

# Fixed Income Insights

MONTHLY REPORT - February 2024 | CANADA EDITION

FOR PROFESSIONAL INVESTORS ONLY

## Canadian longs fall as market reassess easing cycle, but credit outperforms again

Central bank caution and an inflation uptick duly drove a long end sell-off in January, as markets re-assessed how quickly rates will fall. The BoC made clear policy easing is unlikely before inflation reaches the 2% target, driving Canadian governments and Provis lower. Over 3M, long Canadian credits have gained 12-14%.

### Macro and policy backdrop – Scope for easing but realisation the case for rapid moves is unclear?

Estimates of R\* suggest scope for sizeable Canadian rate cuts in 2024-25, but slower than markets expect. (page 2)

### Canadian govts and credit – Long Canadian bonds declined, as yields backed up after BoC caution

Long Canadian bond yields backed up sharply in January, reversing much of December's decline, after the BoC cautioned no pivot is likely before inflation reaches the BoC's 2% target. (pages 3-4)

### Global yields and spreads – Modest bear steepening but global inflation breakevens fall back to 2021 lows

Global inflation breakevens have fallen sharply since the war in Ukraine in 2022 (pages 5-6)

### Sovereign and climate bonds – Long Green Sovereign duration catches investors out during the 2022-23 sell-off

The underperformance of Green Sov. bonds since 2022 was led by their extra duration and heavy issuance. (page 7)

### Performance – High yield credits benefit from equity market rally in January

High yield credits outperformed investment grade equivalents in January, extending the strong performance of the last 12 months. (pages 8-10)

### Appendix (from page 11)

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

Chart 1: What a change a few weeks made! Yields increased across the G7 in January, led by nominal yields, so breakevens edged higher, reversing some of Q4 moves. Canada and the UK led the moves.

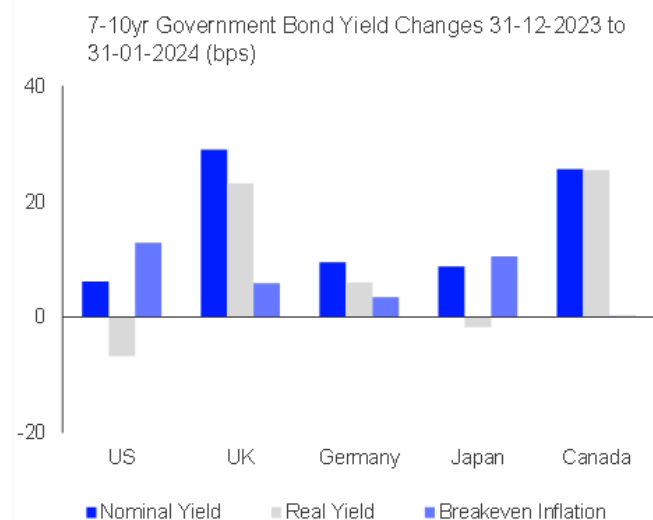
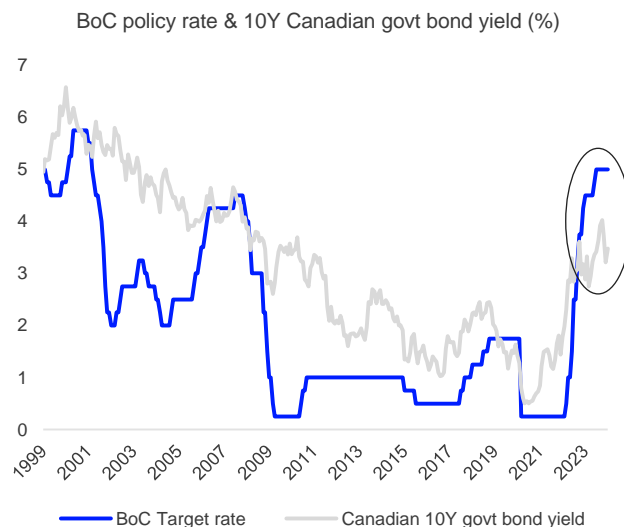


Chart 2: Mind the gap. Investors have been frontrunning a policy pivot in 2023, despite the Bank of Canada cautioning that rates need to stay 'higher for longer', while inflation remains above 2%.



Source: FTSE Russell and LSEG. Latest data available as of January 31, 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 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

Central bank messaging on pivoting to ease policy remained cautious in January, after inflation ticked up, underpinned by wage growth and labour markets near full employment, so G7 central banks extended policy pauses. Estimates of neutral rates suggest sizeable scope for rate cuts in Canada, but this may be drawn out over 2-3 years, like 2000-03.

Unlike the US, Canada's economic growth has flatlined and is expected to remain close to zero in 2024, based on Consensus forecasts (Chart 1). Robust Canadian wages, up by 4-5%, continue to underpin the soft landing narrative. Elsewhere, the US economy rebounded in Q4, but is likely to weaken during 2024 to 1.1% y/y in 2024 (from 2.4% y/y in 2023), while the Eurozone is in the midst of a mild recession.

Chart 2 shows G7 inflation ticking up modestly in December, as energy prices reflected less favourable base effects. Canada's CPI rose to 3.4% y/y (from 3.1% y/y in Nov.), due to higher shelter costs, but core inflation fell to 2.6% y/y (from 2.8% y/y).

Central banks paused policy again in January (Chart 3), amid significant debates on the timing for the first rate cuts. Investors have continued to front run policy decisions, with gaps between 10-year bond yields and central bank policy rates appearing in most major markets (see Canada Chart 2 on cover), and despite central banks' caution of needing to reach their 2% inflation target first.

The US Fed estimates a neutral real rate of about 1.5% for Canada as shown in Chart 4, similar to the BoC's own estimates. Adding the 2% inflation target would result in a nominal rate of 3.5%, therefore implying interest rate cuts of about 150bp from current levels, though sticky inflation suggests this easing could be drawn out over 2-3 yrs, like the 2000-03 cycle.

Chart 1: Consensus has revised down 2024 growth forecasts for Canada and the Eurozone in January (from Dec.), which, with the UK, are expected to be flat, unlike the US and Japan.

Latest Consensus Real GDP Forecasts (% , January 2024)			
	2022	2023	2024
US	2.1	2.4	1.4
UK	4.1	0.4	0.4
Euro Area	3.5	0.5	0.5
Japan	1.6	0.8	1.1
China	2.8	5.2	4.6
Canada	3.5	1.1	0.5

Chart 2: Inflation rose modestly in December in most G7 countries, except in Japan. Higher energy prices and Canadian shelter costs drove up headline CPI, while core inflation fell on weaker growth.

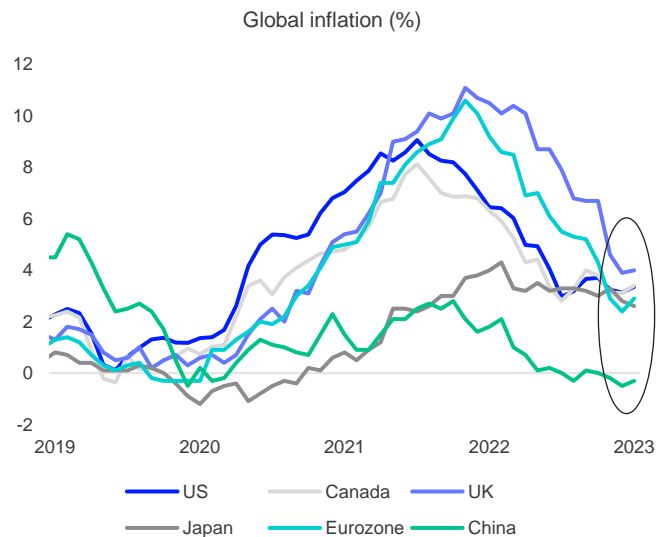
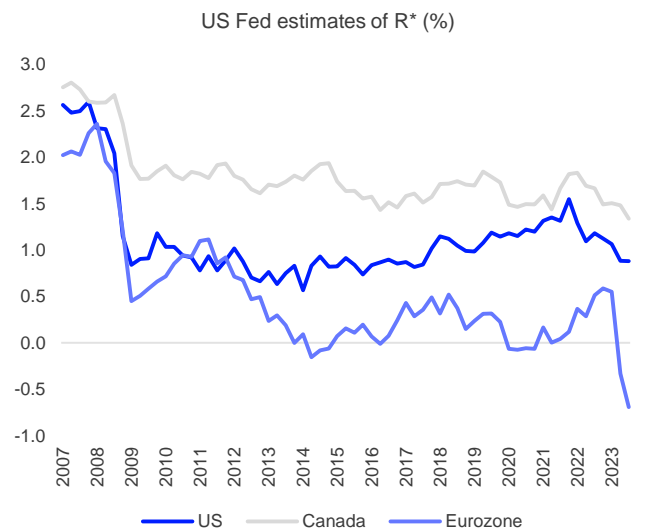
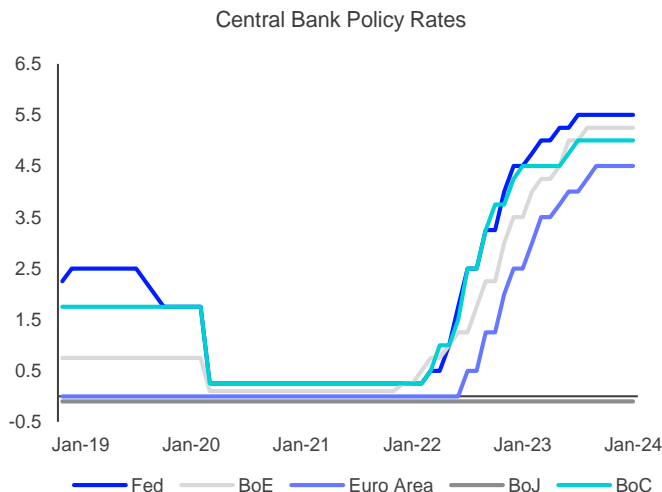


Chart 3: G7 central banks paused for the fourth time in January, maintaining rates 'higher for longer' as inflation modestly ticked up in Dec., heightening the debate on the timing of the first rate cuts.

Chart 4: The Fed's neutral rate estimates imply rate cuts of about 150bp in Canada from current levels, which would bring interest rate levels of around 3.5%, once easing has been completed.



Source: FTSE Russell and Refinitiv. Latest data available as of January 31, 2024. 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.

# Canadian Governments, Provinces and Municipalities

Chart 1: The Canadian curve remained deeply inverted, and a long way from being positive, despite some dis-inversion in January, notably in long yields, following the BoC's caution.

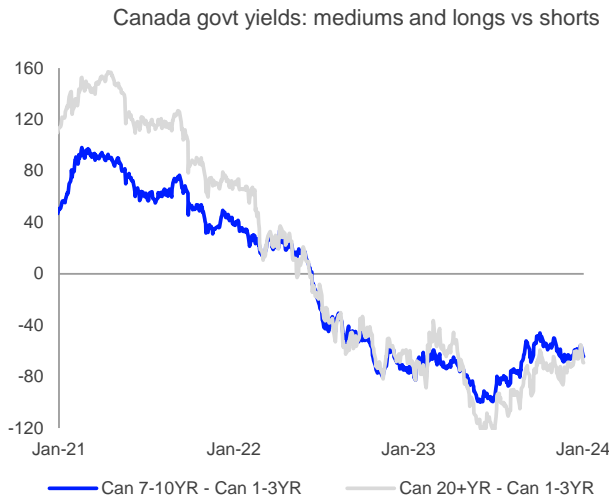


Chart 2: Canadian 7-10yr government spreads have remained negative vs US and UK equivalents. They widened versus Bunds in 2024, when Bunds outperformed other G7 markets.

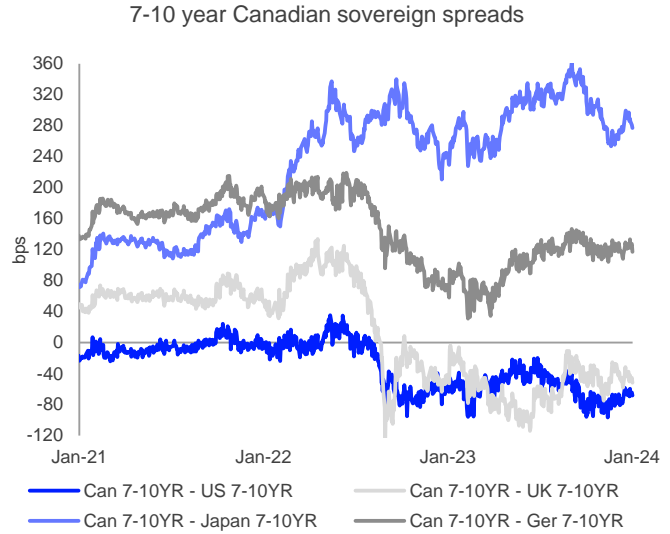


Chart 3: This chart shows the sharp back up in long Canadian govt bond yields in January, as investors re-assessed the prospects for BoC easing and Canadian inflation rebounded.

Chart 4: Long Canadian breakevens have declined steadily since 2022, and fallen relative to long US, UK and Eurozone breakevens. This will be of some re-assurance to the BoC.

