

Long-Term Investment Perspectives

CIO Office | As of September 30, 2023



Table of Contents

LONG-TERM MARKET EXPECTATIONS	OVERVIEW	4
	FIVE-YEAR EXPECTED RETURNS	6
	DETAILED EXPECTATIONS	9
	HISTORICAL METRICS	10
FEATURED CHARTS & TABLES	ECONOMY	13
	EQUITIES	27
	RATES	39
	CURRENCIES & COMMODITIES	45

Long-Term

Market Expectations

Long-Term Market Expectations – Overview

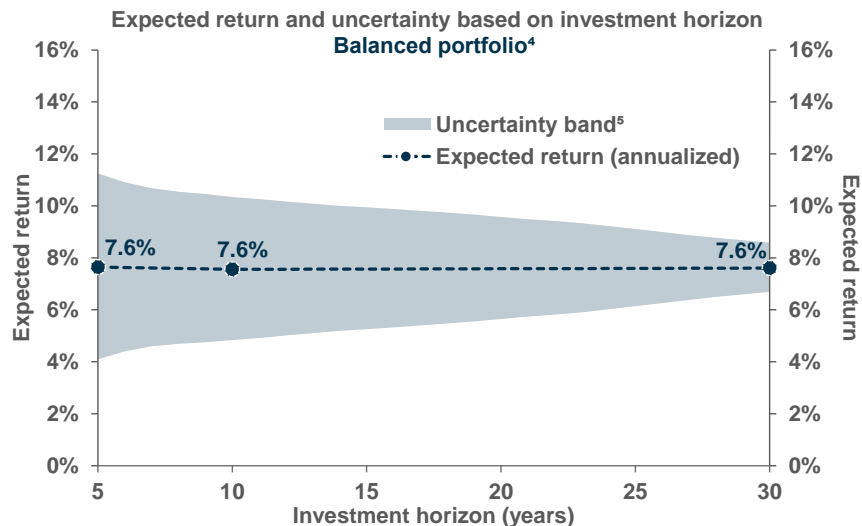
Long-Term Market Expectations: Fall 2023 Update

Twice a year (April, October), we update our Long-Term Market Expectations (LTMES) for major asset classes over a 5-year, 10-year and 30-year investment horizon¹. Based on our recently improved building-block methodology (5-year and 10-year) and risk premia methodology (30-year), these projections are the foundation of National Bank Investments' asset allocation strategy (AAS) and portfolio construction.

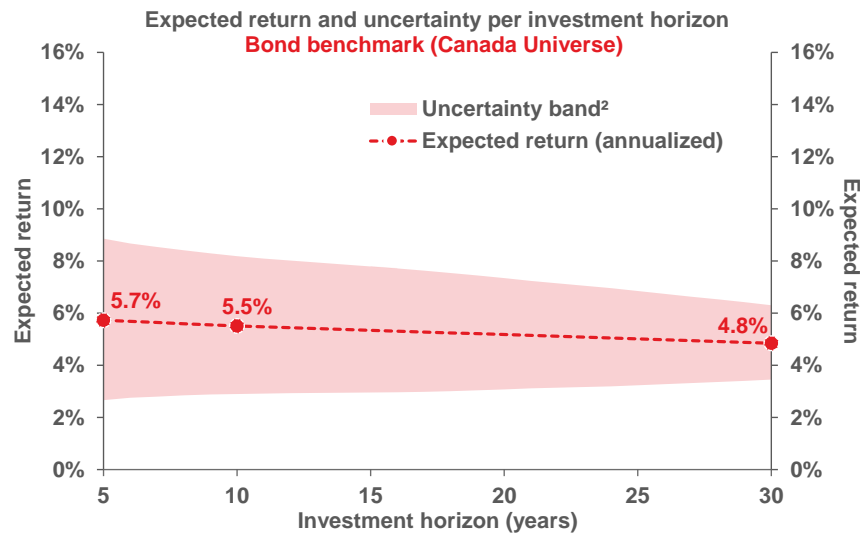
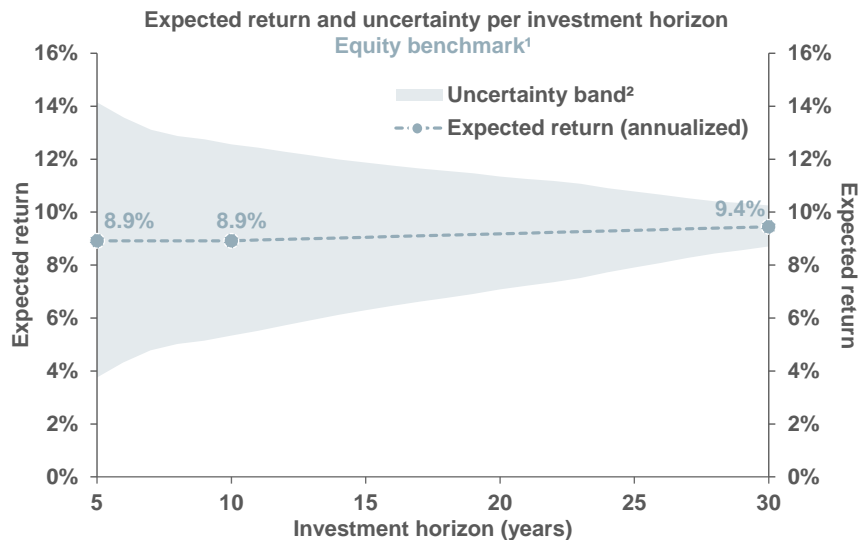
This latest edition shows an expected annual return of 7.6% for a reference balanced portfolio over a 5-year horizon, much higher than the 4.5% realized return over the past 5 years. This relatively favourable outcome for the 2023-2028 period is largely driven by improving bond prospects in an environment of interest rates above equilibrium levels.

Specifically, our model foresees an annual return of 5.7% for the Canadian bond universe over the next 5 years, the best projection since 2001² for the asset class which has been under pressure since 2021. On the equity front, the picture is slightly weaker than a year ago mostly due to higher U.S. valuations, with a projected annual return of 8.9% for our equity benchmark³ – a performance in line with historical averages.

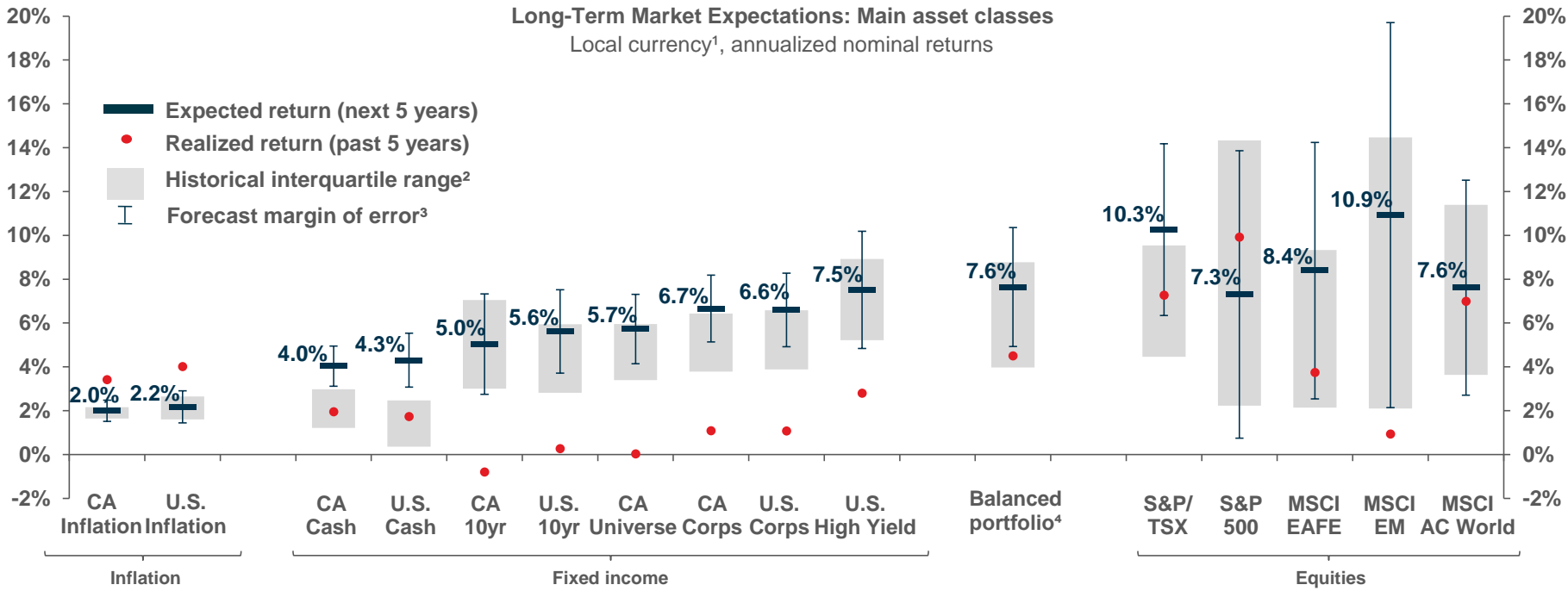
Ultimately, beyond the inevitable short-term fluctuations, the outlook remains largely positive for long-term investors, not least due to attractive prospects for bonds, both on an absolute and risk-adjusted basis.



Long-Term Market Expectations – Overview (stocks & bonds)



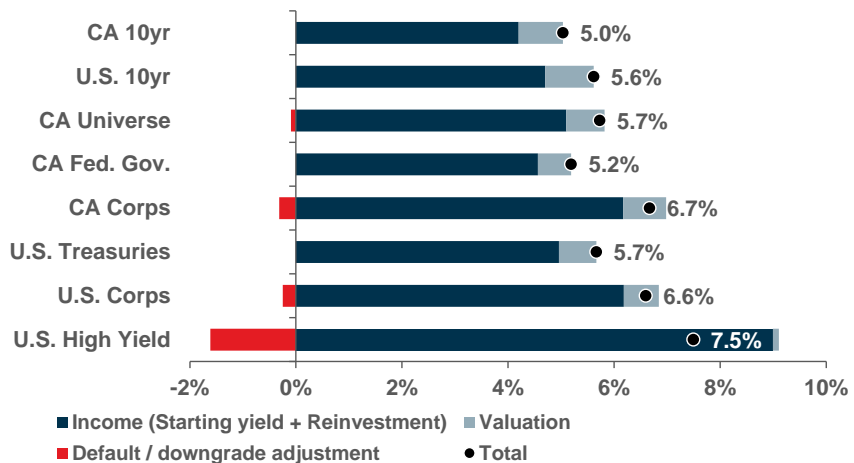
Five-year market expectations – Overview



Five-year market expectations – Methodology

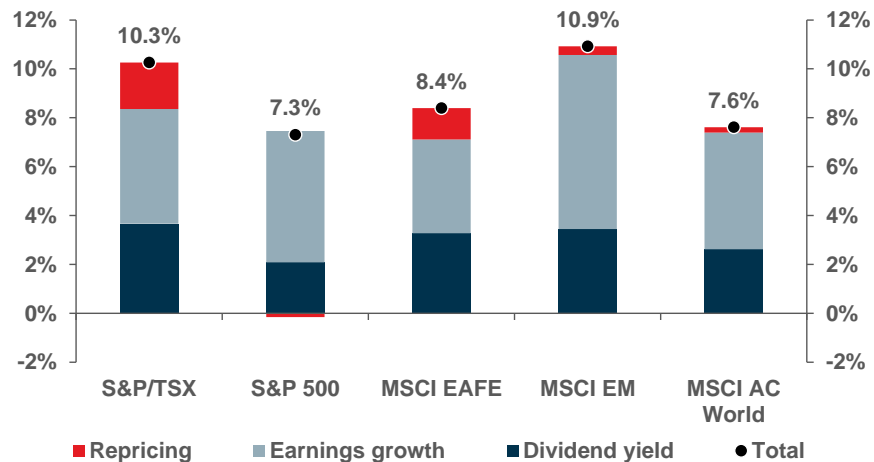
Building blocks methodology: Fixed income

Our 5-year return forecasts for fixed income assets have three components shown below:

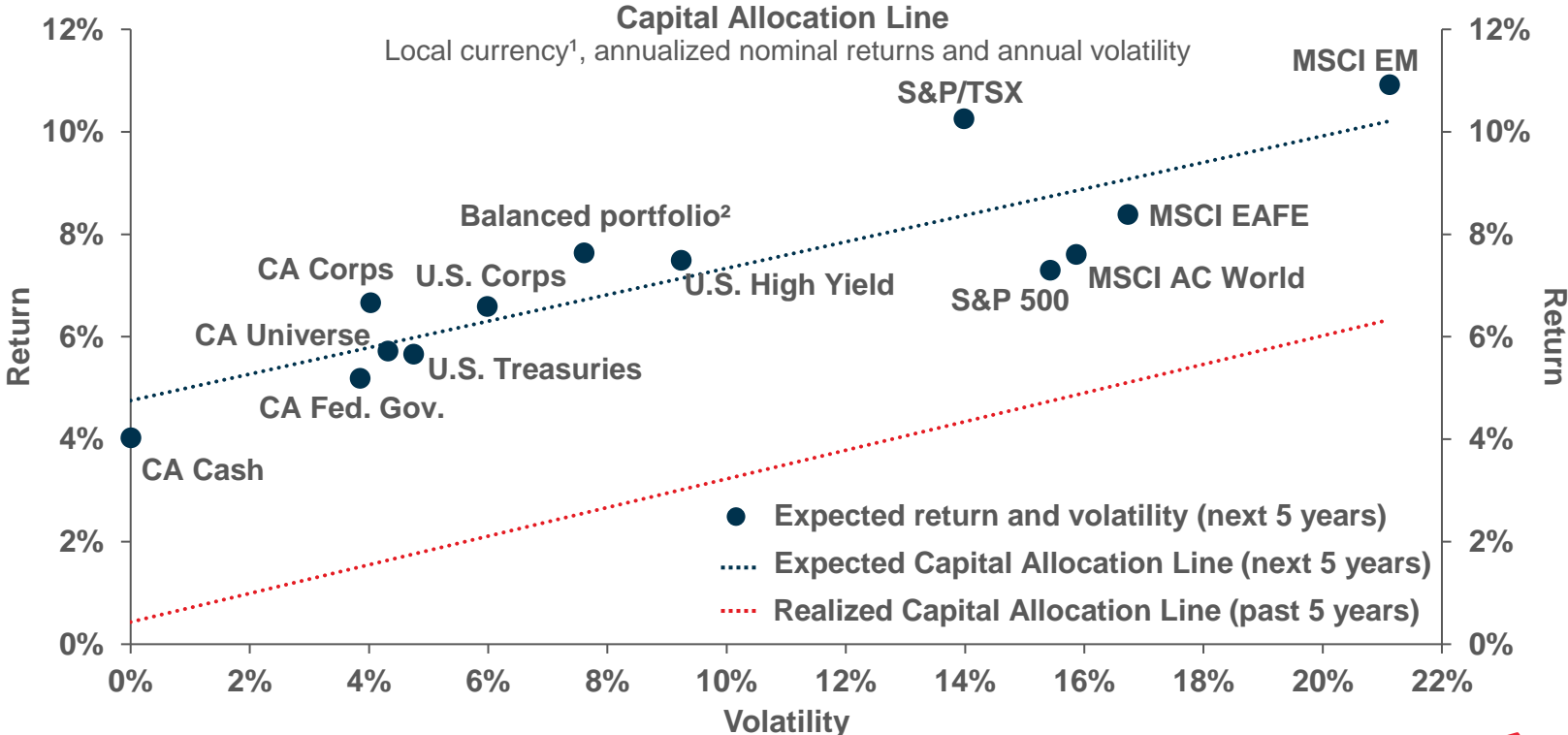


Building blocks methodology: Equities

Our 5-year return forecasts for equities have three components shown below:



Five-year market expectations – Capital Allocation Line (CAL)



Detailed expectations

Long-Term Market Expectations - Detailed assumptions (local currency¹, annualized)

Asset	Expected nominal return			Expected volatility	Economic forecasts ⁴	
	5-year	10-year	30-year		Inflation	Nominal GDP
Balanced portfolio ²	7.6%	7.6%	7.6%	7.6%	-	-
Equity benchmark ³	8.9%	8.9%	9.4%	11.9%	-	-
Bond benchmark (Canada Universe)	5.7%	5.5%	4.8%	4.3%	2.0%	4.0%
Cash						
Canada Cash	4.0%	3.6%	2.5%	-	2.0%	4.0%
U.S. Cash	4.3%	3.9%	2.5%	-	2.2%	3.9%
German Cash	2.7%	2.4%	1.5%	-	2.2%	4.2%
U.K. Cash	4.1%	3.8%	2.5%	-	2.1%	3.9%
Japan Cash	0.2%	0.6%	0.6%	-	1.9%	2.7%
Australia Cash	3.8%	3.9%	3.0%	-	3.0%	4.4%
Bonds						
Canada 10yr gov. bond	5.0%	4.8%	4.4%	6.1%	2.0%	4.0%
U.S. 10yr gov. bond	5.6%	5.3%	4.6%	7.5%	2.2%	3.9%
Germany 10yr gov. bond	4.0%	3.8%	3.4%	6.1%	2.2%	4.2%
U.K. 10yr gov. bond	5.8%	5.5%	4.6%	6.7%	2.1%	3.9%
Japan 10yr gov. bond	0.4%	0.8%	1.8%	3.0%	1.9%	2.7%
Australia 10yr gov. bond	5.8%	5.5%	5.0%	7.0%	3.0%	4.4%
Canada Universe	5.7%	5.5%	4.8%	4.3%	2.0%	4.0%
Canada Federal Government	5.2%	5.0%	4.5%	3.8%	2.0%	4.0%
Canada Corporate (IG)	6.7%	6.4%	5.3%	4.0%	2.0%	4.0%
U.S. Treasuries	5.7%	5.4%	4.6%	4.7%	2.2%	3.9%
U.S. Corporate (IG)	6.6%	6.4%	5.3%	6.0%	2.2%	3.9%
U.S. High Yield	7.5%	7.5%	6.6%	9.2%	2.2%	3.9%
Equities						
S&P/TSX	10.3%	10.3%	9.8%	14.0%	2.0%	4.0%
S&P 500	7.3%	7.2%	8.9%	15.4%	2.2%	3.9%
Russell 2000	11.0%	11.2%	10.9%	20.4%	2.2%	3.9%
MSCI EAFE	8.4%	8.5%	9.1%	16.7%	2.1%	3.7%
MSCI Emerging Markets	10.9%	10.9%	10.9%	21.1%	3.5%	7.2%
MSCI Europe	9.2%	9.2%	9.8%	18.4%	2.1%	3.9%
DAX 30	11.8%	12.1%	9.8%	20.3%	2.2%	4.2%
FTSE 100	10.4%	10.1%	9.9%	13.6%	2.1%	3.9%
TOPIX	3.8%	6.2%	6.7%	16.8%	1.9%	2.7%
S&P/ASX 200	9.2%	8.6%	9.6%	13.3%	3.0%	4.4%
MSCI China	10.7%	11.6%	11.6%	26.3%	2.2%	5.9%
MSCI AC World	7.6%	7.7%	9.2%	15.9%	2.3%	4.2%

CIO Office (Data via Refinitiv). 1. With the exception of MSCI indices, which are in USD. 2. Balanced portfolio: 21% S&P/TSX, 21% S&P 500, 12% MSCI EAFE, 6% MSCI Emerging Markets and 40% Canada Bond Universe, all in CAD. 3. Equity benchmark: 35% S&P TSX, 35% S&P 500, 20% MSCI EAFE, 10% MSCI EM, all in CAD. 4. All economic forecasts are for the next 5 years and come from the IMF's World Economic Outlook. Forecasts for equity indices with multiple regions are constructed using each region's equity weight within the index.

