



Cost of Capital in the Current Environment

COVID-19 Update
December 2021

See it live:

www.kroll.com/cost-of-capital-infographics

Please Note:

In this publication, you will find that sources and references that were previously noted as *Duff & Phelps* or *Duff & Phelps, A Kroll Business*, will now exclusively and henceforth be referred to as *Kroll*.

Duff & Phelps acquired Kroll in 2018 and began transitioning our combined firm to the Kroll brand name in 2021. In 2022, we begin this new chapter with a fresh look and a clear and confident vision for the future. Kroll is the world's premier provider of services and digital products related to valuation, governance, risk and transparency.

“

Global economic recovery is continuing at a robust but uneven pace. Global supply disruptions and regional labor shortages are creating significant inflationary pressures, which combined **with a resurgence in COVID-19 cases, are contributing to further downward revisions in real GDP growth.** Financial market risk has risen recently due to a new COVID-19 variant, but the longer-term impact of Omicron is still a wild card.

”



Carla S. Nunes, CFA
Managing Director, Kroll

Global Cost of Capital Inputs

Data as of November 30, 2021

	Normalized Risk-free Rate	Kroll-Recommended Equity Risk Premium
United States (in USD)	2.5%	5.5%
Eurozone* (in EUR)	1.5%	5.5% to 6.0%

These are our latest Equity Risk Premium (ERP) recommendations for the U.S. and the Eurozone (from a German investor perspective), along with accompanying normalized risk-free rates. ERPs are still higher relative to our recommendations prior to the outbreak of COVID-19 in March 2020.

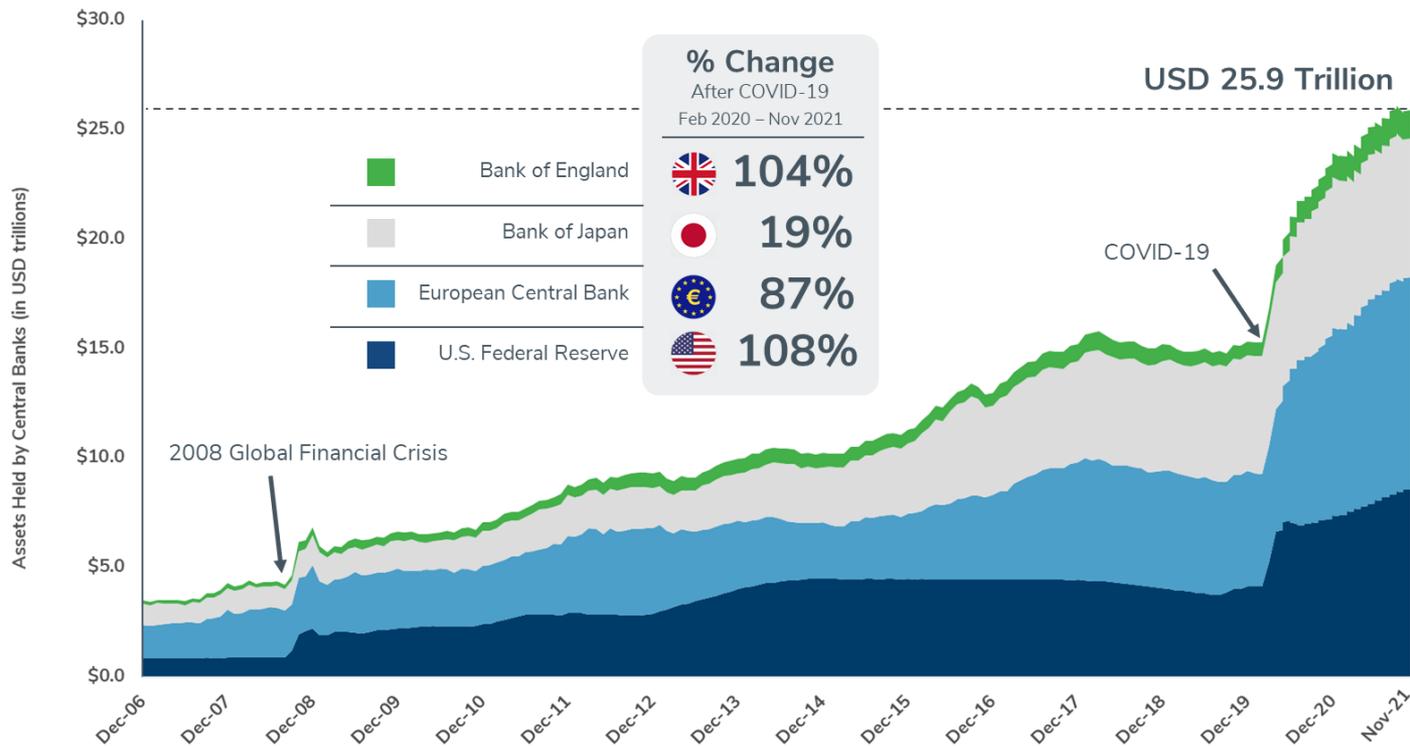
*German normalized risk-free rate and Eurozone Equity Risk Premium (ERP) for use in EUR-denominated discount rates from a German investor perspective. Additional country risk adjustments may be warranted when estimating discount rates for other countries in the Eurozone.