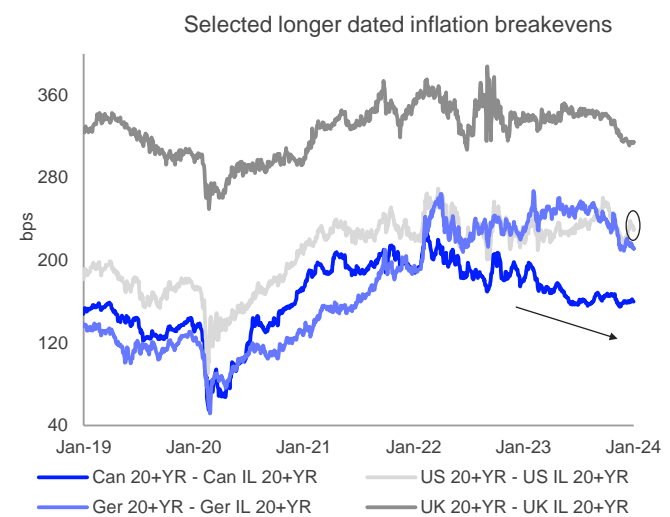
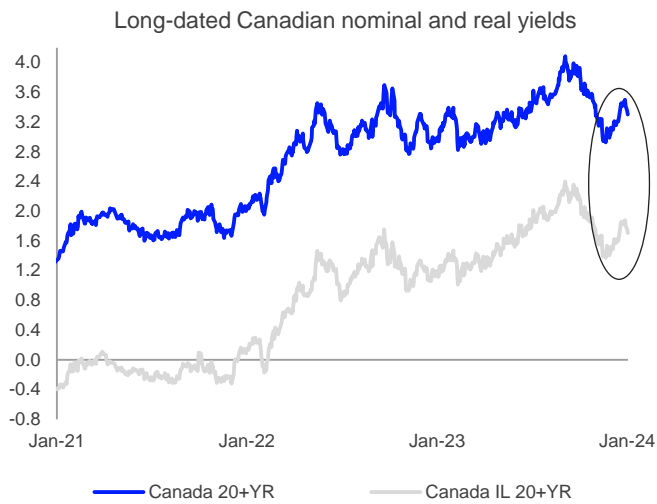
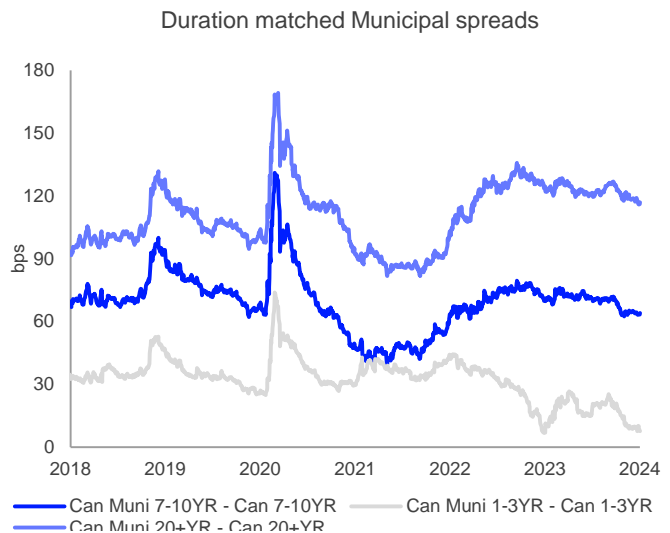
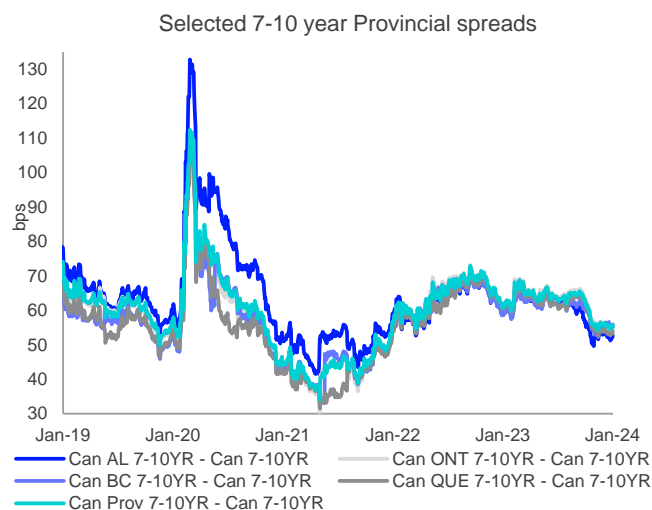


Chart 5: 7-10 year Provincial spreads have merged and are currently at similar levels to those before Covid in 2020, after narrowing by about 10-15bp in 2023.

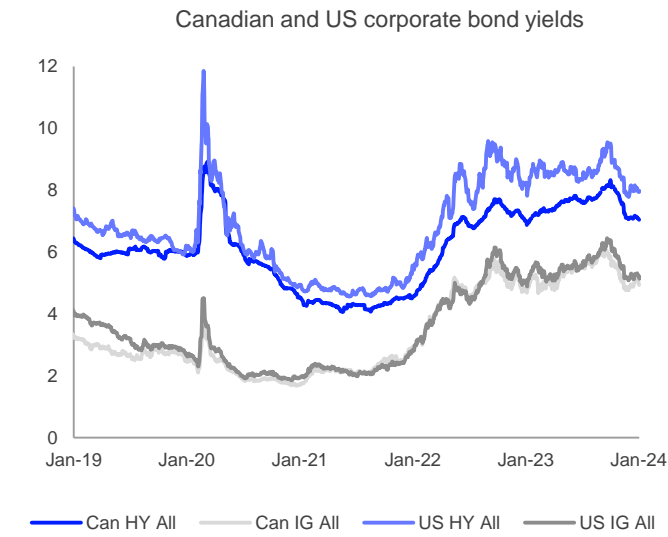
Chart 6: Canadian Municipals spreads have continued to decline in January, especially in shorts, after Canadian govt bond yields backed up sharply in January.



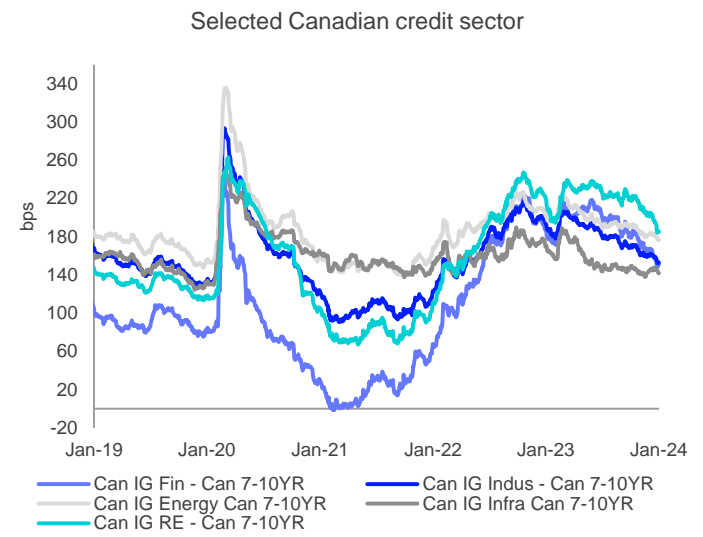
Source: FTSE Russell. All data as of January 31, 2024. Past performance is no guarantee of future results. Please see the end for important legal disclosures. Bond market data is derived from FTSE Fixed Income Indices. See Appendix Glossary for list of indices used for each market. For professional investors only.

# Canadian Corporate Bonds

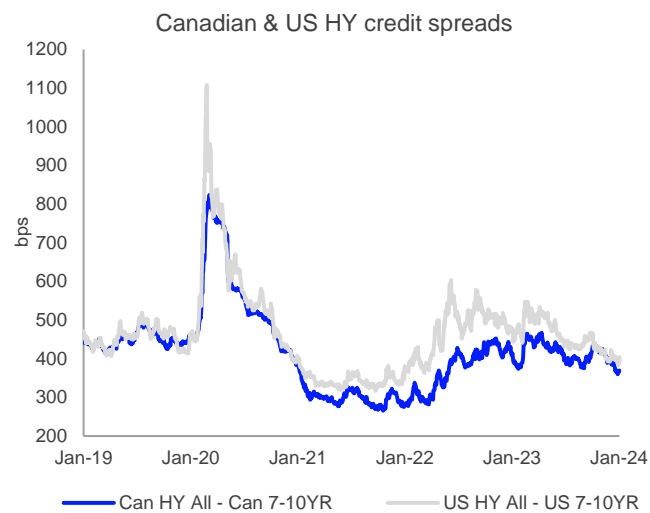
**Chart 1: Canadian IG yields are still significantly higher than their yields prior to Covid, despite falling sharply in December and being modestly lower than US IG yields.**



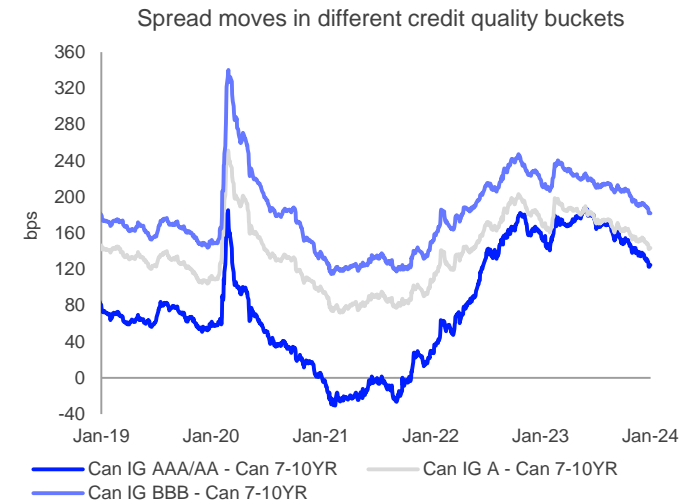
**Chart 2: Within industries, Canadian industrials and infrastructure corporate spreads have now converged at around 140bp. Real estate corporate spreads have fallen in anticipation of BoC easing.**



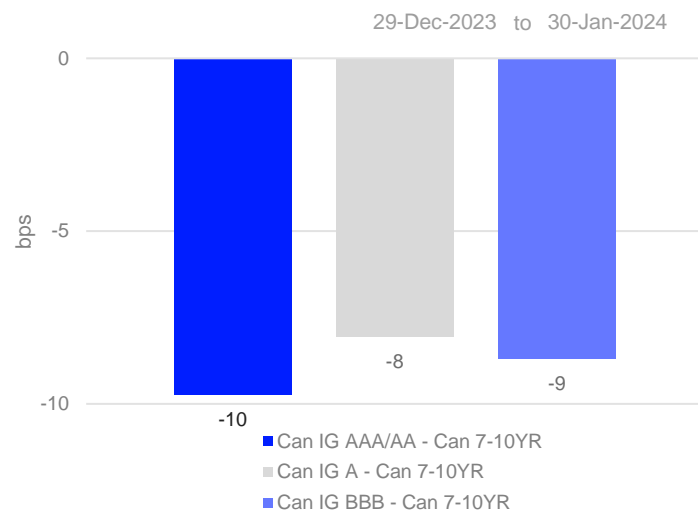
**Chart 3: Both Canadian and US HY credit spreads have narrowed by a long way since Covid peaks. But they are still notably higher than their lows in 2021-22.**



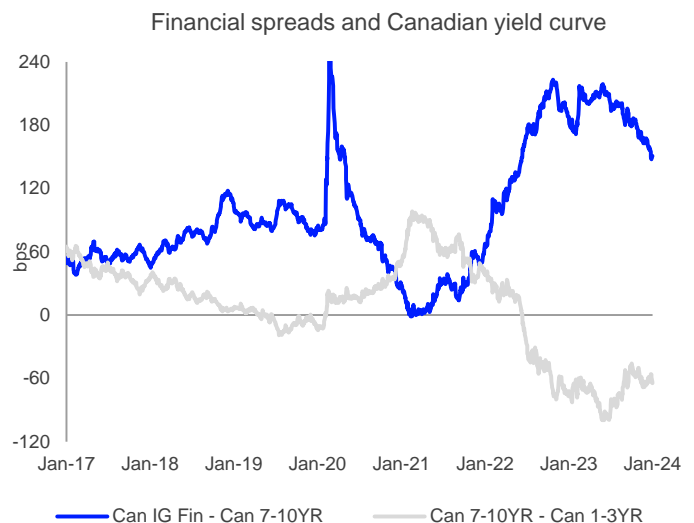
**Chart 4: The rally in Canadian investment grade corporates in 2023 has not been as strong as that of their HY peers (Chart 3), with IG spreads remaining above pre-Covid levels, despite recent falls.**



**Chart 5: Spreads have narrowed broadly in line in the last month, across the IG credit spectrum, mainly reflecting higher Canadian government bond yields in January, while corporate yields were stable.**



**Chart 6: Canadian IG financial spreads continue to show a strong negative correlation to the yield curve, widening as the curve flattens, and tightening as the curve steepens.**



Source: FTSE Russell. All data as of January 31, 2024. 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: Yields backed up across the board in January, with JGB yields moving the least, thanks to BoJ curve control. The markets that had rallied the most in Q4 suffered some of the biggest losses.

