

# Fixed Income Insights

MONTHLY REPORT – MAY 2024 | CANADA EDITION

FOR PROFESSIONAL INVESTORS ONLY

## Canadian longs readjust to higher rates, for even longer

The strength of US final sales and inflation surprised markets in April, pushing US yields higher, led by longs, pressuring Canadian yields, as investors revised rate expectations higher and rates remain on hold. The Canadian PMI also showed green shoots of recovery. HY credit gains show close correlation to risk assets, though with a modest April reversal.

### Macro and policy backdrop – Resilient US growth diverges with the rest of the world, but for how long?

The US shows itself as an outlier, with IMF real growth forecasts for 2024 significantly upgraded in April, unlike other economies, where revisions were modest, and mostly lower. (page 2)

### Canadian govts – Canadian yield curve disinverted on higher rates for longer narrative

The Canadian yield curve disinverted further in April as the negative carry weighed on longs. (page 3)

### Canadian credit – Canadian HY spreads narrowed a little in April after govt yields backed up

Canadian high yield spreads have continued to tighten since January, but more modestly so in April, after tracking the lacklustre equity performance and government bond yields rose. (pages 4-5)

### Global yields and spreads – Real yields were led higher by US Tips in April, as real US growth remained buoyant

G7 real yields have moved higher, as markets adjusted rate expectations to receding prospects of early easing. (pages 6)

### Sovereign and climate bonds – PAB continues to underperform Choice and ex fossil fuels indices

Performance variation has largely been driven by duration, and bank weights, as yields have continued to rise. (page 7)

### Performance – Canadian high yield gains since January reflects low duration while long govts adjust to higher rates

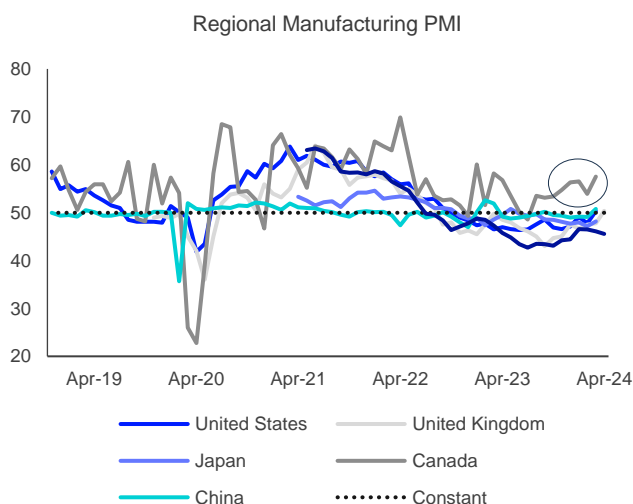
Canadian credit held up better than govt bonds in April, but lost some ground, as the risk rally reversed. (pages 8-10)

### Appendix (from page 11)

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

Chart 1: Canada's manufacturing PMI has picked up since January, on improved business optimism compared to 2023, supported by better economic conditions and robust, even if slowing, US growth.

Chart 2: A turning point? Canadian goods inflation fell in March, though the decline appears to be slowing down, contrasting services inflation, which, while higher, also appears to be stabilising.



Source: FTSE Russell and LSEG. Latest data available as of April 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 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

G7 central banks paused policy again in April, highlighting the need for “sustainable” inflation at target levels as the reason for their decisions. The IMF upgraded US real growth forecasts for 2024 in April, unlike the rest of G7 economies, rekindling uncertainty over the timing of US rate cuts. Canadian wage growth rose in April, despite higher unemployment, as did manufacturing PMI on improving business sentiment, but lower Canadian inflation makes a Q3 rate cut plausible, with real economic growth still much weaker than the US.

The IMF revised upward its growth estimate for the US in April, compared to January, highlighting the strength of consumer spending and fiscal stimulus, relative to other G7 economies. Other G7 growth forecasts were revised marginally lower (Chart 1), including Canada.

Canada is unique versus other G7 economies in that its core inflation of 2.0% y/y in March, is significantly lower than its nominal inflation of 2.9% y/y (Chart 2), and actually at target levels of 2%. Reflected in the core CPI is the easing of food and oil prices, while the above-target headline CPI highlights the continued challenge posed by Canada’s high rental and service sector inflation. Chart 2 also shows disinflation flat-lined in most regions in March data, except in the US, where resilient shelter inflation contributed in part to the recent 3.5% y/y inflation uptick.

Robust wage growth of 4.5% y/y, shown in Chart 3, has continued to drive services inflation (see Chart 2 on the cover) and rental costs higher. Even if Canadian unemployment rose a little in March, the 6.1% rate is in line with pre-Covid levels, suggesting the job market remains resilient. As in the US, the employment participation rate of 65.3%, has not accelerated significantly and reflects the ageing labour force.

The US Fed noted the rise in US inflation and continued robust data, at the May FOMC meeting, in explaining the policy pause (Chart 4). Other G7 central banks have echoed the need for inflation to be sustained at, or below 2% targets, before easing, with the recent strength of the US dollar, and its potential impact in raising inflation, a concern. Meanwhile, sluggish Canadian growth and low inflation make a rate cut plausible in Q3.

Canadian manufacturing PMI stands out, after rising in April (see Chart 1 on the cover), as sentiment on economic activity improved, reaffirming the soft-landing narrative for the economy.

Chart 1: The US shows itself as an outlier, with real IMF growth forecasts for 2024 significantly upgraded in April, unlike other economies, where revisions were modest, and mostly lower.

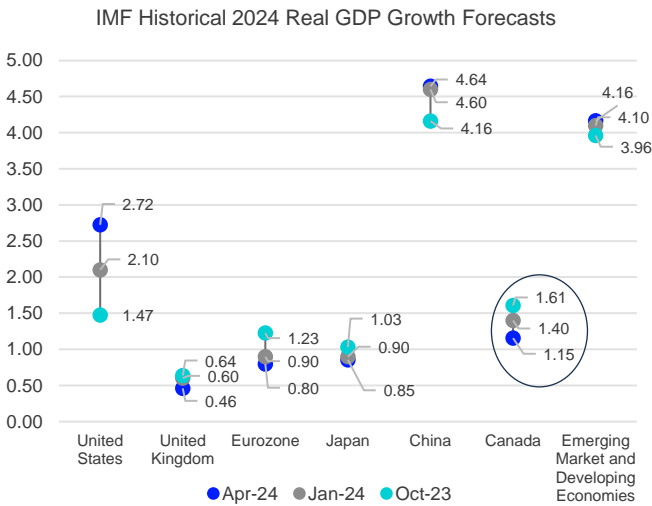


Chart 2: Most G7 inflation barely moved in March, though US inflation surprised on the upside. High housing costs in the US and Canada remain a problem and a big driver of higher inflation.

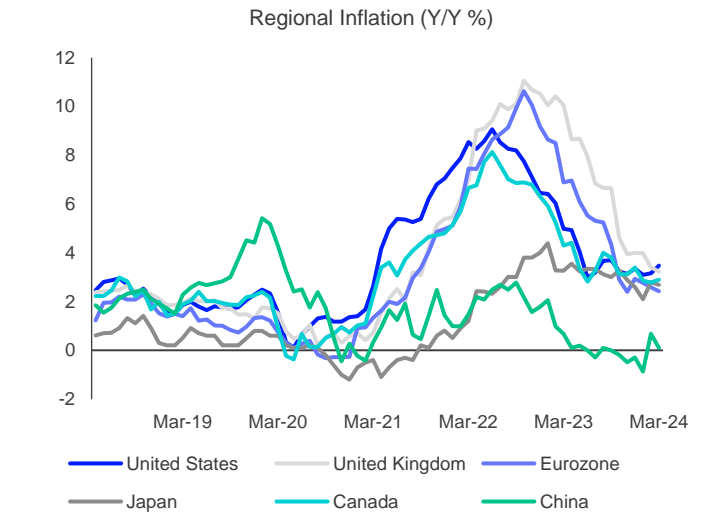


Chart 3: Canada’s wage growth remained robust, and even increased a little in March, despite unemployment also increasing a little, but only to pre-Covid levels.

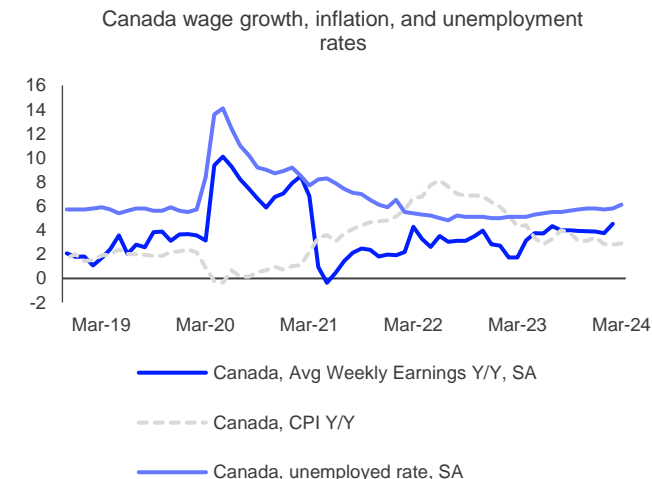
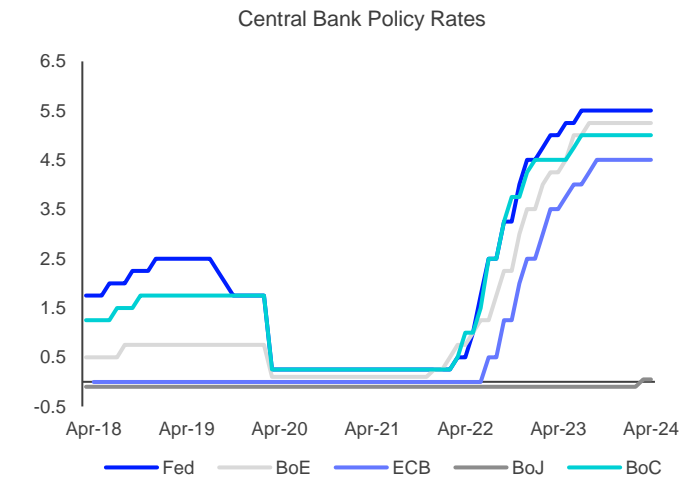


Chart 4: G7 central banks retained policy pauses in April, with rate cuts not expected before 2H 2024. The US is an outlier, where the market is now raising the real possibility of no cuts at all in 2024.



Source: FTSE Russell and LSEG. Latest data available as of April 30, 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 disinverted further in April, after the long end steepened when the BoC paused policy again, with rates now expected to stay at 5% until Q3.

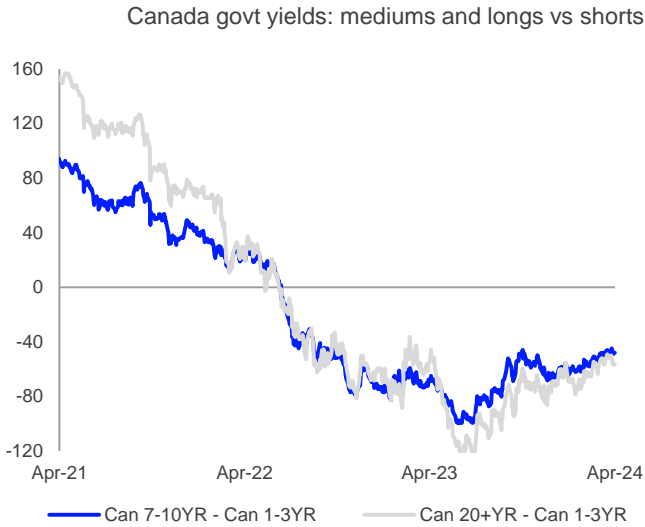


Chart 3: Long conventional yields backed up in April, unwinding much of the steep decline of Q4 2023, with real yields tracking conventional yields higher after inflation ticked up a little.

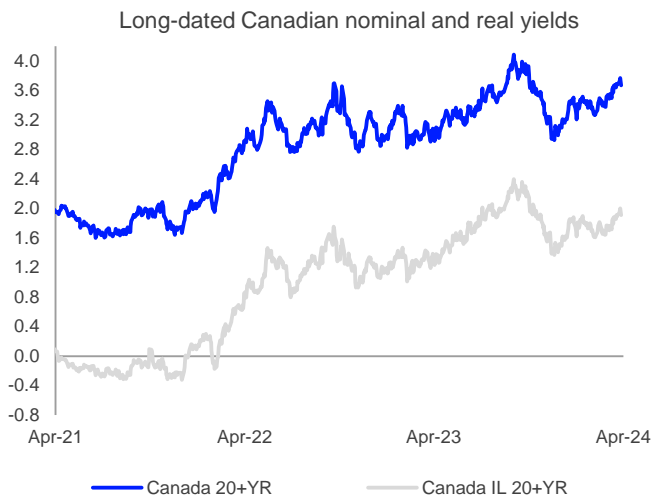


Chart 5: Alberta spreads reversed course and widened in April, following other provincial spreads higher, after the market readjusted to no imminent cuts and rates staying higher for longer.