Historical correlation matrix

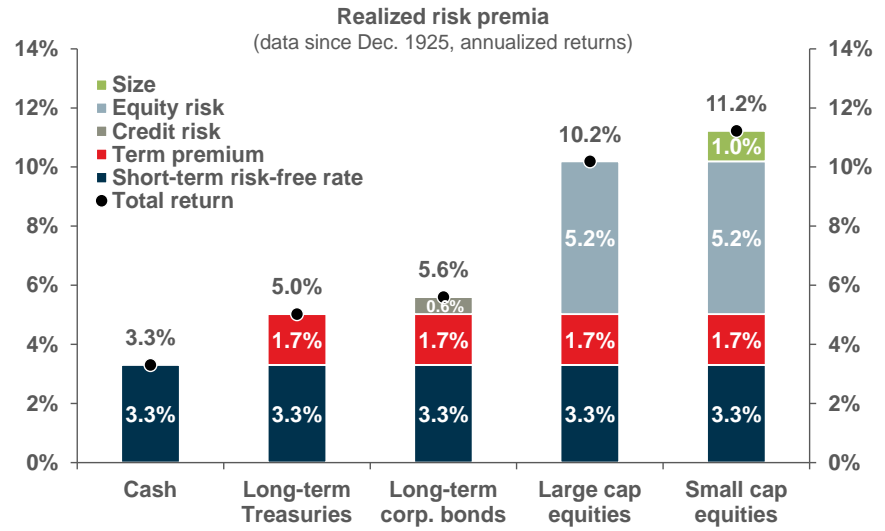
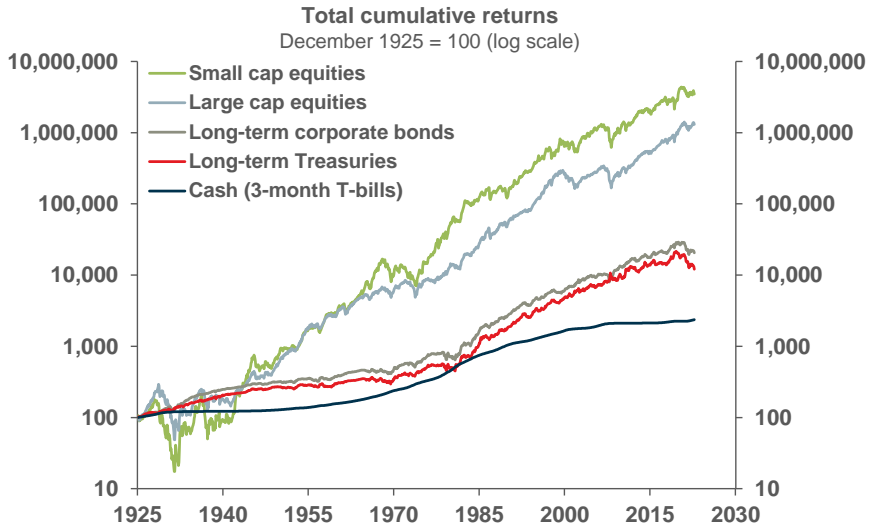
Historical correlation matrix (local currency¹)

Asset	Volatility	CA Cash	U.S. Cash	CA Fed. Gov.	CA Corps	CA Universe	U.S. Treasuries	U.S. Corps	Balanced	USD/CAD	U.S. High Yield	S&P/TSX	S&P 500	MSCI EAFE	Russell 2000	MSCI EM
CA Cash	0.0%		0.94	0.12	0.05	0.08	0.13	0.06	-0.01	0.12	-0.02	-0.12	-0.04	-0.01	-0.10	-0.02
U.S. Cash	0.0%	0.84		0.14	-0.01	0.06	0.20	0.02	-0.11	0.14	-0.09	-0.22	-0.14	-0.07	-0.21	-0.06
CA Fed. Gov.	3.8%	0.17	0.09		0.71	0.92	0.88	0.66	0.45	0.04	0.29	0.18	0.22	0.21	0.06	0.15
CA Corps	4.0%	0.01	-0.07	0.73		0.92	0.53	0.90	0.74	-0.34	0.69	0.59	0.52	0.52	0.46	0.51
CA Universe	4.3%	0.09	0.01	0.94	0.90		0.75	0.85	0.67	-0.18	0.54	0.44	0.43	0.41	0.30	0.36
U.S. Treasuries	4.7%	0.14	0.17	0.85	0.53	0.75		0.64	0.29	0.03	0.13	0.02	0.11	0.12	-0.08	0.14
U.S. Corps	6.0%	-0.04	-0.06	0.54	0.79	0.71	0.57		0.78	-0.50	0.76	0.64	0.62	0.64	0.53	0.66
Balanced portfolio ²	7.6%	-0.07	-0.11	0.29	0.58	0.47	0.10	0.61		-0.60	0.86	0.93	0.92	0.89	0.84	0.75
USD/CAD	8.7%	0.11	-0.01	0.27	-0.04	0.13	0.14	-0.34	-0.28		-0.71	-0.72	-0.76	-0.79	-0.76	-0.75
U.S. High Yield	9.2%	-0.16	-0.14	0.03	0.45	0.25	-0.07	0.66	0.70	-0.60		0.85	0.83	0.82	0.83	0.72
S&P/TSX	14.0%	-0.10	-0.11	-0.04	0.36	0.17	-0.13	0.48	0.84	-0.58	0.73		0.90	0.88	0.88	0.73
S&P 500	15.4%	-0.15	-0.12	-0.06	0.28	0.13	-0.13	0.44	0.84	-0.61	0.74	0.81		0.90	0.90	0.74
MSCI EAFE	16.7%	-0.08	-0.05	-0.05	0.29	0.13	-0.11	0.50	0.80	-0.68	0.77	0.80	0.87		0.87	0.83
Russell 2000	20.4%	-0.16	-0.14	-0.14	0.21	0.05	-0.22	0.35	0.75	-0.58	0.72	0.78	0.89	0.79		0.76
MSCI EM	21.1%	-0.05	-0.01	-0.05	0.29	0.12	-0.07	0.50	0.70	-0.71	0.72	0.76	0.74	0.86	0.69	

Correlation of monthly returns over the last 5 years

Correlation of monthly returns over the last 20 years

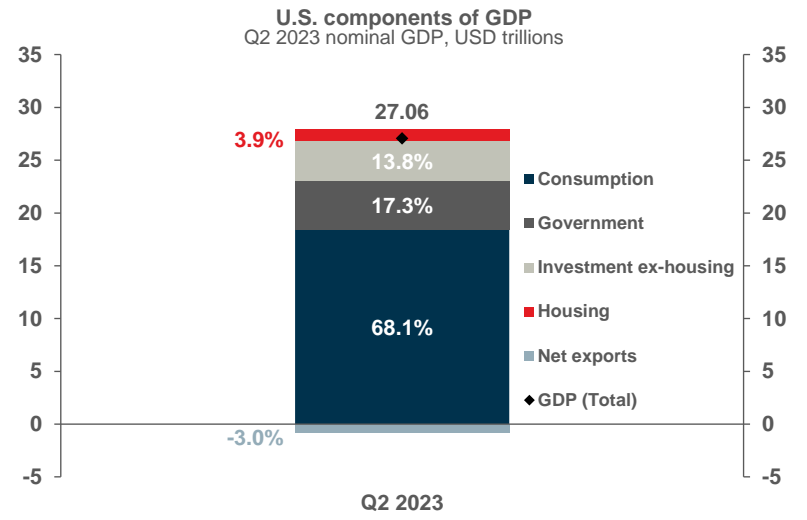
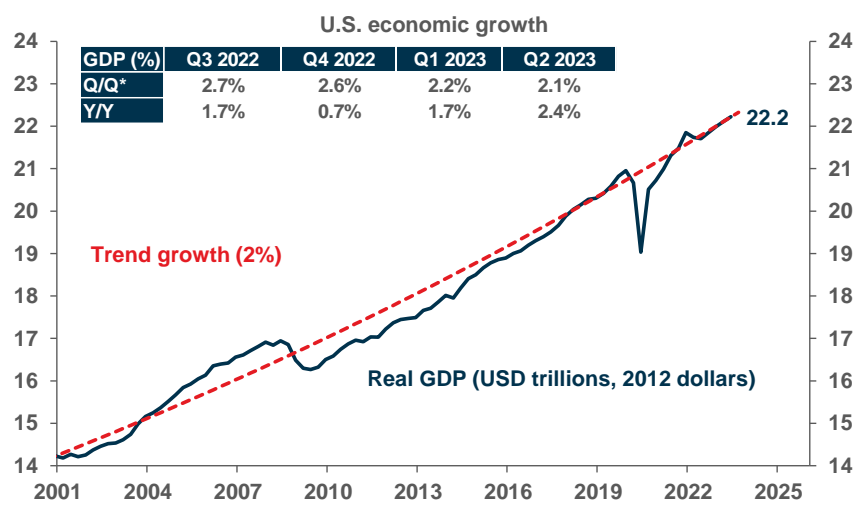
Historical risk premia



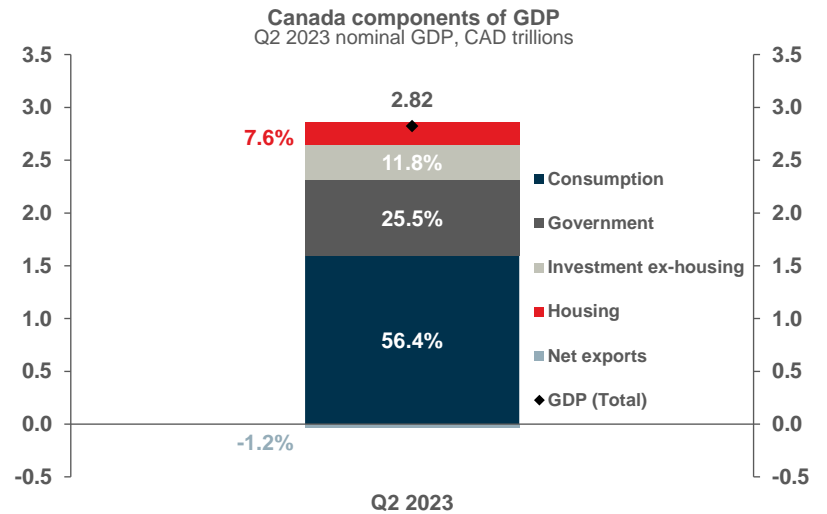
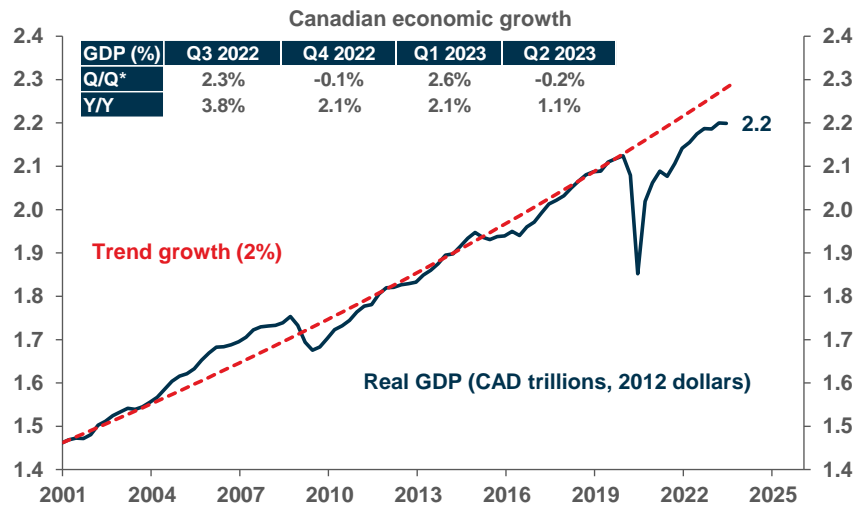
Featured

Charts & Tables

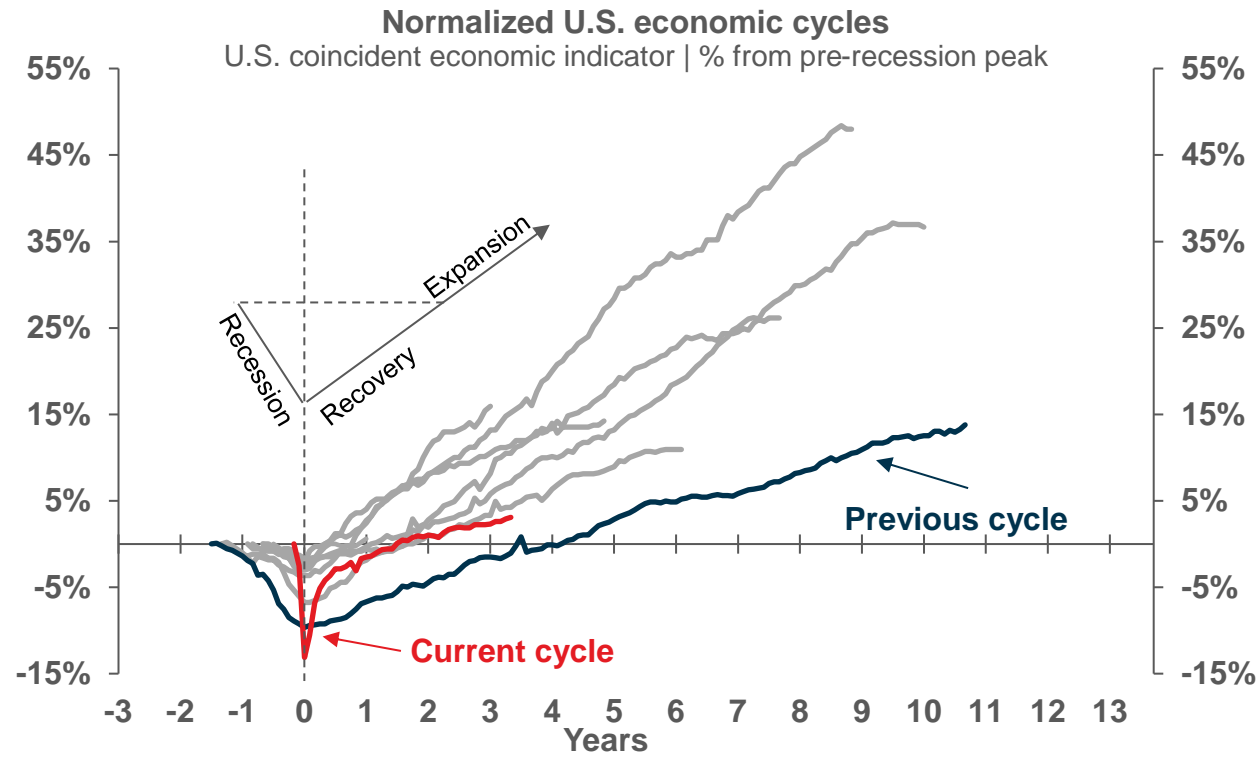
U.S. economic growth and composition of GDP



