Capital Markets Strategy

Essential inCights for the C-Suite

MUFG

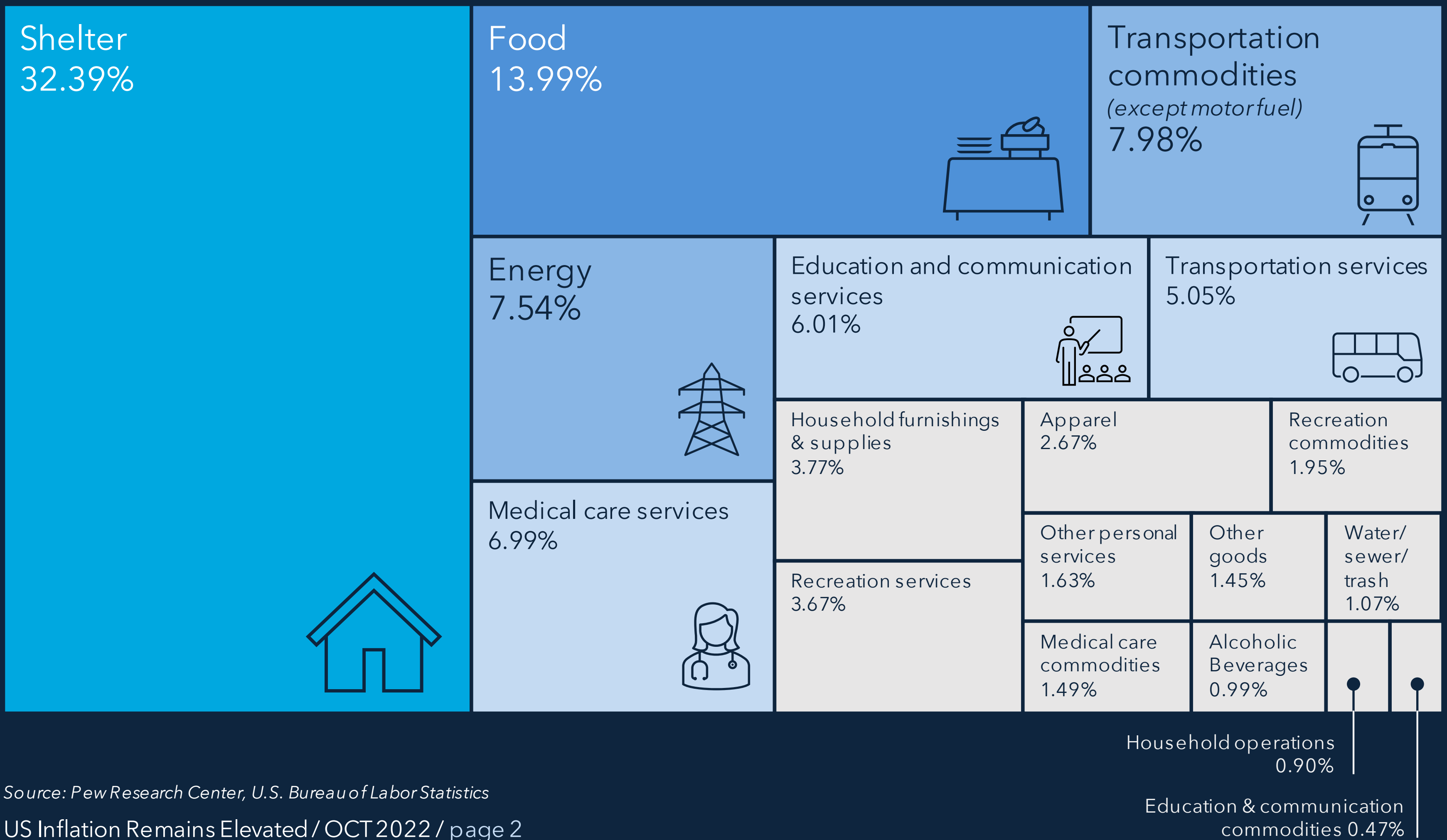
US Inflation Remains Elevated

OCT 2022

Breakdown of US Inflation Basket

Housing, food and energy prices represent nearly 54% of expenditures in the US CPI bucket, with housing alone accounting for nearly 1/3 of the headline CPI basket (and over 40% of the core CPI basket).

Breakdown of US CPI basket



Source: Pew Research Center, U.S. Bureau of Labor Statistics

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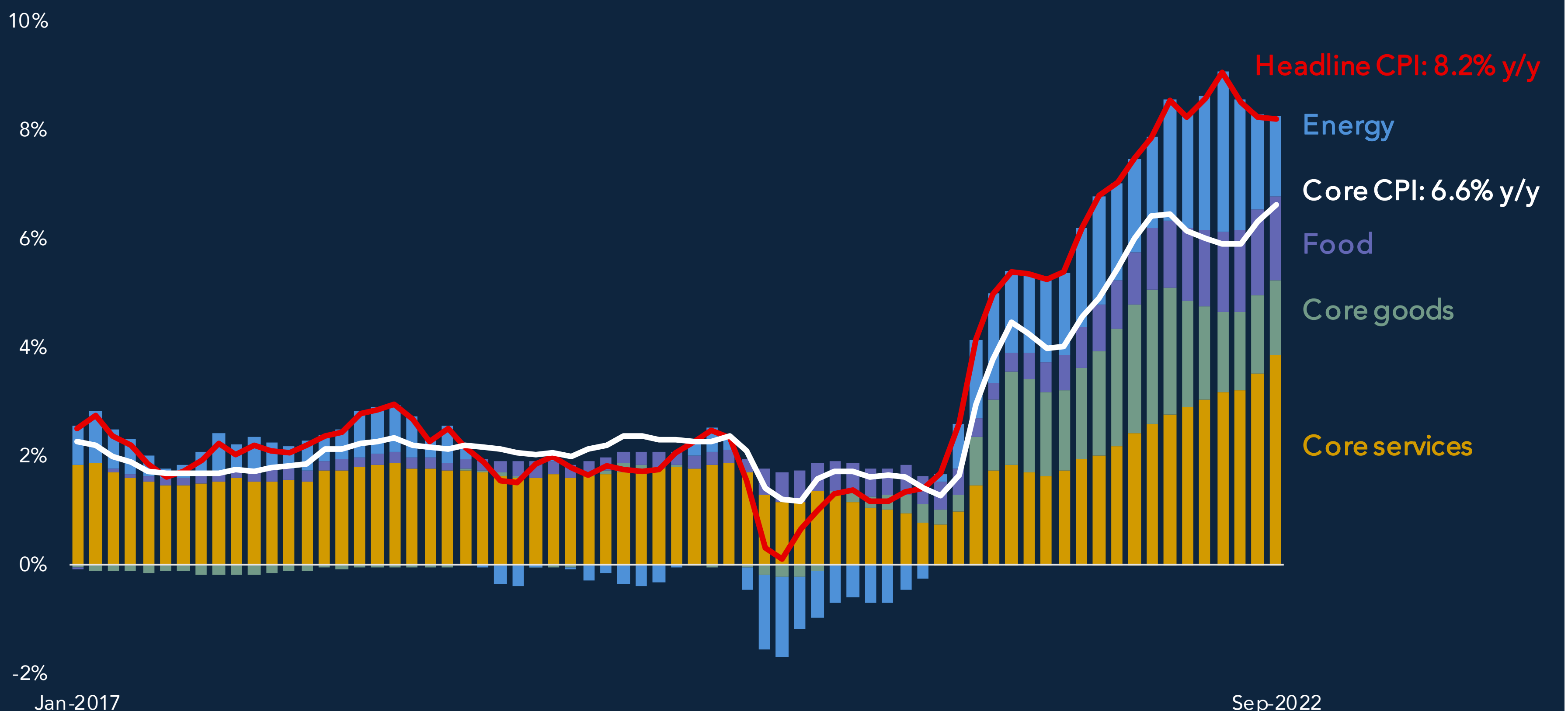
US Core Inflation Remains Elevated

Headline CPI surprised markets by accelerating 0.4% m/m and eased only slightly to 8.2% on a year over year basis vs. 8.3% in August. Core CPI accelerated to 6.6% y/y in September from 6.3% y/y in August, driven by a broad-based increase in core services.

Breakdown of CPI by components



Source: (1) Bloomberg. Data as of October 13, 2022.

