

**Exhibit 1:** Spot, Long-Term, and Normalized Risk-Free Rates for Germany as of Mid-October 2022

Method 1: Long-Term Average		
<u>15-Year German Government Securities:</u> <sup>1</sup>		
- Spot Rate (as of October 14, 2022)	2.4%	
- Long-Term (10-year) Trailing Average Yield	0.8%	
Method 2: Fisher Equation	Range	Median
Estimated Long-term Real Risk-Free Rate <sup>2</sup>	-1.2% to 1.5%	0.8%
Expected Long-term Inflation <sup>3</sup>	1.8% to 3.4%	2.8%
Range of Estimates	0.6% to 4.9%	NMF
Midpoint	2.8%	3.6%
Concluded Normalized Risk-free Rate		3.0%

<sup>1</sup> Source: Interest rates on listed German federal securities (calculated using Svensson method), Deutsche Bundesbank.

<sup>2</sup> List of the academic paper references used to arrive at the real rate estimates, German Council of Economic Experts (2015), "Focus on Future Viability", Annual Report 2015/16, Federal Statistical Office, Wiesbaden; Hristov, Atanas, "Measuring the Natural Rate of Interest in the Eurozone: A DSGE Perspective", CESifo Forum 17 (1), 2016, 86-91; German Council of Economic Experts (2016), "Time for Reforms", Annual Report 2016/17, Federal Statistical Office, Wiesbaden; Belke, Ansgar, and Jens Klose. "Equilibrium real interest rates and secular stagnation: An empirical analysis for euro area member countries." JCMS: Journal of Common Market Studies 55, no. 6 (2017): 1221-1238; German Council of Economic Experts (2017), "Towards a Forward-Looking Economic Policy", Annual Report 2017/18, Federal Statistical Office, Wiesbaden; Fries, Sébastien, Jean- Stéphane Mésonnier, Sarah Mouabbi, and Jean-Paul Renne. "National natural rates of interest and the single monetary policy in the euro area." Journal of Applied Econometrics 33, no. 6 (2018): 763-779; Brand, Claus, Marcin Bielecki, and Adrian Penalver. "The natural rate of interest: estimates, drivers, and challenges to monetary policy." ECB Occasional Paper 217 (2018); Beyer, Robert CM, and Volker Wieland. "Instability, imprecision and inconsistent use of equilibrium real interest rate estimates." Journal of International Money and Finance 94 (2019): 1-14; Belke, Ansgar, and Jens Klose. "Equilibrium real interest rates and the financial cycle: Empirical evidence for Euro area member countries." Economic Modelling 84 (2020): 357-366; Arena, Marco, Gabriel Di Bella, Alfredo Cuevas, Borja Gracia, Huong Nguyen, and Alex Pienkowski, "It is Only Natural: Europe's Low Interest Rates" (July 1, 2020); Davis, Josh, Cristian Fuenzalida, and Alan M. Taylor. "The Natural Rate Puzzle: Global Macro Trends and the Market-Implied r." No. w26560. National Bureau of Economic Research, 2019; Reichenbachas, Tomas, Linas Jurkšas, and Rokas Kaminskas. "Natural real rates of interest across Euro area countries: Are R-stars getting closer together?." No. 24. Bank of Lithuania, 2021.

<sup>3</sup> Excludes inflation forecasts for 2022, as the indications were deemed an outlier and unduly influencing the long-term average. Source of underlying data: Consensus Economics, "Consensus Forecasts – Surveys of International Economic Forecasts – G7 & Western Europe", Survey Date: October 10, 2022; Economist Intelligence Unit (EIU) – Global Forecasting Service, "Economic forecast: Europe growth and inflation", September 14, 2022; IHS Markit, "Comparative World Overview Tables (Interim Forecast, Monthly)", September 15, 2022; Oxford Economics, "Country Economic Forecast – Germany", October 14, 2022; International Monetary Fund (IMF), "World Economic Outlook – Countering the Cost-of-Living Crisis", October 2022; PwC, "Global Economic Watch – Projections", August 2022.

**Exhibit 2:** Spot, Long-Term, and Normalized Risk-Free Rates for the United Kingdom as of Mid-October 2022

Method 1: Long-Term Average		
20-Year U.K. Government Securities: <sup>4</sup>		
- Spot Rate (as of October 13, 2022)	4.5%	
- Long-Term (10-year) Trailing Average Yield	2.0%	
Method 2: Fisher Equation		
	Range	Median
Estimated Long-term Real Risk-Free Rate <sup>5</sup>	-0.4% to 2.3%	1.1%
Expected Long-term Inflation <sup>6</sup>	2.2% to 3.7%	3.1%
<b>Range of Estimates</b>	<b>1.8% to 6.0%</b>	<b>NMF</b>
<b>Midpoint</b>	<b>3.9%</b>	<b>4.2%</b>
<b>Concluded Normalized Risk-free Rate</b>		<b>4.0%</b>

<sup>4</sup> Source: Nominal par yields on British Government Securities (calculated using VRP model), Bank of England Database.

