

CEPREMAP / DBNOMICS

# Macroeconomic Outlook - February 2023

## DBnomics

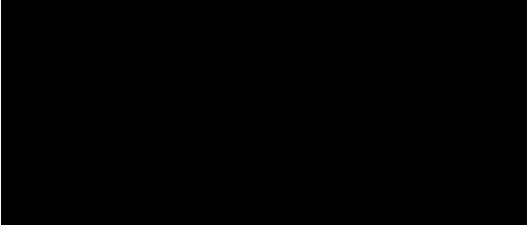
- All data presented in the forthcoming slides are extracted from DBnomics (<https://db.nomics.world/>), an open-sourced databank created at CEPREMAP, and will be automatically updated every Friday at 2:00pm
- The project has been financed by generous grants from Banque de France, AFD, DG Trésor, France Stratégie and OECD
- The executive director of the DBnomics project is Christophe Benz
- The comments on the slides have been written by Daniel Cohen and Armand Dubois at CEPREMAP
- Links to the DBnomics data are available in the Appendix
- All materials presented here can be freely used with proper acknowledgment

## Executive summary

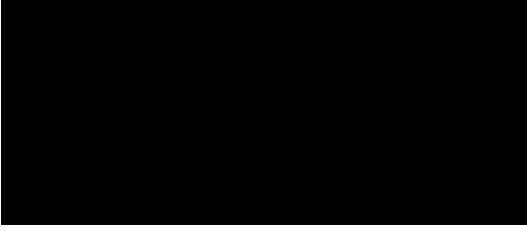
- 2023 is announced as a year of low and potentially negative growth both in the US and in the EZ.
- Monetary policy has been tightened up to levels unheard of for the last 20 years, the question being up to which point in 2023.
- Markets are following closely the inflation path. Positive news regarding inflation boosts markets, while positive news regarding labor market have the opposite effect.
- From a textbook point of view, in the case of a supply shock, only a rise of unemployment can calm down wage inflation.
- The sheer threat of a recession, however, has reduced the price of energy, potentially cooling down inflationary pressures worldwide, subject to further OPEC decisions.
- The discrepancy between the tightening pace in the US and in the Euro Area has led to an appreciation of the USD against the EUR. The expectation that US inflation may peak before the EZ could reverse this trend next year.

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## I Growth and inflation in selected G20 countries



## A    The growth slowdown

## Growth in advanced economies

2022 European growth has proved to be more resilient than expected. 2023 is expected to deliver sluggish potentially negative growth in advanced economies

**Yearly GDP growth rate (YoY % change)**

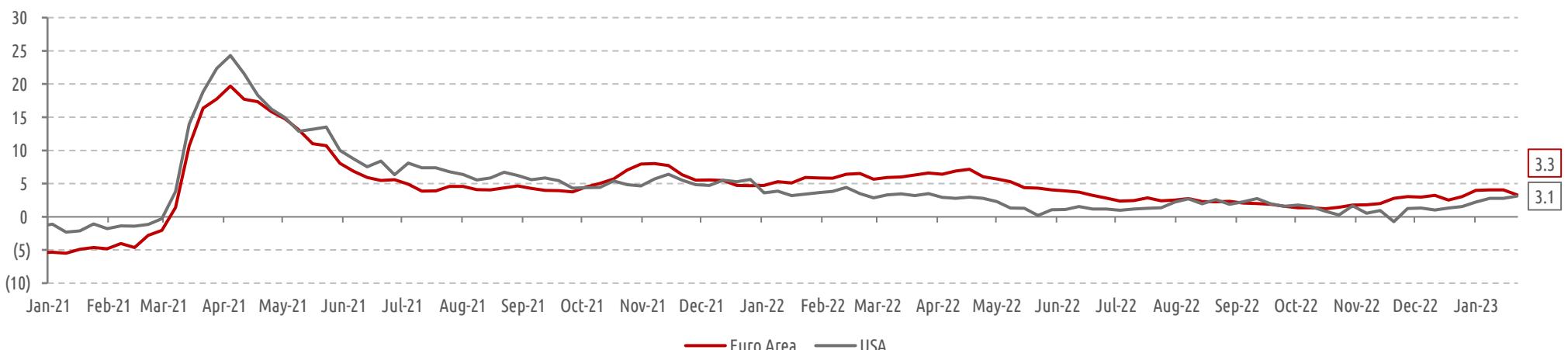
Country	Yearly GDP growth rate %				
	2020	2021	2022(P)	2023(P)	2024(P)
<b>Euro Area</b>	(6.3) <sup>1</sup>	5.3	3.5	0.7	1.6
<i>Germany</i>	(4.1)	2.6	1.9	0.1	1.4
<i>France</i>	(7.9)	6.8	2.6	0.7	1.6
<i>Italy</i>	(9.1)	6.7	3.9	0.6	0.9
<b>UK</b>	(11.0)	7.6	4.1	(0.6)	0.9
<b>USA</b>	(2.8)	5.9	2.0	1.4	1.0
<b>Canada</b>	(5.2)	5.0	3.5	1.5	1.5
<b>Japan</b>	(4.6)	2.1	1.4	1.8	0.9

Forecast from IMF WEO update January 2023

**Quarterly GDP growth rate (% change over the previous period)**

Country	Quarterly GDP growth rate %									
	20Q4	21Q1	21Q2	21Q3	21Q4	22Q1	22Q2	22Q3	22Q4	
<b>Euro Area</b>	(0.3)	(0.1)	2.0	2.2	0.5	0.6	0.9	0.3	0.1	
<i>France</i>	(0.9)	0.1	1.1	3.3	0.6	(0.2)	0.5	0.2	0.1	
<i>Germany</i>	0.6	(1.5)	1.9	0.8	(0.0)	0.8	0.1	0.5	(0.2)	
<i>Italy</i>	(0.8)	0.3	2.5	2.8	0.9	0.1	1.1	0.5	(0.1)	
<b>UK</b>	1.2	(1.1)	6.5	1.7	1.5	0.6	0.1	(0.3)	–	
<b>USA</b>	1.0	1.5	1.7	0.7	1.7	(0.4)	(0.1)	0.8	0.7	
<b>Canada</b>	2.1	1.3	(0.6)	1.4	1.7	0.7	0.8	0.7	0.4	
<b>Japan</b>	1.9	(0.1)	0.3	(0.5)	1.2	(0.5)	1.1	(0.2)	–	

**Weekly growth tracker in Advanced Economies (YoY % change) – Since Jan. 2021**



## Growth in emerging countries

The end of China's zero-covid policy is expected to boost growth in 2023

**Yearly GDP growth rate (YoY % change)**

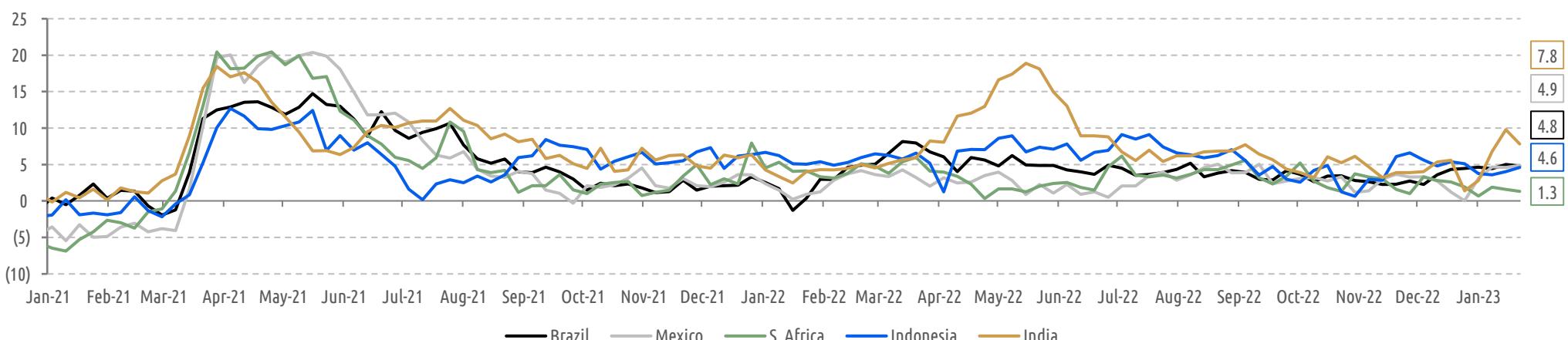
Country	Yearly GDP growth rate %				
	2020	2021	2022(P)	2023(P)	2024(P)
China	2.2	8.4	3.0	5.2	4.5
S. Africa	(6.3)	4.9	2.6	1.2	1.3
Brazil	(4.2)	5.0	3.1	1.2	1.5
India	(6.6)	8.7	6.8	6.1	6.8
Mexico	(8.1)	4.7	3.1	1.7	1.6
Indonesia	(2.1)	3.7	5.3	4.7	5.1

Forecast from IMF WEO update January 2023, except for Indonesia<sup>2</sup>

**Quarterly GDP growth rate (% change over the previous period)**

Country	Quarterly GDP growth rate %								
	20Q4	21Q1	21Q2	21Q3	21Q4	22Q1	22Q2	22Q3	22Q4
China	2.4	0.8	1.4	0.4	1.3	1.6	(2.7)	3.9	-
S. Africa	2.7	0.8	1.4	(1.8)	1.4	1.7	(0.7)	1.6	-
Brazil	3.2	1.1	(0.3)	0.4	0.9	1.3	1.0	0.4	-
India	7.8	0.8	(8.6)	8.7	5.0	(0.1)	(0.0)	0.8	-
Mexico	4.2	0.5	0.7	(1.1)	1.0	1.2	1.1	0.9	0.4
Indonesia	2.4	1.0	0.2	0.1	3.3	1.1	0.9	0.7	2.2

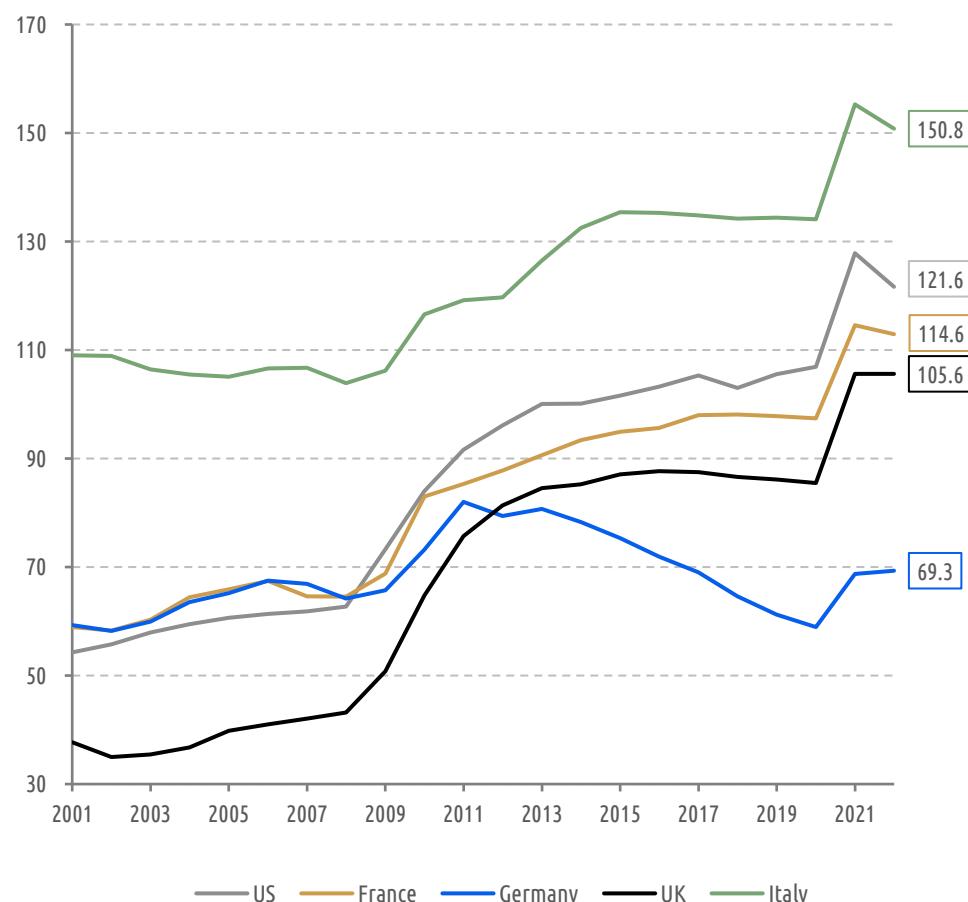
**Weekly growth tracker in Emerging Economies (YoY % change) – Since Jan. 2021**



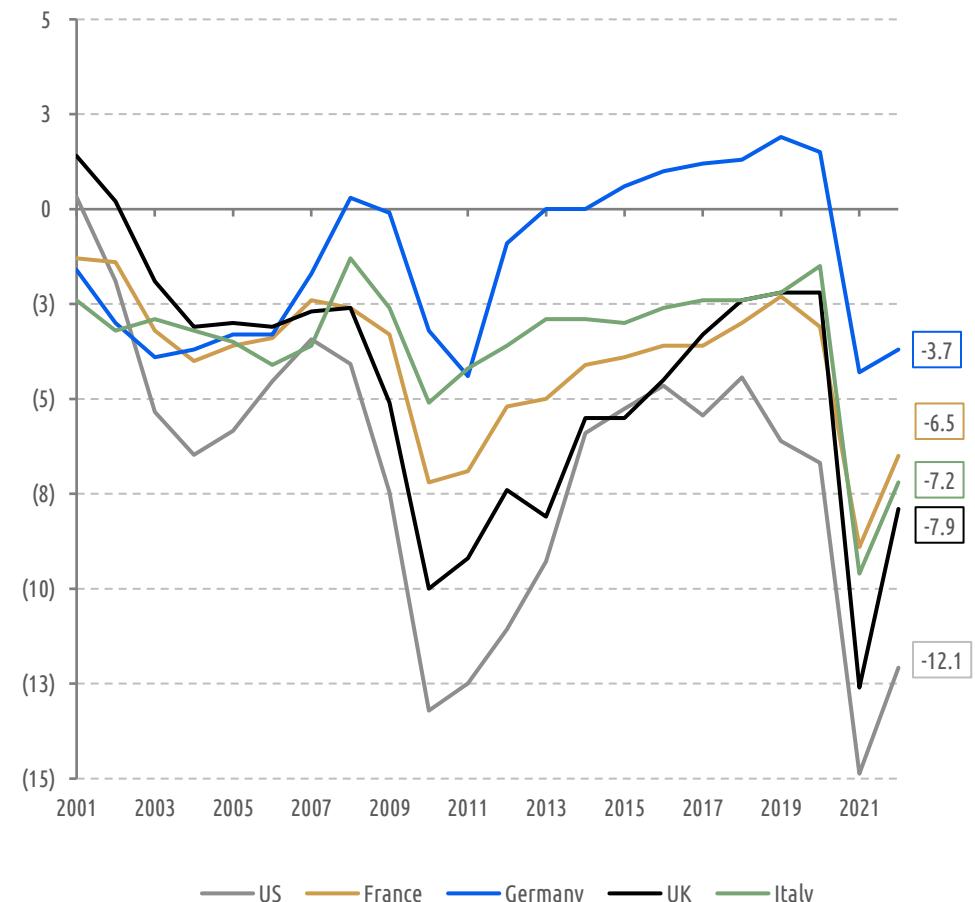
## Government debts and deficits have reached a new plateau in the G5 countries<sup>1</sup>