Summary Conclusions on Elevated Inflation

Throughout 2022, markets (and the Fed) have consistently underestimated the magnitude of inflation, and the pace of policy tightening.

1. Elevated Inflation a Problem Globally

Inflation rising across nearly every major economy globally in synchronized fashion, with most countries well above "target," and many not yet at "peak inflation"

2. Inflation has been Broad-based and Entrenched

Elevated US inflation is broad-based and entrenched across many segments of the economy (food, energy, shelter, medical, transportation, etc).

3. US Core CPI Exceeded Expectations

With energy prices actually declining in September, the +0.6% m/m increase in core CPI to 6.6% y/y was both larger and more broad-based than anticipated.

4. Services Inflation Remains a Primary Area of Concern

With services representing 80% of US GDP, the sharp 0.8% m/m rise in core services CPI, the highest monthly gain since August 1990, is perhaps the greatest area of concern.

5. Core Goods Inflation Should Moderate from Here

For the first time in 5 months, core goods prices were flat m/m. Lower energy prices and moderating supply chain stress (port backlogs, transportation time and cost) should drive continued improvement in months ahead.

Summary Conclusions on Elevated Inflation

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6. Energy Prices Especially High for Non-US Countries

While US energy prices declined 2.1% m/m in September, they remain elevated at +20% on a y/y basis, and even higher at +30-40% y/y for countries importing USD-denominated commodities (ie, Europe, Japan).

7. Real Wage Growth Remains Deeply Negative

With broader CPI rising more rapidly than wage inflation, US real wage growth remains deeply negative, a significant concern for a US economy where the consumer is 70% of GDP.

8. Market Focus to Shift from “Peak” Inflation to “Sticky” Inflation in 2023

As inflation pressures moderate in 2023 (base effects, lower goods inflation, etc), the market will likely shift its focus from the timing of “peak” inflation to the strength of “sticky” inflation across numerous sub-segments of the economy (labor, services).

9. UST Yields Tend to Peak Toward the End of the Cycle

Monetary policy operates with a lag. Central banks often start too late, and do too much. Casualties of Fed tightening are common. UST yields tend to peak near the end of a tightening cycle.

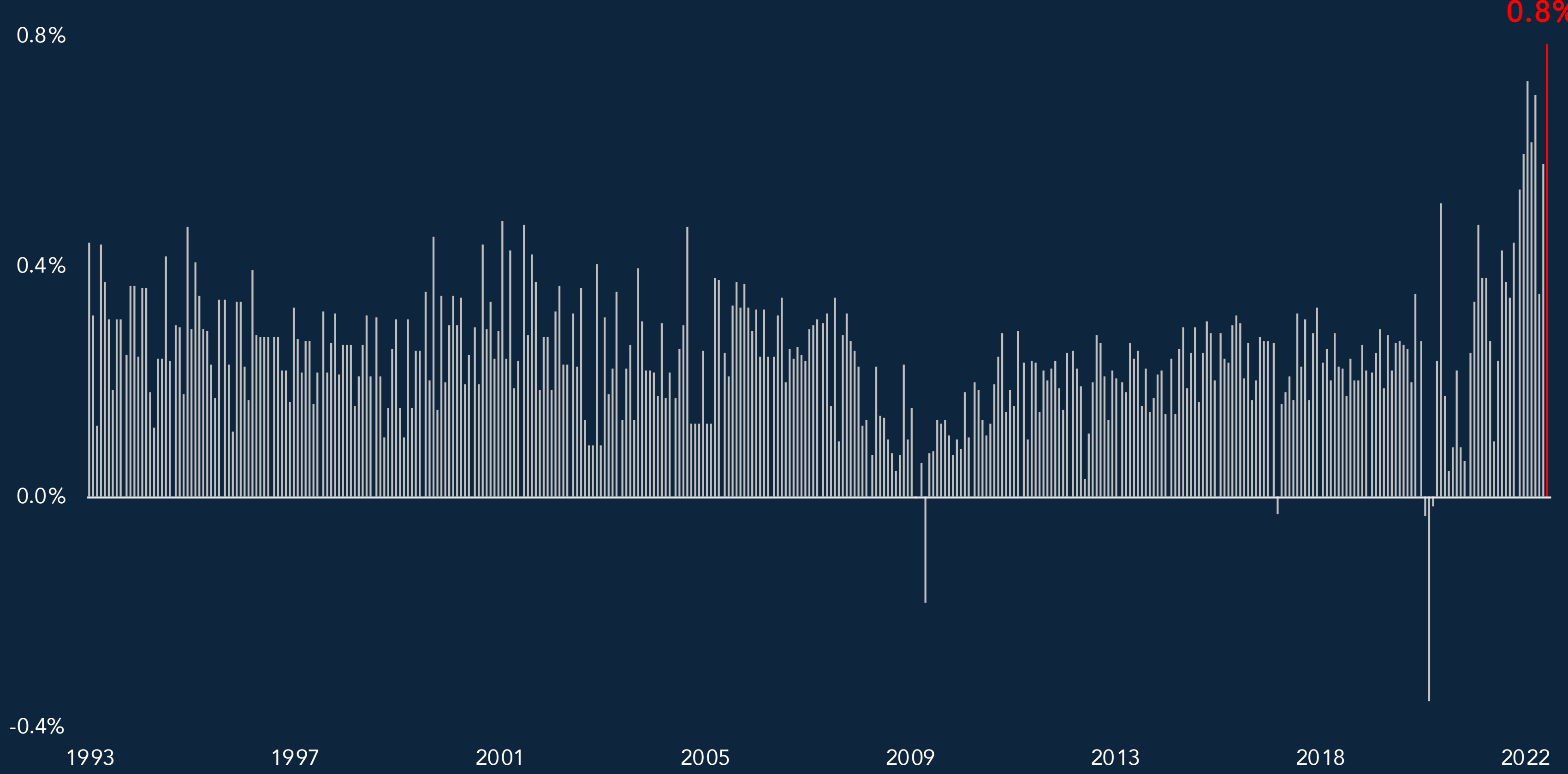
10. The More Inflation, the More Hard Landing Risk

Europe & the UK are likely entering a reasonably deep recession right now (Q4), while the US and global economy are likely entering comparatively milder recessions in the 1H 2023. Going back to 1950, the US has nearly always entered recession when y/y headline inflation rises above 5%.

Core Services Inflation Remains Greatest Concern

With services representing approximately 80% of US GDP, the persistent rise in US core services CPI has become the most concerning area of persistent US inflation. The 0.8% m/m rise in core services CPI in September was the highest monthly increase since August 1990.

US CPI core services, m/m



Source: (1) Bloomberg. Data as of October 14, 2022.

Breakdown of September US Inflation Report

Energy | Food | Core goods | Core services

US inflation by sector (y/y)

Airline fares	43%
Utility gas service	33%
Eggs	31%
Health insurance	28%
Public transportation	27%
Energy	20%
Energy services	20%
Energy commodities	20%
Motor fuel	19%
Delivery services	16%
Cereals & bakery products	16%
Electricity	16%
Milk	15%
Transportation services	15%

Vehicle accessories	14%
Motor vehicle parts and equipment	13%
Outdoor equip. & supplies	13%
Food at home	13%
Tires	13%
Nonalcoholic beverages	13%
Housekeeping supplies	12%
Veterinarian services	12%
Tools, hardware & supplies	11%
Pets & pet products	11%
Motor vehicle maint. & Repair	11%
Motor vehicle insurance	10%
Furniture & bedding	10%
Household furnishings & supplies	10%

New vehicles	9%
New trucks	9%
Fruits and vegetables	9%
Food away from home	9%
Tobacco & smoking products	8%
Legal services	7%
Used cars and trucks	7%
Laundry & cleaning services	7%
Financial services	7%
Rent of shelter	7%
Services less energy services	7%
Owners' equivalent rent	7%
Shelter	7%
Medical care services	7%

Source: (1) Bureau of Labor Statistics. CPI Report September 2022.

