KR

Cost of Capital in the Current Environment

September 2023 Update

In this edition, we are happy to introduce real GDP growth estimates for Canada and Brazil. Major central banks are approaching the peak for their policy interest rates. However, while headline inflation has decelerated significantly, core inflation (i.e., excluding the volatile energy and food prices) continues to be stubbornly high, which means interest rates will stay higher for a longer period. The global economy appears to be more resilient than expected at the beginning of 2023. Nonetheless, as high interest rates continue to bite into consumers' pockets and businesses' capital budgets, a slowdown is expected in late 2023 and early 2024, with some countries expected to dip into recession. Global financial markets are generally pricing a soft landing rather than a deep and prolonged recessionary period. Amid this uncertainty, cost of capital estimates are now similar to levels observed around the Global Financial Crisis of 2008–2009.

Carla S. Nunes, CFA – Managing Director, Valuation Digital Solutions, Kroll

Kroll Cost of Capital Inputs

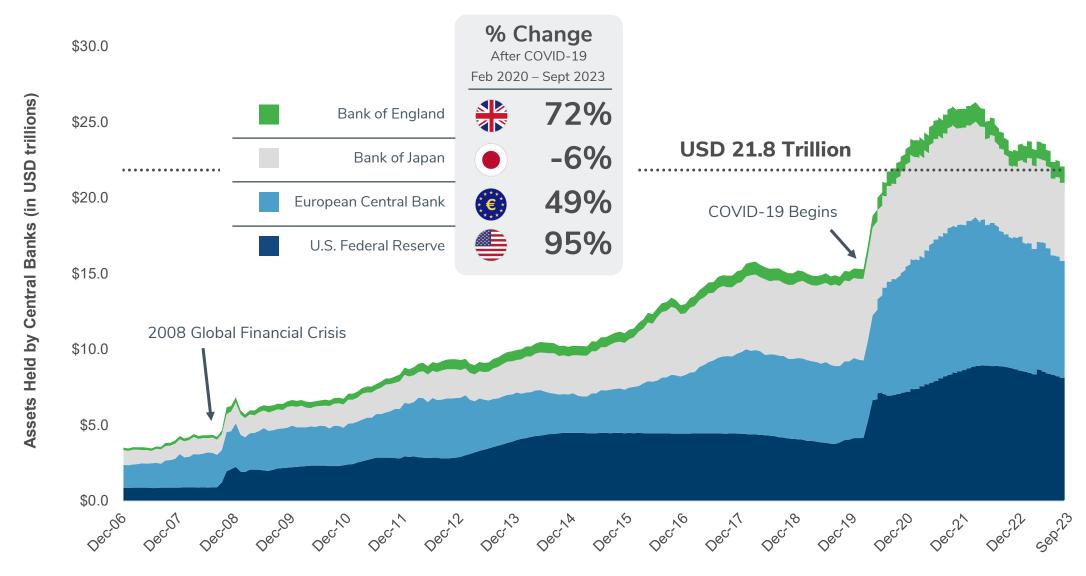
Data as of September 18, 2023

	Normalized Risk-Free Rate	Kroll-Recommended Equity Risk Premium	
U.S. (in USD)	Higher of 3.5% or Spot*	5.5%	
Eurozone *** (in EUR)	Higher of 3.0% or Spot**	5.5% ^{to} 6.0%	

- We recommend using the spot 20-year U.S. Treasury yield as the proxy for the riskfree rate, if the prevailing yield as of the valuation date is higher than our recommended U.S. normalized risk-free rate of 3.5%. This guidance is effective when developing USD-denominated discount rates as of June 16, 2022, and thereafter.
- ** We recommend using the spot 15-year German government bond yield as the proxy for the risk-free rate, if the prevailing yield as of the valuation date is higher than our recommended German normalized risk-free rate of 3.0%. This guidance is effective when developing EUR-denominated discount rated as of October 18, 2022, and thereafter
- *** German normalized risk-free rate and Eurozone equity risk premium (ERP) for use in EUR-denominated discount rates from a German investor perspective. Our current ERP recommendation is at the top of the range. Additional country risk adjustments may be warranted when estimating discount rates for other countries in the Eurozone.