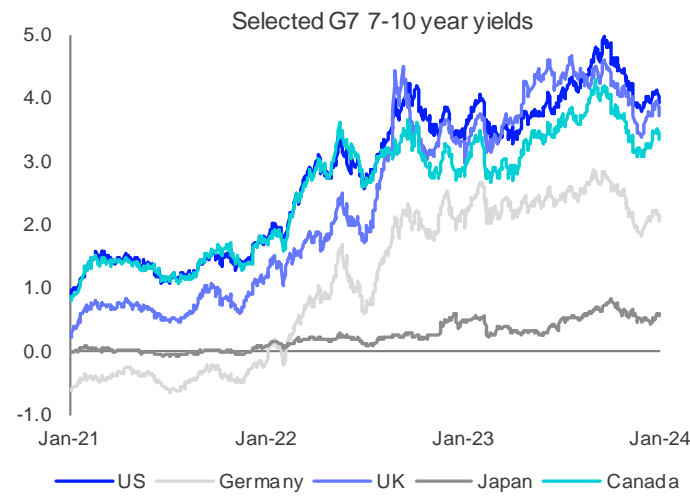


Chart 2: 7-10 year real yields also increased in January, though US TIPS moved less. UK index linked bonds gave up more ground after the strong Q4 rally. BoE caution on rates weighed on UK gilts.

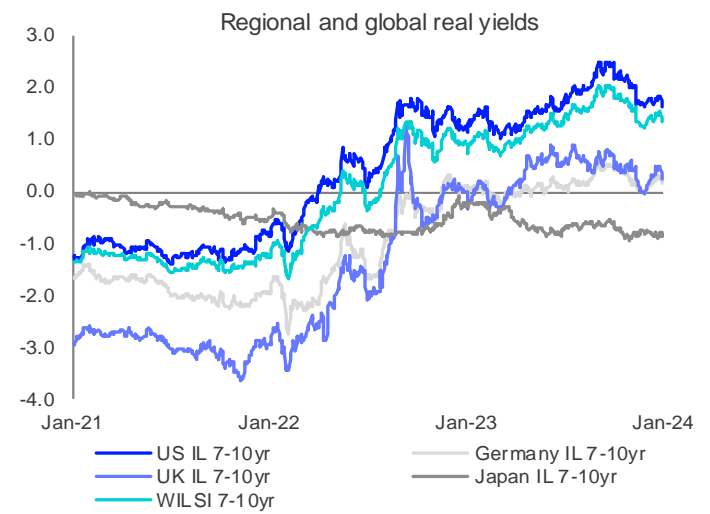


Chart 3: Yield curves bear steepened in January, as 7-10 year yields rose more than shorter dates, though the moves were modest, and curves remain deeply inverted, apart from JGB curve control.

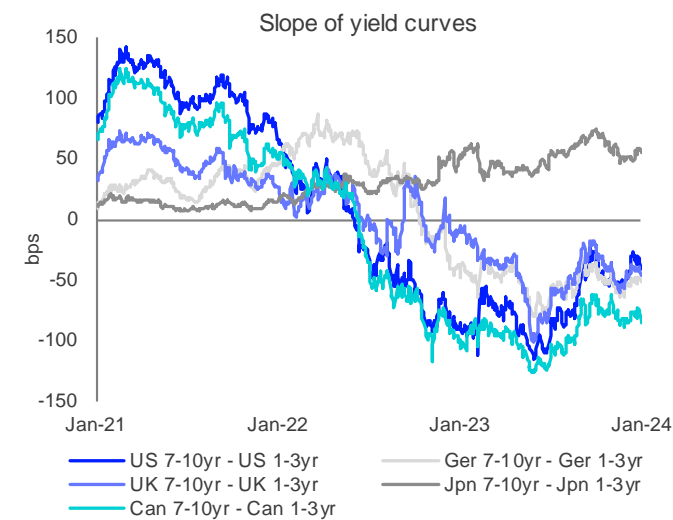


Chart 4: Long end yields moved higher by more than shorts, taking yield curves back to positive gradients in the UK and US in January. JGBs also steepened, with further speculation about YCC ending.

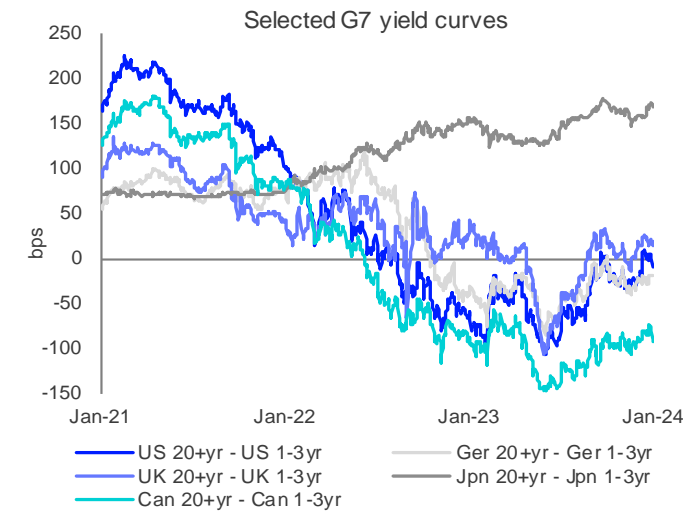


Chart 5: Inflation breakevens were mixed in January, though globally most fell modestly, including Germany. The US and Japan were exceptions, with rising breakevens explained by higher growth.

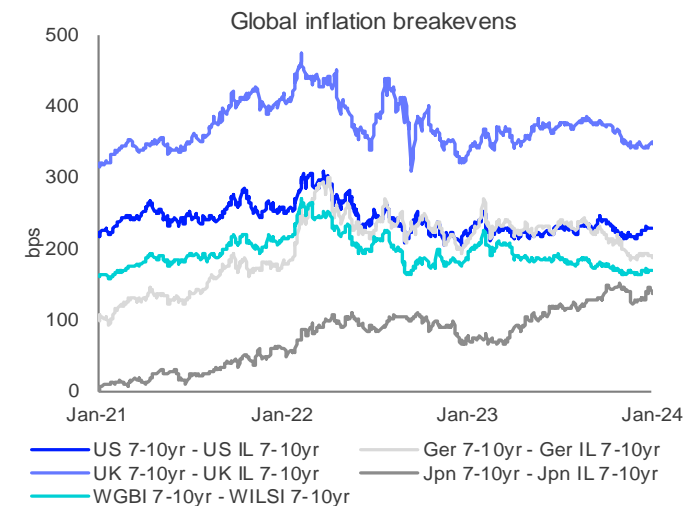
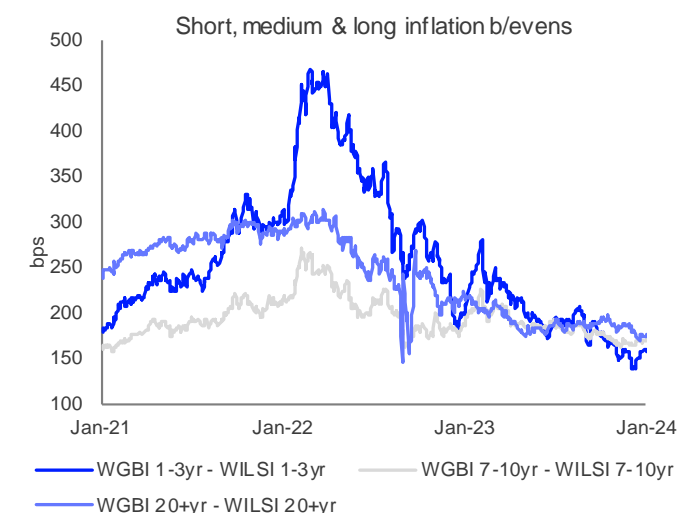


Chart 6: Global inflation breakevens have fallen sharply since the war in Ukraine in 2022, which is consistent with curve flattening. Breakevens suggest no major change in inflation regimes.



Source: FTSE Russell. All data as of January 31, 2024. Past performance is no guarantee of future results. Please see the end for important legal disclosures. Bond market data is derived from FTSE Fixed Income Indices. See Appendix Glossary for list of indices used for each market. For professional investors only.

# Yield Spread and Credit Spread Analysis

Chart 1: US spreads widened versus Japan in January, but were stable elsewhere, with yields in most markets increasing, as central banks proved cautious about the possibility of near term rate cuts.

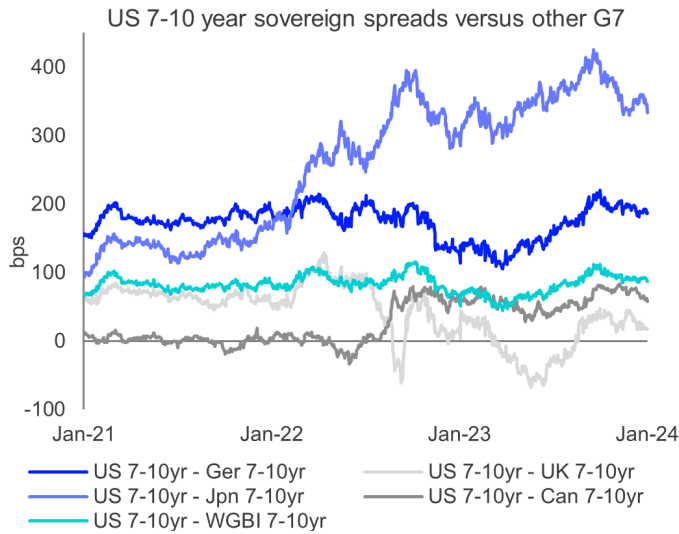


Chart 2: Italian spreads held up well during the market sell-offs in January, widening only modestly against Japan, where yield curve control continues.

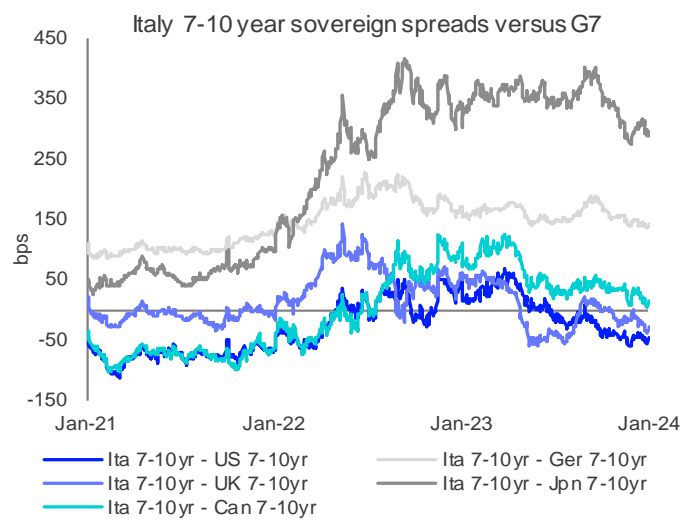


Chart 3: EM spreads tightened vs the G7 in January, helped by the fall in Chinese yields and the high Chinese weighting in the EMGBI. Spreads have steadily tightened in EM since Covid.

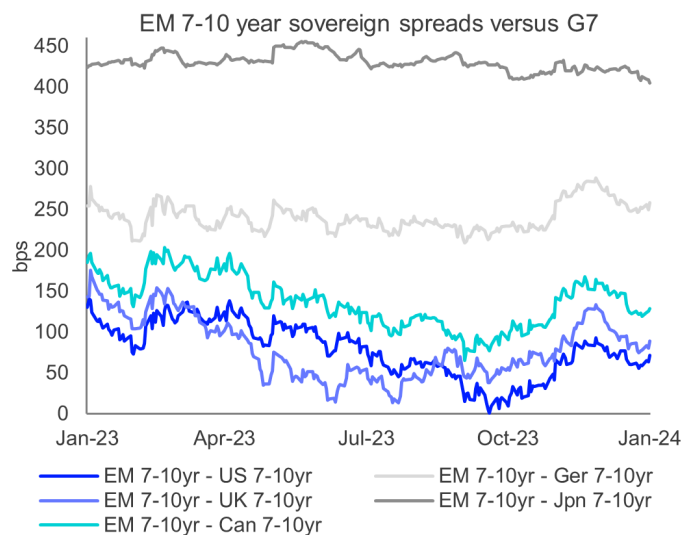


Chart 4: China's yield correlation with G7 yields has remained low since the Covid crisis in 2020. Chinese yields fell steadily since then versus the rising G7 trend. Only JGB yields have remained stable.

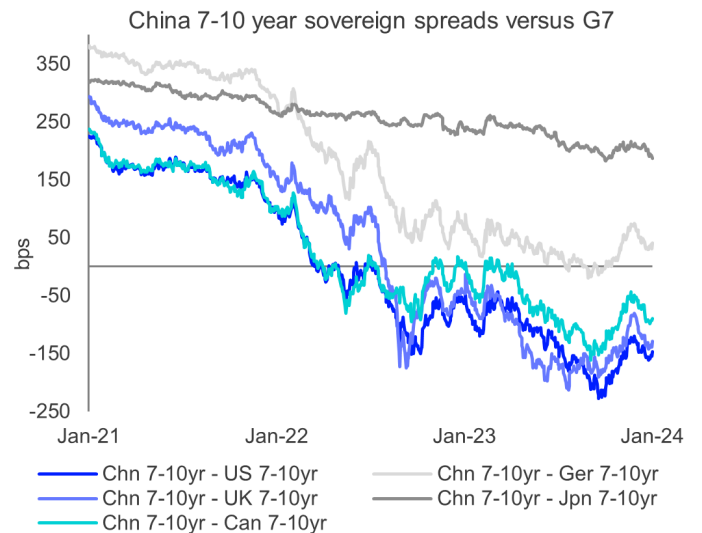


Chart 5: Credit spreads tightened a little in January mainly due to the rise in government bond yields. High yield spreads have converged more than IG in 2023-24, reflecting the risk rally.