Fiscal accounts were deteriorated by Covid-19 policy responses with inflation a moderating factor on the evolution of debt

General Government debt (% of GDP) – Since 2001



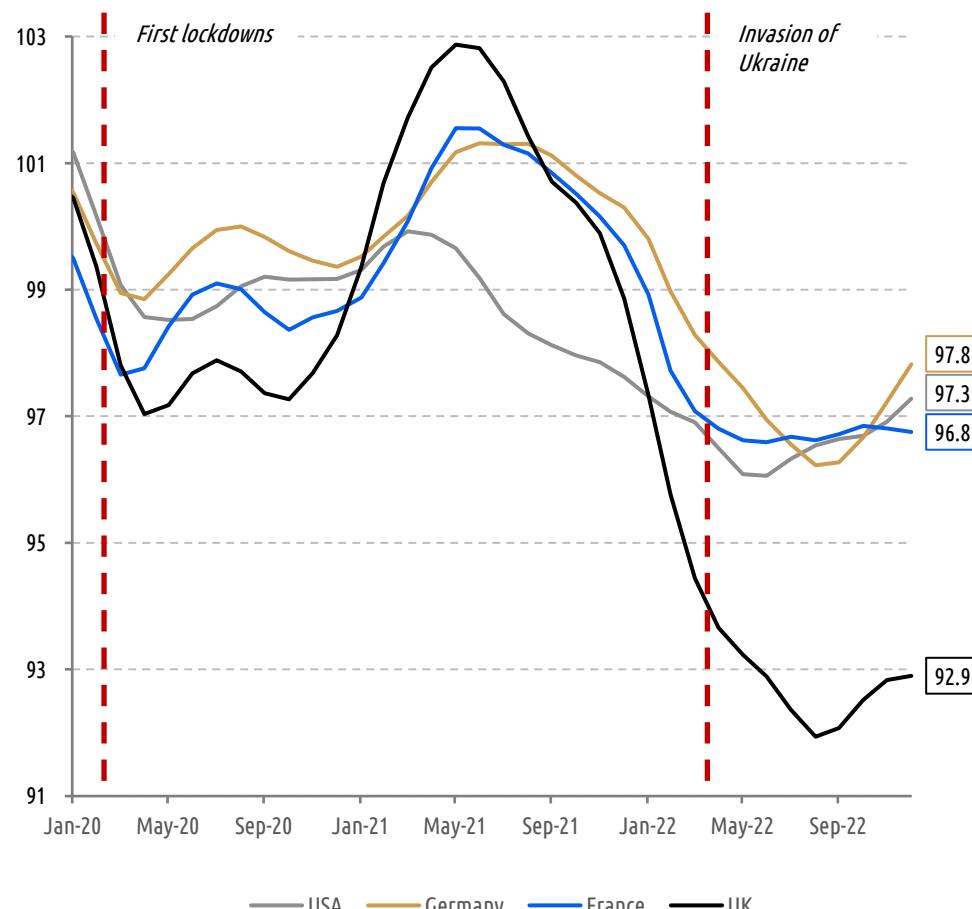
General Government deficit (% of GDP) – Since 2001



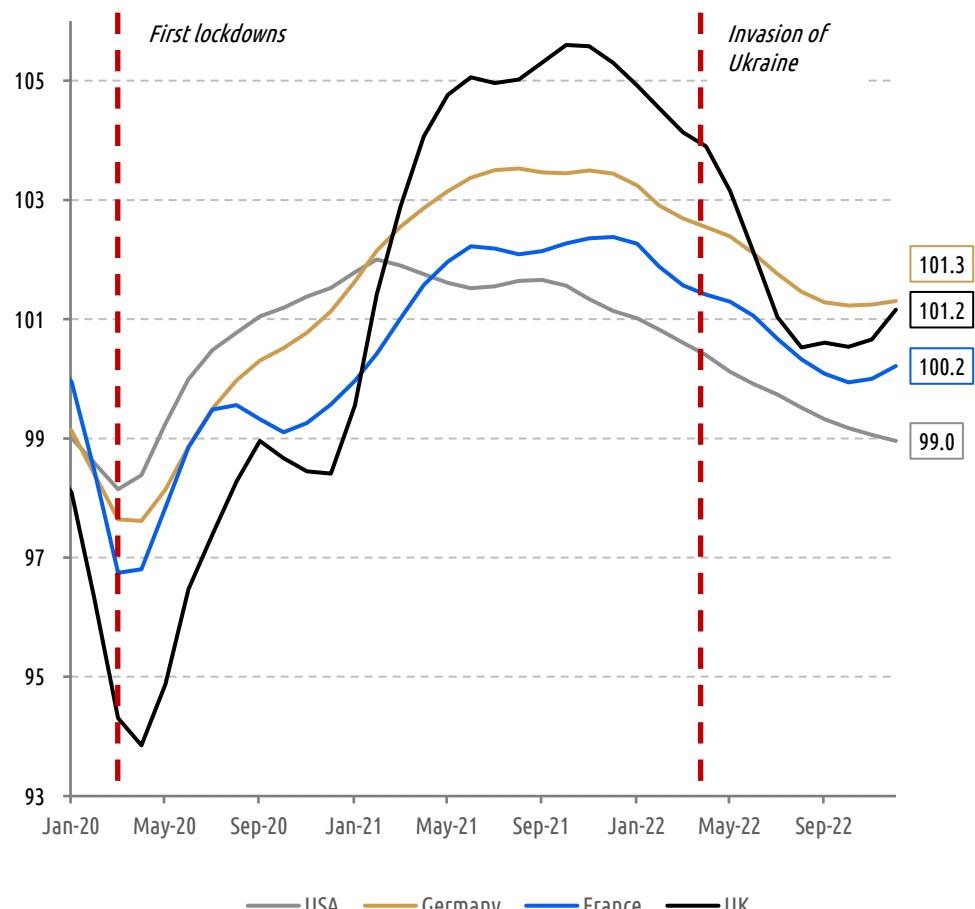
## Consumer confidence indicators may have bottomed down in the G4 countries<sup>1</sup>

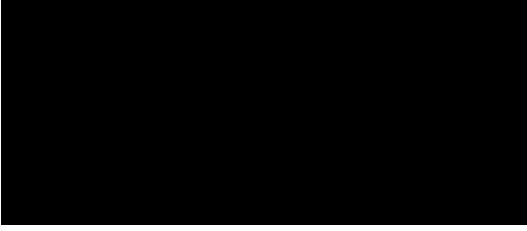
Business confidence, however, while below post-Covid peaks, remains at pre-crisis level

**Consumer confidence indicator – Since Jan. 2020**



**Business confidence indicator – Since Jan. 2020**



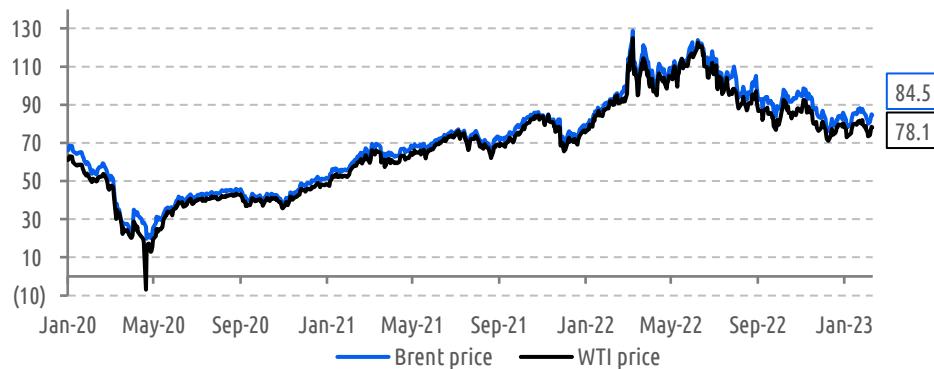


## B    The seeds of inflation

## Energy prices have sharply increased over the last 2 years - (1/2)

Post Covid recovery has raised commodity prices, even prior to the Ukrainian invasion

**Oil prices in historical perspective (USD per barrel)**



**Natural Gas (Dutch TTF) prices in historical perspective (€/MWh) – Mar. 23**



**Copper prices in historical perspective (USD/tonne)**



**CBOT Wheat (USD/Bushel)**

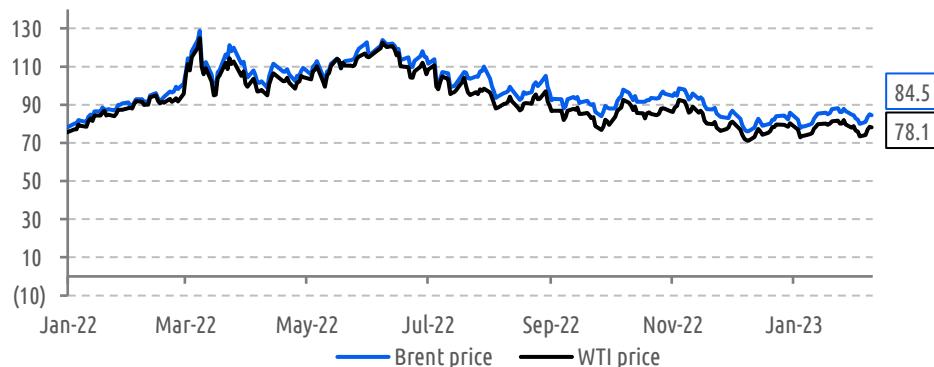


Sources: Nasdaq, ICE, NYSE as of 09/02/2023

## But may have already peaked - (2/2)

Ukrainian invasion lifted up prices, but fear of recession are cooling off pressure. European gas prices fell significantly below pre-war levels.

**Oil prices in historical perspective (USD per barrel)**



**Natural Gas (Dutch TTF) prices in historical perspective (€/MWh) – Mar. 23**



**Copper prices in historical perspective (USD/tonne)**



**CBOT Wheat (USD/Bushel)**

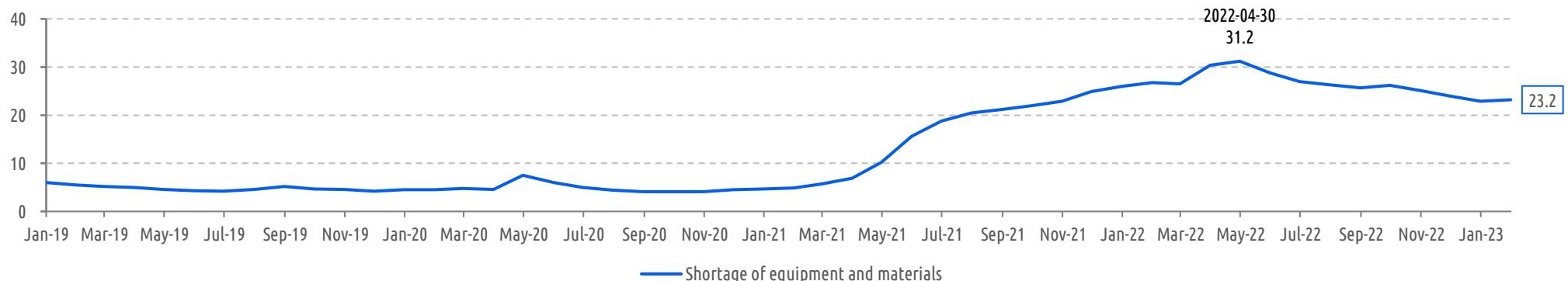


Sources: Nasdaq, ICE, NYSE as of 09/02/2023

## Supply chain disruptions are easing up significantly

Transportation costs well below their peaks remain above pre-crisis level

% of EU business reporting shortages of materials and equipment in the construction industry as a limiting production factor



Shipping Container Index (based on spot rate for 40 feet containers)

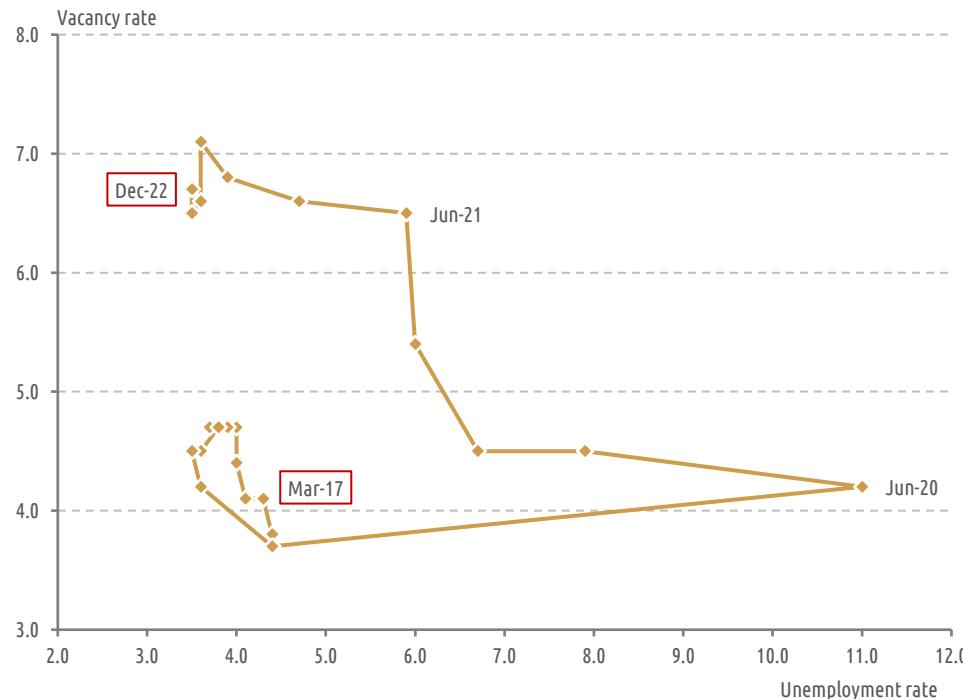


Sources: Eurostat, Freightos Data, Sea intelligence as of 10/02/2023

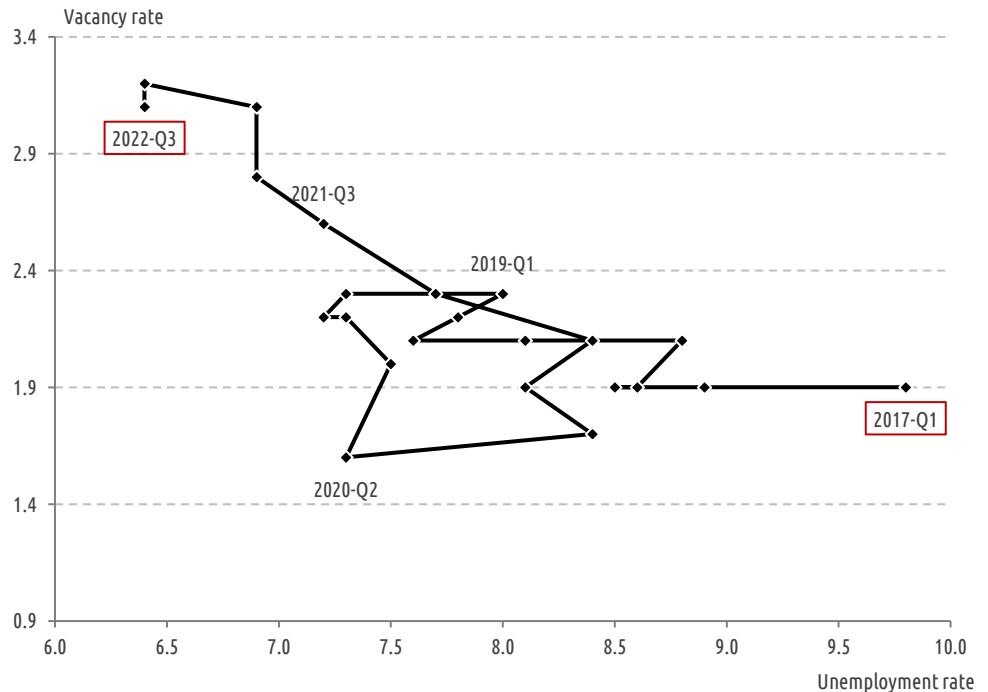
## Labor markets remain tight... (1/2)

