# Impact of High Inflation and Market Volatility on Cost of Capital Assumptions – October 2022 Update

## Executive Summary

Kroll regularly reviews fluctuations in global economic and financial market conditions that may warrant changes to our equity risk premium (ERP) and accompanying risk-free rate recommendations. The risk-free rate and ERP are key inputs used to calculate the cost of equity capital in the context of the Capital Asset Pricing Model (CAPM) and other models used to develop discount rates. We also update country risk data on a quarterly basis for 175+ countries using various models.

In December 2021, despite some uncertainty regarding the impact of the omicron variant of COVID-19, the global economy appeared to be on a strong path to recovery, although with some unevenness across regions. Major central banks were considering some level of normalization of monetary policy, both by slowing down (or stopping altogether) quantitative easing (QE) measures and by raising policy interest rates, particularly as inflationary pressures proved to be more than transitory in many countries. On January 3, 2022, the S&P 500 index achieved a new record high, while two days later the STOXX Europe 600 index reached its own record high. At that time, Kroll began evaluating when and under which circumstances it might be appropriate to *lower* our recommended ERPs for the U.S. and the Eurozone.

Starting in mid-January, as inflation continued to surprise with increasingly higher-than-expected readings reaching levels not seen in 30 to 40 years in some countries, global equity markets became more volatile. Investors have tried to ascertain the magnitude and speed at which central banks will raise interest rates, leading to a potential decrease in the value of companies in various industries due to an increase in discount rates.

Factors such as increased consumer demand for goods and services (driven in part by pent-up demand and unprecedented levels of monetary and government fiscal stimulus to fight the pandemic), labor shortages and global supply chain bottlenecks stemming from COVID-19 have all contributed to upward inflationary pressures. In addition, rising tensions between Russia and Ukraine culminated in Russia's invasion of Ukraine on February 24, 2022. The Russia-Ukraine war has now surpassed the 7-month mark and has placed further pressure on already-strained global supply chains, contributing to significant increases in food and certain commodity prices across the world.

Economists have continued to downgrade global real economic growth projections for 2022 and 2023, with Europe being particularly impacted due to its higher exposure to Russia and Ukraine, and especially since it was already suffering from an energy crisis prior to these events. The big question for investors is whether central banks will manage to control inflation by slowing down economic activity, without creating a major recession.

This increased level of uncertainty has precipitated a repricing of equity securities in stock markets around the globe. At the end of September 2022, the S&P 500 index had declined by 25% since the beginning of the year, while the NASDAQ Composite index had lost 32% (in price terms); both indices are considered to be in "bear market" territory. The VIX (the volatility index on the S&P 500 index) is now higher than in December 2020, when Kroll last changed its Recommended U.S. ERP. In the case of Europe, the VSTOXX (the volatility index on the EURO STOXX 50 index) remains elevated, but it is down from the levels observed back in March 2022, immediately after Russia's invasion of Ukraine. The STOXX Europe 600 index has decreased by 20% (in price terms) for year-to-date September 2022.

As major central banks continue to signal rate hikes (the Bank of Japan being an exception), significant volatility has been observed in government bond yields. This has been exacerbated by the ongoing lack of confidence in the UK's new government after its September 23, 2022 announcement of significant tax cuts, to be funded by issuance of new government debt. In the near term, it is possible that even higher levels of volatility will be observed in spot yields before they stabilize. Notwithstanding the references below to spot yields as of a given valuation date, if government bonds yields continue to fluctuate considerably, valuation professionals may wish to **consider using a moving average of spot yields** to mitigate the impact of this volatility (e.g., weekly average, monthly average).

More broadly, this heightened uncertainty will have a negative impact on the valuation of investments globally. The uncertainty generated by these events warrants a reevaluation of cost of capital assumptions. While the following recommendations are effective as of October 18, 2022, many of the conditions and risk factors supporting the new guidance were already present in late September 2022.

### Cost of Capital Recommendations

- **United States: The Kroll Recommended U.S. ERP is increasing from 5.5% to 6.0% when developing USD-denominated discount rates as of October 18, 2022, until further notice.** This is matched with the *higher* of a normalized risk-free rate of 3.5% or the spot 20-year U.S. Treasury yield as of the valuation date. We are aware of lack of liquidity issues in the U.S. Treasury market for the 20-year maturity, which is causing some distortion in the 20-year yield relative to that observed for 10 and 30 maturities. We will continue to closely monitor the situation and publish new guidance if and when appropriate.

- **Canada:** The Kroll normalized risk-free rate remains at 3.5%. However, we recommend **using the spot Government of Canada Benchmark Long-Term Bond yield as the proxy for the risk-free rate if the prevailing yield as of the valuation date is *higher* than our normalized Canadian risk-free rate of 3.5%.** This guidance is effective when developing CAD-denominated discount rates as of October 18, 2022 and thereafter, until further guidance is issued.

- **Eurozone (from a German investor perspective)**: The current Kroll Recommended Eurozone ERP remains in the *range* of 5.5% to 6.0%. Based on current economic and financial market conditions, we continue to believe that a 6.0% ERP is more appropriate when developing EUR-denominated discount rates as of March 14, 2022 and thereafter, until further guidance is issued. However, we are **increasing the Kroll normalized risk-free rate for Germany from 2.0% to 3.0%, as of October 18, 2022 when developing EUR-denominated discount rates, until further notice.** In addition, 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 normalized German risk-free rate of 3.0%. Incremental country risk adjustments for other Eurozone countries with a sovereign debt rating below AAA may be appropriate. Please note that this information does not supersede Germany's IDW (Institut der Wirtschaftsprüfer) guidance for projects that will be reviewed by German auditors or regulators.

- **United Kingdom: The Kroll normalized risk-free rate for the UK is increased from 3.5% to 4.0% as of October 18, 2022 when developing GBP-denominated discount rates, until further notice.** We continue to recommend using the spot 20-year UK government bond yield as the proxy for the risk-free rate if the prevailing yield as of the valuation date is *higher* than our normalized UK risk-free rate of 4.0%.

For selected underlying data supporting the latest guidance for these countries, click here.

Please contact the costofcapital.support@kroll.com with any questions.

## Kroll Cost of Capital Inputs

Data as of October 18, 2022

| | U.S. (in USD) | Eurozone ***** (in EUR) | U.K. (in GBP) | Canada (in CAD) |
|---|---|---|---|---|
| Normalized Risk-Free Rate | Higher of 3.5% or Spot* | Higher of 3.0% or Spot** | Higher of 4.0% or Spot*** | Higher of 3.5% or Spot**** |
| Kroll Recommended Equity Risk Premium | 6.0% | 5.5% to 6.0% | n/a | n/a |

* 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 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 rates as of October 18, 2022 and thereafter.

*** We recommend using the spot 20-year U.K. Gilt yield as the proxy for the risk-free rate, if the prevailing yield as of the valuation date is higher than our recommended U.K. normalized risk-free rate of 4.0%. This guidance is effective when developing GBP-denominated discount rates as of October 18, 2022 and thereafter.

**** We recommend using the spot Government of Canada Benchmark Long-Term Bond yield as the proxy for the risk-free rate, if the prevailing yield as of the valuation date is higher than our recommended Canada normalized risk-free rate of 3.5%. This guidance is effective when developing CAD-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. Additional country risk adjustments may be warranted when estimating discount rates for other countries in the Eurozone.