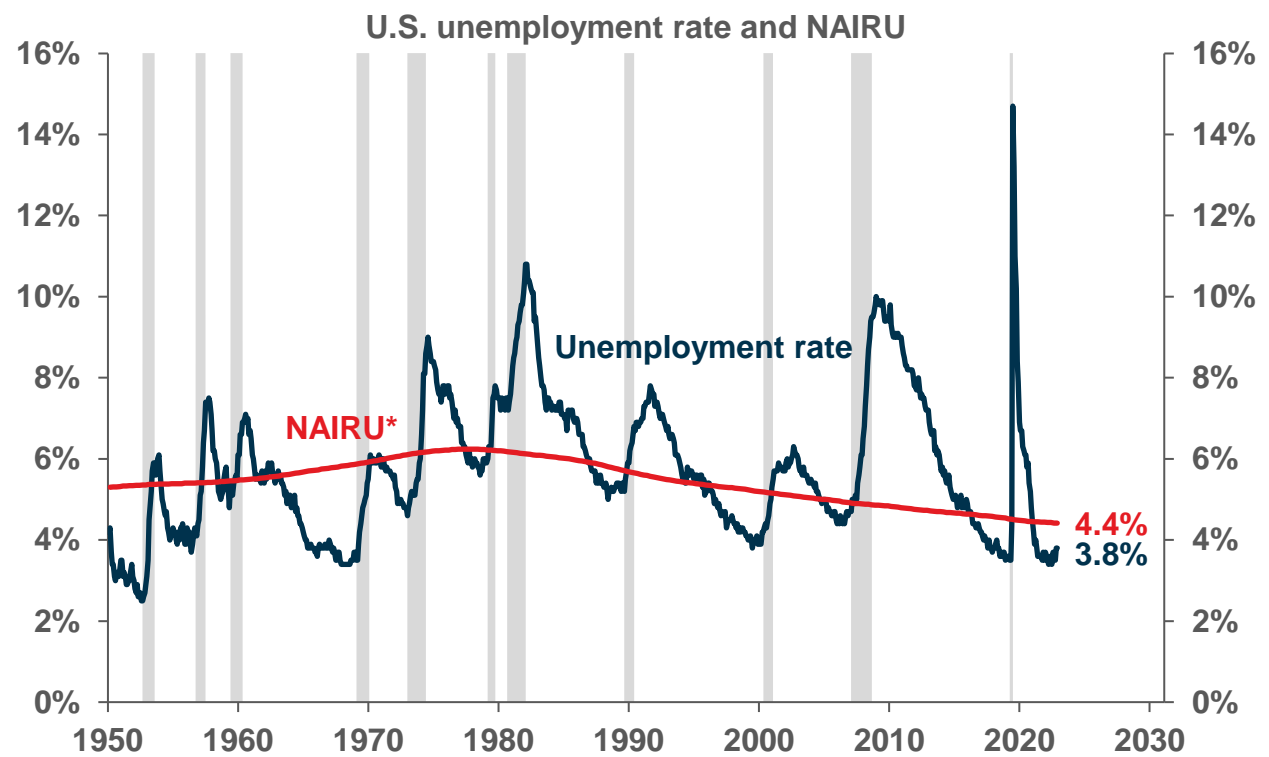
Canadian economic growth and composition of GDP



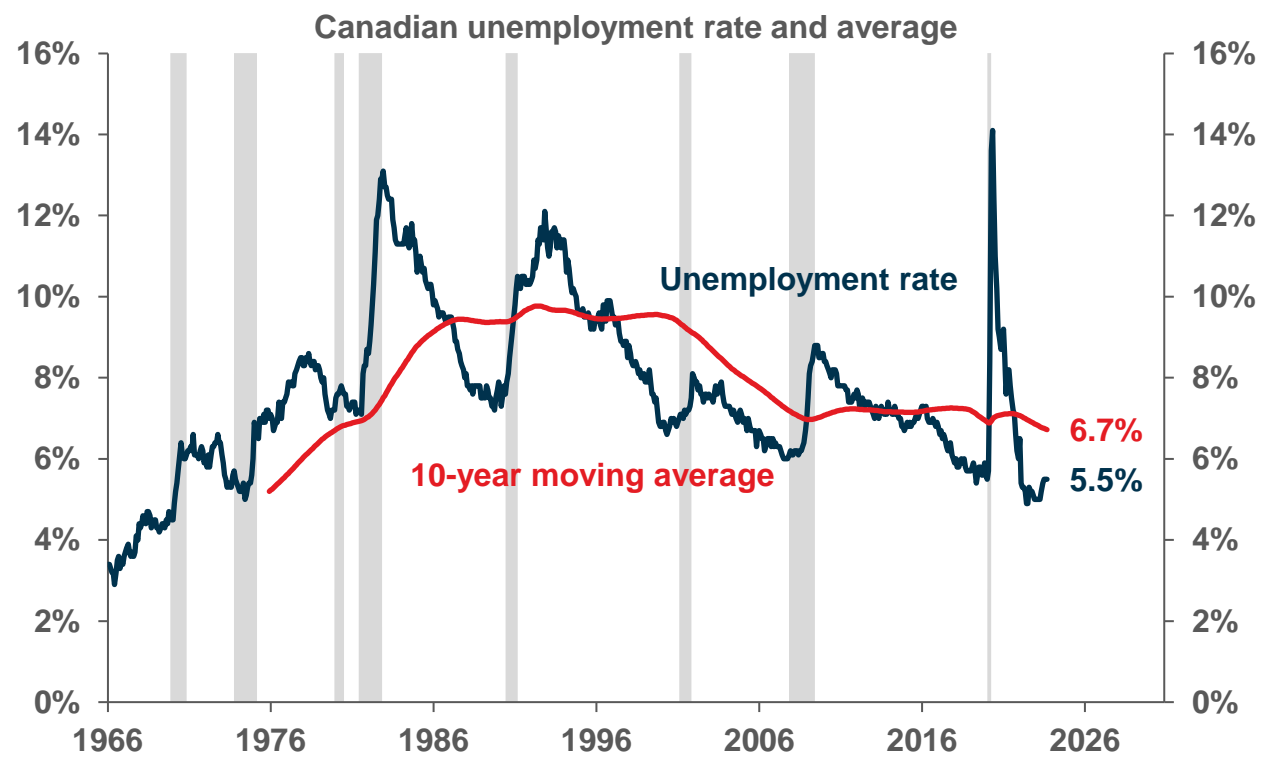
U.S. economic cycles



U.S. unemployment rate



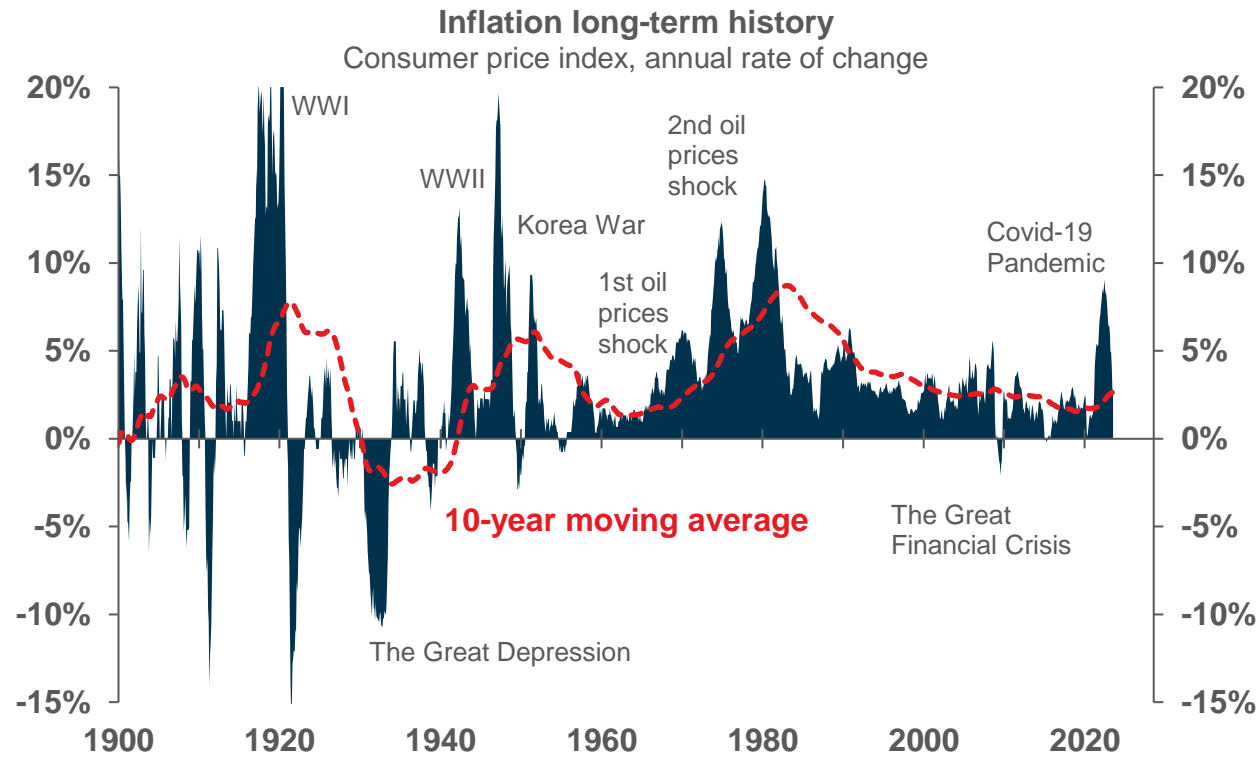
Canadian unemployment rate



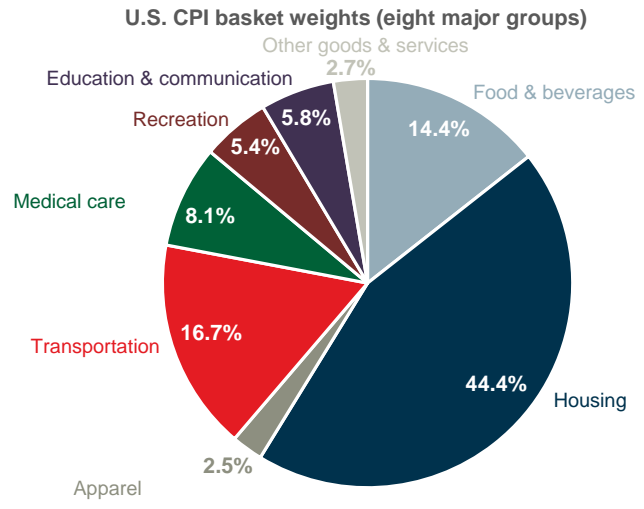
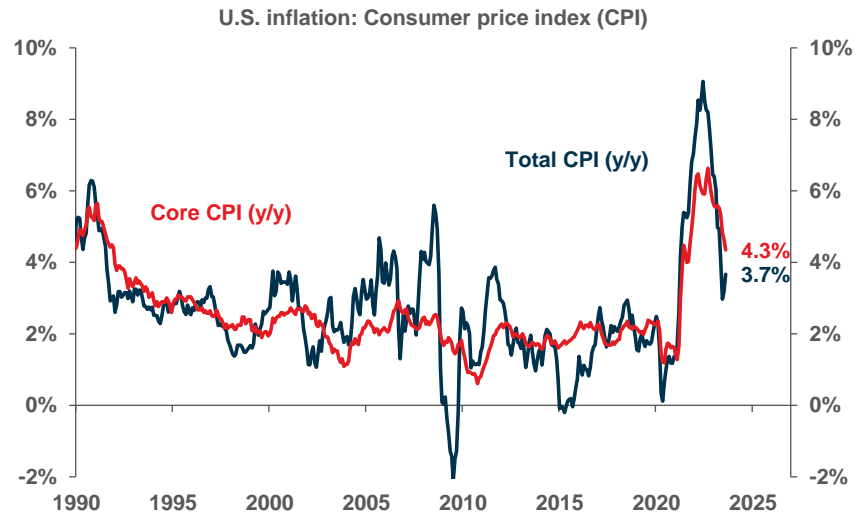
U.S. labour demand



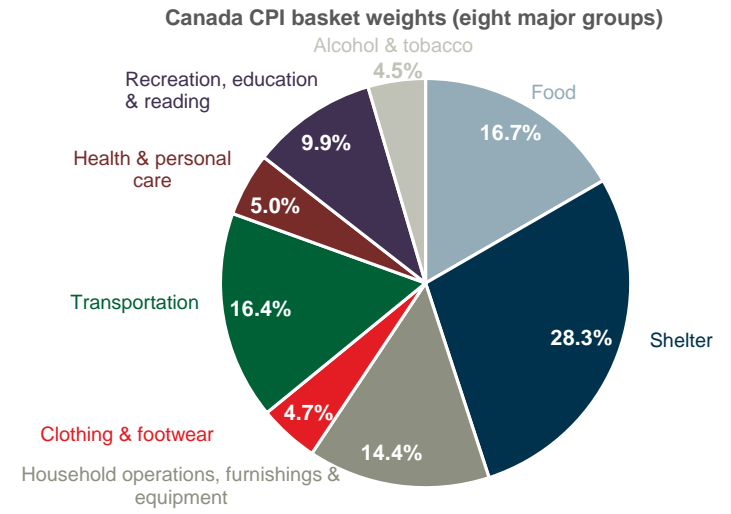
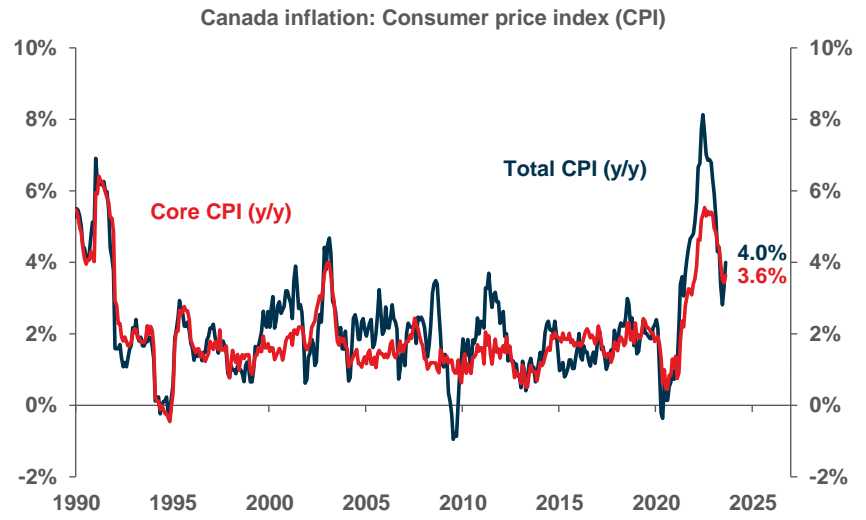
Inflation long-term history