For more information, visit: www.kroll.com/cost-of-capital-resource-center

Total Assets Held by Major Central Banks Over Time

Data as of November 30, 2021

After COVID-19 was declared a pandemic, major central banks implemented quantitative easing (QE) policies that entailed massive purchases of securities at an unprecedented pace. The swelling size of their balance sheets, which are comprised primarily of government debt securities, has contributed to keeping interest rates at historically low levels in most developed markets, despite recent inflationary pressures.

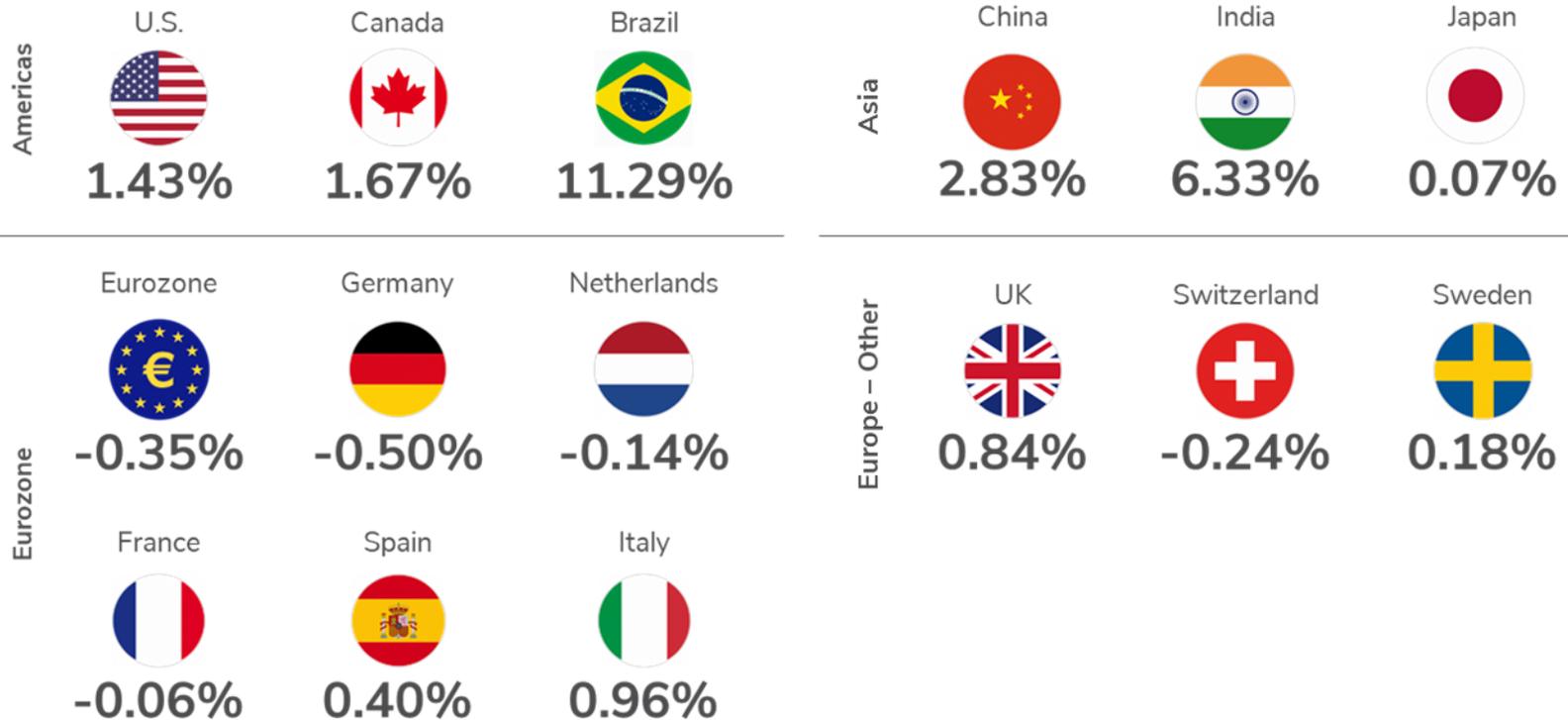


Sources: Capital IQ, FRED® Economic Data, Bank of England, Bank of Japan, European Central Bank

Global 10-Year Government Bond Yields

Data as of November 30, 2021

Long-term interest rates are still at historically low levels in developed markets, as central bank policies continue to exert some downward pressure on yields. The recent surge in inflation, partly due to global supply chain disruptions, is starting to have an impact in emerging markets. Brazilian 10-year yields have seen a significant increase from 2020, at the height of the pandemic.