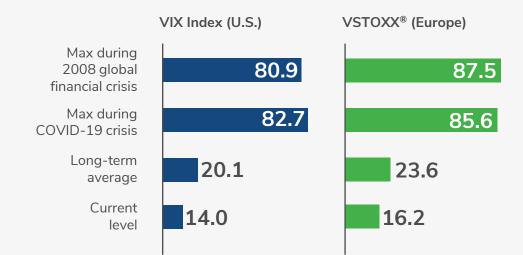
Total Assets Held by Major Central Banks Over Time

Data as of September 18, 2023



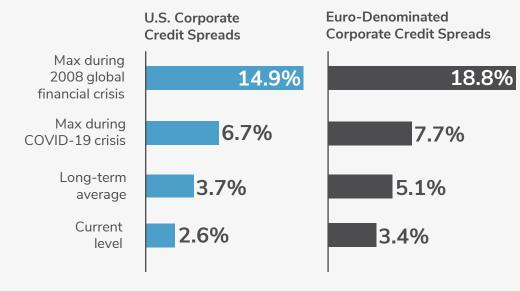
Global Market Volatility

Data as of September 18, 2023



Global Credit Spreads

Data as of September 18, 2023

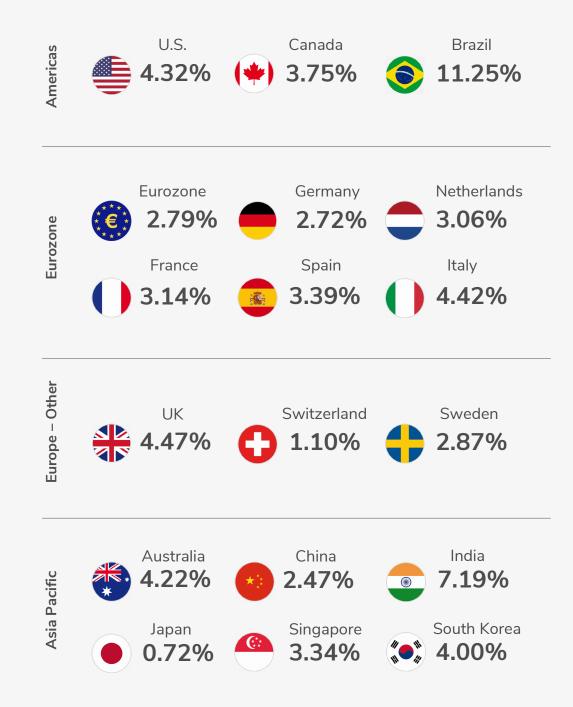


Sources: Capital IQ, FRED® Economic Data, Bloomberg

U.S. corporate credit spreads are based on the difference in effective yields between the ICE BofA U.S. High Yield Index and the ICE BofA U.S. Corporate Index. Euro-denominated corporate credit spreads are based on the difference in effective yields between the Bloomberg Pan-European High Yield Index (EUR) and the Bloomberg Euro Aggregate Corporate Bond Index. Long-term averages are based on 1995 to present for VIX daily series, 1999 to present for VSTOXX daily series, 1996 to present for U.S. credit spread daily series, and 1998 to present for EUR-denominated credit spread monthly series.

Global 10-Year Government Bond Yields

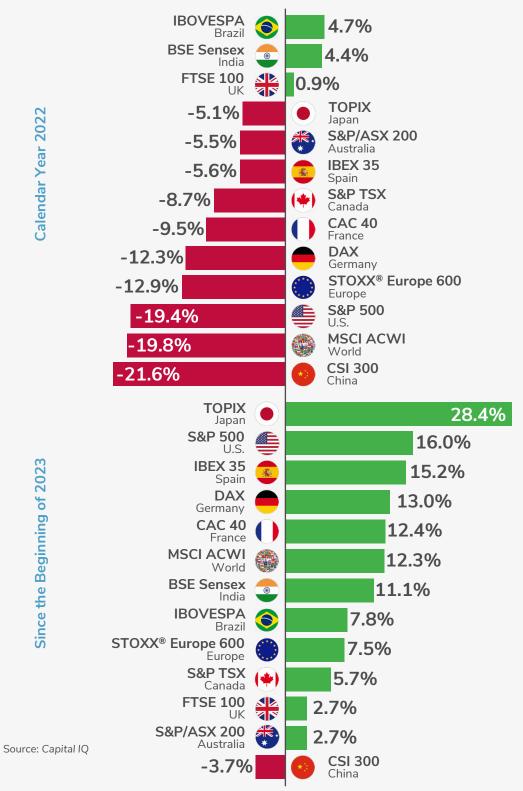
Data as of September 18, 2023



Sources: Refinitiv (Brazil, India), European Central Bank (Eurozone aggregate yield) and Capital IQ (other countries)