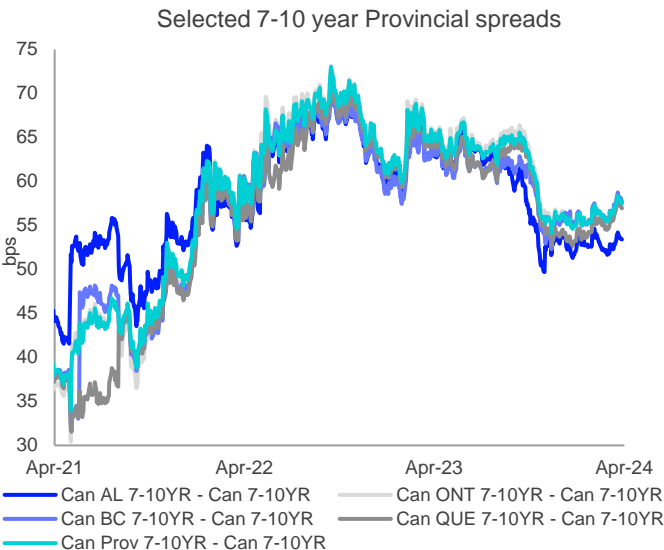


Chart 2: Canadian 7-10 year spreads have widened against Bunds and JGBs, but narrowed vs US Treasuries, reflecting differences in interest rate and growth expectations.

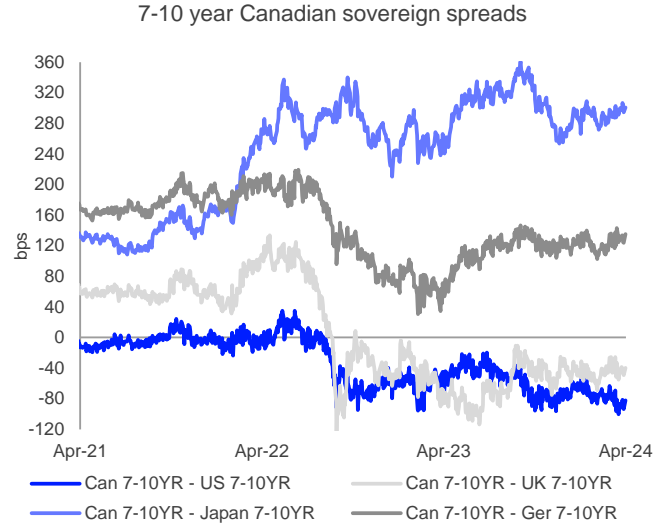


Chart 4: G7 inflation breakevens rose further in April, repeating the pro-cyclical pattern of breakevens rising and falling with nominal yields (e.g., they fell in the Q4 rally as nominal yields fell faster).

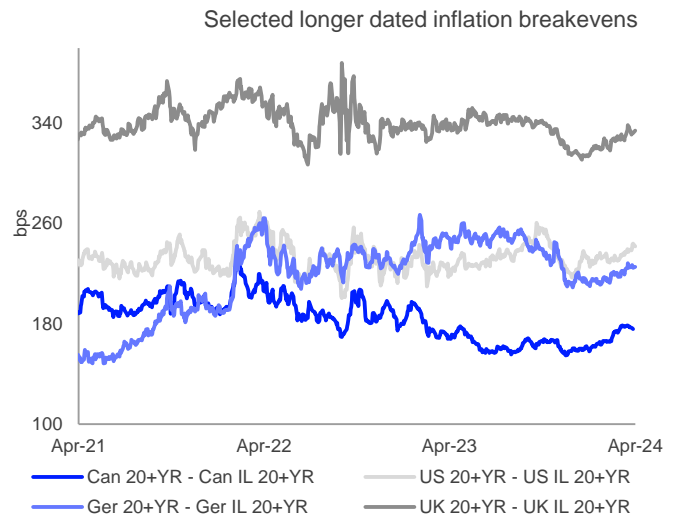
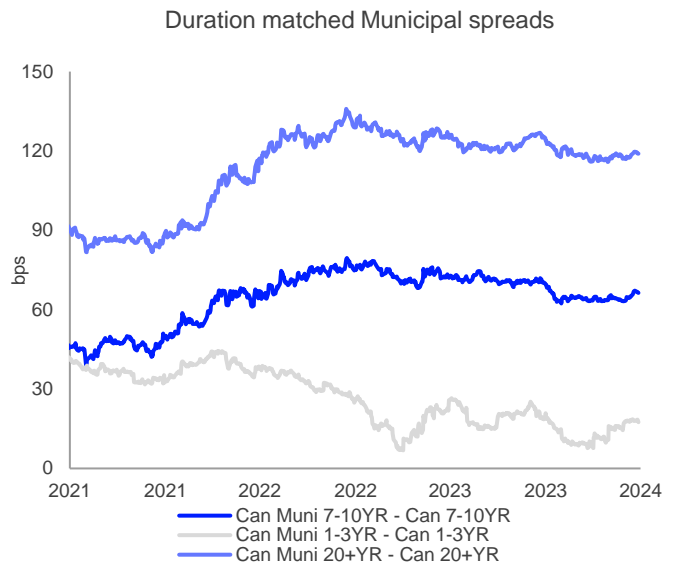


Chart 6: Short Canadian municipal spreads were wider in April, after the BoC maintained policy unchanged and rates stay higher for longer, while longer equivalents only rose a little after govt yields backed up.



Source: FTSE Russell. All data as of April 30, 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 Investment Grade Credit Analysis

Chart 1: Canadian corporate bond spreads have declined across the whole of the quality spectrum since January, as government bond yields backed up, with AAA spreads still a lot higher than pre-covid levels.

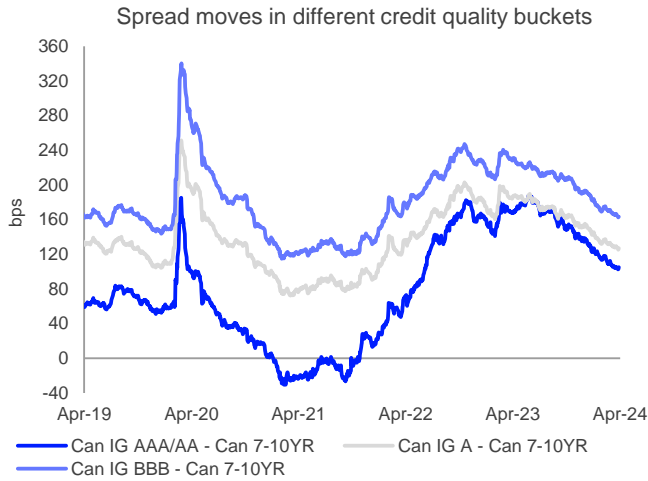


Chart 2: The weight in AAAs and BBBs in the Canadian corporate bond universe increased modestly in April, while AA and A weightings saw small reductions. Still, single As (47%) have the largest exposure.

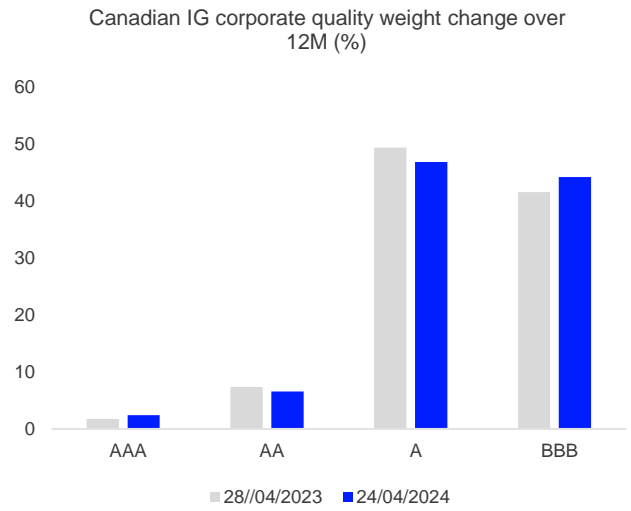


Chart 3: Infrastructure and industrial spreads, and real estate and energy spreads, have converged to around 135bp & 160bp respectively in April, while financial spreads tightened the most since 2021.

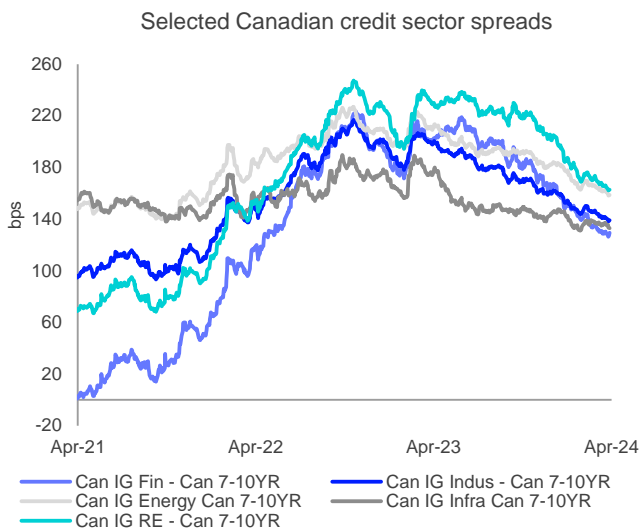


Chart 4: Financials have seen the biggest change in weighting over the last year, with a drop of over 1%, while energy has grown by about 0.9%, with the former making up 39% of the universe.

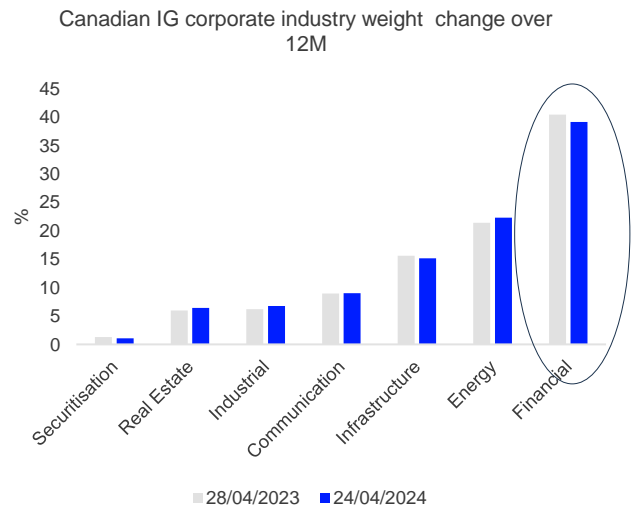


Chart 5: Canadian corporate bond spreads tightened modestly across the quality spectrum in April. Government bond yields backed up after inflation ticked up and the BoC left rates unchanged.

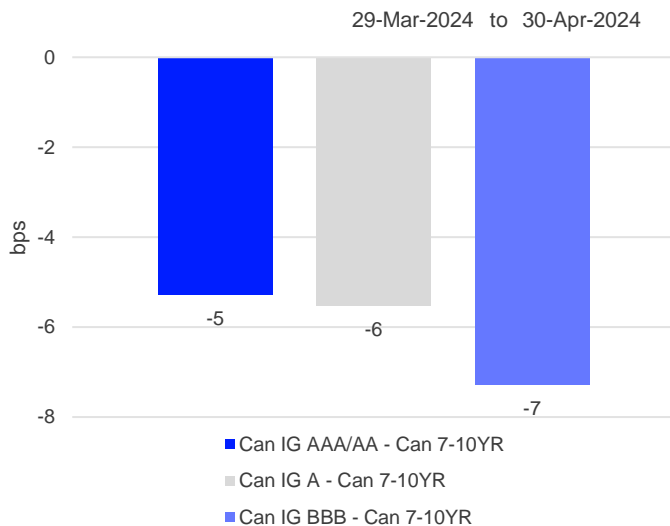
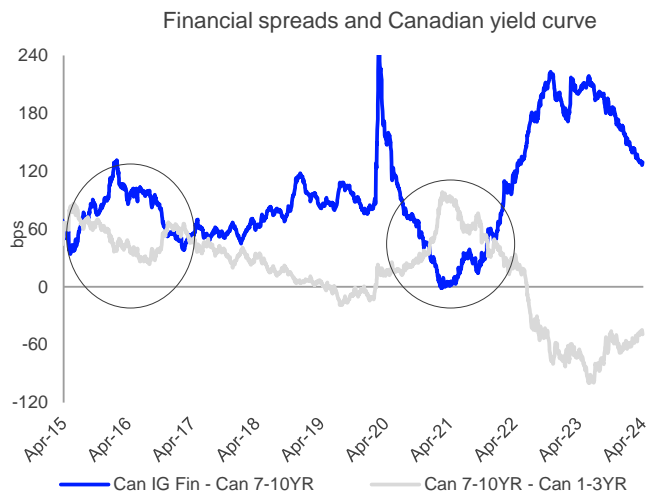


Chart 6: Financial spreads fell, helped by the govt curve disinverting, and higher for longer rates. Although the curve remains deeply inverted, relative spreads could fall further, given higher net interest income.