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

Stock Market Performance Since the Wuhan Lockdown*

Data as of November 30, 2021

The United States has emerged as the market with the best performance and fastest recovery from the pandemic, relative to other major stock markets across the globe.

MSCI All Country
World Index



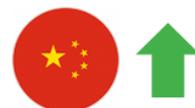
26.2%

S&P 500



37.3%

CSI 300



20.7%

TOPIX



11.4%

STOXX®
Europe 600



10.2%

FTSE 100



-6.0%

DAX 30



12.8%

CAC 40



12.5%

IBEX 35



-12.7%

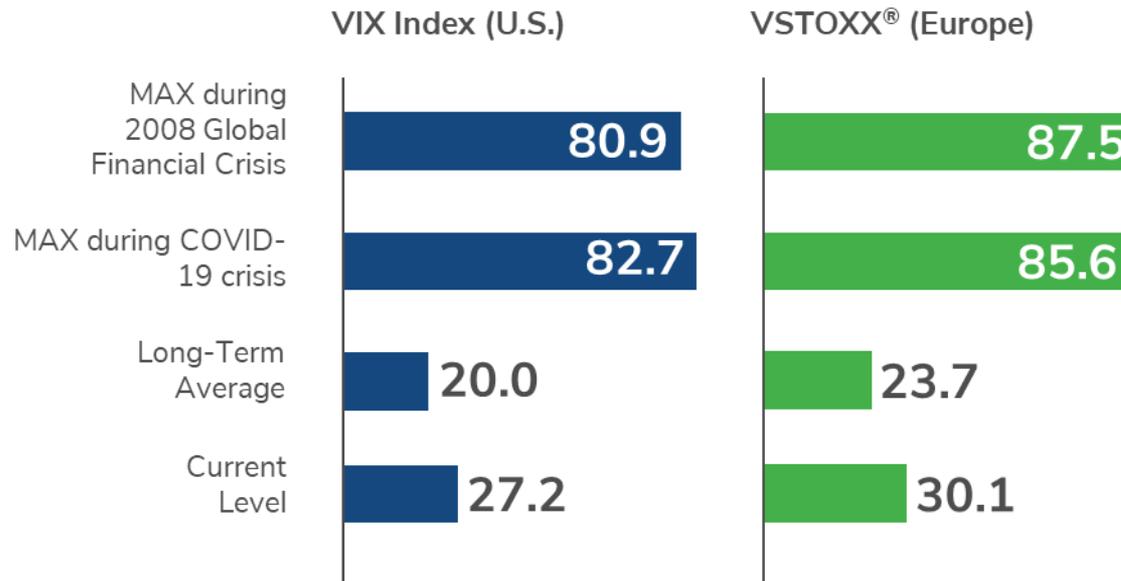
Source: Capital IQ

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

Global Market Volatility

Data as of November 30, 2021

U.S. and European financial markets have experienced some recent volatility due to increased uncertainty related to the impact of inflationary pressures on central banks' plans to raise interest rates and a surge in COVID-19 cases.