Stock Market Performance

Data as of September 18, 2023



U.S. and Eurozone Consumer Sentiment vs. Business Confidence

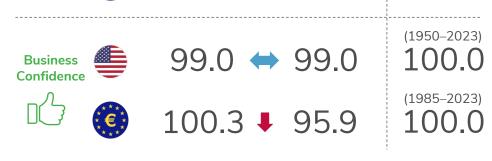
Data as of September 18, 2023



Long-Term Inflation Expectations (Median)

Data as of September 18, 2023





Sources: Michigan University's Index of Consumer Sentiment (preliminary September 2023 reading), OECD's Business Confidence Index and European Commission business and consumer surveys [The same methodology that the European Commission uses to standardize its Economic Sentiment Indicator (ESI) was applied to the Eurozone Consumer Confidence and Business Climate Indicator series.]

U.S. vs. Eurozone Unemployment Rate

Data as of September 18, 2023

2020			****
March	4.4%	0	7.2%
June	11.0%	0	8.1%
September	7.9%	0	8.6%
December	6.7%	0	8.2%
2021			
March	6.0%	0	8.2%
June	5.9%	0	7.9%
September	4.7%	0	7.3%
December	3.9%	0	7.0%
2022			
March	3.6%	0	6.8%
June	3.6%	0	6.7%
September	3.5%	0	6.7%
December	3.5%	0	6.7%
2023			
March	3.5%	0	6.5%
June	3.6%	0	6.4%
Latest Available*	3.8%		6.4%

Inflation estimates over the long term rose from 2.0% in June 2020 to 2.4% in December 2022 and remined there through mid-September 2023.

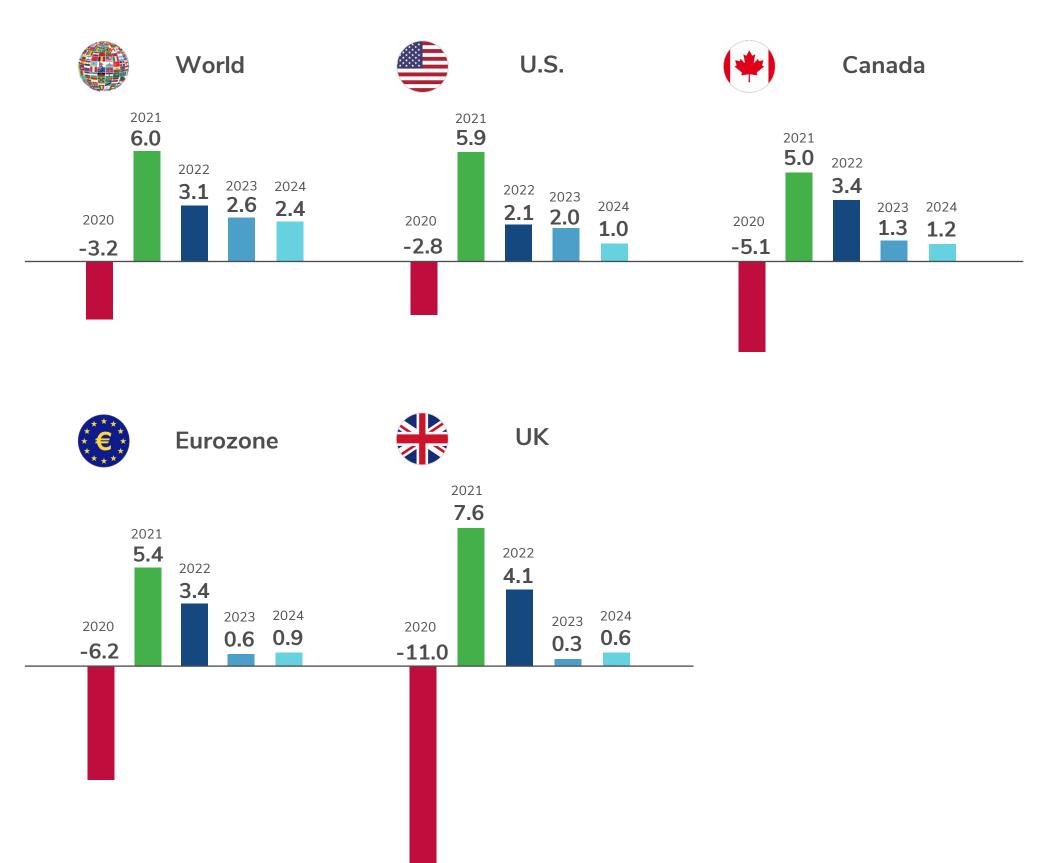
Long-term inflation expectations surged from 1.6% in June 2020 to 2.8% in December 2022, dropping to 2.6% in May 2023, but climbing back up to 2.7% in mid-September 2023.