Source: FTSE Russell. All data as of April 22 (Charts 3 and 4) and April 30, 2024 elsewhere. 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 High Yield Credit Analysis

Chart 1: US HY credit yields rebounded more than Canadian HY credit, showing strong correlation to the risk rally reversal in equities IG yields also backed up, due to the correlation with higher govt yields.

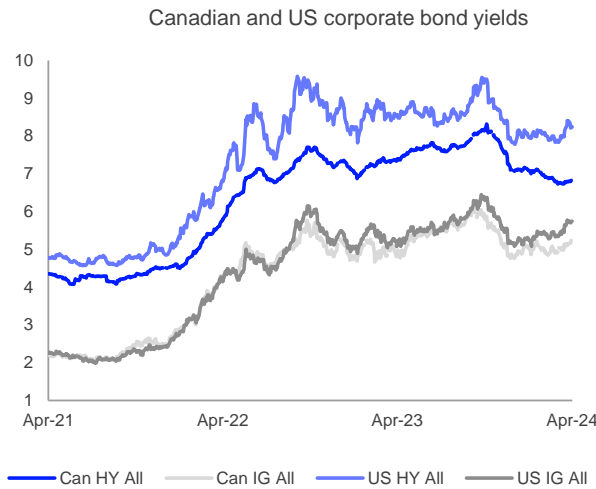


Chart 2: Both Canadian and US HY spreads have continued to tighten since January, with April's more modest moves tracking the lacklustre equity performance.

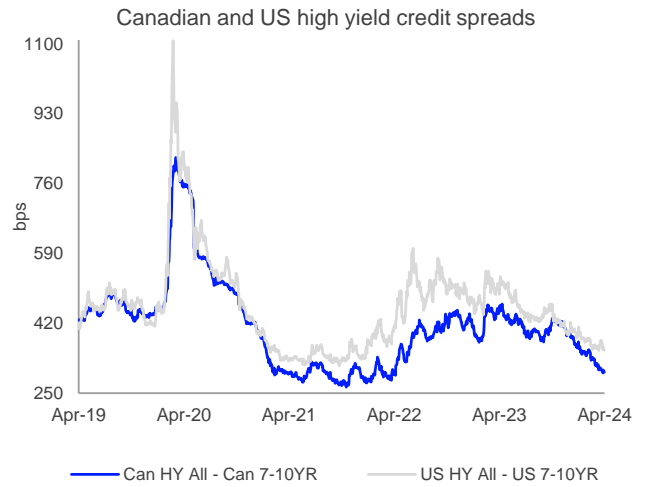


Chart 3: HY Canadian credit duration has fallen marginally in all sectors in April, with financials & communications settling at 2.9 and 3.3 years respectively, and contributing the most to the fall in overall duration.

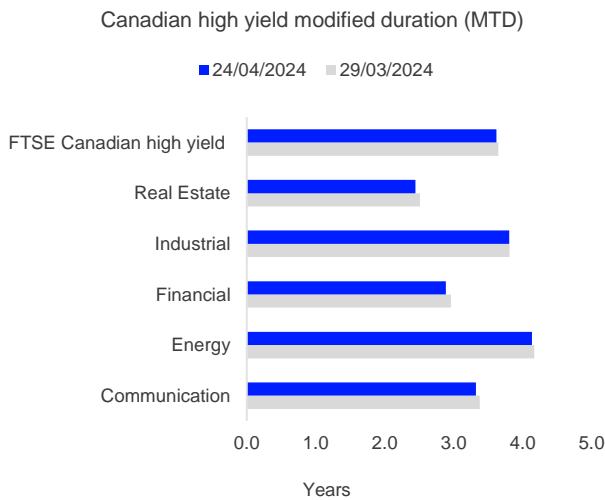


Chart 4: Since 2019, financial duration has barely changed, with the biggest move observed in industrials, which has lost nearly one year, with a duration of 3.8 yrs, while real estate has the lowest at 2.5 yrs.

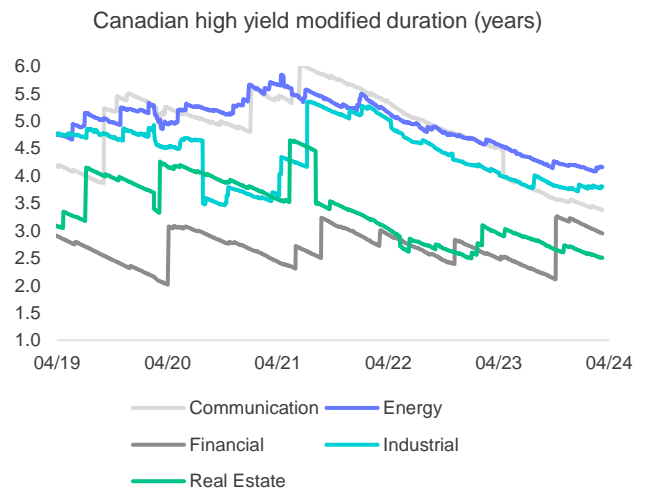


Chart 5: Canadian real estate yields have fallen the most in April, compared to the back-up by HY financial and energy yields, reflecting the economic slowdown and pressures on housing rentals.

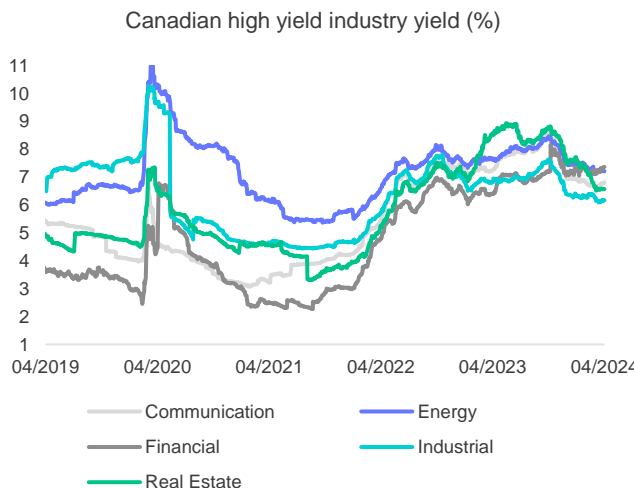
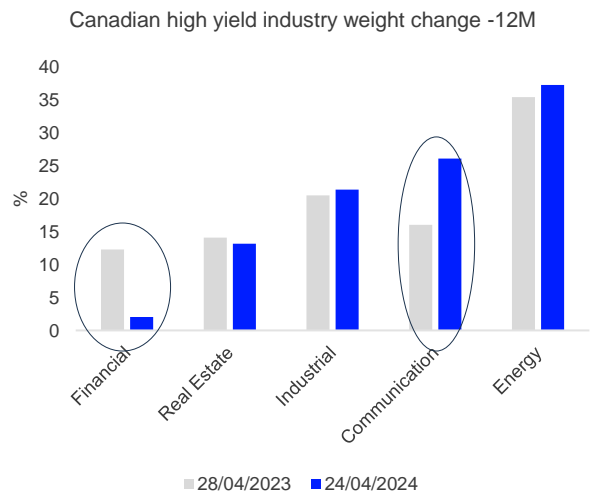


Chart 6: Financials saw the biggest decline in weightings over the last twelve months and communication the largest increase, with the energy weight still making up just under 40% of the universe.



Source: FTSE Russell and LSEG. All data as of April 24, 2024 and April 30, 2024 for charts 1 and 2. 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: 7-10 year yields generally backed up further in April, led by the US, after the inflation uptick in March. Better Eurozone inflation numbers restricted the rise in Bund yields. JGB yields edged higher.

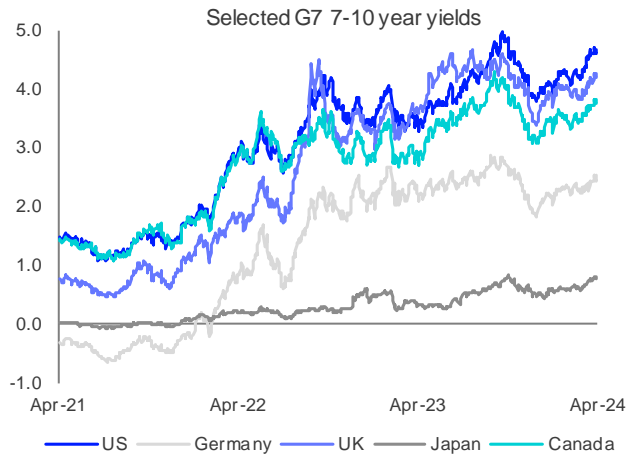


Chart 2: Real yields were led higher by US TIPS in April, as real US growth remained buoyant. Real yields elsewhere moved higher, as markets adjusted rate expectations to receding prospects of early easing.

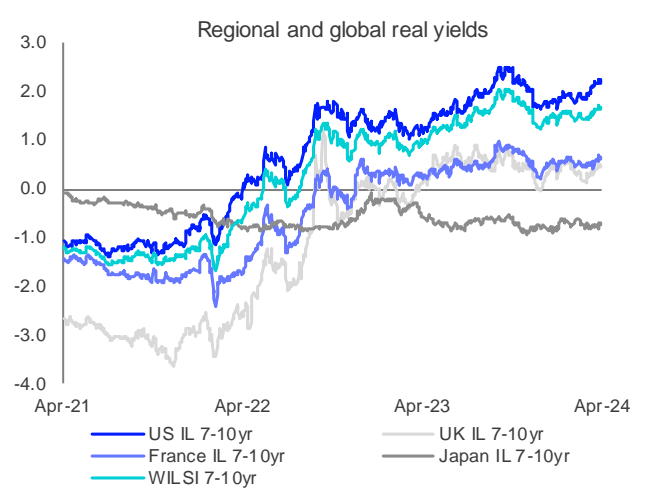


Chart 3: Yield curves disinverted further as longer dated yields backed up in April, though remained negative. The JGB curve reacted modestly to the end of curve control, but the 10s/2s yield curve did steepen a little.

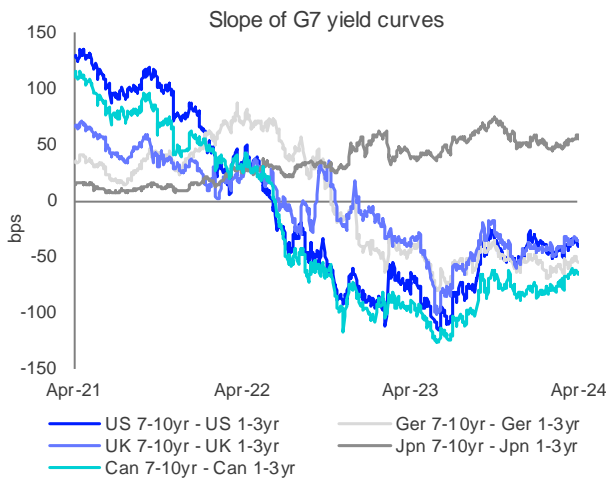


Chart 4: Long end yields backed up further, as the "higher for longer" narrative dominated most gov't bond markets. However, better German inflation data restricted the disinversion of the long Bund curve.

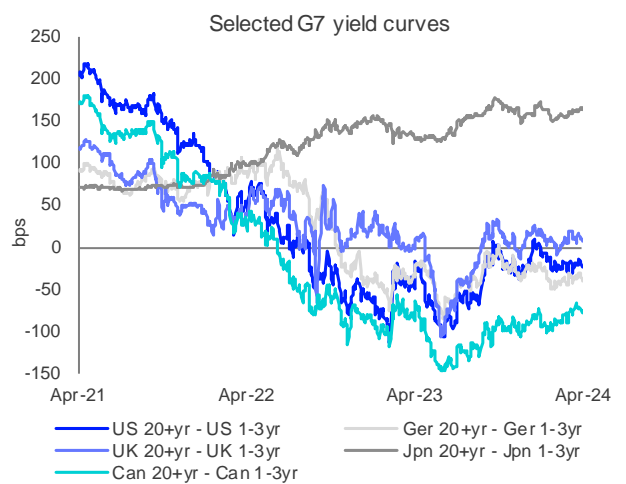


Chart 5: Inflation breakevens were driven higher in April. This was the pattern for most of the G7 and the BoJ will welcome the new cycle high in Japanese breakevens, as it seeks to reflate the economy.