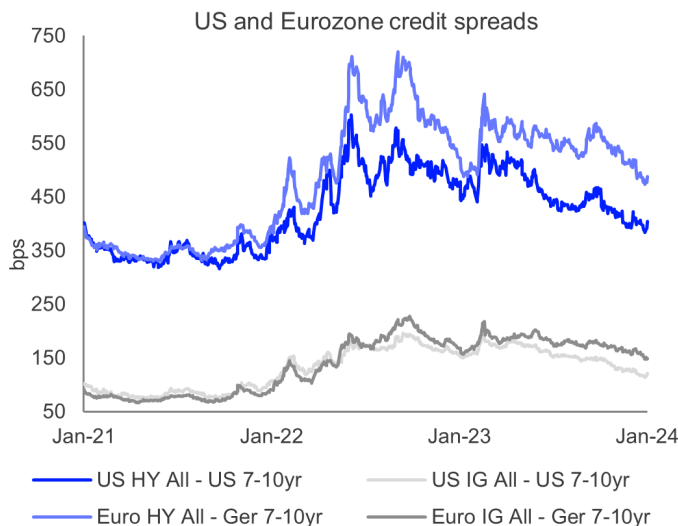
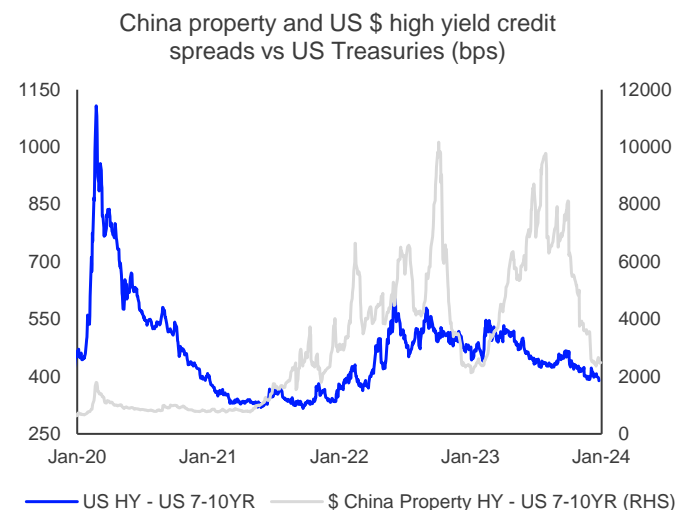


Chart 6: Chinese \$ HY rallied and spreads eased to 2400bps in January, as Treasury yields rose. But the number of issues within Chinese HY property fell to ≤ 20, from a peak of 140+ in 2020.



Source: FTSE Russell. All data as of January 31, 2024. Past performance is no guarantee of future results. Please see the end for important legal disclosures. Bond market data is derived from FTSE Fixed Income Indices. See Appendix Glossary for list of indices. For professional investors only.

# Sovereign and Climate Bonds Analysis

Chart 1: The underperformance of Green sov. bonds was led by their extra duration and heavy issuance (Chart 5). However, Green sov. bonds outperformed in the Q4 rally, due to extra duration.

Chart 2: The long duration of Green Sovereign bonds caught many investors out during the bond market sell-off in 2022-23. Duration fell more in Green Sovereigns vs straight sovereigns, as prices fell.

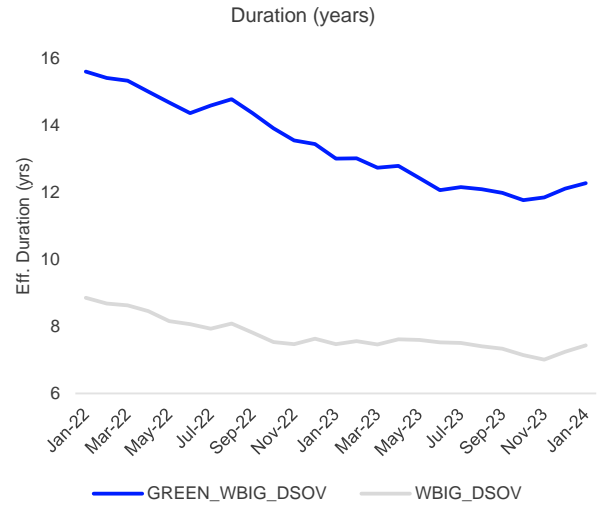
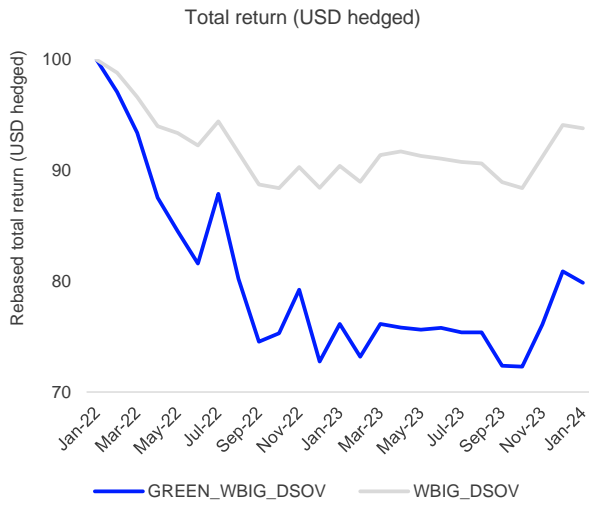


Chart 3: Relative returns in Green IG Corporates have been closer to other IG Corporates since 2022. Spread narrowing during Q4's rally helped Green Corporates outperform.

Chart 4: Unlike Sovereigns, Green IG corporates have shorter duration than other IG corporates, though the duration differential is more modest than in Sovereigns.

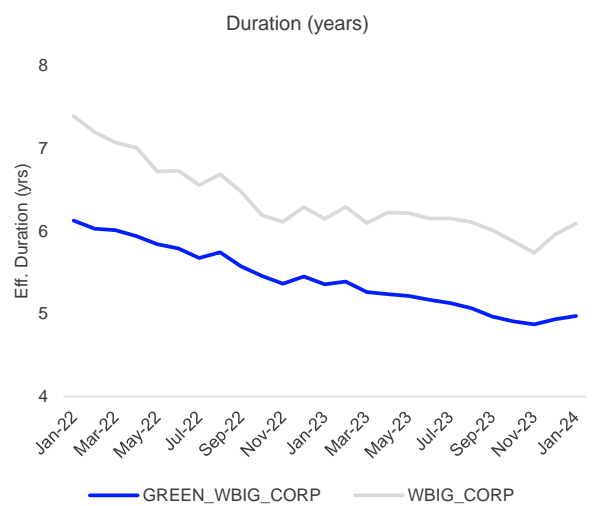
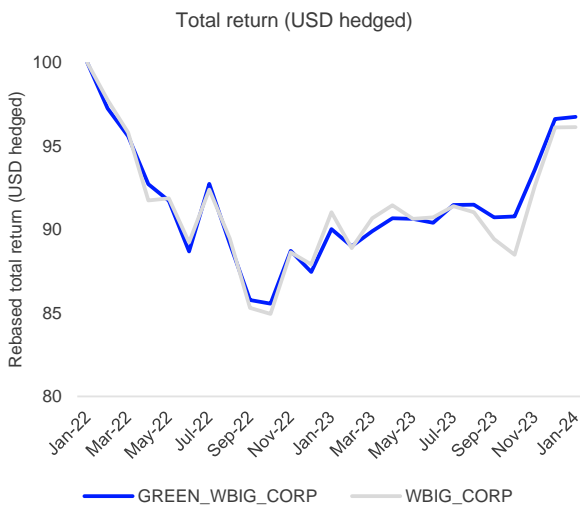
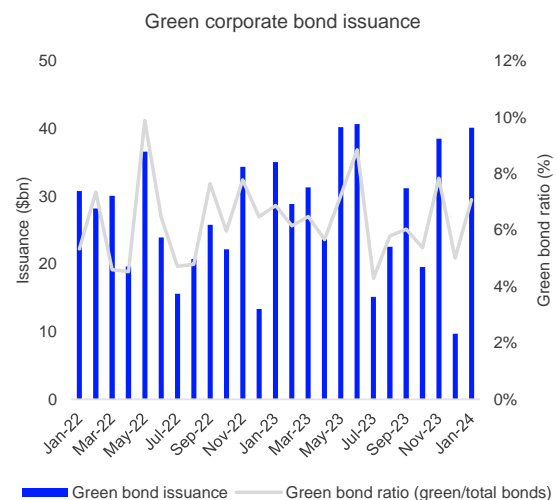
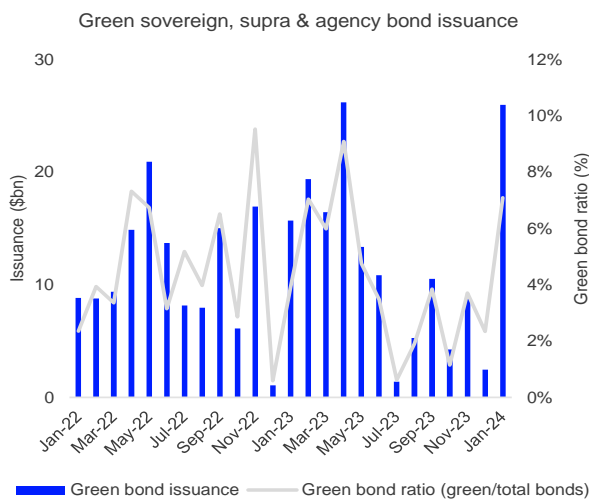


Chart 5: European sovereigns tend to dominate Green sovereign issuance, as they seek to fill out a Green yield curve. The issues tend to be large, like the recent £10bn Green Gilt 2053 re-opening.

Chart 6: The ratio of green bond issuance to total issuance has rebounded to 7%, after falling to 4% in July 2023. January 2024's Green issuance of about \$40bn was close to a monthly record.



Source: FTSE Russell and Refinitiv. All data as of January 31, 2024. Past performance is no guarantee of future results. Please see the end for important legal disclosures. Bond market data is derived from FTSE Fixed Income Indices. See Appendix Glossary for list of indices used for each market. For professional investors only.

# Global Bond Market Returns – 1M & 12M % (CAD, LC, TR)

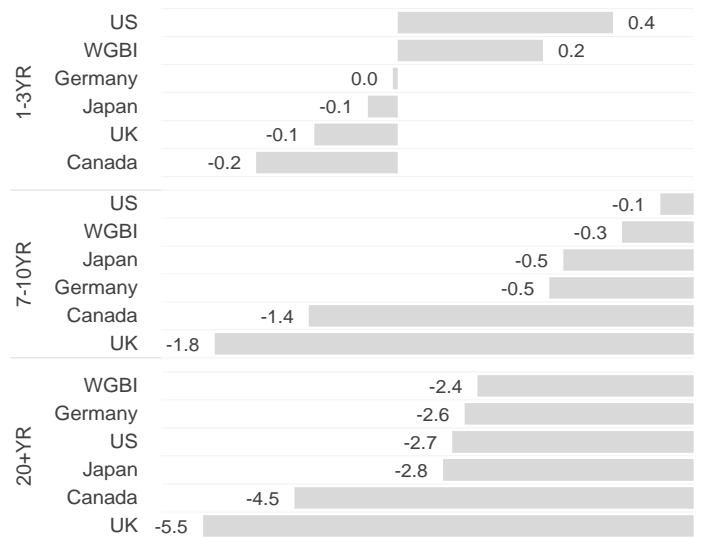
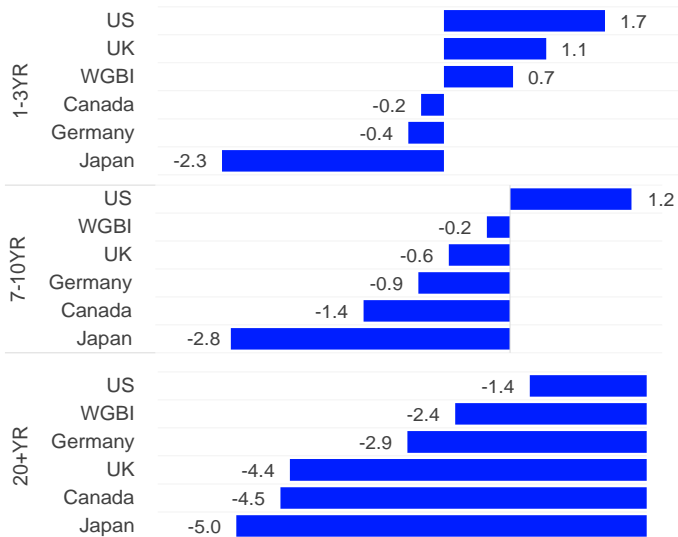
Global bond yields backed up in January, reversing some of the sharp falls from the previous month, which followed overly zealous speculation on the extent and timing of central banks' interest rate cuts. Long conventional and inflation linked govt bonds suffered the most, notably in Canada. Over 12M, long UK index-linked gilts lost 19% in Canadian dollars.