Breakdown of September US Inflation Report

Energy | Food | Core goods | Core services

US inflation by sector (y/y)

Personal care products	7%
Photo equipment & supplies	6%
Recreational reading	6%
Apparel	6%
Garbage & trash collection	5%
Day care and preschool	5%
Water & sewerage maint.	5%
Meats	5%
Nursing homes	5%
Educational books	5%
Cosmetics	5%
Computer software and accessories	5%
Jewelry and watches	4%

Toys	4%
Recreation services	4%
Alcoholic beverages	4%
Music instruments & acces.	4%
Footwear	4%
Hospital services	4%
Land-line phone services	4%
Medicinal drugs	4%
Professional services	3%
Sporting goods	3%
Funeral expenses	3%
School tuition	3%
Lodging away from home	3%

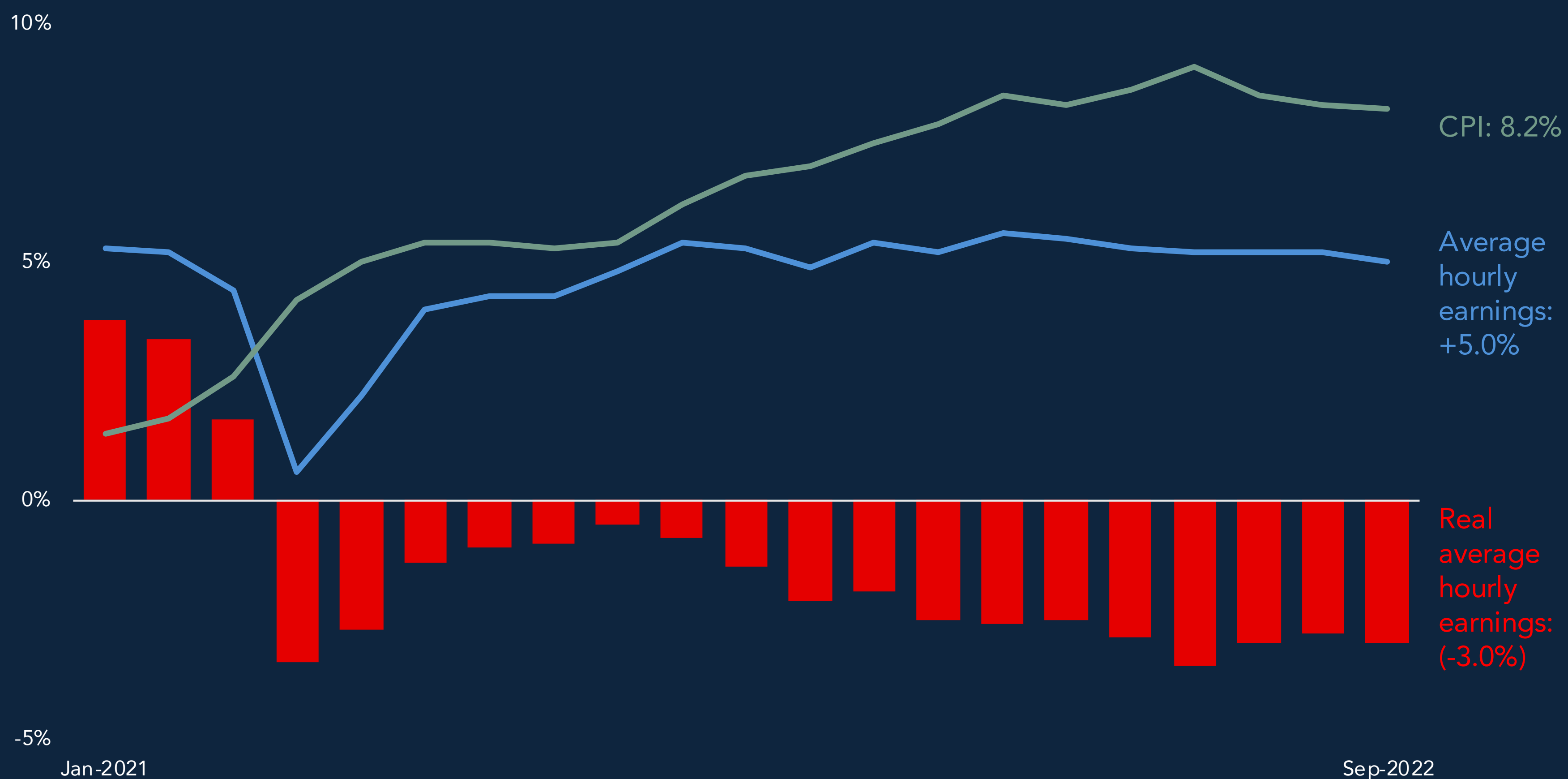
Audio equipment	3%
Moving, storage, freight expense	2%
College tuition and fees	2%
Physicians' services	2%
Appliances	2%
Technical & bus. school tuition	1%
Intracity mass transit	1%
Internet services	0%
Wireless phone services	(-1%)
Car & truck rental	(-1%)
Computers and smart home assistants	(-4%)
TVs	(-18%)
Smartphones	(-21%)

Source: (1) Bureau of Labor Statistics. CPI Report September 2022.

Real Wage Growth Remains Deeply Negative

With broader CPI rising much more rapidly than wage inflation, US real wage growth remains deeply negative, squeezing US consumers and elevating recession risk concerns.

y/y change in real and nominal earnings and CPI

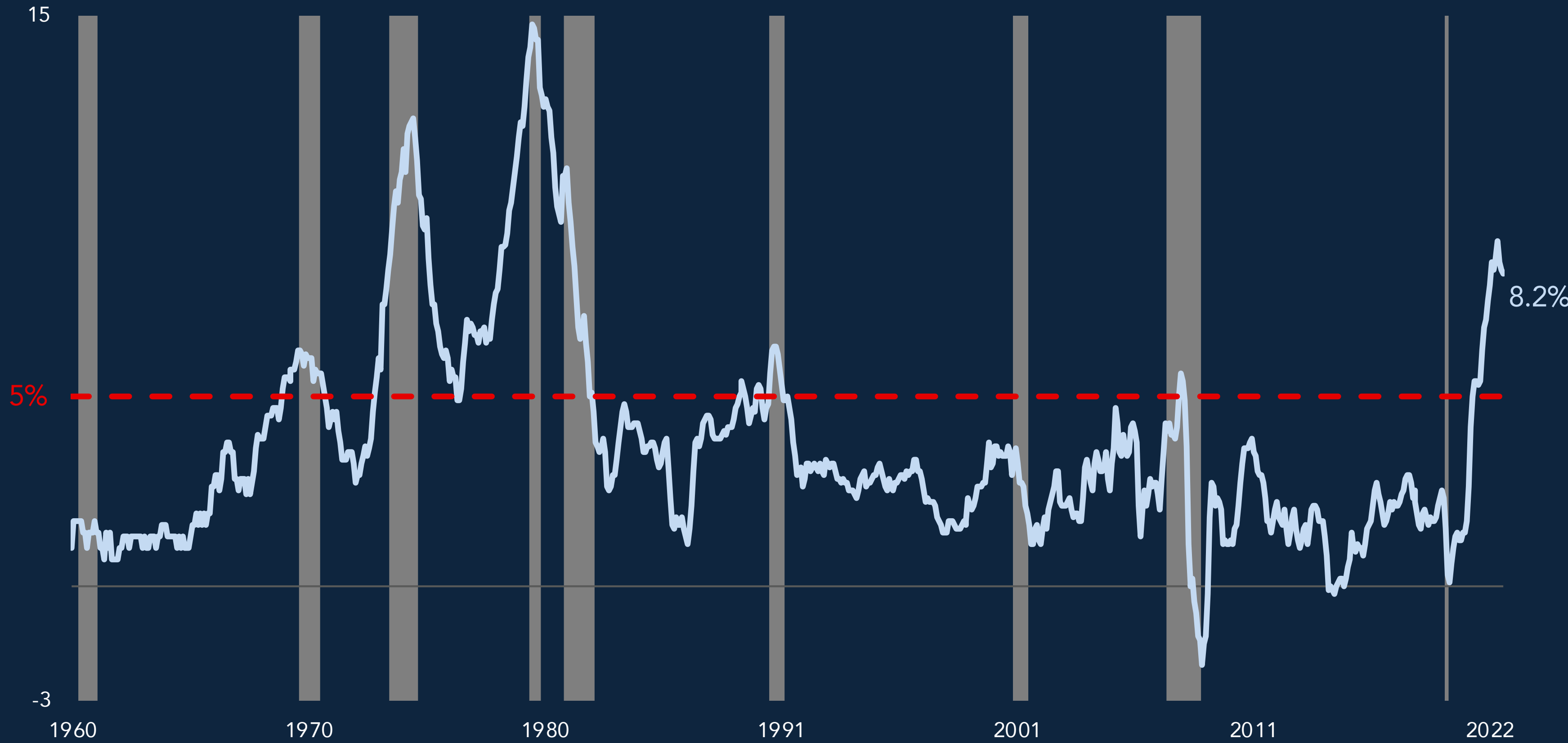


Source: (1) Bloomberg. Data as of October 18, 2022.