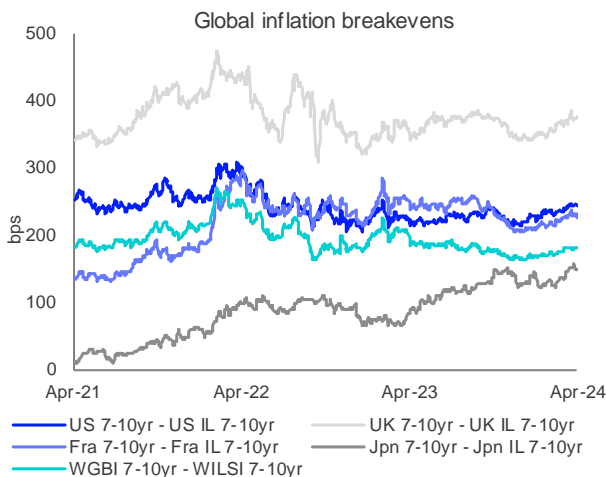
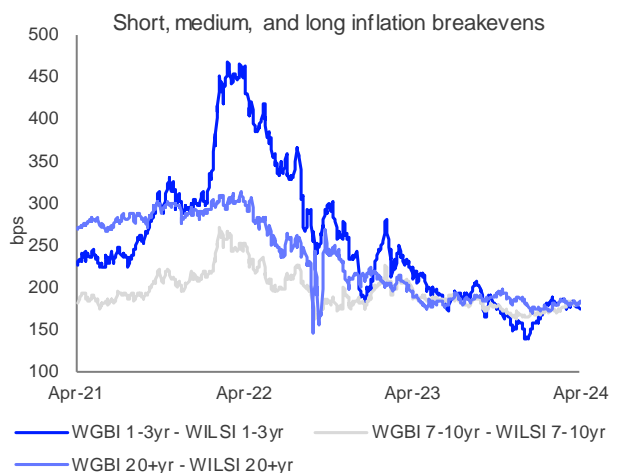


Chart 6: Global inflation breakevens have remained stable at around 2%, after inflation stalled or fell a little, except in the US. Short-dated breakevens remain most sensitive to spot inflation rates.



Source: FTSE Russell and LSEG. All data as of April 30, 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.

# SI Corporate Bond Analysis

Chart 1: SI corporate returns were all negative over 3 months, with PAB (Paris aligned benchmark) weakest, losing near 2%. However, returns for the indices remain positive over 1-year and 5-year periods.

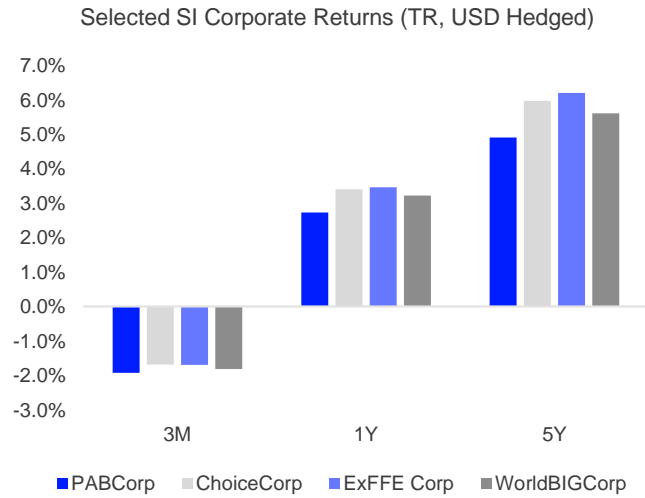


Chart 2: On a relative basis, PAB has underperformed WorldBIG Corp post-Covid, while Ex FFE and Choice outperformed. Performance variation has largely been driven by duration as yields have continued to rise.

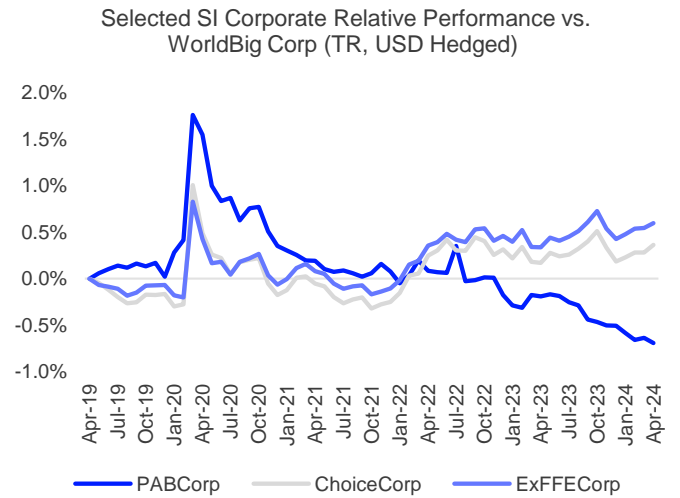


Chart 3: Also contributing to the divergence in performance was the PAB underweight in Banks - a strong performer over 12M, following the US banking crisis in 2023, and helped by higher rates.

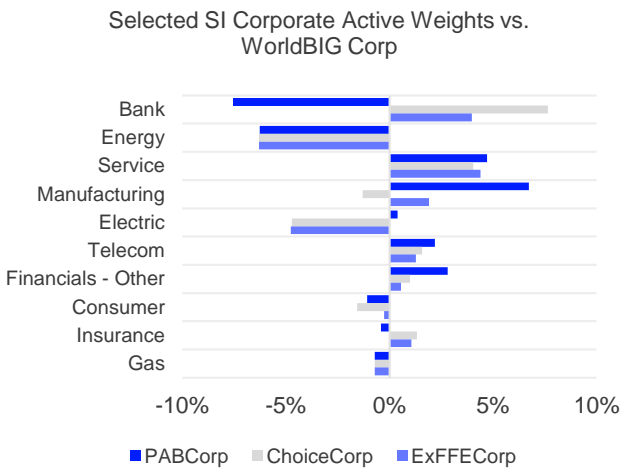


Chart 4: SI Indices have a lower BBB exposure vs WorldBIG in favour of AAAs and AAs. PAB shows the highest credit quality, resulting in an underperformance, as lower grade credit has outperformed.

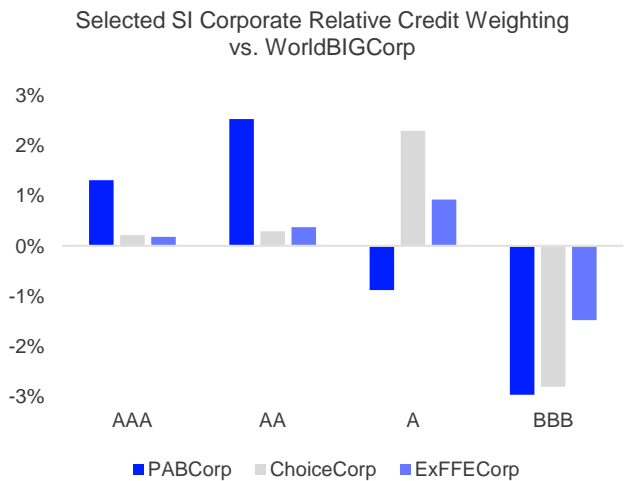


Chart 5: Spread tightening in recent months has occurred despite yields at high levels. Dislocation between spreads and yields suggests spread tightening has driven a large share of recent performance.

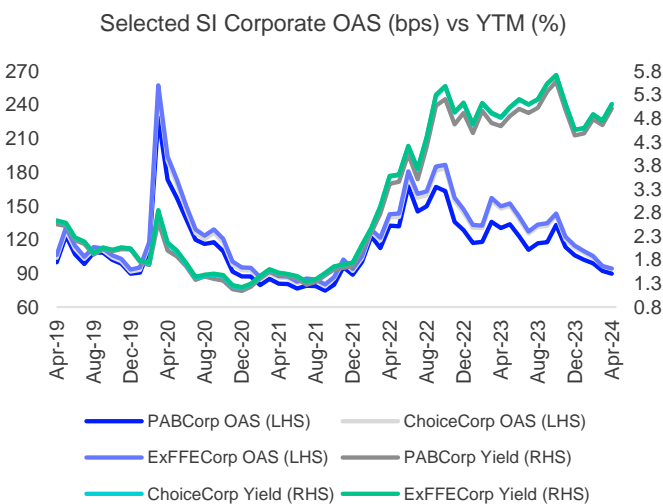
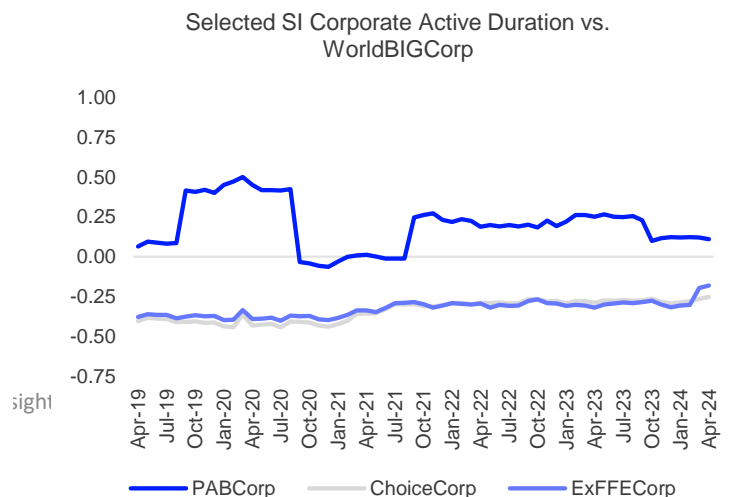


Chart 6: Active duration for PAB has been mostly positive in the past 5 years, despite some volatility. In contrast, Choice and ExFFE show low vol and consistently negative active duration versus WorldBig Corp.



Source: FTSE Russell and LSEG. All data as of April 30, 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 & YTD % (CAD, LC, TR)

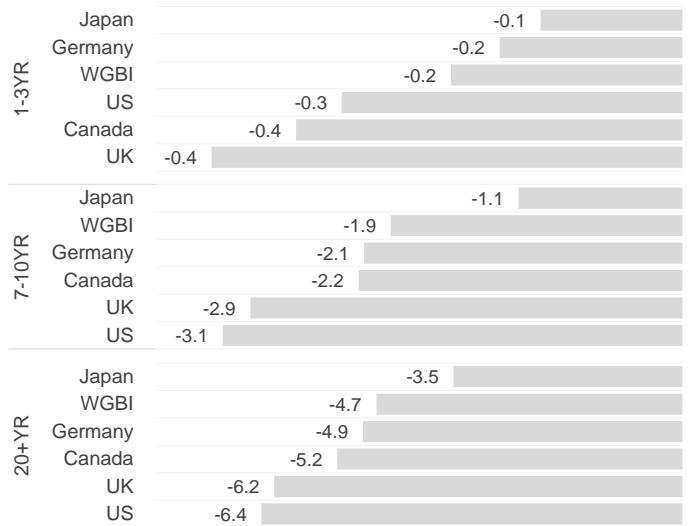
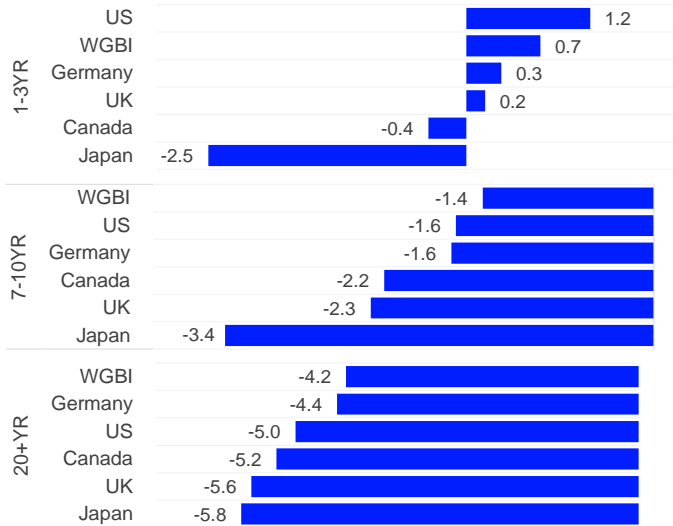
Both conventional and real return bonds fell back in April, led by longer maturities and JGBs in Canadian dollar terms. The “higher for longer” narrative still predominates, and negative carry has become more of a factor. Currency weakness depressed JGB returns, and long gilts suffered from extra duration, but long Canadian gov bonds and Treasuries also lost 5% in April. YTD returns show a similar profile.

Short US Treasuries and Bunds escaped further losses in April, with modest positive returns, while Canadian shorts were marginally negative. JGBs again underperformed, due to the weak yen, with losses of 3-6% across the curve in Canadian dollars.

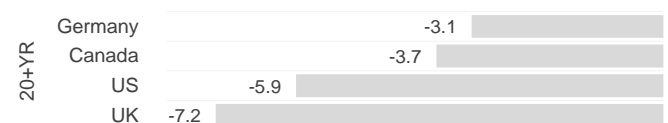
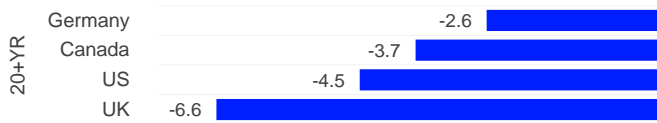
YTD returns pick up more severe yen weakness, with JGBs losing 7-12% in Canadian dollars. But duration also took its toll on long gilts and Canadian government bonds, down 8-10%. Long Canadian real return bonds fell both in April (-4%) and over 12M (-5%) but were less negative than long conventional returns during the same period.

