

Cost of Capital in the Current Environment

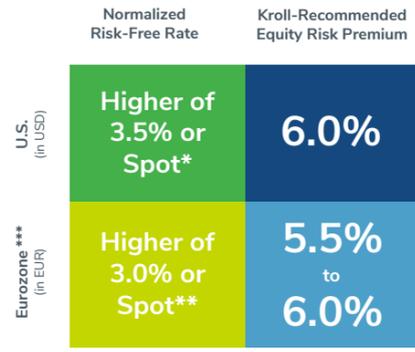
Update – January 2023

Although at a slower pace, major central banks are continuing to raise interest rates to tame high inflation, which reached levels not seen in 30 to 40 years in some countries (70-year record high for Germany). Inflation appears to have peaked at the tail end of 2022, which led financial markets to hope that interest rate hikes will be stopping sometime in 2023. Economists have severely downgraded real growth expectations for 2023 relative to a year ago, with several countries expected to fall into recession. However, global financial markets are generally pricing a soft landing rather than a deep and prolonged recessionary period, particularly since natural gas prices have stabilized and China has ended its zero-Covid-19 policy. Amidst this highly uncertain environment, cost of capital estimates increased during 2022 but could stabilize or even improve in 2023, if central banks are perceived to have inflation under control.

Carla S. Nunes, CFA – Managing Director, Kroll

Kroll Cost of Capital Inputs

Data as of January 17, 2023



* We recommend using the spot 20-year U.S. Treasury yield as the proxy for the risk-free 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 15, 2022, and thereafter.

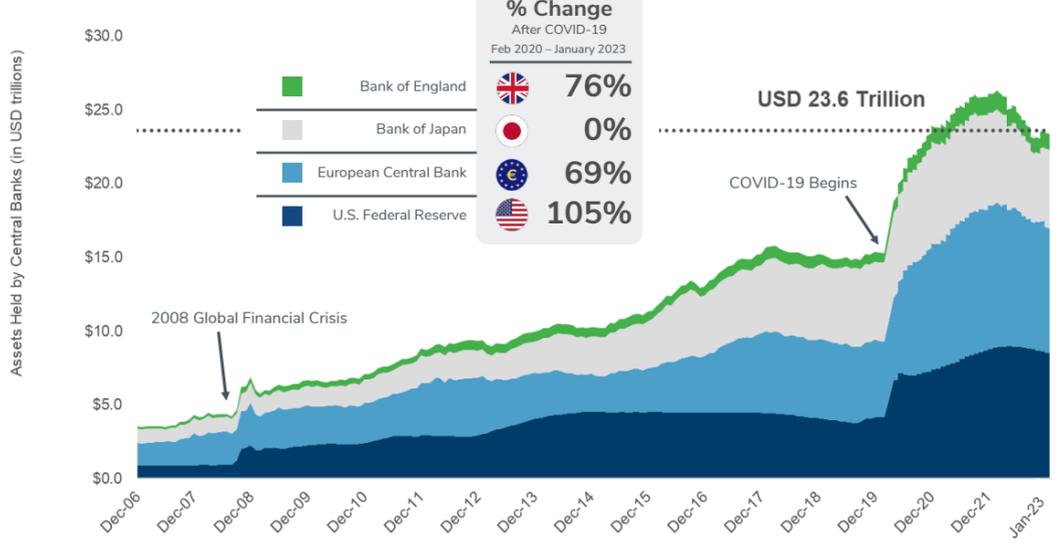
** We recommend using the spot 15-year German government bond yield as the proxy for the risk-free rate, if the prevailing yield as of the valuation date is higher than our recommended German normalized risk-free rate of 3.0%. This guidance is effective when developing EUR-denominated discount rates 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.