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).

US CPI inflation, y/y



Source: (1) Bloomberg. Data as of October 14, 2022.

Elevated Inflation a Systemic Global Problem

Nearly every major global economy is experiencing inflation well above target levels. Notably, inflation in Europe and the UK is not yet "past peak" and will likely take longer to "normalize" than the US.

Global CPI forecasts, y/y

Region / country	2021	2022	
North America			
Mexico	5.7%	8.0%	↑
US	4.7%	8.0%	↑
Canada	3.4%	6.7%	↑
Eurozone	**2.6%**	**8.3%**	↑
Netherlands	2.7%	10.7%	↑
Spain	3.1%	8.7%	↑
Germany	3.1%	8.0%	↑
Italy	1.9%	7.9%	↑
Ireland	2.4%	7.8%	↑
Finland	2.2%	7.2%	↑
France	1.6%	5.3%	↑
Other Europe			
Turkey	19.6%	72.8%	↑
Czech Republic	3.8%	14.8%	↑
Poland	5.1%	14.3%	↑
Russia	6.7%	13.7%	↑
UK	2.6%	8.9%	↑
Denmark	1.9%	7.8%	↑
Sweden	2.2%	7.7%	↑
Norway	3.5%	6.1%	↑
Switzerland	0.6%	2.8%	↑

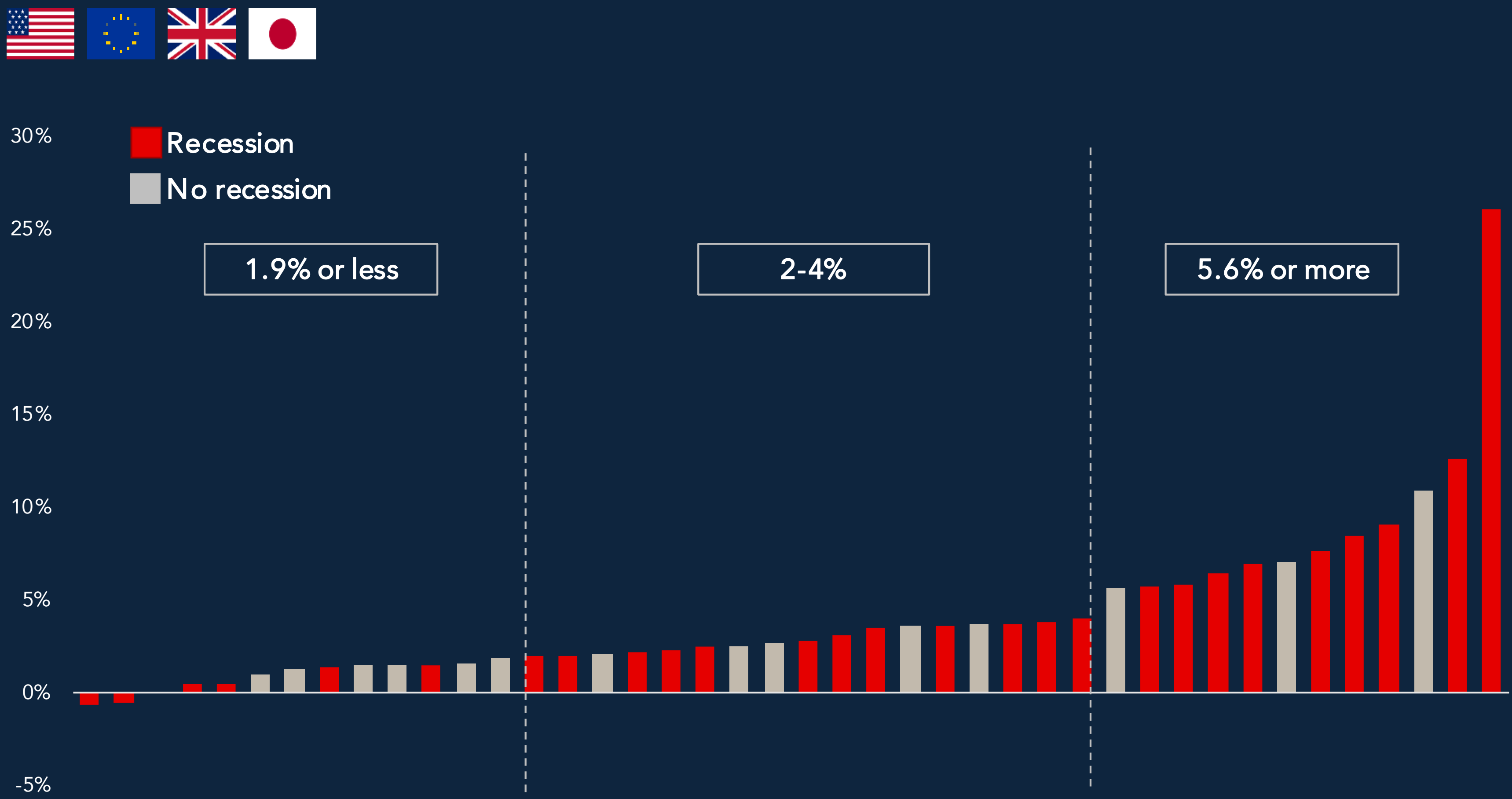
Region / country	2021	2022	
APAC			
India	5.1%	6.9%	↑
New Zealand	3.9%	6.7%	↑
Australia	2.8%	6.4%	↑
Singapore	2.3%	6.0%	↑
Philippines	3.9%	5.8%	↑
South Korea	2.5%	5.3%	↑
Indonesia	1.6%	4.6%	↑
Vietnam	1.8%	3.3%	↑
China	0.9%	2.3%	↑
Japan	(-0.2%)	2.3%	↑
LatAm			
Argentina	48.4%	74.3%	↑
Chile	4.5%	11.7%	↑
Colombia	3.5%	10.0%	↑
Brazil	8.3%	9.7%	↑
MENA			
Sub-Saharan Africa	15.4%	17.4%	↑
South Africa	4.6%	6.8%	↑
UAE	0.2%	4.5%	↑
Saudi Arabia	3.1%	2.3%	↓

Source: (1) Oxford Economics. Data as of October 17, 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 correspond with higher probability of recession.

G4 central bank tightening cycles by peak inflation rate (hard vs. soft landing)

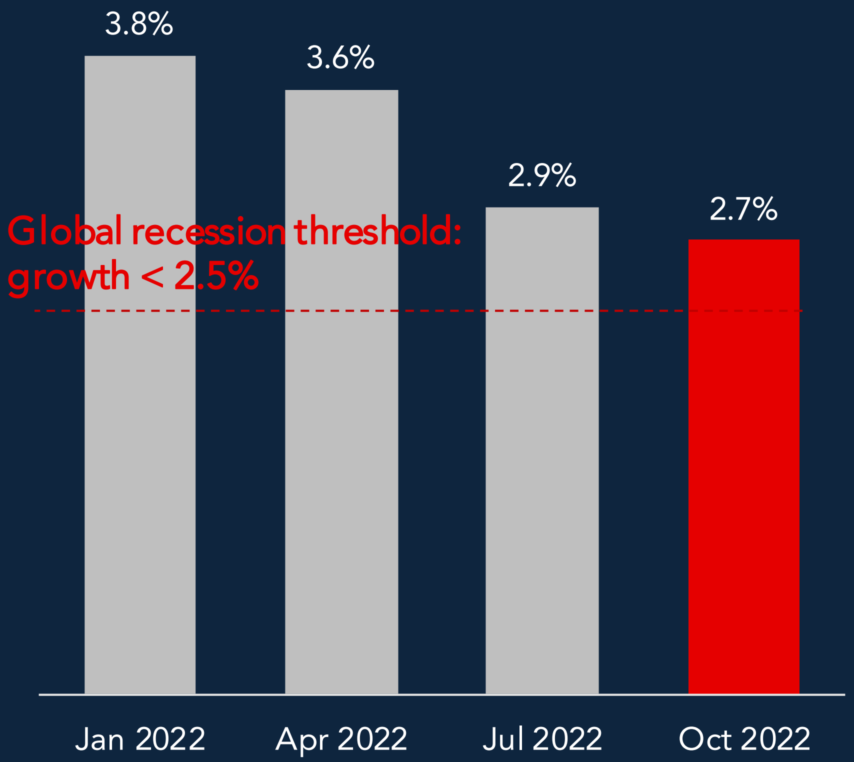


Source: (1) Oxford Economics, "What History Tells us About Rate Hikes and Recession Risk" (May 9, 2022).

