

Capital Markets Strategy

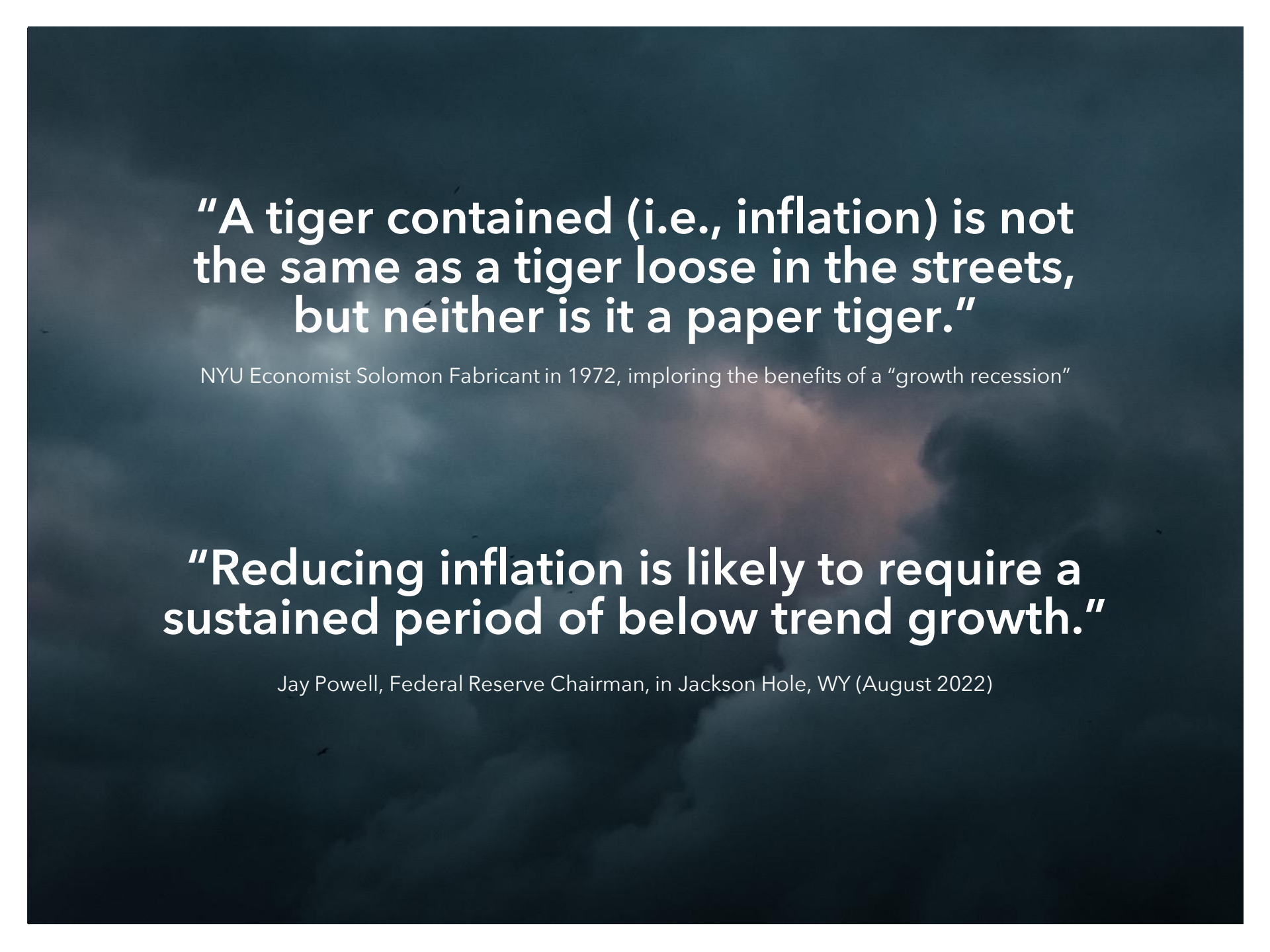
Essential inCights for the C-Suite



The Orchestrated Slowdown

Historic Tightening in the Global Economy & Markets

SEP 2022



"A tiger contained (i.e., inflation) is not the same as a tiger loose in the streets, but neither is it a paper tiger."

NYU Economist Solomon Fabricant in 1972, imploring the benefits of a "growth recession"

"Reducing inflation is likely to require a sustained period of below trend growth."

Jay Powell, Federal Reserve Chairman, in Jackson Hole, WY (August 2022)

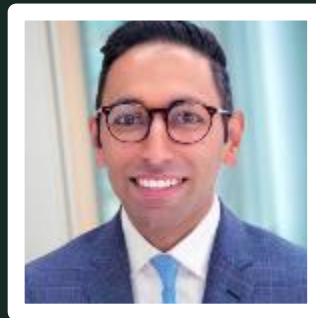
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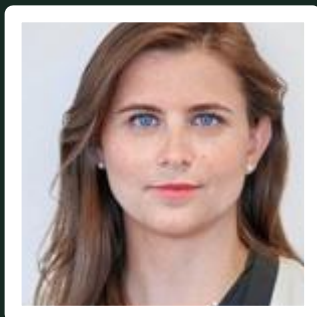
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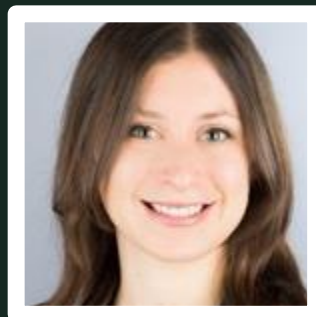
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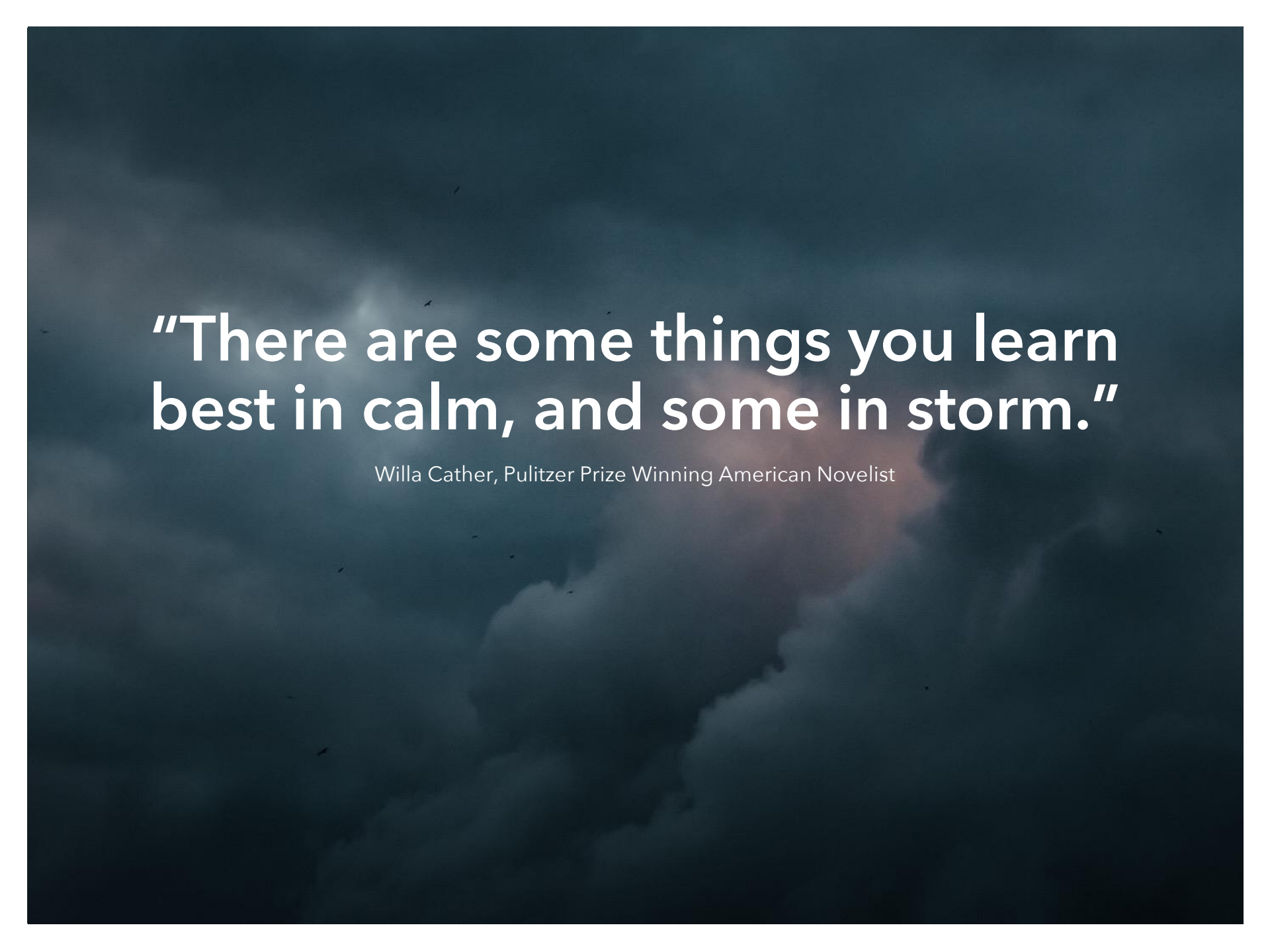
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"Macro stability isn't everything, but without it, you have nothing."

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Introduction

A dramatic, dark sky filled with heavy, swirling clouds. A faint, warm light source, possibly the sun or moon, is visible behind the clouds in the center-right, creating a soft glow and highlighting the textures of the cloud formations. Several small, dark silhouettes of birds are scattered across the sky, adding a sense of movement and scale.

**"There are some things you learn
best in calm, and some in storm."**

Willa Cather, Pulitzer Prize Winning American Novelist

Sequential Supply-Side Shocks

Global markets have accelerated into a fundamentally new macro super-cycle following three sequential shocks to the global economy and policy regime in recent years. This new macro and geopolitical landscape is fundamentally less stable, less predictable and more inflationary.

2018

US-China trade wars

- Policy regime change
- Supply side disruptions

2020

Global COVID crisis

- Global demand shock
- Global supply shock

2022

Russia-Ukraine crisis

- Global energy crisis
- US Dollar acceleration & squeeze

The New Macro Supercycle

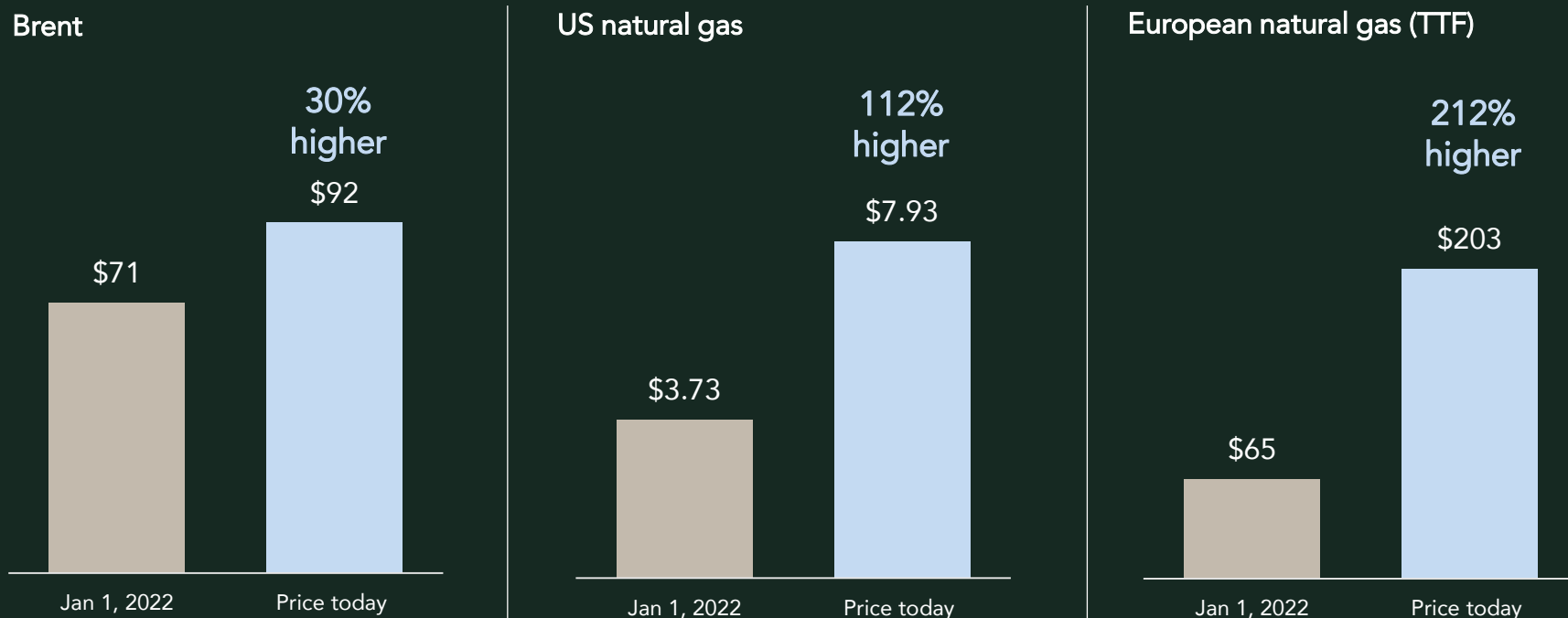
From...	To...
The Great Moderation	The Great Instability
Lower rates, volatility suppression	Higher rates & structural volatility
Secular stagnation	Secular reflation
Surplus global production capacity	Global labor shortages
Deficient aggregate demand	Disruptions in global supply
Monetary & fiscal easing	Monetary & fiscal tightening
Currency wars ("race to the bottom")	"Reverse" currency wars
Lighter government regulation & free trade	Increased government activism & policy intervention



Challenging Year for Consensus Forecasts

2022 has been a very challenging year for the accuracy of consensus forecasts made back on January 1. As we transition out of the summer season and into a looming energy crisis in the final four months of the year, we should be reminded that the current geopolitical, economic and market environment is one of reasonably high volatility and low visibility. Risk management has therefore become critically important (i.e., pre-funding, hedging), for both upside and downside scenarios.

Consensus forecast for Q3 2022 on January 1, 2022 vs. price today



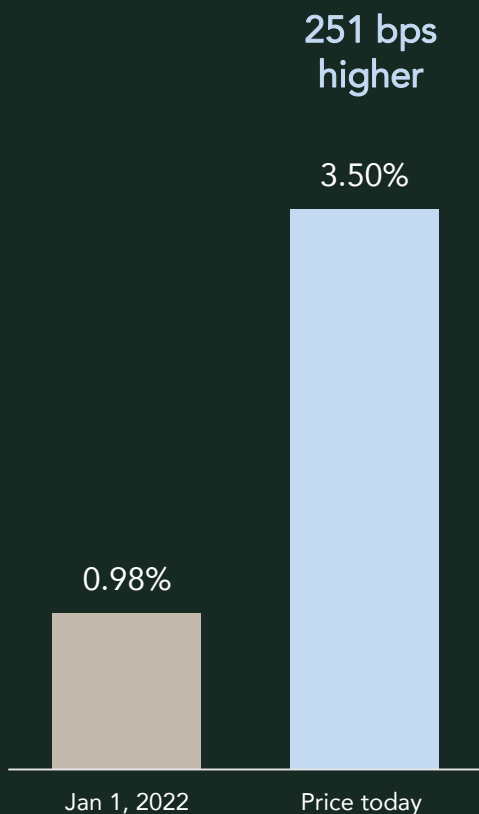
Source: (1-3) Bloomberg. Data as of September 9, 2022. European Natural Gas (TTF) is MUFG forecast. Rest of forecasts are Bloomberg Consensus.



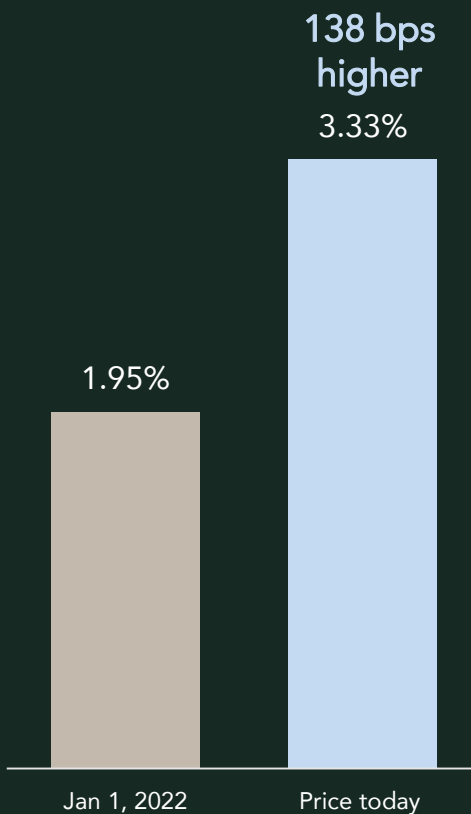
Challenging Year for Consensus Forecasts

Consensus forecast for Q3 2022 on January 1, 2022 vs. price today

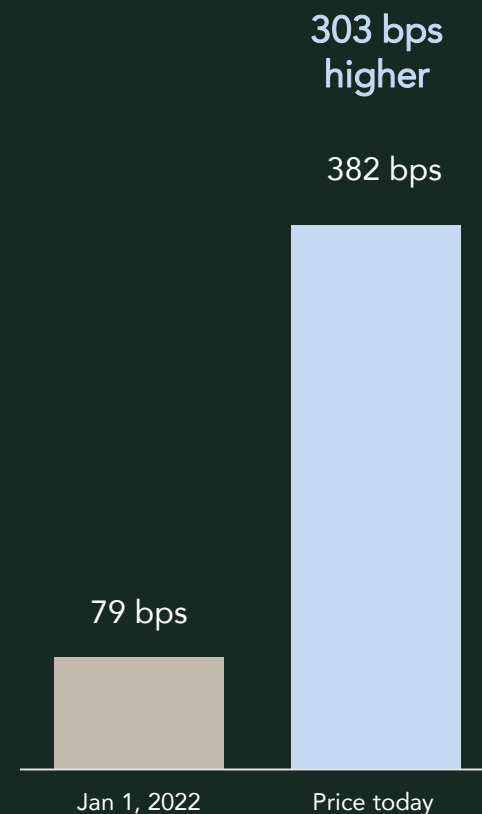
2 year UST



10 year UST



Number of fed hikes for full year 2022 (bps)



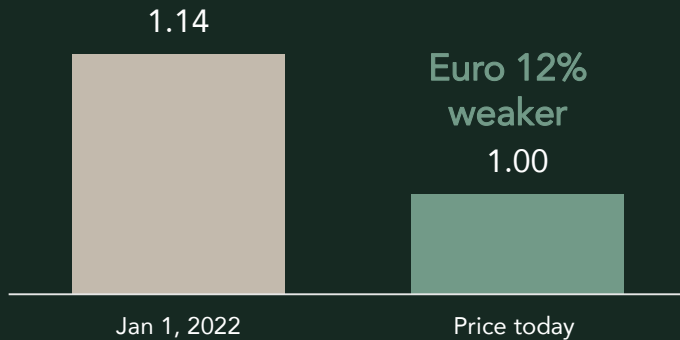
Source: (1-3) Bloomberg. Data as of September 9, 2022.

Challenging Year for Consensus Forecasts

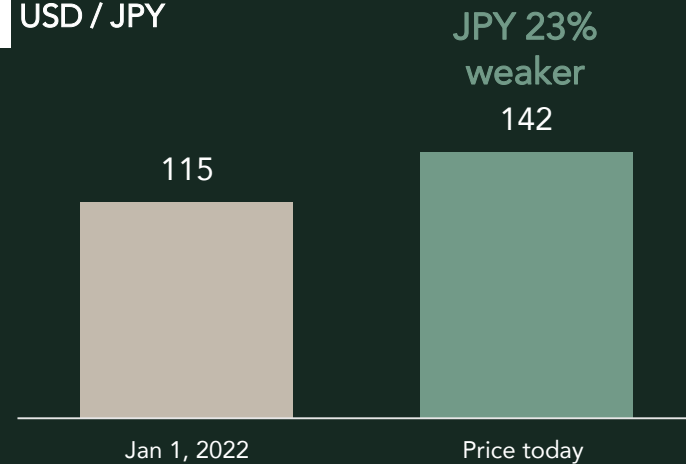
Consensus forecast for Q3 2022 on January 1, 2022 vs. price today



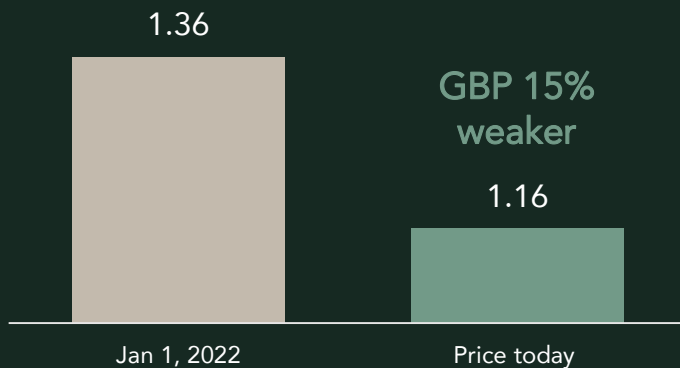
EUR / USD



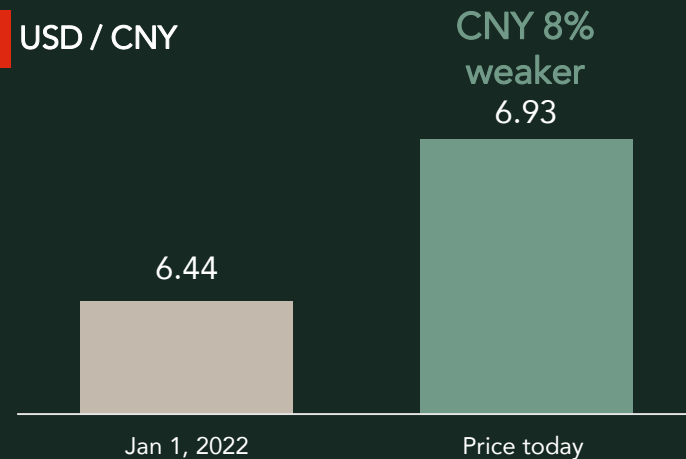
USD / JPY



GBP / USD



USD / CNY



Source: (1-4) Bloomberg. Data as of September 9, 2022.



Global Recession

Risk Rising

A dramatic, dark sky filled with heavy, swirling clouds. A bright, warm light source, possibly the sun or moon, is partially obscured by the clouds in the center-right, creating a strong backlighting effect and illuminating the edges of the clouds. Several small, dark silhouettes of birds are scattered across the sky, adding a sense of movement and depth.

**"Truth isn't always beauty,
but the hunger for it is."**

Nadine Gordimer, Nobel Prize winning South African author

Recessions are Reasonably Rare Events

Recessions are reasonably rare events, with only 11 US recessions (and 6 globally) since 1950. Energy prices, inflation and central bank tightening cycles have been the most common causes of recessions historically.

		Contributing Factors								
		Most common causes of recession								
Post WWII US Recessions	Global Recession?	Fed policy	Inflation	Oil price shock	Banking crisis / stress	Credit cycle turn	Asset price bubble	USD / FX shock	Pandemic	Other
1 Jul 1953 – May 1954		✓	✓							
2 Aug 1957 – Apr 1958	✓	✓	✓					✓	✓	
3 Apr 1960 – Feb 1961		✓	✓							✓
4 Dec 1969 – Nov 1970		✓	✓							
5 Nov 1973 – Mar 1975	✓	✓	✓	✓				✓		
6 Jan 1980 – Jul 1980	✓	✓	✓	✓						
7 Jul 1981 – Nov 1982	✓	✓	✓	✓						
8 Jul 1990 – Mar 1991		✓		✓	✓	✓				✓
9 Mar 2001 – Nov 2001						✓	✓			✓
10 Dec 2007 – Jun 2009	✓	✓		✓	✓	✓	✓			
11 Feb 2020 – Apr 2020	✓					✓			✓	

Source: (1) BEA. IMF. OECD. *While not considered a "global recession" by the IMF, the 1957 recession did include the large global economies US, Canada & Europe.



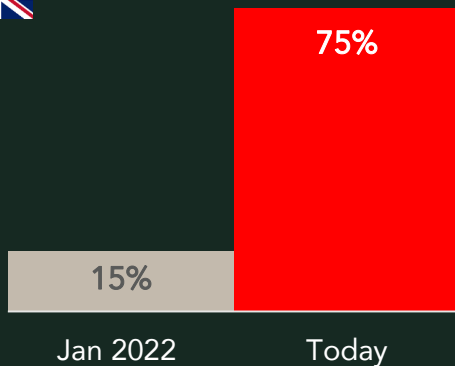
Global Recession Risk Rising

According to recent Bloomberg Surveys of economists globally, the UK and Eurozone economies now have greater than a 50% chance of recession over the next 12 months, with the US close behind at a 49% probability.

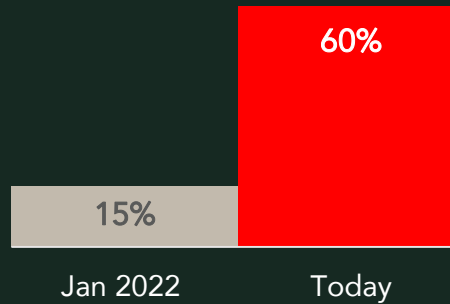
Bloomberg survey of economists on recession probability over next 12 months



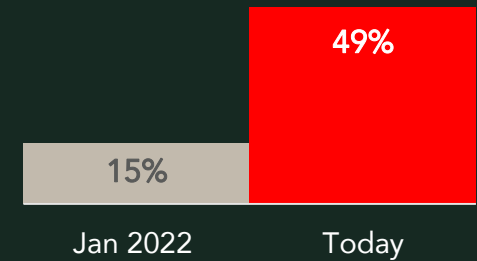
UK



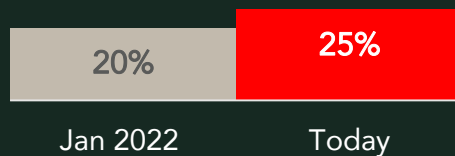
Eurozone



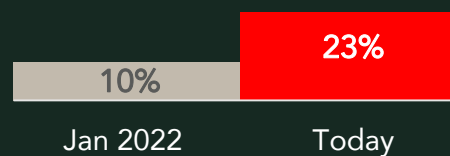
US



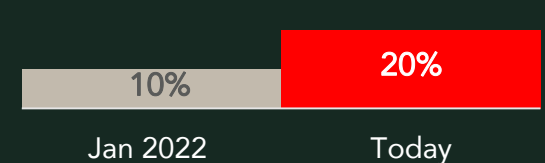
Japan



Australia



China

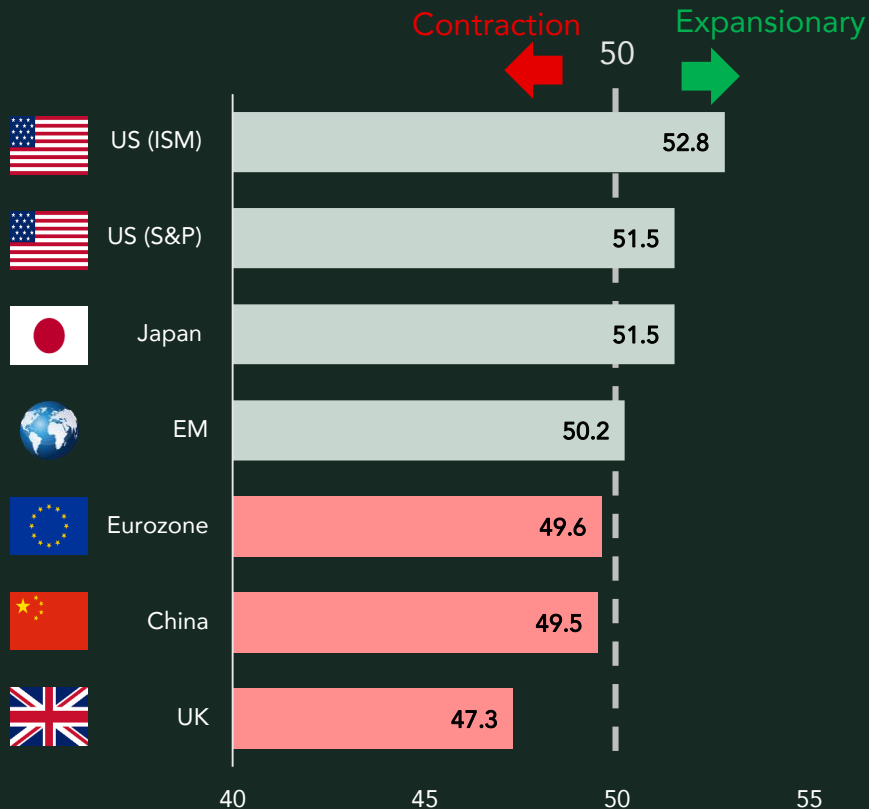


Source: (1-6) Bloomberg. Data as of September 7, 2022. Surveys as of August.