## CONVENTIONAL BONDS

1M CAD 1M LCY

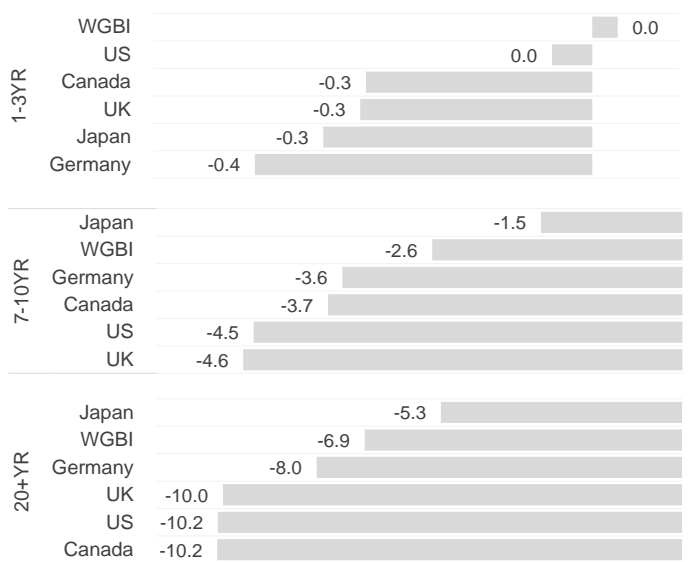
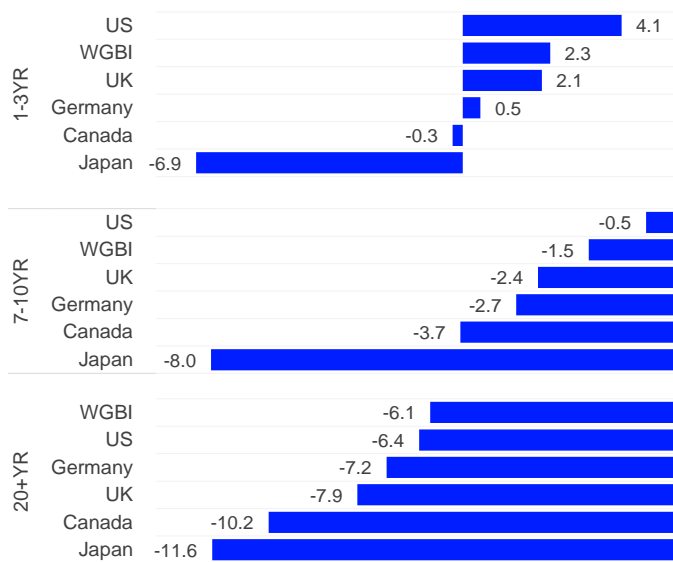


## INFLATION LINKED BONDS

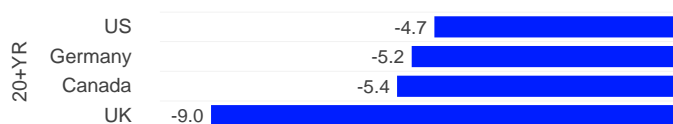


## CONVENTIONAL BONDS

YTD CAD YTD LCY



## INFLATION LINKED BONDS



Source: FTSE Russell. All data as of April 30, 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.

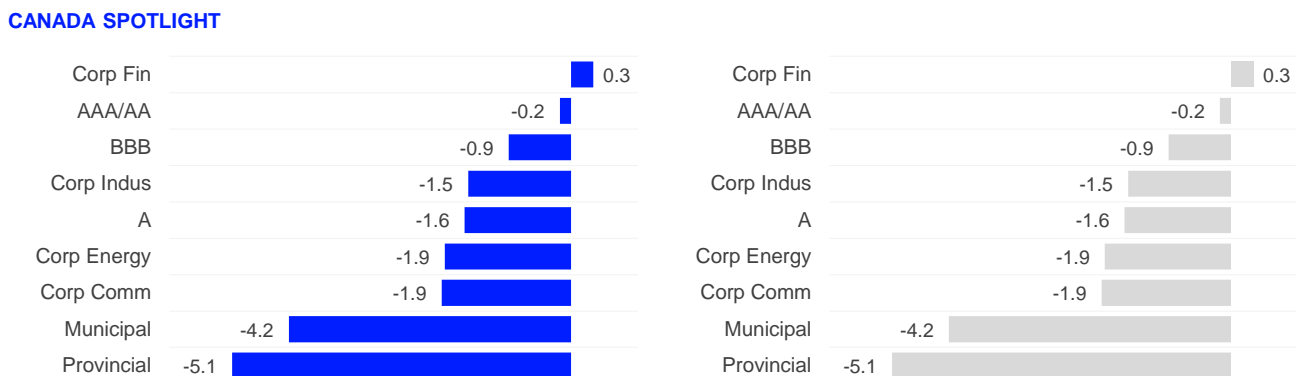
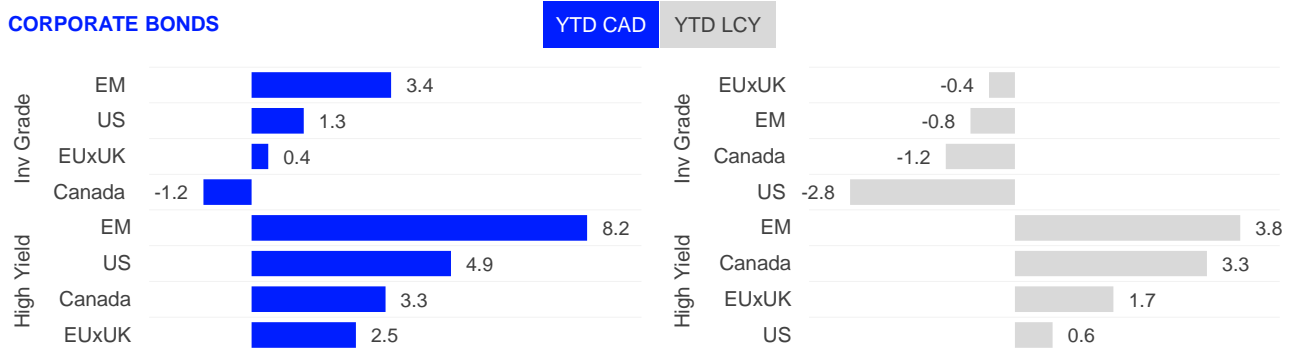
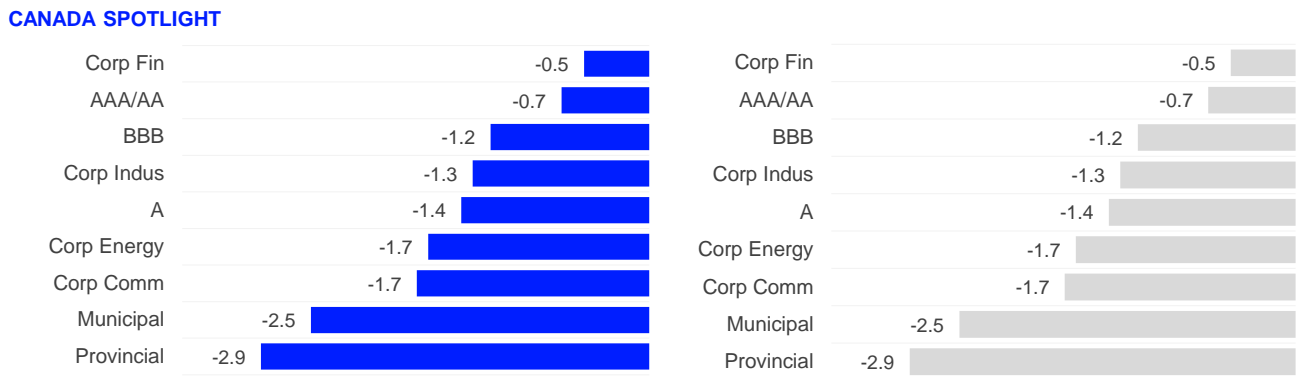
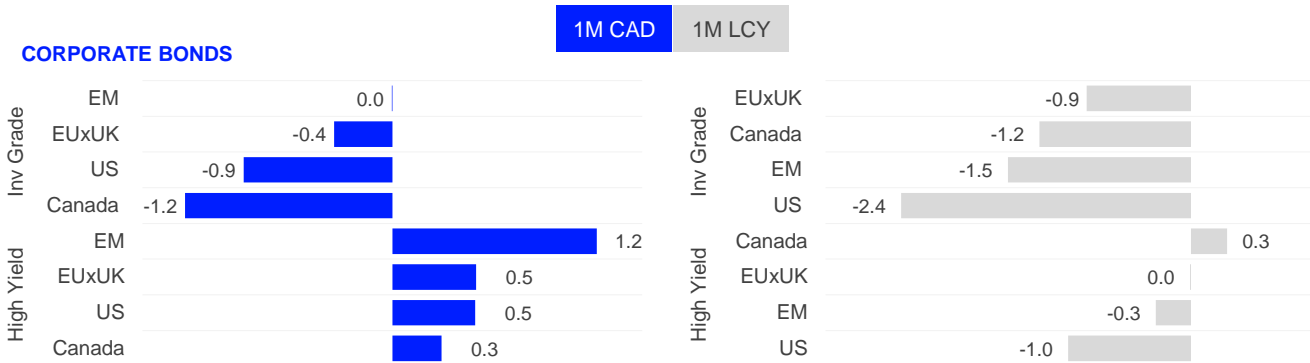


# Canadian and Corporate Bond Returns – 1M & YTD % (CAD, LC, TR)

Credit held up better than government bonds in April but still lost some ground, as the risk rally reversed. High yield outperformed investment grade equivalents, with the latter impacted by the back-up in yields after rate cut expectations receded. A return of risk aversion meant that both munis and provis tracked government bonds lower in April, extending year to date losses.

Credit markets reflected weakness in equities in April, as the risk rally faltered, with high yield credit outperforming investment grade, but only modestly. EM credit outperformed, gaining 1.2% in Canadian dollars, with currency strength improving returns, while returns for Canadian HY credit was flat. YTD, HY returns remain positive.

Higher quality corporates fared better in April, after losing about 1%. Municipals and Provincials lost about 3% in April and 4-5% since January.



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 April 30, 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 – 1M & 12M % (CAD, TR)

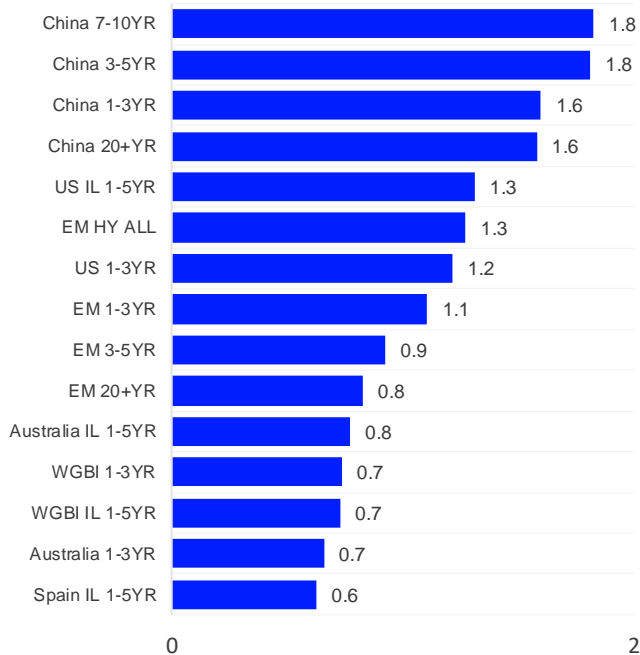
The back-up in yields in April affected most longer duration bonds, which returned into the bottom 15 of the performance table after a period of outperformance, notably in Q4, 2023. China, EM and short duration bonds showed their resilience, with marginal gains. Over 12 months, high yield credits dominate, including Canadian high yields, up 11% on 12M, as do Italian government bonds and long Chinese debt.

Duration again proved the investor's foe in April, apart from longer China and EM bonds, which escaped largely unscathed. The bottom 15 performers on 1M were all long dated bonds. Yen weakness put JGBs at the bottom of the performance table both in April and over 12M, with losses of up to 24% for JGB with long maturities.

