5yr 5-10yr 20+yr 1-5yr 5-10yr 1-5yr 5-10yr 20+yr 1-5yr 5-10yr 20+yr 1-5yr 5-10yr 20+yr 1-5yr 5-10yr 20+yr 1-5yr 5-10yr 1-5yr 5-10yr 20+yr 1-5yr 5-10yr 20+yr 1-5yr 5-10yr 20-yr 1-5yr 5-10yr 20-yr 1-5yr 5-10yr	5-10yr -0.38 20+yr -1.52 1-5yr 0.61 5-10yr -0.58 20+yr -4.28 1-5yr -0.32 5-10yr -0.55 1-5yr 2.45 5-10yr 0.85 20+yr -2.33 1-5yr 1.38 5-10yr 1.92 20+yr 3.24 1-5yr 2.15 5-10yr 3.77 20+yr 1.50 5-10yr 2.30 1-5yr 1.18 5-10yr 1.03 20+yr 1.47 1-5yr 1.08 5-10yr 1.87 1-5yr -0.44 5-10yr -0.60 20+yr -3.78 5-10yr 0.87	5-10yr -0.38 -0.38 20+yr -1.52 -1.52 1-5yr 0.61 -2.70 5-10yr -0.58 -3.84 20+yr -4.28 -7.43 1-5yr -0.32 -3.36 5-10yr -0.55 -3.58 1-5yr 2.45 -1.75 5-10yr 0.85 -3.11 20+yr -2.33 -6.45 1-5yr 1.38 -3.27 5-10yr 1.92 -2.75 20+yr 3.24 -1.49 1-5yr 2.15 -2.53 5-10yr 3.77 -0.99 20+yr 1.50 -3.15 5-10yr 2.30 -2.38 1-5yr 1.18 -3.45 5-10yr 1.03 -3.60 20+yr 1.47 -3.17 1-5yr 1.08 -5.20 5-10yr 1.87 -4.46 1-5yr -0.44 -4.40 5-10y	5-10yr -0.38 -0.38 3.63 20+yr -1.52 -1.52 4.90 1-5yr 0.61 -2.70 1.77 5-10yr -0.58 -3.84 0.86 20+yr -4.28 -7.43 -1.55 1-5yr -0.32 -3.36 0.64 5-10yr -0.55 -3.58 0.91 1-5yr 2.45 -1.75 5.53 5-10yr 0.85 -3.11 4.30 20+yr -2.33 -6.45 -0.31 1-5yr 1.38 -3.27 2.74 5-10yr 1.92 -2.75 3.78 20+yr 3.24 -1.49 4.65 1-5yr 2.15 -2.53 3.91 5-10yr 3.77 -0.99 5.49 20+yr 1.50 -3.15 3.10 5-10yr 2.30 -2.38 3.87 1-5yr 1.18 -3.45 2.19 5-10yr 1.03 <td< td=""><td>5-10yr -0.38 -0.38 3.63 3.63 20+yr -1.52 -1.52 4.90 4.90 1-5yr 0.61 -2.70 1.77 1.60 5-10yr -0.58 -3.84 0.86 0.69 20+yr -4.28 -7.43 -1.55 -1.72 1-5yr -0.32 -3.36 0.64 5.31 5-10yr -0.55 -3.58 0.91 5.58 1-5yr 2.45 -1.75 5.53 -6.55 5-10yr 0.85 -3.11 4.30 -6.27 20+yr -2.33 -6.45 -0.31 -11.84 1-5yr 1.38 -3.27 2.74 -0.05 5-10yr 1.92 -2.75 3.78 0.97 20+yr 3.24 -1.49 4.65 1.82 1-5yr 2.15 -2.53 3.91 1.10 5-10yr 3.77 -0.99 5.49 2.63 20+yr 3.63</td><td>5-10yr -0.38 -0.38 3.63 3.63 3.20 20+yr -1.52 -1.52 4.90 4.90 -0.29 1-5yr 0.61 -2.70 1.77 1.60 1.91 5-10yr -0.58 -3.84 0.86 0.69 -0.71 20+yr -4.28 -7.43 -1.55 -1.72 -10.42 1-5yr -0.32 -3.36 0.64 5.31 0.02 5-10yr -0.55 -3.58 0.91 5.58 0.68 1-5yr 2.45 -1.75 5.53 -6.55 8.57 5-10yr 0.85 -3.11 4.30 -6.27 3.54 20+yr -2.33 -6.45 -0.31 -11.84 -5.54 1-5yr 1.38 -3.27 2.74 -0.05 2.66 5-10yr 1.92 -2.75 3.78 0.97 1.39 20+yr 3.24 -1.49 4.65 1.82 -3.30 1-5yr<td>5-10yr -0.38 -0.38 3.63 3.20 3.20 20+yr -1.52 -1.52 4.90 4.90 -0.29 -0.29 1-5yr 0.61 -2.70 1.77 1.60 1.91 1.61 5-10yr -0.58 -3.84 0.86 0.69 -0.71 -1.01 20+yr -4.28 -7.43 -1.55 -1.72 -10.42 -10.68 1-5yr -0.32 -3.36 0.64 5.31 0.02 -6.11 5-10yr -0.55 -3.58 0.91 5.58 0.68 -5.49 1-5yr 2.45 -1.75 5.53 -6.55 8.57 -9.32 5-10yr 0.85 -3.11 4.30 -6.27 3.54 -11.39 20+yr -2.33 -6.45 -0.31 -11.84 -5.54 -20.76 1-5yr 1.38 -3.27 2.74 -0.05 2.66 -1.85 5-10yr 1.92 -2.75 3.78</td><td>5-10yr -0.38 -0.38 3.63 3.63 3.20 3.20 6.44 20+yr -1.52 -1.52 4.90 4.90 -0.29 -0.29 6.68 1-5yr 0.61 -2.70 1.77 1.60 1.91 1.61 4.22 5-10yr -0.58 -3.84 0.86 0.69 -0.71 -1.01 3.08 20+yr -4.28 -7.43 -1.55 -1.72 -10.42 -10.68 -0.35 1-5yr -0.32 -3.36 0.64 5.31 0.02 -6.11 -0.52 5-10yr -0.55 -3.58 0.91 5.58 0.68 -5.49 0.27 1-5yr 2.45 -1.75 5.53 -6.55 8.57 -9.32 10.41 5-10yr 0.85 -3.11 4.30 -6.27 3.54 -11.39 6.19 20+yr -2.33 -6.45 -0.31 -11.84 -5.54 -20.76 -0.63 1-5yr</td></td></td<>	5-10yr -0.38 -0.38 3.63 3.63 20+yr -1.52 -1.52 4.90 4.90 1-5yr 0.61 -2.70 1.77 1.60 5-10yr -0.58 -3.84 0.86 0.69 20+yr -4.28 -7.43 -1.55 -1.72 1-5yr -0.32 -3.36 0.64 5.31 5-10yr -0.55 -3.58 0.91 5.58 1-5yr 2.45 -1.75 5.53 -6.55 5-10yr 0.85 -3.11 4.30 -6.27 20+yr -2.33 -6.45 -0.31 -11.84 1-5yr 1.38 -3.27 2.74 -0.05 5-10yr 1.92 -2.75 3.78 0.97 20+yr 3.24 -1.49 4.65 1.82 1-5yr 2.15 -2.53 3.91 1.10 5-10yr 3.77 -0.99 5.49 2.63 20+yr 3.63	5-10yr -0.38 -0.38 3.63 3.63 3.20 20+yr -1.52 -1.52 4.90 4.90 -0.29 1-5yr 0.61 -2.70 1.77 1.60 1.91 5-10yr -0.58 -3.84 0.86 0.69 -0.71 20+yr -4.28 -7.43 -1.55 -1.72 -10.42 1-5yr -0.32 -3.36 0.64 5.31 0.02 5-10yr -0.55 -3.58 0.91 5.58 0.68 1-5yr 2.45 -1.75 5.53 -6.55 8.57 5-10yr 0.85 -3.11 4.30 -6.27 3.54 20+yr -2.33 -6.45 -0.31 -11.84 -5.54 1-5yr 1.38 -3.27 2.74 -0.05 2.66 5-10yr 1.92 -2.75 3.78 0.97 1.39 20+yr 3.24 -1.49 4.65 1.82 -3.30 1-5yr <td>5-10yr -0.38 -0.38 3.63 3.20 3.20 20+yr -1.52 -1.52 4.90 4.90 -0.29 -0.29 1-5yr 0.61 -2.70 1.77 1.60 1.91 1.61 5-10yr -0.58 -3.84 0.86 0.69 -0.71 -1.01 20+yr -4.28 -7.43 -1.55 -1.72 -10.42 -10.68 1-5yr -0.32 -3.36 0.64 5.31 0.02 -6.11 5-10yr -0.55 -3.58 0.91 5.58 0.68 -5.49 1-5yr 2.45 -1.75 5.53 -6.55 8.57 -9.32 5-10yr 0.85 -3.11 4.30 -6.27 3.54 -11.39 20+yr -2.33 -6.45 -0.31 -11.84 -5.54 -20.76 1-5yr 1.38 -3.27 2.74 -0.05 2.66 -1.85 5-10yr 1.92 -2.75 3.78</td> <td>5-10yr -0.38 -0.38 3.63 3.63 3.20 3.20 6.44 20+yr -1.52 -1.52 4.90 4.90 -0.29 -0.29 6.68 1-5yr 0.61 -2.70 1.77 1.60 1.91 1.61 4.22 5-10yr -0.58 -3.84 0.86 0.69 -0.71 -1.01 3.08 20+yr -4.28 -7.43 -1.55 -1.72 -10.42 -10.68 -0.35 1-5yr -0.32 -3.36 0.64 5.31 0.02 -6.11 -0.52 5-10yr -0.55 -3.58 0.91 5.58 0.68 -5.49 0.27 1-5yr 2.45 -1.75 5.53 -6.55 8.57 -9.32 10.41 5-10yr 0.85 -3.11 4.30 -6.27 3.54 -11.39 6.19 20+yr -2.33 -6.45 -0.31 -11.84 -5.54 -20.76 -0.63 1-5yr</td>	5-10yr -0.38 -0.38 3.63 3.20 3.20 20+yr -1.52 -1.52 4.90 4.90 -0.29 -0.29 1-5yr 0.61 -2.70 1.77 1.60 1.91 1.61 5-10yr -0.58 -3.84 0.86 0.69 -0.71 -1.01 20+yr -4.28 -7.43 -1.55 -1.72 -10.42 -10.68 1-5yr -0.32 -3.36 0.64 5.31 0.02 -6.11 5-10yr -0.55 -3.58 0.91 5.58 0.68 -5.49 1-5yr 2.45 -1.75 5.53 -6.55 8.57 -9.32 5-10yr 0.85 -3.11 4.30 -6.27 3.54 -11.39 20+yr -2.33 -6.45 -0.31 -11.84 -5.54 -20.76 1-5yr 1.38 -3.27 2.74 -0.05 2.66 -1.85 5-10yr 1.92 -2.75 3.78	5-10yr -0.38 -0.38 3.63 3.63 3.20 3.20 6.44 20+yr -1.52 -1.52 4.90 4.90 -0.29 -0.29 6.68 1-5yr 0.61 -2.70 1.77 1.60 1.91 1.61 4.22 5-10yr -0.58 -3.84 0.86 0.69 -0.71 -1.01 3.08 20+yr -4.28 -7.43 -1.55 -1.72 -10.42 -10.68 -0.35 1-5yr -0.32 -3.36 0.64 5.31 0.02 -6.11 -0.52 5-10yr -0.55 -3.58 0.91 5.58 0.68 -5.49 0.27 1-5yr 2.45 -1.75 5.53 -6.55 8.57 -9.32 10.41 5-10yr 0.85 -3.11 4.30 -6.27 3.54 -11.39 6.19 20+yr -2.33 -6.45 -0.31 -11.84 -5.54 -20.76 -0.63 1-5yr