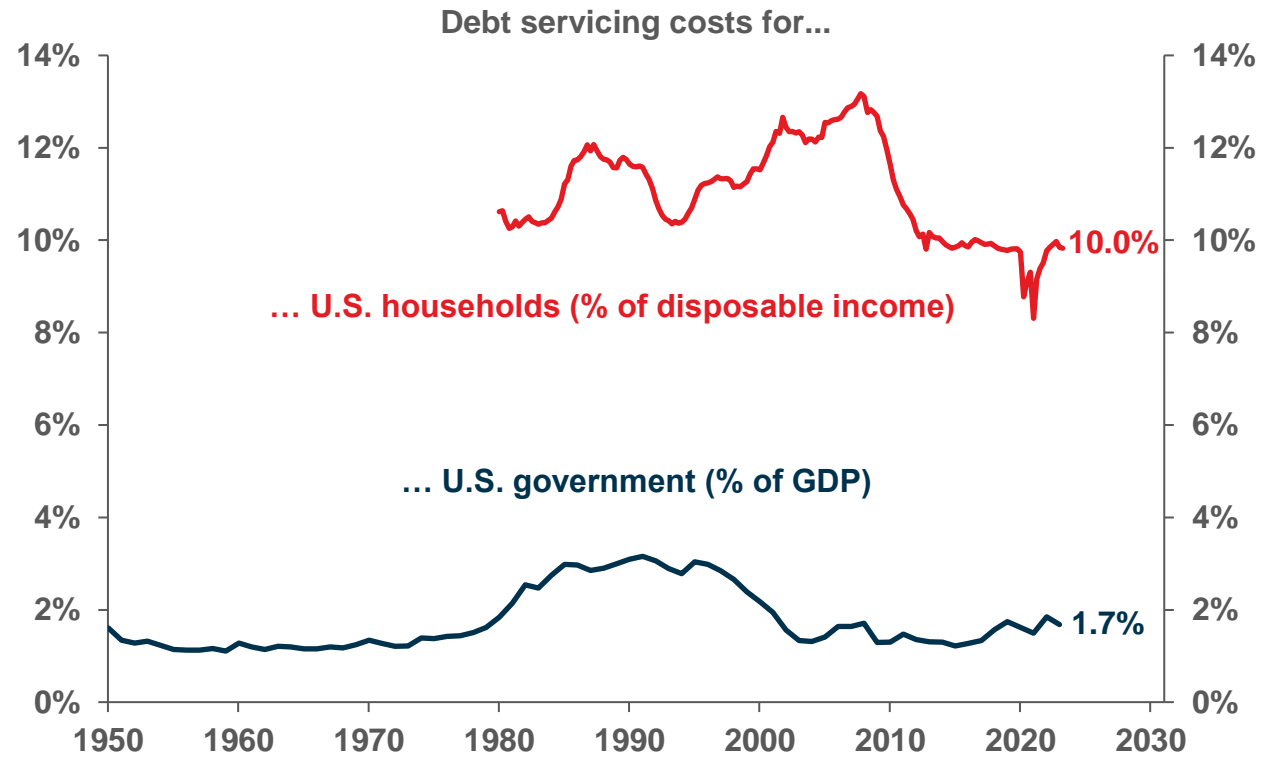
U.S. inflation and CPI composition



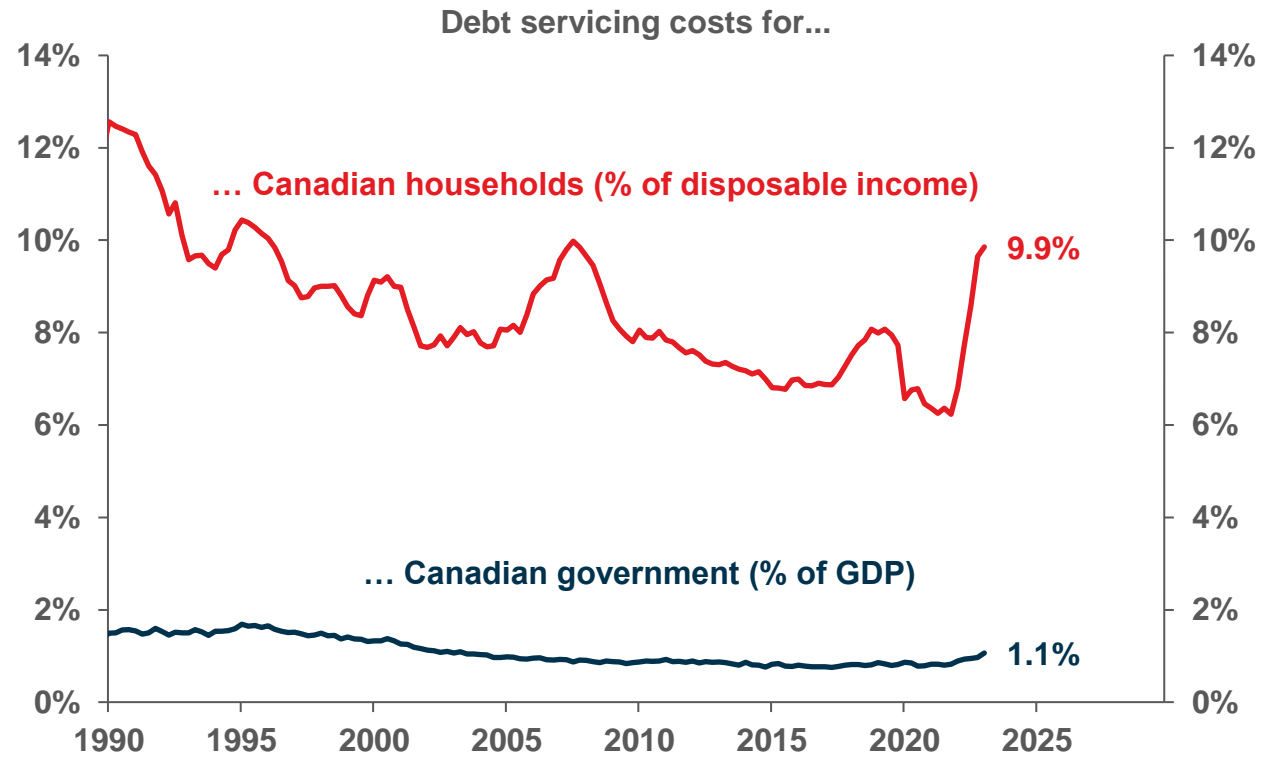
Canadian inflation and CPI composition



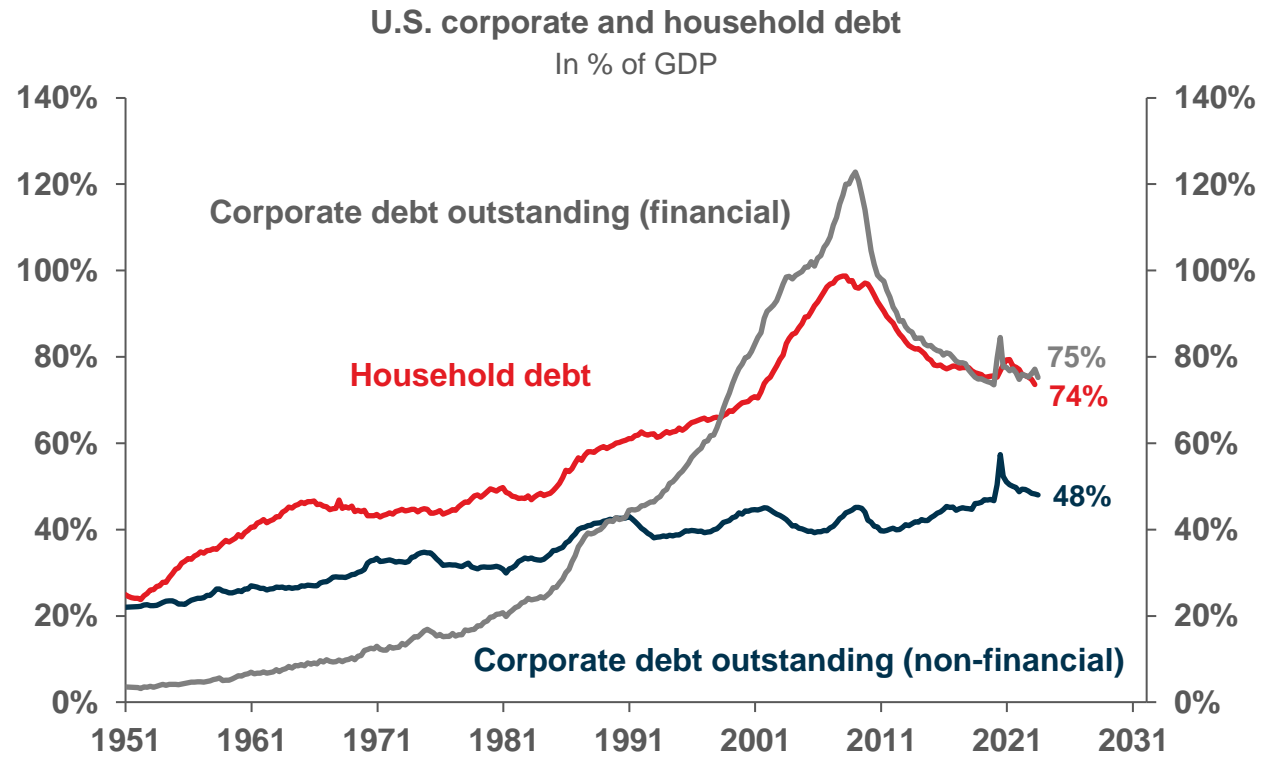
U.S. cost of debt



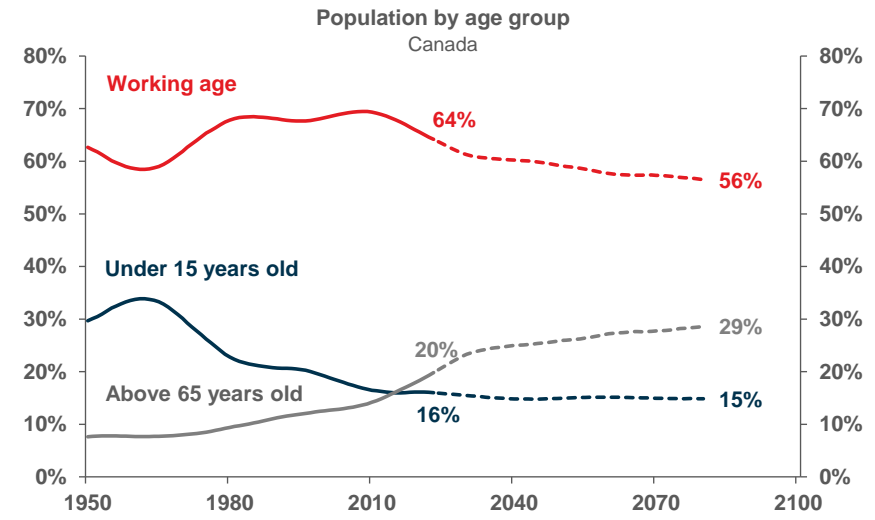
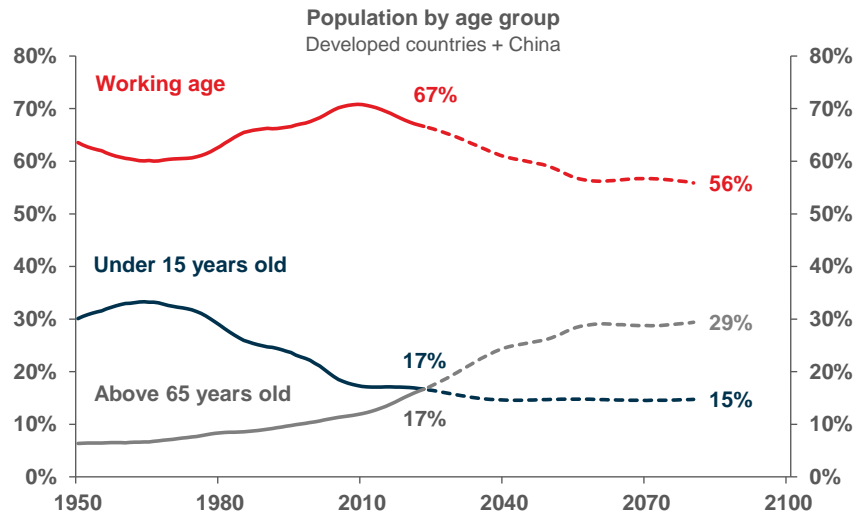
Canadian cost of debt



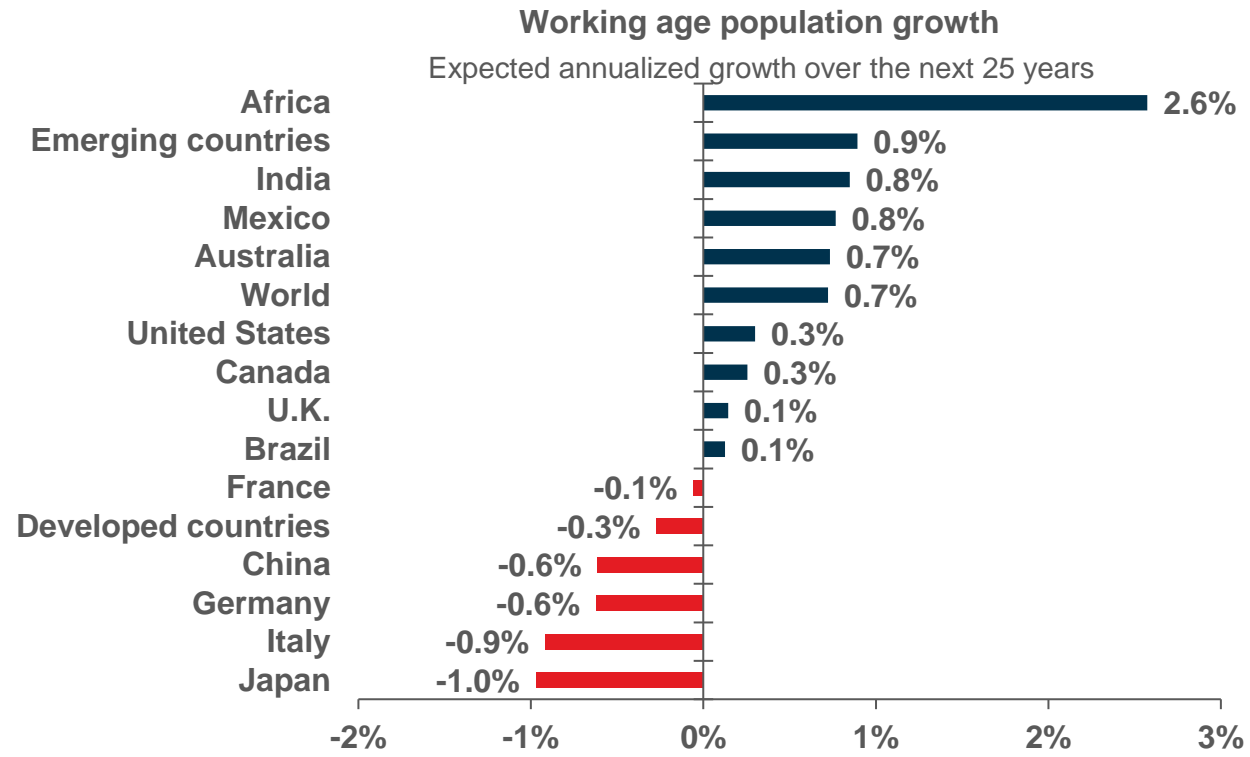
U.S. corporate and household debt



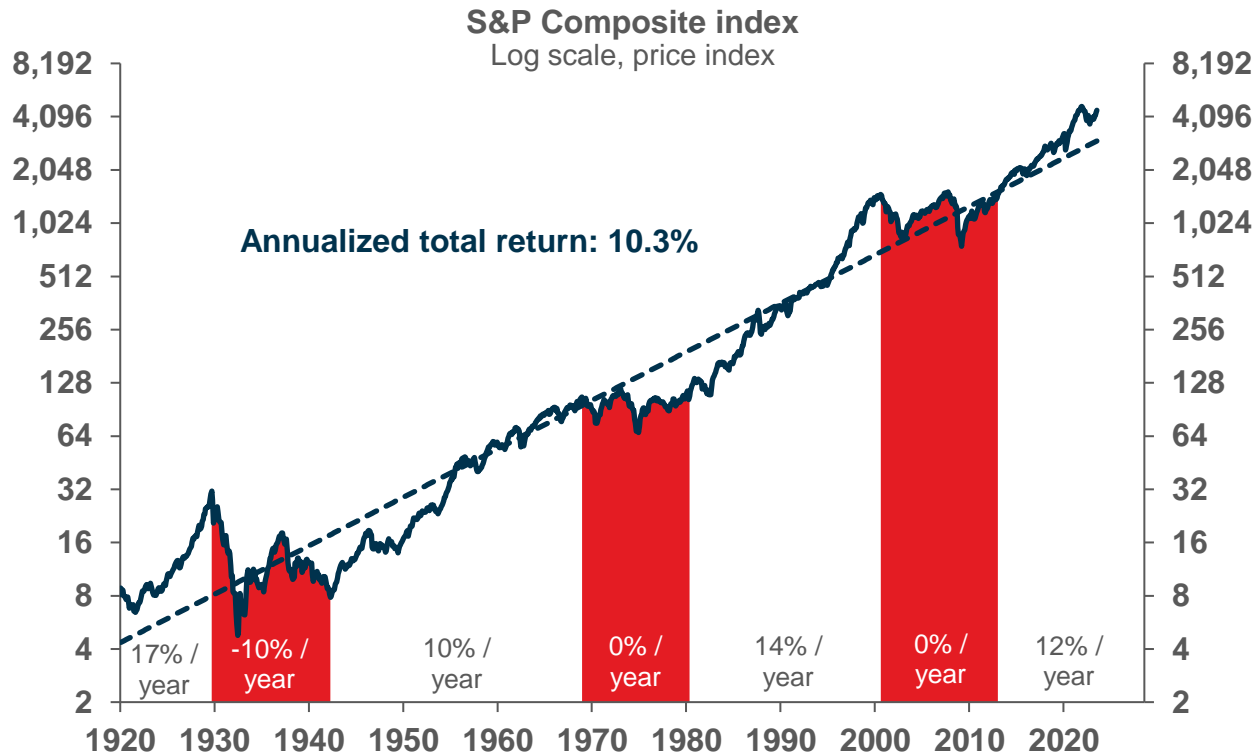
World demographics – Age group trends



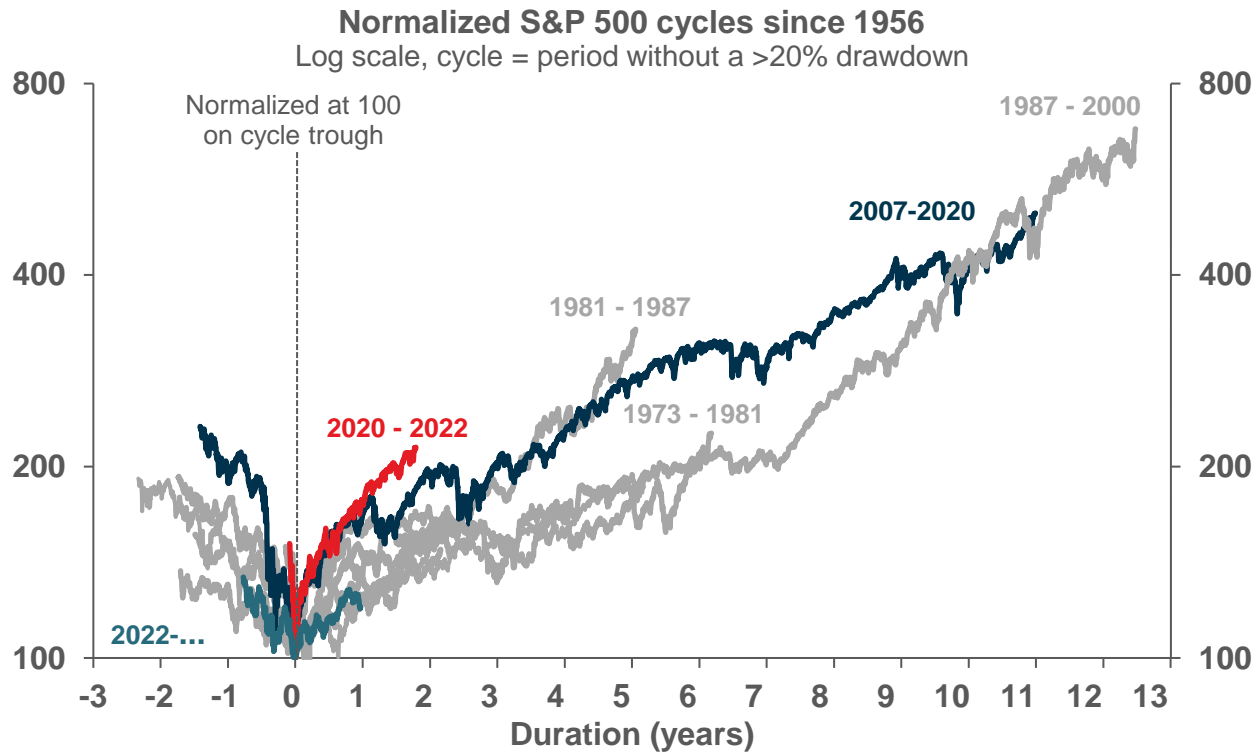
World demographics – Geographical breakdown