Canadian government bond performance was negative across the curve, down 1-8% in January, after the BoC did not exclude further tightening, and inflation remained well above 2%. Over 12M, short Canadian government bond returns were up 2.5%.

## CONVENTIONAL BONDS

1M CAD

1M LCY



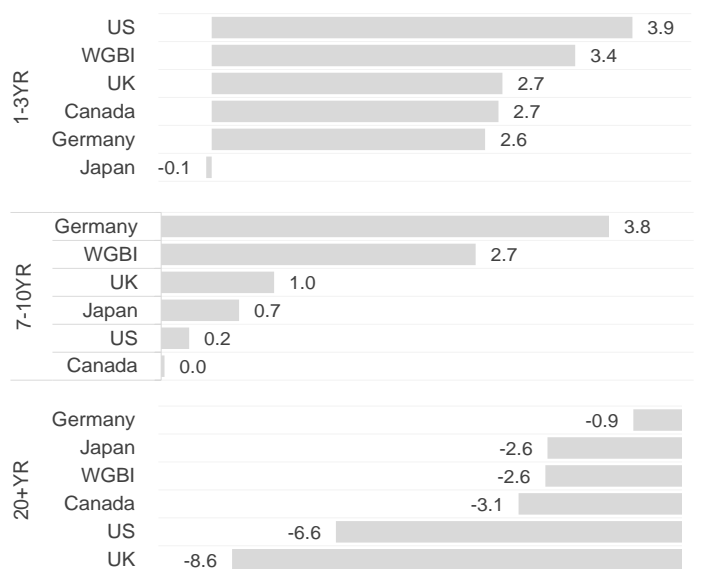
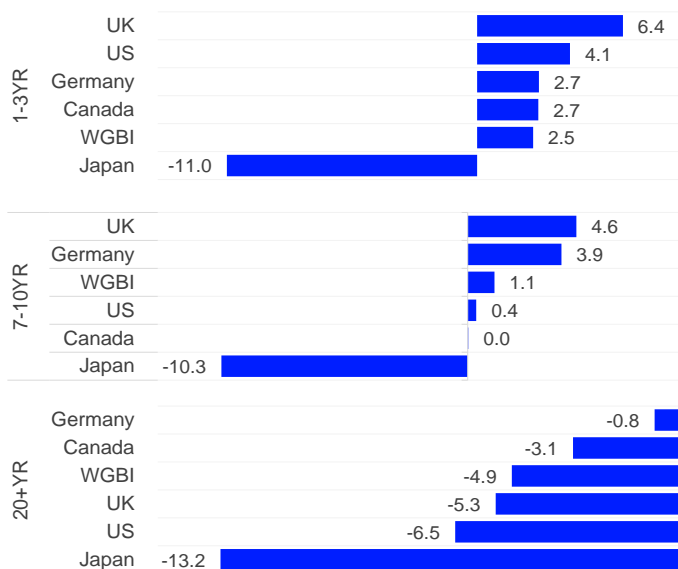
## INFLATION LINKED BONDS



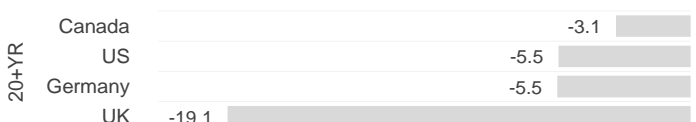
## CONVENTIONAL BONDS

12M CAD

12M LCY



## INFLATION LINKED BONDS



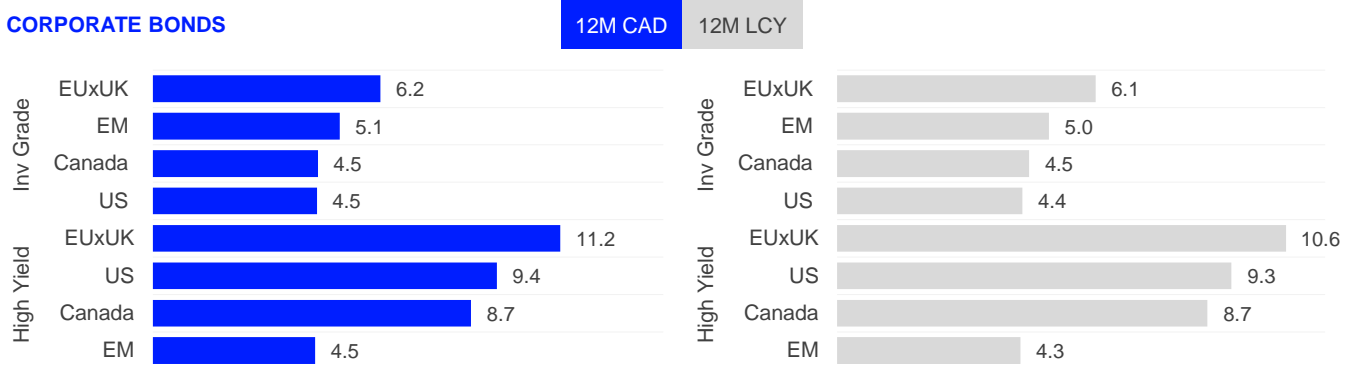
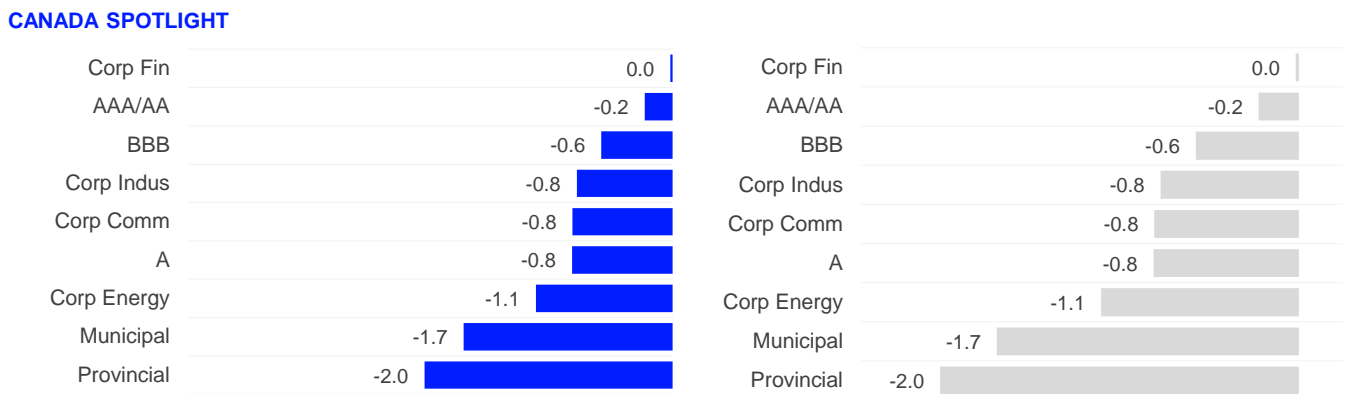
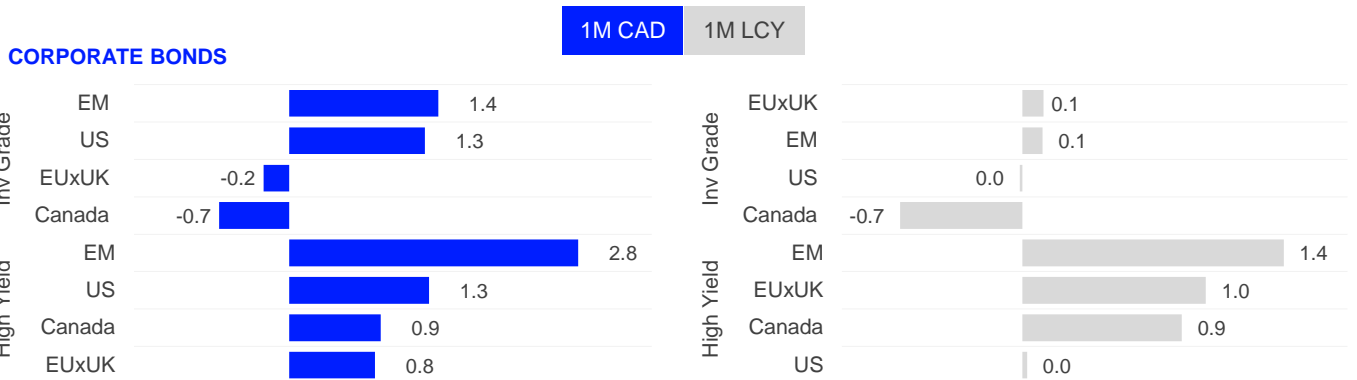
Source: FTSE Russell. All data as of January 31, 2024. Past performance is no guarantee of future results. Please see the end for important legal disclosures. Bond market data is derived from FTSE Fixed Income Indices. See Appendix Glossary for list of indices used for each market. For professional investors only.



# Canadian and Corporate Bond Returns – 1M & 12M % (CAD, LC, TR)

High yield (HY) credits mostly outperformed investment grade (IG) in January, extending the strong performance of the last 12 months. Returns for Munis and Provis were negative in January, and flat over the last 12 months.

Within corporates, HY credits gained up to 3% in Canadian dollars in January, benefiting from the equity market rally, while IG gains were more modest and Canadian IG credit fell 2%. Both EM high yield credit and investment grade corporates outperformed, gaining 2-3% in Canadian dollar terms.



Indices used: FTSE Canada Corporate Bond Index (AAA/AA, A, BBB, Financial, Communication, Industrial, Energy, Overall), FTSE Canada High Yield Bond Index, FTSE Canada Provincial Bond Index. Source: FTSE Russell. All data as of January 31, 2024. Past performance is no guarantee of future results. Please see the end for important legal disclosures. Bond market data is derived from FTSE Fixed Income Indices. See Appendix Glossary for list of indices used for each market. For professional investors only.

## Top and Bottom Bond Returns – 3M & 12M % (CAD, TR) as of January 31, 2024

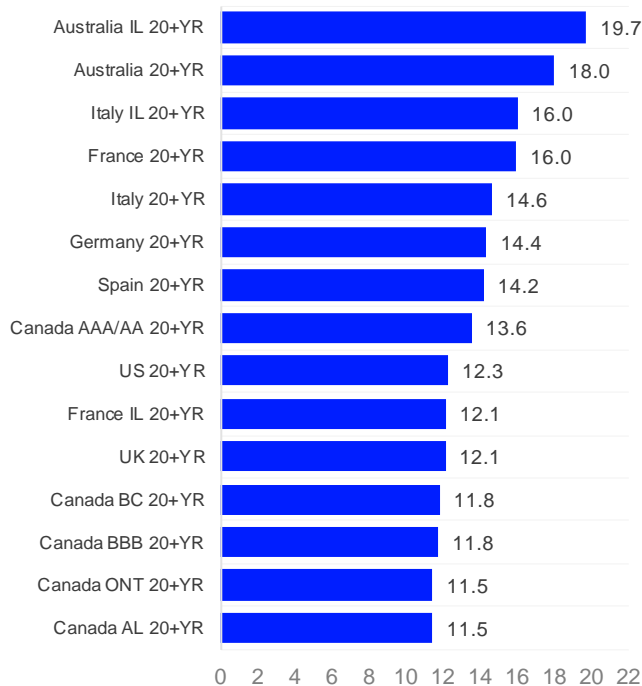
Despite the back-up in bond yields in January, long govt bonds registered double digit returns on 3M in Canadian dollars, highlighting the extent of the rally in November and December. In Canada, long corporates and Provinces held up well, making similar gains to long sovereign govt bonds. Long UK IL gilt returns remained strongly negative over 12M.

Despite their underperformance in January, long Canadian government and corporates bonds were both up 12-14% on 3M. Long Australian, Eurozone, US and UK govt bonds recorded gains of up to 20% in Canadian dollars. Defensive plays such as short US Treasuries and Chinese government bonds were modestly negative over the period.

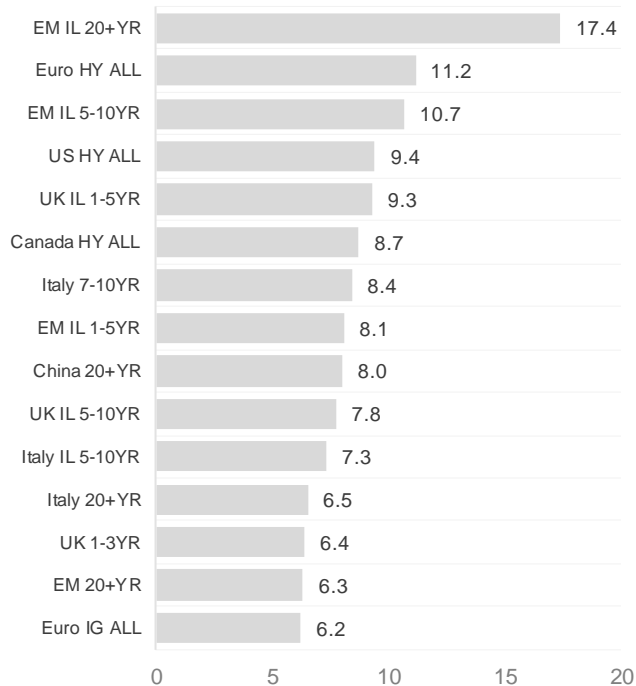
High yield credits and EM inflation linked bonds have outperformed over the last 12M, including Canadian HY credits, which gained nearly 9%. Yen weakness during the period hurt JGBs' returns, while long UK index linked bonds lost 16% in Canadian dollars.