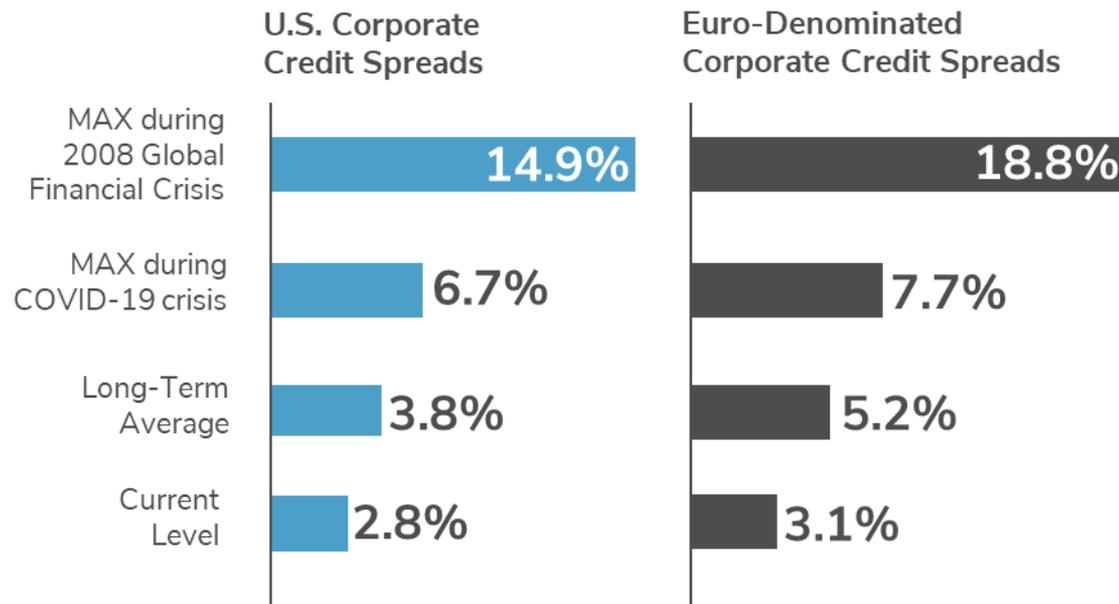
Sources: Capital IQ, FRED® Economic Data, Morningstar Direct

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 Pan-European High Yield Index (EUR) and 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 Credit Spreads

Data as of November 30, 2021

Thanks to the inclusion of corporate debt in the Federal Reserve Bank (Fed) and European Central Bank (ECB) asset purchase programs, as well as investor perception that these central banks will act as a lender of last resort, U.S. and European corporate debt spreads between high-yield and investment-grade bonds are at historical lows.



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

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Real GDP Growth – Q1, Q2 and Q3 2021

Data as of November 30, 2021

Economic recovery from the pandemic in 2021 appears strongest in the United States, despite a slowdown in Q3. Japan's economy continues to oscillate between growth and contraction (in real terms).

	 U.S.	 Eurozone	 UK	 China	 Japan
QUARTER-ON-QUARTER GROWTH (%)	Q1: 1.5% ↑ Q2: 1.6% ↑ Q3: 0.5% ↑	Q1: -0.3% ↓ Q2: 2.1% ↑ Q3: 2.2% ↑	Q1: -1.4% ↓ Q2: 5.5% ↑ Q3: 1.3% ↑	Q1: 0.2% ↑ Q2: 1.2% ↑ Q3: 0.2% ↑	Q1: -1.1% ↓ Q2: 0.4% ↑ Q3: -0.8% ↓
ANNUALIZED QUARTER-ON-QUARTER GROWTH (%)	Q1: 6.3% ↑ Q2: 6.7% ↑ Q3: 2.1% ↑	Q1: -1.2% ↓ Q2: 8.7% ↑ Q3: 9.3% ↑	Q1: -5.3% ↓ Q2: 23.9% ↑ Q3: 5.1% ↑	Q1: 0.8% ↑ Q2: 4.9% ↑ Q3: 0.8% ↑	Q1: -4.1% ↓ Q2: 1.5% ↑ Q3: -3.0% ↓