For more information, visit: <https://www.kroll.com/costofcapitalnavigator>

Total Assets Held by Major Central Banks Over Time

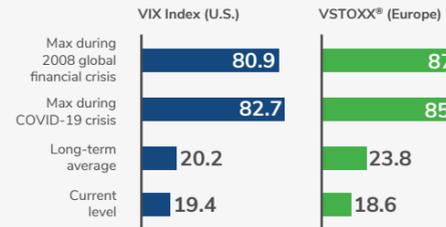
Data as of January 17, 2023



Sources: Capital IQ, FRED® Economic Data, Bank of England, Bank of Japan and European Central Bank

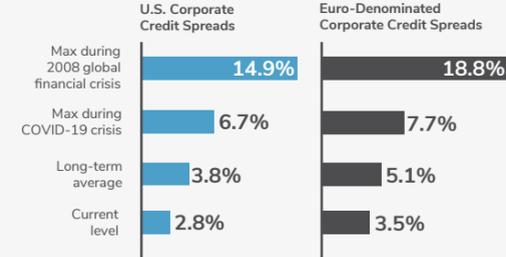
Global Market Volatility

Data as of January 17, 2023



Global Credit Spreads

Data as of January 17, 2023

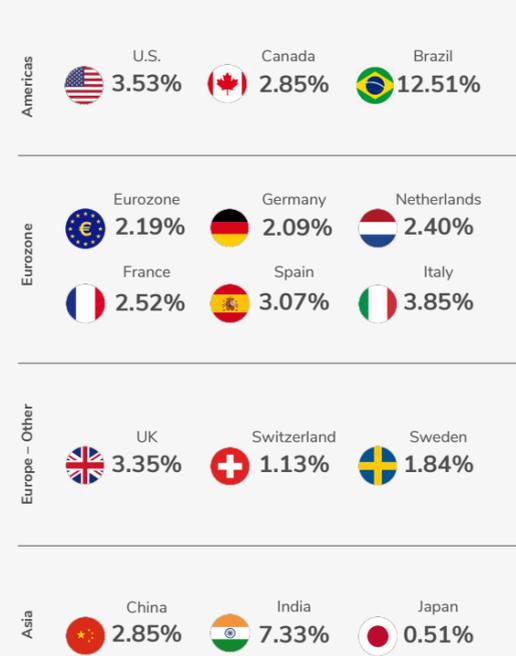


Sources: Capital IQ, FRED® Economic Data, Morningstar Direct

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 Barclays 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

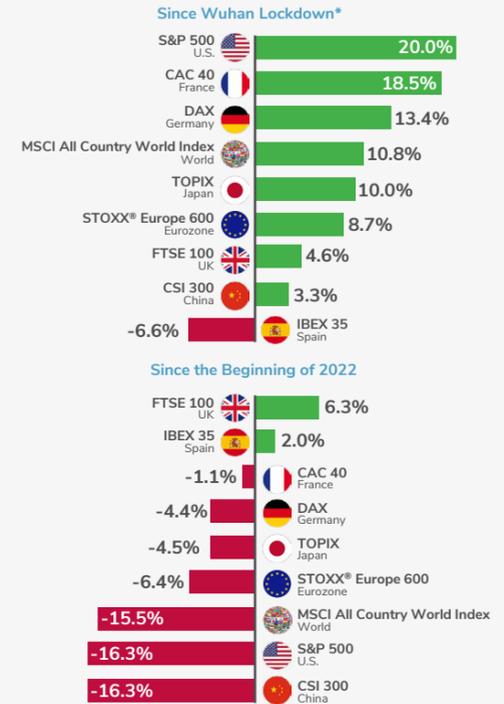
Data as of January 17, 2023



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

Stock Market Performance

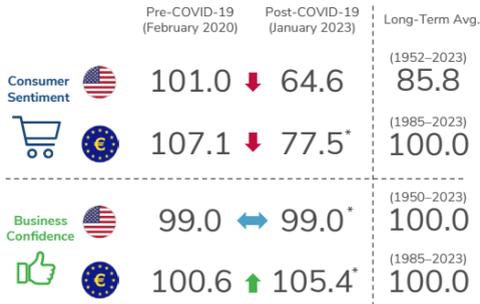
Data as of January 17, 2023



Source: Capital IQ
*The first lockdown due to COVID-19 began on January 23, 2020, in Wuhan, China.