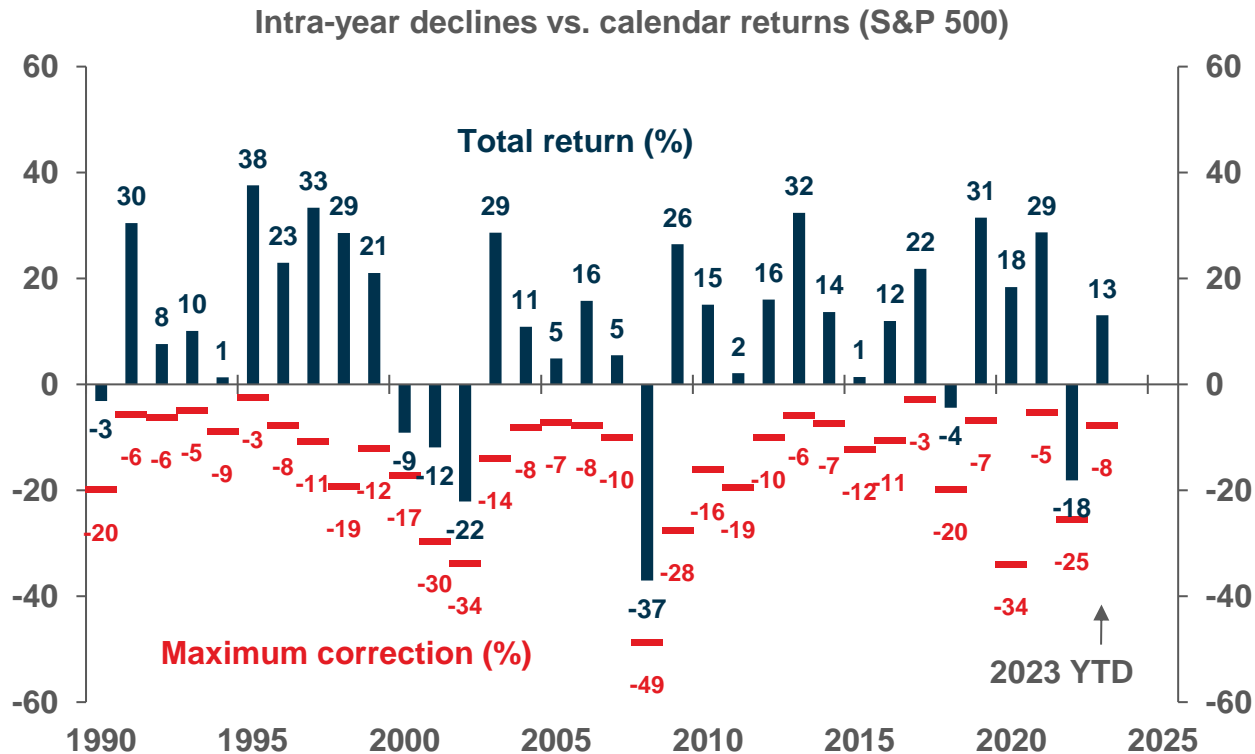
U.S. equity market since 1920



U.S. equity market cycles



Annual returns and market corrections



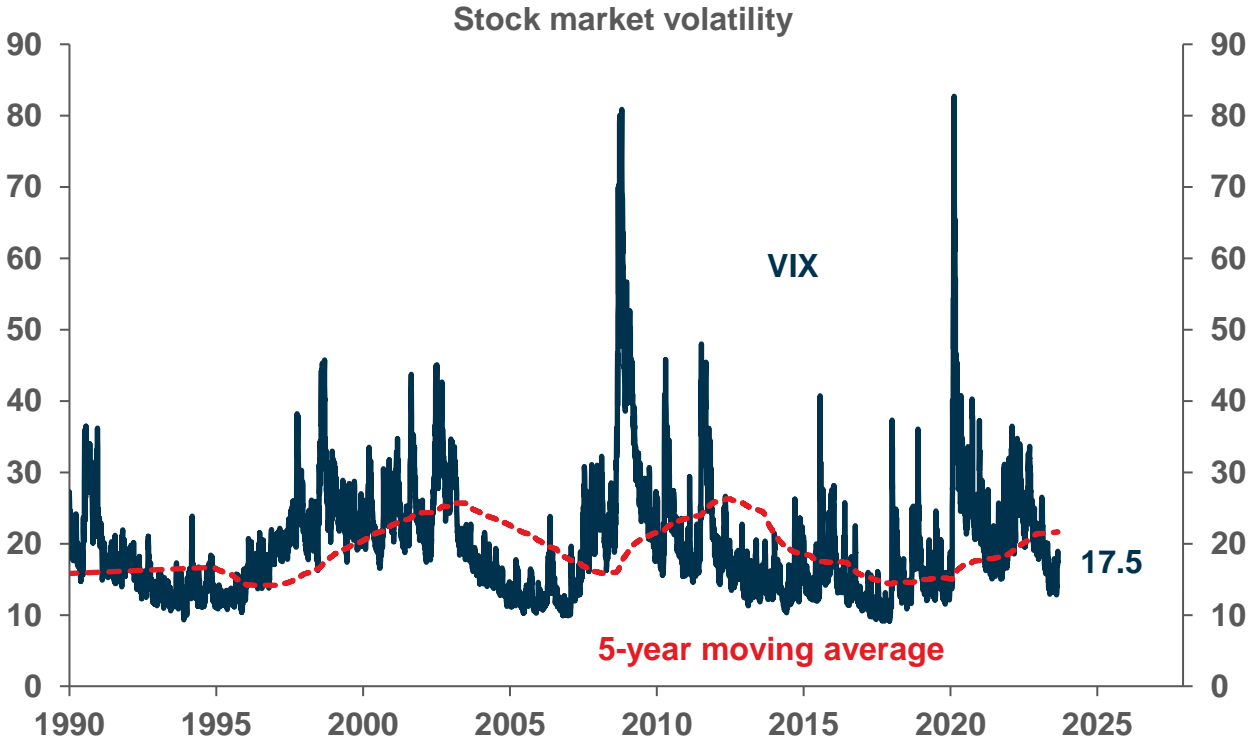
Equity return statistics per investment horizon

S&P 500 returns* - Detailed statistics

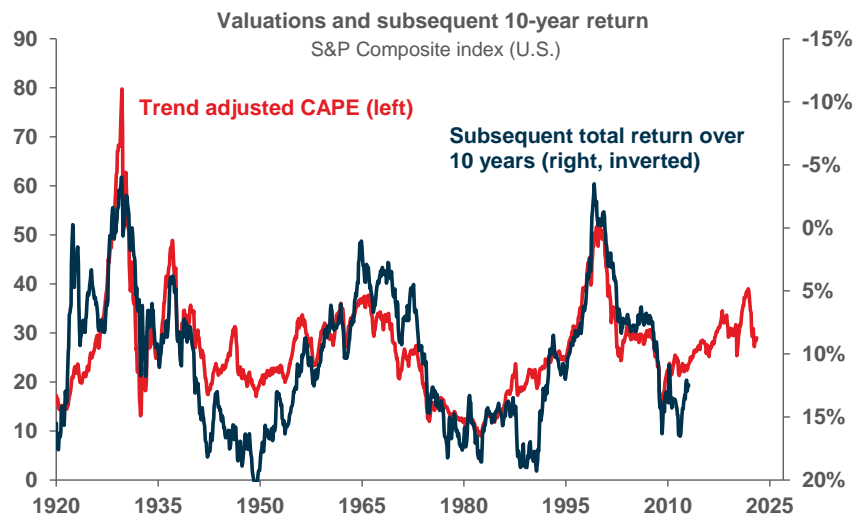
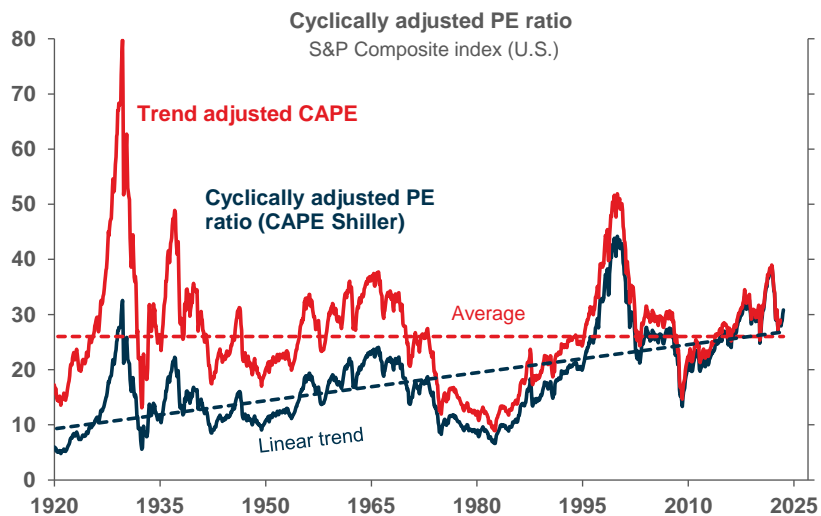
Period	Avg.	Std. dev.	Min.	Max.	Percentile				
					90th	70th	50th	30th	10th
Daily	0.0%	1.1%	-12.0%	11.6%	1.2%	0.5%	0.1%	-0.3%	-1.1%
Monthly	0.7%	4.4%	-30.8%	26.4%	5.4%	2.8%	1.0%	-0.9%	-4.4%
Quarterly	2.1%	7.4%	-41.8%	40.1%	10.3%	5.8%	2.6%	-0.7%	-7.0%
1 year	9.5%	16.1%	-49.0%	73.6%	28.6%	17.5%	11.1%	3.0%	-12.6%
3 years	8.3%	9.3%	-18.0%	32.6%	19.1%	13.1%	9.6%	3.8%	-5.2%
5 years	7.9%	7.6%	-7.4%	27.5%	17.5%	12.6%	8.3%	2.3%	-1.7%
10 years	7.2%	5.6%	-4.8%	20.1%	15.4%	10.3%	7.1%	3.2%	-0.1%
20 years	7.1%	2.1%	2.6%	11.9%	9.7%	8.3%	7.4%	5.9%	3.7%
30 years	9.7%	0.3%	8.3%	10.3%	10.1%	9.9%	9.7%	9.5%	9.3%

*Price index from 1966 to 1987. Total return from Jan. 1st, 1988. Annualized return for periods from 3 to 30 years.

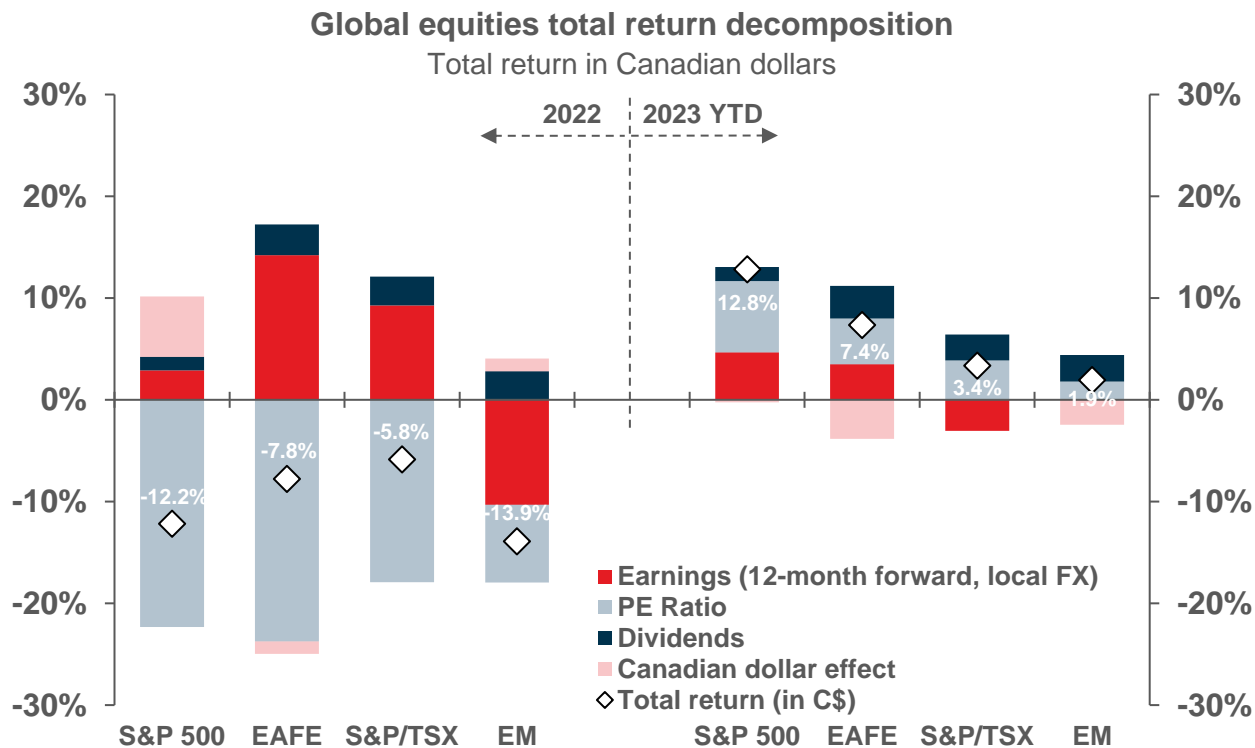
Stock market volatility



Equity valuations and returns since 1920



Decomposition of equity returns



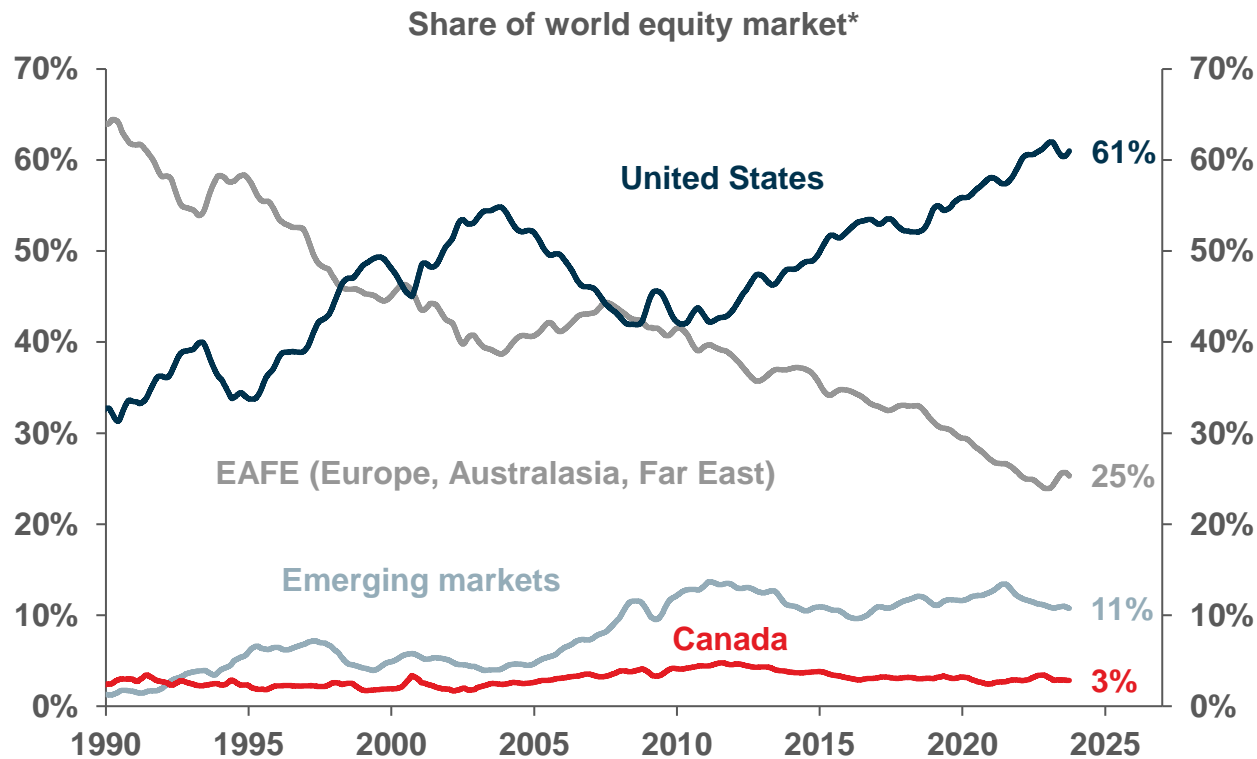
Global equity sector allocation

Global equity sector allocation

	S&P 500	S&P/TSX	Emerging markets	EAFE
Technology	27.5%	7.5%	20.7%	7.9%
Healthcare	13.4%	0.3%	3.7%	13.5%
Financials	12.8%	30.4%	21.7%	19.1%
Cons. disc.	10.7%	3.7%	13.5%	12.0%
Comm. serv.	8.9%	3.7%	9.8%	4.2%
Industrials	8.3%	13.5%	6.7%	15.9%
Staples	6.6%	4.2%	6.2%	9.7%
Energy	4.7%	18.8%	5.0%	4.8%
Materials	2.4%	11.6%	8.2%	7.4%
Utilities	2.4%	4.0%	2.7%	3.3%
Real estate	2.4%	2.3%	1.8%	2.3%
Cyclical/Value*	41%	80%	57%	61%
Defensive/Growth**	59%	20%	43%	39%

*Financials, Consumer discretionary, Materials, Energy, Industrials, Real estate. **Technology, Communication services, Staples, Healthcare, Utilities. Data via Refinitiv (S&P 500 and S&P/TSX), Regression based (EM), and API (iShares EAFE).