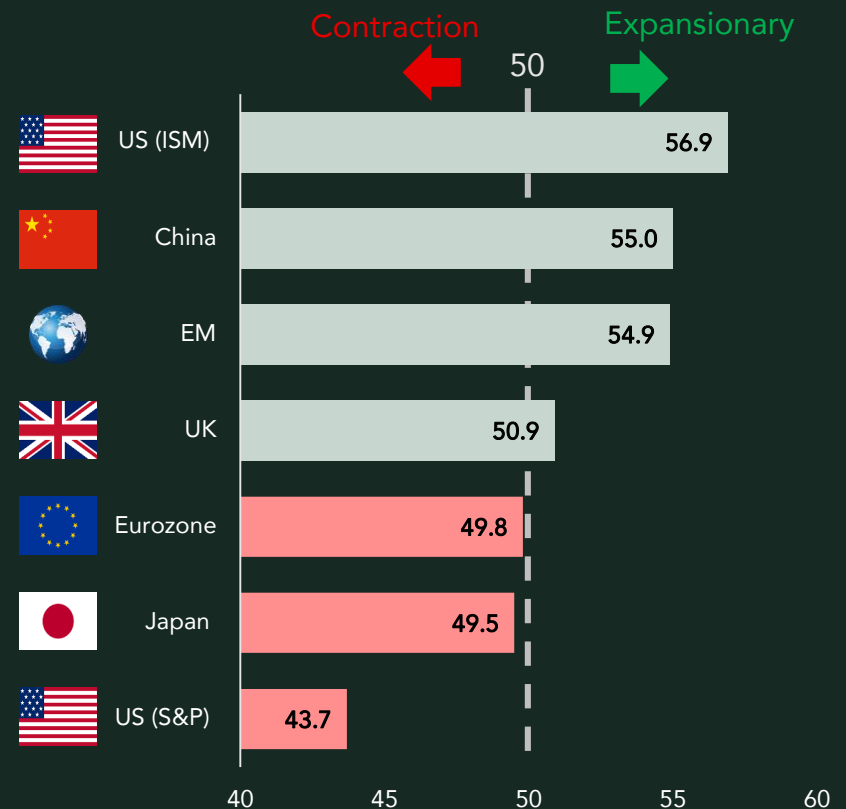
PMI's Signal Decelerating Global Economy

PMI's have historically provided a good view of economic growth over the subsequent 6 months. In Europe, data points to a modest contraction over the next 3 months, though more severely in Germany. High inflation and energy costs suggest a deeper contraction in both the EU and UK in Q4-Q1. China's manufacturing PMI was notably weak in August on declining domestic and global demand. The more closed and energy independent US economy has been more resilient by comparison.

Global manufacturing PMIs

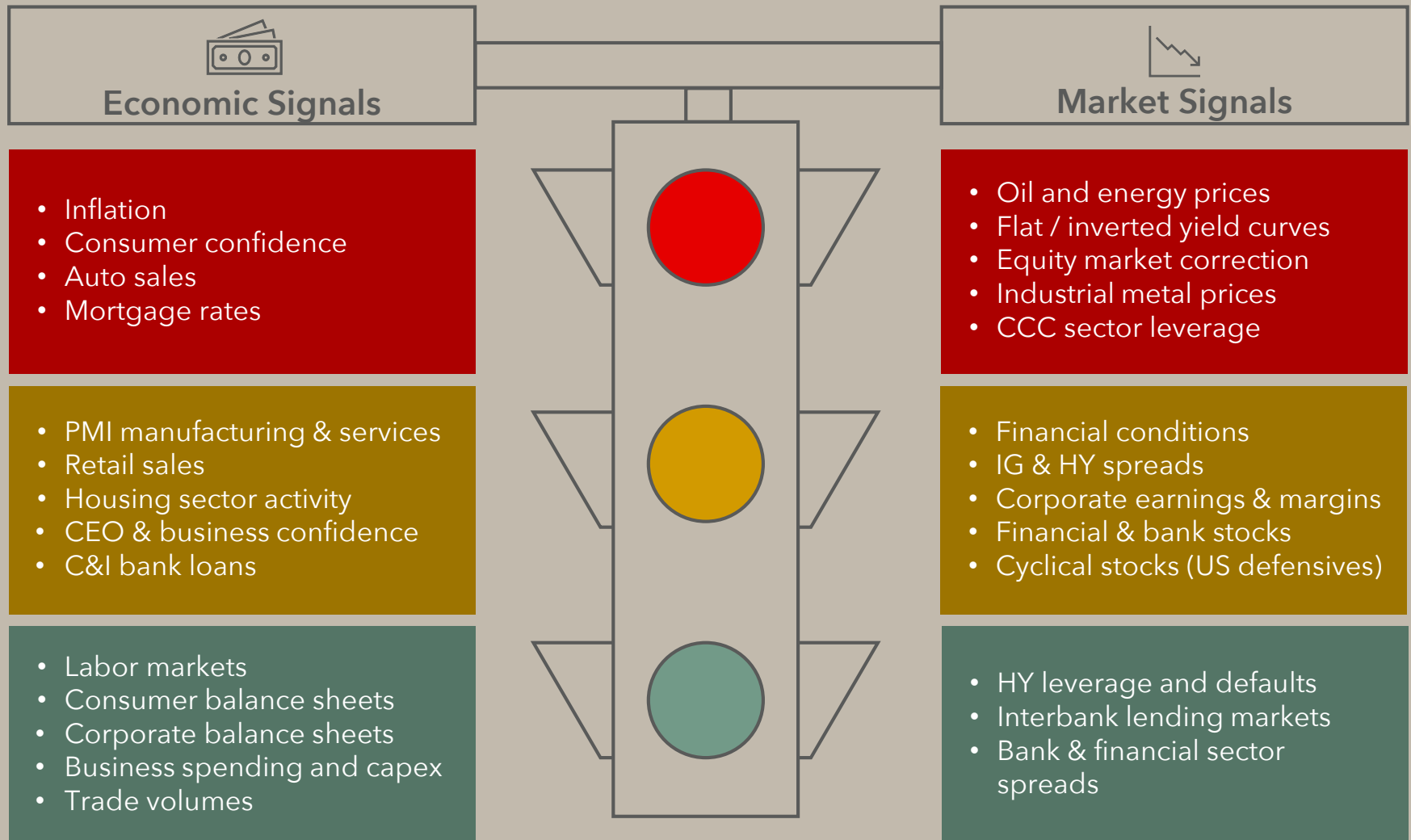


Global services PMIs



Source: (1) Capital Economics. Bloomberg. Data as of September 8, 2022.

US Recession Signals



Record High US Energy Prices Weigh on Consumer



Driven primarily by the cost of gasoline, US personal spending on energy goods and services (gasoline, electricity and natural gas) reached a record high \$855 billion (nominal terms) in June. On an inflation adjusted basis, US personal spending has now surpassed the previous record highs of March 2008 and March 2022.

US personal consumption expenditures, energy goods and services



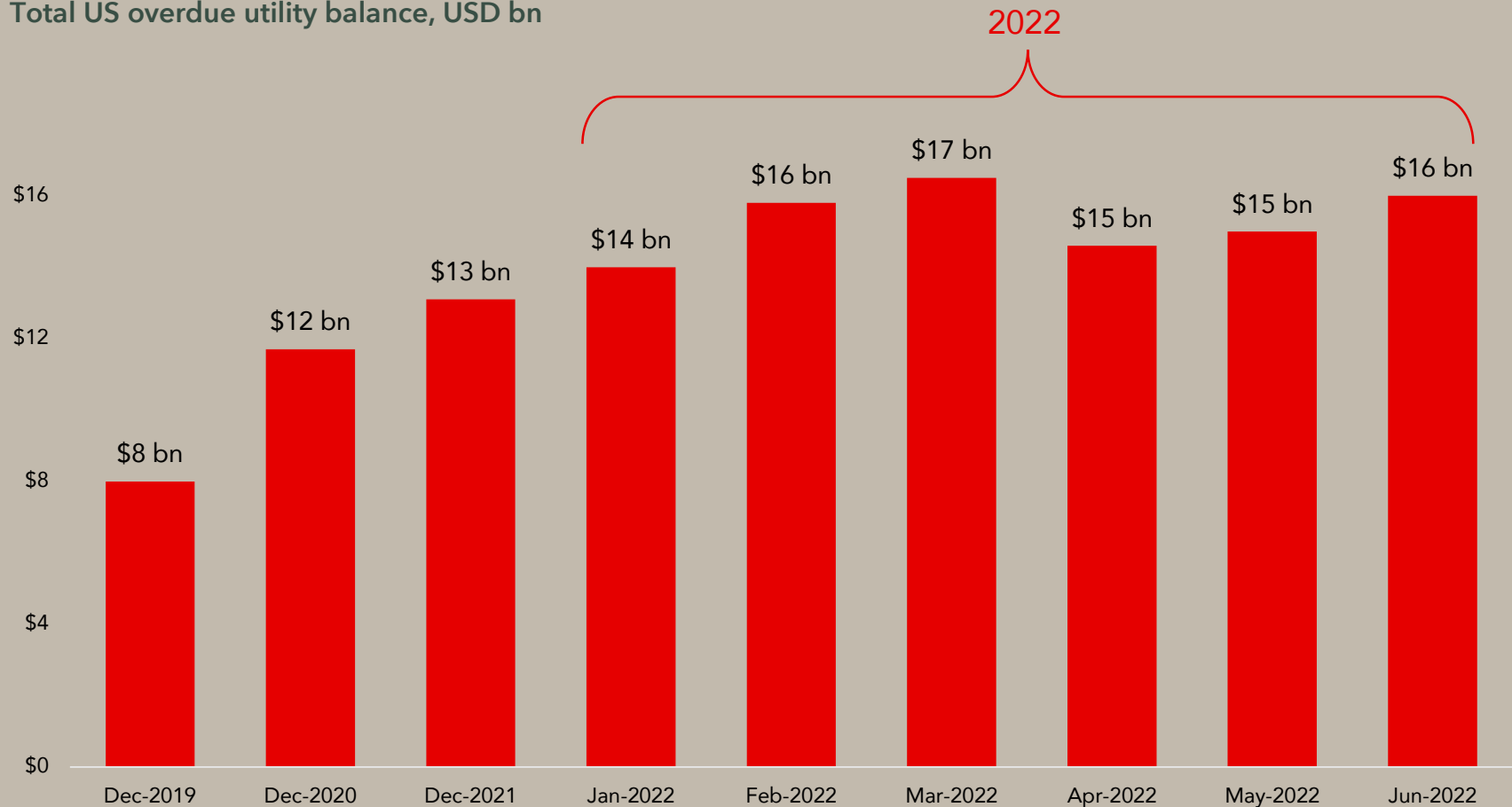
Source: (1) FRED. Data as of September 8, 2022. US PCE chain-type price index. Index 2012 = 100. Bloomberg, "Electricity is One Part of US Inflation That Congress Can Help Tame" (August 4, 2022).

20 Million US Households Behind on Energy Bills



With energy prices at record highs, roughly 20 million households, or about 1 in 6, have fallen behind on their utility bills

Total US overdue utility balance, USD bn



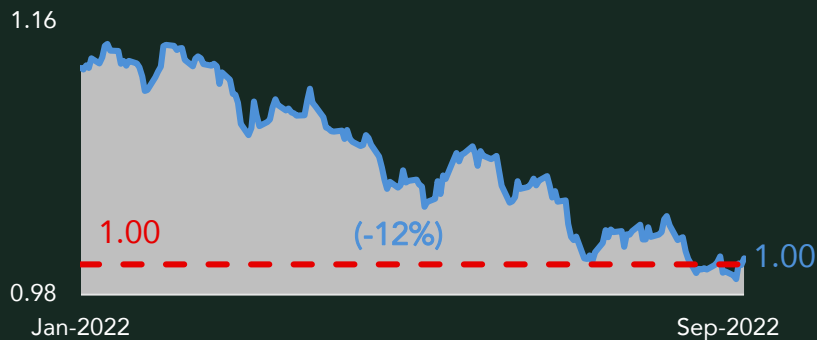
Source: (1) National Energy Assistance Directors Association (NEADA). Bloomberg "A 'Tsunami of Shutoffs: 20 Million US Homes Are Behind on Energy Bills."

"Hard Landing" Likely in Europe

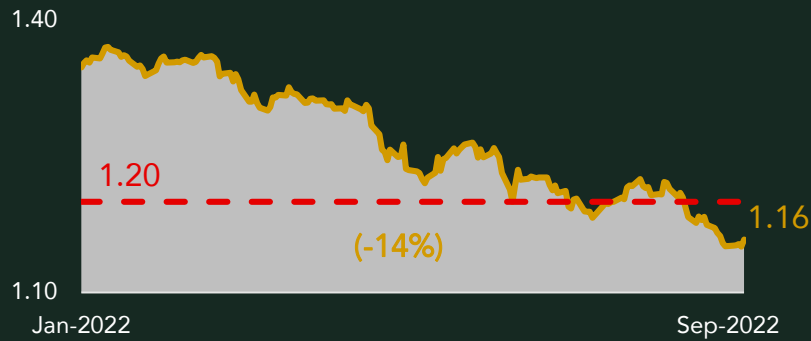
Europe is uniquely exposed to both Russian energy and the global economy, with a weakening currency not well-equipped to combat inflation. With an energy crisis likely to persist in some form for years, Europe has been stretched by its 4th crisis in 15 years (GFC-2007, migrant-2015, COVID-2020 and Ukraine-2022) and is facing the prospect of a 4th recession in that same time period.



EUR / USD



GBP / USD



"Hard Landing" Drivers

Russian energy dependencies (multi-year vulnerabilities)

Industrial sector exposure to natural gas

Rapidly rising inflation (not yet peak)

Consumer pullback (energy prices, rationing)

Depreciating currencies (exacerbates inflation)

More exposure to global economy, trade & China

Policy tightening (ECB, BOE, bank lending)

Balance sheets not as strong as in US

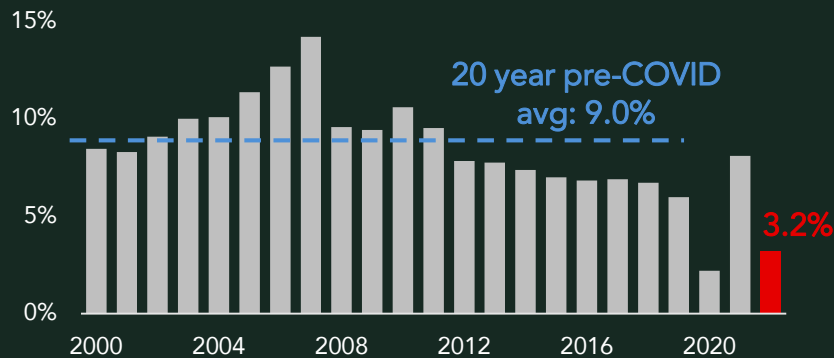
Source: (1-2) Bloomberg. Data as of September 9, 2022.

China's Growth Slowdown Should be Watched Closely



In an important political year for Xi Jinping, China's growth has plummeted to the lowest levels in decades. A strong government sector, albeit with questions on policy effectiveness, and a weak private sector, are likely to persist as long as COVID policy uncertainty continues. Policy divergence (easing) should ensure continued RMB weakness for the rest of this year.

China GDP growth, y/y



CNY's sharp drop vs. USD



Key Drivers of China Slowdown

Domestic property sector (excess supply, developer defaults, mortgage boycotts)

Zero COVID policy uncertainty

Tepid Chinese consumer

Weak export momentum (weak global GDP, high inflation, pivot to services)

Slow progress on productivity-enhancing reforms (SOEs, debt)







Limited effectiveness of monetary and fiscal policy (local gov't, weak demand)





US-China policy tension & decoupling

Source: (1) Oxford Economics. Data as of September 9, 2022. (2) Bloomberg. Data as of September 9, 2022. Axis is inverted to show depreciation.

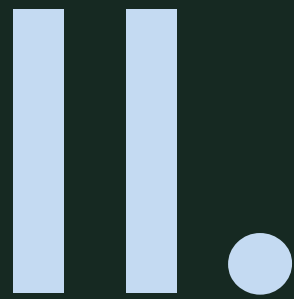
Global Growth Decelerating into 2023

GDP Growth Forecasts y/y

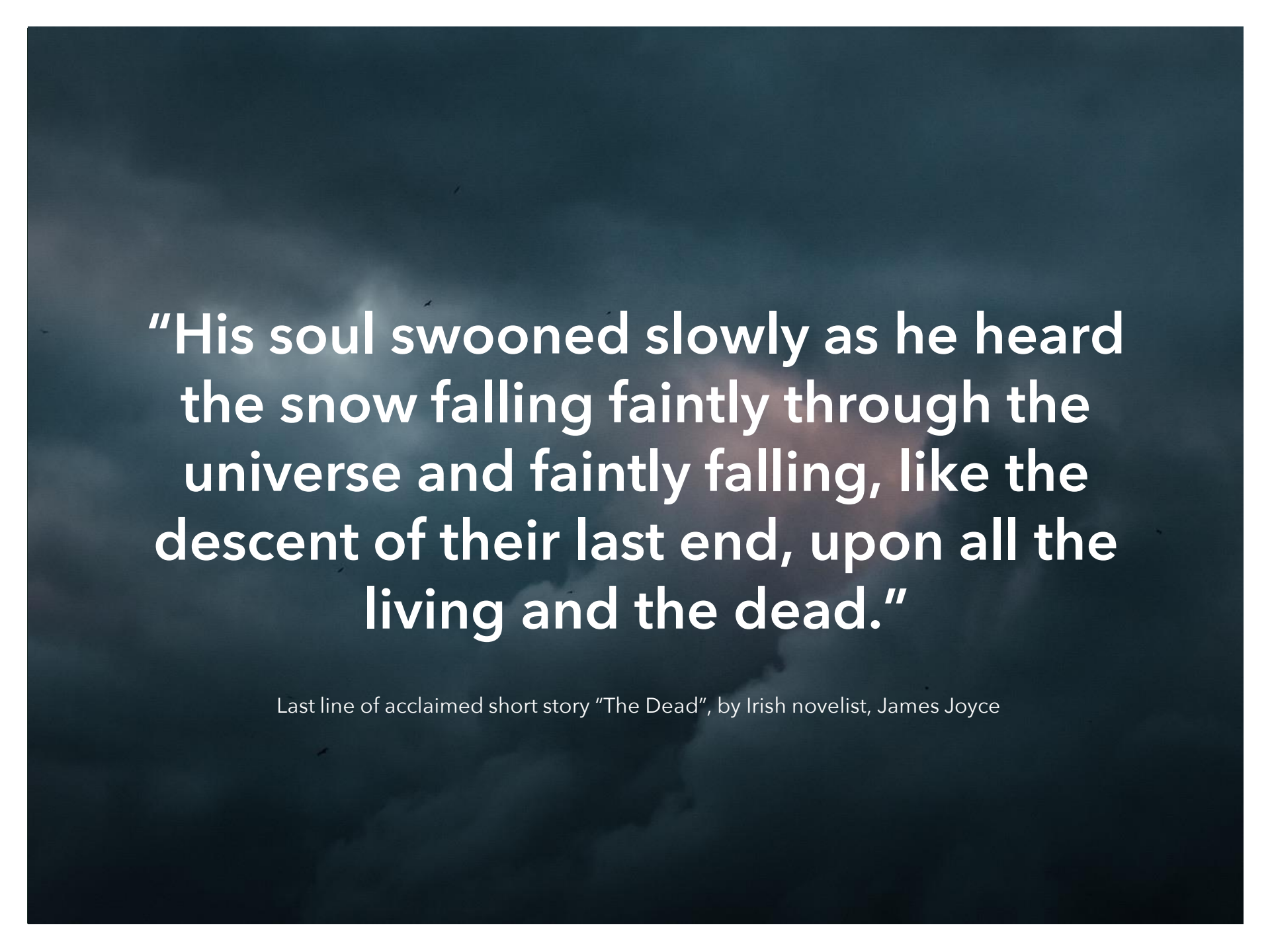
Region / country	2022	2023	
North America			
 Canada	3.2%	1.0%	↓
 Mexico	1.8%	1.7%	↓
 US	1.7%	1.0%	↓
Eurozone			
 Eurozone	3.0%	0.9%	↓
Ireland	5.2%	1.3%	↓
Netherlands	4.6%	1.1%	↓
Spain	4.5%	2.0%	↓
Italy	3.5%	1.0%	↓
France	2.7%	0.9%	↓
Finland	2.2%	0.5%	↓
Germany	1.5%	0.2%	↓
Other Europe			
Poland	5.4%	0.3%	↓
Turkey	3.9%	1.2%	↓
 UK	3.6%	0.3%	↓
Denmark	3.5%	1.1%	↓
Switzerland	2.5%	0.9%	↓
Czech Republic	2.5%	0.2%	↓
Sweden	2.4%	1.5%	↓
Norway	2.2%	2.0%	↓
 Russia	(-6.4%)	(-3.9%)	↑

Region / country	2022	2023	
APAC			
Vietnam	7.7%	6.3%	↓
 India	7.0%	4.4%	↓
Philippines	6.2%	4.5%	↓
Indonesia	5.8%	5.0%	↓
Australia	3.8%	2.4%	↓
Singapore	3.6%	1.5%	↓
 China	3.2%	5.1%	↑
South Korea	2.7%	1.6%	↓
New Zealand	2.2%	3.4%	↑
 Japan	1.6%	1.8%	↑
LatAm			
Colombia	6.9%	(-1.4%)	↓
Argentina	3.9%	0.2%	↓
 Brazil	2.0%	0.4%	↓
Chile	1.9%	(-2.2%)	↓
MENA			
Saudi Arabia	7.6%	3.4%	↓
UAE	7.0%	5.4%	↓
Sub-Saharan Africa	3.3%	3.2%	↓
South Africa	2.0%	1.3%	↓

Source: (1) Oxford Economics. Data as of September 7, 2022.



Winter is Coming



"His soul swooned slowly as he heard
the snow falling faintly through the
universe and faintly falling, like the
descent of their last end, upon all the
living and the dead."

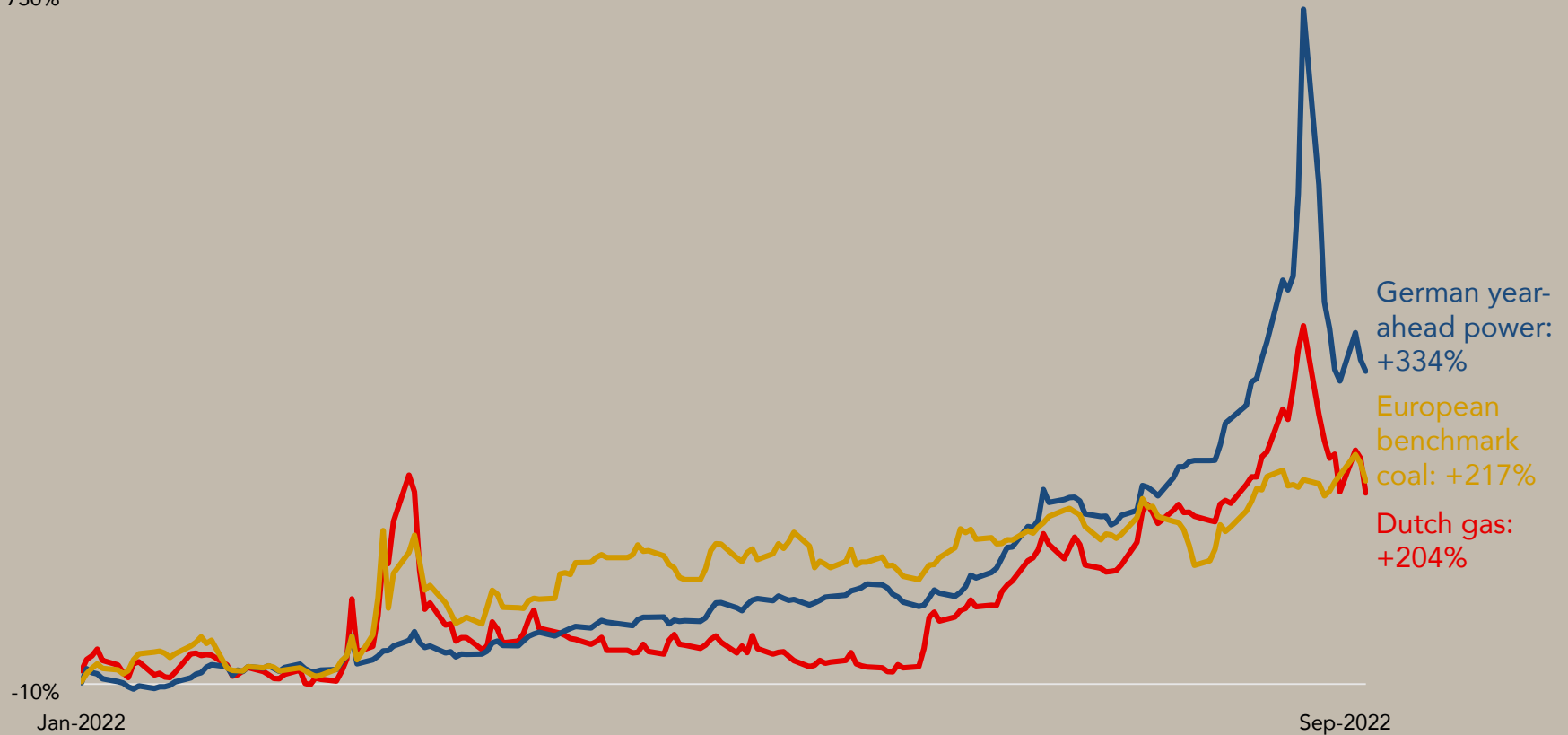
Last line of acclaimed short story "The Dead", by Irish novelist, James Joyce

Europe's Historic Energy Crisis

As Europe grapples with the geopolitical fallout of the Russia-Ukraine crisis, necessary nuclear power plant repairs in France, and crippling droughts limiting hydropower in Germany, wholesale energy prices have surged 10x above their seasonal average over the past five years.

European energy prices, 2022 YTD

730%



Source: (1) Bloomberg. Data as of September 7, 2022. European benchmark coal is ICE Futures Rotterdam Coal. German year-ahead power is Phelix Baseload for all delivery days in the delivery year. Dutch gas is TTF.

Key Drivers of the Energy Crisis



Structural under-investment in fossil fuels; pivot from coal & nuclear



War in Ukraine, Western sanctions and Russia sanctions retaliation



Emergency nuclear power plant repairs



Colder winter 2020 - 2021; depleted natural gas inventories



Demand surge from pandemic recovery and record high temperatures

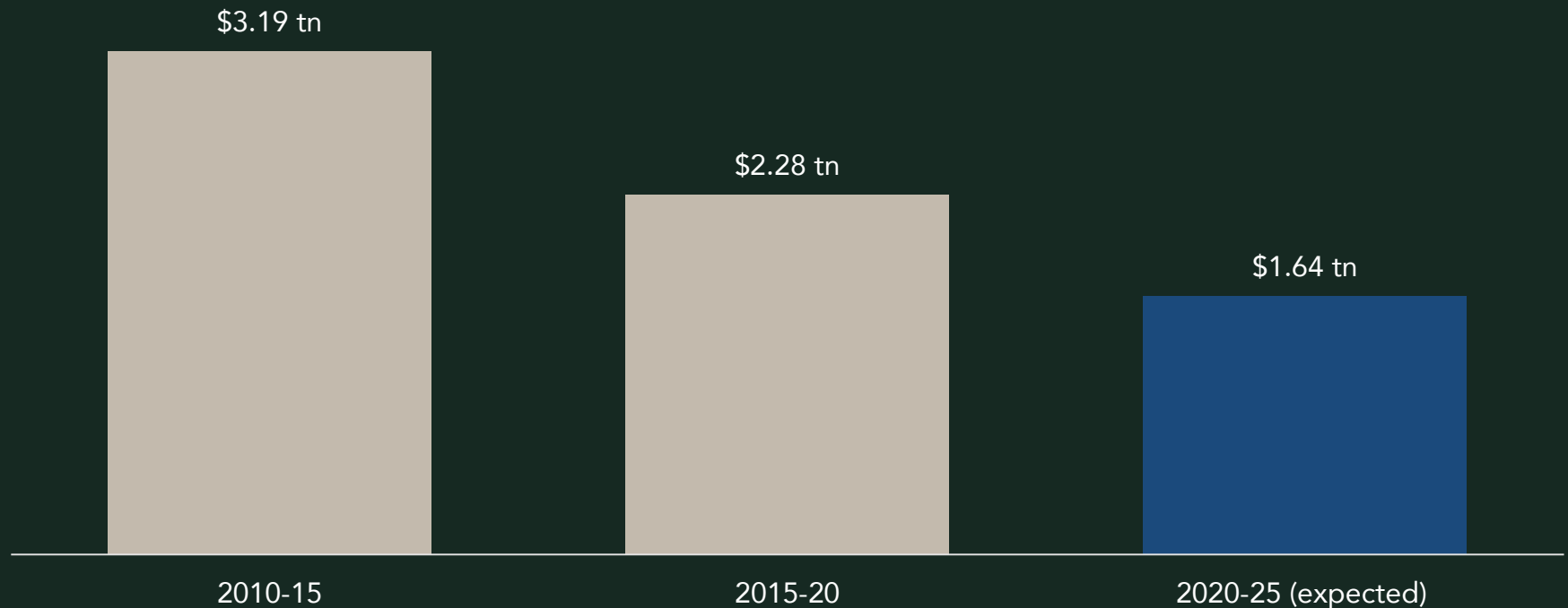


Unusual weather causing low wind speeds & droughts

Structural Under Investment in the “Old Economy”

As companies and policymakers globally moved rapidly toward energy transition, years of structural underinvestment in the capital intensive oil, gas and coal sectors soon followed due to a myriad of factors including: regulatory policy, ESG’s acceleration, rising inflation within the sector, labor shortages, bank lending requirements and investor demands to return cash via buybacks and dividends. This, in turn, has contributed to Europe’s energy crisis near term, and has initiated a multi-year commodities super cycle longer term.