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

Data as of January 17, 2023

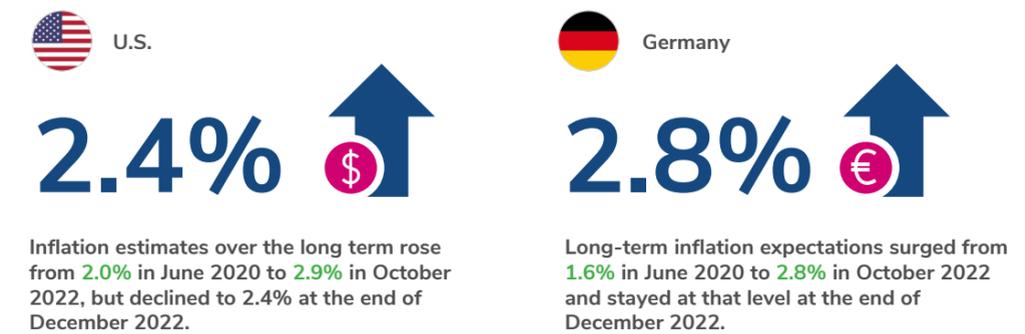


* Data only available for December 2022

Sources: Michigan University's Index of Consumer Sentiment, 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.]

Long-Term Inflation Expectations (Median)

Data as of January 1, 2023



Sources of underlying U.S. data: Blue Chip Economic Indicators; Blue Chip Financial Forecasts, Consensus Economics, IHS Markit, 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, International Monetary Fund, Oxford Economics and PwC.

U.S. vs. Eurozone Unemployment Rate

Data as of January 17, 2023

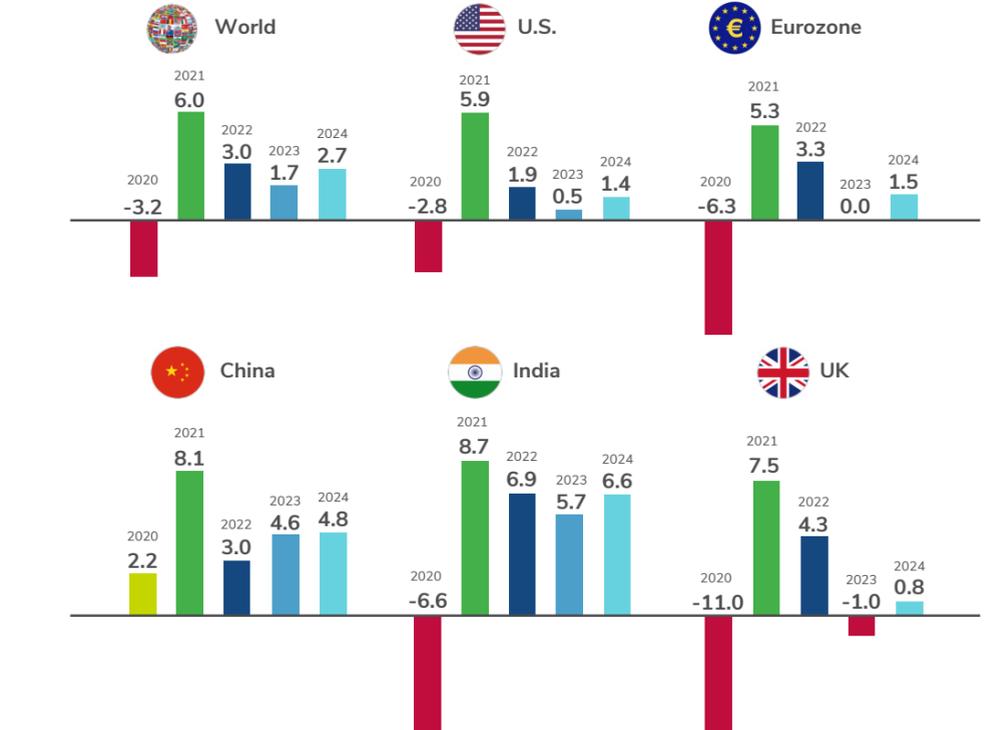


Source: U.S. Bureau of Labor Statistics and Eurostat

* Data through December 2022 for the U.S. and November 2022 for the Eurozone.

Real GDP Growth (%) Estimates (Median)

Data as of January 17, 2023



Sources: OECD, International Monetary Fund, World Bank, Blue Chip Economic Indicators, Consensus Economics, Economic Intelligence Unit, Fitch Ratings, IHS Markit, Moody's Analytics, Oxford Economics and S&P Global Ratings

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