3M CAD 12M CAD

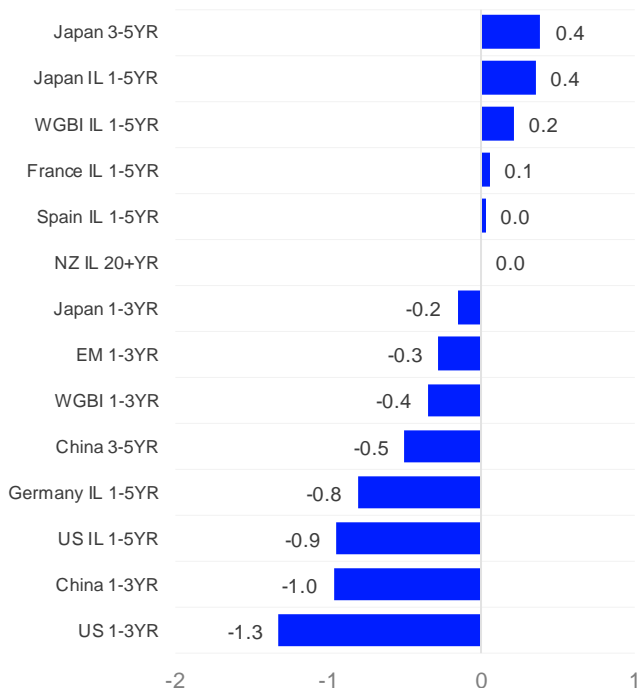
### Top 15



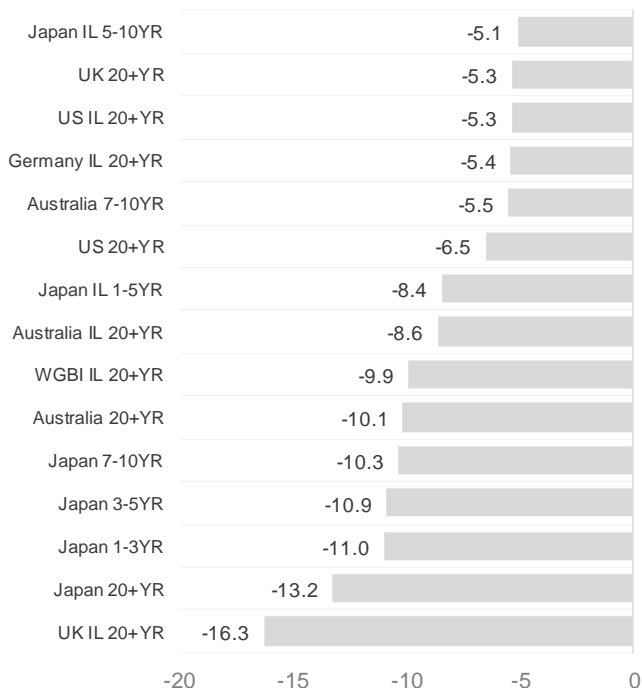
### Top 15



### Bottom 15



### Bottom 15



Source: FTSE Russell. All data as of January 31, 2024. This analysis is taken from 130+ FTSE Russell sub-indices. Past performance is no guarantee of future results. Please see the end for important legal disclosures. Bond market data is derived from FTSE Fixed Income Indices. See Appendix Glossary for list of indices used for each market. For professional investors only.

# Appendix – Canadian Bond Market Returns % (CAD vs USD, TR) – Jan 31, 2024

## Government and corporate bond returns

Top 15% Bottom 15%

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

		3M		6M		YTD		12M	
		Local	USD	Local	USD	Local	USD	Local	USD
<b>Government</b>	1-3YR	2.41	6.41	3.22	1.69	-0.24	-1.54	2.69	2.56
	7-10YR	6.15	10.30	3.25	1.72	-1.44	-2.73	0.03	-0.10
	20+YR	11.39	15.74	1.73	0.23	-4.50	-5.74	-3.12	-3.24
<b>Inflation-Linked</b>	20+YR	7.23	10.99	1.87	0.36	-3.06	-4.33	-3.08	-3.20
<b>Corporate</b>	1-3YR	4.05	8.12	4.82	3.27	0.04	-1.26	4.95	4.81
	7-10YR	7.69	11.89	5.81	4.24	-0.52	-1.82	4.45	4.32
	20+YR	11.36	15.71	4.50	2.95	-2.36	-3.63	3.72	3.59
<b>AAA/AA</b>	1-3YR	3.95	8.01	4.57	3.02	-0.05	-1.35	4.79	4.66
	7-10YR	7.08	11.27	5.84	4.27	-0.30	-1.61	4.05	3.92
	20+YR	13.56	18.00	4.71	3.15	-3.44	-4.70	2.64	2.51
	All	4.62	8.71	4.86	3.31	-0.23	-1.53	4.77	4.64
<b>A</b>	1-3YR	3.93	7.99	4.74	3.19	0.04	-1.26	4.77	4.64
	7-10YR	7.21	11.40	5.25	3.69	-0.66	-1.95	3.82	3.69
	20+YR	11.02	15.36	3.95	2.41	-2.56	-3.83	2.96	2.82
	All	6.34	10.49	4.58	3.03	-0.83	-2.13	4.17	4.04
<b>BBB</b>	1-3YR	4.26	8.34	5.01	3.45	0.07	-1.23	5.26	5.12
	7-10YR	7.96	12.18	6.09	4.52	-0.46	-1.76	4.79	4.66
	20+YR	11.75	16.12	5.23	3.67	-2.04	-3.32	4.80	4.66
	All	6.98	11.16	5.28	3.72	-0.59	-1.89	4.91	4.78
<b>Sectors</b>	Comm	8.21	12.43	5.60	4.03	-0.83	-2.12	4.71	4.58
	Energy	7.95	12.16	4.78	3.23	-1.13	-2.42	4.16	4.02
	Fin	4.54	8.62	4.96	3.41	-0.02	-1.33	5.00	4.87
	Indus	6.50	10.66	4.72	3.16	-0.79	-2.09	4.35	4.22
	Infra	8.99	13.25	4.27	2.72	-1.88	-3.16	3.31	3.18
	RE	5.52	9.64	5.41	3.85	0.12	-1.19	5.02	4.88
	Secur	3.67	7.72	4.74	3.19	0.26	-1.05	5.00	4.86
<b>Provinces (All)</b>	1-3YR	2.92	6.94	3.65	2.11	-0.31	-1.61	2.79	2.66
	7-10YR	6.46	10.62	4.21	2.67	-1.25	-2.54	1.78	1.65
	20+YR	11.43	15.78	3.04	1.51	-3.38	-4.65	0.18	0.05
	All	7.92	12.13	3.53	1.99	-2.05	-3.33	1.25	1.12
<b>Ontario</b>	1-3YR	2.88	6.90	3.63	2.10	-0.28	-1.58	2.84	2.70
	7-10YR	6.44	10.60	4.15	2.60	-1.23	-2.52	1.79	1.67
	20+YR	11.46	15.81	3.07	1.54	-3.35	-4.61	0.34	0.21
	All	7.64	11.85	3.55	2.02	-1.93	-3.22	1.44	1.31
<b>Alberta</b>	1-3YR	2.74	6.76	3.63	2.09	-0.32	-1.62	2.58	2.44
	7-10YR	6.10	10.25	4.45	2.91	-1.25	-2.54	1.85	1.72
	20+YR	11.45	15.81	2.90	1.38	-3.74	-5.00	-0.85	-0.98
	All	7.55	11.75	3.57	2.04	-2.04	-3.32	0.83	0.71
<b>Quebec</b>	1-3YR	3.14	7.17	3.71	2.17	-0.38	-1.68	2.89	2.76
	7-10YR	6.69	10.86	4.24	2.70	-1.31	-2.60	1.74	1.61
	20+YR	11.36	15.71	2.98	1.45	-3.45	-4.71	0.25	0.13
	All	8.38	12.61	3.47	1.94	-2.26	-3.54	1.17	1.04
<b>BC</b>	1-3YR	2.42	6.42	3.38	1.85	-0.28	-1.58	2.50	2.37
	7-10YR	6.27	10.42	4.15	2.61	-1.25	-2.54	1.57	1.45
	20+YR	11.82	16.19	2.98	1.45	-3.32	-4.58	-0.19	-0.32
	All	8.30	12.53	3.52	1.99	-2.05	-3.33	0.92	0.79

Indices used: FTSE Canada Non-Agency Bond Index (Short, Mid, Long), FTSE Canada RRB Canada Index, FTSE Canada Corporate Bond Index (Short, Mid, Long, AAA/AA, A, BBB), FTSE Canada Provincial Bond Index, FTSE Canada High Yield Bond Index.

Source: FTSE Russell. All data as of January 31, 2024. Past performance is no guarantee of future results. Please see the end for important legal disclosures. Bond market data is derived from FTSE Fixed Income Indices. See Appendix Glossary for list of indices used for each market. For professional investors only.

# Appendix – Global Bond Market Returns % (CAD vs LC, TR) – Jan 31, 2024

## Government bond returns

Top 15% Bottom 15%

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

		3M		6M		YTD		12M	
		Local	USD	Local	USD	Local	USD	Local	USD
<b>Government</b>	1-3YR	2.41	6.41	3.22	1.69	-0.24	-1.54	2.69	2.56
	7-10YR	6.15	10.30	3.25	1.72	-1.44	-2.73	0.03	-0.10
	20+YR	11.39	15.74	1.73	0.23	-4.50	-5.74	-3.12	-3.24
<b>Inflation-Linked</b>	20+YR	#DIV/0!	#DIV/0!	1.87	0.36	-3.06	-4.33	-3.08	-3.20
<b>Corporate</b>	1-3YR	4.05	8.12	4.82	3.27	0.04	-1.26	4.95	4.81
	7-10YR	7.69	11.89	5.81	4.24	-0.52	-1.82	4.45	4.32
	20+YR	11.36	15.71	4.50	2.95	-2.36	-3.63	3.72	3.59
<b>AAA/AA</b>	1-3YR	3.95	8.01	4.57	3.02	-0.05	-1.35	4.79	4.66
	7-10YR	7.08	11.27	5.84	4.27	-0.30	-1.61	4.05	3.92
	20+YR	13.56	18.00	4.71	3.15	-3.44	-4.70	2.64	2.51
	All	4.62	8.71	4.86	3.31	-0.23	-1.53	4.77	4.64
<b>A</b>	1-3YR	3.93	7.99	4.74	3.19	0.04	-1.26	4.77	4.64
	7-10YR	7.21	11.40	5.25	3.69	-0.66	-1.95	3.82	3.69
	20+YR	11.02	15.36	3.95	2.41	-2.56	-3.83	2.96	2.82
	All	6.34	10.49	4.58	3.03	-0.83	-2.13	4.17	4.04
<b>BBB</b>	1-3YR	4.26	8.34	5.01	3.45	0.07	-1.23	5.26	5.12
	7-10YR	7.96	12.18	6.09	4.52	-0.46	-1.76	4.79	4.66
	20+YR	11.75	16.12	5.23	3.67	-2.04	-3.32	4.80	4.66
	All	6.98	11.16	5.28	3.72	-0.59	-1.89	4.91	4.78
<b>Sectors</b>	Comm	8.21	12.43	5.60	4.03	-0.83	-2.12	4.71	4.58
	Energy	7.95	12.16	4.78	3.23	-1.13	-2.42	4.16	4.02
	Fin	4.54	8.62	4.96	3.41	-0.02	-1.33	5.00	4.87
	Indus	6.50	10.66	4.72	3.16	-0.79	-2.09	4.35	4.22
	Infra	8.99	13.25	4.27	2.72	-1.88	-3.16	3.31	3.18
	RE	5.52	9.64	5.41	3.85	0.12	-1.19	5.02	4.88
	Secur	3.67	7.72	4.74	3.19	0.26	-1.05	5.00	4.86
<b>Provinces (All)</b>	1-3YR	2.92	6.94	3.65	2.11	-0.31	-1.61	2.79	2.66
	7-10YR	6.46	10.62	4.21	2.67	-1.25	-2.54	1.78	1.65
	20+YR	11.43	15.78	3.04	1.51	-3.38	-4.65	0.18	0.05
	All	7.92	12.13	3.53	1.99	-2.05	-3.33	1.25	1.12
<b>Ontario</b>	1-3YR	2.88	6.90	3.63	2.10	-0.28	-1.58	2.84	2.70
	7-10YR	6.44	10.60	4.15	2.60	-1.23	-2.52	1.79	1.67
	20+YR	11.46	15.81	3.07	1.54	-3.35	-4.61	0.34	0.21
	All	7.64	11.85	3.55	2.02	-1.93	-3.22	1.44	1.31
<b>Alberta</b>	1-3YR	2.74	6.76	3.63	2.09	-0.32	-1.62	2.58	2.44
	7-10YR	6.10	10.25	4.45	2.91	-1.25	-2.54	1.85	1.72
	20+YR	11.45	15.81	2.90	1.38	-3.74	-5.00	-0.85	-0.98
	All	7.55	11.75	3.57	2.04	-2.04	-3.32	0.83	0.71
<b>Quebec</b>	1-3YR	3.14	7.17	3.71	2.17	-0.38	-1.68	2.89	2.76
	7-10YR	6.69	10.86	4.24	2.70	-1.31	-2.60	1.74	1.61
	20+YR	11.36	15.71	2.98	1.45	-3.45	-4.71	0.25	0.13
	All	8.38	12.61	3.47	1.94	-2.26	-3.54	1.17	1.04
<b>BC</b>	1-3YR	2.42	6.42	3.38	1.85	-0.28	-1.58	2.50	2.37
	7-10YR	6.27	10.42	4.15	2.61	-1.25	-2.54	1.57	1.45
	20+YR	11.82	16.19	2.98	1.45	-3.32	-4.58	-0.19	-0.32
	All	8.30	12.53	3.52	1.99	-2.05	-3.33	0.92	0.79

Indices used: FTSE Canada Non-Agency Bond Index (Short, Mid, Long).