Oil & gas exploration and development investment expected to decline >50%



Source: (1) WSJ, “Energy Prices May Keep Inflation High for Years” (July 30, 2022). IEA. BlackRock Investment Institute. Wood Mackenzie.

Russia "Weaponizing" Energy Policy

The Ukraine crisis has become a geo-economic war between Russia and the West, with natural gas markets as the primary contagion channel going into year-end

Main pipelines from Russia to Europe

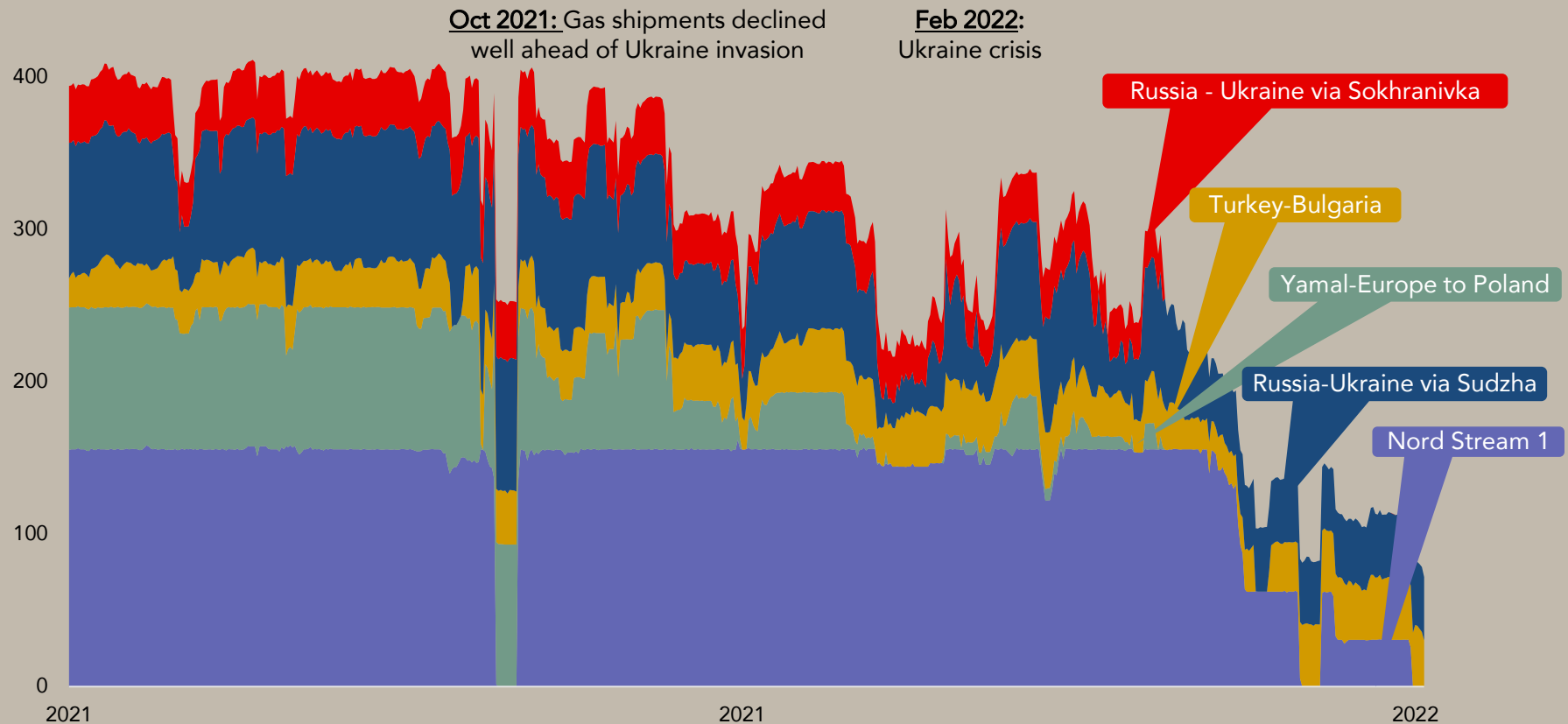


Source: (1) Oxford Economics, "Russia: Each Side Could Gain From Easing of Gas War" (August 16, 2022). European Network of Transmission System Operators for Gas. BBC.

Breaking Down the Russia Pipeline Gas Shutoff

Over the last 6 months, Germany has decertified NS2, while Russia has recently shut down gas flows through NS1. In aggregate, Russian gas exports to the EU via NS1 and the pipelines through Ukraine and Belarus are down over 90% y/y. Russia's gas exports via NS1 are unlikely to resume soon.

Russia piped natural gas supply to Europe (MCM/D)



Source: (1) Oxford Economics. Bloomberg. MUFG Commodities Weekly, "Russia Indefinitely Suspends Nord Stream Gas Pipeline Flows into Europe" (Ehsan Khoman). Data as of September 7, 2022.

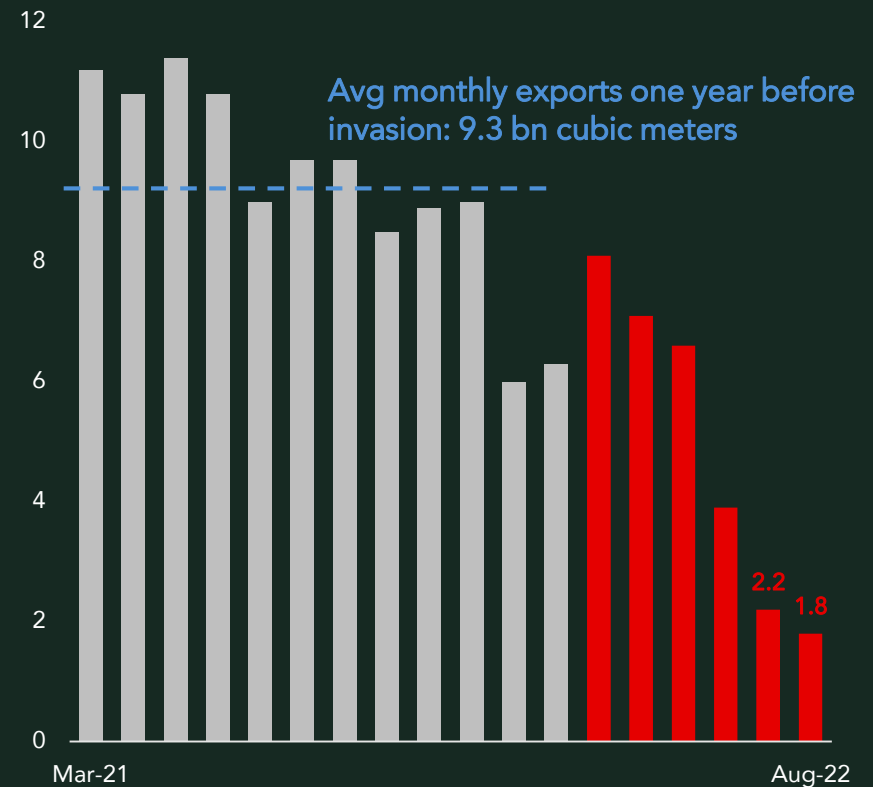
Russian Gas Exports to EU Declining

As the Russia-Ukraine crisis and related sanctions evolve, President Putin has sought to break European unity and public opinion. The recent shutdown of NS1 began with tapered flows months earlier as Putin aimed to slow Europe's accelerating gas storage efforts in advance of winter. By comparison to natural gas, oil is a much more global and mobile market by virtue of its global infrastructure (storage, transportation) and physical properties (conversion not required).

Key Takeaways:

- 1 European Russian gas dependency nearly 40% (pre-war)
- 2 EU sanctioning 2/3 phase out of Russian gas by YE 2022, 100% by YE 2030
- 3 European gas demand down > 20%
- 4 Russian pipeline exports down > 90%
- 5 More EU gov support for consumer than industry

Russian pipeline gas exports to the EU, bn cubic meters



Source: (1) Oxford Economics, "Russia: Each Side Could Gain From Easing of Gas War" (August 16, 2022). ENTSOG. Data updated as of September 8, 2022.

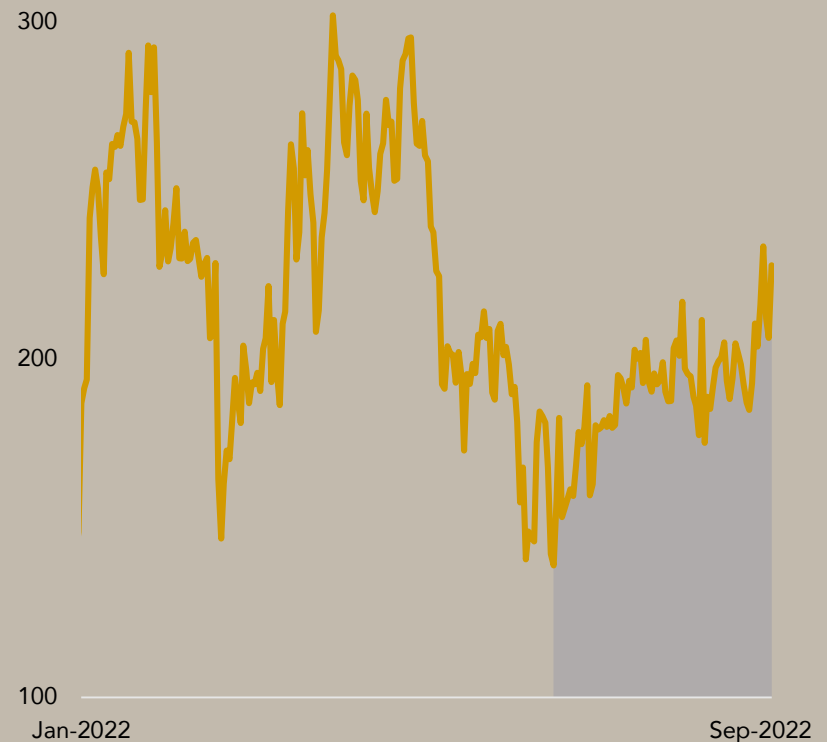
LNG Demand & Bottlenecks

In an effort to reduce Russian gas dependencies, MUFG's Ehsan Khoman notes the EU has increased LNG imports by 51% y/y. With LNG prices rising 5x by mid-2022, the endeavor has been costly. As prices soar, the largest LNG exporters in the world (US, Australia, Qatar, SE Asia) are increasingly shifting exports to the region, though bottlenecks remain on the ability to scale the effort given limited global supply, shipping and port facility bottlenecks.

Key Takeaways:

- 1 EU LNG imports up > 50%
- 2 Global supply limitations (US, Qatar, Australia, SE Asia)
- 3 Limited supply flexibility (technology, costs, transportation, terminal capacity)
- 4 Global demand competition (China more likely to look to coal than LNG at high prices)
- 5 Elevated LNG prices globally

LNG flows to northwest Europe, MCM / d



Source: (1) Bloomberg. Data as of September 7, 2022.

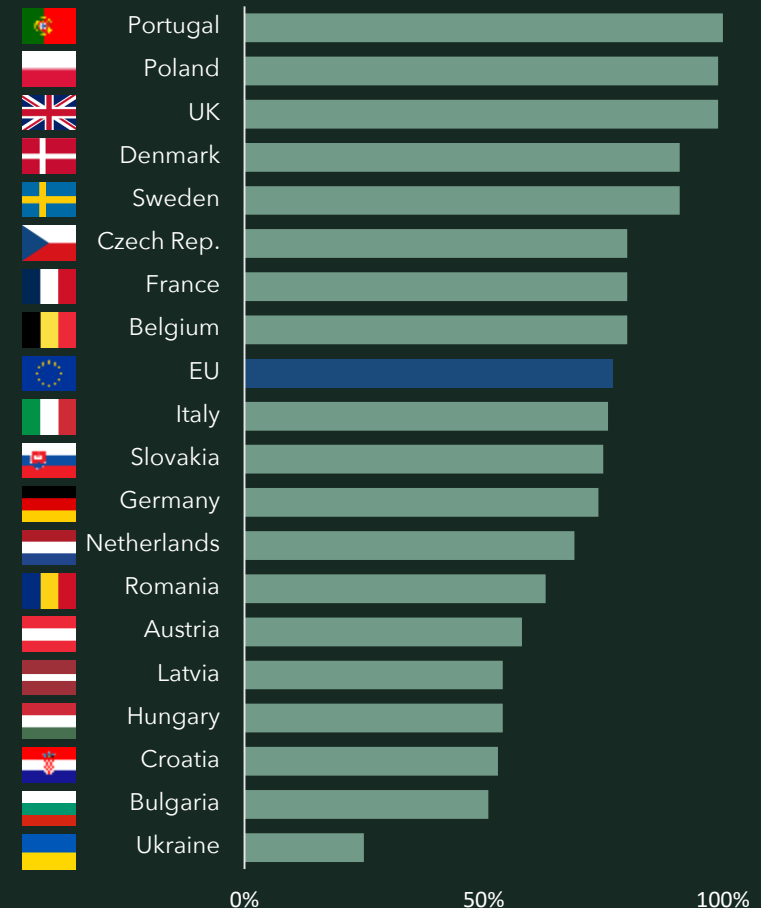
European Gas Storage Varies Widely

Even if Europe meets its 90% storage capacity targets by October, estimates vary widely on the length of time storage can meet European demand (i.e., 3-6 months). Winter temperatures will be a key variable in this regard.

Key Takeaways:

- 1 EU storage capacity nearing 80% (wide variance by country)
- 2 90% storage capacity achievable by end of October
- 3 Winter temperatures a critical variable
- 4 Alternative supply not sufficient in cold temp scenarios
- 5 Demand destruction needed to rebalance markets (already underway)

European gas storage levels (% of capacity)



Source: (1) MUFG Global Markets Research, Ehsan Khoman "Europe's Coming Winter Gastastrophe". Bloomberg, European Commission, Eurostat.

"Real" Electricity Prices Surging

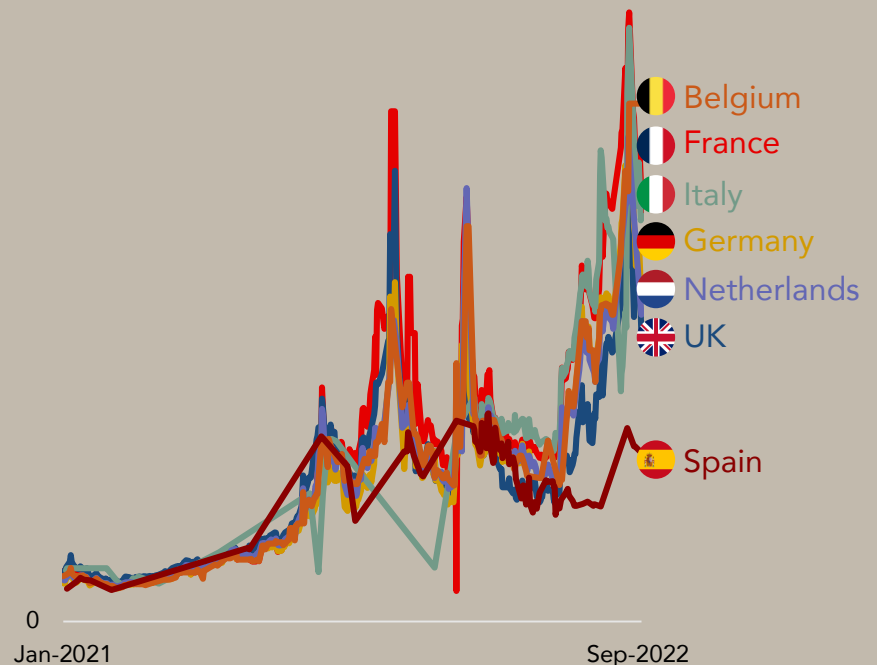
Natural gas prices, as a primary input for the electricity grid, are the marginal driver of electricity prices across the US and Europe. MUFG's Ehsan Khoman notes that a notably cold 2020-21 winter in Europe, combined with unusually low wind speeds, also contributed to a tripling in European electricity prices in 2H 2021. France, traditionally Europe's largest electricity exporter, has been importing electricity amidst higher prices and its aging nuclear infrastructure.

Key Takeaways:

- 1 Higher natural gas prices marginal driver of electricity
- 2 Cold 2020-21 winter
- 3 Unusually low wind speeds
- 4 France's aging nuclear infrastructure under-producing
- 5 Limited LNG supply flexibility

European electricity prices, 1m forward (EUR / MWh)

900



Source: (1) Bloomberg. Data as of September 7, 2022. Energy prices are base load electricity prices for major European countries, 1 month forward. MUFG Global Markets Research, Ehsan Khoman "Europe's Coming Winter Gastastrophe". Bloomberg, European Commission, Eurostat.

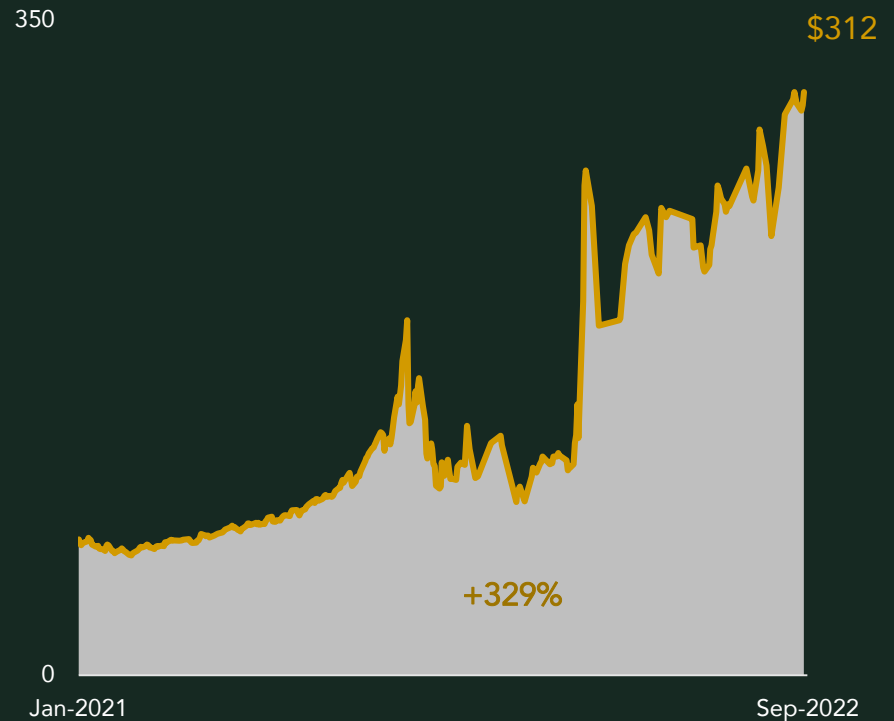
Europe Revisiting Coal, For Now

The EU reduced hard coal production by 79% between 1990-2021, but has since increased coal production by 15% in the 1H 2022. MUFG's Ehsan Khoman emphasizes two notable implications: (i) following EU Russian coal ban in August, a sharp increase in demand for alternative coal imports (Australia, Indonesia); and (ii) more demand and price appreciation for LNG increasing China and EM demand for coal. This pivot to coal is a multi-year phenomenon.

Key Takeaways:

- 1 Global coal generated electricity production at record highs (+9% in 2021)
- 2 EU coal production up 15% in 1H 2021
- 3 Increased EU demand for coal imports (Australia, Indonesia)
- 4 Increased China and EM demand for coal (as LNG prices rise)
- 5 Coal prices have tripled since Jan 2021; doubled since Jan 2022

European Coal Prices, 1 Yr Forward (\$/tonne)



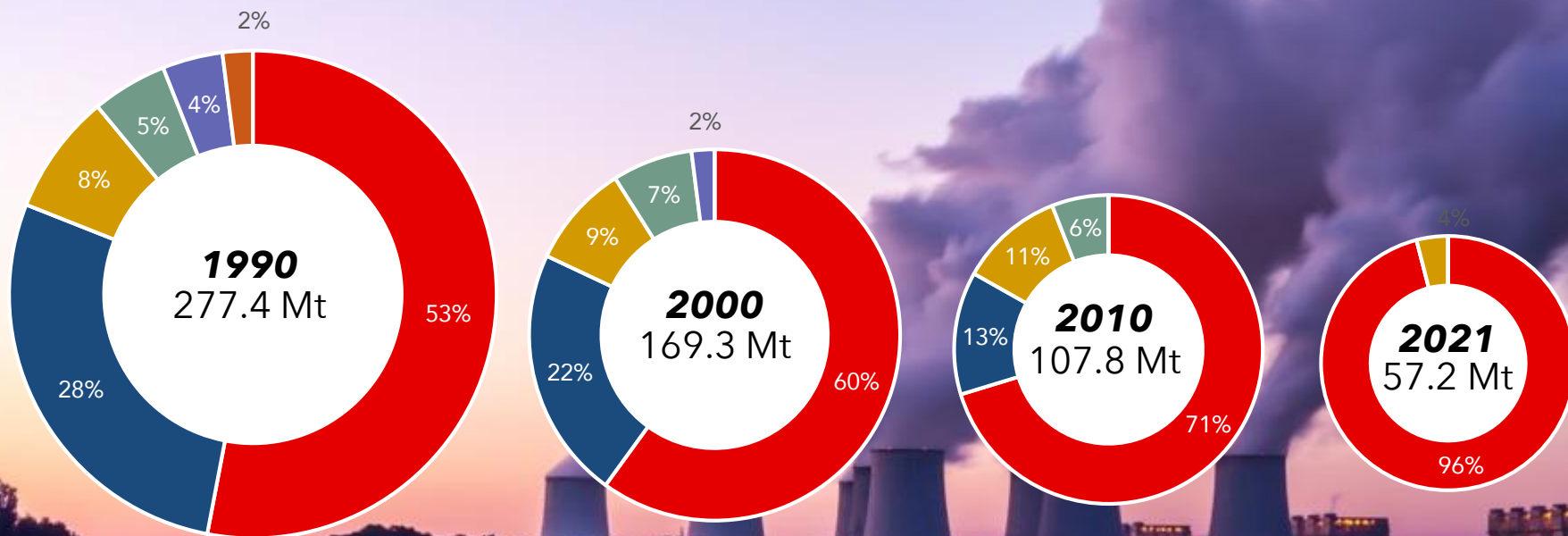
Source: (1) Bloomberg Data as of September 7, 2022.

Europe Revisiting Coal, For Now



Production of hard coal in the EU, million tonnes

● Poland ● Germany ● Czech Rep. ● Spain ● France ● Other



"The EU's 2030 and 2050 targets remain fully intact ... while we may temporarily increase our use of coal, the long term direction is clear."

Elina Bardram, European Commission acting director for International Affairs and Climate Finance

Source: (1) Eurostat. Data might not add up to 100% due to rounding. The 2021 figures are based on cumulated monthly data.

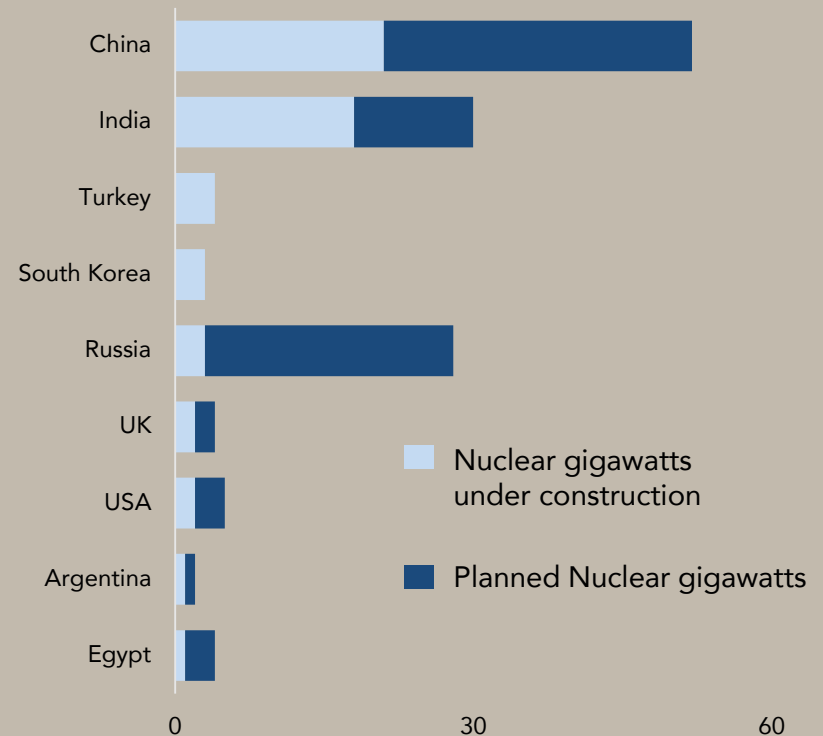
Revisiting Nuclear: Politically Complex, Requires Investment

Since the 2011 Fukushima Dai-Ichi nuclear meltdown in Japan, nuclear power has fallen out of favor with governments and consumers around the world. Germany, for example, had planned to phase out nuclear power by year end 2022. However, the ongoing energy crisis has brought new life to the nuclear power industry.

Key Takeaways:

- 1 EU added nuclear to "green taxonomy" while Germany delays YE 2022 nuclear phase-out
- 2 France's aging nuclear infrastructure under-producing
- 3 US Inflation Reduction Act includes provisions supporting existing and new nuclear
- 4 Japan bringing several plants back online
- 5 China & India building more reactors

Nuclear gigawatts planned or under construction



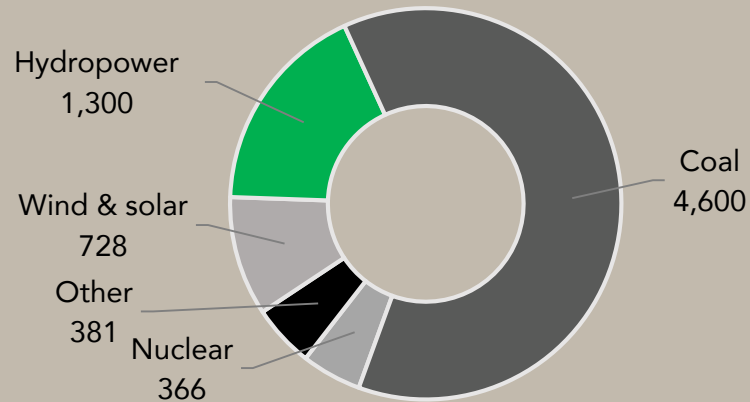
Source: (1) World Nuclear Association. BloombergNEF, "Global Energy Crisis Spurs a Revival of Nuclear Power in Asia" (August 29, 2022) "Germany Edges Closer to Using Nuclear to Plug Russian Gas Gap" (August 23, 2022). Financial Times "Japan turns back to nuclear power in post-Fukushima shift" (August 24, 2022).