Sources: FRED® Economic Data (Eurozone, Japan, U.S.), National Bureau of Statistics of China, UK's Office for National Statistics

Quarter-on-quarter growth based on the growth rate from Q4 2020 to Q1 2021, Q1 2021 to Q2 2021, and Q2 2021 to Q3 2021. This rate is annualized by computing the compounded growth rate for four quarters as follows: $(1 + \text{Real GDP Q/Q Growth})^4$. The annualized rate shows what the quarterly change would be if it lasted a full year.

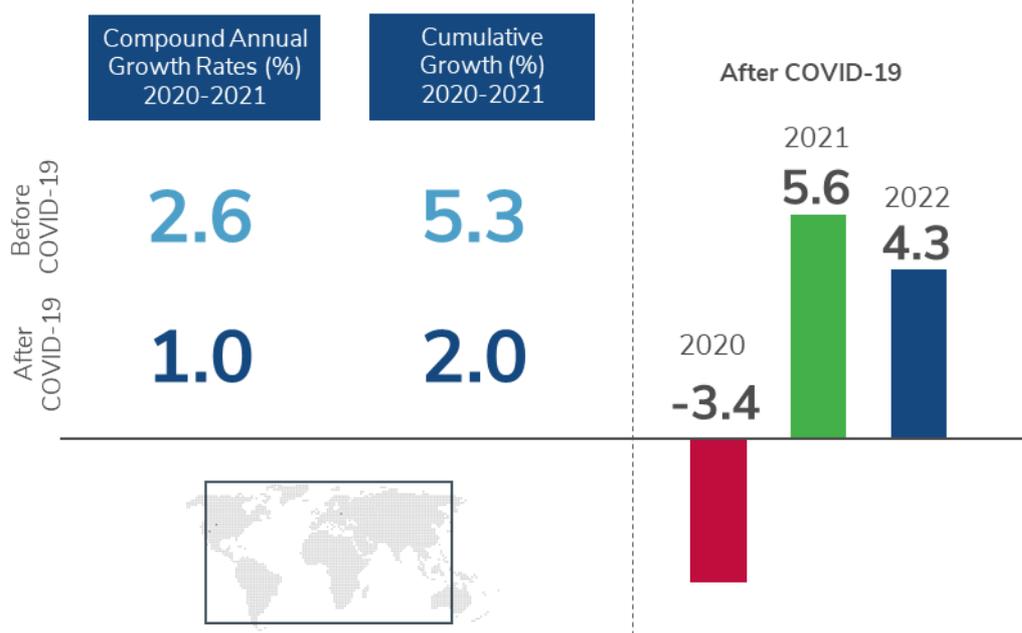
Real GDP Growth (%) Estimates (Median)

Data as of December 1, 2021



Global economic recovery from the pandemic continues at a robust, but uneven pace. Economic growth projections for 2021 and 2022 have been revised slightly down relative to September. Global supply chain disruptions, inflationary pressures, and a resurgence of COVID-19 cases in some pockets of the world are adding uncertainty.

WORLD



Note: Before COVID-19 median estimates are based on data released in December 2019 and early January of 2020. After COVID-19 median estimates are based on data available as of the date noted above.

Compound annual growth rate (CAGR) is calculated as the annualized rate of return of median real GDP growth rate estimates from the end of 2019 through the end of 2021: $[(1 + 2020 \text{ Real GDP Growth Rate}) * (1 + 2021 \text{ Real GDP Growth Rate})]^{1/2} - 1$. Cumulative growth is calculated as the total (cumulative) growth rates of median real GDP estimates from the end of 2019 through the end of 2021: $(1 + 2020 \text{ Real GDP Growth Rate}) * (1 + 2021 \text{ Real GDP Growth Rate}) - 1$. These metrics show the annualized and cumulative real GDP growth rates that were expected at the end of 2019 (Before COVID-19) for the 2020–2021 period vs. what the expectations are currently (After COVID-19).