The vacancy/unemployment ratio still at record high levels

Beveridge curve - USA (Q1-17 – Q4-22), Quarterly



Beveridge curve – Euro Area (Q1-17 – Q3-22), Quarterly



Unemployment rate (% of labor force) - Monthly

Civilian unemployment rate – Total – USA – Seasonally adjusted												
Indicator	02-22	03-22	04-22	05-22	06-22	07-22	08-22	09-22	10-22	11-22	12-22	01-23
Rate	3.8	3.6	3.6	3.6	3.6	3.5	3.7	3.5	3.7	3.6	3.5	3.4

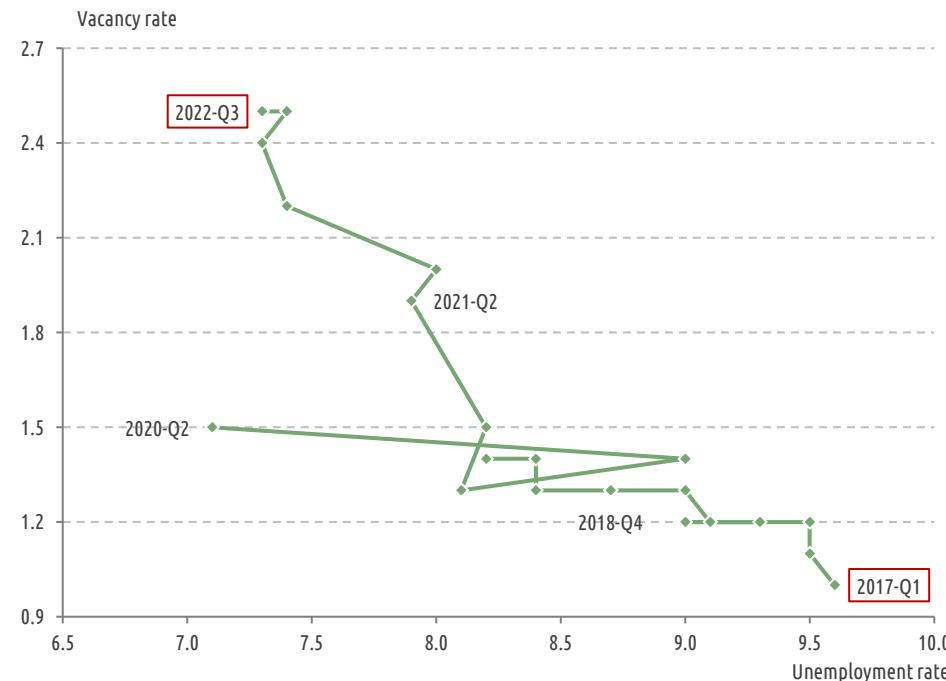
Unemployment rate (% of labor force) - Monthly

Unemployment according to ILO definition – Total – Euro area – Seasonally adjusted												
Indicator	01-22	02-22	03-22	04-22	05-22	06-22	07-22	08-22	09-22	10-22	11-22	12-22
Rate	6.9	6.8	6.8	6.7	6.7	6.7	6.6	6.7	6.7	6.6	6.6	6.6

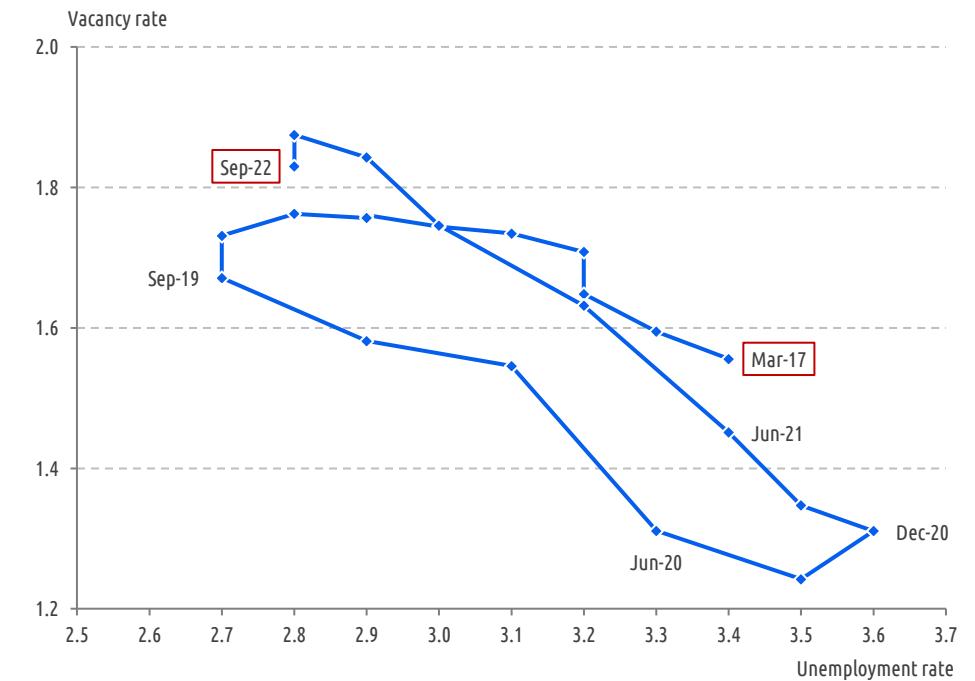
## Labor markets remain tight... (2/2)

The vacancy/unemployment ratio still at record high levels

Beveridge curve - France (Q1-17 – Q3-22), Quarterly



Beveridge curve - Germany (Q1-17 – Q3-22), Quarterly



Unemployment rate (% of labor force) – Monthly (Eurostat)

Unemployment rate – Total – France- Seasonally adjusted												
Indicator	01-22	02-22	03-22	04-22	05-22	06-22	07-22	08-22	09-22	10-22	11-22	12-22
Rate	7.3	7.3	7.4	7.5	7.6	7.6	7.3	7.2	7.1	7.1	7.0	7.1

Unemployment rate (% of labor force) - Monthly

Unemployment according to ILO definition - Total – Germany – Seasonally adjusted												
Indicator	01-22	02-22	03-22	04-22	05-22	06-22	07-22	08-22	09-22	10-22	11-22	12-22
Rate	3.2	3.1	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	2.9

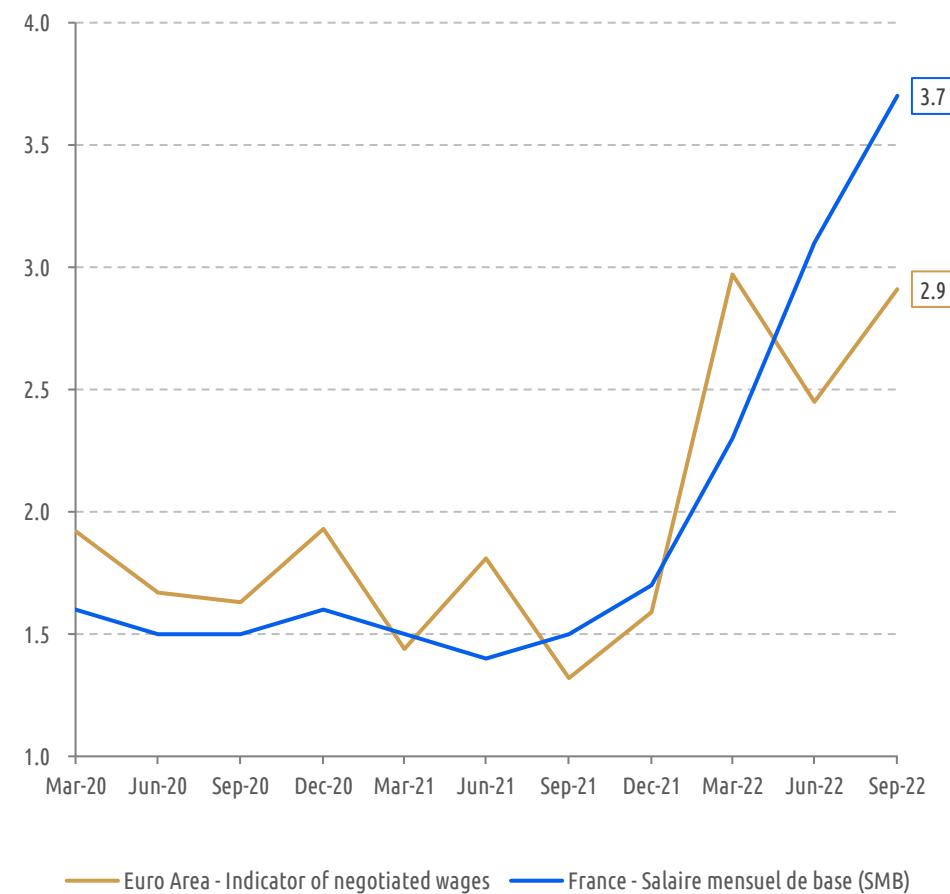
## Resulting in rising labor costs, especially in the US

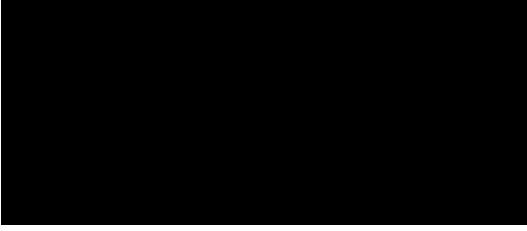
The verdict on EZ wage inflation still open

**Wage growth tracker (nominal wage growth of individuals) – US (Monthly)**



**Indicator of negotiated wages<sup>1</sup> in the Euro Area (Quarterly)**





## C Inflation unbound

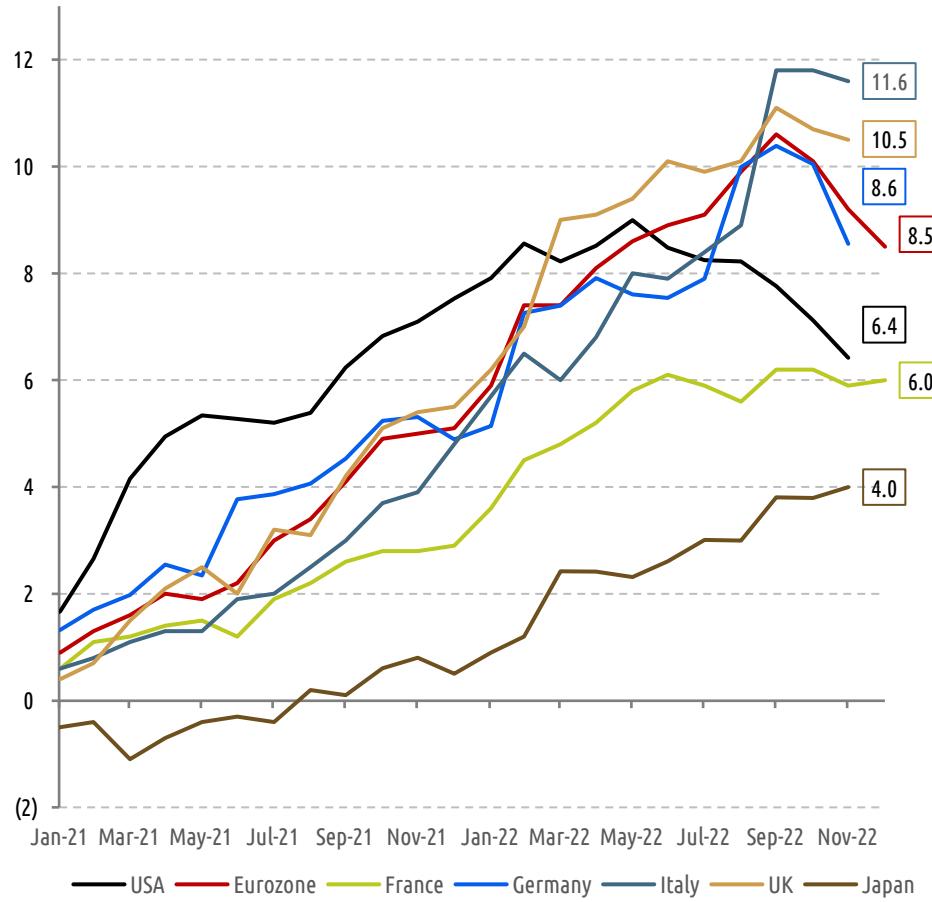
## In 2022, inflation have reached record high levels

Latest data in the US and in Europe shows that inflation has peaked in both regions, although at a higher level in the Eurozone. The latest headline US number is down to 6.5%. Core inflation is also down on a YoY basis although up on a monthly basis (from 0.2% to 0.3%)

CPI and core inflation in advanced economies (YoY % change)