Appendix - Global Bond Market Returns % (USD & LC, TR) - Nov 29, 2024

Global Bond Yields

Top 15% Bottom 15%

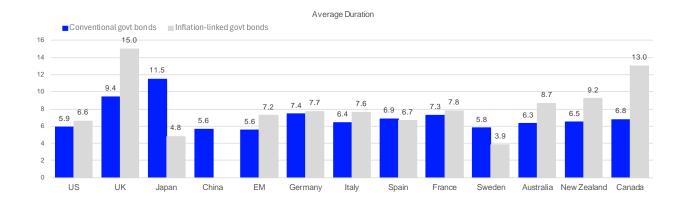
Green highlight indicates top 15%, red indicates bottom 15%.

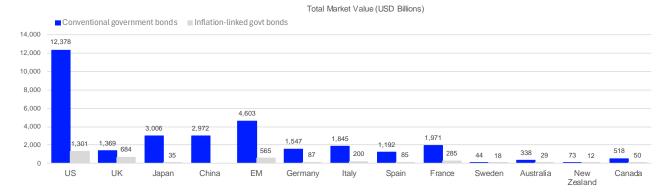
		Conve	ntional go	vernment	bonds	Inflati	on-linked	bonds	Inv Grade	High Yld
		1-3YR	3-5YR	7-10YR	20+YR	1-5YR	5-10YR	20+YR	All Mat	All Mat
US	Current	4.24	4.12	4.18	4.48	1.81	1.86	2.17	5.08	7.36
	3M Ago	4.04	3.77	3.87	4.31	1.90	1.69	2.06	4.97	7.53
	6M Ago	4.94	4.58	4.50	4.70	2.35	2.08	2.30	5.55	8.21
	12M Ago	4.82	4.39	4.35	4.63	2.57	2.14	2.27	5.64	8.47
UK	Current	4.13	4.01	4.17	4.67	0.27	0.57	1.46		
	3M Ago	4.09	3.84	3.90	4.44	0.37	0.43	1.27		
	6M Ago	4.60	4.26	4.23	4.68	0.31	0.46	1.32		
	12M Ago	4.52	4.16	4.11	4.61	0.62	0.53	1.30		
Japan	Current	0.55	0.67	0.93	2.18	-1.06	-0.58			
	3M Ago	0.32	0.43	0.76	2.03	-1.28	-0.79			
	6M Ago	0.34	0.55	0.93	2.09	-1.19	-0.69			
	12M Ago	0.00	0.17	0.57	1.63	-2.08	-0.94			
China	Current	1.38	1.58	1.99	2.24					
	3M Ago	1.55	1.77	2.14	2.37					
	6M Ago	1.77	1.99	2.31	2.61					
	12M Ago	2.37	2.47	2.66	3.02					
EM	Current	3.09	3.36	3.99	3.70	6.09	5.50	5.95	5.34	7.83
	3M Ago	3.09	3.51	4.09	3.68	5.76	5.15	5.64	5.13	7.76
	6M Ago	3.30	3.83	4.47	3.96	5.69	5.26	5.63	5.81	8.79
	12M Ago	3.66	4.22	4.76	4.46	4.42	4.45	5.10	6.09	10.50
Germany	Current	1.94	1.85	2.02	2.29	0.72	0.19	0.39		
	3M Ago	2.45	2.15	2.18	2.50	1.46	0.49	0.54		
	6M Ago	3.07	2.72	2.59	2.77	1.45	0.60	0.55		
	12M Ago	2.86	2.41	2.37	2.67	1.16	0.34	0.28		
Italy	Current	2.29	2.46	3.04	3.76	0.76	1.18	1.67		
	3M Ago	2.85	2.90	3.45	4.13	1.44	1.66	1.98		
	6M Ago	3.46	3.42	3.73	4.30	1.54	1.68	1.91		
	12M Ago	3.39	3.40	3.93	4.59	1.60	1.97	2.15		
France	Current	2.20	2.39	2.74	3.32	0.55	0.72	1.11		
	3M Ago	2.64	2.60	2.84	3.42	0.97	0.85	1.16		
	6M Ago	3.20	2.99	3.02	3.45	0.94	0.79	0.97		
	12M Ago	3.01	2.73	2.87	3.46	0.84	0.63	0.95		
Sweden	Current	1.64	1.66	1.87		0.48	0.25			
	3M Ago	1.87	1.80	1.98		0.94	0.56			
	6M Ago	3.04	2.60	2.46		1.69	0.92			
	12M Ago	3.27	2.70	2.61		1.30	1.12			
Australia	Current	3.99	3.92	4.25	4.79	1.76	1.82	2.29		
	3M Ago	3.66	3.57	3.91	4.49	1.26	1.51	2.05		
	6M Ago	4.11	4.08	4.35	4.79	1.67	1.80	2.17		
	12M Ago	4.15	4.04	4.36	4.73	1.28	1.81	2.19		
New Zealand	Current	3.81	3.90	4.35	4.97		2.25			
	3M Ago	3.97	3.86	4.24	4.74	2.47	2.21			
	6M Ago	4.82	4.67	4.77	5.07	2.33	2.32			
	12M Ago	5.07	4.78	4.89	5.09	1.91	2.59			
Canada	Current	3.08	2.96	3.10	3.16	1.18	1.21	1.43		
	3M Ago	3.47	3.05	3.10	3.26	1.53	1.39	1.62		
	6M Ago	4.26	3.73	3.64	3.50	1.85	1.81	1.74		
	12M Ago	4.27	3.71	3.58	3.38	1.80	1.81	1.69		