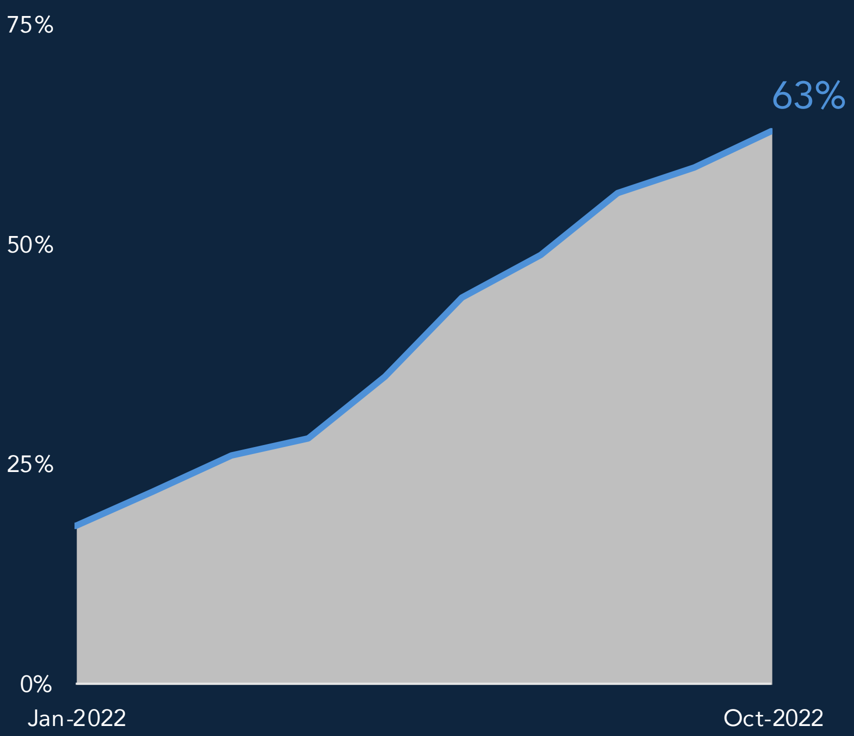
Global Recession Risk Rising

With its 4th downward revision this year, the IMF projects that the global economy will grow at 2.7% in 2023, just avoiding the 2.5% global recession threshold, though adding that they expect 1/3 of the global economy to contract this year or next. By comparison, we remain more concerned and believe that the global economy will likely enter its 7th recession since WWII sometime in the 1H of 2023.

2023 global GDP growth forecast revisions, y/y



Probability the US is in a recession in next 12 months

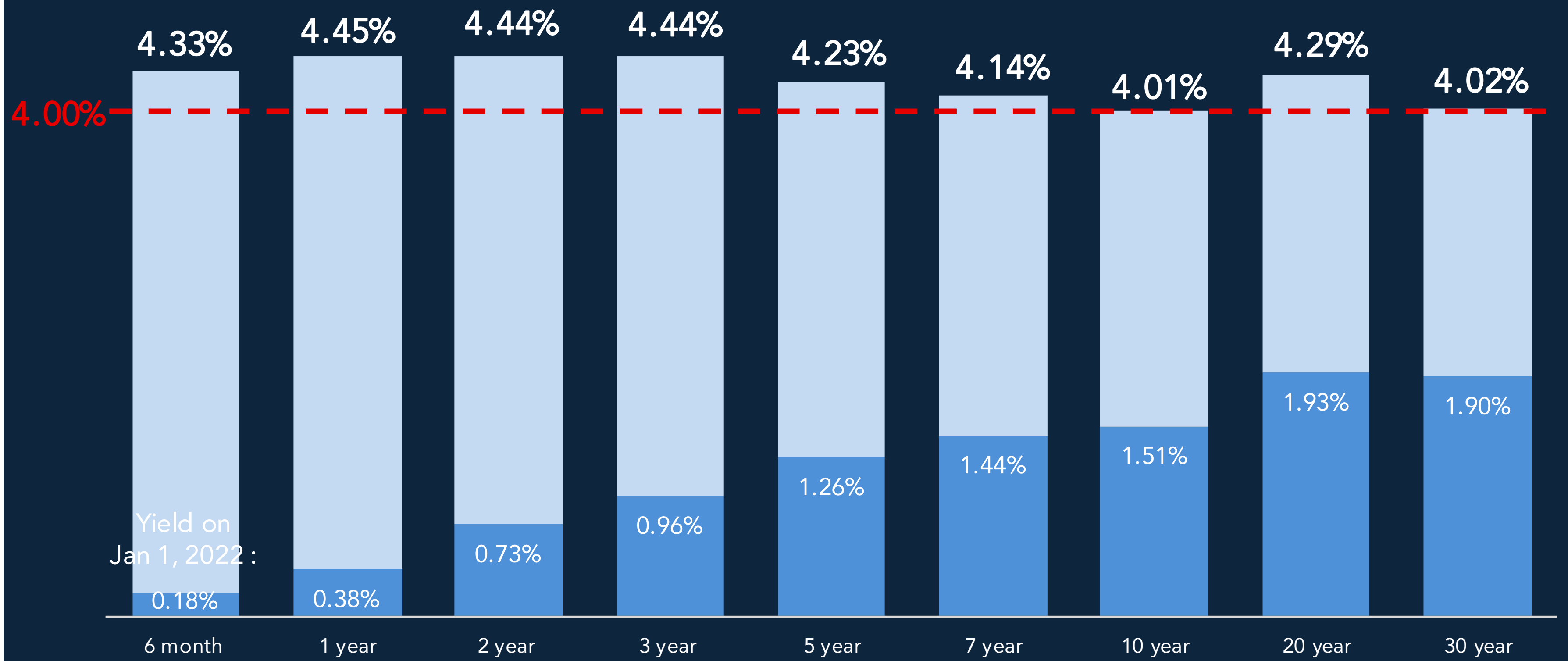


Source: (1) Global GDP forecasts are IMF. (2) Wall Street Journal surveys of Economists, October 2022.

Nearly Entire UST Curve Now Above 4%

With inflation proving more persistent than anticipated, and the Fed more hawkish, the entire US Treasury curve from 6 months to 30 years is now trading above 4%, a significant repricing from earlier this year. Market expectations for peak Fed Funds have also repriced to nearly 5%, up more than 150 bps since early August alone.