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, S&P Global Ratings

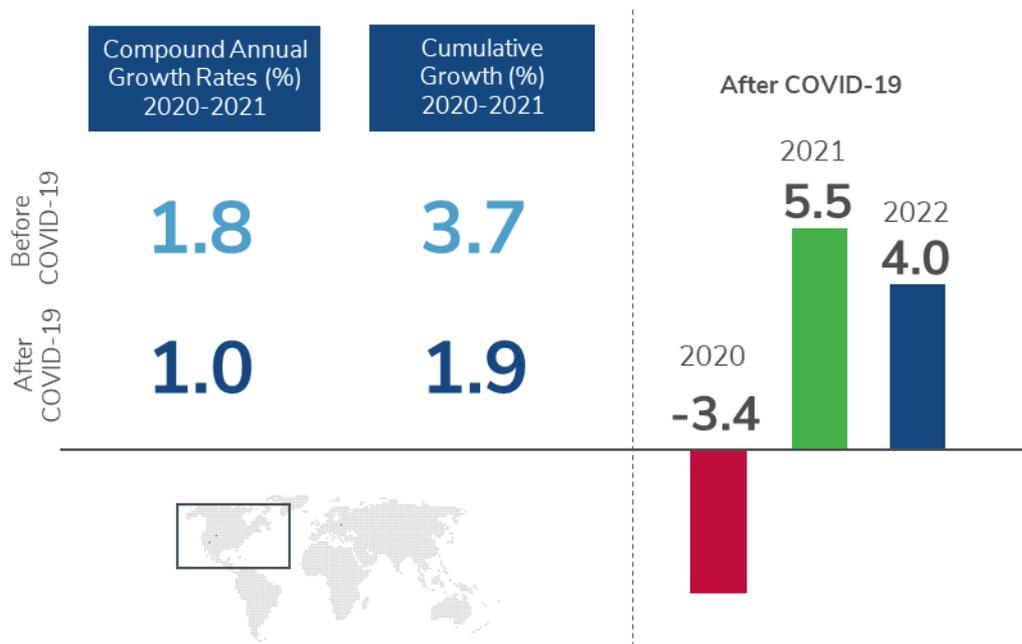
Real GDP Growth (%) Estimates (Median)



Data as of December 1, 2021

Growth expectations for 2021 have been downgraded, as a resurgence of COVID-19 cases related to the Delta-variant, global supply chain disruptions, and labor shortages have contributed to a slowdown in third-quarter economic activity.

UNITED STATES



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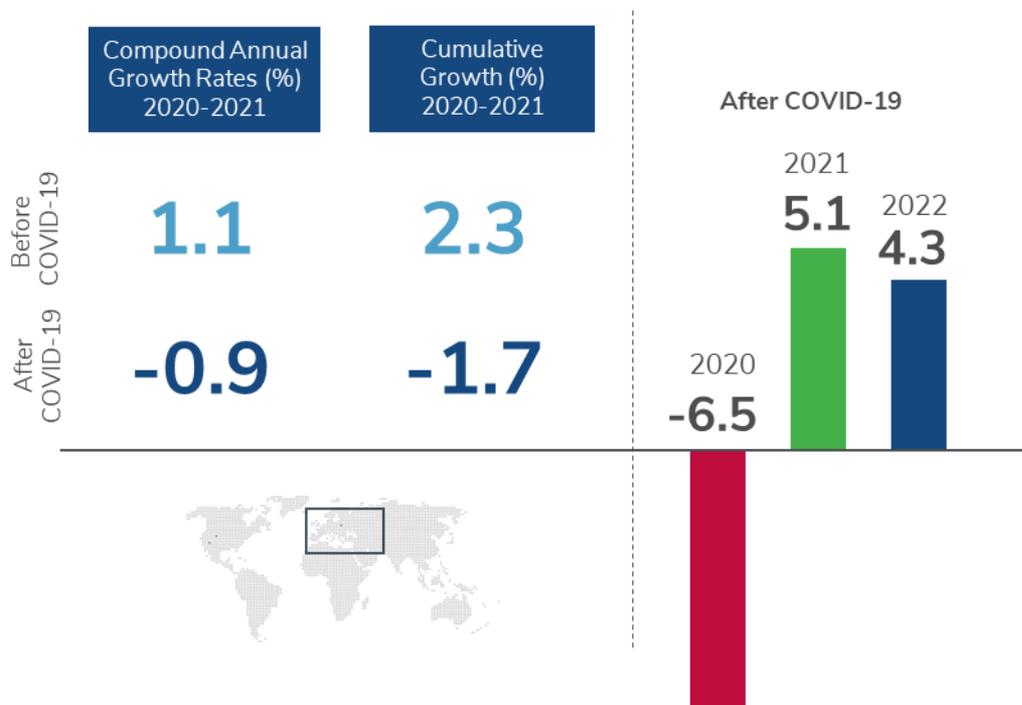
Real GDP Growth (%) Estimates (Median)