Appendix - Duration and Market Value (USD, Bn) as of November 29, 2024

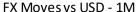
			Conv	entional go	vernment	bonds				Inflatio	n-linked g	overnment	bonds	
		Dura	ation			Marke	t Value			Duration		Market Value		
					3-5YR				5-10YR			5-10YR		
US	3.6	7.1	16.6	5.9	2,900.5	1,238.5	1,446.1	12,378.1	7.0	21.2	6.6	425.0	122.4	1,301.5
UK	3.7	7.3	18.1	9.4	213.8	231.9	338.6	1,369.2	7.5	26.7	15.0	126.4	229.5	684.2
Japan	3.9	8.2	22.9	11.5	353.8	430.9	607.2	3,006.3	7.9		4.8	13.8		34.9
China	3.7	7.6	18.1	5.6	676.6	508.0	325.4	2,972.3						
EM	3.6	7.1	16.4	5.6	994.4	815.3	433.8	4,603.1	5.9	13.0	7.2	95.5	143.2	564.6
Germany	3.7	7.7	21.4	7.4	309.3	245.6	177.8	1,546.6	6.1	20.6	7.7	43.8	18.1	87.4
Italy	3.5	7.2	17.2	6.4	316.8	281.7	161.8	1,845.3	7.0	25.3	7.6	60.2	5.9	200.3
Spain	3.6	7.2	18.0	6.9	247.4	214.2	123.6	1,191.9	7.2		6.7	50.2		85.0
France	3.7	7.4	19.3	7.3	349.1	337.5	247.6	1,971.4	6.5	23.7	7.8	76.8	21.5	285.1
Sweden	3.3	7.5		5.8	6.9	9.9		43.6	6.3		3.9	6.0		18.3
Australia	3.5	7.2	16.3	6.3	52.1	98.7	19.8	338.5	6.2	21.4	8.7	10.7	2.8	28.5
New Zealand	3.7	7.2	16.0	6.5	13.8	18.0	5.2	73.3	5.3		9.2	3.2		11.8
Canada	3.8	7.3	19.4	6.8	83.3	115.8	76.7	517.7	6.0	20.2	13.0	8.2	20.6	49.7

	Investment grade bonds												
	Duration							Market Va	lue		Duration	MktVal	
						AAA							
US	10.2	8.5	7.1	6.6	7.0	76.7	478.2	2832.1	3710.2	7097.1	3.8	1107.3	
Europe	6.0	4.7	4.6	4.2	4.4	15.3	216.4	1249.7	1587.1	3068.5			
EM		6.6	5.5	5.4	5.5		39.3	210.0	236.9	486.2	3.6	194.5	