Droughts Exacerbating Global Energy Crunch

China

- China's Yangtze River, a critical provider of hydropower, is at its lowest level for this time of year since records began in 1865
- Hydropower provides 18% of China's power generation
- Lack of consistent power has caused intermittent factory shutdowns. Reliance on coal has kept the crisis from spreading to additional provinces

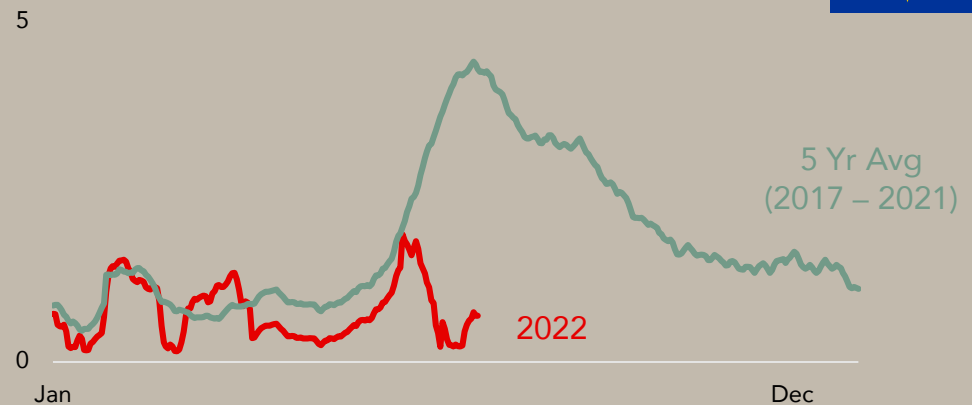
China's sources of power generation (KGWh)



Europe

- The Rhine River water level in Germany has fallen to below 40 cm in some key areas making it impossible to navigate for distribution of coal, petrol, wheat and other key commodities
- Hydropower generation has been significantly reduced
- Germany, historically an energy exporter, will be challenged by the production shortfall

German water-reservoir power generation (GWh)



Source: (1) Bloomberg. Data for China is 2020. (2) MUFG Ehsan Khoman, Head of EM Research, "Europe's Coming Winter Gastastrophe" (August 24, 2022). Bloomberg. Eurostat.

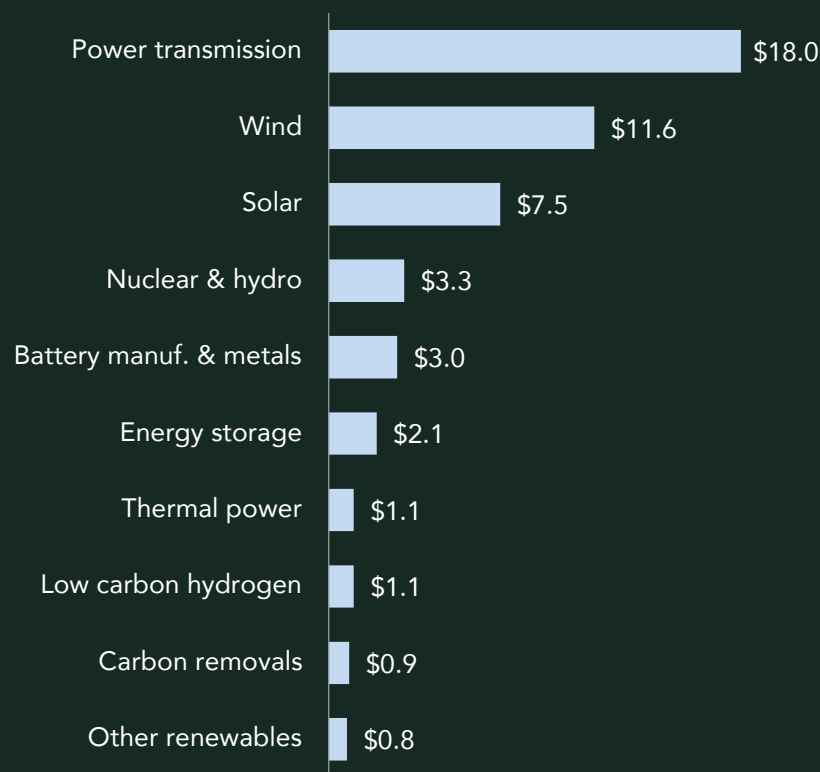
Renewables Will be Slow to Close the Gap

The EU launched its RePowerEU strategy in March 2022 to reduce Russian energy dependency, with clean energy a critical component of the plan. Interestingly, a more rapid adoption of “renewables” is critical to both Europe’s energy security and sustainability objectives. However, the current technology (i.e., batteries), regulatory (permits, approvals) and economic bottlenecks for renewables are too formidable to close the short term gaps in Europe’s energy requirements.

Key Takeaways:

- 1 Energy security over sustainability near term
- 2 Renewables important to BOTH energy security and sustainability
- 3 Technology, regulatory and economic bottlenecks to acceleration
- 4 Key mineral demand also a challenge (copper, rare earths, nickel, lithium, graphite)
- 5 Gov’t policy, subsidies & tax incentives expanding

Estimated cumulative spending by category to get to net zero emissions by 2050, USD tn



Source: (1) WSJ. Wood Mackenzie. net zero emissions by 2050 also based on world limiting global warming to 1.5 degrees celsius above pre-industrial levels.

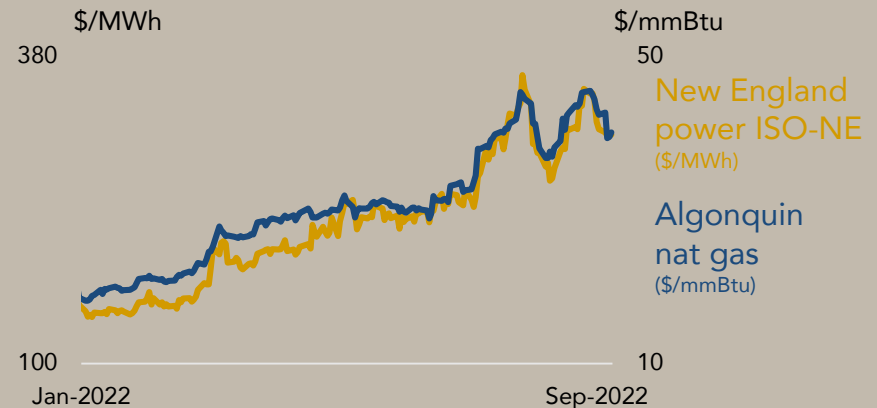
US Importing Europe's Energy Crisis

For the US, the energy crisis is more about "price" than "access." Power prices in the Northeast of the US are expected to reach record levels this winter due to Europe's energy crisis. The Northeast, which, in winter, is more reliant on LNG rather than pipeline gas, will be directly impacted by the global surge in prices.

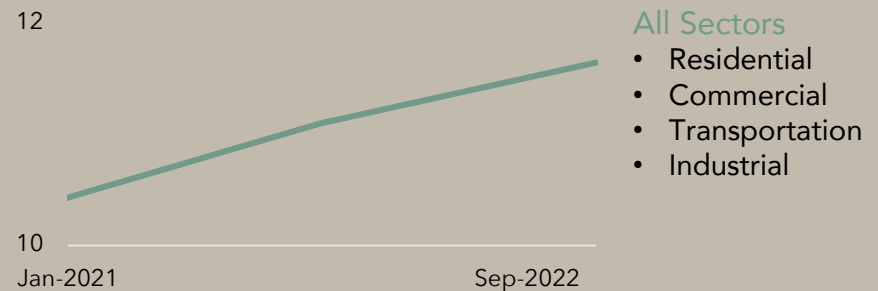
Key Takeaways:

- 1 Super-tight US energy markets on structural under-investment (regulatory, ESG, labor shortages, inflation, investors demanding cash & dividends)
- 2 Nat gas majority heating fuel in US; also drives electricity prices
- 3 Hurricane season and winter temps will be key variables
- 4 Northeast US reliant on LNG in winter (2 under-supplied pipelines)
- 5 Finite US export capacity at outer limits

January 2023 fair values for New England gas and power



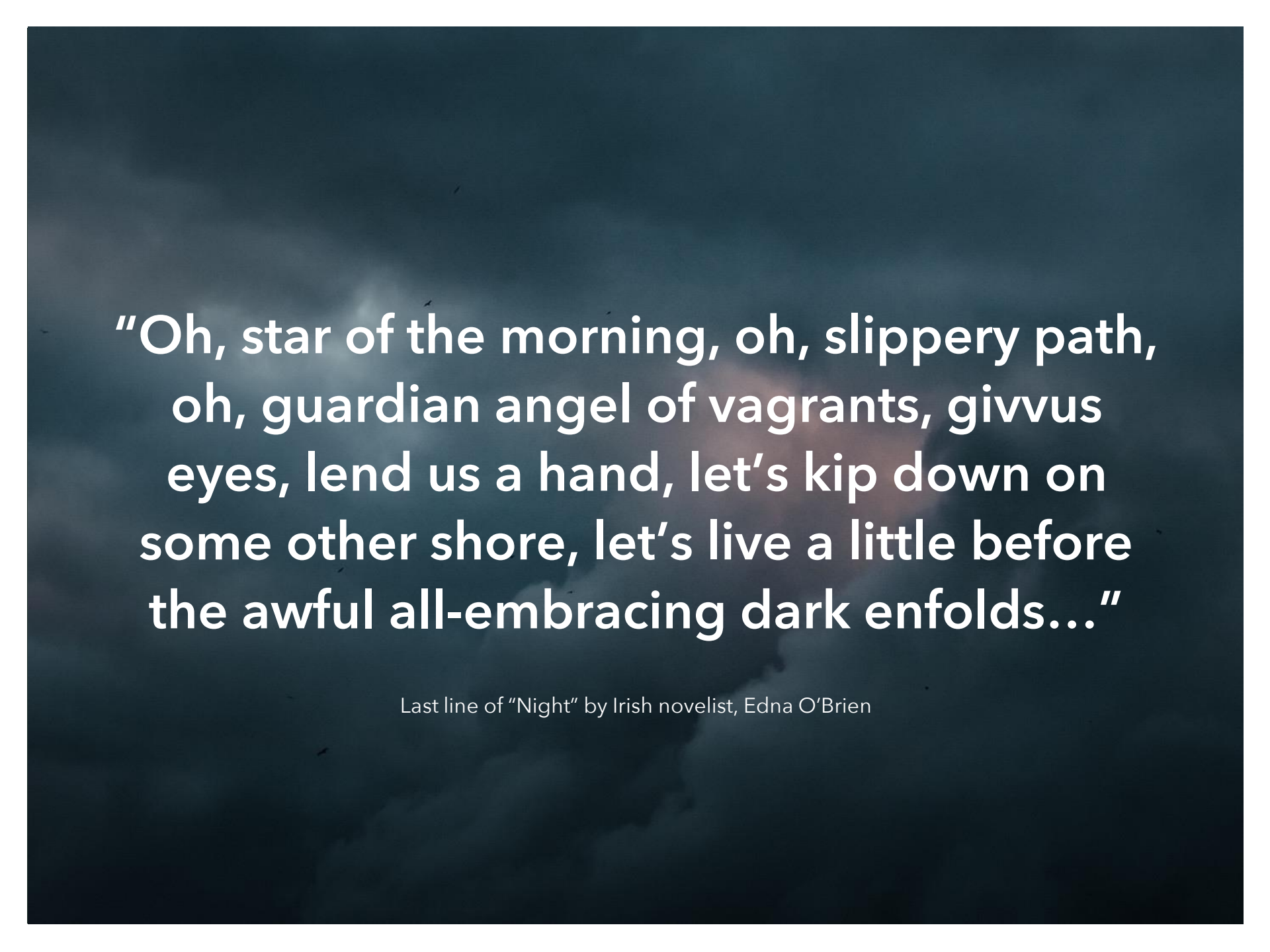
Average electricity prices (kilowatt-hour)



Source: (1) Bloomberg NEF. Waves from European Energy Crisis Set to Hit Northeast US. Bloomberg. Data as of September 8, 2022. TTF converted into Btu. (2) WSJ, "America's New Energy Crisis" (August 1, 2022). Bloomberg. Data as of September 7, 2022. EIA.



The Orchestrated Slowdown



"Oh, star of the morning, oh, slippery path,
oh, guardian angel of vagrants, givvus
eyes, lend us a hand, let's kip down on
some other shore, let's live a little before
the awful all-embracing dark enfolds..."






Last line of "Night" by Irish novelist, Edna O'Brien

10

The Burden of High Inflation

Pervasive Inflation, with High Differentiation Globally

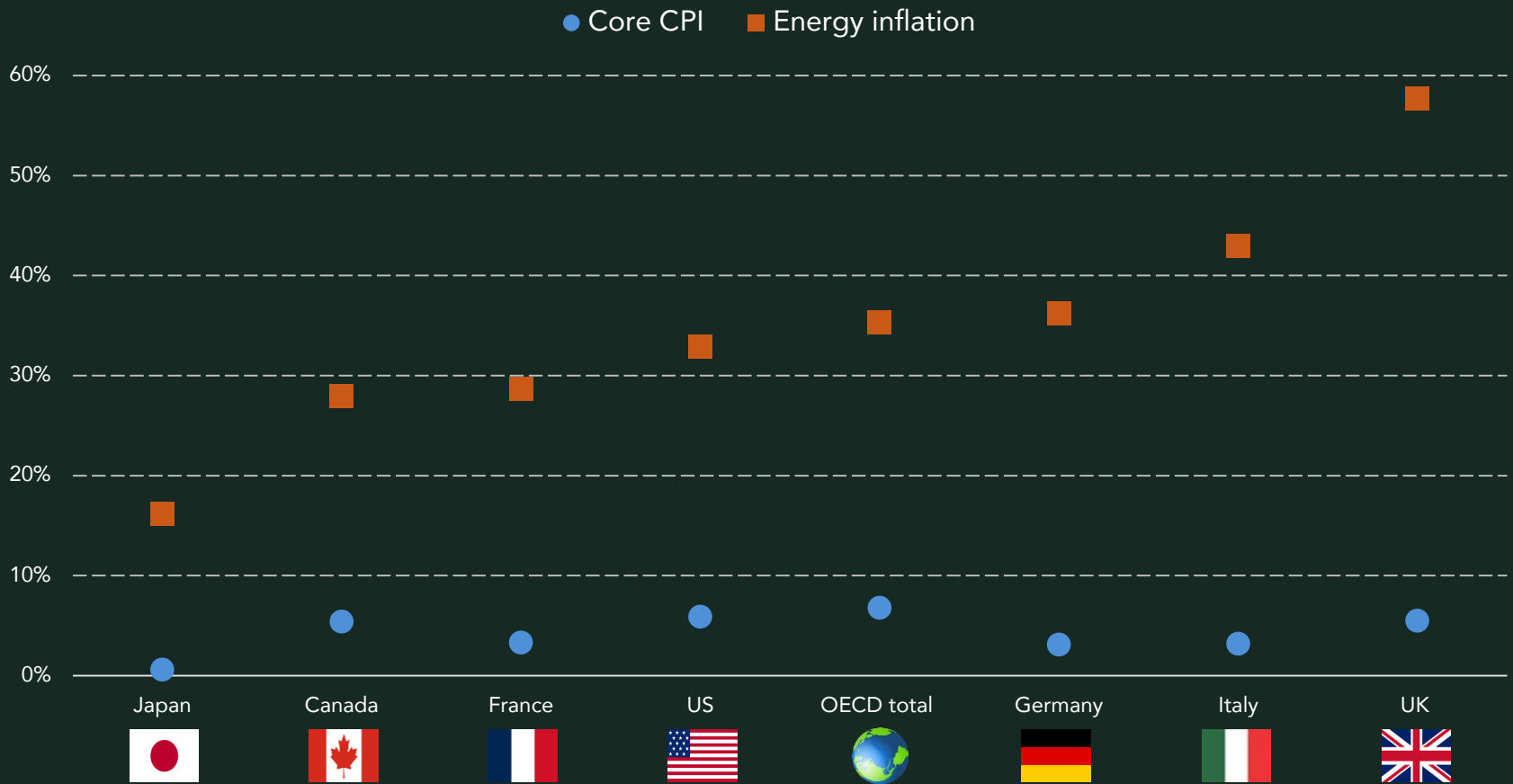
Post COVID and post Ukraine supply and demand forces have made high inflation a pervasive global theme for 2022, though with high regional differentiation across global economies. While consumers with “high” excess COVID savings can absorb the initial inflation spike, a prolonged period of elevated inflation becomes quite damaging.

		Consensus Inflation Expectations			Inflation outlook
Country		Current inflation rate	2022 YE	2023 YE	
 UK		10.1% y/y	9.2%	7.0%	<ul style="list-style-type: none"> BoE forecasting peak inflation above 13% in Q4 Hawkish pivot since December 2021, including 50bps rate hike in August
 EU		8.9% y/y	8.1%	4.6%	<ul style="list-style-type: none"> Inflation already more than 4x ECB's 2% target and expected to move higher Unprecedented 75bps hike in September, with hawkish forward policy guidance
 US		8.5% y/y	7.9%	3.9%	<ul style="list-style-type: none"> Inflation “possibly” past peak Markets forecasting Fed Funds at 4% by year end, 50bps higher than in early August
 China		2.5% y/y	2.4%	2.3%	<ul style="list-style-type: none"> Inflation below 3% target and likely contained by slowing demand & growth challenges Inflation nonetheless at 24-month high
 Japan		2.6% y/y	2.0%	1.4%	<ul style="list-style-type: none"> Inflation above pre-pandemic levels but manageable and likely near peak Substantial energy imports causing record trade deficit and weighing on currency

Source: (1) Bloomberg. Data as of September 9, 2022. Oxford Economics. Consensus is Bloomberg.

Energy Inflation Soaring Across G7

Across the G7, inflation has reached multi-decade or even record high levels from outsized moves in the cost of energy. In the UK, some fear, inflation could approach 15-20% as the cap on energy bills is lifted. Further shutdowns in Russian energy supply and cold winter temperatures would push Europe's energy crisis to more concerning levels.



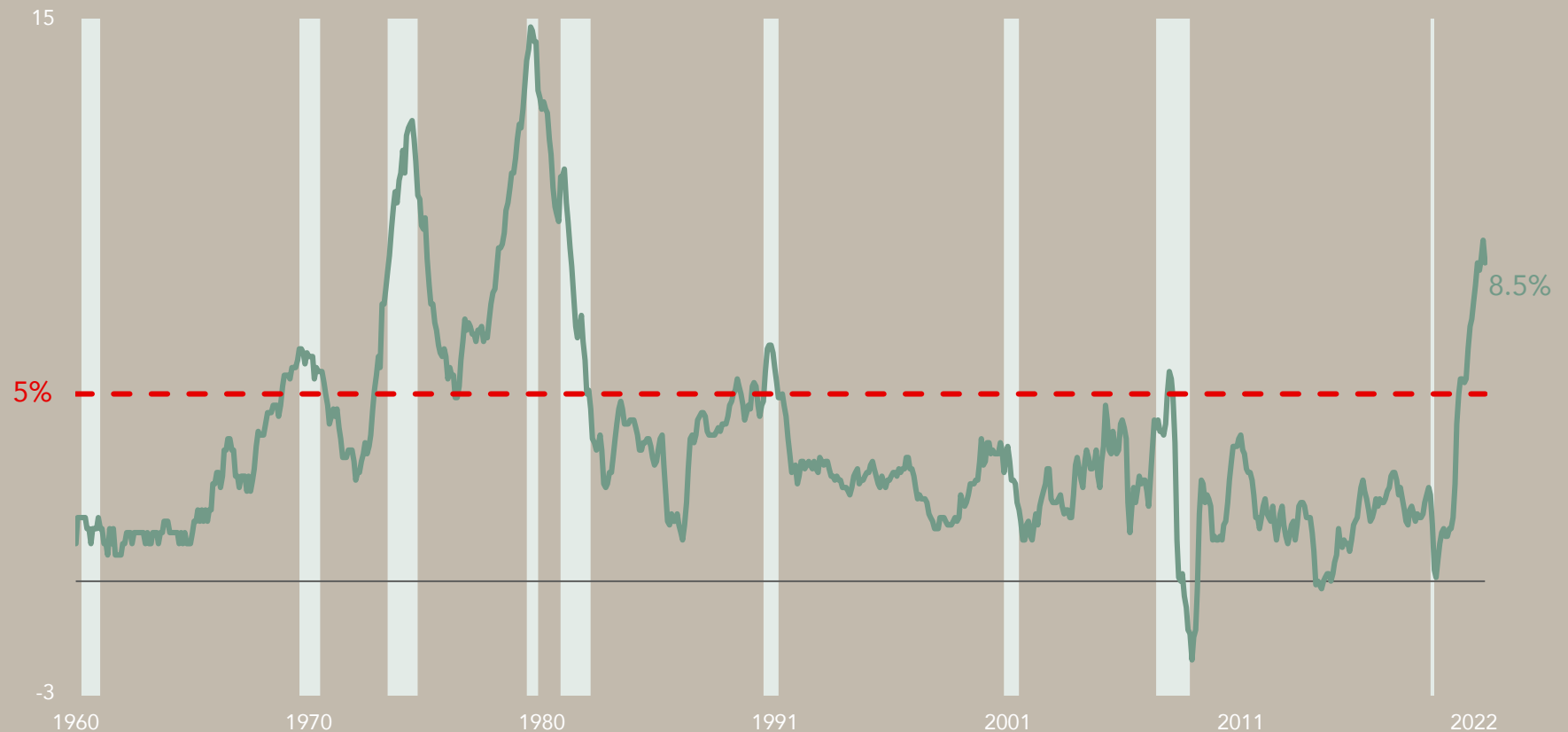
Source: (1) Bloomberg Data as of September 8, 2022. OECD.

Inflation Threshold for US Recessions

Going back to 1950, the US has generally entered into a recession after year-on-year headline inflation growth rises above 5%. US inflation in Q2 & Q3 2022 rose to its highest reading in 41 years (1981). A broad-based surge in inflation poses systemic risks for both the US and global economy and markedly increases the likelihood of recession.



US CPI inflation, y/y



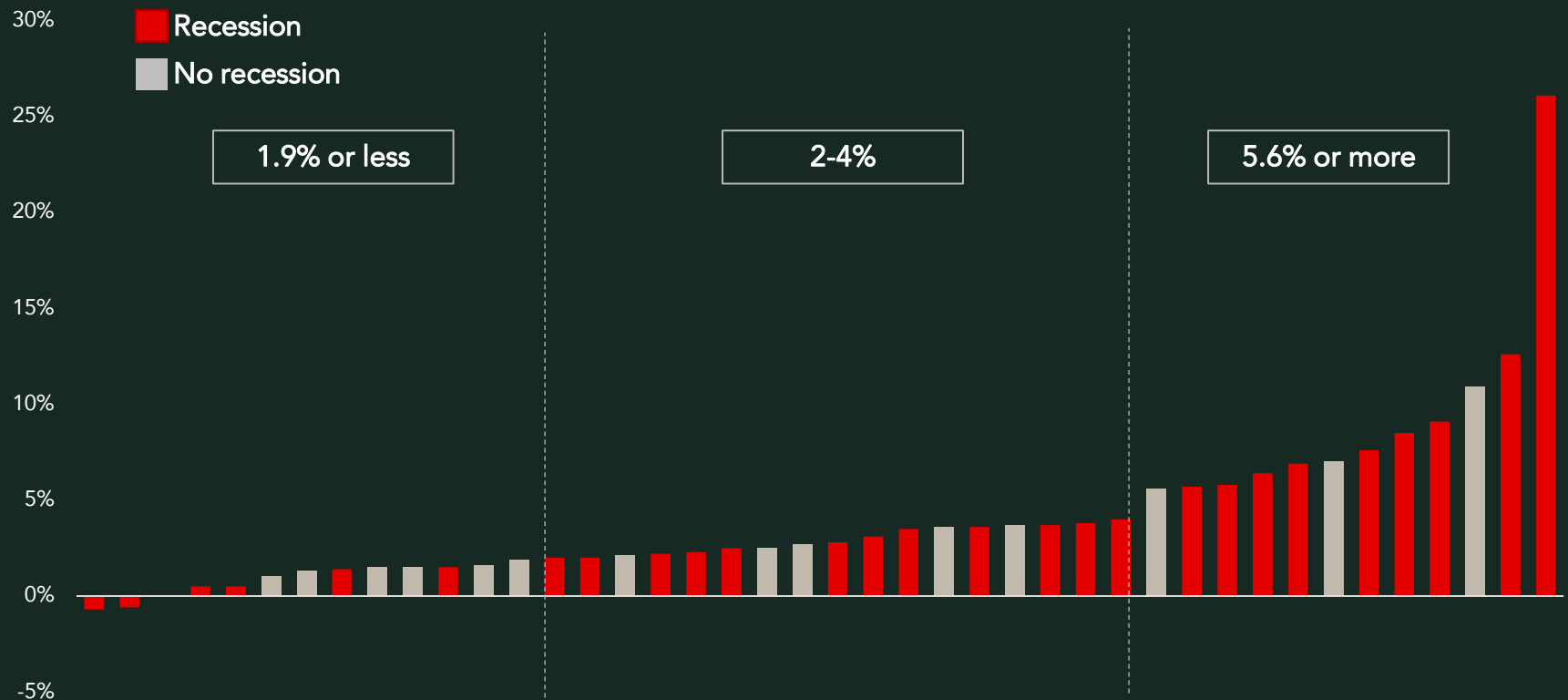
Source: (1) Bloomberg. Data as of September 8, 2022.

The More Inflation, the More Hard Landing Risk

In a study of 42 developed economy hiking cycles since 1950 (US, UK, EU, Japan), Oxford Economics found that higher levels of inflation at the start of a tightening cycle also correspond with higher probability of recession. With inflation so elevated, central banks must move quickly to raise nominal rates up to inflation (positive real rates). History, however, suggests that fine tuning a slowdown with blunt demand-side tools is very difficult to do.



Global recessions and soft landings by peak inflation rate



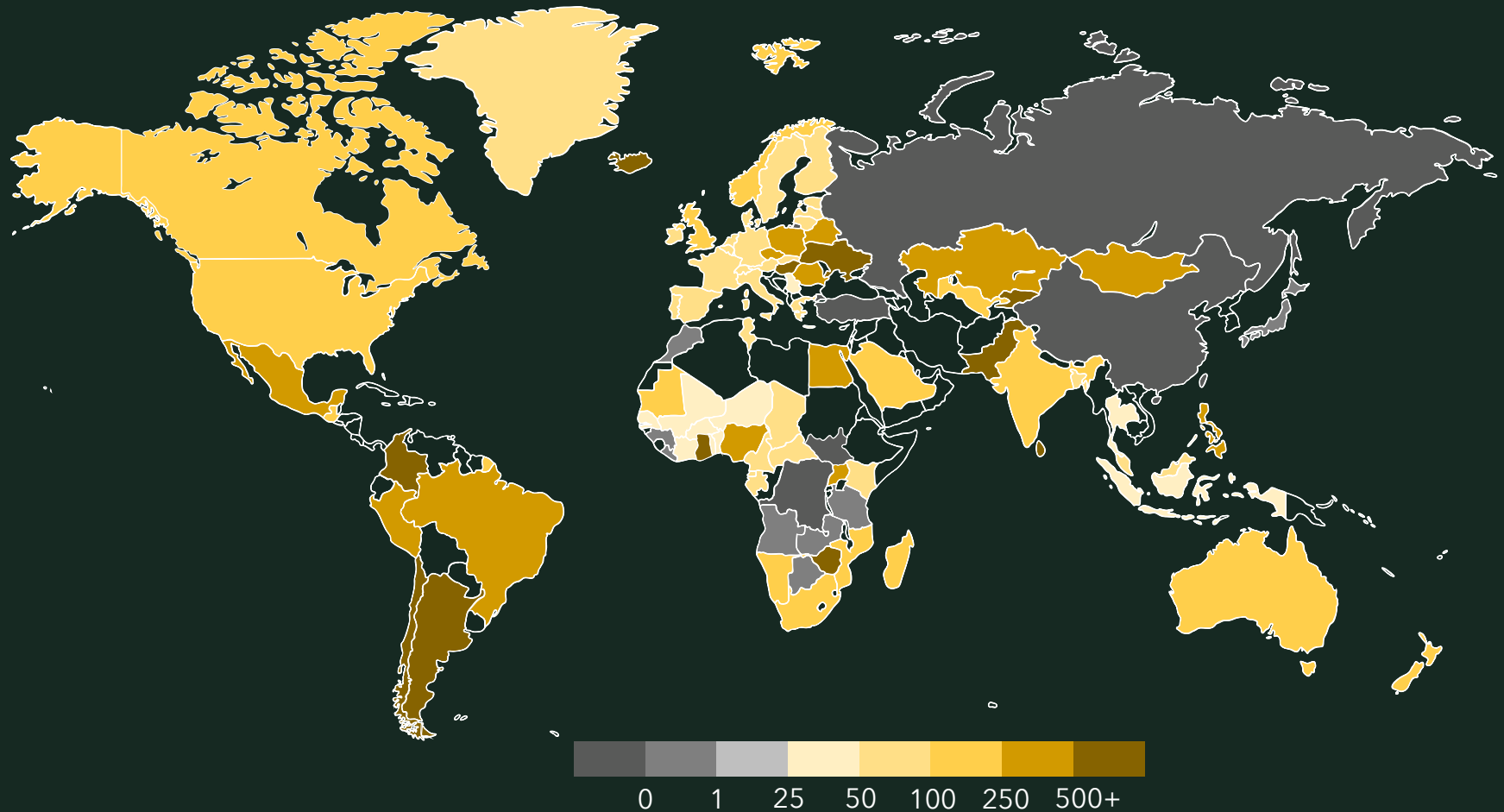
Source: (1) Oxford Economics, "What History Tells us About Rate Hikes and Recession Risk" (May 9, 2022).