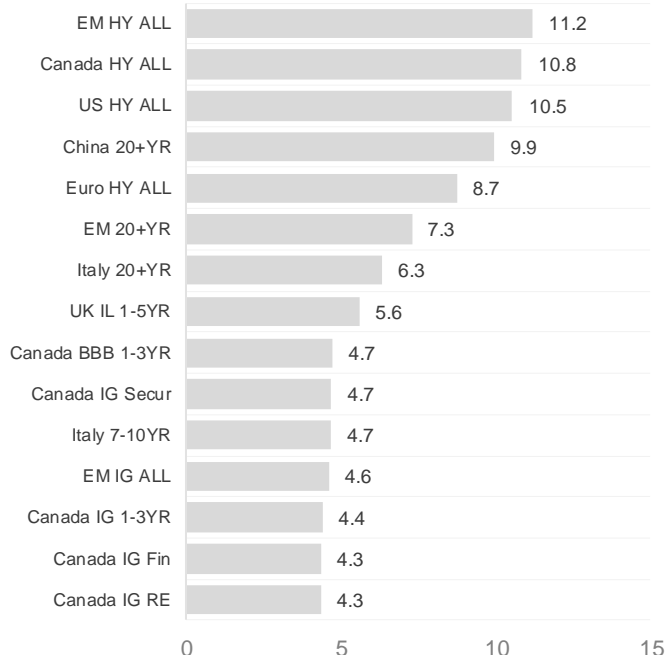
High yield credits, Canadian corporates, especially short BBBs, featured in the top 15 rank over 12M, with returns of 4-11%.

1M CAD 12M CAD

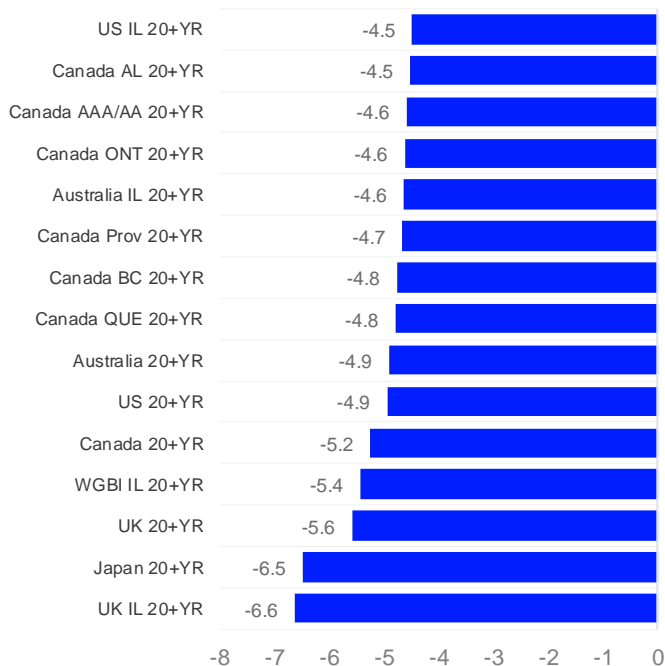
### Top 15



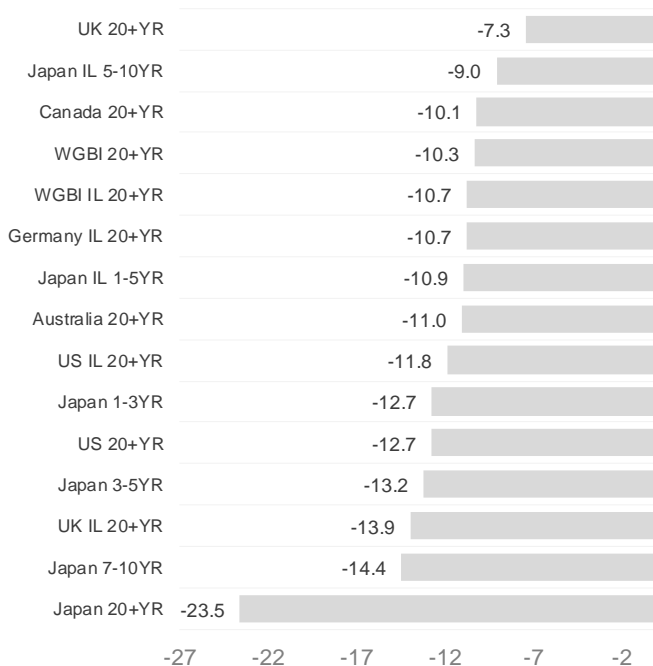
### Top 15



### Bottom 15



### Bottom 15



Source: FTSE Russell. All data as of April 30, 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) – Apr 30, 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	-0.02	-2.77	2.39	3.46	-0.26	-4.27	1.75	0.45
	7-10YR	-2.29	-4.98	3.71	4.80	-3.70	-7.58	-3.60	-4.84
	20+YR	-5.93	-8.52	4.78	5.88	-10.16	-13.78	-10.14	-11.29
<b>Inflation-Linked</b>	20+YR	-2.46	-5.14	#DIV/0!	#DIV/0!	-5.44	-9.24	-4.37	-5.59
<b>Corporate</b>	1-3YR	0.49	-2.27	4.57	5.66	0.54	-3.51	4.40	3.07
	7-10YR	-0.66	-3.39	6.98	8.10	-1.17	-5.15	2.46	1.15
	20+YR	-2.72	-5.40	8.33	9.46	-5.02	-8.84	-0.58	-1.85
<b>AAA/AA</b>	1-3YR	0.37	-2.39	4.33	5.42	0.32	-3.71	3.95	2.62
	7-10YR	-0.67	-3.40	6.37	7.48	-0.97	-4.96	1.98	0.67
	20+YR	-4.68	-7.30	8.25	9.38	-7.96	-11.66	-3.45	-4.68
	All	0.07	-2.69	4.69	5.78	-0.17	-4.18	3.71	2.38
<b>A</b>	1-3YR	0.46	-2.30	4.41	5.50	0.51	-3.54	4.28	2.95
	7-10YR	-0.96	-3.69	6.18	7.29	-1.62	-5.57	1.50	0.21
	20+YR	-3.11	-5.78	7.57	8.69	-5.59	-9.39	-1.72	-2.98
	All	-0.76	-3.49	5.53	6.63	-1.59	-5.54	2.15	0.84
<b>BBB</b>	1-3YR	0.57	-2.19	4.86	5.96	0.65	-3.40	4.72	3.39
	7-10YR	-0.52	-3.25	7.40	8.53	-0.97	-4.96	2.96	1.65
	20+YR	-2.11	-4.80	9.40	10.54	-4.10	-7.96	1.10	-0.19
	All	-0.34	-3.08	6.61	7.73	-0.93	-4.91	3.32	2.00
<b>Sectors</b>	Comm	-1.11	-3.83	7.00	8.12	-1.93	-5.87	2.23	0.92
	Energy	-0.76	-3.49	7.12	8.25	-1.88	-5.83	2.05	0.75
	Fin	0.35	-2.41	4.91	6.01	0.34	-3.70	4.35	3.02
	Indus	-0.75	-3.48	5.70	6.81	-1.54	-5.49	2.38	1.07
	Infra	-2.24	-4.93	6.55	7.66	-4.08	-7.93	-0.55	-1.82
	RE	0.26	-2.50	5.79	6.90	0.37	-3.66	4.35	3.01
	Secur	0.72	-2.06	4.41	5.50	0.97	-3.09	4.69	3.36
	All	-0.34	-3.08	6.61	7.73	-0.93	-4.91	3.32	2.00
<b>Provinces (All)</b>	1-3YR	-0.08	-2.83	2.84	3.92	-0.39	-4.40	1.88	0.58
	7-10YR	-1.94	-4.64	4.39	5.48	-3.17	-7.06	-1.45	-2.71
	20+YR	-5.23	-7.84	5.60	6.71	-8.44	-12.12	-6.14	-7.34
	All	-3.07	-5.74	4.60	5.70	-5.06	-8.88	-2.93	-4.17
<b>Ontario</b>	1-3YR	-0.05	-2.80	2.83	3.91	-0.33	-4.34	1.91	0.61
	7-10YR	-1.90	-4.60	4.42	5.51	-3.10	-7.00	-1.46	-2.71
	20+YR	-5.08	-7.70	5.79	6.90	-8.26	-11.95	-6.03	-7.23
	All	-2.87	-5.54	4.55	5.65	-4.75	-8.58	-2.64	-3.88
<b>Alberta</b>	1-3YR	-0.06	-2.81	2.68	3.75	-0.38	-4.39	1.76	0.46
	7-10YR	-1.83	-4.53	4.17	5.26	-3.05	-6.95	-1.17	-2.44
	20+YR	-4.94	-7.56	5.94	7.05	-8.50	-12.18	-6.26	-7.46
	All	-2.64	-5.32	4.71	5.81	-4.63	-8.46	-2.58	-3.83
<b>Quebec</b>	1-3YR	-0.18	-2.92	2.96	4.04	-0.56	-4.56	1.90	0.59
	7-10YR	-2.05	-4.74	4.50	5.60	-3.33	-7.22	-1.56	-2.82
	20+YR	-5.52	-8.12	5.21	6.32	-8.78	-12.44	-6.35	-7.55
	All	-3.49	-6.14	4.60	5.69	-5.67	-9.46	-3.45	-4.68
<b>BC</b>	1-3YR	0.05	-2.71	2.46	3.54	-0.23	-4.24	1.84	0.54
	7-10YR	-1.97	-4.67	4.17	5.26	-3.19	-7.09	-1.54	-2.80
	20+YR	-5.60	-8.20	5.56	6.66	-8.73	-12.40	-6.53	-7.72
	All	-3.39	-6.05	4.63	5.72	-5.38	-9.18	-3.37	-4.61

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 April 30, 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) – Apr 30, 2024

## Government bond returns

Top 15% Bottom 15%

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

		1M		3M		YTD		12M	
		Local	CAD	Local	CAD	Local	CAD	Local	CAD
US	1-3YR	-0.32	1.19	-0.41	2.41	-0.05	4.14	2.38	3.70
	7-10YR	-3.06	-1.58	-4.36	-1.66	-4.48	-0.48	-5.30	-4.07
	20+YR	-6.40	-4.97	-7.64	-5.03	-10.15	-6.39	-13.82	-12.70
	IG All	-2.38	-0.89	-2.79	-0.04	-2.80	1.27	1.13	2.44
	HY All	-1.01	0.50	0.61	3.46	0.64	4.86	9.12	10.53
UK	1-3YR	-0.45	0.18	-0.12	0.98	-0.26	2.07	2.89	3.83
	7-10YR	-2.87	-2.26	-2.84	-1.76	-4.59	-2.36	-0.50	0.41
	20+YR	-6.20	-5.61	-4.78	-3.72	-10.04	-7.94	-8.16	-7.32
EUR	IG All	-0.86	-0.35	-0.56	0.66	-0.44	0.41	5.17	3.18
	HY All	-0.01	0.50	0.74	1.97	1.67	2.54	10.83	8.73
Japan	1-3YR	-0.13	-2.49	-0.26	-4.73	-0.31	-6.94	-0.40	-12.70
	7-10YR	-1.09	-3.42	-0.99	-5.43	-1.48	-8.04	-2.35	-14.41
	20+YR	-3.48	-5.76	-2.52	-6.89	-5.28	-11.58	-12.76	-23.53
China	1-3YR	0.23	1.56	0.87	2.84	1.26	3.33	3.13	-0.05
	7-10YR	0.43	1.76	1.47	3.45	2.58	4.67	6.12	2.85
	20+YR	0.31	1.64	2.10	4.09	6.00	8.17	13.45	9.95
EM	1-3YR	0.11	1.07	0.76	2.39	1.23	2.71	4.13	1.51
	7-10YR	-0.67	0.12	-0.15	1.45	0.45	1.80	4.86	1.98
	20+YR	-0.26	0.86	0.91	2.83	3.69	5.54	9.94	7.29
	IG All	-1.50	0.00	-0.79	2.02	-0.76	3.40	3.27	4.60
	HY All	-0.29	1.23	2.29	5.18	3.83	8.18	9.75	11.17
Germany	1-3YR	-0.17	0.34	-0.38	0.84	-0.38	0.46	1.73	-0.20
	7-10YR	-2.12	-1.62	-3.03	-1.85	-3.56	-2.73	0.32	-1.58
	20+YR	-4.86	-4.37	-5.55	-4.40	-7.99	-7.21	-3.87	-5.69
Italy	1-3YR	-0.14	0.37	-0.21	1.01	-0.01	0.84	3.12	1.16
	7-10YR	-1.31	-0.81	-0.53	0.68	-0.31	0.54	6.70	4.68
	20+YR	-2.63	-2.13	0.57	1.80	0.28	1.14	8.38	6.33
Spain	1-3YR	-0.11	0.40	-0.15	1.07	0.01	0.86	2.48	0.54
	7-10YR	-1.27	-0.76	-1.13	0.08	-1.49	-0.65	3.92	1.95
	20+YR	-2.69	-2.19	-0.83	0.38	-2.59	-1.76	4.71	2.73
France	1-3YR	-0.25	0.26	-0.53	0.68	-0.56	0.29	1.89	-0.04
	7-10YR	-1.68	-1.18	-2.55	-1.36	-3.04	-2.22	1.50	-0.42
	20+YR	-3.65	-3.16	-4.19	-3.02	-6.47	-5.67	0.23	-1.67
Sweden	1-3YR	-0.16	-1.25	-0.15	-3.35	-0.17	-4.49	2.22	-3.23
	7-10YR	-1.07	-2.15	-1.88	-5.02	-3.02	-7.22	1.06	-4.34
	20+YR	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Australia	1-3YR	-0.40	0.64	0.11	1.12	0.47	-0.39	1.74	1.26
	7-10YR	-2.89	-1.87	-1.89	-0.90	-1.95	-2.79	-3.69	-4.14
	20+YR	-5.93	-4.94	-4.35	-3.38	-5.87	-6.67	-10.57	-10.99
NZ	1-3YR	0.01	0.44	0.78	-0.37	0.87	-1.78	3.69	0.63
	7-10YR	-1.87	-1.44	-1.00	-2.13	-2.37	-4.93	-1.04	-3.97
Canada	1-3YR	-0.37	-0.37	-0.02	-0.02	-0.26	-0.26	1.75	1.75
	7-10YR	-2.15	-2.15	-2.29	-2.29	-3.70	-3.70	-3.60	-3.60
	20+YR	-5.25	-5.25	-5.93	-5.93	-10.16	-10.16	-10.14	-10.14