US treasury yields

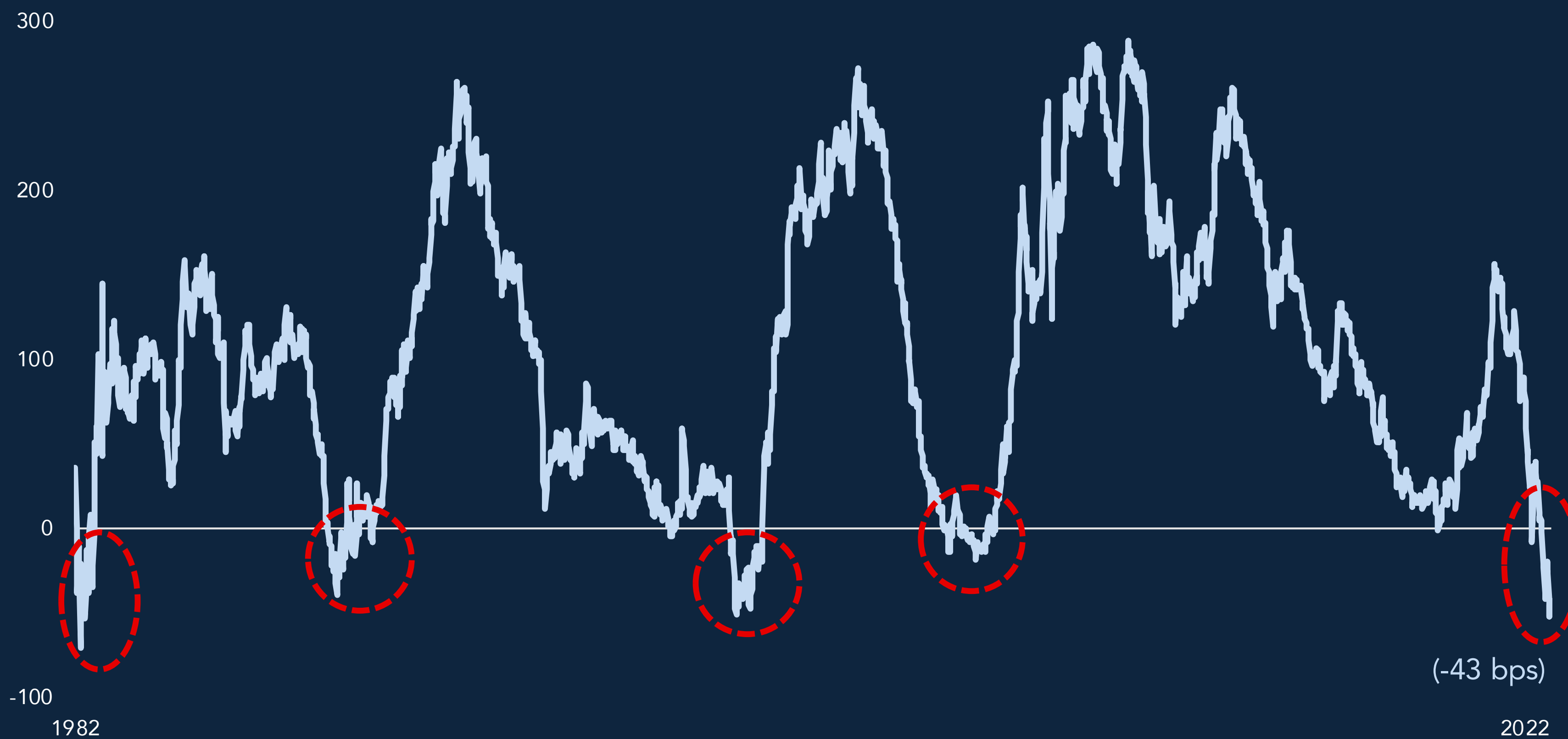


Source: (1) Bloomberg. Data as of October 17, 2022.

Yield Curve Most Inverted in 40 Years

US yield curve inversion has historically been the most reliable metric for signaling US recessions, typically with a 9-12 month lag to recession start, depending on the part of the curve. Today, the 2s-10s curve is at its most deeply inverted level in 40 years (1982).

2s10s UST curve

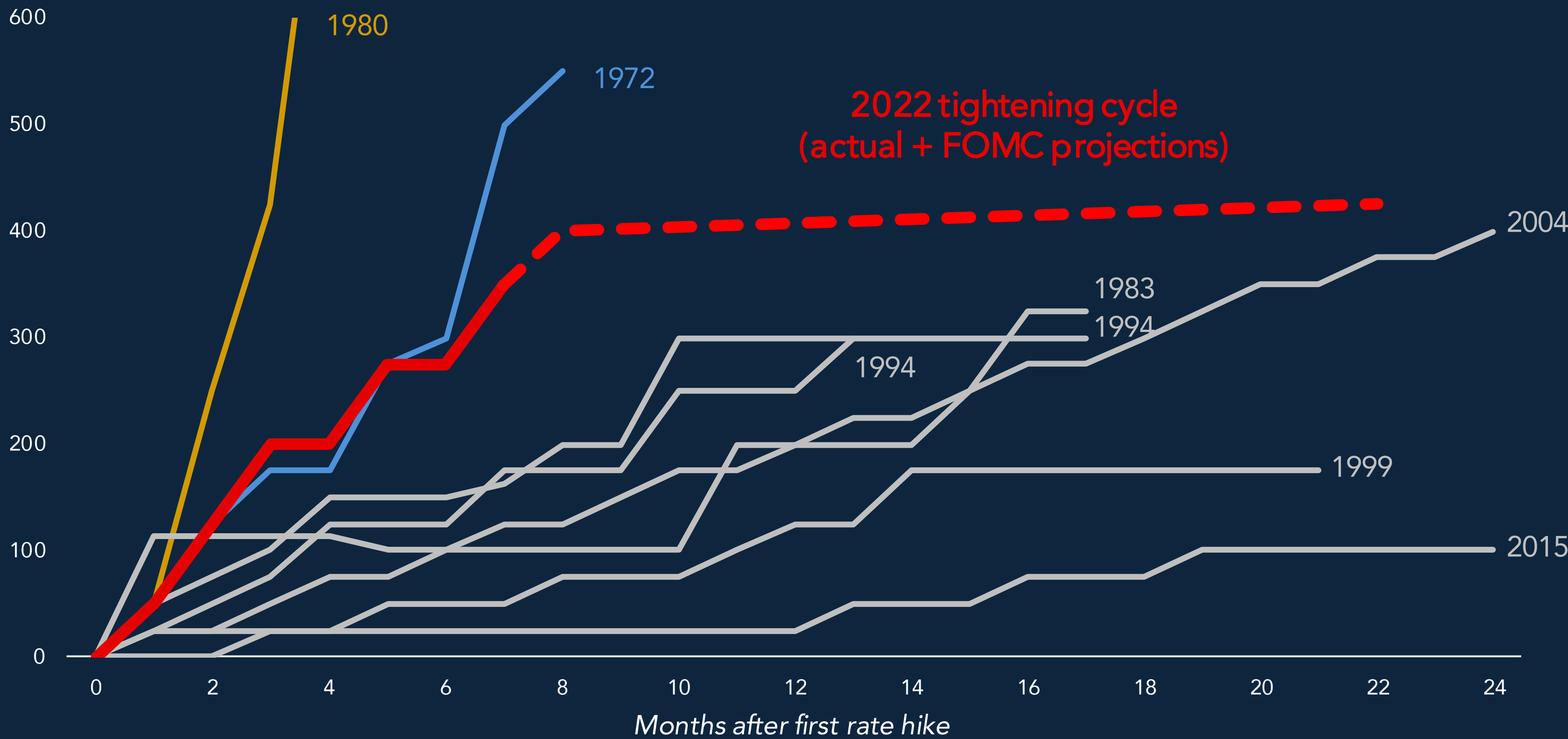


Source: (1) Bloomberg. Data as if October 17, 2022.

Fastest Pace of Tightening in 40 Years

Despite a late start, the Fed has embarked on its fastest rate hiking cycle since Volker in 1980, while simultaneously reducing its balance sheet by nearly $100 bn per month. Historically, the Fed has more typically tightened at a pace of 25 bps per meeting, much slower than the 75 bps hike in each of the last three FOMC meetings. For markets, the "rate of change" in policy rates or currency can be more disruptive than the valuation level itself.

Historic Fed tightening cycles, bps

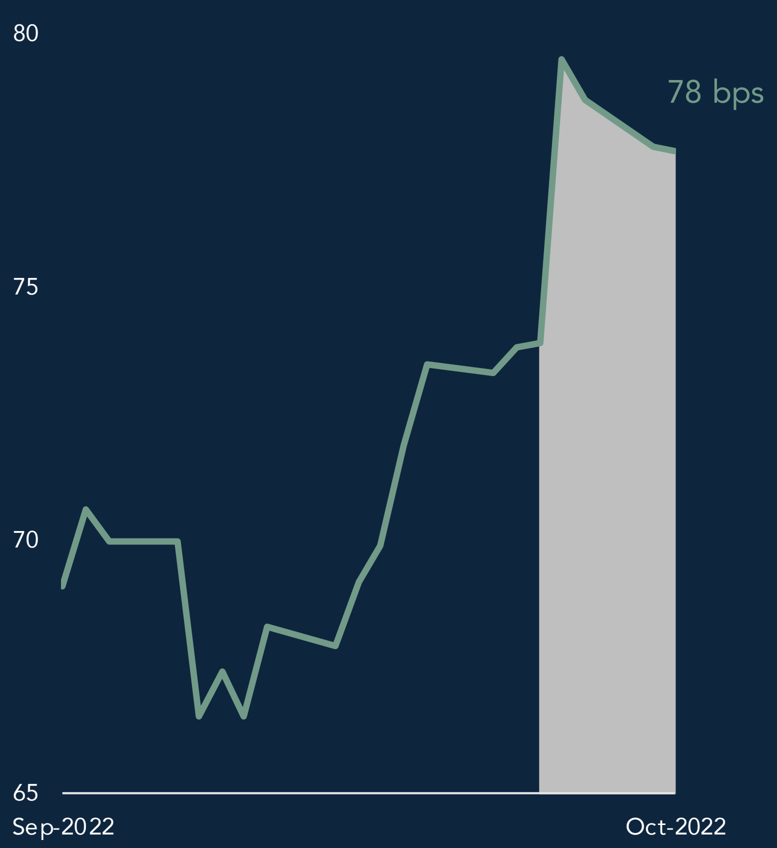


Source: (1) Bloomberg. Data as of October 4, 2022. X-axis is months after the first rate hike, 2022 tightening cycle dash line is Fed projections.