02

Historic Central Bank Policy Pivot

80 Central Banks Tightening in 2022

Over 80 central banks globally have tightened rates in 2022, including 15 of the 20 most important central banks for markets globally. China is the only major economy easing policy in 2022.

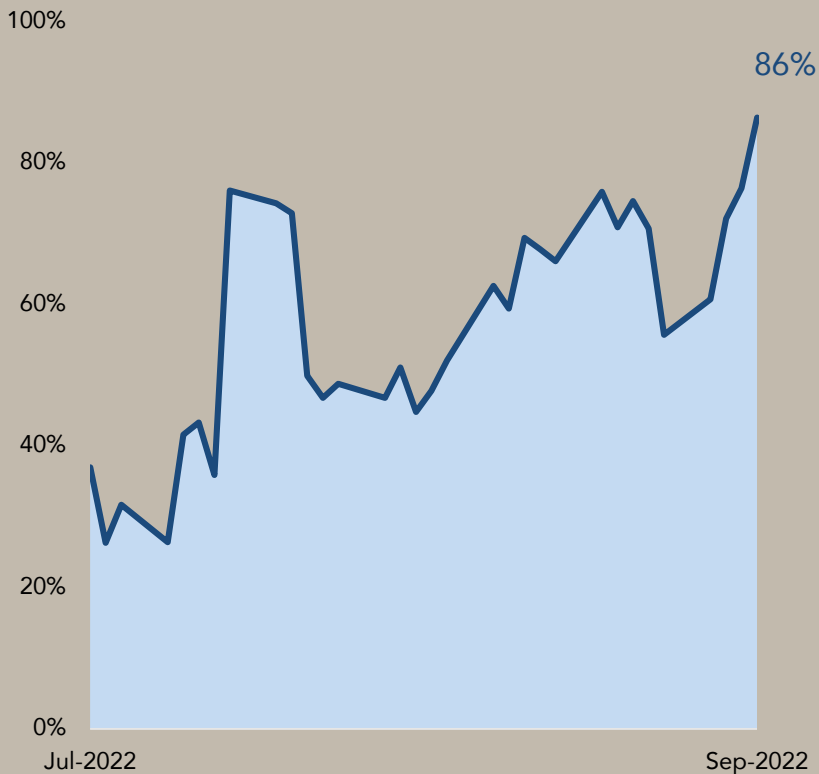


Source: (1) Bloomberg, "Top Central Bankers Deliver Hawkish Message at Jackson Hole". (August 27, 2022).

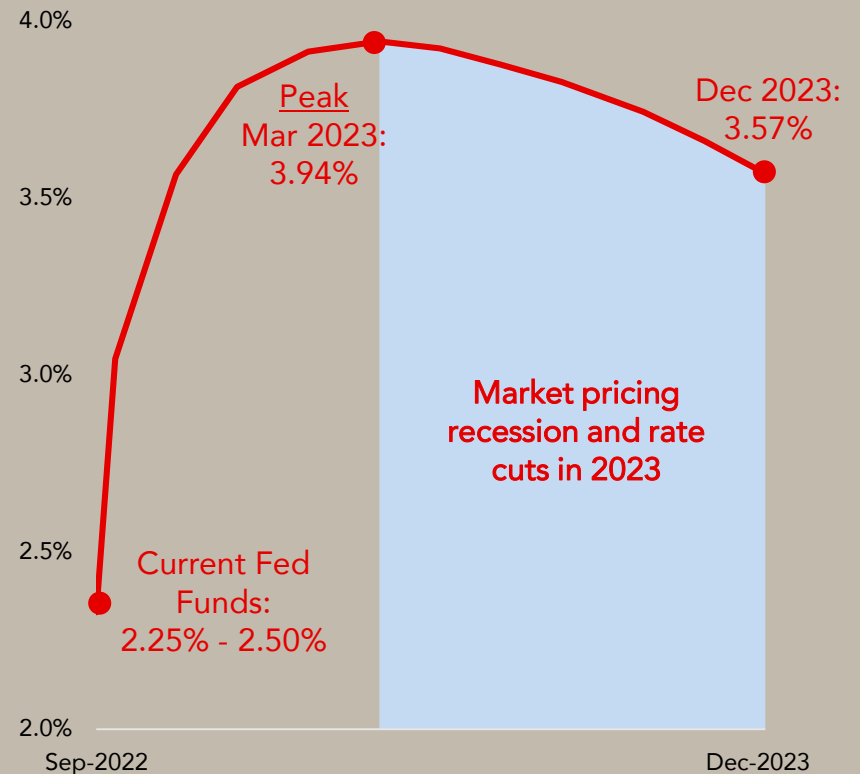
Fed Raising Global Speed Limit to 75bps

The market is currently pricing in over an 80% probability that the Fed will raise rates by 75 bps for a third time on September 21. MUFG's Head of Research, Derek Halpenny, notes the broader implications of aggressive Fed action by encouraging other central banks to follow suit. Recent 75 bps hikes from the ECB (unprecedented) and the BoC are case in point. Other major central banks to watch for 50-75 bps rate hikes in September include the BoE, the SNB, the Riksbank and Norges Bank.

Probability of 75bps Fed rate hike on September 21



Implied Fed policy effective rate

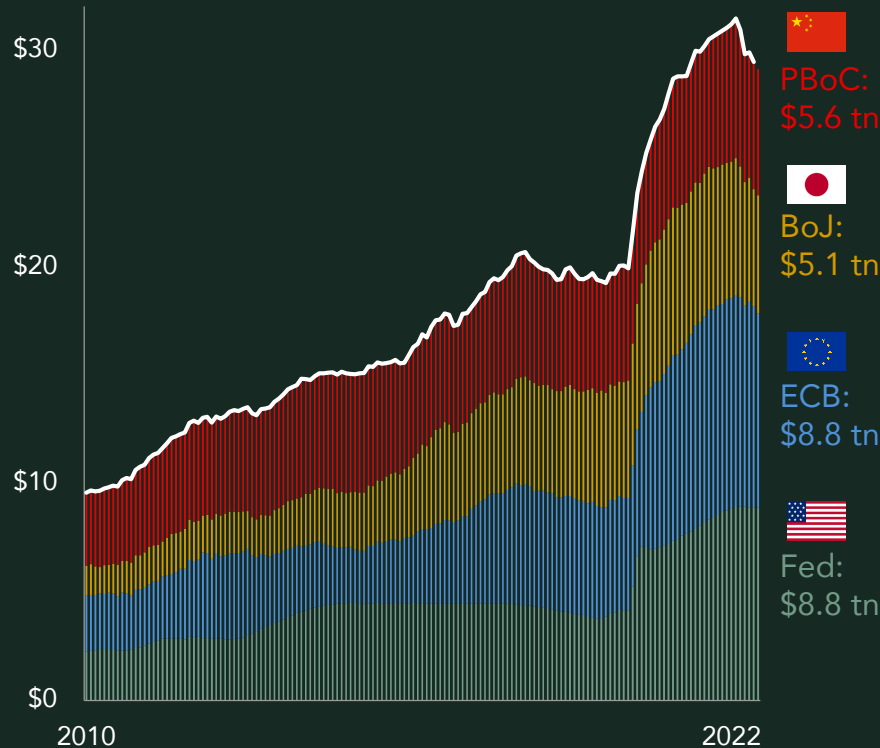


Source: (1-2) Bloomberg. Data as of September 8, 2022.

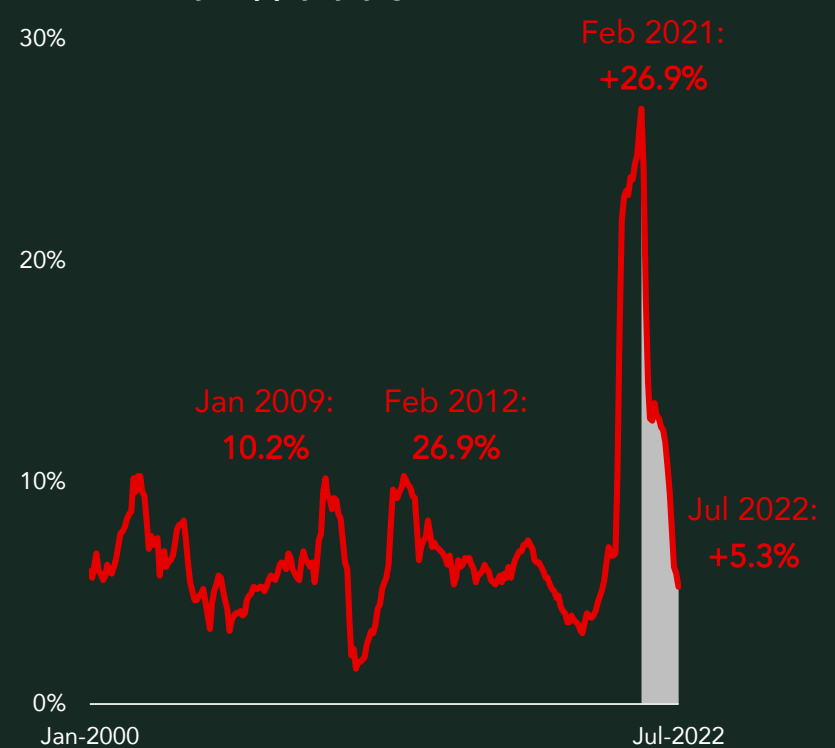
Big 4 Central Banks Draining Liquidity

Combined total assets of the four largest global central banks peaked at over \$31 trillion in February and have declined to just over \$28 trillion. While still very high relative to the pre-COVID period, the systematic draining of liquidity from the global financial system is putting pressure on bond markets. In September, the Fed will be at its maximum balance sheet reduction pace of \$95 bn per month. US M2 money supply growth, previously reaching a record high of 27% in 2021 (nearly 3x 2009 levels), is now plunging toward zero.

Total balance sheet assets, USD tn



US M2 money supply, y/y growth



Source: (1-2) "Recession Risks Across Emerging Markets" (Khoman). Bloomberg. Data as of September 8, 2022.

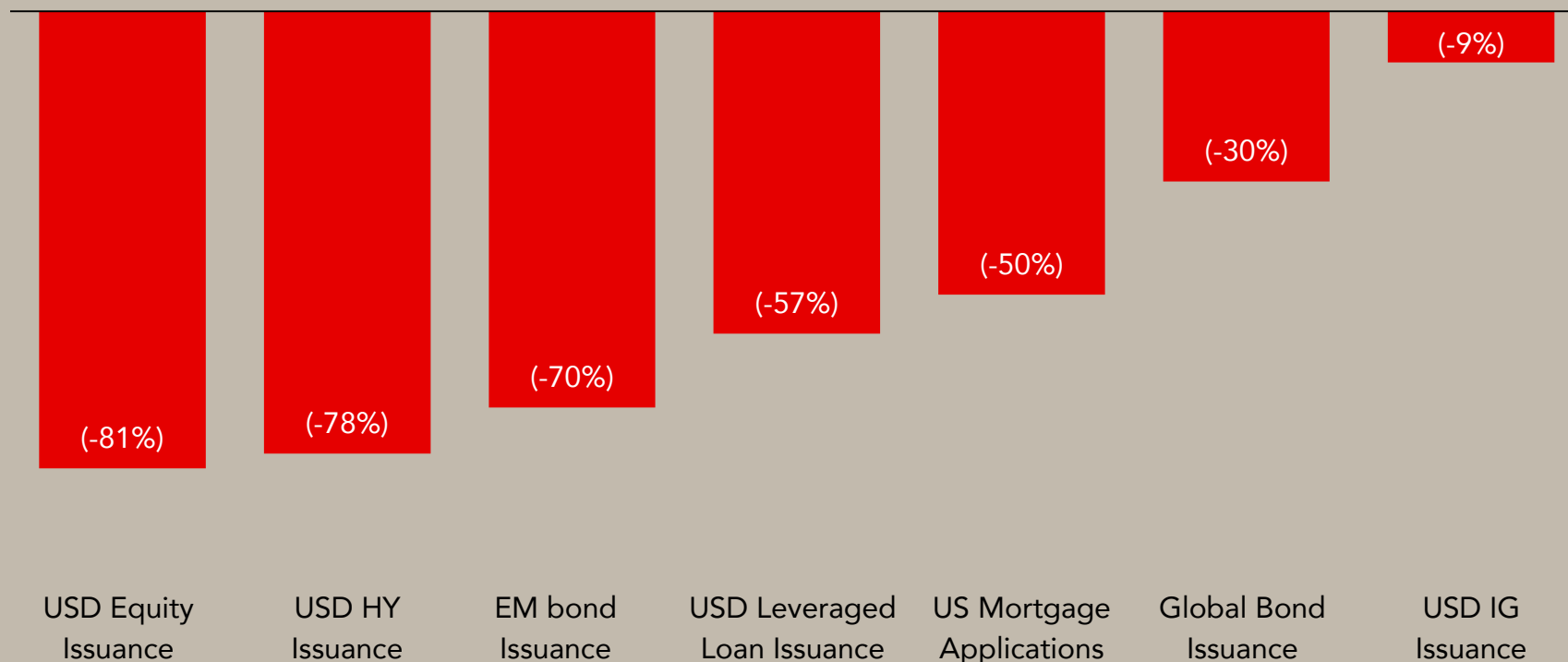


Tighter Financial Market Conditions

Financing Volumes Down Sharply in 2022

With high pre-funding activity and fortress balance sheets built in 2021, corporate new issue activity has dropped sharply in 2022 as central banks tighten policy and global geopolitical tension spike. Private sector funding, mortgages and bank lending are also down sharply over the period.

YTD issuance volumes (y/y)



Source: (1) MUFG Capital Markets. DCM. ECM. FT. Bloomberg. Reuters. Global bond issuance is global IG corporates, from Dealogic. Data is as of September 2, 2022.

Energy Prices Driving Economy & Markets

While the global economy is far less oil intensive than it was in the 1970s, the price of oil is still driving the economic outlook and market performance



Global energy prices

360



Equity volatility (VIX)

30

12

Jan-2021

Sep-2022

VIX: 23

US Dollar

112

85

Jan-2021

Sep-2022

109.7

10 year UST

3.8%

0.8%

Jan-2021

Sep-2022

3.25%

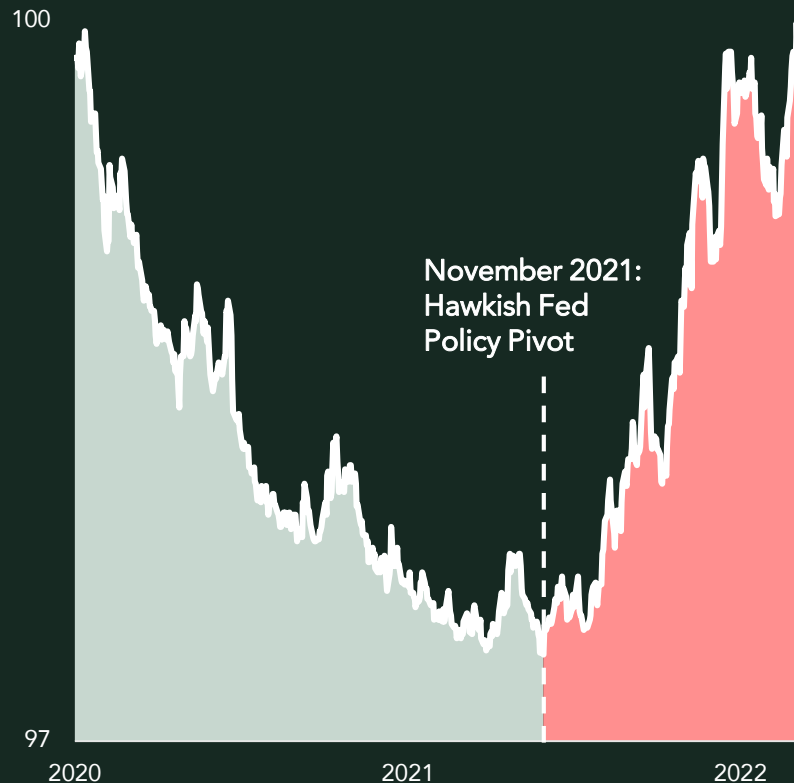
Source: (1-4) Bloomberg. Data as of September 9, 2022.

Global Financial Conditions Tightening

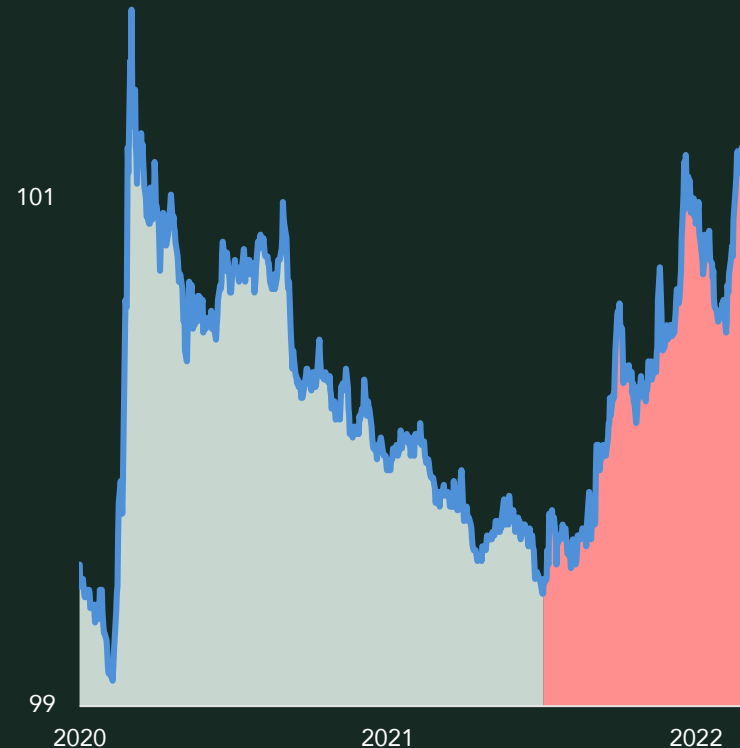
Outside of China and Japan, financial conditions have tightened across nearly every major market globally in 2022. US financial conditions (as impacted by higher interest rates, wider credit spreads, a stronger US dollar and lower equities) have tightened considerably since the Fed embarked on its hawkish pivot in November.



US financial conditions



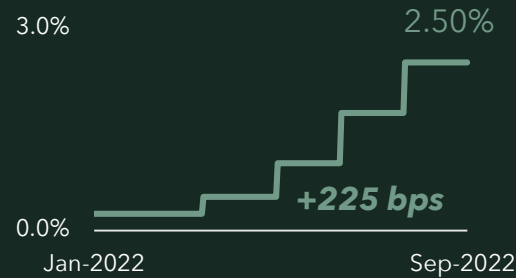
Eurozone financial conditions



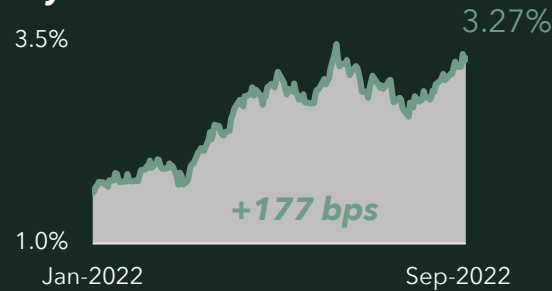
Source: (1-2) Bloomberg. Data as of September 8, 2022.

Rates Complex Tightening

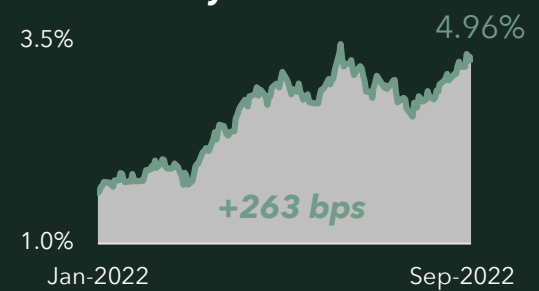
Fed funds



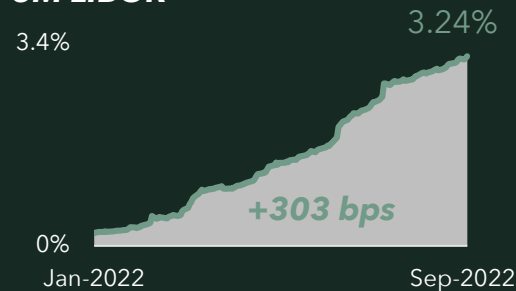
10 year UST



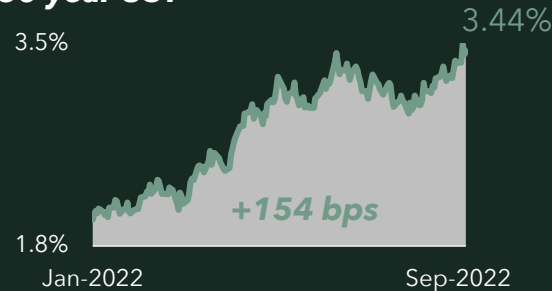
USD IG bond yields



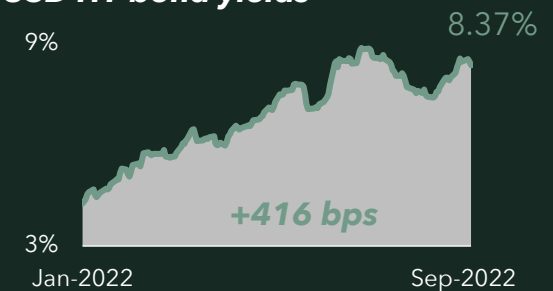
3M LIBOR



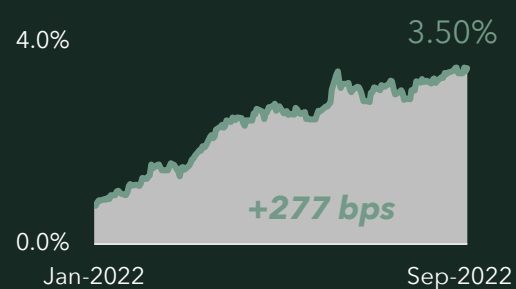
30 year UST



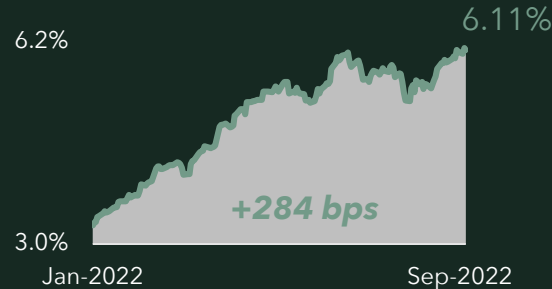
USD HY bond yields



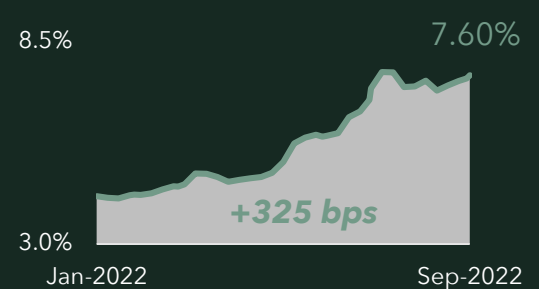
2 year UST



30 year mortgage rates



USD leveraged loan yields

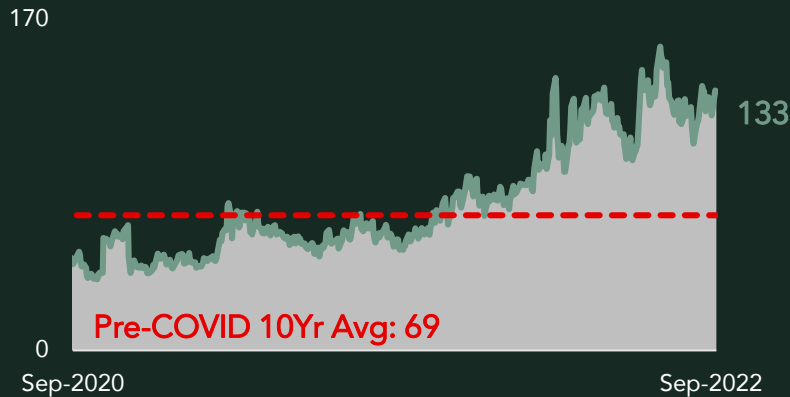


Source: (1-9) Bloomberg. Data as of September 9, 2022. USD leveraged loans index is LCD LSTA US Leveraged Loan Index excluding BBBs.

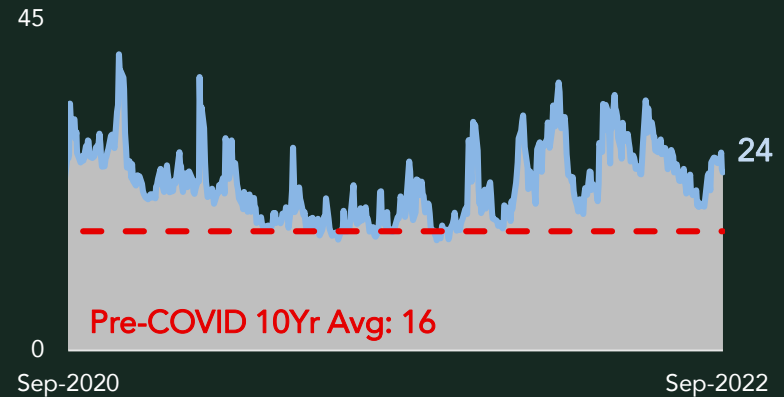
Global Volatility Structurally Higher

Energy market volatility jumped higher in the 1H 2022 as Europe and Russia engaged in policy escalation through sanctions and retaliation measures. Rate and equity volatility jumped higher after Chair Powell's August speech in Jackson Hole.

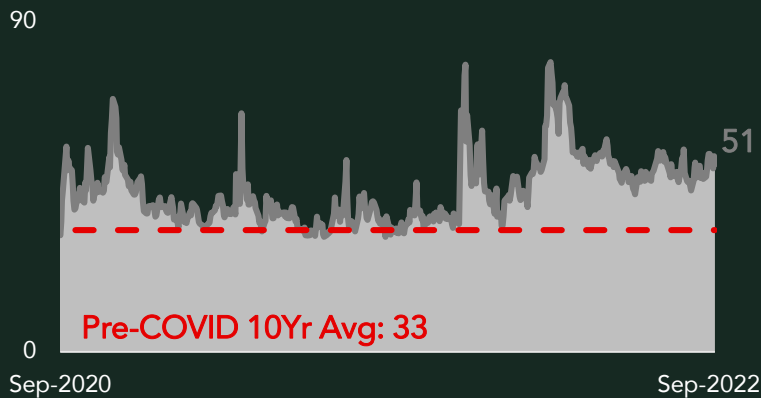
Rates volatility (MOVE)



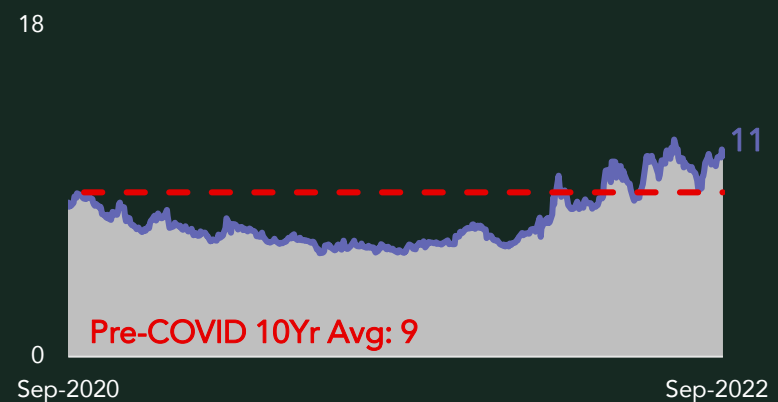
Equity volatility (VIX)



Oil volatility (OVX)



Currency volatility (CVIX)



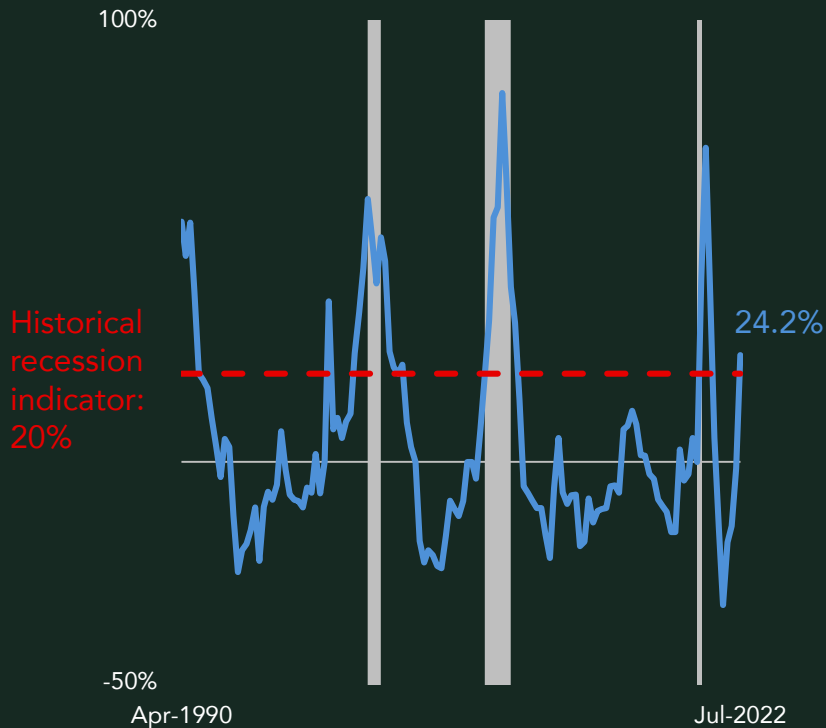
Source: (1) Bloomberg. Data as of September 8, 2022.