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

Source: FTSE Russell. All data as of April 30, 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) – Apr 25, 2024

## Inflation-Linked Bond Returns

Top 15% Bottom 15%

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

		1M		3M		YTD		12M	
		Local	CAD	Local	CAD	Local	CAD	Local	CAD
US	1-5YR	-0.22	1.30	-0.10	2.72	0.34	4.54	2.23	3.55
	5-10YR	-1.92	-0.43	-2.75	0.00	-2.29	1.81	-2.48	-1.22
	20+YR	-5.92	-4.49	-7.54	-4.93	-8.56	-4.73	-12.95	-11.82
UK	1-5YR	-0.10	0.53	0.33	1.44	-0.42	1.91	4.64	5.59
	5-10YR	-1.66	-1.04	-0.81	0.30	-2.41	-0.12	2.41	3.34
	20+YR	-7.21	-6.63	-2.36	-1.27	-11.10	-9.02	-14.69	-13.91
EUxUK	1-5YR	-0.02	0.49	-0.07	1.15	-0.32	0.53	0.72	-1.19
	5-10YR	-0.87	-0.36	-1.35	-0.14	-2.15	-1.31	-1.00	-2.88
	20+YR	-3.09	-2.60	-3.05	-1.86	-5.97	-5.16	-8.99	-10.71
Japan	1-5YR	-0.20	-2.56	-0.72	-5.17	-0.69	-7.30	1.65	-10.91
	5-10YR	-0.11	-2.47	-0.13	-4.61	0.17	-6.50	3.82	-9.00
EM	1-5YR	-0.65	-1.56	0.93	0.32	1.87	0.62	10.73	3.32
	5-10YR	-2.21	-2.46	-1.58	-1.42	-1.61	-2.15	6.65	2.48
	20+YR	-3.23	-4.31	-4.78	-4.65	-6.38	-6.83	3.66	3.55
Germany	1-5YR	-0.02	0.49	-0.07	1.15	-0.32	0.53	0.72	-1.19
	5-10YR	-0.87	-0.36	-1.35	-0.14	-2.15	-1.31	-1.00	-2.88
	20+YR	-3.09	-2.60	-3.05	-1.86	-5.97	-5.16	-8.99	-10.71
Italy	1-5YR	-0.05	0.46	0.13	1.35	0.14	0.99	3.79	1.83
	5-10YR	-0.43	0.08	1.07	2.30	0.90	1.76	6.15	4.14
	20+YR	-1.51	-1.00	4.97	6.25	2.97	3.84	5.62	3.62
Spain	1-5YR	0.11	0.62	0.07	1.29	-0.19	0.66	1.81	-0.12
	5-10YR	-0.25	0.26	0.54	1.76	-0.02	0.83	3.08	1.13
France	1-5YR	-0.36	0.15	-0.78	0.43	-0.94	-0.09	0.30	-1.60
	5-10YR	-0.73	-0.22	-1.16	0.04	-1.93	-1.09	-0.19	-2.08
	20+YR	-2.40	-1.90	-1.43	-0.23	-5.33	-4.53	-3.88	-5.70
Sweden	1-5YR	0.19	-0.91	0.31	-2.90	-0.07	-4.40	3.07	-2.43
	5-10YR	0.52	-0.58	0.39	-2.82	-1.02	-5.31	3.86	-1.69
Australia	1-5YR	-0.29	0.75	0.38	1.39	0.33	-0.53	2.58	2.10
	5-10YR	-1.79	-0.76	-0.84	0.16	-1.24	-2.07	0.33	-0.14
	20+YR	-5.64	-4.65	-4.00	-3.03	-7.83	-8.62	-5.75	-6.19
NZ	5-10YR	-0.74	-0.31	1.14	-0.02	0.22	-2.41	1.93	-1.08
	20+YR	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Canada	20+YR	-3.66	-3.66	-2.46	-2.46	-5.44	-5.44	-4.37	-4.37

Indices used: FTSE Canada RRB Canada Bond Index.

Source: FTSE Russell. All data as of April 30, 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 April 30, 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	4.29	3.81	3.72	
	3M Ago	3.99	3.35	3.30	
	6M Ago	4.55	4.08	3.93	
	12M Ago	3.55	2.83	2.94	
<b>IL</b>	Current			1.96	
	3M Ago			1.70	
	6M Ago				
	12M Ago			1.26	
<b>Provincial</b>	Current	4.44	4.38	4.70	4.55
	3M Ago	4.07	3.91	4.26	4.11
	6M Ago	4.71	4.71	4.95	4.82
	12M Ago	3.72	3.48	3.97	3.77
<b>Ontario</b>	Current	4.45	4.37	4.68	4.53
	3M Ago	4.10	3.91	4.24	4.11
	6M Ago	4.71	4.72	4.94	4.81
	12M Ago	3.74	3.48	3.96	3.77
<b>Quebec</b>	Current	4.42	4.37	4.68	4.54
	3M Ago	4.00	3.89	4.22	4.08
	6M Ago	4.65	4.71	4.91	4.80
	12M Ago	3.68	3.47	3.93	3.75
<b>Alberta</b>	Current	4.43	4.33	4.69	4.51
	3M Ago	4.05	3.88	4.30	4.11
	6M Ago	4.73	4.65	4.95	4.79
	12M Ago	3.70	3.46	4.00	3.76
<b>BC</b>	Current	4.47	4.38	4.69	4.55
	3M Ago	4.12	3.91	4.22	4.09
	6M Ago	4.77	4.69	4.94	4.82
	12M Ago	3.68	3.46	3.96	3.75
<b>Municipal</b>	Current	4.46	4.46	4.91	4.66
	3M Ago	4.07	3.99	4.47	4.23
	6M Ago	4.74	4.78	5.18	4.94
	12M Ago	3.77	3.55	4.19	3.90
<b>Corporate</b>	Current	5.12	5.25	5.39	5.21
	3M Ago	4.90	4.90	5.06	4.94
	6M Ago	5.87	5.92	5.85	5.88
	12M Ago	4.86	4.71	4.90	4.84
<b>High Yield</b>	Current				6.82
	3M Ago				7.04
	6M Ago				8.32
	12M Ago				7.37

		1-5YR	5-10YR	20+YR	All Mat
<b>AAA/AA</b>	Current	4.85	4.87	4.89	4.85
	3M Ago	4.60	4.53	4.51	4.60
	6M Ago	5.57	5.61	5.24	5.56
	12M Ago	4.53	4.34	4.38	4.51
<b>A</b>	Current	5.04	4.98	5.16	5.07
	3M Ago	4.81	4.62	4.81	4.79
	6M Ago	5.78	5.62	5.57	5.70
	12M Ago	4.77	4.40	4.62	4.67
<b>BBB</b>	Current	5.31	5.40	5.72	5.43
	3M Ago	1.98	1.64	2.01	5.17
	6M Ago	2.82	2.50	2.64	6.14
	12M Ago	1.62	1.23	1.64	5.12
<b>Comm</b>	Current	5.19	5.74	5.29	5.29
	3M Ago	4.81	5.41	5.10	4.96
	6M Ago	5.95	6.32	5.98	5.96
	12M Ago	4.67	5.34	4.93	4.99
<b>Energy</b>	Current	5.29	5.36	5.46	5.38
	3M Ago	5.10	5.06	5.17	5.12
	6M Ago	5.98	6.02	5.99	6.00
	12M Ago	4.93	4.81	4.98	4.92
<b>Financial</b>	Current	5.08	5.19	5.28	5.09
	3M Ago	4.85	4.88	4.98	4.86
	6M Ago	5.86	6.00	5.79	5.87
	12M Ago	4.84	4.75	5.07	4.84
<b>Industrial</b>	Current	5.08	5.16	5.44	5.19
	3M Ago	4.82	4.76	5.13	4.88
	6M Ago	5.72	5.73	5.91	5.77
	12M Ago	4.78	4.64	5.04	4.81
<b>Infrastructure</b>	Current	4.82	5.01	5.23	5.13
	3M Ago	4.56	4.60	4.86	4.77
	6M Ago	5.39	5.52	5.61	5.56
	12M Ago	4.37	4.35	4.66	4.57
<b>Securitization</b>	Current	5.08			5.08
	3M Ago	4.88			4.88
	6M Ago	5.80			5.81
	12M Ago	4.79			4.79

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 April 30, 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 April 30, 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	5.09	4.80	4.69	4.85	2.41	2.24	2.44	5.75	8.22
	3M Ago	4.33	3.93	3.93	4.31	1.98	1.64	2.01	5.14	7.97
	6M Ago	5.17	4.87	4.90	5.19	2.82	2.50	2.64	6.38	9.46
	12M Ago	4.24	3.62	3.41	3.75	1.68	1.23	1.58	5.15	8.47
UK	Current	4.64	4.31	4.28	4.72	0.30	0.49	1.38		
	3M Ago	4.21	3.73	3.75	4.39	0.16	0.21	1.25		
	6M Ago	4.67	4.45	4.43	4.91	0.65	0.71	1.51		
	12M Ago	4.05	3.69	3.60	4.04	0.51	0.19	0.70		
Japan	Current	0.21	0.39	0.76	1.86	-1.21	-0.76			
	3M Ago	0.04	0.20	0.59	1.73	-1.65	-0.83			
	6M Ago	0.09	0.34	0.83	1.82	-1.55	-0.65			
	12M Ago	-0.07	0.03	0.32	1.23	-1.50	-0.70			
China	Current	1.89	2.06	2.34	2.61					
	3M Ago	2.07	2.22	2.46	2.70					
	6M Ago	2.27	2.42	2.67	3.08					
	12M Ago	2.28	2.44	2.73	3.14					
EM	Current	3.42	3.86	4.56	3.94	5.65	5.21	5.67	6.01	9.15
	3M Ago	3.34	3.81	4.64	4.17	4.38	4.41	5.03	5.58	9.35
	6M Ago	3.71	4.43	5.00	4.55	4.20	4.73	5.46	6.71	11.34
	12M Ago	3.74	4.17	4.62	4.44	4.12	4.14	5.05	5.60	11.79
Germany	Current	3.08	2.67	2.53	2.69	1.12	0.46	0.43		
	3M Ago	2.57	2.07	2.06	2.38	0.81	0.20	0.27		
	6M Ago	3.09	2.66	2.70	3.05	0.90	0.45	0.65		
	12M Ago	2.72	2.58	2.48	2.63	0.46	0.13	0.03		
Italy	Current	3.45	3.38	3.68	4.24	1.25	1.54	1.79		
	3M Ago	2.96	2.93	3.47	4.21	1.08	1.58	1.94		
	6M Ago	3.77	3.88	4.45	5.06	1.77	2.35	2.53		
	12M Ago	3.36	3.38	3.82	4.39	1.26	1.75	1.80		
France	Current	3.17	2.93	2.96	3.39	0.72	0.65	0.86		
	3M Ago	2.62	2.34	2.52	3.13	0.44	0.37	0.78		
	6M Ago	3.21	3.01	3.23	3.88	0.93	0.78	1.28		
	12M Ago	2.84	2.80	2.86	3.37	0.41	0.36	0.65		
Sweden	Current	3.14	2.68	2.50		1.60	0.85			
	3M Ago	2.68	2.21	2.18		1.26	0.76			
	6M Ago	3.43	3.05	2.94		1.34	1.30			
	12M Ago	2.89	2.63	2.40		0.96	0.71			
Australia	Current	4.16	4.05	4.36	4.75	1.40	1.71	2.06		
	3M Ago	3.69	3.60	3.97	4.42	1.04	1.39	1.81		
	6M Ago	4.49	4.48	4.87	5.33	1.47	2.04	2.53		
	12M Ago	3.13	3.96	3.97	4.27	1.24	1.46	1.72		
NZ	Current	5.16	4.77	4.85	5.17	2.29	2.51			
	3M Ago	4.89	4.44	4.55	4.87	1.72	2.39			
	6M Ago	5.49	5.37	5.55	5.69	2.47	3.05			
	12M Ago	4.89	4.61	4.55	4.63	1.36	1.99			
Canada	Current	4.29		3.81	3.72			1.96	5.21	6.82
	3M Ago	3.99		3.35	3.30			1.70	4.94	7.04
	6M Ago	4.55		4.08	3.93				5.88	8.32
	12M Ago	3.55		2.83	2.94			1.26	4.84	7.37