Share of world equity market

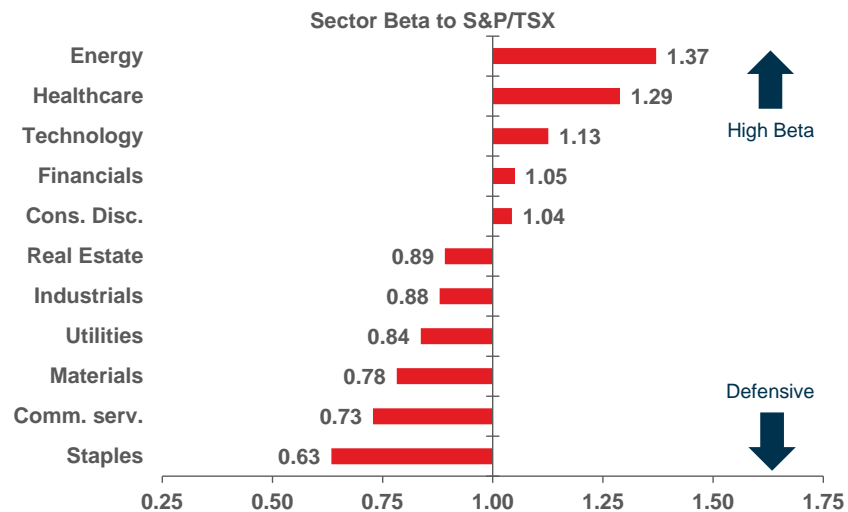
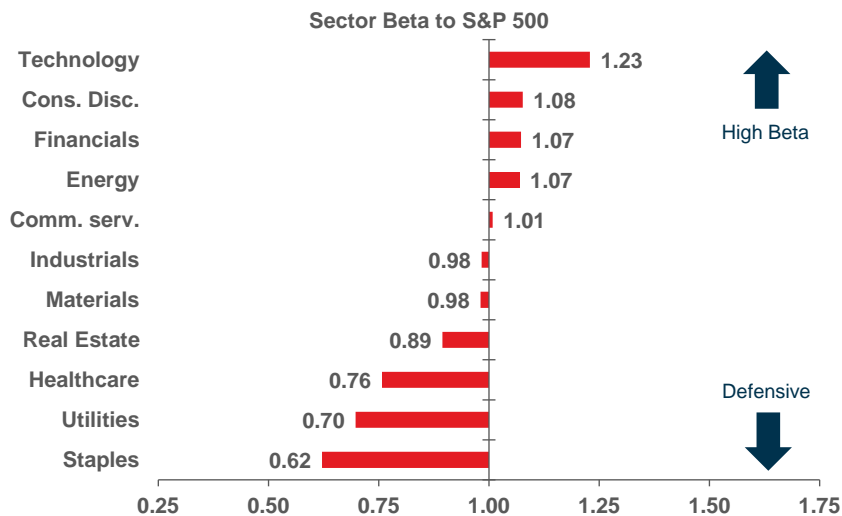


S&P 500 bear markets since 1950

S&P 500 bear markets since 1950

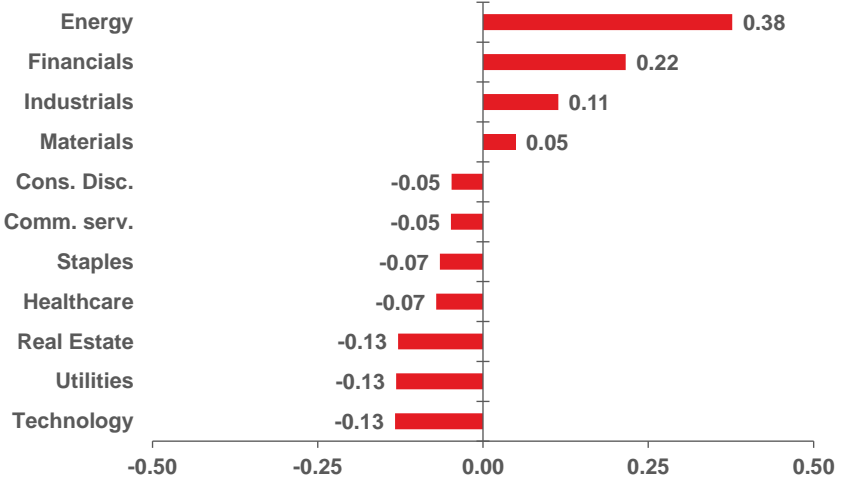
Peak	Bottom	Recovery	Event	Peak-bottom (months)	Bottom-recov. (months)	Total duration (months)	Max drawdown
Aug 1956	Oct 1957	Sep 1958	Recession of 1958	15	11	26	-21.6%
Dec 1961	Jun 1962	Sep 1963	Kennedy Slide of 1962	6	14	21	-28.0%
Feb 1966	Oct 1966	May 1967	Aggressive Fed tightening	8	7	15	-22.2%
Nov 1968	May 1970	Mar 1972	Recession of 1969-1970	18	21	39	-36.1%
Jan 1973	Oct 1974	Jul 1980	1970s energy crisis	21	70	90	-48.2%
Nov 1980	Aug 1982	Nov 1982	Early 1980s recession	20	3	23	-27.1%
Aug 1987	Dec 1987	Jul 1989	Black Monday	3	20	23	-33.5%
Mar 2000	Oct 2002	May 2007	Dot-com bubble	31	56	86	-49.1%
Oct 2007	Mar 2009	Mar 2013	Great Financial Crisis	17	49	66	-56.8%
Feb 2020	Mar 2020	Aug 2020	COVID-19 pandemic	1	5	6	-33.9%
Jan 2022	Oct 2022	?	<i>Central banks catch-up</i>	9	?	?	-25.4%
Average (excluding current bear market)				14	25	39	-35.7%

Sector properties – Beta to index

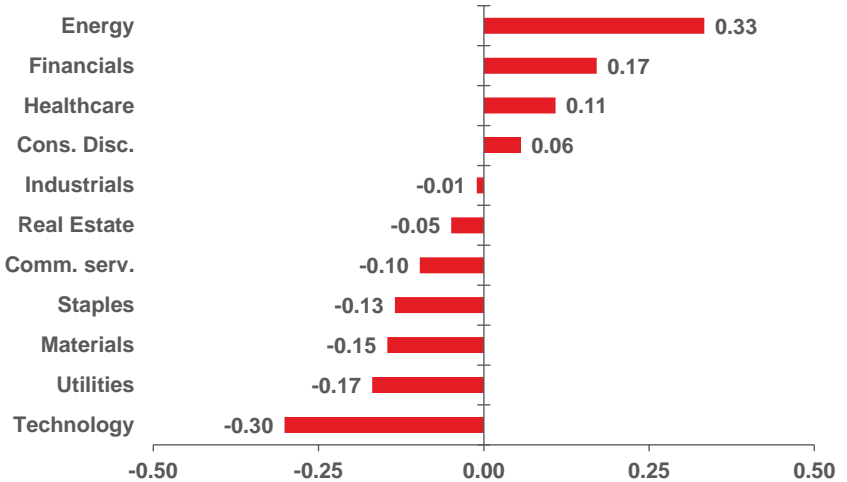


Sector properties – Correlation to 10-year rates

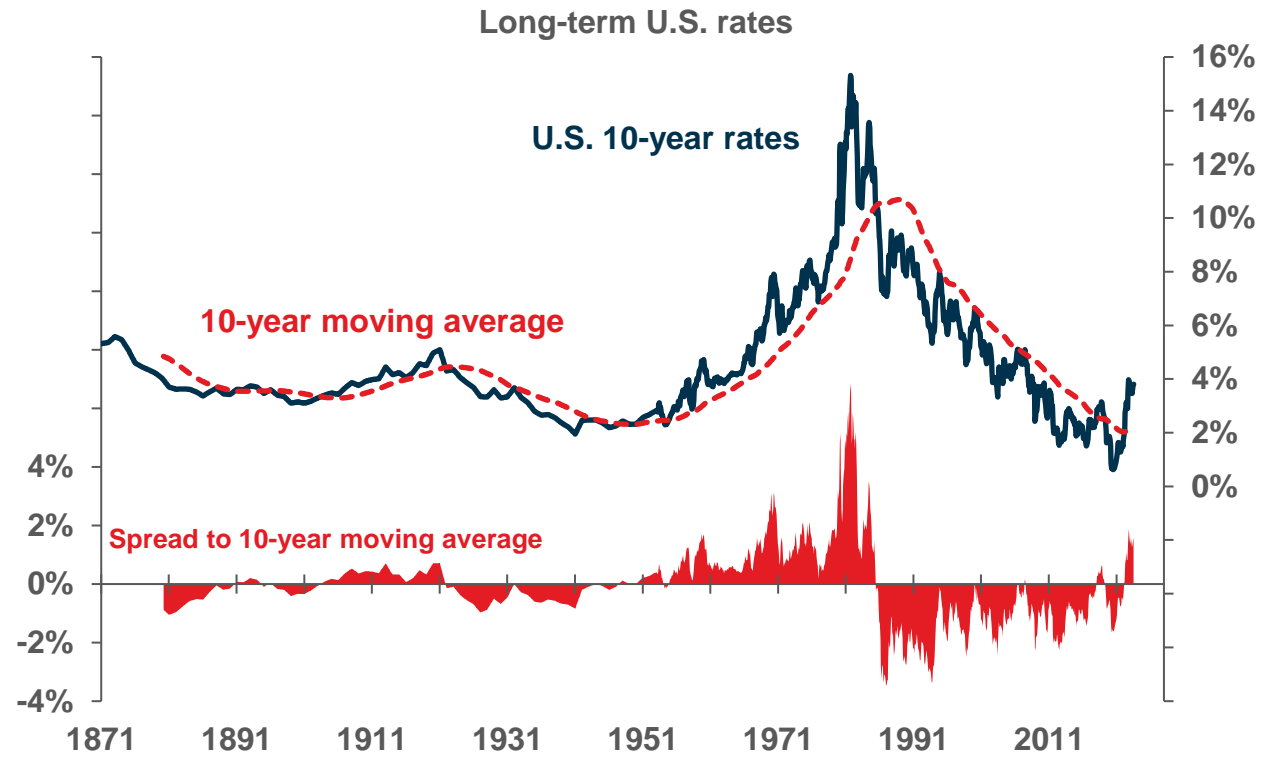
S&P 500 sector correlation with U.S. 10-year rates



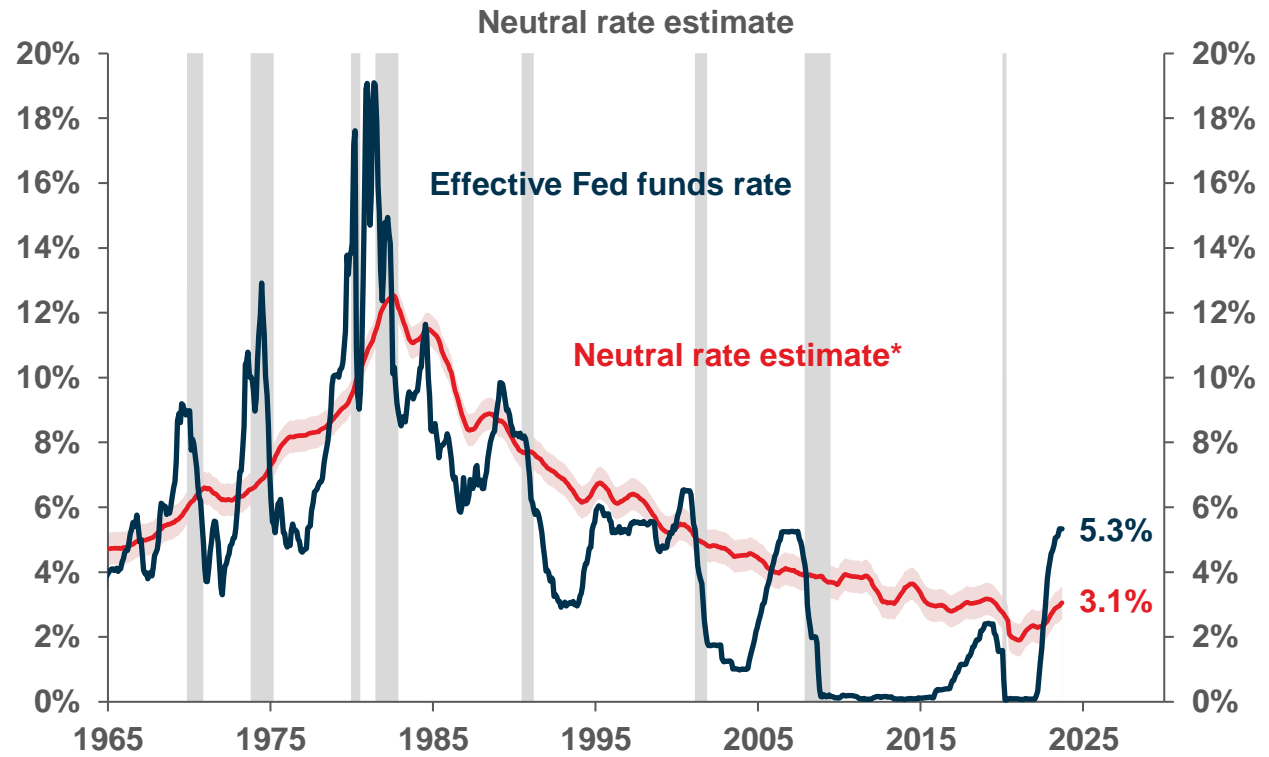
S&P/TSX sector correlation with canadian 10-year rates