Banks Tightening Corporate Lending Standards

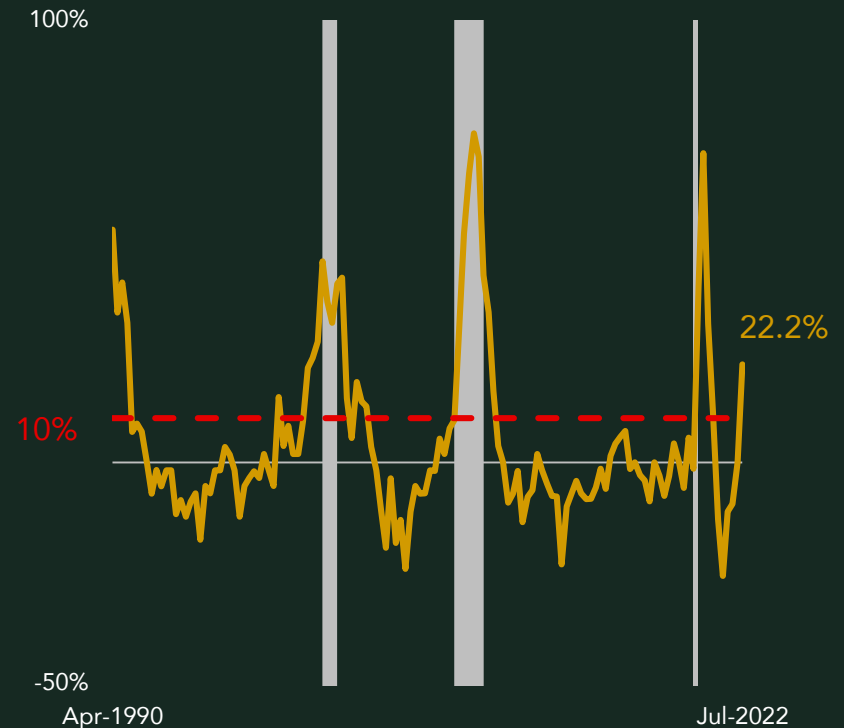
The Fed's latest Senior Loan Officer Opinion Survey showed that 24% of banks have tightened their standards on loans to large and medium-sized firms while 22% have tightened standards on loans to small firms. Historically, tightening of lending standards at these levels is an indicator of US recession. Despite tightening standards, demand for loans from all size firms remains elevated, a positive indicator of corporate activity.

% of banks tightening C&I loans

To large firms



To small firms



Source: (1-2) Bloomberg. Data as of September 8, 2022.

USD Bond Issuance Down in 2022

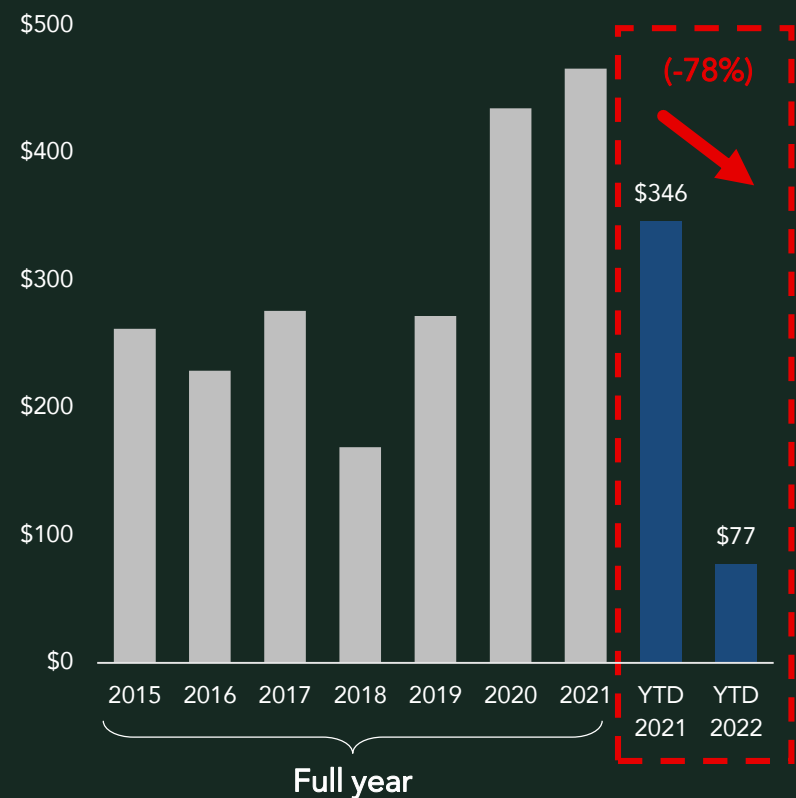
Better than expected earnings, pre-funding and high liquidity have allowed investment grade issuers in the US dollar markets to be more "opportunistic" than in prior years.

IG USD new issue, bn



Following record 2021 issuance, 2022 YTD HY volumes are down 78%. A strong September pipeline will test favorable market technicals but opportunistic issuance windows are expected.

HY USD new issue, bn

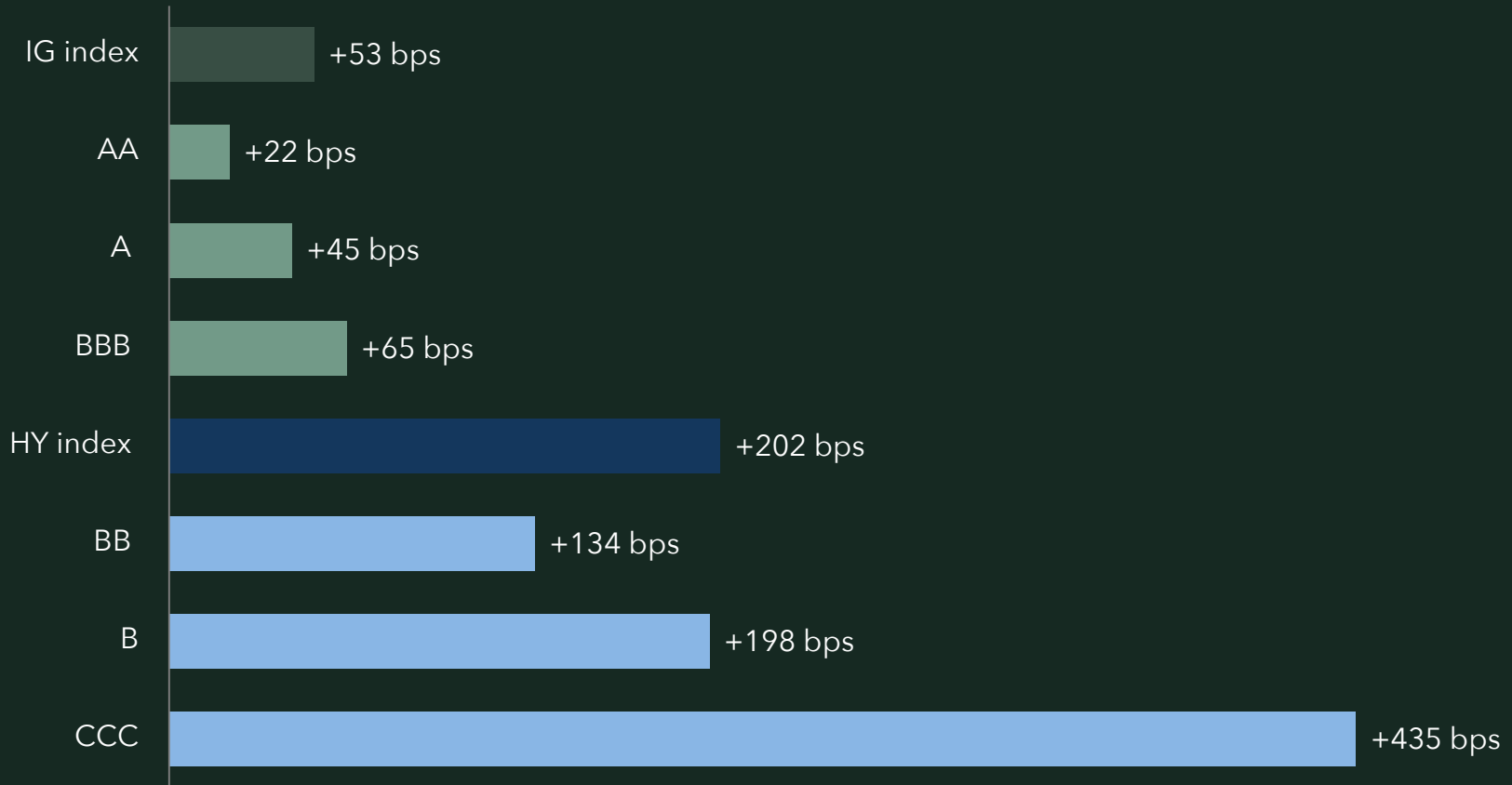


Source: (1-2) IFR. MUFG Syndicate. Data as of September 2, 2022.

High Rated Credits Outperforming

In the COVID recovery period, HY and IG spreads reached post GFC tight, spreads compressed across the ratings spectrum and lower credits outperformed. As volatility returns to the market and funding costs rise, the flight to quality has driven outperformance in higher rated credits.

Change in spreads in 2022

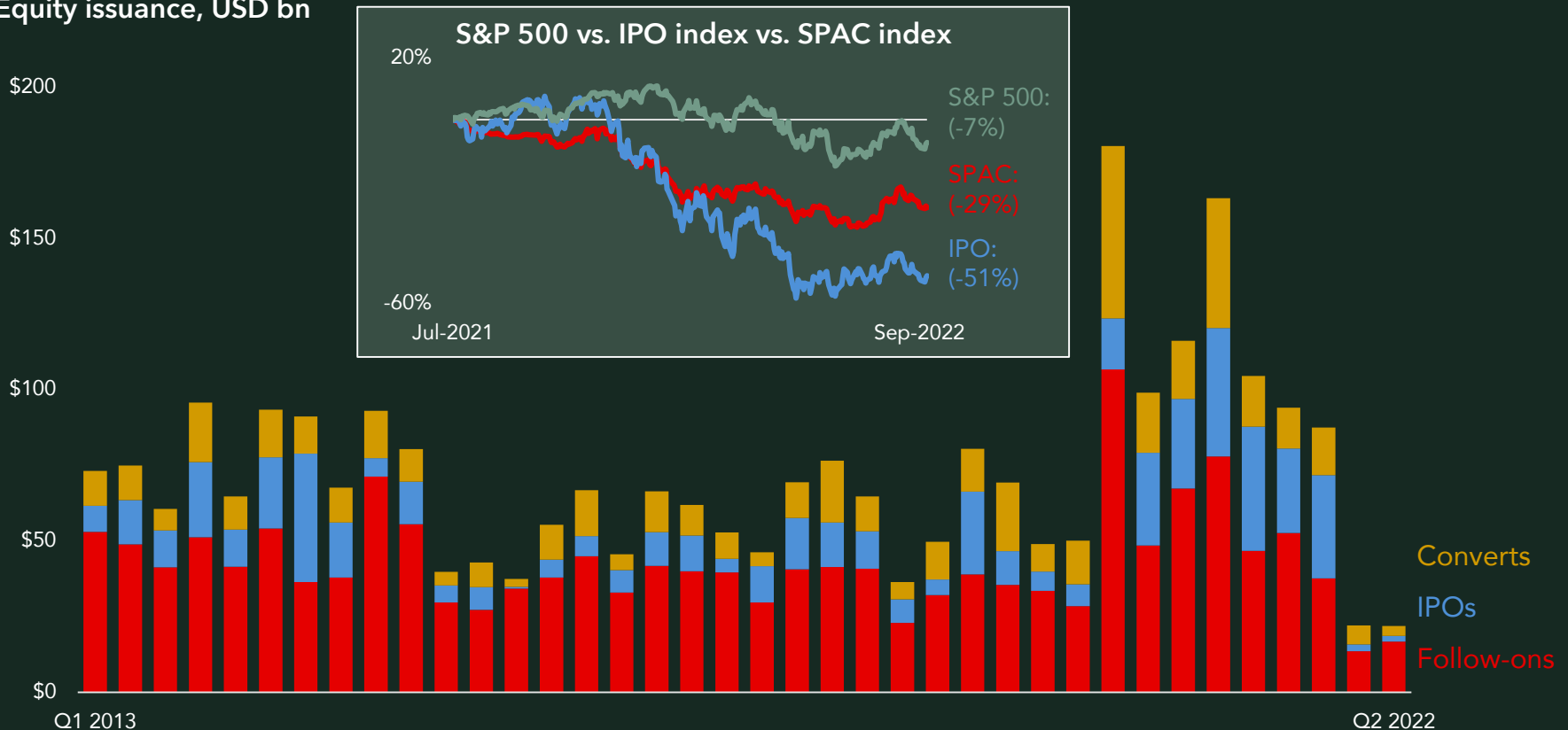


Source: (1) Bloomberg. Data as of September 8, 2022. Bloomberg OAS indices.

Equity Issuance Down 81% Y/Y

Global equity issuance has declined across every offering type, region and industry sector in 2022. From a regional perspective, North America and Latin America have declined the most while Asia Pacific and EMEA are returning closer to levels seen in 2020. IPOs for SPACs, which drove issuance in 2020 and 2021, have declined significantly in 2022 as increased regulatory scrutiny adds to market volatility, tighter monetary policy and inflation factors weighing on the market.

Equity issuance, USD bn



Source: (1) MUFG. ECM. Data as of September 8, 2022. (2) Bloomberg. Data as of September 8, 2022. IPO index is Renaissance IPO Index. SPAC index is IPOX SPAC Index.

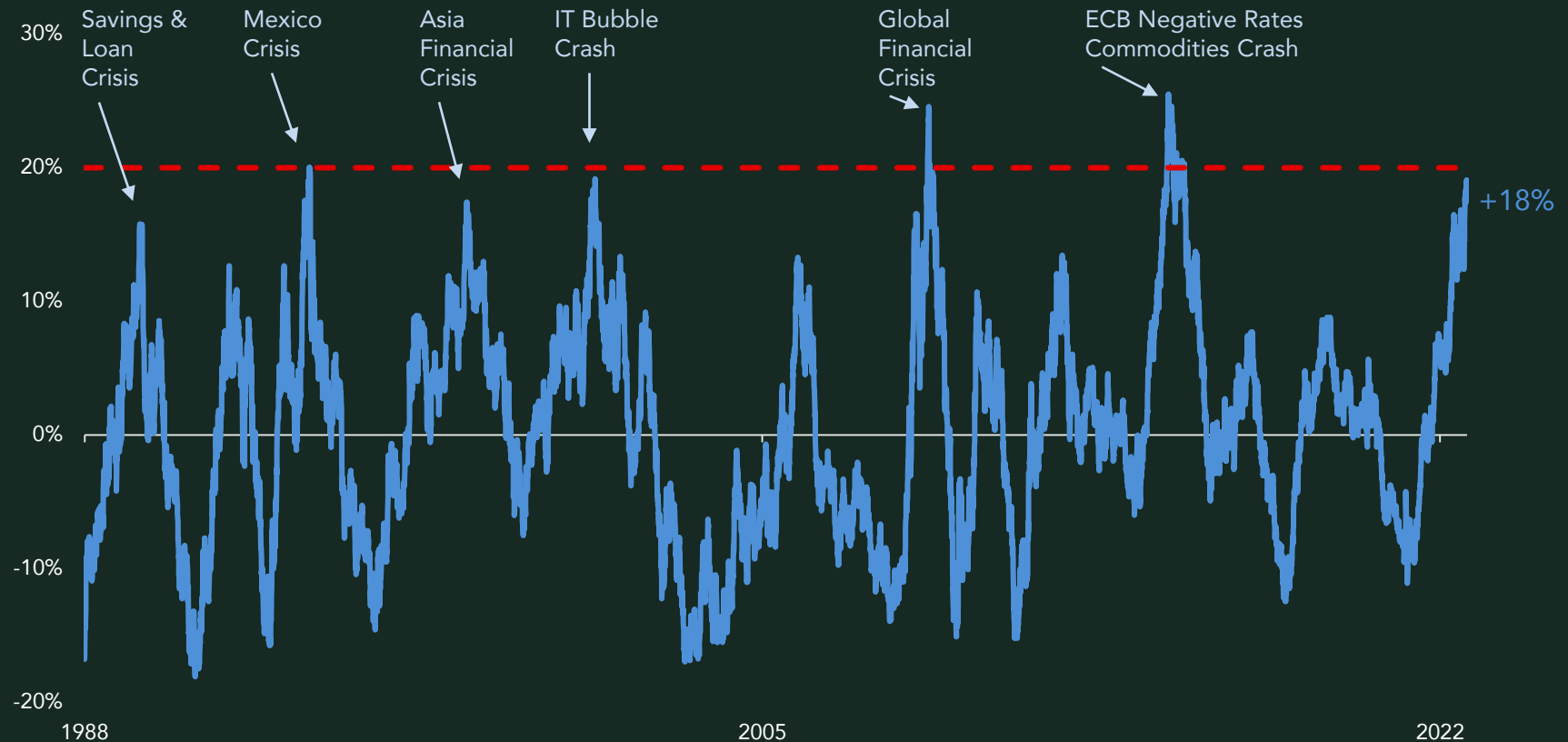
04

US
Dollar
Strength

US Dollar Strength Signaling Crisis

Since January 2021, the US Dollar index has appreciated nearly 20% and reached highs not seen since 2002. According to analysis by MUFG's head of Global Markets Research, Derek Halpenny, a 20% y/y increase has only happened three times since the late 1980s. Each time the USD has approached the 20% threshold, a global crisis has soon followed.

Y/Y change in USD index



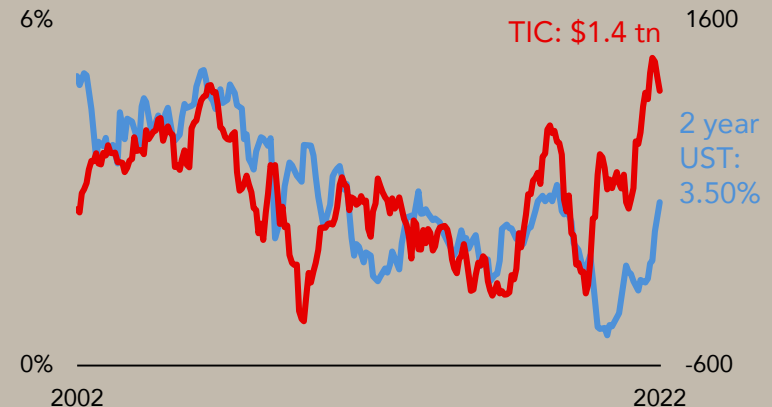
Source: (1) Bloomberg. Data as of September 8, 2022.

Key Drivers of USD Strength

#1 Short Term Rate Differentials

- The Fed has moved faster and more aggressively than other central banks to raise policy rates towards neutral
- Higher US short term rates since Q3 2021 has been associated with a \$1.3 trillion rolling 12 month supply of capital inflows into US dollar assets

US treasury inflows and yields



#2 Long Term Rate Differentials

- Real 10-year yield differentials have widened significantly between the US and the Eurozone and Japan
- Real US 10-year yields have moved into positive territory, after running deeply negative for most of 2020 and 2021

US 10 year real yields

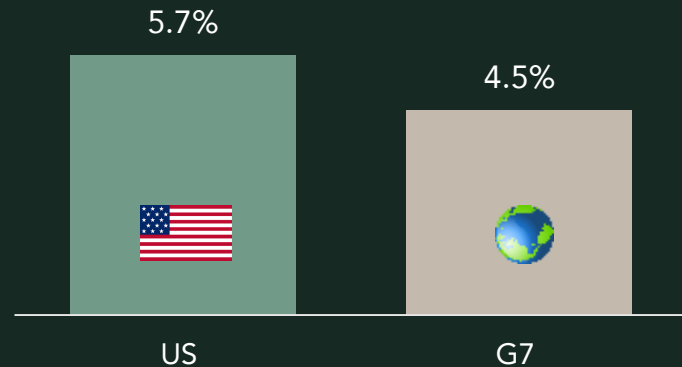


Key Drivers of USD Strength

#3 Relative GDP Growth Favors US

- Stronger relative growth in 2021 helped propel the dollar higher
- US Economy more resilient to energy crisis

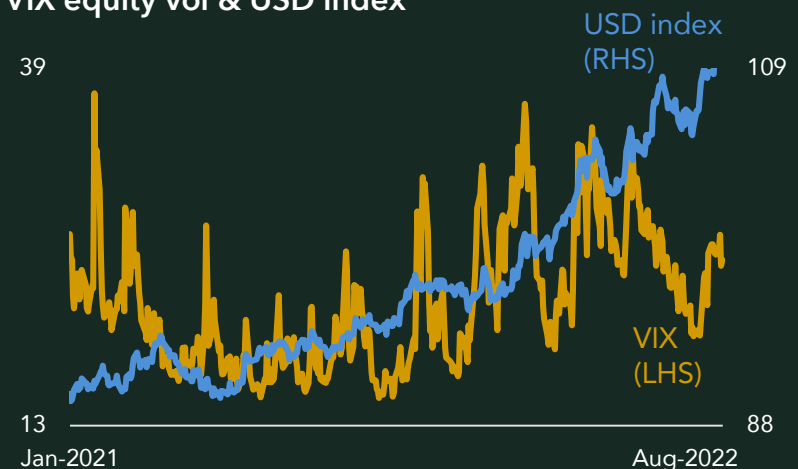
2021 GDP growth, y/y



#4 Safe Haven Flows into US Dollars

- Structurally higher market volatility and stress indicators favor safe haven flows into USD
- US relatively more isolated from some global economic shocks unfolding (i.e., Russia-Ukraine)

VIX equity vol & USD index

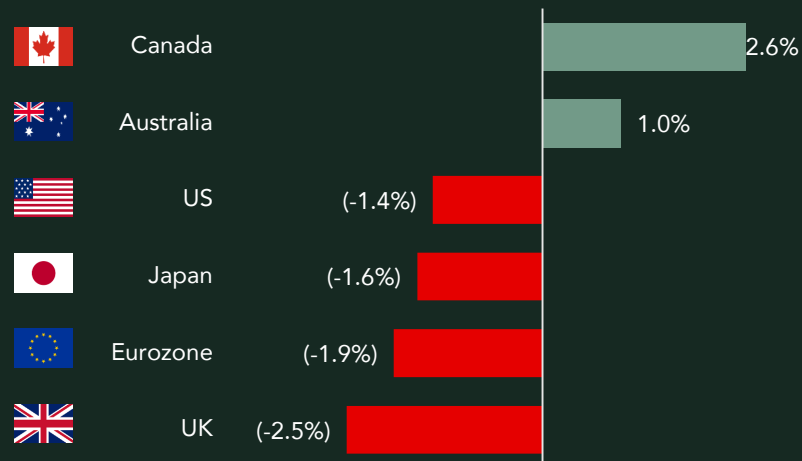


Key Drivers of USD Strength

#5 Terms of Trade Weighing on Competitor Currencies

- Higher commodity prices caused shifts in terms of trade for many economies
- US, as a small net energy exporter, has fared relatively well

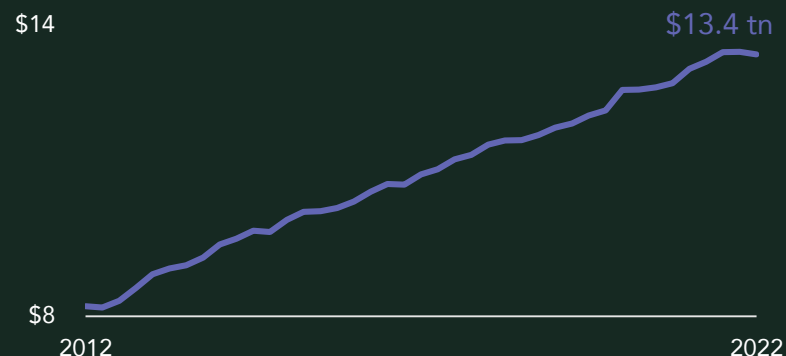
2022 current account balance, % of GDP, change in forecast from January



#6 High Foreign Issuance of US Dollar Debt

- Foreign issued USD debt of roughly \$13 trillion

Foreign issued USD debt, tn

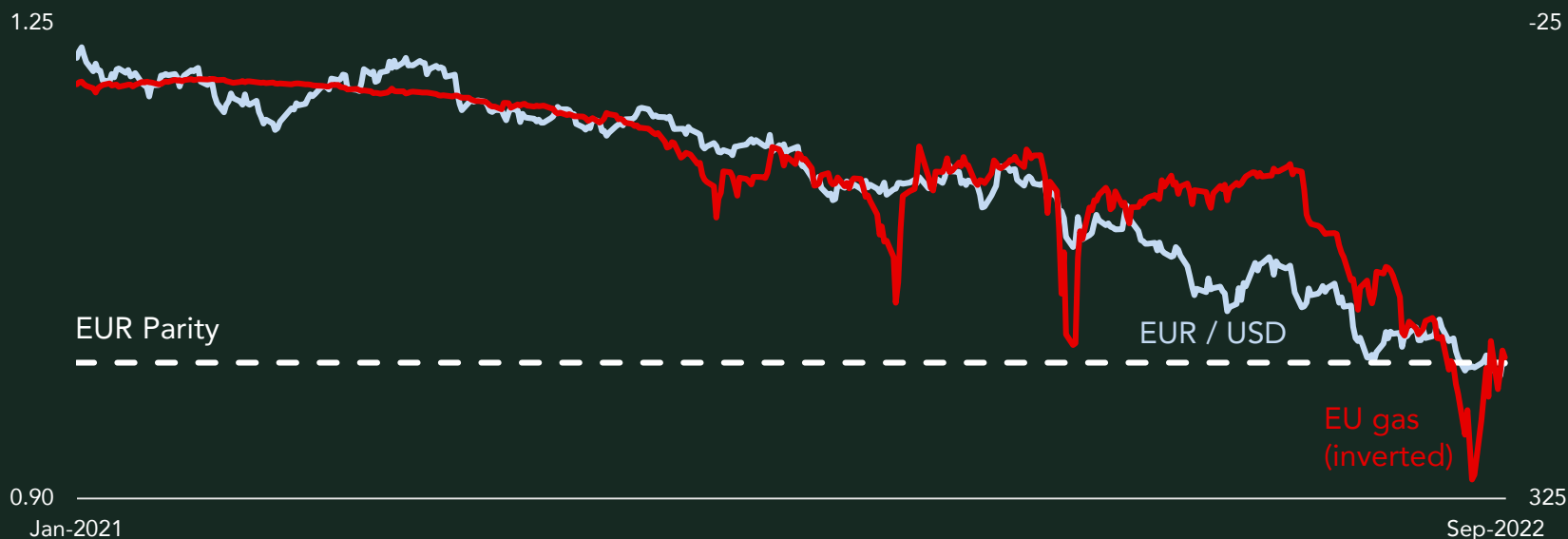


Source: (1) Oxford Economics. (2) BIS. Debt is USD credit to non-bank borrowers residing outside the US. Data as of Q1 2022.

EUR / USD Below Parity Until 2023

The US Dollar is effectively trading like a petro-currency vs. Euro and Yen in 2022. Higher gas prices are expected to weigh on growth and increase the probability of a Eurozone recession in the coming months. While the ECB has pivoted to a more hawkish stance, it will not be enough to offset near-term Euro weakness, keeping EUR / USD below parity through year end.