Country	Monthly Year-on-Year inflation rates (%) – 2022/2023											
	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan
<b>US</b>	7.9	8.6	8.2	8.5	9.0	8.5	8.2	8.2	7.8	7.1	6.4	–
<i>US core</i>	6.4	6.4	6.1	6.0	5.9	5.9	6.3	6.7	6.3	6.0	5.7	–
<b>Euro Area</b>	5.9	7.4	7.4	8.1	8.6	8.9	9.1	9.9	10.6	10.1	9.2	8.5
<i>Euro Area core</i>	2.7	3.0	3.5	3.8	3.7	4.0	4.3	4.8	5.0	5.0	5.2	5.2
<b>France</b>	3.6	4.5	4.8	5.2	5.8	6.1	5.9	5.6	6.2	6.2	5.9	6.0
<i>France core</i>	2.5	2.5	3.2	3.7	3.7	4.3	4.7	4.5	5.0	5.3	5.3	–
<b>Germany</b>	5.1	7.3	7.4	7.9	7.6	7.5	7.9	10.0	10.4	10.0	8.6	8.7
<i>Germany core</i>	3.0	3.4	3.8	3.8	3.2	3.2	3.5	4.6	5.0	5.0	5.2	–
<b>Italy</b>	5.7	6.5	6.0	6.8	8.0	7.9	8.4	8.9	11.8	11.8	11.6	–
<i>Italy core</i>	1.7	1.9	2.4	3.2	3.8	4.1	4.4	5.0	5.3	5.6	5.8	–
<b>UK</b>	6.2	7.0	9.0	9.1	9.4	10.1	9.9	10.1	11.1	10.7	10.5	–
<i>UK core</i>	5.2	5.7	6.2	5.9	5.8	6.2	6.3	6.5	6.5	6.3	6.3	–
<b>Canada</b>	5.1	5.7	6.7	6.8	7.7	8.1	7.6	7.0	6.9	6.9	6.8	6.3
<i>Canada core</i>	3.5	3.9	4.7	4.6	5.2	5.3	5.5	5.3	5.4	5.3	5.4	5.3
<b>Japan</b>	0.9	1.2	2.4	2.4	2.3	2.6	3.0	3.0	3.8	3.8	4.0	–
<i>Japan core</i>	(0.9)	(0.7)	0.8	0.8	0.9	1.2	1.6	1.8	2.5	2.8	3.0	–

CPI Inflation (YoY % change) – since January 2021



Sources: Banque de France, Destatis, Eurostat, Bureau of Labor Statistics, Office of National Statistics, Statistics of Japan, OECD, Italian National Institute of Statistics; Statcan

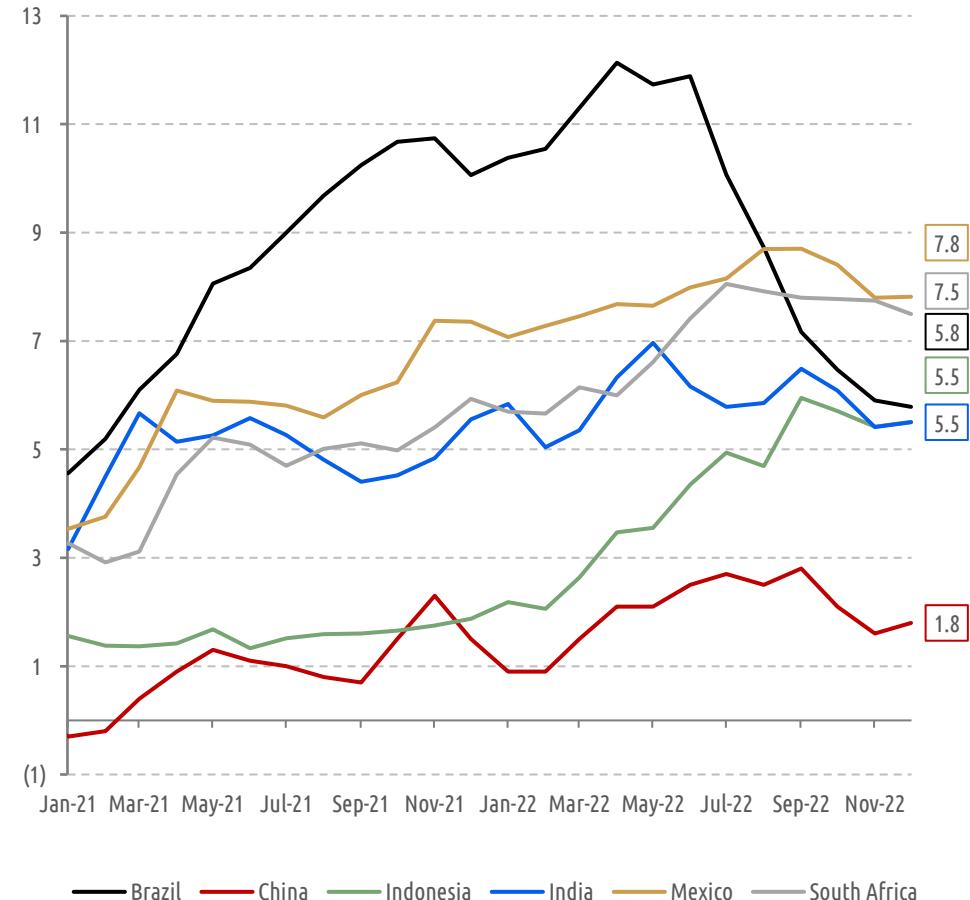
# Inflation in emerging economies

In most emerging countries, inflation also a critical problem. China an exception

CPI inflation in advanced economies (YoY % change)

Country	Monthly Year-on-Year inflation rates (%) – 2022/2023											
	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan
China	0.9	1.5	2.1	2.1	2.5	2.7	2.5	2.8	2.1	1.6	1.8	–
India	5.0	5.4	6.3	7.0	6.2	5.8	5.9	6.5	6.1	5.4	5.5	–
South Africa	5.7	6.1	6.0	6.6	7.4	8.1	7.9	7.8	7.8	7.7	7.5	–
Brazil	10.5	11.3	12.1	11.7	11.9	10.1	8.7	7.2	6.5	5.9	5.8	–
Mexico	7.3	7.5	7.7	7.7	8.0	8.2	8.7	8.7	8.4	7.8	7.8	–
Indonesia	2.1	2.6	3.5	3.6	4.3	4.9	4.7	6.0	5.7	5.4	5.5	–

CPI Inflation (YoY % change) – since January 2021



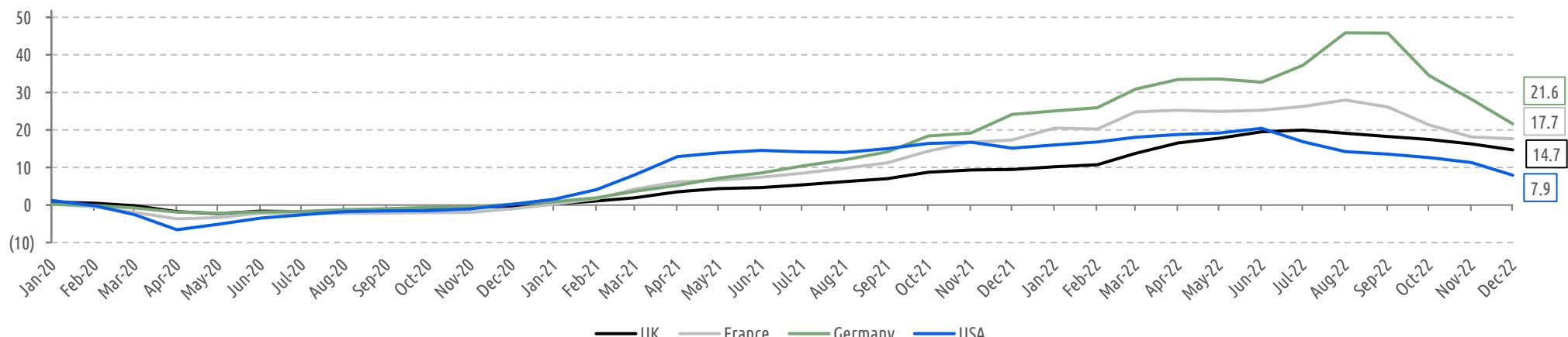
# Producer price index for the G4 countries<sup>1</sup>

Producer price inflation are still way above consumer inflation

Producer price index for industrial products in France, Germany, the UK and the US (YoY % change) – Since Feb. 2022

Producer price index for industrial products in France, Germany, the UK and the US (YoY % change) – Since Feb. 2022												
Country	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan
US	16.0	16.8	18.0	18.8	19.2	20.4	16.9	14.3	13.6	12.6	11.4	7.9
Germany	25.9	30.9	33.5	33.6	32.7	37.2	45.8	45.8	34.5	28.2	21.6	–
France	20.2	24.8	25.2	25.0	25.3	26.2	27.9	26.1	21.3	18.1	17.7	–
UK	10.7	13.7	16.6	17.8	19.5	19.9	19.1	18.3	17.5	16.3	14.7	–

Producer price index for industrial products in France, Germany, the UK and the US (YoY % change) – Since Jan. 2020



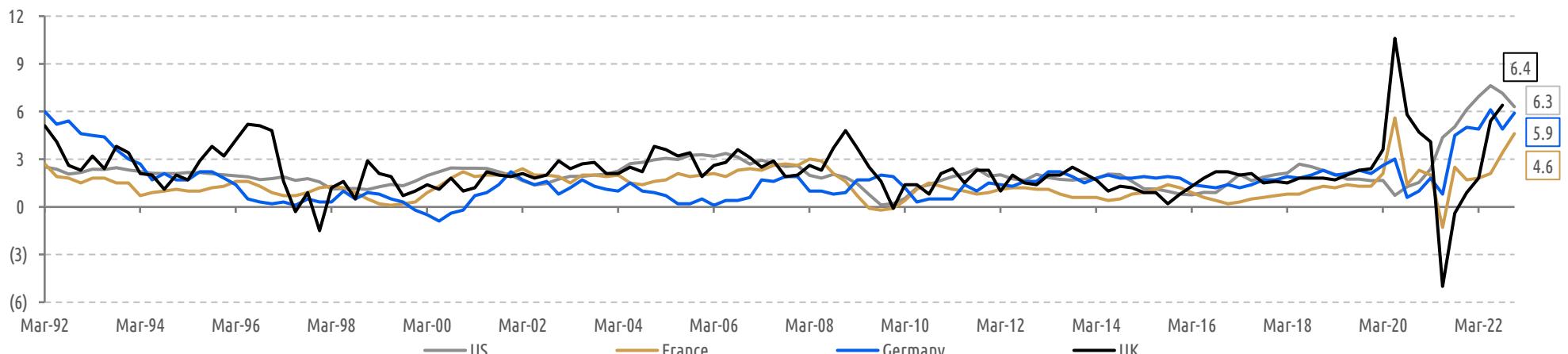
## Implied GDP deflator in G4 countries<sup>1</sup>

Implied GDP deflators have also sharply increased although to a lesser extent than headline inflation

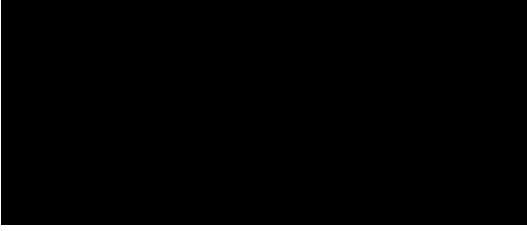
Quarterly implied GDP deflator – Since Q1-2021

Country	Implied GDP deflator (YoY % change) – Since Q1-2021								
	Q1-21	Q2-21	Q3-21	Q4-21	Q1-22	Q2-22	Q3-22	Q4-22	
US	2.4	4.4	5.0	6.1	6.9	7.6	7.1	6.3	
Germany	1.8	0.8	4.5	5.0	4.9	6.1	4.9	5.9	
France	2.0	(1.3)	2.5	1.7	1.8	2.1	3.4	4.6	
UK	4.1	(5.0)	(0.4)	0.9	1.8	5.4	6.4	-	

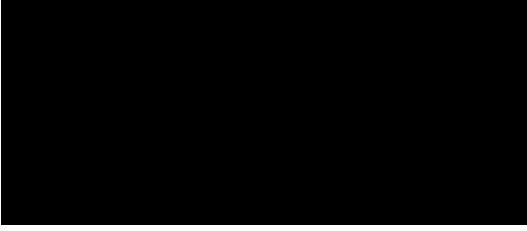
Quarterly implied GDP deflator – Since Q1-1992



Sources: Eurostat, Bureau of Economic Analysis, Office of National Statistics, Insee  
Note: G4 includes France, Germany, US and UK



## II    Monetary policy



## A In the US

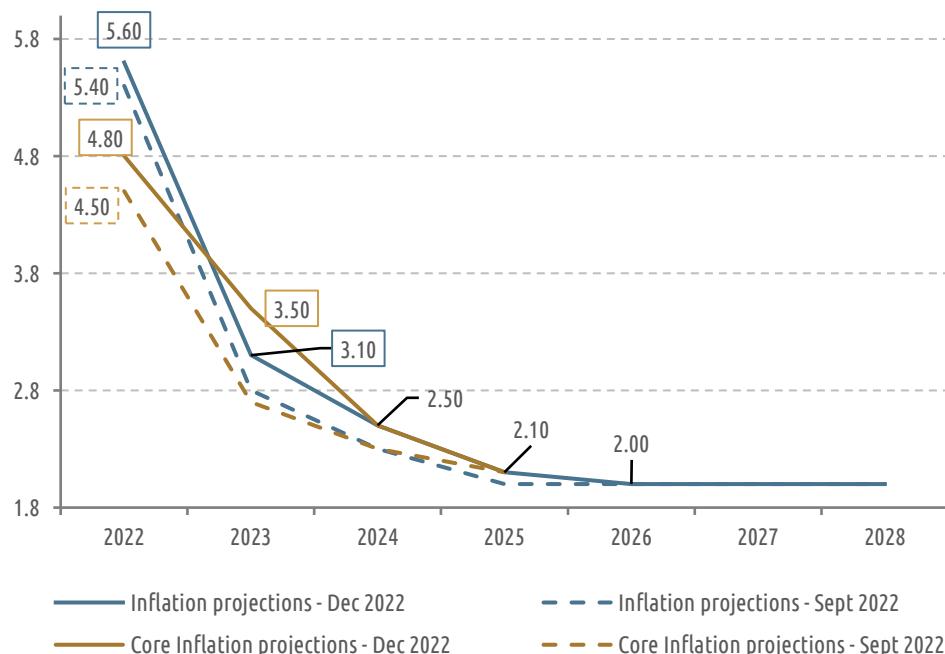
## Monetary Policy Decisions from the Fed (1/2)

As expected, Fed has raised rates by 25 bps, a shift from a massive tightening of its monetary policy during the last 5 months. However, Chairman Powell warned that ongoing increases would be needed to bring inflation under control.