Source: FTSE Russell. All data as of January 31, 2024. Past performance is no guarantee of future results. Please see the end for important legal disclosures. Bond market data is derived from FTSE Fixed Income Indices. See Appendix Glossary for list of indices used for each market. For professional investors only.

## Appendix – Global Bond Market Returns % (CAD vs LC, TR) – Jan 31, 2024

### Inflation-Linked Bond Returns

Top 15% Bottom 15%

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

		3M		6M		YTD		12M	
		Local	USD	Local	USD	Local	USD	Local	USD
<b>WGBI</b>	1-5YR	2.55	4.13	2.78	2.22	0.23	-0.33	4.09	4.07
	5-10YR	5.35	7.51	2.17	1.38	-0.18	-0.90	3.09	3.49
	20+YR	10.59	14.50	-3.88	-4.85	-5.63	-6.03	-12.07	-9.99
<b>US</b>	1-5YR	2.92	2.92	3.02	3.02	0.44	0.44	4.11	4.11
	5-10YR	6.79	6.79	2.24	2.24	0.48	0.48	2.08	2.08
	20+YR	14.80	14.80	-2.72	-2.72	-1.10	-1.10	-5.46	-5.46
<b>UK</b>	1-5YR	2.28	7.33	4.25	3.18	-0.74	-0.85	5.53	9.16
	5-10YR	3.89	9.03	3.63	2.57	-1.61	-1.72	4.04	7.62
	20+YR	7.75	13.08	-6.12	-7.08	-8.95	-9.05	-19.15	-16.37
<b>EUxUK</b>	1-5YR	0.30	3.07	0.39	-1.10	-0.24	-1.91	1.72	1.74
	5-10YR	1.82	4.63	-0.30	-1.77	-0.81	-2.46	1.81	1.83
	20+YR	8.72	11.73	-5.11	-6.51	-3.01	-4.63	-5.51	-5.49
<b>Japan</b>	1-5YR	0.65	4.28	0.98	-1.85	0.03	-3.52	2.81	-8.53
	5-10YR	2.15	5.83	2.21	-0.65	0.31	-3.26	6.54	-5.22
<b>EmergingMkts</b>	1-5YR	3.60	4.74	4.17	-0.88	0.93	-1.01	12.44	7.95
	5-10YR	5.43	7.66	3.29	-1.52	-0.03	-2.03	12.32	10.56
	20+YR	9.14	11.90	2.91	-1.06	-1.69	-3.57	13.93	17.26
<b>Germany</b>	1-5YR	0.30	3.07	0.39	-1.10	-0.24	-1.91	1.72	1.74
	5-10YR	1.82	4.63	-0.30	-1.77	-0.81	-2.46	1.81	1.83
	20+YR	8.72	11.73	-5.11	-6.51	-3.01	-4.63	-5.51	-5.49
<b>Italy</b>	1-5YR	2.53	5.36	2.36	0.85	0.01	-1.66	4.94	4.96
	5-10YR	6.32	9.26	1.65	0.14	-0.17	-1.83	7.19	7.21
	20+YR	17.32	20.56	-5.20	-6.60	-1.91	-3.54	1.72	1.74
<b>France</b>	1-5YR	1.17	3.97	1.05	-0.44	-0.16	-1.82	2.37	2.39
	5-10YR	2.66	5.50	0.72	-0.77	-0.77	-2.43	2.76	2.78
	20+YR	13.39	16.53	-3.57	-4.99	-3.96	-5.56	-3.64	-3.62
<b>Australia</b>	1-5YR	2.63	7.15	3.02	1.07	-0.05	-3.17	4.53	-1.94
	5-10YR	6.33	11.01	3.83	1.85	-0.40	-3.51	3.82	-2.60
	20+YR	19.15	24.40	2.72	0.77	-3.99	-6.99	-2.70	-8.72
<b>NZ</b>	5-10YR	6.15	12.33	3.84	2.71	-0.91	-3.66	4.31	-0.65
	20+YR	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Indices used: FTSE Canada RRB Canada Bond Index.

Source: FTSE Russell. All data as of January 31, 2024. 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 – Canadian Historical Bond Yields % as of January 31, 2024

## Canadian Bond Yields

Top 15% Bottom 15%

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

		1-3YR	7-10YR	20+YR	All Mat
<b>Canada</b>	Current	3.99	3.35	3.30	
	3M Ago	4.55	4.08	3.93	
	6M Ago	4.55	3.58	3.34	
	12M Ago	3.68	2.91	3.00	
<b>IL</b>	Current			1.70	
	3M Ago				
	6M Ago			1.78	
	12M Ago			1.20	
<b>Provincial</b>	Current	4.07	3.91	4.26	4.11
	3M Ago	4.71	4.71	4.95	4.82
	6M Ago	4.64	4.22	4.32	4.37
	12M Ago	3.70	3.53	3.99	3.80
<b>Ontario</b>	Current	4.10	3.91	4.24	4.11
	3M Ago	4.71	4.72	4.94	4.81
	6M Ago	4.63	4.22	4.32	4.38
	12M Ago	3.74	3.53	3.99	3.80
<b>Quebec</b>	Current	4.00	3.89	4.22	4.08
	3M Ago	4.65	4.71	4.91	4.80
	6M Ago	4.68	4.20	4.27	4.33
	12M Ago	3.65	3.52	3.96	3.78
<b>Alberta</b>	Current	4.05	3.88	4.30	4.11
	3M Ago	4.73	4.65	4.95	4.79
	6M Ago	4.63	4.22	4.35	4.38
	12M Ago	3.66	3.51	3.98	3.76
<b>BC</b>	Current	4.12	3.91	4.22	4.09
	3M Ago	4.77	4.69	4.94	4.82
	6M Ago	4.72	4.20	4.30	4.33
	12M Ago	3.62	3.50	3.96	3.75
<b>Municipal</b>	Current	4.07	3.99	4.47	4.23
	3M Ago	4.74	4.78	5.18	4.94
	6M Ago	4.71	4.29	4.56	4.52
	12M Ago	3.75	3.62	4.24	3.93
<b>Corporate</b>	Current	4.90	4.90	5.06	4.94
	3M Ago	5.87	5.92	5.85	5.88
	6M Ago	5.65	5.39	5.20	5.49
	12M Ago	4.84	4.69	4.92	4.83
<b>High Yield</b>	Current				7.04
	3M Ago				8.32
	6M Ago				7.60
	12M Ago				6.99

		1-5YR	5-10YR	20+YR	All Mat
<b>AAA/AA</b>	Current	4.60	4.53	4.51	4.60
	3M Ago	5.57	5.61	5.24	5.56
	6M Ago	5.35	5.17	4.66	5.32
	12M Ago	4.59	4.25	4.40	4.52
<b>A</b>	Current	4.81	4.62	4.81	4.79
	3M Ago	5.78	5.62	5.57	5.70
	6M Ago	5.58	5.08	4.93	5.33
	12M Ago	4.71	4.45	4.66	4.66
<b>BBB</b>	Current	5.11	5.05	5.43	5.17
	3M Ago	2.82	2.50	2.64	6.14
	6M Ago	2.44	1.72	1.80	5.72
	12M Ago	1.79	1.46	1.62	5.10
<b>Comm</b>	Current	4.81	5.41	5.10	4.96
	3M Ago	5.95	6.32	5.98	5.96
	6M Ago	5.36	5.65	5.74	5.50
	12M Ago	4.69	5.37	4.87	4.98
<b>Energy</b>	Current	5.10	5.06	5.17	5.12
	3M Ago	5.98	6.02	5.99	6.00
	6M Ago	5.74	5.47	5.29	5.48
	12M Ago	4.87	4.86	5.01	4.93
<b>Financial</b>	Current	4.85	4.88	4.98	4.86
	3M Ago	5.86	6.00	5.79	5.87
	6M Ago	5.64	5.48	5.26	5.62
	12M Ago	4.80	4.60	5.03	4.79
<b>Industrial</b>	Current	4.82	4.76	5.13	4.88
	3M Ago	5.72	5.73	5.91	5.77
	6M Ago	5.56	5.25	5.25	5.40
	12M Ago	4.87	4.60	5.03	4.84
<b>Infrastructure</b>	Current	4.56	4.60	4.86	4.77
	3M Ago	5.39	5.52	5.61	5.56
	6M Ago	5.17	5.04	4.99	5.02
	12M Ago	4.45	4.35	4.71	4.61
<b>Securitization</b>	Current	4.88			4.88
	3M Ago	5.80			5.81
	6M Ago	5.70			5.71
	12M Ago	4.82			4.82

Indices used: FTSE Canada Non-Agency Bond Index (Short, Mid, Long), FTSE Canada RRB Canada Index, FTSE Canada Corporate Bond Index (Short, Mid, Long, AAA/AA, A, BBB), FTSE Canada Provincial Bond Index, FTSE Canada High Yield Bond Index.

Source: FTSE Russell. All data as of January 31, 2024. 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 January 31, 2024

## 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	4.33	3.93	3.93	4.31	1.98	1.64	2.01	5.14	7.97
	3M Ago	5.17	4.87	4.90	5.19	2.82	2.50	2.64	6.38	9.46
	6M Ago	5.01	4.33	3.97	4.11	2.44	1.72	1.80	5.50	8.34
	12M Ago	4.35	3.74	3.46	3.71	1.85	1.32	1.54	5.01	8.22
UK	Current	4.21	3.73	3.75	4.39	0.16	0.21	1.25		
	3M Ago	4.67	4.45	4.43	4.91	0.65	0.71	1.51		
	6M Ago	5.04	4.69	4.25	4.39	1.86	0.65	1.00		
	12M Ago	3.42	3.19	3.24	3.68	0.12	-0.18	0.29		
Japan	Current	0.04	0.20	0.59	1.73	-1.65	-0.83			
	3M Ago	0.09	0.34	0.83	1.82	-1.55	-0.65			
	6M Ago	-0.04	0.08	0.50	1.40	-1.70	-0.74			
	12M Ago	-0.02	0.11	0.52	1.50	-1.20	-0.37			
China	Current	2.07	2.22	2.46	2.70					
	3M Ago	2.27	2.42	2.67	3.08					
	6M Ago	2.08	2.34	2.66	3.04					
	12M Ago	2.30	2.59	2.87	3.31					
EM	Current	3.34	3.81	4.64	4.17	4.38	4.41	5.03	5.56	9.29
	3M Ago	3.71	4.43	5.00	4.55	4.20	4.73	5.46	6.68	11.30
	6M Ago	3.58	4.17	4.80	4.41	3.05	4.07	4.88	5.93	11.51
	12M Ago	3.59	4.46	4.87	4.58	1.69	3.49	5.31	5.52	10.25
Germany	Current	2.57	2.07	2.06	2.38	0.81	0.20	0.27		
	3M Ago	3.09	2.66	2.70	3.05	0.90	0.45	0.65		
	6M Ago	3.09	2.60	2.41	2.53	0.60	0.07	0.01		
	12M Ago	2.59	2.78	2.59	2.57	0.22	0.08	0.03		
Italy	Current	2.96	2.93	3.47	4.21	1.08	1.58	1.94		
	3M Ago	3.77	3.88	4.45	5.06	1.77	2.35	2.53		
	6M Ago	3.60	3.55	3.86	4.35	1.30	1.64	1.69		
	12M Ago	3.17	3.93	4.28	4.57	0.70	1.63	1.82		
France	Current	2.62	2.34	2.52	3.13	0.44	0.37	0.78		
	3M Ago	3.21	3.01	3.23	3.88	0.93	0.78	1.28		
	6M Ago	3.15	2.90	2.90	3.35	0.58	0.37	0.60		
	12M Ago	2.71	2.94	2.89	3.22	-0.07	0.23	0.63		
Sweden	Current	2.68	2.21	2.18		1.26	0.76			
	3M Ago	3.43	3.05	2.94		1.34	1.30			
	6M Ago	3.33	2.83	2.57		0.96	0.74			
	12M Ago	2.50	2.53	2.28		-0.07	0.20			
Australia	Current	3.69	3.60	3.97	4.42	1.04	1.39	1.81		
	3M Ago	4.49	4.48	4.87	5.33	1.47	2.04	2.53		
	6M Ago	4.02	3.86	4.03	4.40	1.03	1.47	1.79		
	12M Ago	3.17	3.03	3.32	3.83	0.12	0.93	1.54		
NZ	Current	4.89	4.44	4.55	4.87	1.72	2.39			
	3M Ago	5.49	5.37	5.55	5.69	2.47	3.05			
	6M Ago	5.21	4.80	4.70	4.87	1.94	2.39			
	12M Ago	4.67	4.17	4.10	4.34	1.01	1.70			
Canada	Current	3.99		3.35	3.30			1.70	4.94	7.04
	3M Ago	4.55		4.08	3.93				5.88	8.32
	6M Ago	4.55		3.58	3.34			1.78	5.49	7.60
	12M Ago	3.68		2.91	3.00			1.20	4.83	6.99