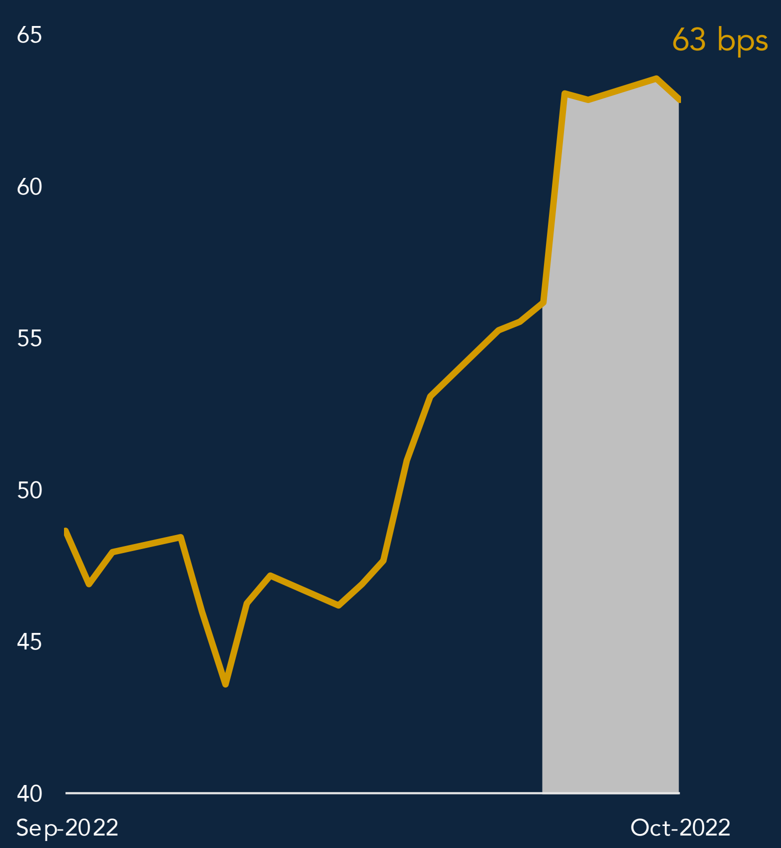
Market Repricing Nov & Dec Rate Hikes

The market is now pricing in more than a 75% probability, up from 15% probability a week ago, of an additional 150 bps of Fed rate hikes before year-end 2022. Following the September CPI report, the market has markedly raised its expectations for Fed rate hikes into year end, now pricing more than 75 bps and more than 50 bps in November and December, respectively.

Market Repricing November FOMC Rate Hike



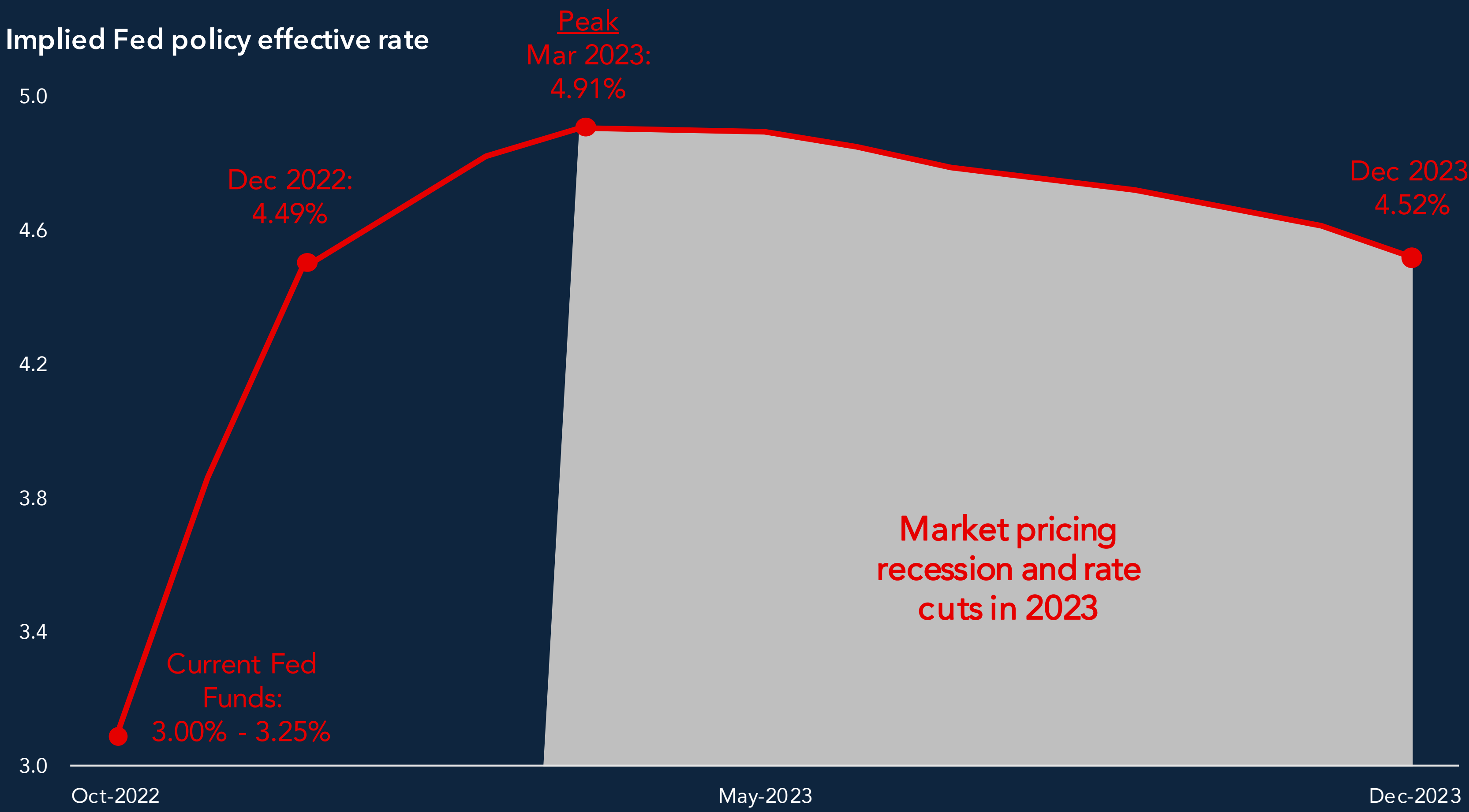
Market Repricing December FOMC Rate Hike



Source: (1-2) Bloomberg. Data as of October 17, 2022.

"Higher for Longer" Rates Narrative into 2023

The market is pricing in an additional 125-150 bps of rate hikes in Q4 2022, peak Fed Funds close to 5.0% in March 2023 and rate cuts in the latter half of the year. However, the market has consistently "underpriced" Fed tightening all year. In our view, companies should position themselves for a "higher for longer" rates narrative in 2023 as inflation may prove "stickier" than currently anticipated.