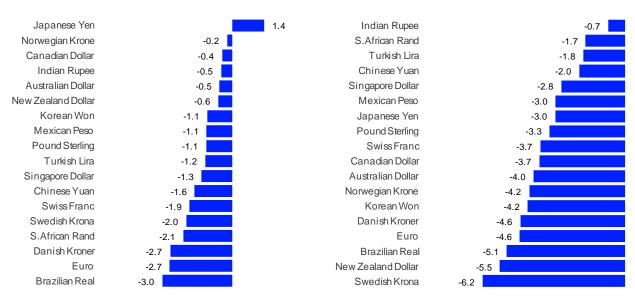




Appendix - Foreign Exchange Returns % as of November 29, 2024

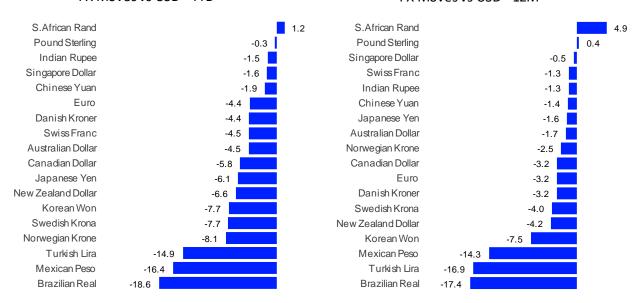


M FX Moves vs USD - 3M



FX Moves vs USD - YTD

FX Moves vs USD - 12M



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

Global Investment Research Market Maps



ABOUT FTSE RUSSELL

FTSE Russell is a leading global provider of index and benchmark solutions, spanning diverse asset classes and investment objectives. As a trusted investment partner we help investors make better-informed investment decisions, manage risk, and seize opportunities. Market participants look to us for our expertise in developing and managing global index solutions across asset classes. Asset owners, asset managers, ETF providers and investment banks choose FTSE Russell solutions to benchmark their investment performance and create investment funds, ETFs, structured products, and index-based derivatives. Our clients use our solutions for asset allocation, investment strategy analysis and risk management, and value us for our robust governance process and operational integrity. For over 35 years we have been at the forefront of driving change for the investor, always innovating to shape the next generation of benchmarks and investment solutions that open up new opportunities for the global investment community.

CONTACT US

To learn more, visit .lseg.com/en/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

© 2024 London Stock Exchange Group plc and its applicable group undertakings ("LSEG"). LSEG includes (1) FTSE International Limited ("FTSE"), (2) Frank Russell Company ("Russell"), (3) FTSE Global Debt Capital Markets Inc. and FTSE Global Debt Capital Markets Limited (together, "FTSE Canada"), (4) FTSE Fixed Income Europe Limited ("FTSE FI Europe"), (5) FTSE Fixed Income LLC ("FTSE FI"), (6) FTSE (Beijing) Consulting Limited ("WOFE") (7) Refinitiv Benchmark Services (UK) Limited ("RBSL"), (8) Refinitiv Limited ("RL") and (9) Beyond Ratings S.A.S. ("BR"). All rights reserved.

FTSE Russell® is a trading name of FTSE, Russell, FTSE Canada, FTSE FI, FTSE FI Europe, WOFE, RBSL, RL, and BR. "FTSE®", "Russell®", "FTSE Russell®", "FTSE4Good®", "ICB®", "Refinitiv", "Beyond Ratings®", "WMR™", "FR™" and all other trademarks and service marks used herein (whether registered or unregistered) are trademarks and/or service marks owned or licensed by the applicable member of LSEG or their respective licensors and are owned, or used under licence, by FTSE, Russell, FTSE Canada, FTSE FI, FTSE FI Europe, WOFE, RBSL, RL or BR. FTSE International Limited is authorised and regulated by the Financial Conduct Authority as a benchmark administrator. Refinitiv Benchmark Services (UK) Limited is authorised and regulated by the Financial Conduct Authority as a benchmark administrator.

All information is provided for information purposes only. All information and data contained in this publication is obtained by LSEG, from sources believed by it to be accurate and reliable. Because of the possibility of human and mechanical inaccuracy as well as other factors, however, such information and data is provided "as is" without warranty of any kind. No member of LSEG nor their respective directors, officers, employees, partners or licensors make any claim, prediction, warranty or representation whatsoever, expressly or impliedly, either as to the accuracy, timeliness, completeness, merchantability of any information or LSEG Products, or of results to be obtained from the use of LSEG products, including but not limited to indices, rates, data and analytics, or the fitness or suitability of the LSEG products for any particular purpose to which they might be put. The user of the information assumes the entire risk of any use it may make or permit to be made of the information.

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

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

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

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

No part of this information may be reproduced, stored in a retrieval system or transmitted in any form or by any means, electronic, mechanical, photocopying, recording or otherwise, without prior written permission of the applicable member of LSEG. Use and distribution of LSEG data requires a licence from LSEG and/or its licensors.

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