European natural gas (TTF) prices (EUR / MWh) vs. EUR / USD



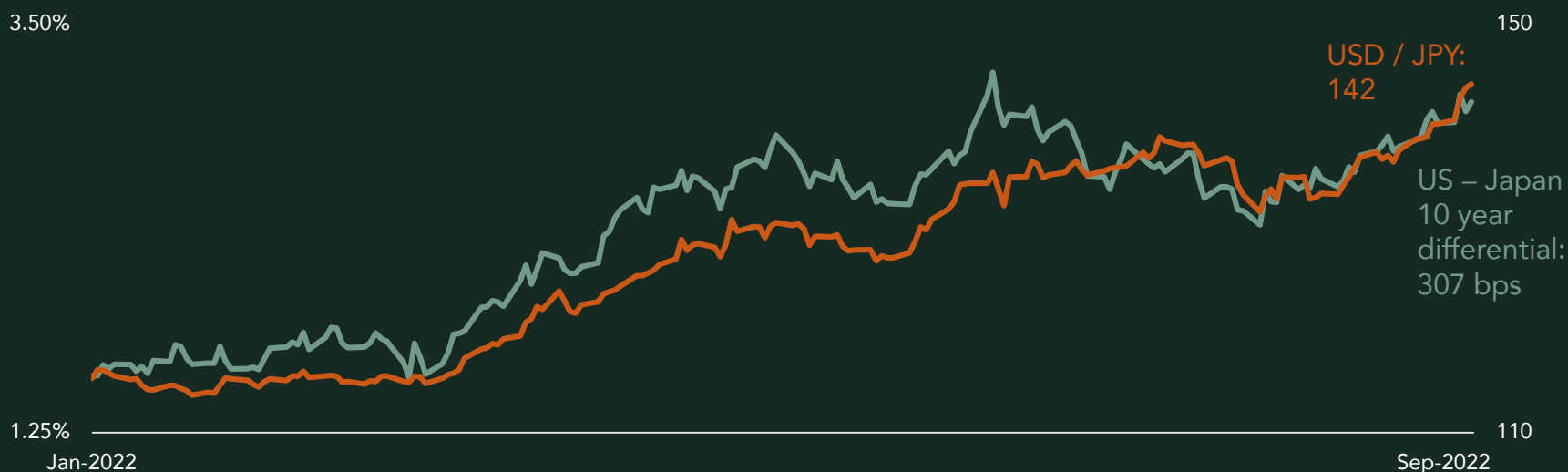
	Spot (9/9)	Q3 2022	Q4 2022	Q1 2023	Q2 2023
EUR / USD	1.00	0.98	0.98	1.02	1.06

Source: (1) MUFG Global Markets Research (Halpenny) "Foreign Exchange Outlook, September 2022". Bloomberg, Data as of September 9, 2022.

Dollar / Yen Above 140 for First Time Since 1999

Yen has been the weakest performing G10 currency in 2022 YTD, weakening above 140 for the first time since 1999. While policy intervention risk in Japan has risen near term, such interventions are reasonably “rare” events, especially when currency pricing is a logical extension of current policy and rate differentials. With exogenous commodity price increases largely responsible for Japan’s negative terms of trade and inflation, MUFG’s Derek Halpenny notes that Governor Kuroda firmly committed BoJ policy in Jackson Hole to continued easing alongside a more hawkish Fed Chair Powell.

USD / JPY tracking long-term US government bond yields



	Spot (9/9)	Q3 2022	Q4 2022	Q1 2023	Q2 2023
USD / JPY	142	136	135	133	132

Source: (1) MUFG Global Markets Research (Halpenny) “Foreign Exchange Outlook, September 2022”. Bloomberg, Data as of September 9, 2022.

EM FX Regional Performance

While the US dollar has strengthened broadly vs. most EM currencies, the regional differentiation has been large since Russia's invasion of Ukraine. Latin American currencies, many of which have benefited from higher commodity prices, have fared better. In EMEA, where volatility remains high and the external backdrop is uncertain, currencies have weakened much more. In Asia, the key differentiator has been "deficit" currencies (i.e., Asia HY) weakening much faster in response to tightening financial conditions.

EM regional currencies vs. USD (Jan 1, 2022 = 100)



Source: (1) "Recession Risks Across Emerging Markets" (Khoman). Bloomberg. Data as of September 8, 2022.

MUFG USD & FX Forecasts

Currency pair	Spot (9/9)	Q3 2022	Q4 2022	Q1 2023	Q2 2023
EUR / USD	1.00	0.98	0.98	1.02	1.06
GBP / USD	1.16	1.13	1.14	1.19	1.23
USD / JPY	142	136	135	133	132
USD / CNY	6.92	7.00	6.85	6.75	6.70
AUD / USD	0.68	0.67	0.68	0.71	0.72
NZD / USD	0.61	0.59	0.61	0.63	0.65
USD / CAD	1.30	1.32	1.31	1.28	1.25
USD / NOK	9.92	10.31	10.31	9.80	9.25
USD / SEK	10.61	11.02	10.92	10.39	9.91
USD / CHF	0.96	0.99	1.00	0.98	0.96
USD / RUB	60.52	61.55	63.57	66.40	70.11
USD / MXN	19.89	20.10	20.30	20.35	20.40
USD / BRL	5.15	5.15	5.60	5.58	5.55

Source: (1) MUFG Foreign Exchange Outlook (September 2022).

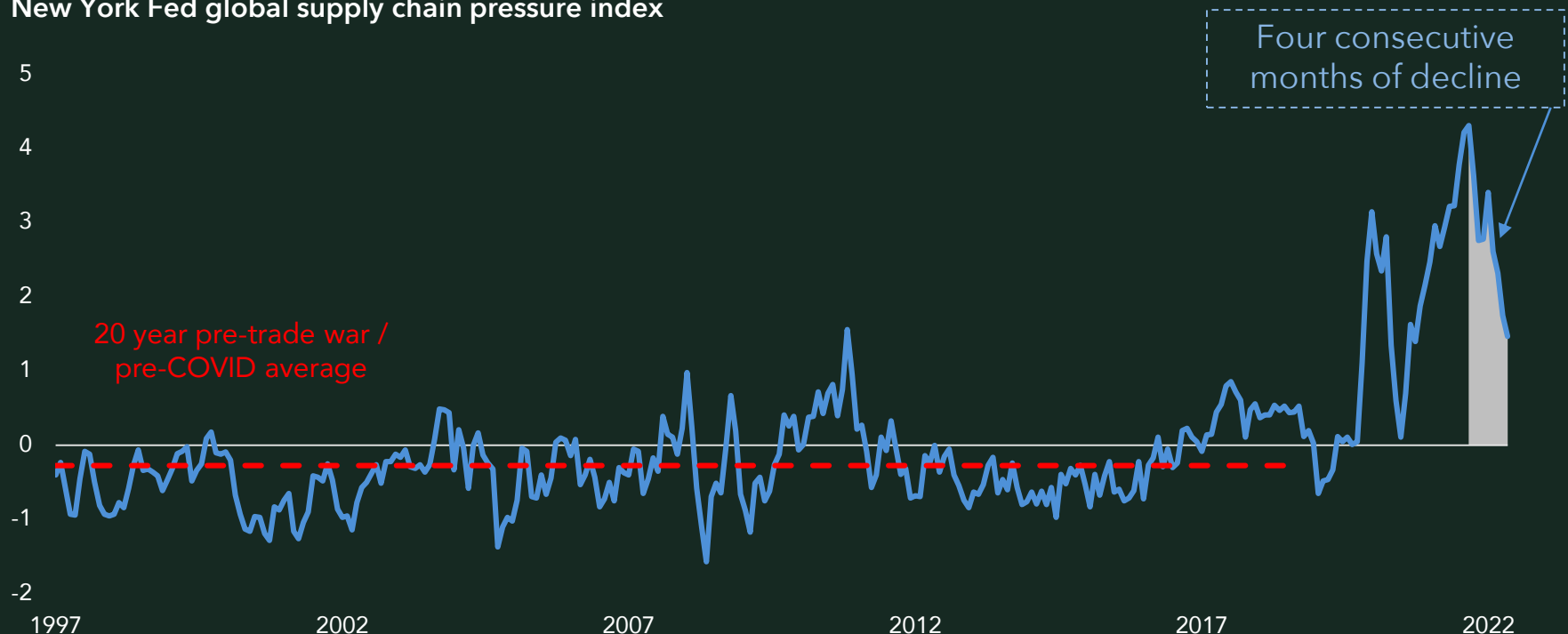


Supply Chain Pressures Moderating

Supply Chain Pressures Moderating, but Elevated

The Federal Reserve's Global Supply Chain Pressure Index, which examines 27 variables from cross-border transportation costs to country-level manufacturing data (delivery times, backlogs, purchased stocks) in seven regions (US, China, Eurozone, Japan, South Korea, Taiwan and the UK), has declined 66% since its peak in December 2021. While the improvement is expected to continue in the near term, supply chain pressures remain elevated. Further, as we enter peak holiday shipping season, risks remain elevated from persistently high inflation and China's zero COVID policy.

New York Fed global supply chain pressure index

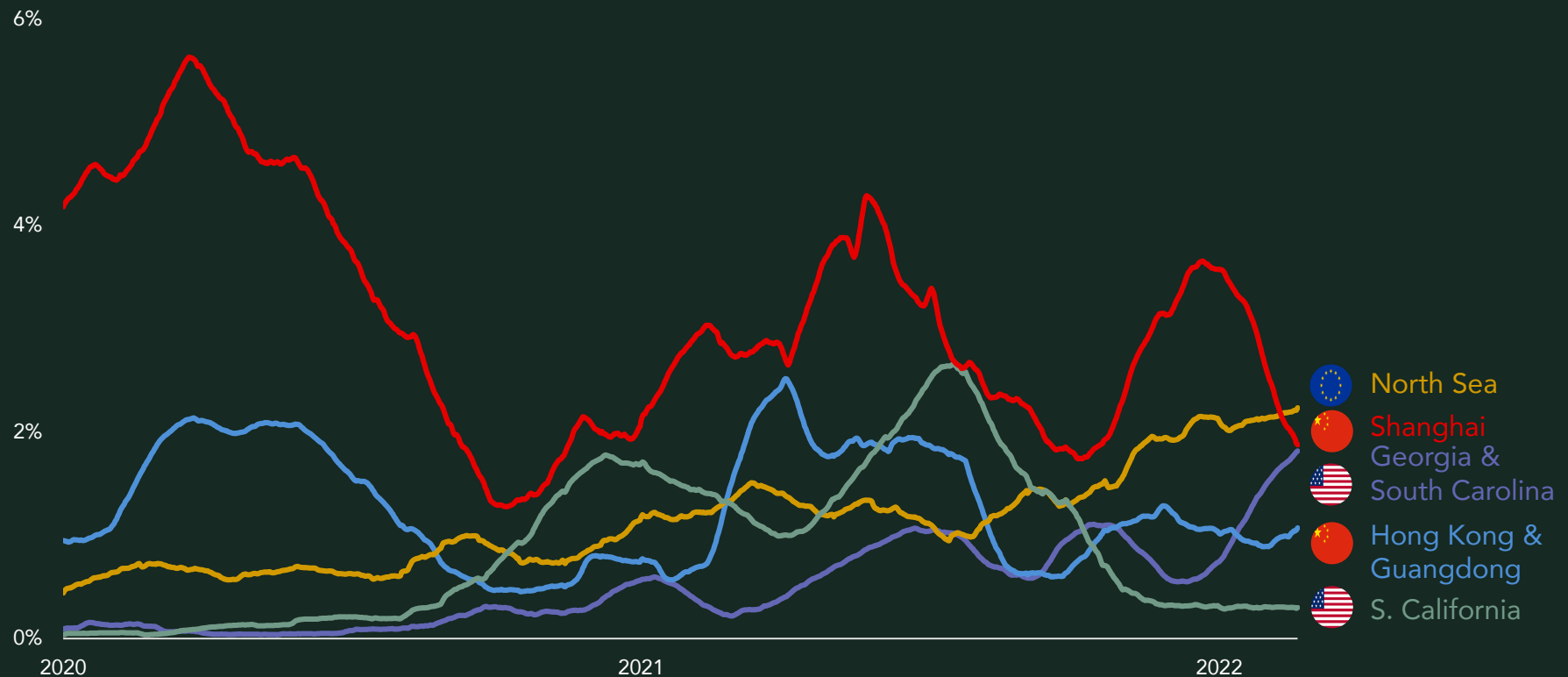


Source: (1) Bloomberg. New York Fed index based on data from the Bureau of Labor Statistics; Harper Petersen; Baltic Exchange; IHSMARKIT; ISM; Haver Analytics; Bloomberg; NY Fed researchers' calculations. Index is normalized such that zero indicates that the index is at its average value with positive values representing how many standard deviations the index is above this average and negative values the opposite. Data updated as September 8, 2022.

Port Congestion Easing

Cargo ship backlogs have improved globally, with the number of vessels waiting to unload at the Port of Los Angeles, North America's busiest container port, down over 80% since the start of the year. While more containers helped to bring down the cost of freight, supply chain logistics have not yet returned to pre-COVID levels as more improvements are needed, particularly in the delivery of goods inland.

Percentage of waiting global container ship cargo capacity

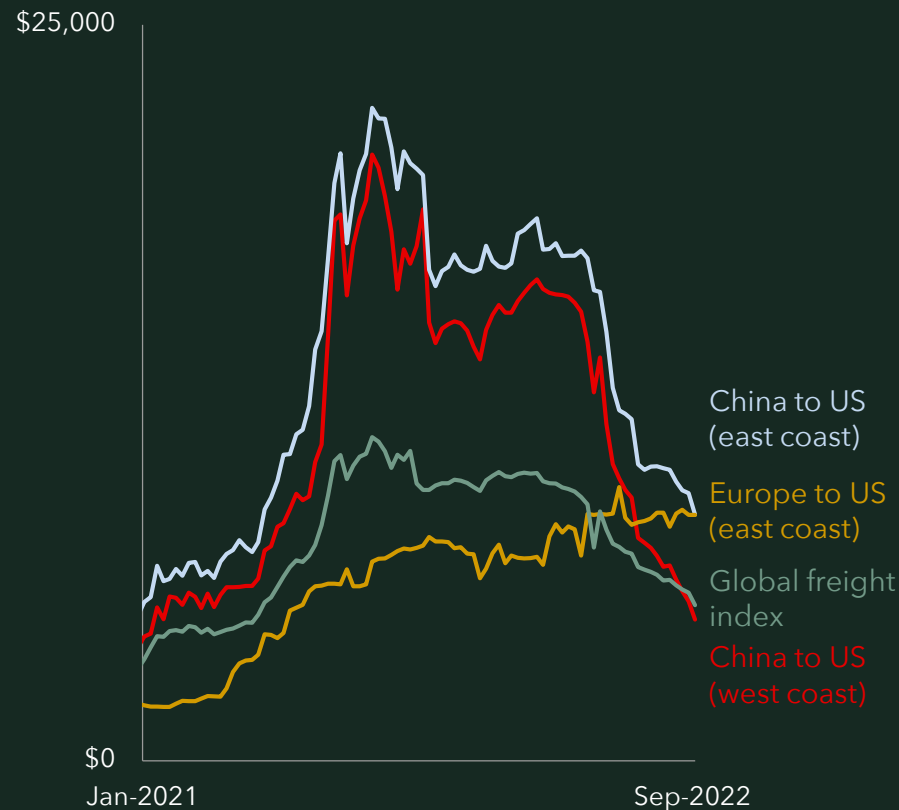


Source: (1) Kiel Institute for the World Economy - Kiel Trade Indicator. Data as of September 8, 2022. 60 day moving average.

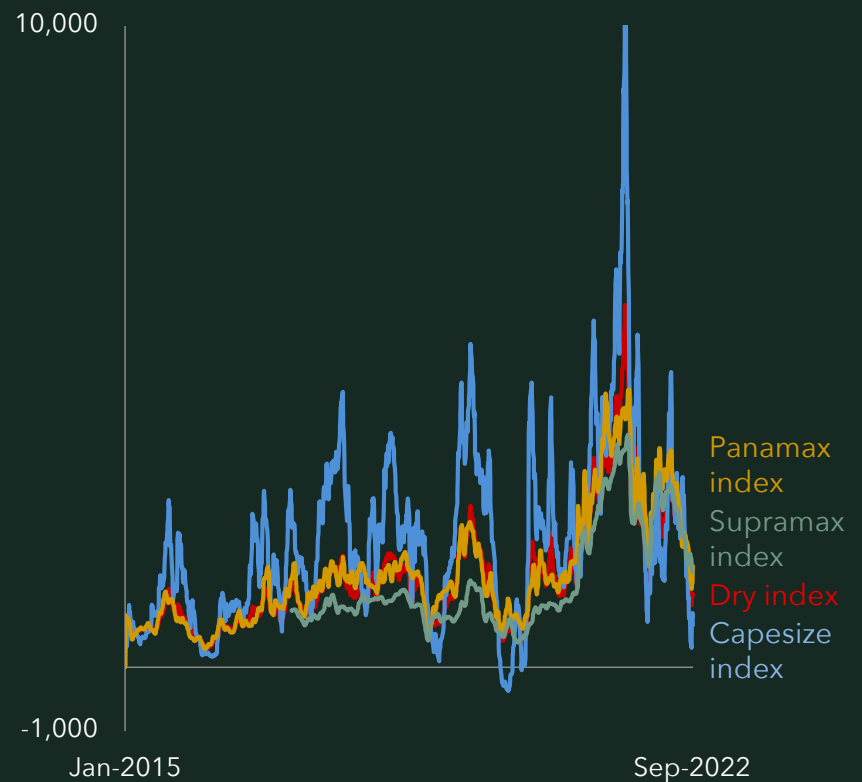
Shipping Costs Declining

While falling rapidly from peak levels, transportation costs may take two years to return to normalized levels, based on analysis of past market cycles by Sea-Intelligence, a Copenhagen-based maritime data and advisory company

Cost of shipping a container, USD



Baltic exchange index, by ship size

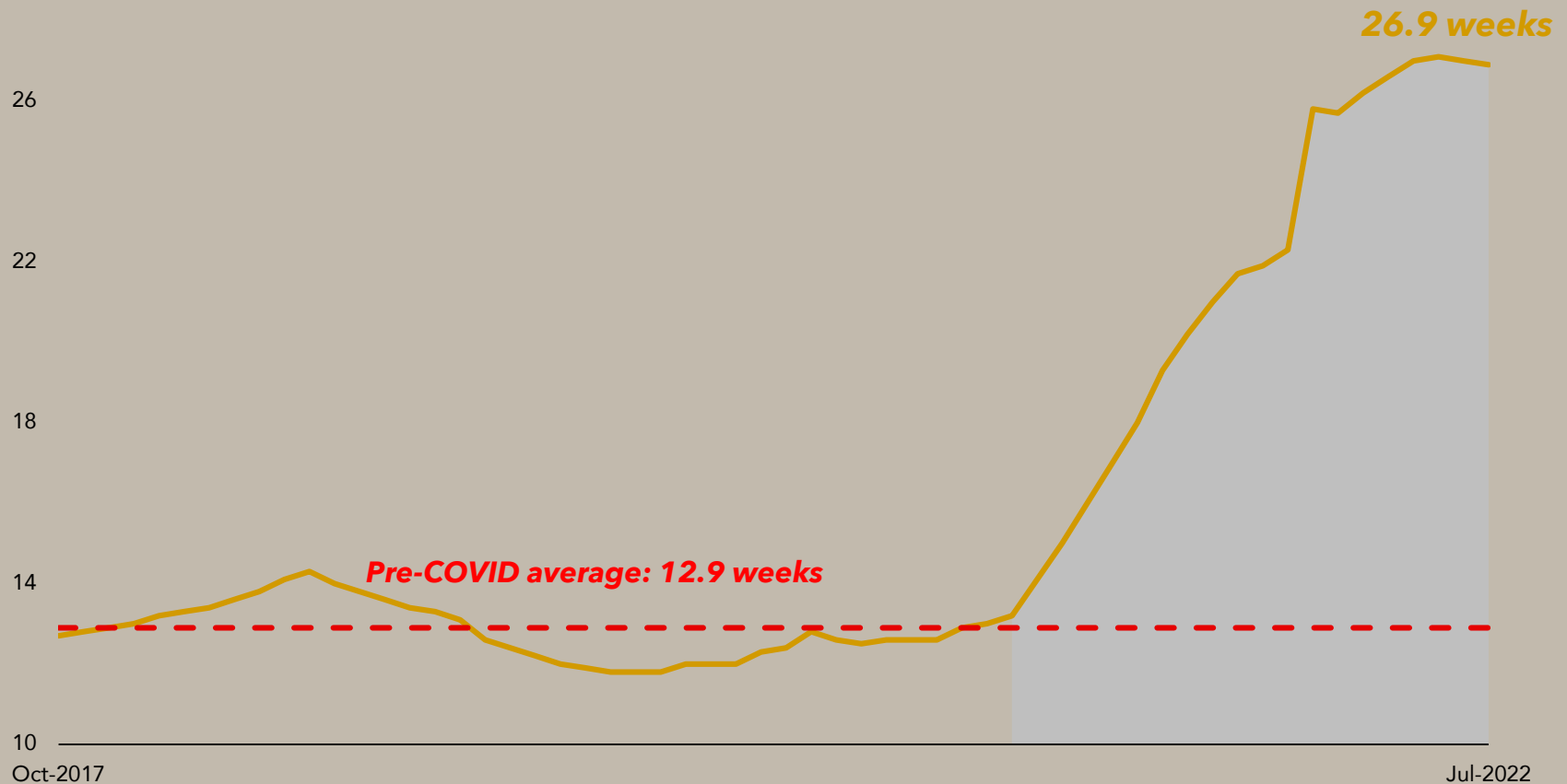


Source: (1) Oxford Economics "How the Pandemic is Reshaping the Trade Outlook" (August 18, 2021). Bloomberg. Data as of September 8, 2022. Freightos Baltic Index. Ocean Freight. (2) Bloomberg. Data as of September 8, 2022. Drewry World Container Index.

Microchips at Center of Supply Chain Bottlenecks

The regionally concentrated, and globally extended, supply chain for semiconductors is at the center of global supply chain bottlenecks

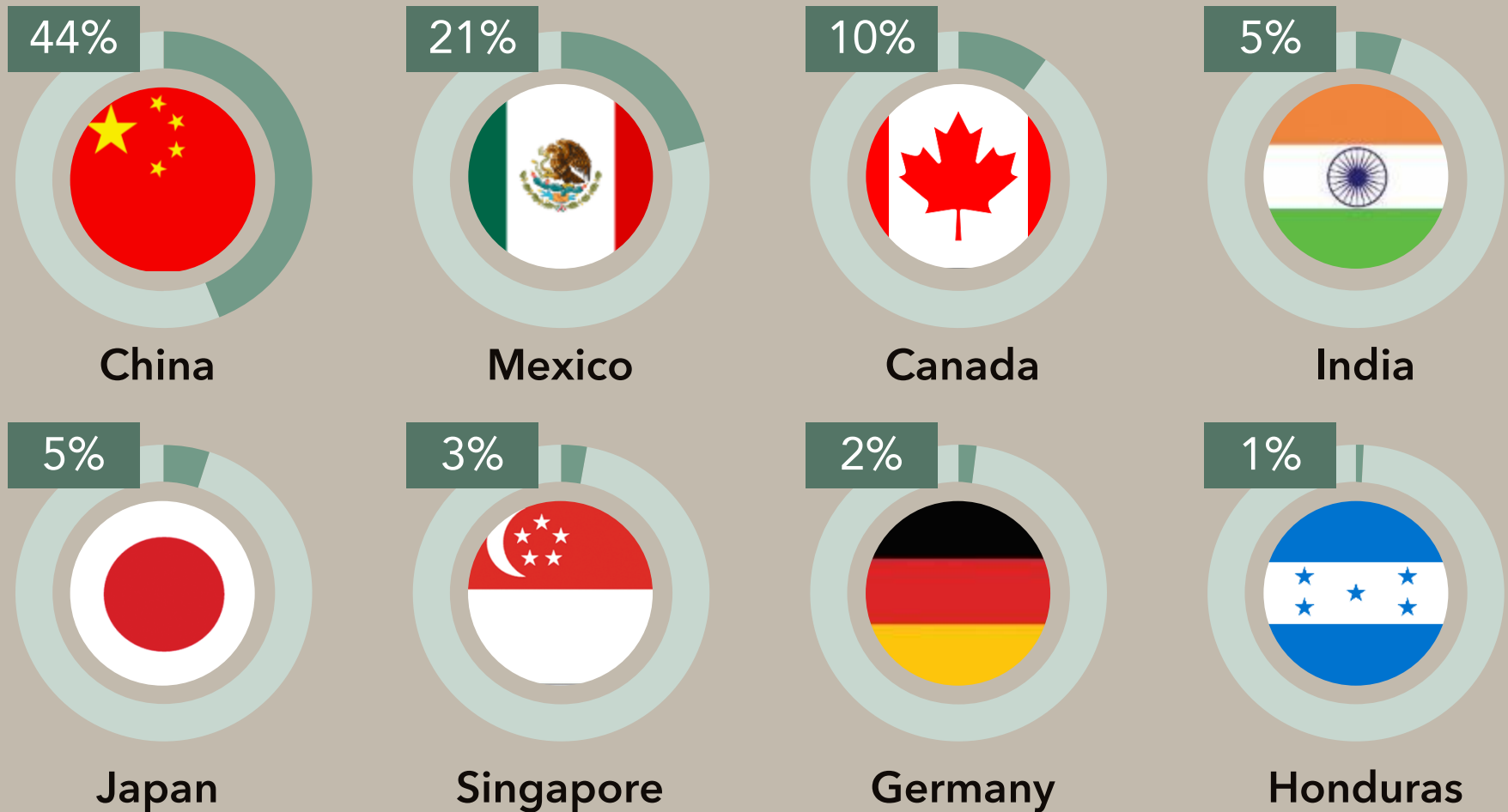
Gap between ordering a chip and delivery, weeks



Source: (1) Bloomberg, "Shortages of Some Chips Drag On Even Amid Signs of Industry Rout" (August 11, 2022). Susquehanna Group.