<sup>5</sup> List of the academic paper references used to arrive at the real rate: Goldby, Mike, Lien Laureys, and Kate Reinold. "An estimate of the UK's natural rate of interest", Bank Underground, 2015; Holston, Kathryn, Thomas Laubach, and John C. Williams, "Measuring the natural rate of interest: International trends and determinants". *Journal of International Economics*, vol. 108, 2017, pp. S59-S75 (data update as of August 2020 available here: <https://www.newyorkfed.org/research/policy/rstar>); Bank of England, "Inflation Report – May 2017"; Bank of England, "Inflation Report – August 2018"; Amiri, Suhail. "Natural Rate of Interest, Demographics and Income Inequalities". HEC Montréal, 2018; Evans, Anthony J. "The Natural Rate of Interest: An Estimate for the United Kingdom". *Economic Affairs*, vol. 40, no. 1, 2020, pp. 24-35; Davis, Josh, Cristian Fuenzalida, and Alan M. Taylor. "The Natural Rate Puzzle: Global Macro Trends and the Market-Implied R\*". NBER Working Paper No. w26560, 2019; Ferreira, Thiago, and Samer Shousha. "Supply of Sovereign Safe Assets and Global Interest Rates". *International Finance Discussion Paper*, vol 2021, no. 1315, 2021, pp. 1-49. Board Of Governors of The Federal Reserve System; Gray, Alexis, Roxane Spitznagel and Adam J. Schickling. "Resetting to a modestly higher neutral rate". Vanguard Research – Megatrends, June 2022.

<sup>6</sup> Excludes inflation forecasts for 2022, as the indications were deemed an outlier and unduly influencing the long-term average. Source of underlying data: Consensus Economics, "Consensus Forecasts – Surveys of International Economic Forecasts – G7 & Western Europe", Survey Date: October 10, 2022; Economist Intelligence Unit (EIU) – Global Forecasting Service, "Economic forecast: Europe growth and inflation", September 14, 2022; EY ITEM Club, "Interim Forecast and Special Report on Consumer Spending", July 2022; EY ITEM Club, "UK economy expected to be in recession until summer 2023, says latest EY ITEM Club forecast", October 17, 2022 ; IHS Markit, "Comparative World Overview Tables (Interim Forecast, Monthly)", September 15, 2022; Oxford Economics, "Country Economic Forecast – UK", October 13, 2022; International Monetary Fund (IMF), "World Economic Outlook – Countering the Cost-of-Living Crisis", October 2022; PwC, "Global Economic Watch – Projections", August 2022.

**Exhibit 3:** Factors Considered in the Kroll U.S. ERP Recommendation:<sup>7</sup>  
Relative Change from December 9, 2020 to October 1, 2022

	Factor	Change	Effect on ERP
Financial Markets	U.S. Equity Markets	▼	▲
	Implied Equity Market Volatility	▲	▲
	Corporate Credit Spreads	▲	▲
	Damodaran Implied ERP Model	▲	▲
	Default Spread Model	▲	▲
	U.S. Equity Market Uncertainty Index	▼	▼
Economic Indicators	Historical & Projected Real GDP Growth	◀▶	◀▶
	Unemployment	▼	▼
	Consumer Sentiment	▼	▲
	Business Confidence	▼	▲
	Sovereign Credit Ratings	◀▶	◀▶
	Economic Policy Uncertainty (EPU) Index	◀▶	◀▶