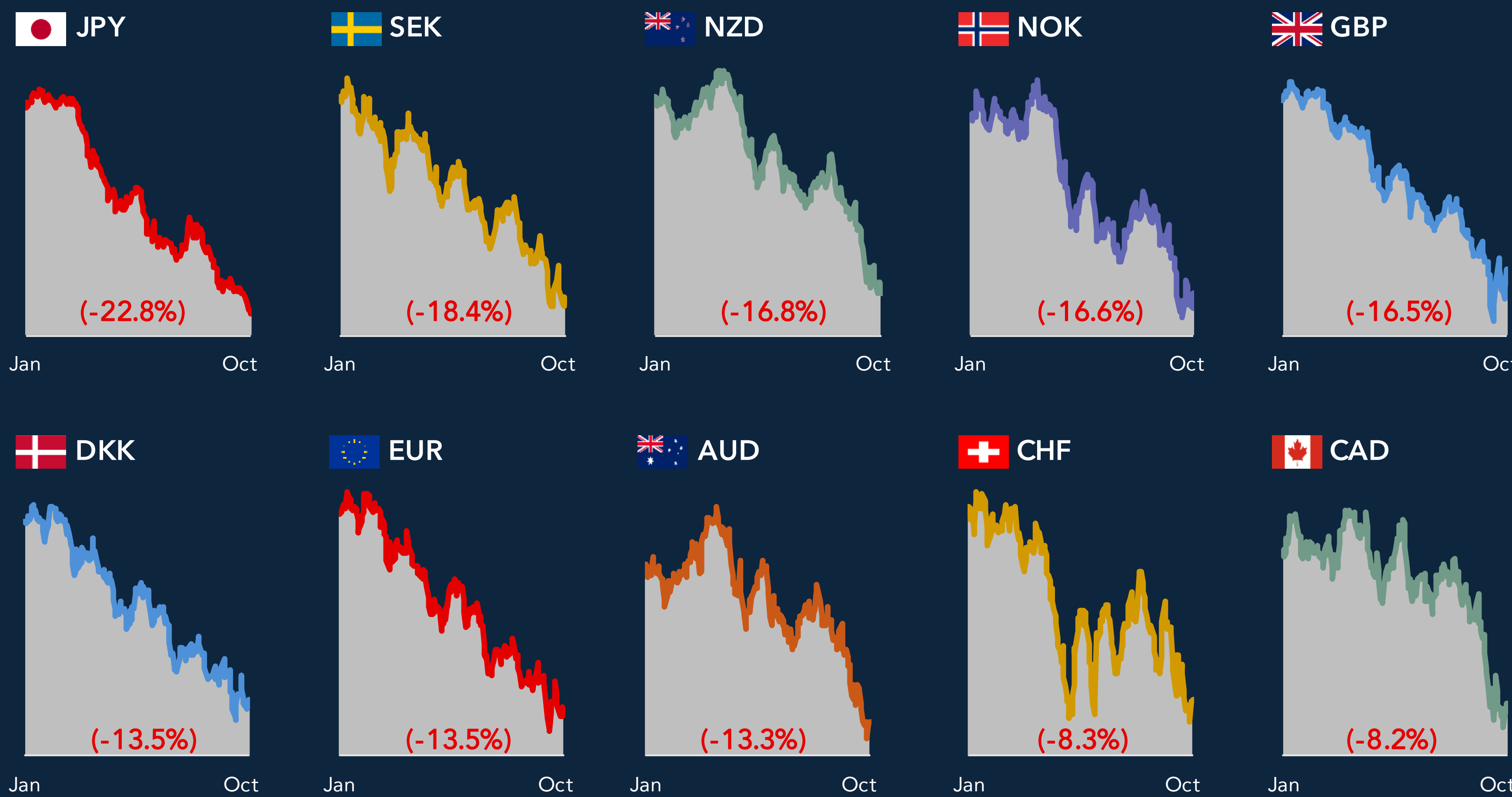


Source: (1) Bloomberg. Data as of October 17, 2022.

Dollar Strength vs. G10 FX

MUFG expects US Dollar strength to continue with the accelerated Fed tightening cycle into early 2023

2022 YTD performance vs. USD



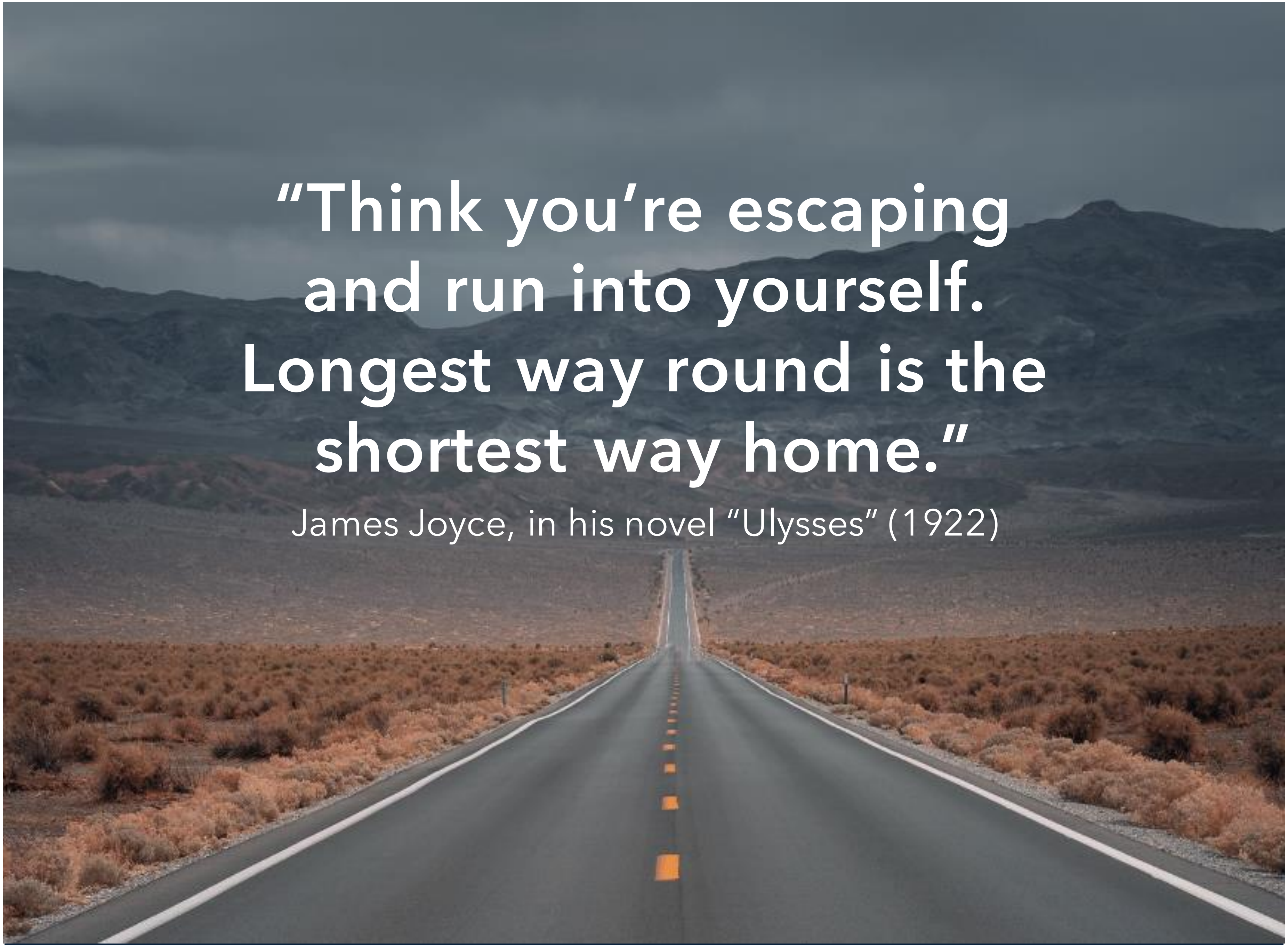
Source: (1-10) Bloomberg. Data as of October 14, 2022. All currencies vs. USD. Axis inverted to show depreciation.

Dollar Strength vs. EMFX

MUFG expects US Dollar strength to continue with the accelerated Fed tightening cycle into early 2023

2022 YTD performance vs. USD

Source: (1-12) Bloomberg. Data as of October 18, 2022. All currencies vs. USD. Axis inverted to show depreciation.


"Think you're escaping
and run into yourself.
Longest way round is the
shortest way home."
James Joyce, in his novel "Ulysses" (1922)

MUFG’s Capital Markets Strategy Team

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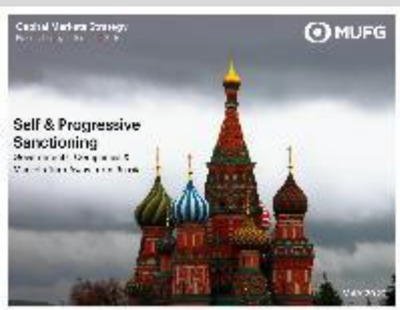

MUFG's Capital Markets Strategy Team

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