Reshoring US Manufacturing

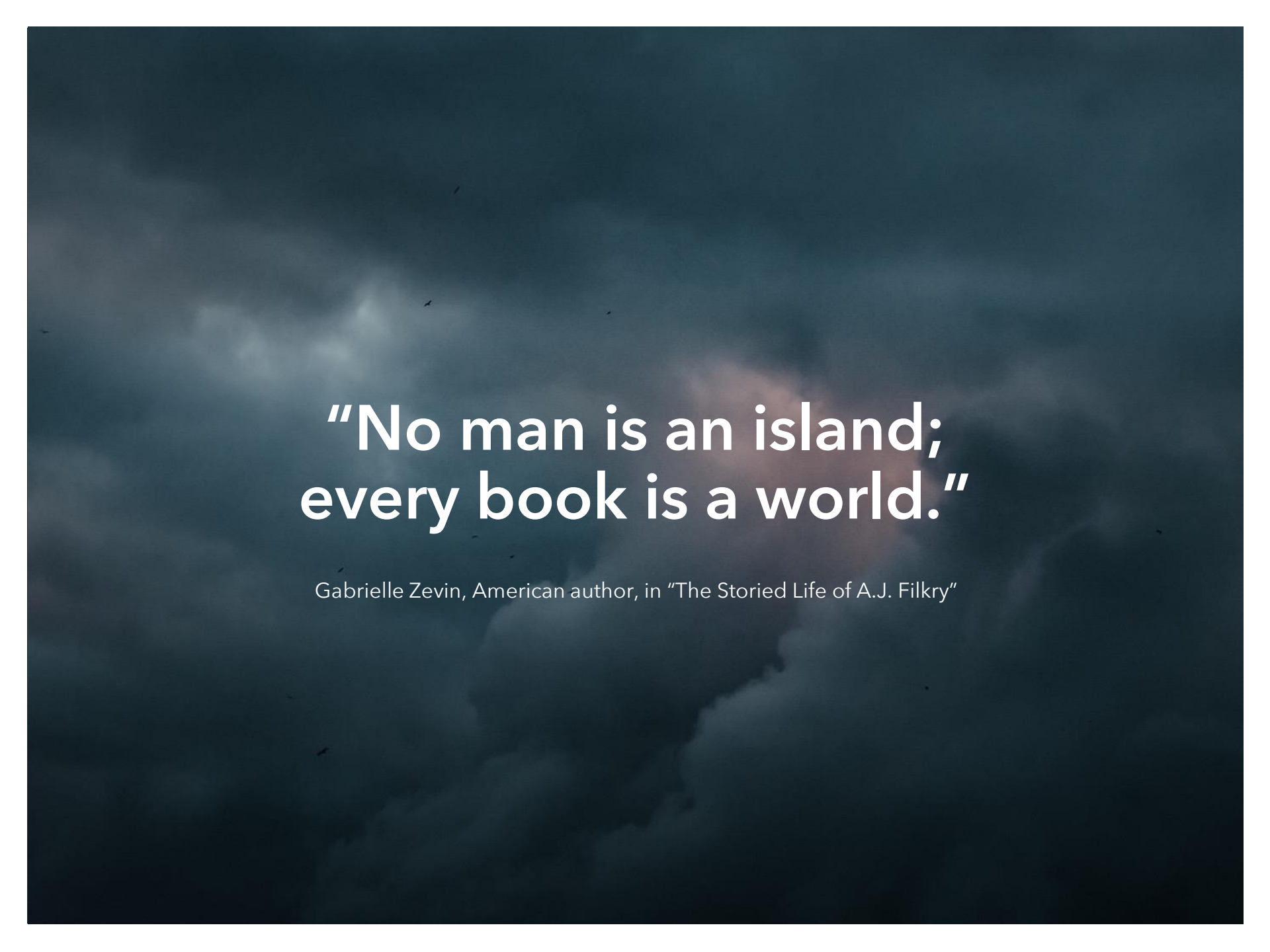
Estimated share of re-shored US manufacturing jobs between 2010 and 2021, by source country



Source: (1) Statista. Reshoring Initiative

IV

● Energy Crisis Policy Response

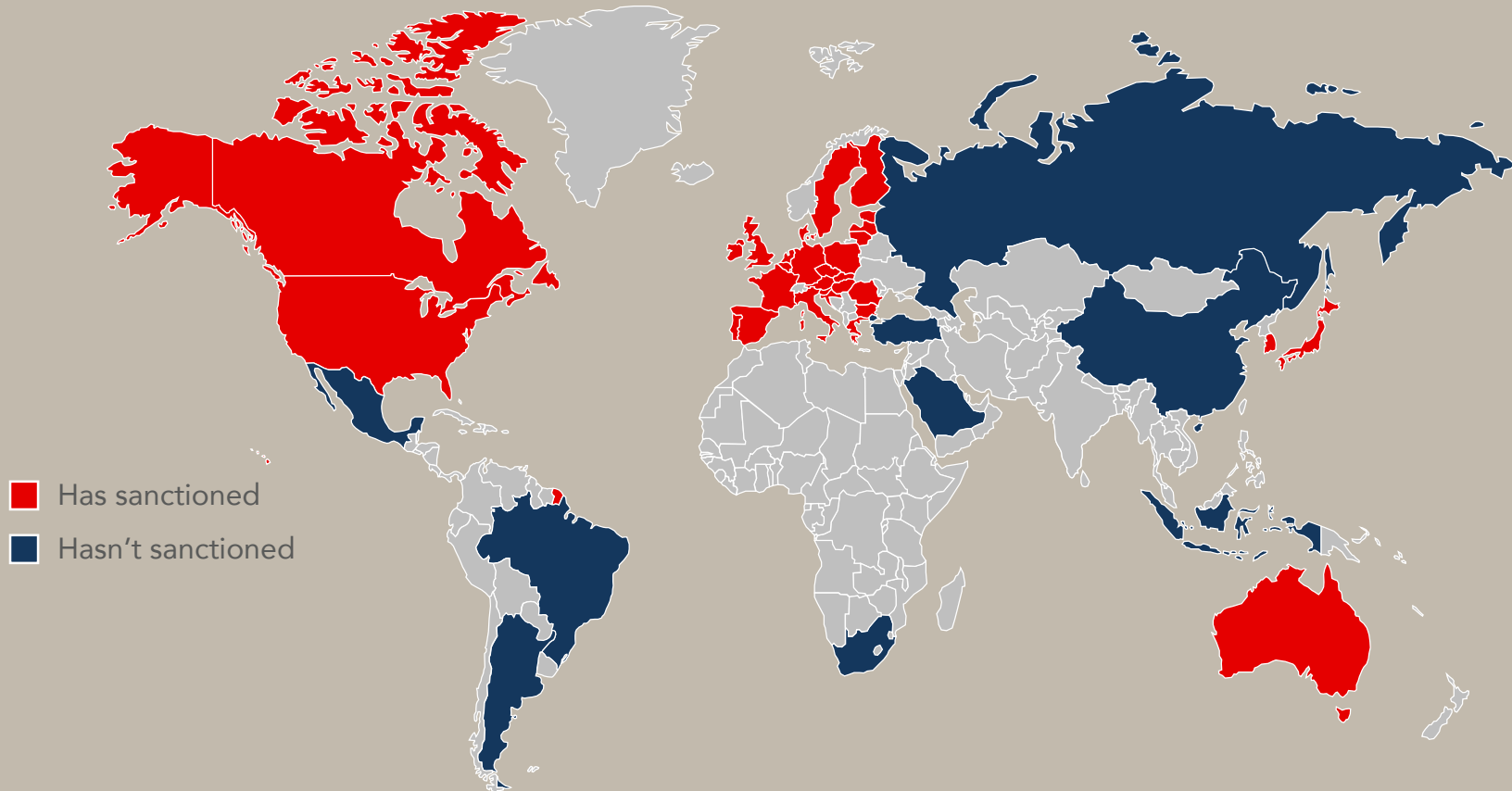


**"No man is an island;
every book is a world."**

Gabrielle Zevin, American author, in "The Storied Life of A.J. Fikry"








G20 Divided on Russia Sanctions

Emphasizing the importance of its neutrality, host-nation Indonesia has invited President Xi of China, President Putin of Russia and President Zelensky of Ukraine to the upcoming G20 meetings in Bali, Indonesia in November. Presidents Xi and Putin plan to attend. Only half of the G20 has imposed sanctions on Russia.



Note: Mapped data for G-20 members, including the 27 nations of the EU.
Source: Bloomberg

Major Sectoral Sanctions & Export Control Restrictions












							
	US	EU	UK	Switzerland	Japan	Canada	Australia
Restrictions on Russian oil imports	✓	✓	✓	✓	✓	✓	✓
Restrictions on Russian gas imports	✓	✓	✓				✓
Restrictions on Russian coal imports	✓	✓	✓		✓		
Restrictions on Russian metals imports		✓		✓			
Restrictions on export of metals to Russia							✓
Restrictions on export of luxury goods to Russia	✓	✓	✓	✓	✓	✓	✓
Restrictions on import of luxury goods from Russia	✓	✓	✓			✓	
Restrictions on export of technology to Russia	✓	✓	✓	✓	✓	✓	
Restrictions on Russia access to IMF & World Bank funds	✓	✓	✓		✓	✓	
Revocation of Most Favored Nation status	✓	✓	✓		✓	✓	✓
Restrictions on sovereign debt	✓	✓	✓	✓	✓	✓	✓
Restriction on Russian banks' correspondent banking accounts	✓		✓				
Restrictions on Russian banks' access to SWIFT	✓	✓	✓	✓	✓	✓	

Source: Castellum.AI. Data as of September 8, 2022. EU and UK have announced plans to reduce Russian gas exposure.

European Policy Response to the Energy Crisis

Governments across Europe have implemented a myriad of measures to ease the real income squeeze caused by record high energy prices

Measures taken since September 2021, by country

Country / Policy	Reduced energy tax / VAT	Retail price regulation	Wholesale price regulation	Transfers to vulnerable groups	Mandate to State-owned firms	Windfall profits tax / regulation	Business Support	Other
 Austria	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>	
 Belgium	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>
 Bulgaria	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
 Croatia	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>				
 Cyprus	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			
 Czech Republic	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			
 Denmark				<input checked="" type="checkbox"/>				
 Estonia	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>	
 Finland	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
 France	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		







☒ Implemented measures ☒ Proposed measures  Measures to be discussed


Source: Sgaravatti, G., S. Tagliapietra, G. Zachmann (2021) 'National policies to shield consumers from rising energy prices', Bruegel Datasets, first published 4 November 2021.

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 Germany	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>
 Greece	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	
 Hungary		<input checked="" type="checkbox"/>						
 Ireland	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>
 Italy	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
 Latvia	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>				
 Lithuania		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>
 Luxembourg				<input checked="" type="checkbox"/>				
 Malta					<input checked="" type="checkbox"/>			
 Netherlands	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>				

☒ Implemented measures ☒ Proposed measures  Measures to be discussed

Source: Sgaravatti, G., S. Tagliapietra, G. Zachmann (2021) 'National policies to shield consumers from rising energy prices', Bruegel Datasets, first published 4 November 2021.

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Country / Policy	Reduced energy tax / VAT	Retail price regulation	Wholesale price regulation	Transfers to vulnerable groups	Mandate to State-owned firms	Windfall profits tax / regulation	Business Support	Other
 Norway	✓			✓			✓	
 Poland	✓	✓		✓				
 Portugal	✓		✓	✓	✓			
 Romania	✓	✓		✓		✓		
 Slovakia					✓	✓		
 Slovenia	✓			✓		✓	✓	
 Spain	✓	✓	✓	✓		✓	✓	
 Sweden	✓			✓				✓
 United Kingdom		✓	✓	✓		✓	✓	✓

 Implemented measures
  Proposed measures
  Measures to be discussed

Source: Sgaravatti, G., S. Tagliapietra, G. Zachmann (2021) 'National policies to shield consumers from rising energy prices', Bruegel Datasets, first published 4 November 2021.

Windfall Tax on Energy Companies

Germany is set to impose a windfall tax on inframarginal power generators, using the proceeds to fund a €65 bn aid package to cushion consumers from the cost of higher energy prices. With benchmark energy prices set by the price of gas, producers that use wind, solar, biomass, coal and nuclear to generate electricity have earned higher profits since the Ukraine crisis began. The new measure would impose a profit cap on these lower cost producers. The tax is in line with recommendations from Brussels for EU member states and is expected to be adopted by other member states. France, for example has already endorsed the idea though details are yet to be determined.

Selected measures in Germany's 3rd aid package

Create "electricity price break" providing private households with basic volume of electricity at reduced prices

One time support payments of €300 to pensioners and €200 to students to help with energy costs

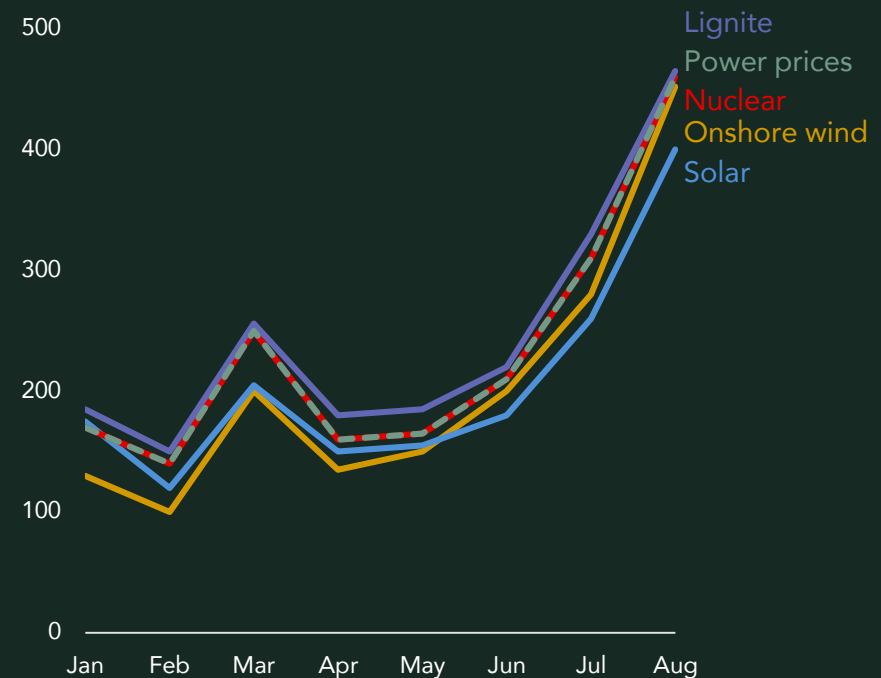
Cuts to social security contributions for people with monthly income below €2,000

VAT reduced to 7% for bars and restaurants

€1.9 bn to continue the €9 / month ticket scheme for local and regional public transportation

Delayed implementation of price increase for carbon allowances in the buildings and transport space (€5 increase had been scheduled for January 2023; will be delayed by 1 year holding price at current €30)

Realized power prices of inframarginal generators in Germany, 2022 (euros / MWh)

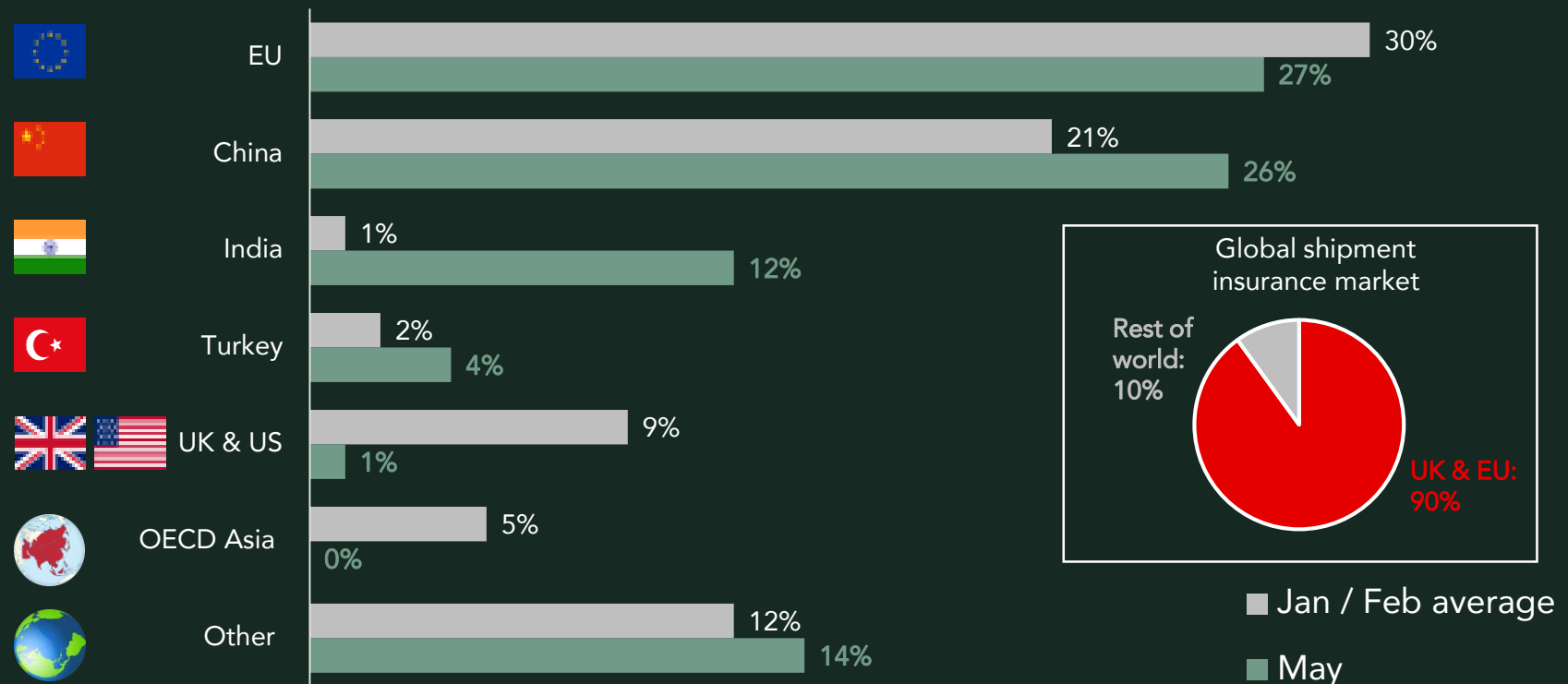


Source: (1) BloombergNEF.

G-7 Oil Price Cap

G7 finance ministers agreed to proceed with a price cap scheme on Russian oil exports. When implemented, the plan would set a price ceiling for crude oil and two other price caps for refined products. Any importer wishing to use G7 or EU insurance coverage or shipping services for Russian oil would have to abide by the cap. The price cap plan would require an amendment to the EU's sixth sanction package which currently calls for a full ban on insurance and transport services starting in December 2022.

Destinations of Russian oil exports






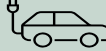



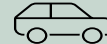


Source: (1) Oxford Economics, "EU oil ban will hurt, but Russia on course for surplus" (May 18, 2022). IEA. Argus. Kpler. Data updated as of June 22, 2022.

Over \$1 Trillion of Washington Legislation in August



In August, President Biden signed into law over \$1 trillion of new legislation including \$386bn on clean energy, \$300bn in deficit reduction, \$280bn in semiconductor investment and nearly \$100bn of healthcare sector spend and subsidies.

Breaking down spending provisions in August legislation

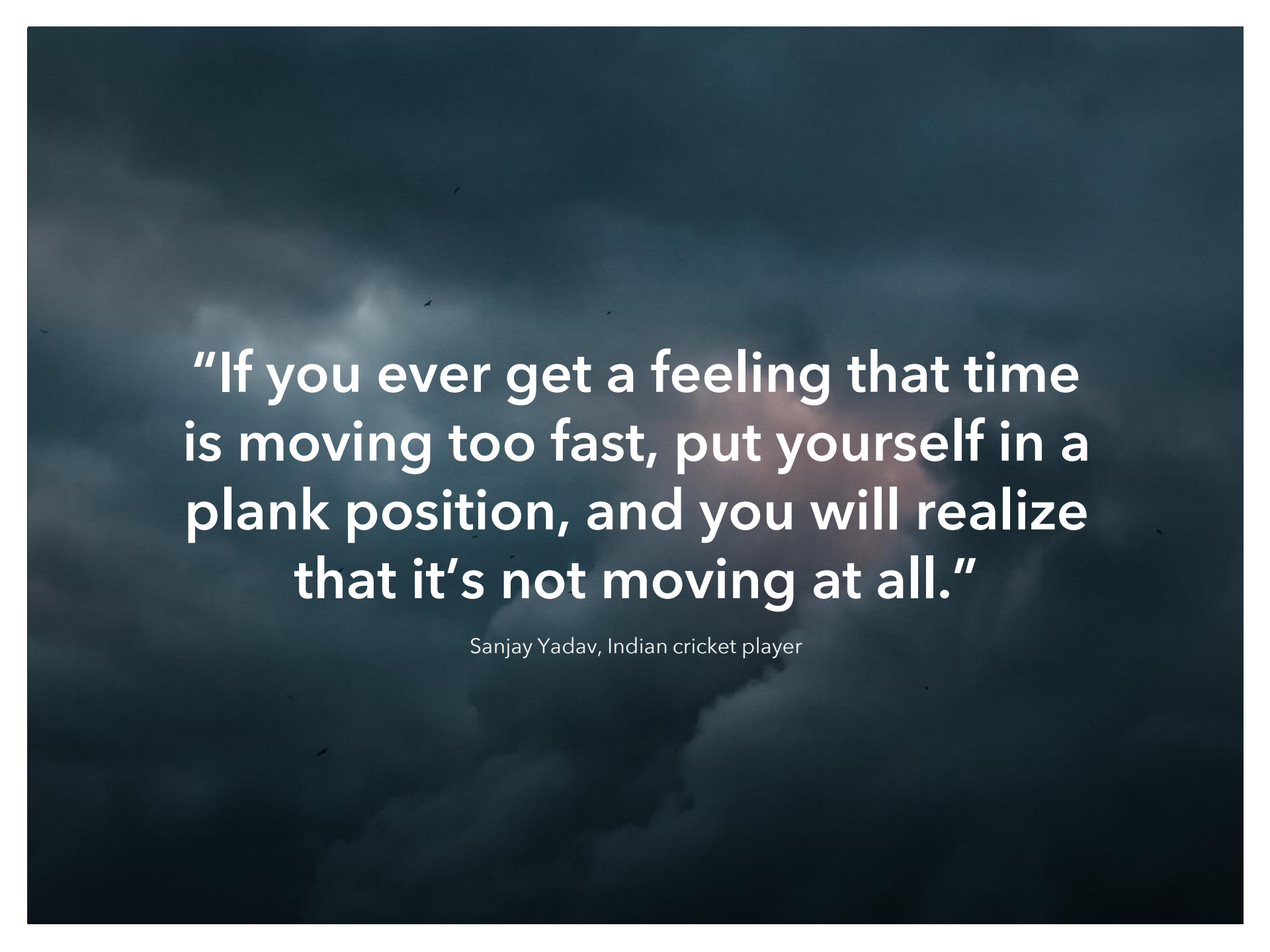
Clean Energy & Climate: \$386			Healthcare: \$98 bn
<div>Clean Electricity Tax Credits \$161bn</div> <div></div>	<div>Air Pollution, Hazardous Materials, Transportation and Infrastructure \$40bn</div>	<div>Conservation, Rural Development, Forestry \$35bn</div> <div></div>	<div>Extension of Expanded ACA subsidies \$64bn</div> <div></div>
	<div>Individual Clean Energy Incentives \$37bn</div> <div></div>		
	<div>Clean Manufacturing Tax Credits \$36bn</div> <div></div>	<div>Building Efficiency and DOE Grants \$27bn</div> <div></div>	<div>Other Healthcare \$34bn</div> <div></div>
	<div>Clean Fuel & Vehicle Tax Credits \$36bn</div> <div></div>	<div>Other Energy / Climate Spending \$14bn</div>	
<div>US Deficit Reduction \$303bn</div> <div></div>		<div>Semiconductor Investment (CHIPS Act) \$280bn</div> <div></div>	

Note: The CBO estimates legislation includes \$790 bn of offsets to fund \$485 bn of new spending and tax breaks, though negotiators include \$739 bn of offsets and \$433 bn of investments.

Source: CBO. CFRB. Bloomberg.

V.

Constructive Takeaways for Issuers

The background of the image is a dark, moody sky with heavy, dark blue and grey clouds. A faint, warm light source, possibly the sun or moon, is visible behind the clouds in the center-right area, creating a soft glow and some lens flare effects. The overall atmosphere is somber and contemplative.

"If you ever get a feeling that time is moving too fast, put yourself in a plank position, and you will realize that it's not moving at all."

Sanjay Yadav, Indian cricket player

Summary conclusions for corporate issuers

- 1 Resilient Investment Grade Market:** The investment grade market has been resilient in 2022 despite significant macro turmoil. Spreads have largely found resistance at the 150 level while, by comparison, the index moved through 200 bps in response to the last commodity cycle downturn in 2016. Performance has been driven by a combination of stronger corporate fundamentals, very high corporate sentiment, and lower supply year on year (IG issuance down 9% and driven by financial rather than corporate issuers) creating a favorable technical market backdrop.
- 2 Low Maturity Wall:** The maturity wall is very low across the Investment Grade and High Yield markets as issuers refinanced at low rates during the COVID recovery period. Strong balance sheet fundamentals have created flexibility for issuers with some in the investment grade space choosing to pay off maturities coming due rather than refinancing on less favorable terms.

Summary conclusions for corporate issuers

3 **Cautious Optimism for HY Windows:** During the summer, the USD HY index rallied from 8.5% to under 7.5%, before resetting higher after Jackson Hole. To be sure, market volatility has picked up as Central Banks have become more hawkish, but we remain confident that issuance windows will reopen in the weeks and months ahead particularly after the next Fed meeting. With YTD issuance down sharply, the technical demand for credit should be strong when the macro-environment finds pockets of stability. Corporates should remain nimble and opportunistic around available issuance windows.

4 **Solid Issuer Fundamentals:** Issuer fundamentals have been strong thus far, but risks are high for the back half of the year. The default cycle has been prolonged due to COVID liquidity programs, but expect defaults to rise to more normalized levels as funding costs move higher and inflation pressures consumers. Sector differentiation will be more pronounced in the back half of the year.

Summary conclusions for corporate issuers

- 5** **Emerging Market Risks Loom:** Emerging market investors have not yet priced in the worst of the market liquidity draw down. While challenges are expected in the months ahead, EM systemic risk is lower than in past crises. Most large / frequent issuers in EM pre-funded during the COVID recovery period allowing for more flexibility in the short and medium term.

- 6** **Differentiation Across EM:** While tighter financial conditions have caused wider credit spreads broadly, differentiation within EM will be larger than in past cycles. Eastern Europe will continue to underperform while commodity exporters will fare better.

- 7** **Higher Cost of Capital:** Cost of capital has risen across almost every segment of the market, but markets are still “orderly” and “open”. Liquidity is available but issuers are paying more to access it while investors get more selective. In the LBO market, for example, investors are getting more selective around preferred sectors, leverage and equity ratios.

Summary conclusions for corporate issuers

8

More Conservative Loan Terms: Banks still have outsized exposure to loan commitments made prior to the Fed hiking cycle. Going forward, deals are expected to be structured with more conservative terms, including moving away from prior year trends of covenant lite loans.

9

Flexibility in CP Market: The commercial Paper market has repriced as the Fed raises rates but supply demand dynamics remain favorable for issuers. CP market has the flexibility to absorb far more paper than is currently being issued. The current curve shape is creating attractive issuance opportunities further out the curve, but the CP market is providing increased flexibility for issuers in timing the market.

10

Private Capital Larger, More Selective: Private capital investors have turned more cautious with direct lending terms turning more in favor of the lender rather than the borrower. Private capital investment has become much larger in the market with direct lenders large enough to compete in deals traditionally dominated by bank lending.

About the Authors



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Role

Tom Joyce is a Managing Director and Capital Markets Strategist within MUFG's global capital markets and investment banking business. Based in New York, Tom heads a team that creates customized analytical content for multi-national S&P 500 companies. His team provides in depth analysis on the impact of economic, political, public policy and regulatory dynamics on the US credit, foreign exchange, rates and commodities markets.

Experience

Tom has over 25 years of Investment Banking experience in New York, London, Hong Kong, and San Francisco. Over the last 15 years, Tom created and built the Capital Markets Strategy role, advising corporate C-Suite executives (Boards, CEOs, CFOs, and Treasurers) on the pervasive macro forces driving markets. Tom also presents at dozens of corporate events each year including Board meetings, CEO ExCo sessions, CFO and Treasury off-sites, corporate leadership events and conferences.

Education

Tom's educational background includes a year of study at Oxford University from 1991 - 1992, a Bachelor of Arts in Political Science from Holy Cross College in 1993, and a MBA from Kellogg Business School, Northwestern University in 2000.

Personal

Tom resides in New Canaan, CT with his wife and four sons, where he coaches youth basketball and serves on the Board of Trustees of the New Canaan Library, the Board of the New Canaan Football (Soccer) Club and the Holy Cross College President's Council.

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Role

Ehsan Khoman joined MUFG in 2016 and is the Head of Emerging Markets Research (EMEA), based in DIFC Branch – Dubai, UAE.

Ehsan leads MUFG's emerging markets and commodities research. He is known for applying global perspectives to provide easy-to-grasp, research-backed investment outlooks to institutional, corporate and retail clients, policymakers as well as across the bank. He also regularly delivers the bank's emerging markets and commodity views to external audiences through a multitude of media platforms.

Experience

Ehsan has over fifteen years' experience in the banking industry and began his career in London for Societe Generale Corporate and Investment Banking (SGCIB) within the Research and Strategy Division.

Education

Ehsan has graduated with First Class Honours in BSc Economics in 2004 from the University College London (UK) and also acquired a Distinction in MSc Economics from the University of Warwick (UK) in 2005.

Personal

Ehsan is a member of the UK Royal Statistical Society (RSS) and has published with the RSS journal, with a notable co-authored contribution with previous Bank of England Monetary Policy Committee (MPC) member, Dr Martin Weale CBE.

Ehsan is a skilled horologist, a member of the British Antiquarian Horological Society and has a collection of antique clocks.

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Role

Hailey Orr is a Director in MUFG's Capital Markets Strategy group within the global capital markets and investment banking business. The team provides market based content for corporate clients to assist in strategic decision making. Focus areas include the impact of economic, political, public policy and regulatory dynamics on the US credit, foreign exchange, rates and commodities markets.

Experience

Hailey has a decade of Wall Street experience, including three years as a Consumer Sector Specialist in Equity Sales and seven years as a Capital Markets Strategist. Hailey is also a member of MUFG's Inclusion & Diversity Council and has devoted years to participating in and developing Wall Street recruiting programs.

Education

Hailey graduated with honors from the University of Michigan's Ross School of Business with a BBA and a minor in International Studies.

Personal

In March 2020, Crain's New York Business Magazine named Hailey one of the "Rising Stars in Banking and Finance".



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Experience

Stephanie has spent over five years as a Capital Markets Strategist. She is an active member of the University of Michigan recruiting team and is also focused on the diversity recruiting effort at MUFG. At her prior firm, Stephanie was a part of the Americas Women's Network Junior Council.

Education

Stephanie graduated with honors from the University of Michigan's Ross School of Business with a BBA .

MUFG's Capital Markets Strategy Team

The MUFG Capital Markets Strategy team provides monthly publications and weekly policy notes, presenting to Boards and C-Suite executives, on a broad range of transformative themes driving the FX, rates and credit markets including: the COVID-19 recovery, ESG's acceleration, tax code policy changes, US-China decoupling, corporate strategy, geopolitical risk and central bank monetary policy.



MUFG's Capital Markets Strategy Team



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