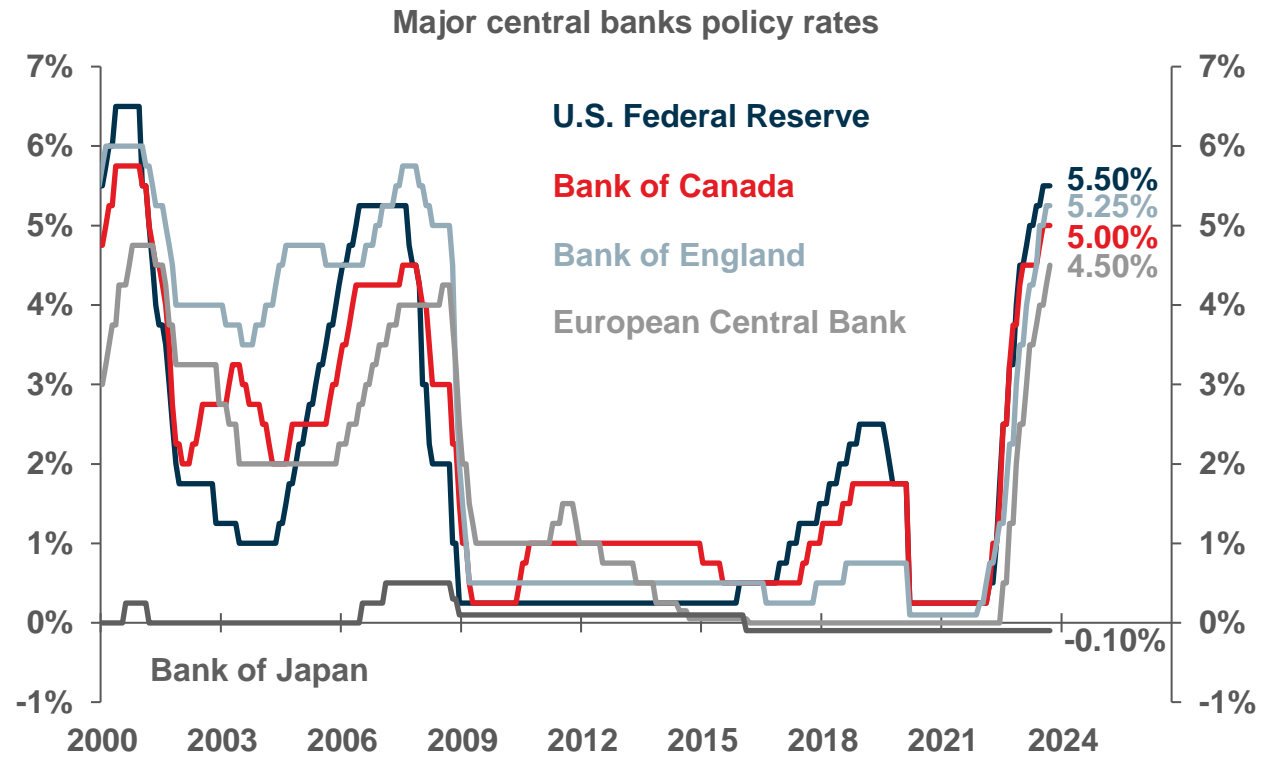
U.S. rates: Looking back 150 years



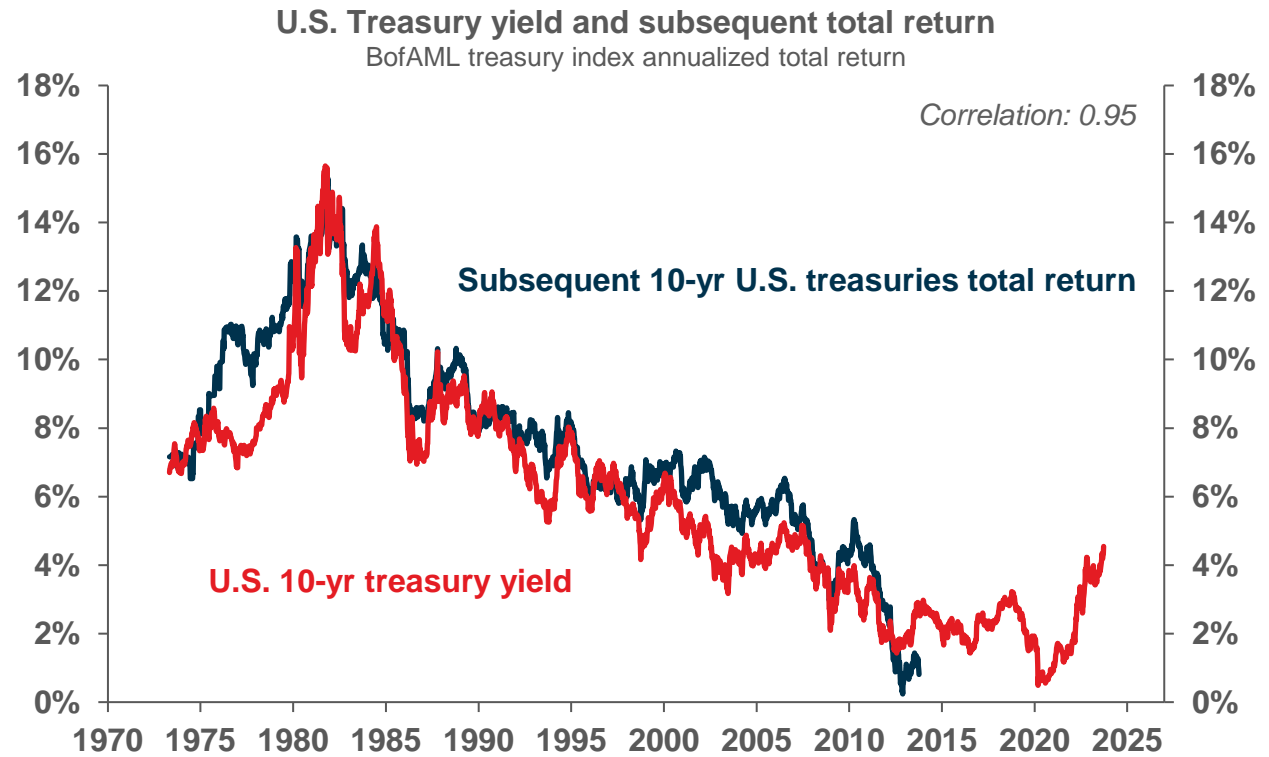
U.S. monetary policy



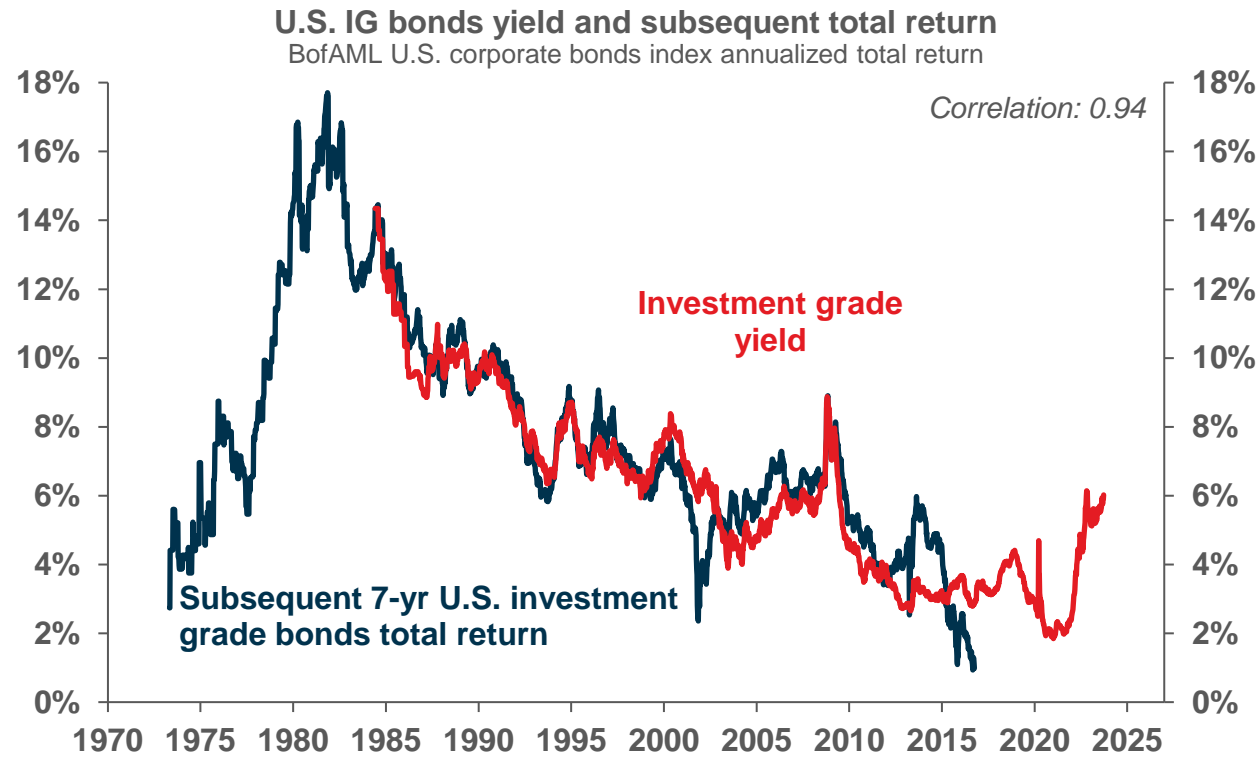
Global policy rates



Fixed income yield and return – Treasuries



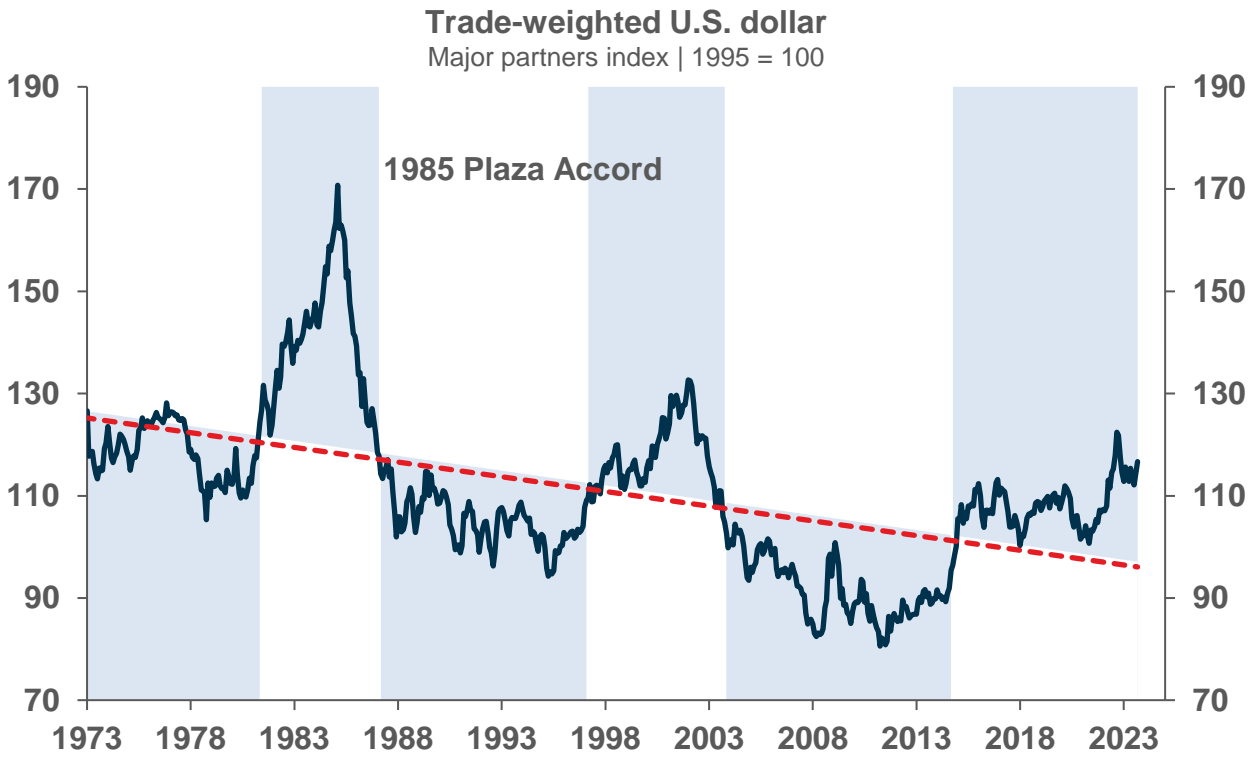
Fixed income yield and return – Investment grade



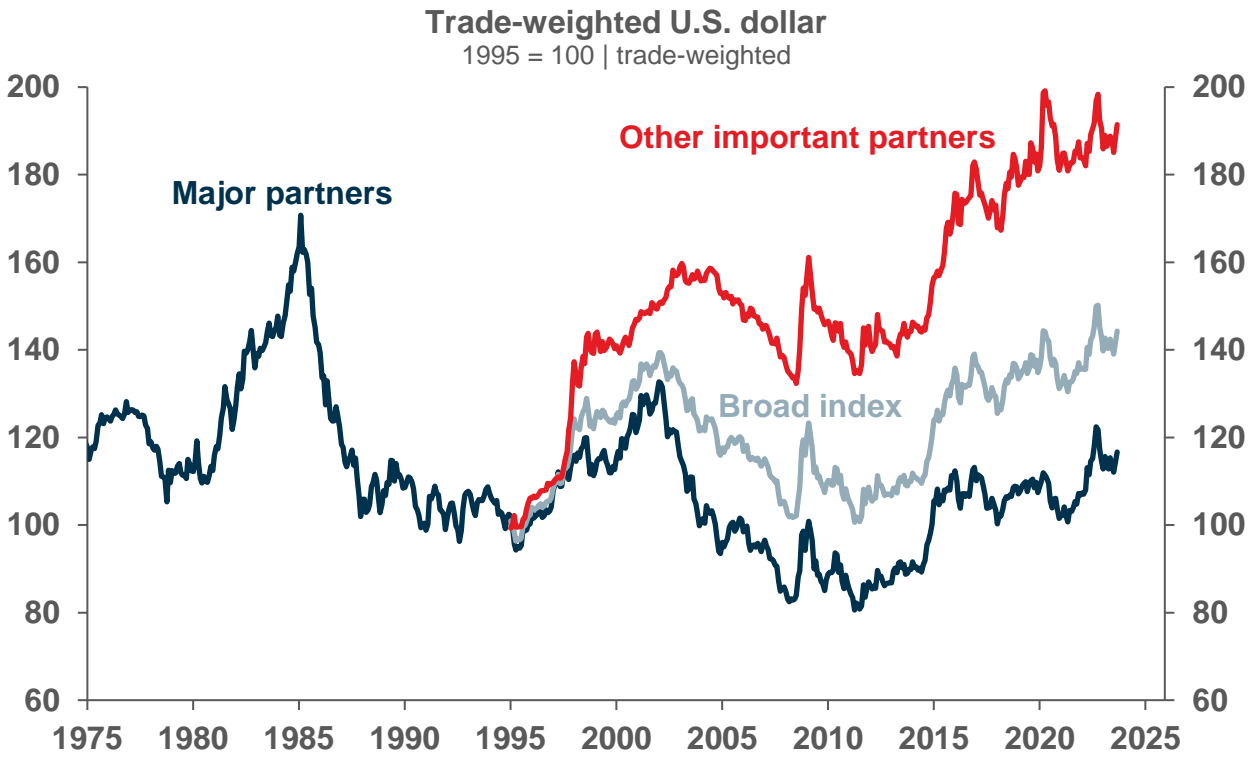
Sovereign bond yield curves

	3 month	6 month	1 year	2 year	5 year	10 year	15 year	20 year	30 year
Japan	-0.23%	-0.15%	-0.04%	0.05%	0.32%	0.76%	1.24%	1.48%	1.74%
Switzerland	1.63%	1.69%	1.82%	1.25%	1.06%	1.09%	1.11%	1.12%	1.09%
Germany	3.65%	3.73%	3.68%	3.21%	2.77%	2.84%	3.01%	3.05%	3.03%
Denmark	3.56%	3.52%		3.63%	3.01%	3.09%		3.19%	
Netherlands	3.75%	3.73%		3.27%	3.02%	3.18%	3.32%	3.32%	3.28%
Sweden	3.92%	4.05%		3.52%	3.08%	2.96%	3.02%	3.02%	
Belgium	3.79%	3.78%	3.71%	3.42%	3.13%	3.49%	3.78%	3.91%	4.01%
Ireland			3.69%	3.40%	3.13%	3.25%	3.63%	3.61%	3.73%
France	3.83%	3.80%	3.80%	3.44%	3.16%	3.40%	3.68%	3.83%	3.92%
Austria			3.77%	3.53%	3.20%	3.45%	3.63%	3.66%	3.62%
Finland				3.36%	3.20%	3.42%	3.65%		3.47%
Portugal	3.51%	3.48%	3.56%	3.22%	3.21%	3.59%	3.98%	4.11%	4.15%
Spain	3.76%	3.85%	3.90%	3.60%	3.51%	3.93%	4.19%	4.36%	4.50%
Australia			4.24%	4.10%	4.16%	4.49%	4.73%	4.79%	4.87%
Italy	3.88%	3.90%	4.02%	4.02%	4.20%	4.79%	5.03%	5.19%	5.26%
Canada	5.13%	5.21%	5.30%	4.88%	4.25%	4.03%		3.99%	3.82%
UK	5.39%	5.42%	5.07%	4.90%	4.51%	4.44%	4.75%	4.84%	4.90%
United States	5.47%	5.55%	5.47%	5.05%	4.61%	4.57%			4.70%
New Zealand	5.77%	5.84%	5.82%		5.31%	5.34%	5.49%	5.56%	

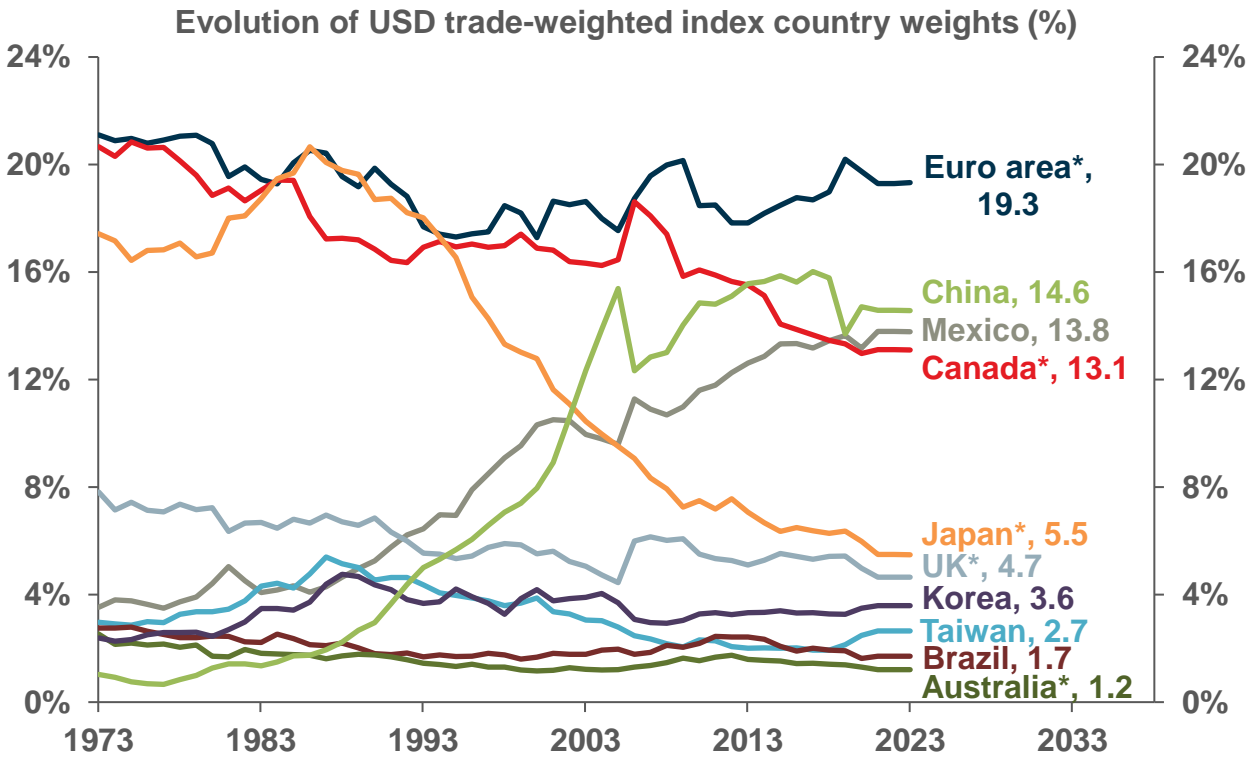
US dollar secular trend



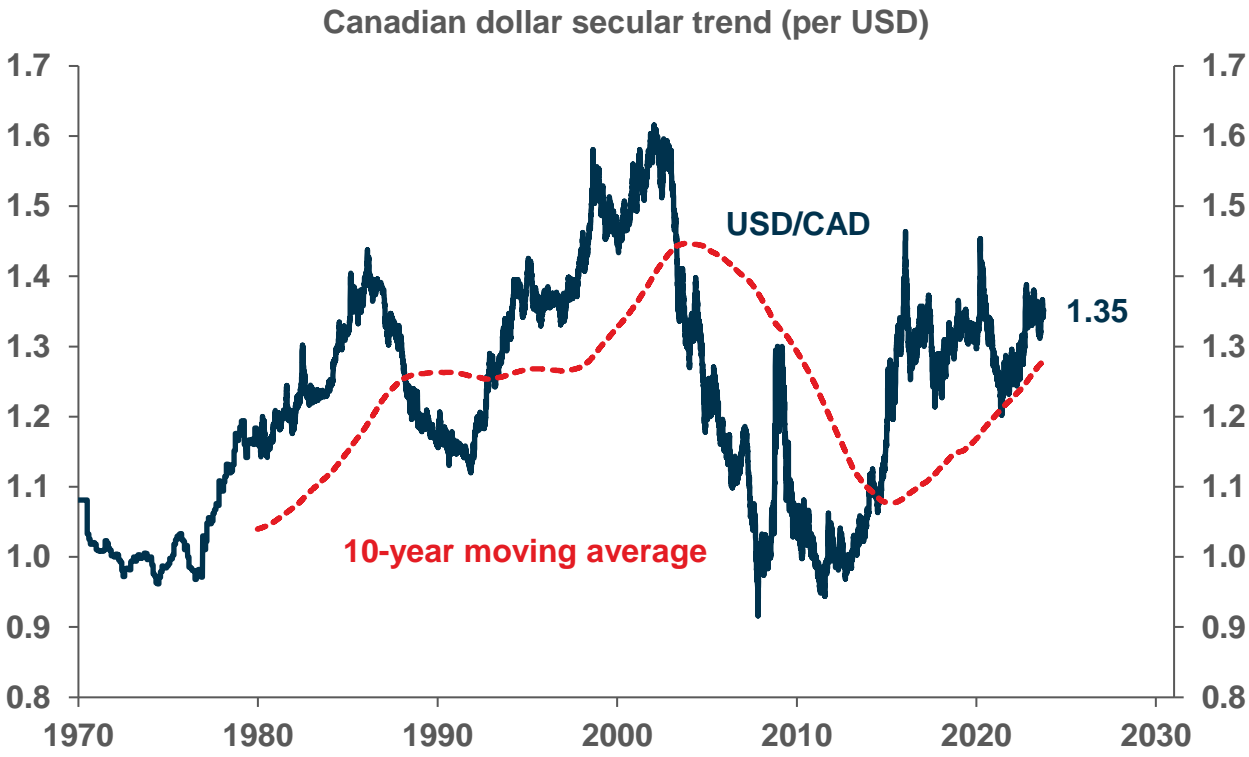
US dollar secular trend by country group