### Personal consumption expenditures (PCE) – Monthly (YoY % change)

Indicator	Price indexes for Personal Consumption Expenditures						
	06-22	07-22	08-22	09-22	10-22	11-22	12-22
PCE inflation	7.0	6.4	6.3	6.3	6.1	5.5	5.0

### PCE Inflation Projections as of December 2022 (%)



### Key considerations

- The target range of the federal fund rates was lifted from 4.25%-4.50% to 4.50%-4.75% on February 1<sup>st</sup>
- "The Committee would be prepared to adjust the stance of monetary policy as appropriate if risks emerge that could impede the attainment of the Committee's goals"
- This increase is a shift from the tightening that marked a 4-month in a row 75-bps increase followed by a 50-bps increase at the end of 2022
- Next meeting will be on March 22<sup>nd</sup>. Another 25-bps hike is expected

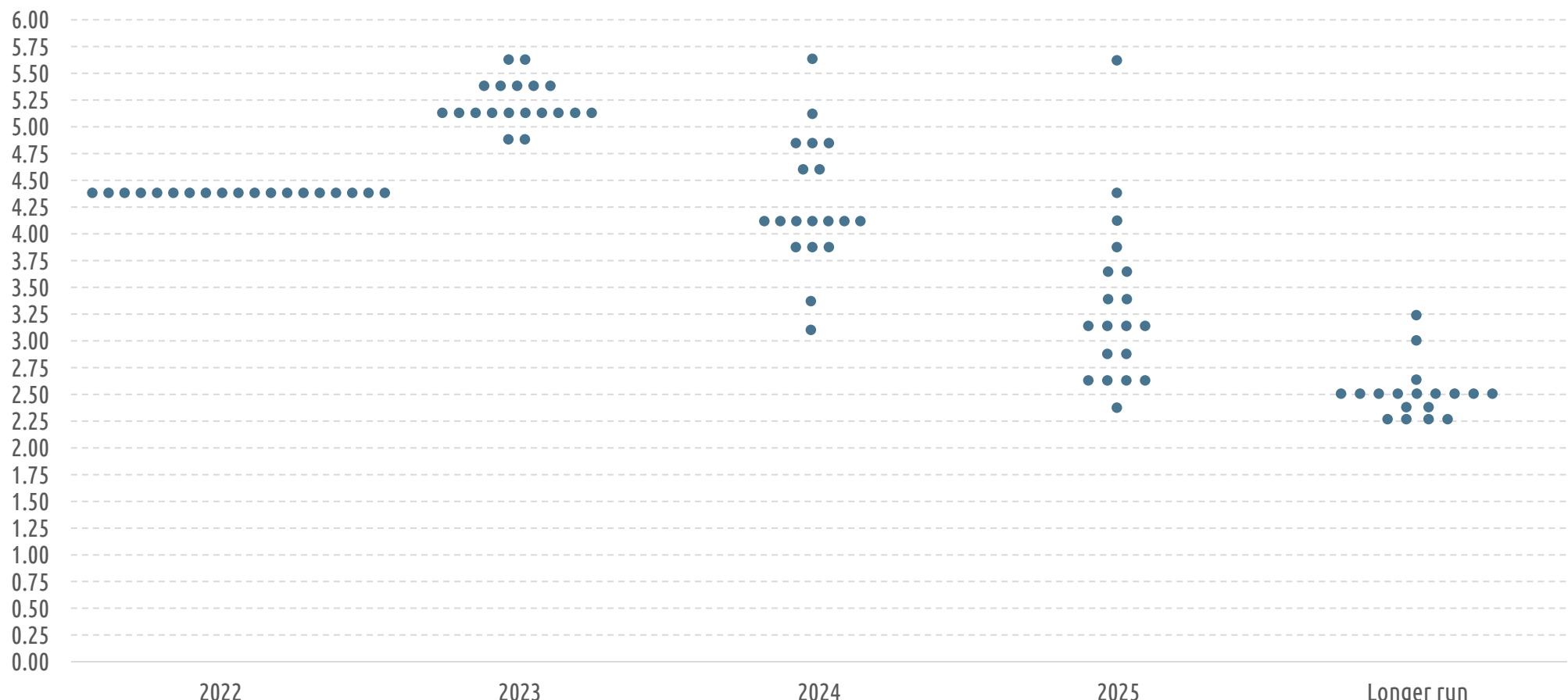
Federal Reserve economic projections as of 14 December 2022				
Indicator	2022	2023	2024	2025
Change in real GDP	0.5	0.5	1.6	1.8
Unemployment rate	3.7	4.6	4.6	4.5
Inflation	5.6	3.1	2.5	2.1
Federal funds rate	4.4	5.1	4.1	3.1

“The Committee decided to raise interest rates by 25 basis points today, continuing the step down from last year’s rapid pace of increases”

## Monetary Policy Decisions from the Fed (2/2)

The Federal Reserve's so-called dot plot shows the median year-end projection for the federal fund rates. The estimate for the end of 2023 is 5.3% implying an additional 100 bps increase

FOMC participants' assessments of appropriate monetary policy: Midpoint of target range or target level for the federal funds rate as of 14 December



Source: Fed as of 14/12/2022

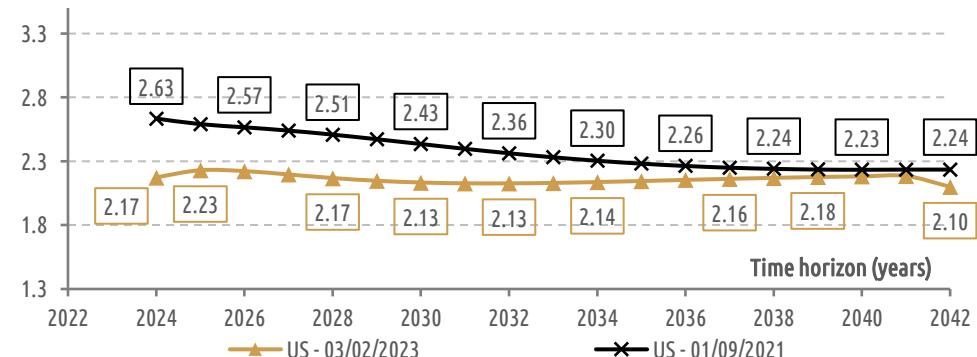
Note: Each shaded circle indicates the value (rounded to the nearest 1/8 percentage point) of an individual participant's judgment of the midpoint of the appropriate target range for the federal funds rate or the appropriate target level for the federal funds rate at the end of the specified calendar year or over the longer run. One participant did not submit longer-run projections for the federal funds rate.

## Long-term rates fell after the FOMC meeting but rose after the US jobs report

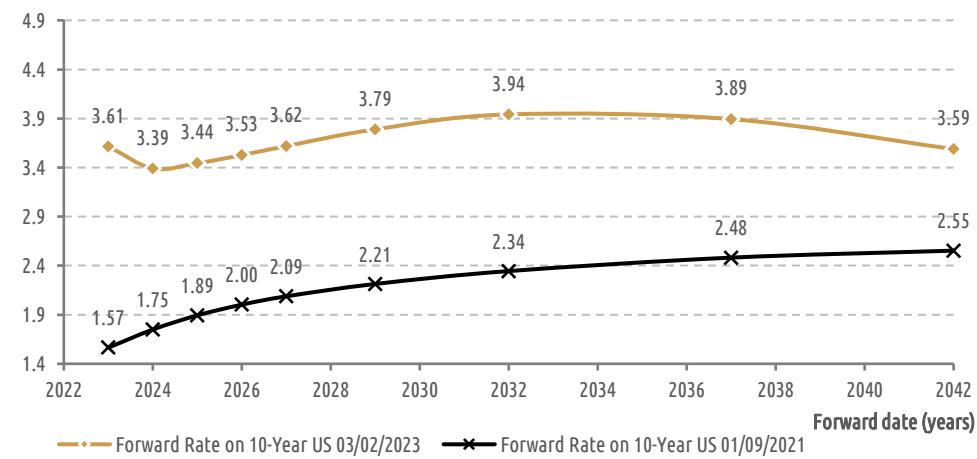
**10-Y Nominal yield – US**



**Inflation Expectations – US (%)**



**Forward Rates on 10-Year U.S. Treasuries (%)**



Source: Fed as of 09/02/2023, Internal calculations

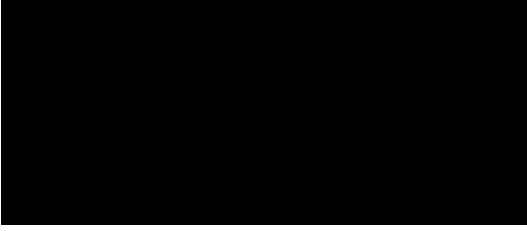
Note: Inflation expectations are derived from US indexed bonds (TIPS) and US nominal bonds

## The US yield curve is inverted, harbinger of a recession

Prior similar episodes include 2008, 2002, 1992, 1983 and 1981

**U.S. 10Yr/2Yr Spread – Since Jan. 1978**



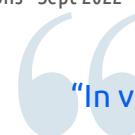
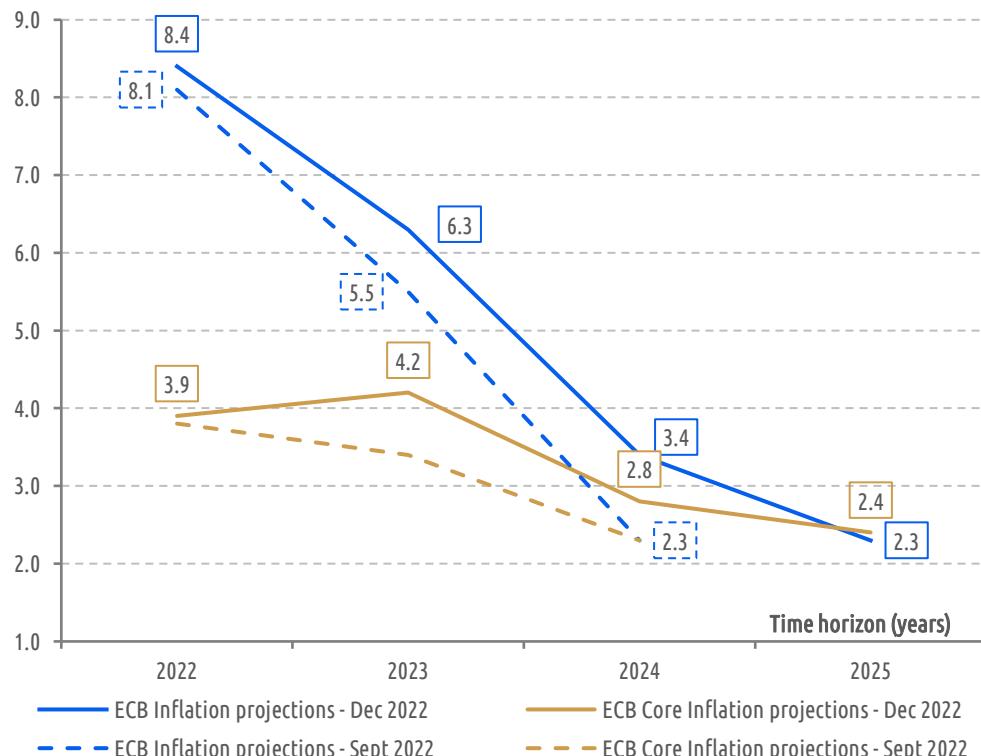


## B In the Euro Area

# The ECB has raised its interest rates by 50 bps in February as underlying price pressures remain strong

President Lagarde has admitted eurozone price pressures may rise again in early 2023, reflecting Europe's stickier inflation problem

CPI and core inflation expectations & projections as of July 2022 (%)



**"In view of the underlying inflation pressures, we intend to raise interest rates by another 50 basis points at our next monetary policy meeting in March"**

## Key considerations

- The Governing Council decided to raise the three key ECB interest rates by 50 basis points, following a 50-bps increase in December and two 75-bps hikes in October and September
- Looking ahead, ECB staff have significantly revised in December their inflation projections up and inflation is now expected to average 8.4% in 2022, 6.3% in 2023, 3.4% in 2024 and 2.4% in 2025
- The interest rate on the main refinancing operations has been lifted-up to 3.00%. The benchmark deposit rate is set at 2.5%, its highest level since the 2008 global financial crisis
- **The next meeting is set on March 16<sup>th</sup>. Another 50-bps hike is expected**

ECB economic projections as of 14 December 2022				
Indicator	2022	2023	2024	2025
Change in real GDP	3.4	0.5	1.9	1.8
Unemployment rate	6.7	6.9	6.8	6.6
Inflation	8.4	6.3	3.4	2.3

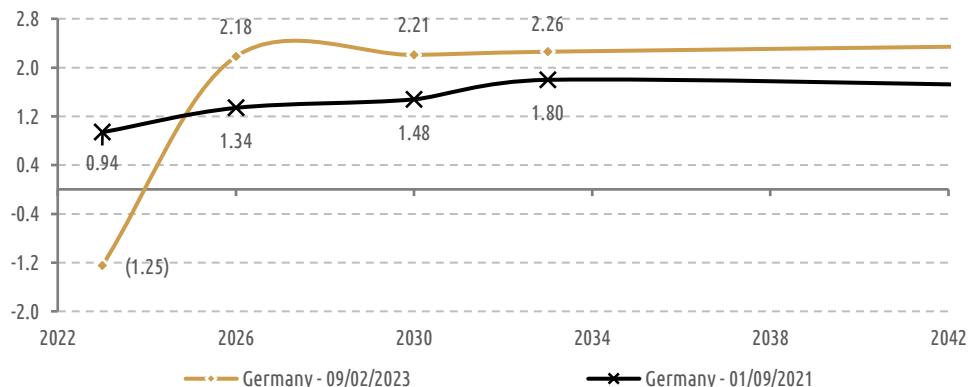
## In the Eurozone, the German bund's rally seems to be over

Expected real rates near zero in the longer run

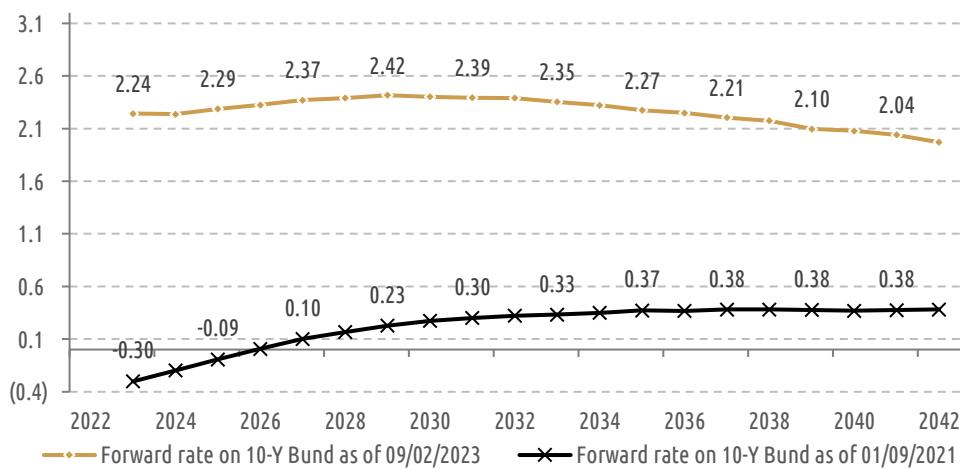
10-Y Nominal yield – German Bund



Inflation Expectations<sup>1</sup> - Germany (%)



Forward Rates on 10-Year German Bund (%)



## The German yield curve is getting (moderately) inverted for the first time since 2008, reflecting fear of recession/sluggish growth in 2023