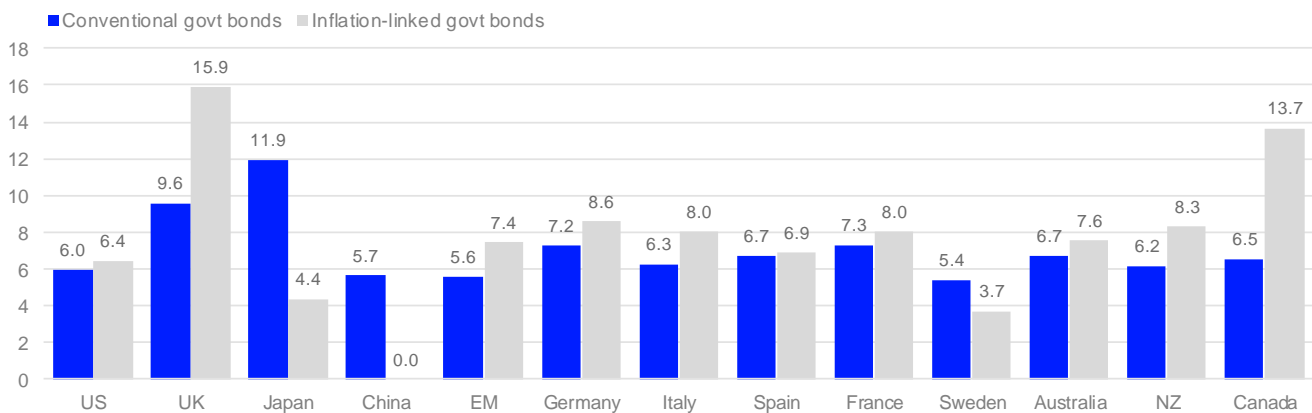
Source: FTSE Russell. All data as of January 31, 2024. Past performance is no guarantee of future results. Please see the end for important legal disclosures. Bond market data is derived from FTSE Fixed Income Indices. See Appendix Glossary for list of indices used for each market. For professional investors only.

# Appendix – Duration and Market Value (USD, Bn) as of January 31, 2024

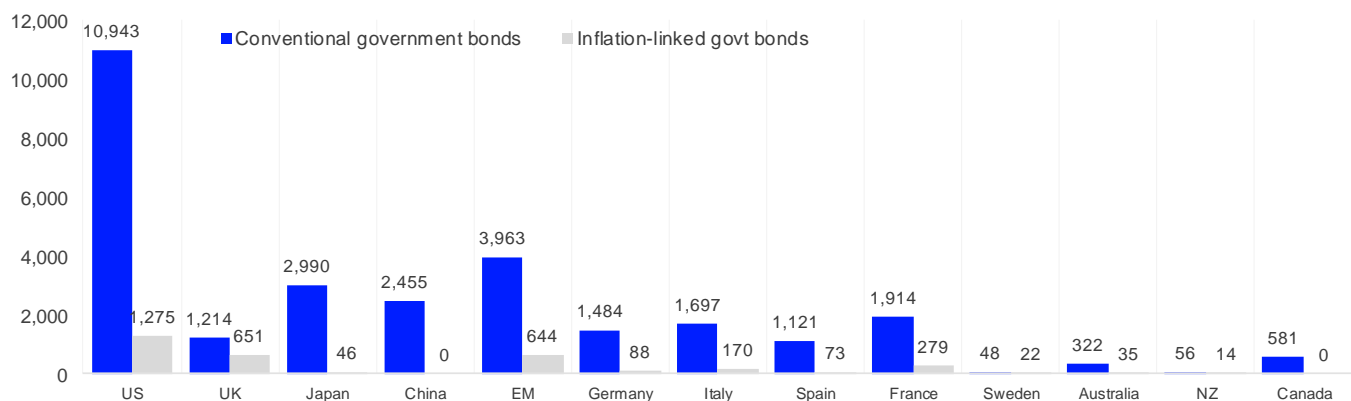
	Conventional government bonds								Inflation-linked government bonds					
	Duration				Market Value				Duration			Market Value		
	3-5YR	7-10YR	20+YR	Overall	3-5YR	7-10YR	20+YR	Total	5-10YR	20+YR	Overall	5-10YR	20+YR	Total
US	3.7	7.3	16.9	6.0	2,559.5	1,136.5	1,323.2	10,942.7	6.9	21.1	6.4	424.0	125.3	1275.1
UK	3.6	7.7	18.4	9.6	161.3	161.0	330.4	1,213.7	6.9	26.9	15.9	113.1	243.8	651.1
Japan	3.9	8.1	23.6	11.9	353.5	358.8	629.6	2,989.9	7.1		4.4	19.7		45.9
China	3.7	7.6	17.9	5.7	571.0	374.7	287.4	2,454.8						
EM	3.6	6.9	16.1	5.6	837.42	704.83	389.00	3,963.4	6.1	13.7	7.4	102.7	172.4	644.2
Germany	3.8	7.5	20.6	7.2	350.71	236.96	177.23	1,484.4	6.9	21.4	8.6	44.2	18.7	88.4
Italy	3.7	7.2	16.3	6.3	307.17	278.09	149.98	1,697.0	7.4	26.0	8.0	62.7	5.4	169.6
Spain	3.7	7.6	17.9	6.7	208.27	200.59	104.55	1,120.6	7.8		6.9	47.7		72.8
France	3.8	7.5	20.0	7.3	325.10	301.75	235.56	1,913.6	6.3	24.2	8.0	109.0	21.2	279.4
Sweden	4.1	7.7		5.4	6.87	14.05		47.9	6.8		3.7	5.5		22.2
Australia	3.6	7.6	17.0	6.7	47.47	92.11	20.70	321.7	6.8	22.1	7.6	10.3	2.8	34.8
NZ	3.5	7.3	16.9	6.2	10.90	15.73	2.78	56.0	5.9		8.3	3.2		14.0
Canada		6.9	17.9	6.5		216.00	96.83	580.9		13.7	13.7		65.6	

	Investment grade bonds					High Yield						
	Duration					Market Value					Duration	MktVal
	AAA	AA	A	BBB	Overall	AAA	AA	A	BBB	Overall		
US	10.5	8.5	7.2	6.6	7.0	76.8	454.5	2,729.7	3,479.0	6,739.9	3.8	1,180.0
Euro	5.6	4.8	4.6	4.2	4.4	11.0	204.6	1,248.0	1,529.7	2,993.4	3.0	421.1
EM		5.9	4.8	5.2	5.1		37.90	221.55	309.4	568.9	3.3	183.5

Average Duration



Total Market Value (USD Billions)



Data as of 2024-01-31

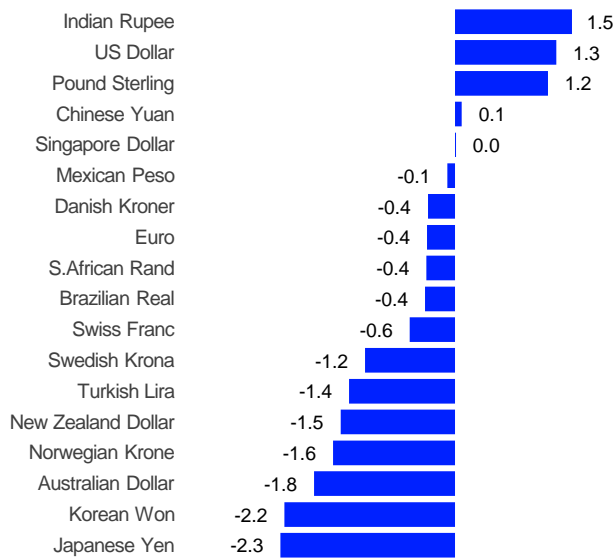
Indices used: FTSE Canada Non-Agency Bond Index (Mid, Long, Overall), FTSE Canada RRB Canada Bond Index.

Source: FTSE Russell. All data as of January 31, 2024. 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 indexes used for each market. For professional investors only.

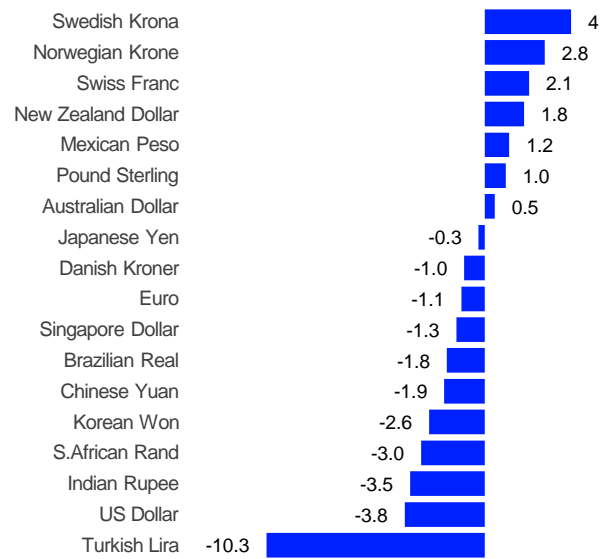


## Appendix – Foreign Exchange Returns % as of January 31, 2024

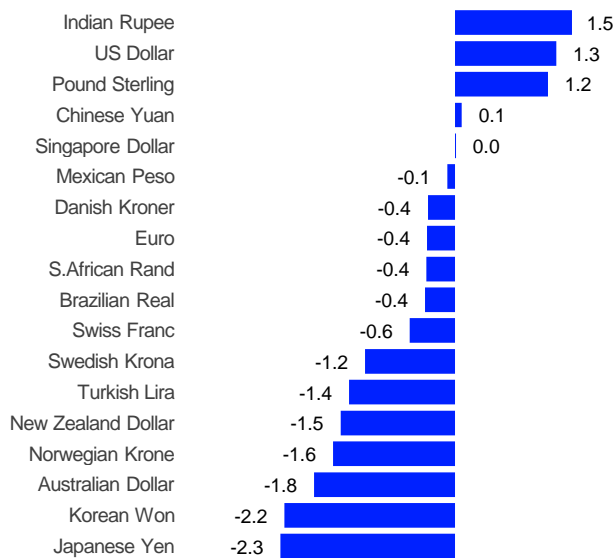
### FX Moves vs CAD - 1M



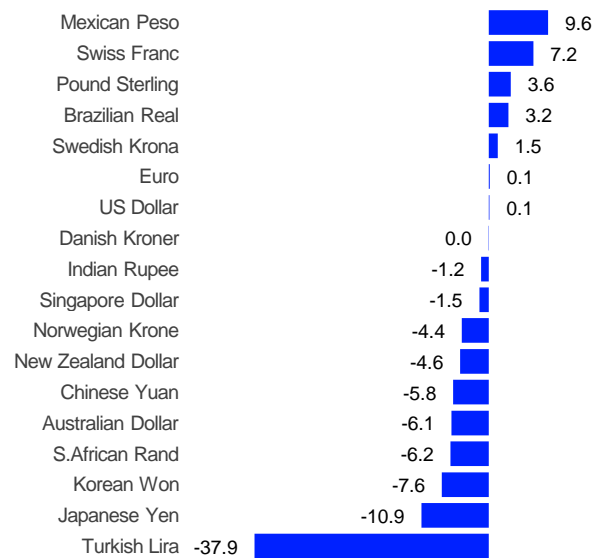
### FX Moves vs CAD - 3M



### FX Moves vs CAD - YTD



### FX Moves vs CAD - 12M



Source: FTSE Russell and Refinitiv. All data as of January 31, 2024. 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 Canada Universe Bond Index for all Canadian government and corporate bond markets\*
- FTSE Canada High Yield Bond Index for the Canadian high yield market
- FTSE Canada RRB Canada Index for the Canadian inflation-linked bond market
- 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 Broad Bond Index (EMUSDBBI) for the emerging markets corporate bond market

## 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

## \* FTSE Canada Bond Indexes

- 1-3YR = Short Term Bond Indices
- 7-10YR = Mid Term Bond Indices
- 20+ YR = Long Term Bond Indices

Total Returns

Growth/Inflation

Financial Conditions

Govt. Bonds

Corporate Bonds

Spreads

Inflation-Linked

Credit/Equities

Appendix

## 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/ftse-russell](https://lseg.com/ftse-russell); email [info@ftserussell.com](mailto:info@ftserussell.com); or call your regional Client Service team office:

EMEA +44 (0) 20 7866 1810	Asia-Pacific
North America +1 877 503 6437	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, transcribing, transmitting, communicating or delivering any such information or data or from use of this document or links to this document or (b) any direct, indirect, special, consequential or incidental damages whatsoever, even if any member of 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.