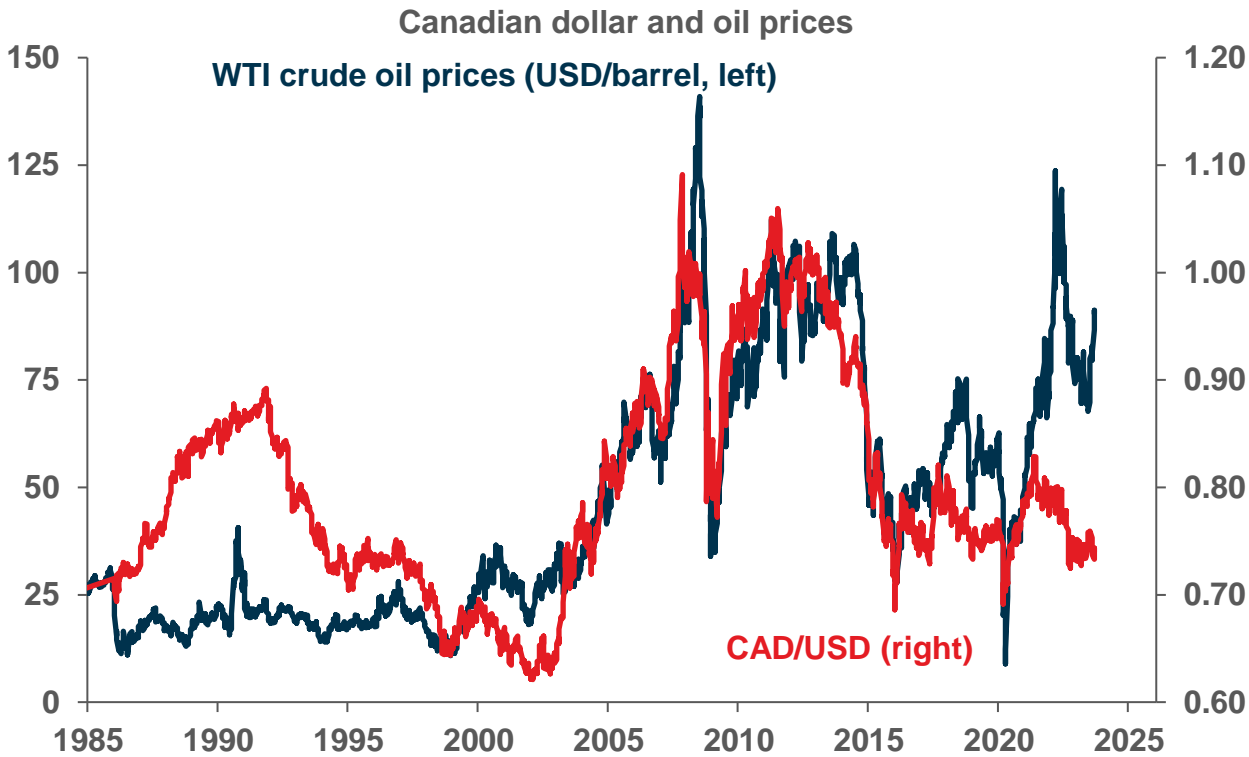
Share of trade-weighted US dollar index



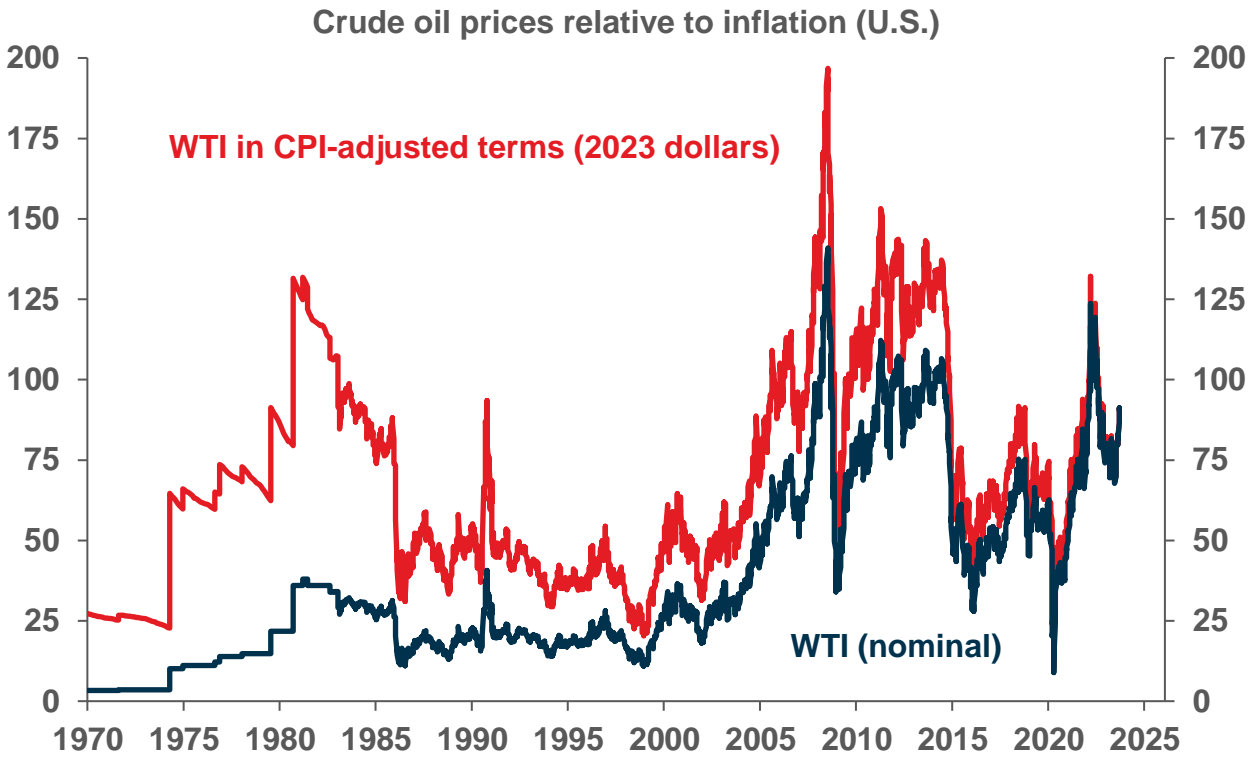
Canadian dollar secular trend



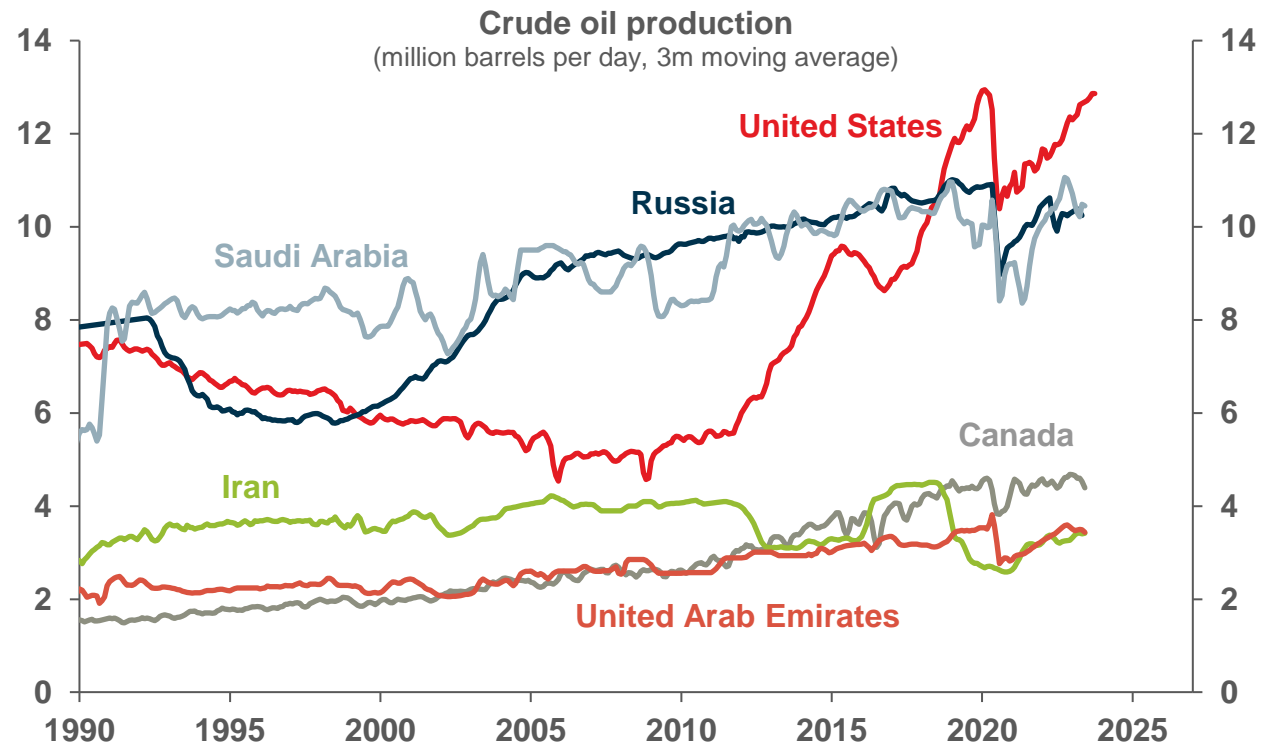
Canadian dollar & crude oil



Oil – Nominal vs real prices



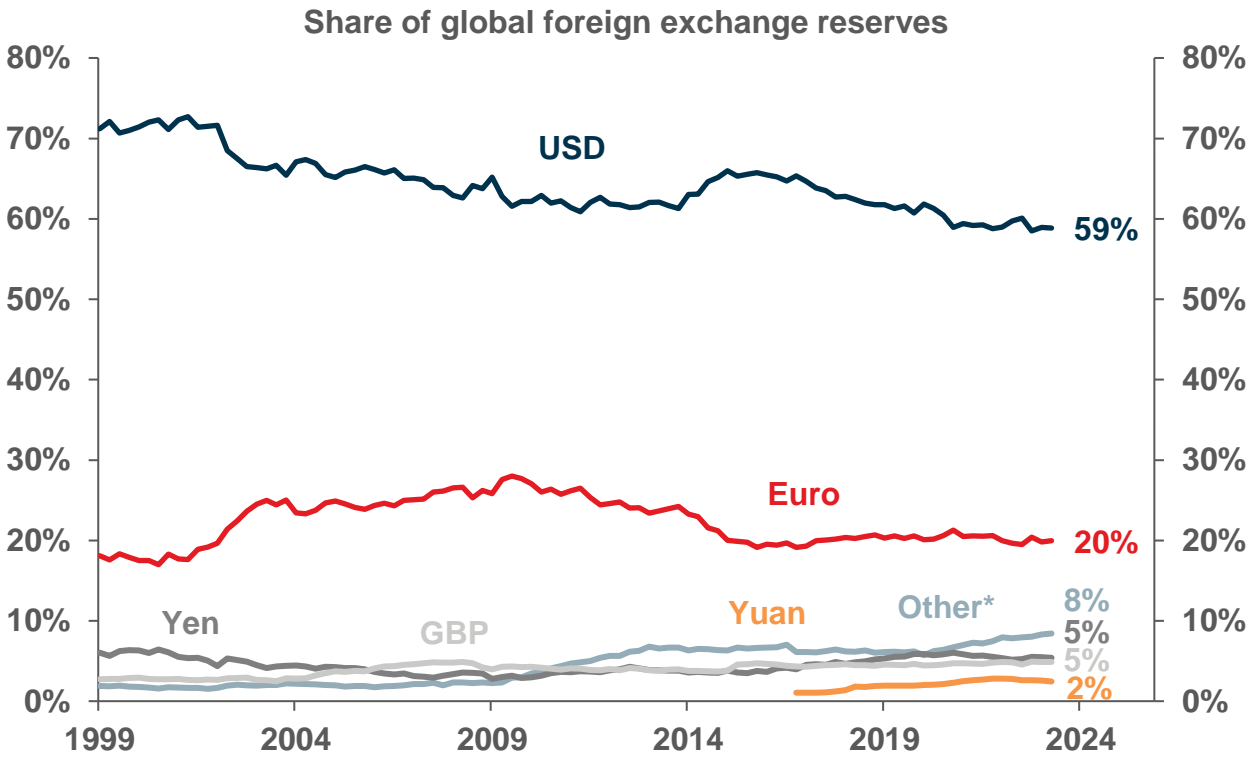
Oil supply by main producing countries



Gold – Nominal vs real prices



Share of global foreign exchange reserves



CIO Office

CIO-Office@bnc.ca

Martin Lefebvre

Chief Investment Officer
martin.lefebvre@bnc.ca

Louis Lajoie

Director
Investment strategy
louis.lajoie@bnc.ca

Mikhael Deutsch-Heng

Associate
Investment strategy
mikhael.deutschheng@bnc.ca

Diego Pinochet-Lapointe

Analyst
Investment strategy
diego.pinochetlapointe@bnc.ca

Simon-Carl Dunberry

Director
Portfolio strategy
simon-carl.dunberry@bnc.ca

Zaid Shoufan

Associate
Portfolio strategy
zaid.shoufan@bnc.ca

Nicolas Charlton

Associate
Quantitative strategy
nicolas.charlton@bnc.ca

Julien Gordon

Analyst
Quantitative strategy
julien.gordon@bnc.ca



CIO Office

The present document was prepared by National Bank Investments Inc. (NBI), a wholly owned subsidiary of National Bank of Canada. National Bank of Canada is a public company listed on the Toronto Stock Exchange (NA: TSX).

The information and the data supplied in the present document, including those supplied by third parties, are considered accurate at the time of their printing and were obtained from sources which we considered reliable. We reserve the right to modify them without advance notice. This information and data are supplied as informative content only. No representation or guarantee, explicit or implicit, is made as for the exactness, the quality and the complete character of this information and these data. The opinions expressed are not to be construed as a solicitation or as an offer to buy or sell the securities mentioned herein and should not be considered as recommendations. This communication creates no legal or contractual obligation on the part of NBI.

This document is not considered a research product under Canadian law and regulation, and consequently is not governed by Canadian rules applicable to the publication and distribution of research reports, including relevant restrictions or disclosures required to be included in research reports.

NBI or its affiliates often act as financial advisor, agent or underwriter for certain issuers mentioned herein and may receive remuneration for its services. As well NBI and its affiliates and/or their officers, directors, representatives, associates, may have a position in the securities mentioned herein and may make purchases and/or sales of these securities from time to time in the open market or otherwise. This document is for distribution only under such circumstances in Canada and to residents of Canada as may be permitted by applicable law.

This document is not directed at you if NBI or any affiliate distributing this document is prohibited or restricted by any legislation or regulation in any jurisdiction from making it available to you. You should satisfy yourself before reading it that NBI is permitted to provide this document to you under relevant legislation and regulations.

® NATIONAL BANK INVESTMENTS is a registered trademark of National Bank of Canada, used under license by National Bank Investments Inc.

© 2023 National Bank Investments Inc. All rights reserved. Any reproduction, in whole or in part, is strictly prohibited without the prior written consent of National Bank Investments Inc.

National Bank Investments is a member of Canada's Responsible Investment Association and a signatory of the United Nations-supported Principles for Responsible Investment.