Data as of December 1, 2021

The outlook for 2021 real GDP growth has improved for the Eurozone (since the September 2021 update), but it is not enough to outweigh the economic contraction observed in 2020. The impact of the Omicron variant of COVID-19 may have a negative impact on the 2022 projections.

EUROZONE



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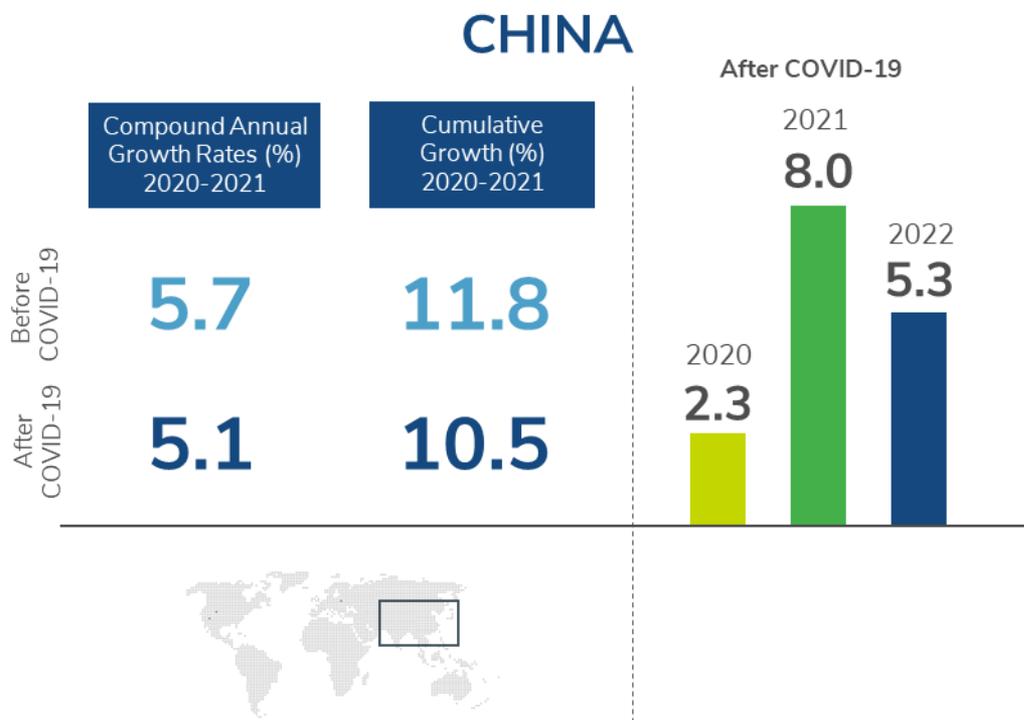
Sources: OECD, International Monetary Fund, World Bank, Blue Chip Economic Indicators, Consensus Economics, Economic Intelligence Unit, Fitch Ratings, IHS Markit, Moody's Analytics, Oxford Economics, S&P Global Ratings

Real GDP Growth (%) Estimates (Median)

Data as of December 1, 2021



While still strong, China's real GDP growth estimates for 2021 and 2022 have been downgraded by economists, relative to September 2021 projections.