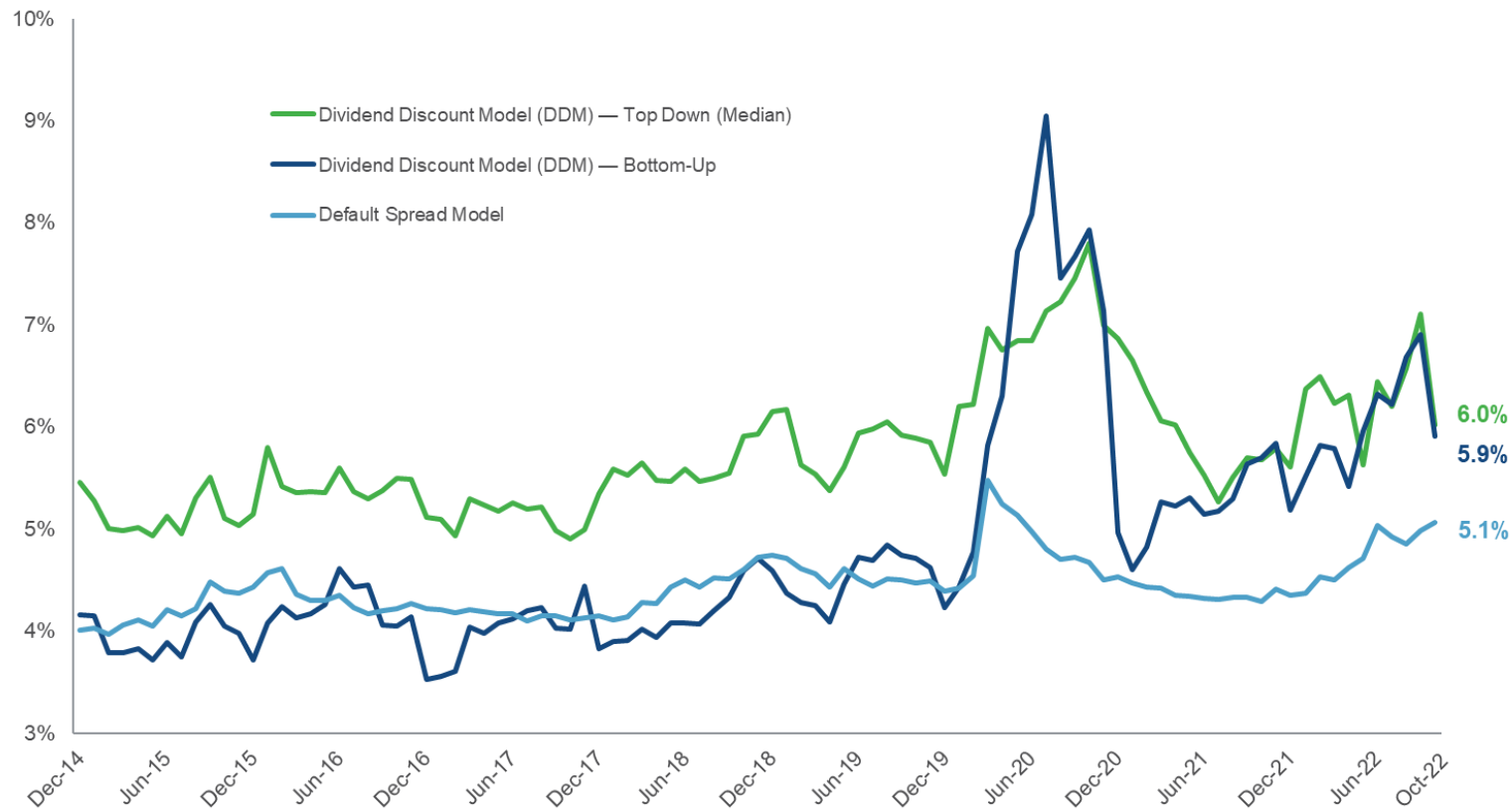
<sup>7</sup> While our models have been updated through October 1st, economic and market conditions have not changed materially through the middle of October 2022.

**Exhibit 4:** Factors Considered in the Kroll Eurozone ERP Recommendation:<sup>8</sup>  
Relative Change from December 31, 2021 to October 1, 2022

	Factor	Change	Effect on ERP
Financial Markets	European Equity Markets	▼	▲
	Implied Equity Market Volatility	▲	▲
	Corporate Credit Spreads	▲	▲
	Dividend Discount Model Implied ERP	▲	▲
	Default Spread Model	▲	▲
Economic Indicators	Historical & Projected Real GDP Growth	▼	▲
	Unemployment	▼	▼
	Consumer Sentiment	▼	▲
	Business Confidence	▼	▲
	Sovereign Credit Ratings	◀▶	◀▶
	Economic Policy Uncertainty (EPU) Index	▲	▲

<sup>8</sup> While our models have been updated through October 1st, economic and market conditions have not changed materially through the middle of October 2022.

**Exhibit 5: Kroll Eurozone Conditional ERP – Quantitative Models<sup>9</sup>**  
December 2014 to October 14, 2022



Source of underlying data: Refinitiv I/B/E/S estimates and market data, Capital IQ, Bloomberg, various sources for German long-term real GDP and inflation estimates. Analysis by Kroll.

<sup>9</sup> The Dividend Discount Model – Bottom -Up is only updated through the end of each month. The September 30, 2022 indication was carried through October 14, 2022.