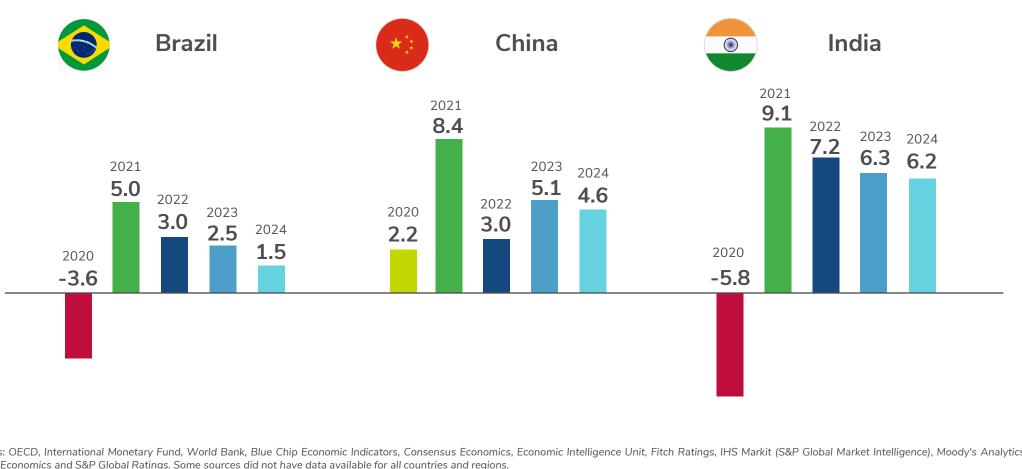
Sources of underlying U.S. data: Blue Chip Economic Indicators; Blue Chip Financial Forecasts, Consensus Economics, IHS Markit (S&P Global Market Intelligence), Federal Reserve Bank of Cleveland, Federal Reserve Bank of Philadelphia (Aruoba Term Structure of Inflation Expectations, Livingston Survey, and Survey of Professional Forecasters), Oxford Economics and the University of Michigan's Surveys of Consumers Inflation Expectations.

Sources of underlying German data: Consensus Economics, Economist Intelligence Unit, IHS Markit (S&P Global Market Intelligence), International Monetary Fund, Oxford Economics and PwC.

Real GDP Growth (%) Estimates (Median)

Data as of September 18, 2023





Source: U.S. Bureau of Labor Statistics and Eurostat

* Data through August 2023 for the U.S. and July 2023 for the Eurozone.

Sources: OECD, International Monetary Fund, World Bank, Blue Chip Economic Indicators, Consensus Economics, Economic Intelligence Unit, Fitch Ratings, IHS Markit (S&P Global Market Intelligence), Moody's Analytics, Oxford Economics and S&P Global Ratings. Some sources did not have data available for all countries and regions.

About Kroll

As the leading independent provider of risk and financial advisory solutions, Kroll leverages our unique insights, data and technology to help clients stay ahead of complex demands. Kroll's team of more than 6,500 professionals worldwide continues the firm's nearly 100-year history of trusted expertise spanning risk, governance, transactions and valuation. Our advanced solutions and intelligence provide clients the foresight they need to create an enduring competitive advantage. At Kroll, our values define who we are and how we partner with clients and communities. Learn more at Kroll.com.

M&A advisory, capital raising and secondary market advisory, capital raising and secondary market advisory, capital raising and secondary market advisory services in the United States are provided by Kroll Securities, LLC (member FINRA/SIPC). M&A advisory, capital raising and secondary market advisory services in the United States are provided by Kroll Securities, LLC (member FINRA/SIPC). Conduct Authority (FCA). Valuation Advisory Services in India are provided by Kroll Advisory Private Limited (formerly, Duff & Phelps India Private Limited), under a category 1 merchant banker license issued by the Securities and Exchange Board of India.

© 2023 Kroll, LLC. All rights reserved.