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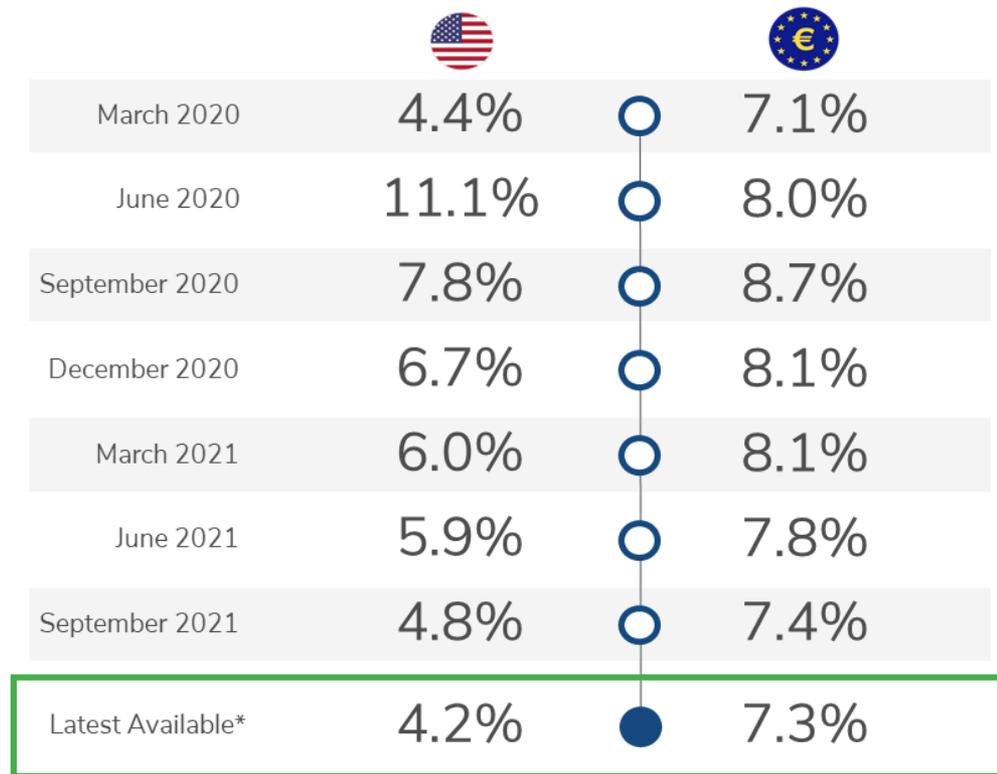
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U.S. vs. Eurozone Unemployment Rate

Data as of November 30, 2021

The U.S. unemployment rate is now lower than in March 2020, the time when COVID-19 was declared a pandemic. The U.S. is currently seeing pockets of labor shortages in a variety of industries. The Eurozone's unemployment rate is close, but still higher than the level registered in March 2020.



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

* Data through November 2021 for the United States and October 2021 for the Eurozone.

U.S. and Eurozone

Consumer Sentiment vs. Business Confidence

Data as of November 30, 2021

Consumer sentiment declined dramatically in the U.S., with a rise in inflation and a surge in COVID-19 cases are creating some anxiety about the future. In contrast, business confidence in the U.S. and Eurozone is now higher than prior to the pandemic.

		Pre-COVID-19 (February 2020)	Post-COVID-19 (November 2021)	
Consumer Sentiment		101.0	↓ 67.4	(1952–2021) 86.4
	 	107.1	↓ 106.3	(1985–2021) 100.0
Business Confidence		99.0	↑ 101.7	(1950–2021) 100.0
	 	99.4	↑ 118.1	(1985–2021) 100.0

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



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About Valuation Digital Solutions

The Valuation Digital Solutions group within Kroll strives to empower companies and finance professionals with cost of capital thought leadership and high-quality valuation data that enables them to make sound business decisions. Key data and content essential in the quantification of risk can be found in the Cost of Capital Navigator digital platform. For more information visit: www.kroll.com/costofcapitalnavigator.

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