Bund 2Yr/10Yr Spread – Since Jan 1998

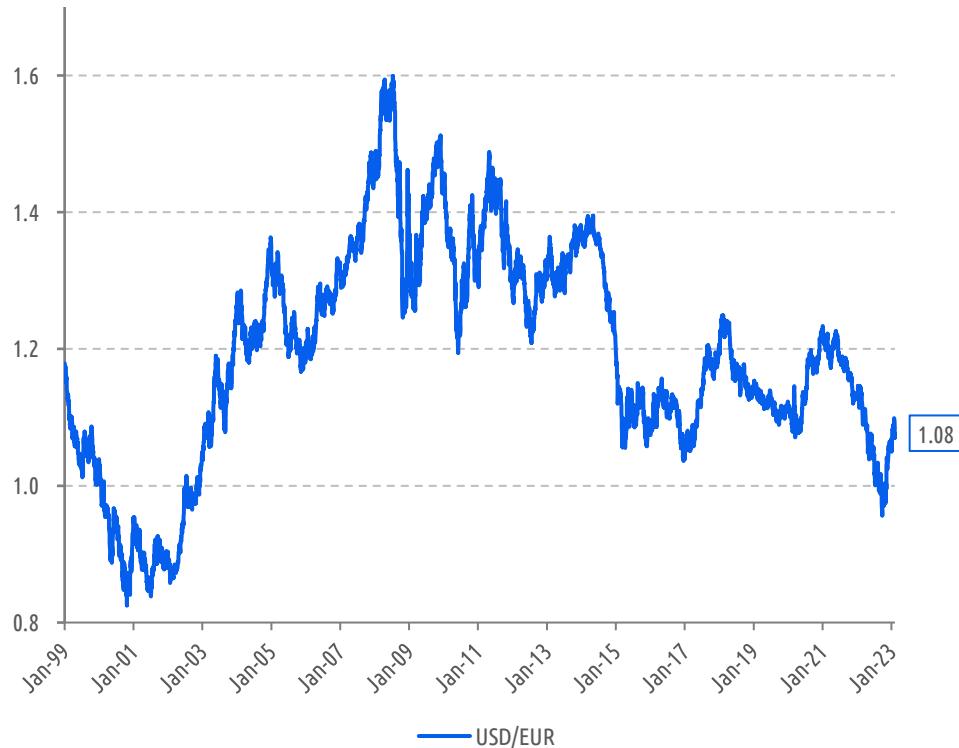


Source: Bundesbank as of 09/02/2023

## The Euro has weakened for most of the year 2022, staging a recovery in the final months

However, latest US jobs report altered the recovery

Nominal Foreign exchange rate in historical perspective – Since Jan. 2020

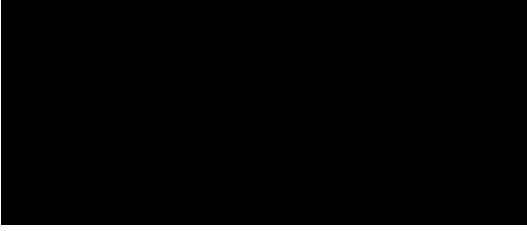


Nominal Foreign exchange rate in historical perspective – Since Jan. 2022



"The level of the euro matters significantly for imported inflation, [...]. A euro that is too weak would go against our price stability objective"

BANQUE DE FRANCE VILLEROY DE GALHAU, 06 MAY

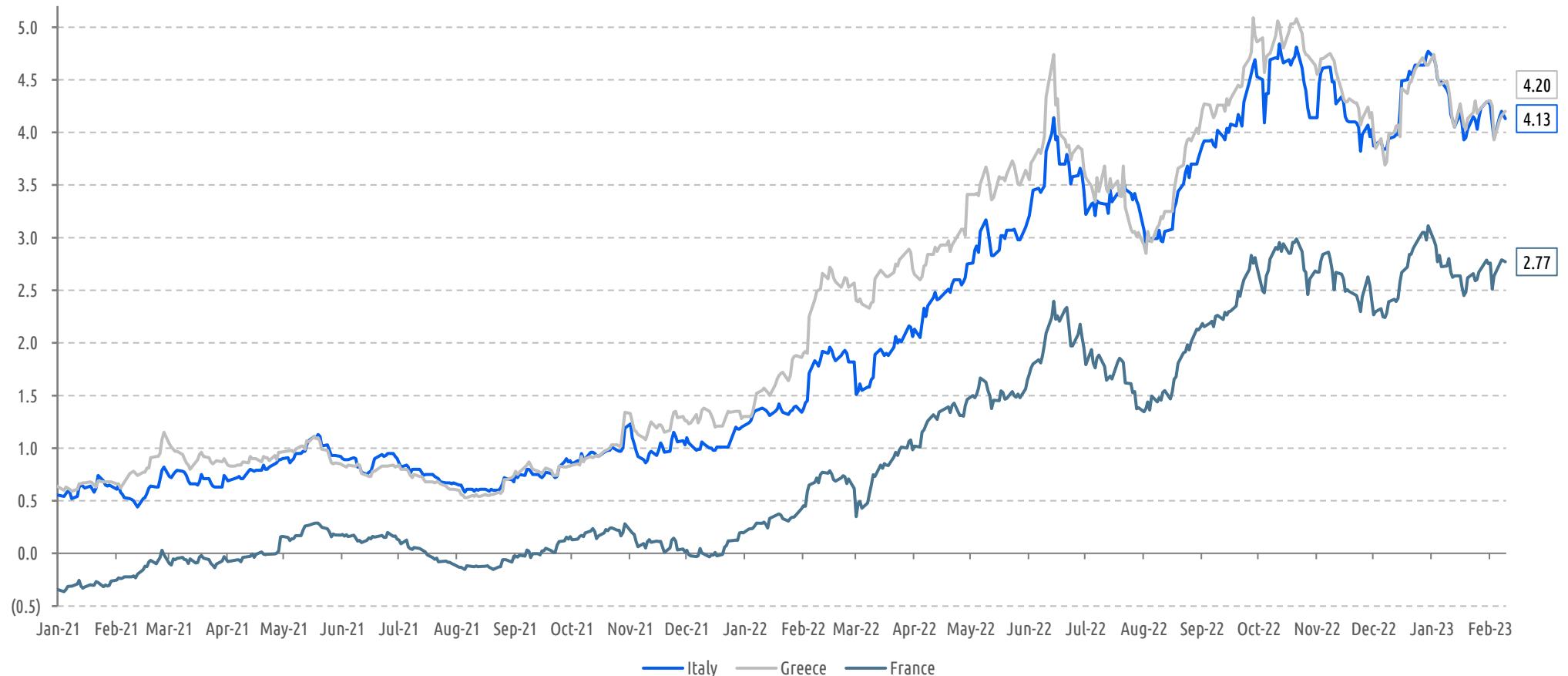


### III Impact on yields and spreads

## In Europe, sovereign yields have plateaued at high levels

Upward in response to the ECB hawkish message and downward following US inflation news

**Italian, Greek and French 10-Y yields – Since Jan. 2021**

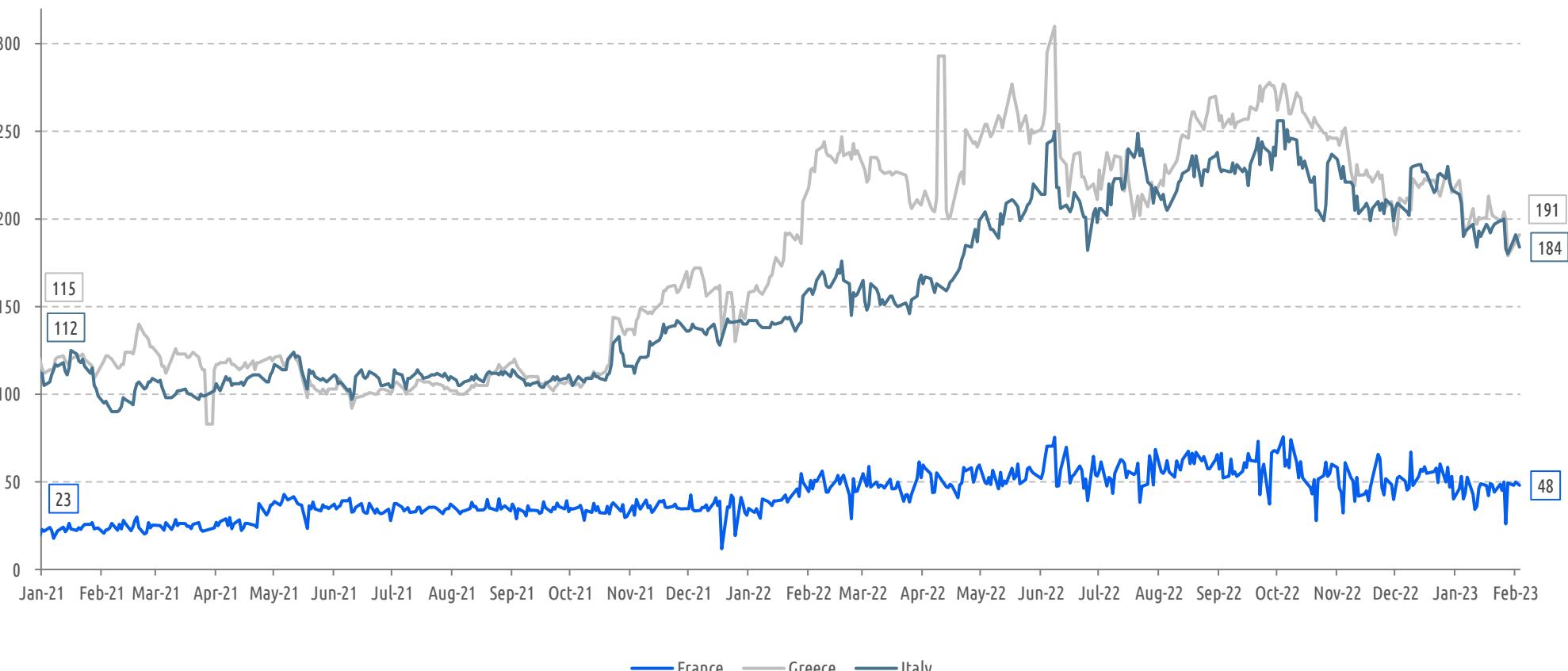


Sources: Banque de France as of 09/02/2023, Eurostat as of 09/02/2023

## Tensions on spreads have slightly eased off

**Italian, Greek and French spreads over 10Y German bund – Since Jan. 2021**

In bps



Sources: Banque de France as of 09/02/2023, Bundesbank as of 09/02/2023, Eurostat as of 09/02/2023, Internal calculations

## High yield corporate bond spreads moderately declining from high levels

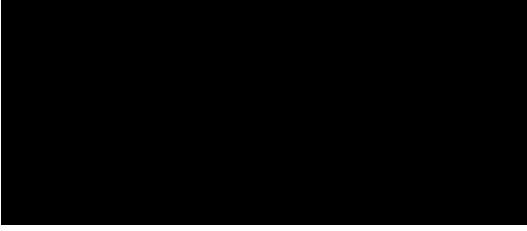
Spreads for corporate bonds<sup>1</sup> in the US and in Europe have increased since the beginning of 2022 and are now c. 100-200 bps above their pre Covid-19 crisis level

**High yield corporate bond spreads – Since 2000**



**High yield corporate bond spreads – Since 2022**



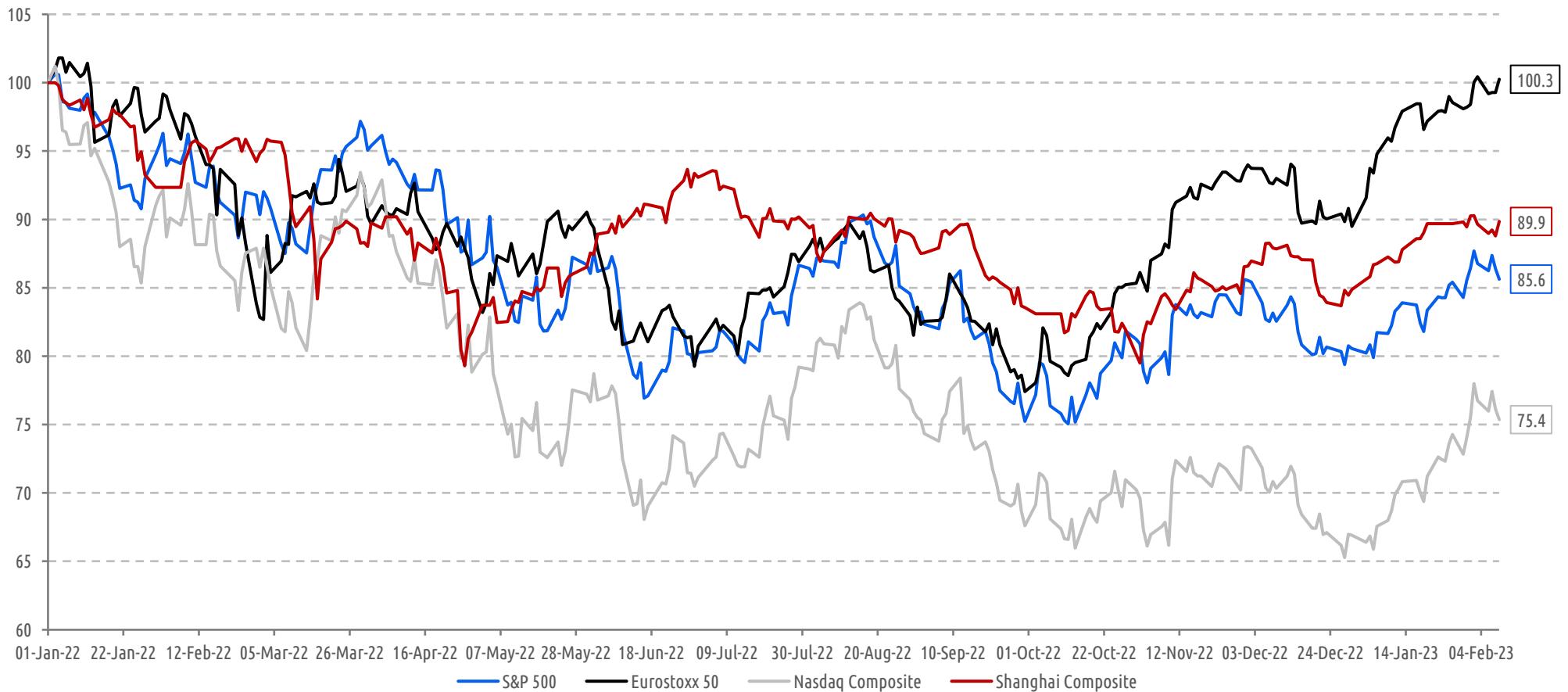


## IV Impact on stock markets

## Stock market prices recovering from post war trough especially in Europe

But pausing in recent weeks

Nasdaq Composite, S&P 500, Shanghai Composite and Eurostoxx 50 indices – Jan. 2022 = 100