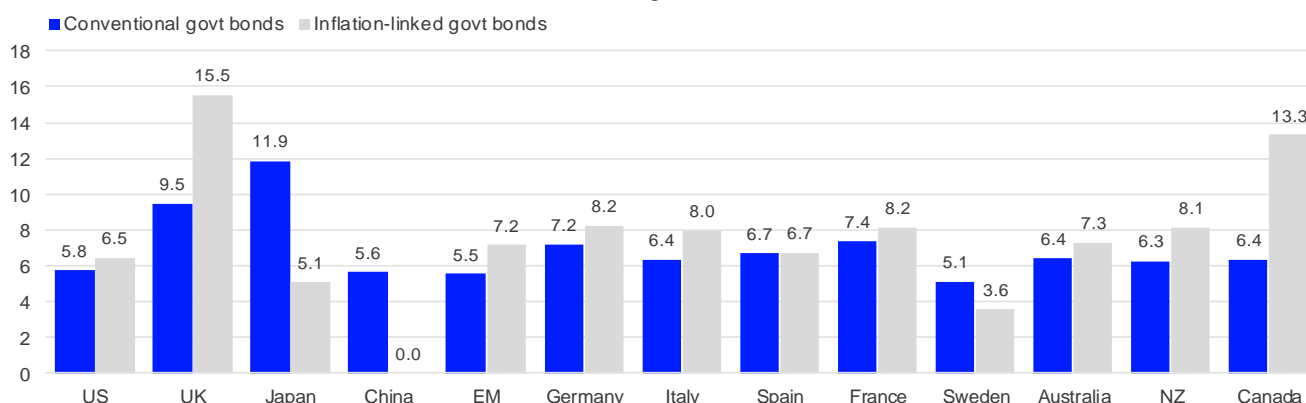
Source: FTSE Russell. All data as of April 30, 2024. Past performance is no guarantee of future results. Please see the end for important legal disclosures. Bond market data is derived from FTSE Fixed Income Indices. See Appendix Glossary for list of indices used for each market. For professional investors only.

## Appendix – Duration and Market Value (USD, Bn) as of April 30, 2024

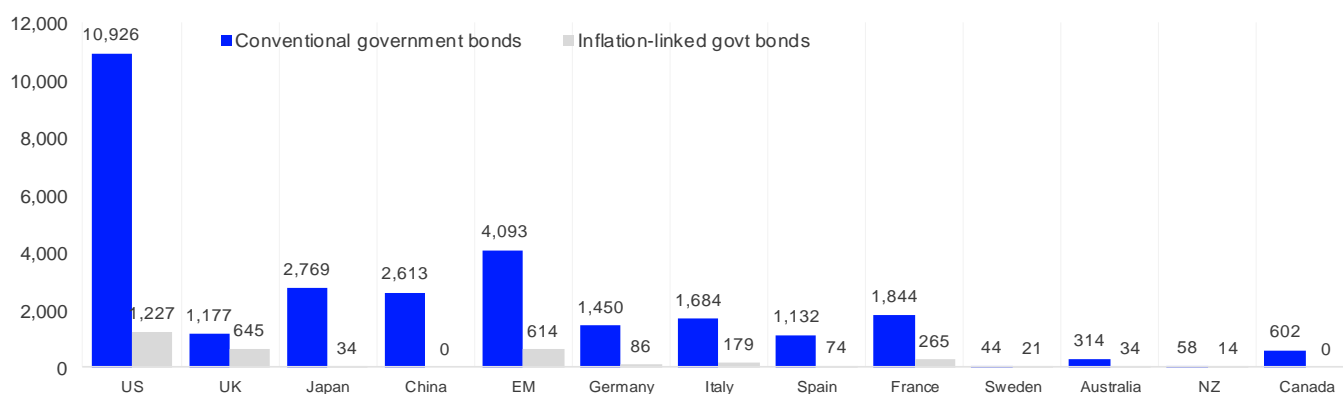
	Conventional government bonds								Inflation-linked government bonds					
	Duration				Market Value				Duration			Market Value		
	3-5YR	7-10YR	20+YR	Overall	3-5YR	7-10YR	20+YR	Total	5-10YR	20+YR	Overall	5-10YR	20+YR	Total
<b>US</b>	3.7	7.2	16.3	<b>5.8</b>	2,616.2	1,102.1	1,256.2	<b>10,925.6</b>	7.0	21.5	<b>6.5</b>	404.3	105.6	<b>1226.6</b>
<b>UK</b>	3.8	7.4	18.2	<b>9.5</b>	160.5	190.7	298.0	<b>1,176.6</b>	7.9	27.4	<b>15.5</b>	114.6	215.7	<b>644.7</b>
<b>Japan</b>	4.0	8.2	23.5	<b>11.9</b>	325.3	351.8	575.8	<b>2,769.1</b>	8.1		<b>5.1</b>	12.3		<b>33.6</b>
<b>China</b>	3.7	7.6	18.0	<b>5.6</b>	614.4	420.5	300.0	<b>2,613.4</b>						
<b>EM</b>	3.6	7.0	16.4	<b>5.5</b>	889.58	733.23	390.39	<b>4,093.2</b>	5.9	13.1	<b>7.2</b>	103.2	154.6	<b>614.5</b>
<b>Germany</b>	3.7	7.7	20.2	<b>7.2</b>	337.41	191.76	182.71	<b>1,449.7</b>	6.6	21.1	<b>8.2</b>	42.8	17.8	<b>85.7</b>
<b>Italy</b>	3.6	7.1	16.5	<b>6.4</b>	312.62	298.99	155.43	<b>1,684.1</b>	7.1	25.7	<b>8.0</b>	64.9	5.6	<b>178.9</b>
<b>Spain</b>	3.6	7.3	17.5	<b>6.7</b>	223.32	201.69	109.61	<b>1,131.8</b>	7.6		<b>6.7</b>	47.2		<b>74.1</b>
<b>France</b>	3.7	7.3	19.4	<b>7.4</b>	340.72	317.34	242.08	<b>1,844.1</b>	6.3	23.9	<b>8.2</b>	87.3	20.9	<b>265.0</b>
<b>Sweden</b>	3.9	7.5		<b>5.1</b>	6.38	13.00		<b>44.4</b>	6.6		<b>3.6</b>	5.3		<b>21.1</b>
<b>Australia</b>	3.4	7.3	16.6	<b>6.4</b>	46.49	88.89	19.32	<b>313.8</b>	6.6	21.8	<b>7.3</b>	10.1	2.7	<b>34.0</b>
<b>NZ</b>	3.3	7.1	15.7	<b>6.3</b>	11.26	15.83	4.99	<b>57.7</b>	5.7		<b>8.1</b>	3.1		<b>13.6</b>
<b>Canada</b>		6.8	16.2	<b>6.4</b>		202.60	111.01	<b>602.3</b>		13.3	<b>13.3</b>		64.0	

	Investment grade bonds										High Yield	
	Duration					Market Value					Duration	MktVal
	AAA	AA	A	BBB	Overall	AAA	AA	A	BBB	Overall		
<b>US</b>	10.2	8.1	6.9	6.4	<b>6.8</b>	70.1	441.0	2,701.8	3,432.8	<b>6,645.6</b>	3.8	1,190.2
<b>Euro</b>	5.2	4.8	4.6	4.2	<b>4.4</b>	11.6	214.4	1,205.8	1,531.0	<b>2,962.9</b>	2.9	343.1
<b>EM</b>		6.6	5.1	5.3	<b>5.3</b>		35.97	214.70	275.0	<b>525.7</b>	3.3	170.6

Average Duration



Total Market Value (USD Billions)



Data as of 2024-04-30

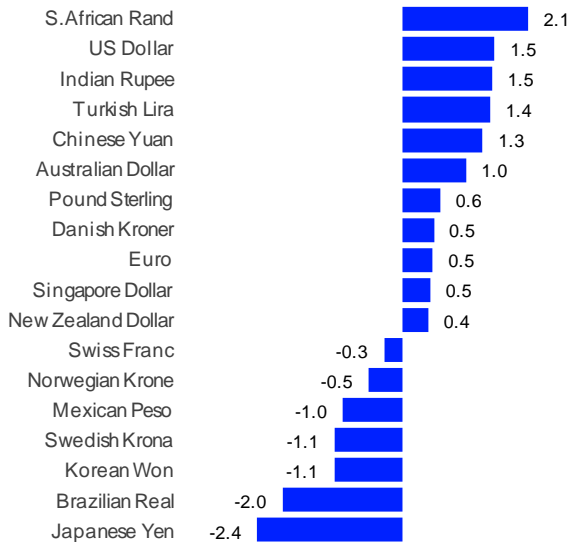
Indices used: FTSE Canada Non-Agency Bond Index (Mid, Long, Overall), FTSE Canada RRB Canada Bond Index.

Source: FTSE Russell. All data as of April 30, 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.

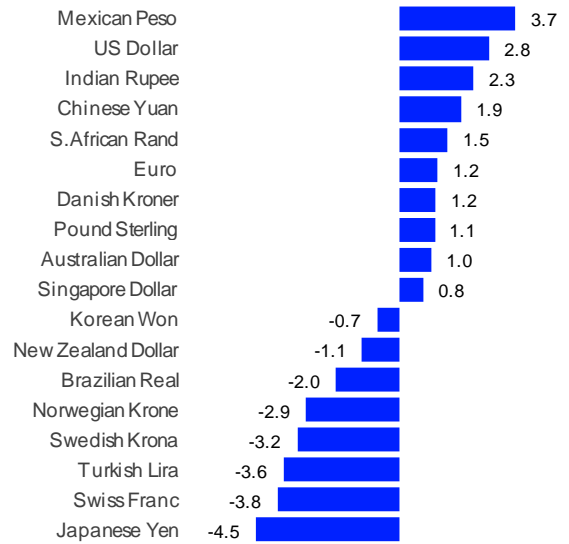


# Appendix – Foreign Exchange Returns % as of April 30, 2024

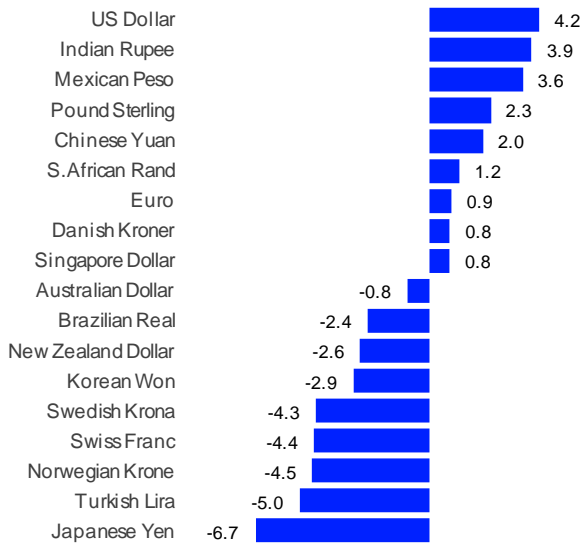
FX Moves vs CAD - 1M



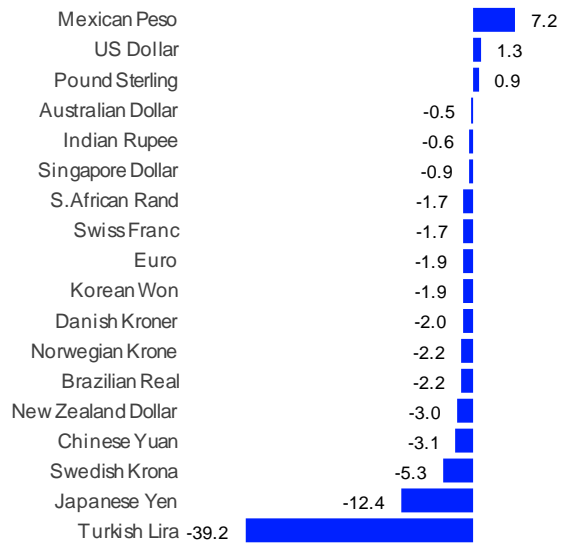
FX Moves vs CAD - 3M



FX Moves vs CAD - YTD



FX Moves vs CAD - 12M



Source: FTSE Russell and LSEG. All data as of April 30, 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](http://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) LSEG Benchmark Services (UK) Limited ("RBSL"), (8) LSEG 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®", "LSEG", "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. LSEG 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.