Sources: Boursorama, S&P Dow Jones as of 09/02/2023

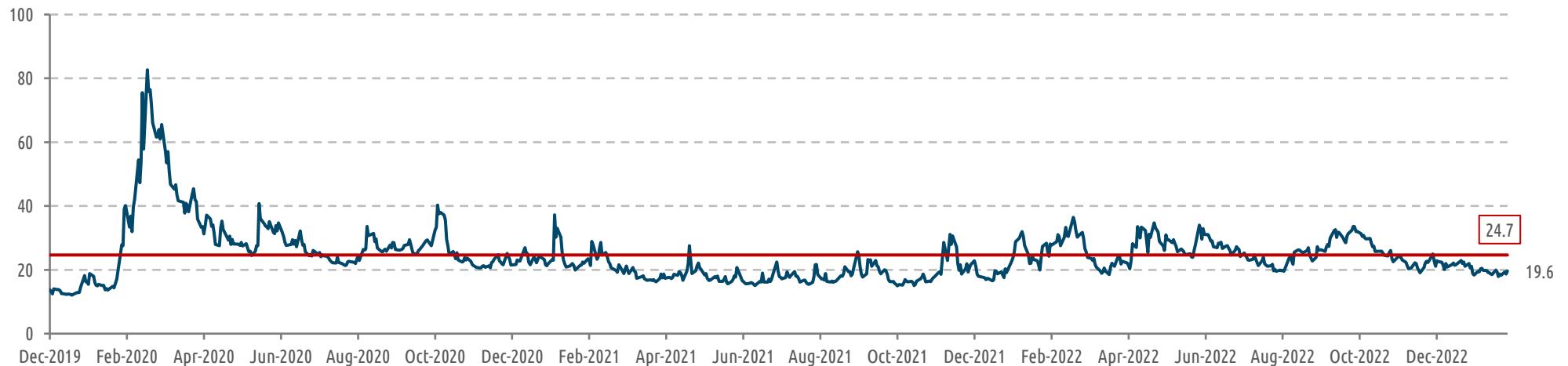
## Volatility on US financial markets are (moderately) edging up

But slightly falling down

VIX index – Since 2000

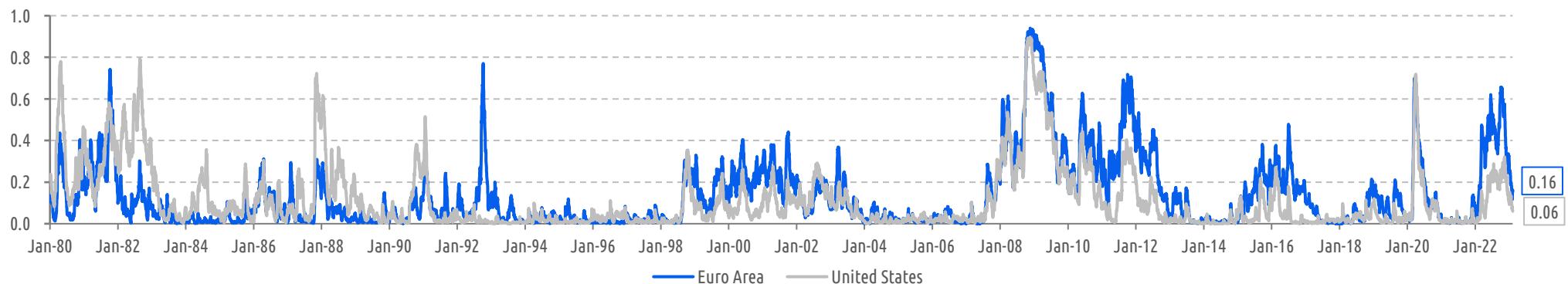


VIX index – Since 2020

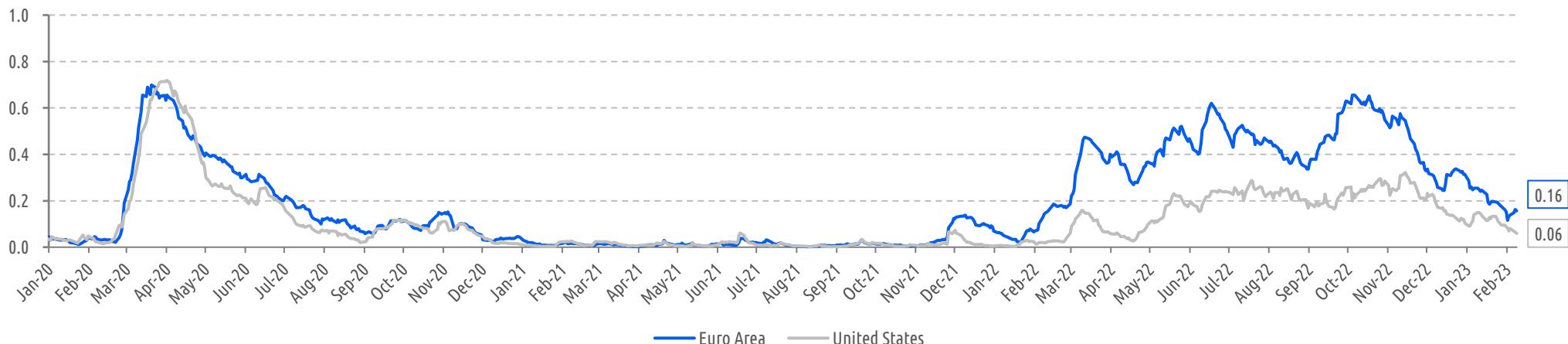


## Financial stress indicators are easing up from high levels

**Composite Indicator of Systemic Stress (daily) – Since Jan. 1980**



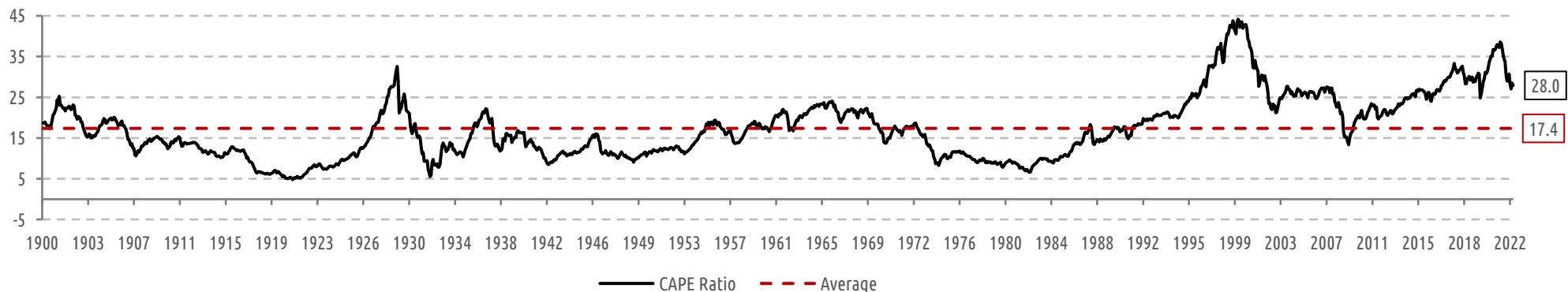
**Composite Indicator of Systemic Stress (daily) – Since Jan. 2020**



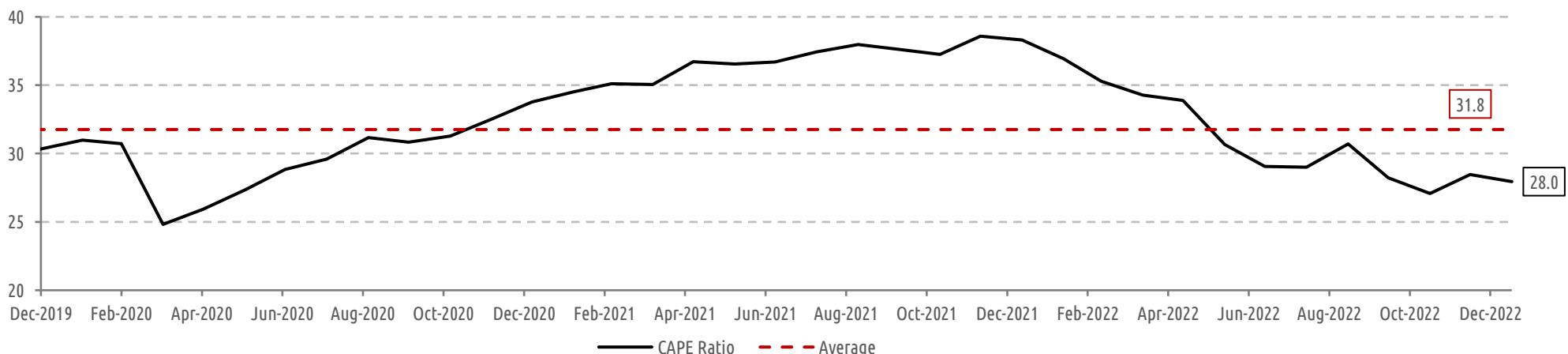
## US Shiller Cyclically Adjusted Price to Earnings ratio (CAPE ratio)<sup>1</sup>

Shiller CAPE ratio remains at record high level in historical perspective and still slightly below pre-crisis level

Cyclically Adjusted Price Earnings ratio – Since 1900



Cyclically Adjusted Price Earnings ratio – Since 2020



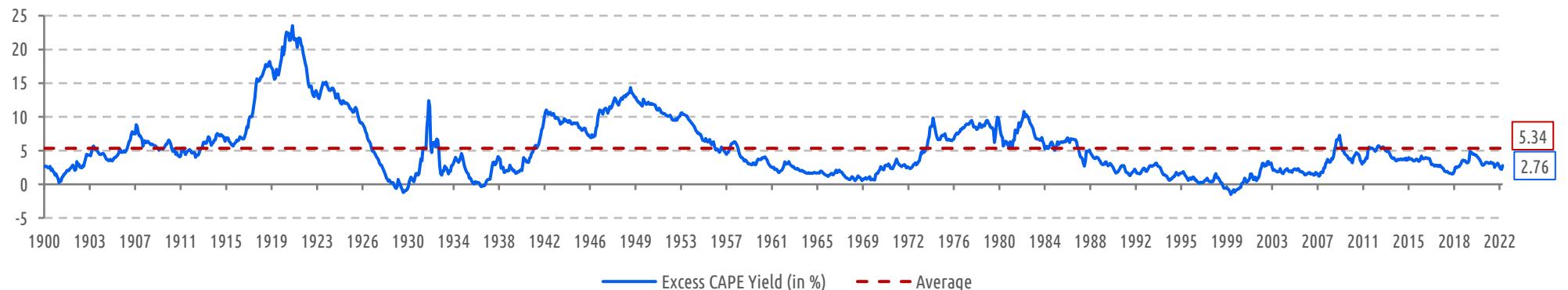
Source: Robert Shiller (last data available – Dec 22)

Note: CAPE divide current prices to 10Y average of earnings (adjusted for inflation)

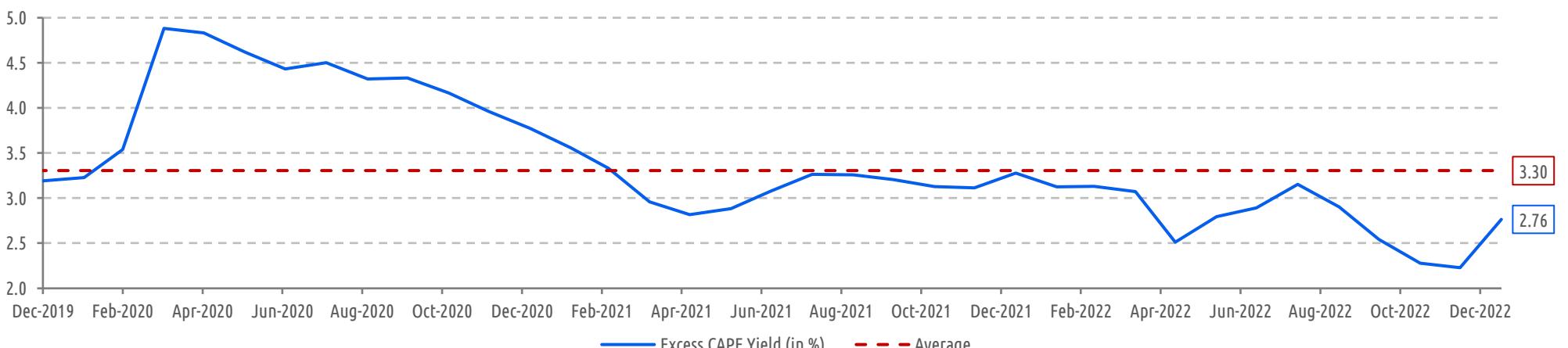
## Shiller excess CAPE return index remains at moderate level in the US

Trending down after the peak due to the Russian invasion

**Excess Cyclically Adjusted Price Earnings return – Since 1900**



**Excess Cyclically Adjusted Price Earnings return – Since 2020**



Source: Robert Shiller (last data available – Dec 22)

Note: Excess return is measured as average earning-to-price minus real interest rates

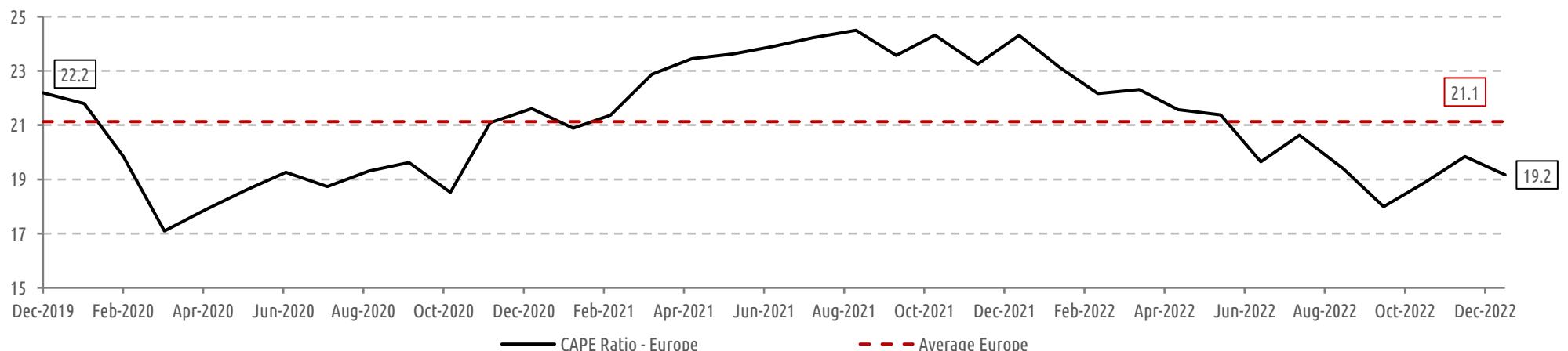
## Shiller CAPE ratio in Europe

Shiller CAPE ratio is still close to its pre-Covid level and to its historical average

Cyclically Adjusted Price Earnings ratio – Since 1982



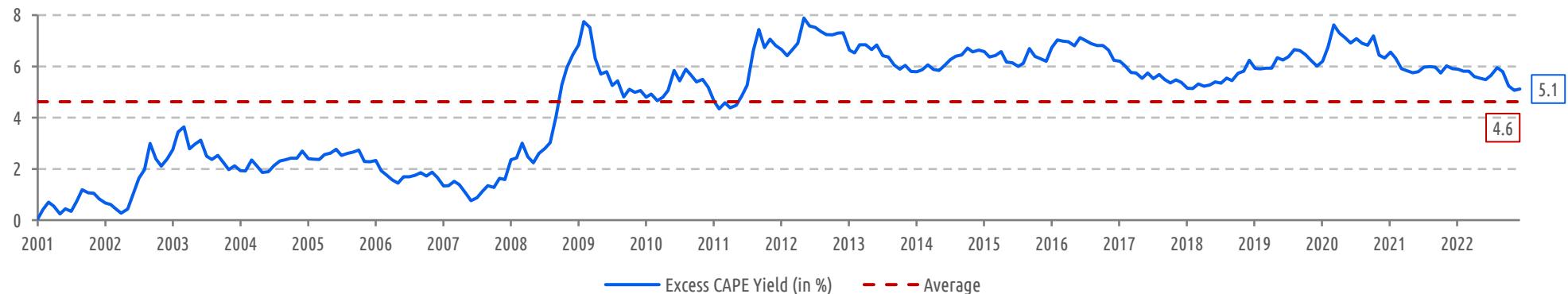
Cyclically Adjusted Price Earnings ratio – Since 2020



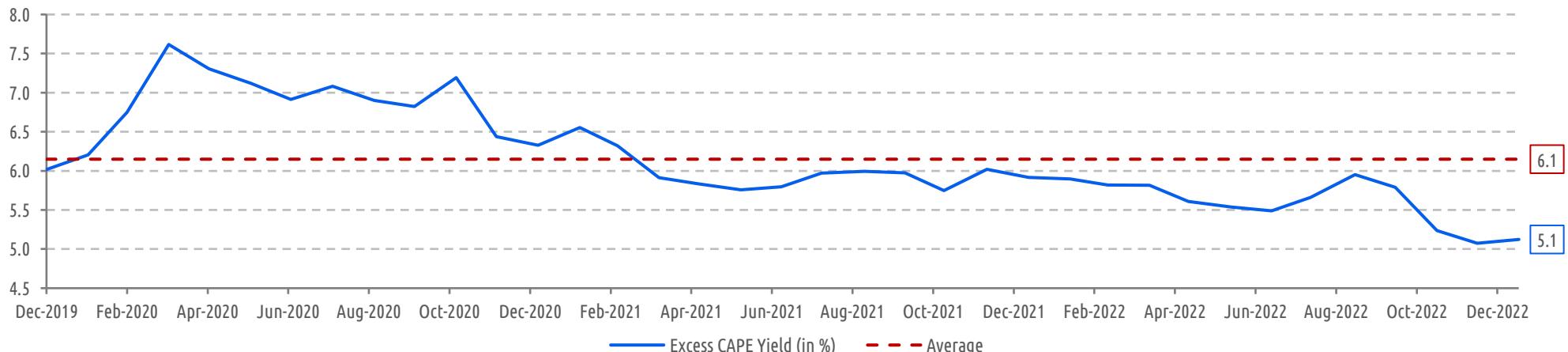
Source: Barclays (last data available – Dec. 22)

## Shiller excess CAPE return index in the Euro Area back to historical average

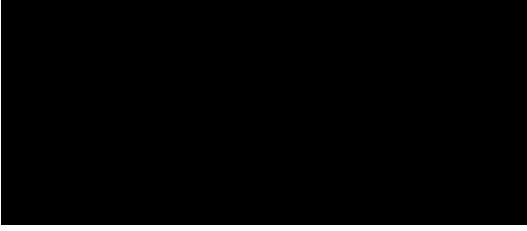
**Excess Cyclically Adjusted Price Earnings return – Since 2006**



**Excess Cyclically Adjusted Price Earnings return – Since 2020**



Sources: Barclays (last data available – Dec. 22), Eurostat, Bundesbank, Robert Shiller, Internal calculations



## V Appendix

## Links to DBnomics data

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4	Quarterly GDP growth (% change over the previous period) – Germany	<a href="#">OECD/KEI/NAEXKP01.DEU.GP.Q</a>
4	Quarterly GDP growth (% change over the previous period) – Eurozone	<a href="#">OECD/KEI/NAEXKP01.EA19.GP.Q</a>
4	Quarterly GDP growth (% change over the previous period) – France	<a href="#">OECD/KEI/NAEXKP01.FRA.GP.Q</a>
4	Quarterly GDP growth (% change over the previous period) – UK	<a href="#">OECD/KEI/NAEXKP01.GBR.GP.Q</a>
4	Quarterly GDP growth (% change over the previous period) – Italy	<a href="#">OECD/KEI/NAEXKP01.ITA.GP.Q</a>
4	Quarterly GDP growth (% change over the previous period) – Japan	<a href="#">OECD/KEI/NAEXKP01.JPN.GP.Q</a>
4	Quarterly GDP growth (% change over the previous period) – US	<a href="#">OECD/KEI/NAEXKP01.USA.GP.Q</a>
4	Yearly GDP growth rate (YoY % change) – Canada	<a href="#">OECD/EO/CAN.GDPV_ANNPCT.A</a>
4	Yearly GDP growth rate (YoY % change) – Germany	<a href="#">OECD/EO/DEU.GDPV_ANNPCT.A</a>
4	Yearly GDP growth rate (YoY % change) – France	<a href="#">OECD/EO/FRA.GDPV_ANNPCT.A</a>
4	Yearly GDP growth rate (YoY % change) – UK	<a href="#">OECD/EO/GBR.GDPV_ANNPCT.A</a>
4	Yearly GDP growth rate (YoY % change) – Italy	<a href="#">OECD/EO/ITA.GDPV_ANNPCT.A</a>
4	Yearly GDP growth rate (YoY % change) – Japan	<a href="#">OECD/EO/JPN.GDPV_ANNPCT.A</a>

## Links to DBnomics data

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4	Yearly GDP growth rate (YoY % change) – Eurozone	<a href="#">OECD/EO/EA17.GDPV_ANNPCT.A</a>
4	OECD Weekly growth tracker – Eurozone	<a href="#">OECD/GDP_GROWTH/W.Eurozone.tracker_yoy</a>
4	OECD Weekly growth tracker – United States	<a href="#">OECD/GDP_GROWTH/W.USA.tracker_yoy</a>
5	Quarterly GDP growth (% change over the previous period) – China	<a href="#">OECD/DP_LIVE/CHN.QGDP.TOT.PC_CHGPP.Q</a>
5	Quarterly GDP growth (% change over the previous period) – Brazil	<a href="#">OECD/KEI/NAEXKP01.BRA.GP.Q</a>
5	Quarterly GDP growth (% change over the previous period) – Mexico	<a href="#">OECD/KEI/NAEXKP01.MEX.GP.Q</a>
5	Quarterly GDP growth (% change over the previous period) – South Africa	<a href="#">OECD/KEI/NAEXKP01.ZAF.GP.Q</a>
5	Quarterly GDP growth (% change over the previous period) – Indonesia	<a href="#">OECD/KEI/NAEXKP01.IDN.GP.Q</a>
5	Quarterly GDP growth (% change over the previous period) – India	<a href="#">OECD/KEI/NAEXKP01.IND.GP.Q</a>
5	Yearly GDP growth rate (YoY % change) – Brazil	<a href="#">OECD/EO/BRA.GDPV_ANNPCT.A</a>
5	Yearly GDP growth rate (YoY % change) – Mexico	<a href="#">OECD/EO/MEX.GDPV_ANNPCT.A</a>
5	Yearly GDP growth rate (YoY % change) – South Africa	<a href="#">OECD/EO/ZAF.GDPV_ANNPCT.A</a>
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5	OECD Weekly growth tracker – Brazil	<a href="#">OECD/GDP_GROWTH/W.BRA.tracker_yoy</a>
5	OECD Weekly growth tracker – Mexico	<a href="#">OECD/GDP_GROWTH/W.MEX.tracker_yoy</a>
5	OECD Weekly growth tracker – South Africa	<a href="#">OECD/GDP_GROWTH/W.ZAF.tracker_yoy</a>
5	OECD Weekly growth tracker – Indonesia	<a href="#">OECD/GDP_GROWTH/W.IDN.tracker_yoy</a>
5	OECD Weekly growth tracker – India	<a href="#">OECD/GDP_GROWTH/W.IND.tracker_yoy</a>
6	General government debt - Germany	<a href="#">Eurostat/gov_10dd_edpt1/A.PC_GDP.S13.GD.DE</a>
6	General government debt – France	<a href="#">Eurostat/gov_10dd_edpt1/A.PC_GDP.S13.GD.FR</a>
6	General government debt – United Kingdom	<a href="#">ONS/EDP2/YEQJ.A</a>
6	General government debt – Italy	<a href="#">Eurostat/gov_10dd_edpt1/A.PC_GDP.S13.GD.IT</a>
6	General government debt – United States	<a href="#">OECD/DP_LIVE/USA.GGDEBT.TOT.PC_GDP.A</a>
6	General government deficit – Germany	<a href="#">OECD/DP_LIVE/DEU.GGNLEND.TOT.PC_GDP.A</a>
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6	General government deficit – United States	<a href="#">OECD/DP_LIVE/USA.GGNLEND.TOT.PC_GDP.A</a>
7	Consumer confidence index – United States	<a href="#">OECD/MEI_CLI/CSCICP03.USA.M</a>
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7	Consumer confidence index – United Kingdom	<a href="#">OECD/MEI_CLI/CSCICP03.GBR.M</a>
7	Business confidence index – United States	<a href="#">OECD/MEI_CLI/BSCICP03.USA.M</a>
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7	Business confidence index – France	<a href="#">OECD/MEI_CLI/BSCICP03.FRA.M</a>
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9/10	Natural Gas (Dutch TTF) prices in historical perspective (€/MWh)	<a href="#">ICE/DUTCH_TTF_GAS_FUTURES/D.5477499</a>
12	% of EU business reporting shortages of materials and equipment in the construction industry as a limiting production factor	<a href="#">EC/CONSTRUCTION/TOT.2.F5S.EU.M</a>
13	Beveridge curve – Euro Area (Q1-17 – Q2-22), Quarterly	<a href="#">Eurostat/une_rt_q/Q.NSA.Y20-64.PC_POP.T.EA19</a> <a href="#">Eurostat/jvs_q_nace2/Q.NSA.B-S.TOTAL.JOBRATE.EA19</a>

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15	Wage growth tracker – France (Quarterly)	<a href="INSEE/ICT-2016/T.BDM_EUR.ICT.A21-BTN.INDICE.SSE.FE.SO.CVS-CJO.2016">INSEE/ICT-2016/T.BDM_EUR.ICT.A21-BTN.INDICE.SSE.FE.SO.CVS-CJO.2016</a>
16	CPI Inflation (YoY % change) – United States	<a href="BLS/cu/CUSR0000SA0">BLS/cu/CUSR0000SA0</a> <a href="BLS/cu/CUSR0000SA0L1E">BLS/cu/CUSR0000SA0L1E</a>
16	CPI Inflation (YoY % change) – Eurozone	<a href="Eurostat/prc_hicp_manr/M.RCH_A.CP00.EA">Eurostat/prc_hicp_manr/M.RCH_A.CP00.EA</a> <a href="Eurostat/prc_hicp_manr/M.RCH_A.TOT_X_NRG FOOD.EA">Eurostat/prc_hicp_manr/M.RCH_A.TOT_X_NRG FOOD.EA</a>
16	CPI Inflation (YoY % change) – France	<a href="INSEE/IPC-2015/M.IPC.SO.SO.4035.GLISSEMENT_ANNUEL.ENSEMBLE.FE.POURCENT.BRUT.SO.FALSE">INSEE/IPC-2015/M.IPC.SO.SO.4035.GLISSEMENT_ANNUEL.ENSEMBLE.FE.POURCENT.BRUT.SO.FALSE</a>
16	CPI Inflation (YoY % change) – Germany	<a href="DESTATIS/61111BM001/DG.PREIS1">DESTATIS/61111BM001/DG.PREIS1</a> <a href="DESTATIS/61111BM006/DG.CC13-63E.PREIS1">DESTATIS/61111BM006/DG.CC13-63E.PREIS1</a>
16	CPI Inflation (YoY % change) – United Kingdom	<a href="ONS/MM23/D7G7.M">ONS/MM23/D7G7.M</a> <a href="ONS/MM23/DK08.M">ONS/MM23/DK08.M</a>
16	CPI Inflation (YoY % change) – Japan	<a href="STATJP/CPIm/001">STATJP/CPIm/001</a> <a href="STATJP/CPIm/740">STATJP/CPIm/740</a>
17	CPI Inflation (YoY % change) - Brazil	<a href="OECD/KEI/CPALTT01.BRA.GY.M">OECD/KEI/CPALTT01.BRA.GY.M</a>
17	CPI Inflation (YoY % change) – China	<a href="OECD/KEI/CPALTT01.CHN.GY.M">OECD/KEI/CPALTT01.CHN.GY.M</a>
17	CPI Inflation (YoY % change) – Indonesia	<a href="OECD/KEI/CPALTT01.IDN.GY.M">OECD/KEI/CPALTT01.IDN.GY.M</a>
17	CPI Inflation (YoY % change) – India	<a href="OECD/KEI/CPALTT01.IND.GY.M">OECD/KEI/CPALTT01.IND.GY.M</a>
17	CPI Inflation (YoY % change) – Mexico	<a href="OECD/KEI/CPALTT01.MEX.GY.M">OECD/KEI/CPALTT01.MEX.GY.M</a>
17	CPI Inflation (YoY % change) – South Africa	<a href="OECD/KEI/CPALTT01.ZAF.GY.M">OECD/KEI/CPALTT01.ZAF.GY.M</a>

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18	Quarterly implied GDP deflator - United Kingdom	<a href="#">ONS/QNA/IHYU.Q</a>
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19	Producer price index for industrial products - United Kingdom	<a href="#">ONS/MM22/GB7S.M</a>
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19	Producer price index for industrial products – Germany	<a href="#">DESTATIS/61241BM001/DG.PRE001</a>
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25	10-Y Nominal yield – US	<a href="#">FED/H15/RIFLGFCY10_N.B</a>
26	Yield curve – US	<a href="#">FED/H15/RIFLGFCM03_N.B</a>
29	10-Y Nominal yield – German Bund	<a href="#">BUBA/BBK01/WT1010</a>
29	Inflation Expectations - Germany	<a href="#">BUBA/BBSSY/D.KCP.EUR.A607.DE0001102523.A</a>
29	Forward Rates on 10-Year German Bund	<a href="#">BUBA/BBSIS/D.I.ZAR.ZI.EUR.S1311.B.A604.R10XX.R.A.A. Z. Z.A</a>

## Links to DBnomics data

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30	Yield curve – Germany	<a href="#">BUBA/BBSSY/D.KCP.EUR.A607.DE0001102523.A</a>
31	Nominal Foreign exchange rate in historical perspective	<a href="#">BUBA/BBEX3/D.USD.EUR.BB.AC.000</a>
34	Italian 10-Y yield	<a href="#">Eurostat/irt_lt_mcby_d/D.MCBY.IT</a>
34	Greek 10-Y yield	<a href="#">Eurostat/irt_lt_mcby_d/D.MCBY.EL</a>
34	French 10-Y yield	<a href="#">BDF/FM/FM.D.FR.EUR.FR2.BB.FR10YT_RR.YLD</a>
39	Composite Indicator of Systemic Stress (daily) – Euro Area	<a href="#">ECB/CISS/D.U2.Z0Z.4F.EC.SS_CIN.IDX</a>
39	Composite Indicator of Systemic Stress (daily) – United States	<a href="#">ECB/CISS/D.US.Z0Z.4F.EC.SS_CIN.IDX</a>