

CEPREMAP / DBNOMICS

## Macroeconomic Outlook - November 2022

## DBnomics

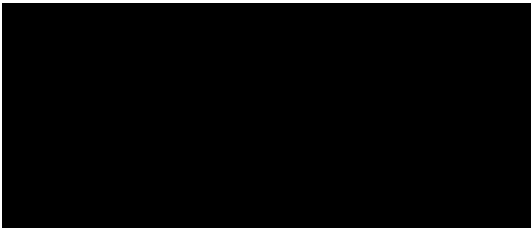
- All data presented in the forthcoming slides are extracted from DBnomics (<https://db.nomics.world/>), an open-sourced databank created at CEPREMAP, and will be automatically updated every Friday at 2:00pm
- The project has been financed by generous grants from Banque de France, AFD, DG Trésor, France 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

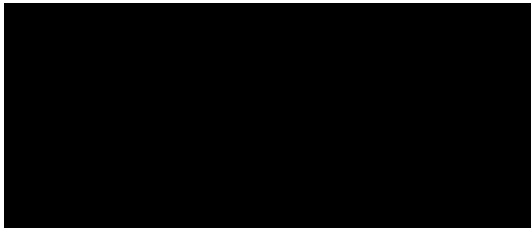
- Inflation reached record high levels since December 1981 in the US and in the Eurozone.
- After falling behind initially, both the Fed and the ECB are tightening up dramatically their monetary policy.
- The critical question is the extent to which the US or Europe can avoid a major recession in order to tame inflation.
- From a textbook point of view, in the case of a supply shock, only a rise of unemployment can calm down wage inflation.
- Squeezing liquidity may result in severe financial strains, reversing the previous decade of easy money.
- 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, with possible destabilizing impact for inflation in the Euro Area and a potential zero sum game between the two zones.
- The sheer threat of a recession may reduce the price of energy, cooling down inflationary pressures, provided that the geopolitical situation in Ukraine does not further deteriorate and that OPEC does not go to far in cutting supply.

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# I **Growth and inflation in selected G20 countries**



## **A The growth slowdown**

# Growth in advanced economies

Most of the major Advanced Economies have started a significant growth slowdown in 2022

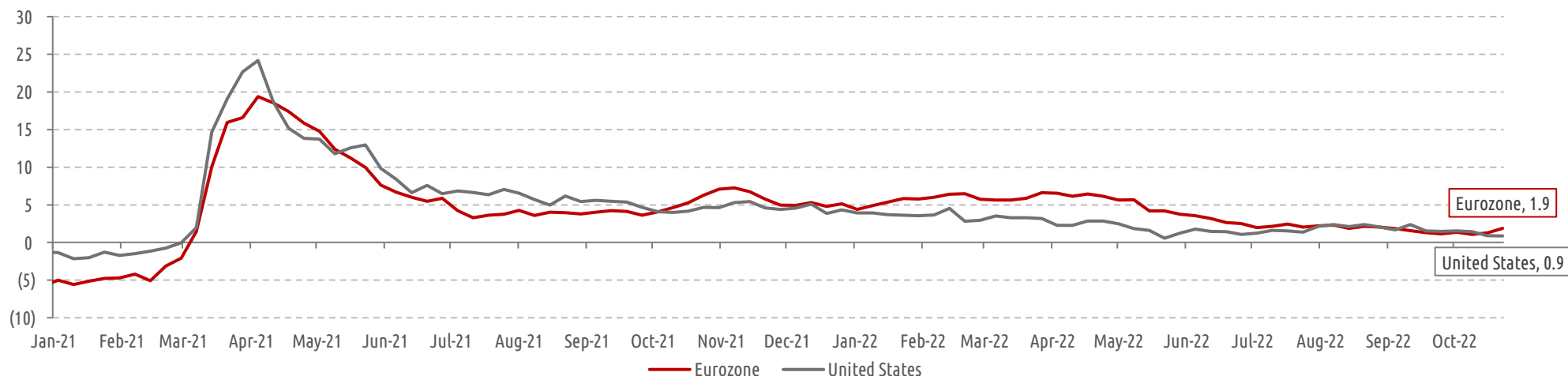
Yearly GDP growth rate (YoY % change)

| Yearly GDP growth rate % |                    |      |         |         |         |
|--------------------------|--------------------|------|---------|---------|---------|
| Country                  | 2020               | 2021 | 2022(P) | 2023(P) | 2024(P) |
| <b>Euro Area</b>         | (6.1) <sup>1</sup> | 5.2  | 3.1     | 0.5     | 1.8     |
| <i>Germany</i>           | (3.7)              | 2.6  | 1.5     | (0.3)   | 1.5     |
| <i>France</i>            | (7.9)              | 6.8  | 2.5     | 0.7     | 1.6     |
| <i>Italy</i>             | (9.0)              | 6.6  | 3.2     | (0.2)   | 1.3     |
| <b>UK</b>                | (9.3)              | 7.4  | 3.6     | 0.3     | 0.6     |
| <b>USA</b>               | (3.4)              | 5.7  | 1.6     | 1.0     | 1.2     |
| <b>Canada</b>            | (5.2)              | 4.5  | 3.3     | 1.5     | 1.6     |
| <b>Japan</b>             | (4.6)              | 1.7  | 1.7     | 1.6     | 1.3     |

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

| Quarterly GDP growth rate % |      |       |       |       |       |       |       |       |      | YoY <sup>2</sup> | YoY <sup>2</sup> |
|-----------------------------|------|-------|-------|-------|-------|-------|-------|-------|------|------------------|------------------|
| Country                     | 20Q3 | 20Q4  | 21Q1  | 21Q2  | 21Q3  | 21Q4  | 22Q1  | 22Q2  | 22Q3 | 31/07            | 23/10            |
| <b>Euro Area</b>            | 12.4 | (0.3) | (0.1) | 2.0   | 2.3   | 0.5   | 0.6   | 0.8   | 0.2  | 2.2              | 1.9              |
| <i>France</i>               | 18.4 | (0.9) | 0.1   | 1.1   | 3.3   | 0.6   | (0.2) | 0.5   | 0.2  | 1.9              | 1.6              |
| <i>Germany</i>              | 9.0  | 0.6   | (1.5) | 1.9   | 0.8   | (0.0) | 0.8   | 0.1   | 0.3  | 1.7              | 1.2              |
| <i>Italy</i>                | 14.5 | (0.8) | 0.3   | 2.5   | 2.8   | 0.8   | 0.1   | 1.1   | 0.5  | 2.5              | 1.1              |
| <b>UK</b>                   | 16.6 | 1.2   | (1.2) | 6.5   | 1.8   | 1.6   | 0.7   | 0.2   | -    | 2.2              | 1.2              |
| <b>USA</b>                  | 7.9  | 1.0   | 1.5   | 1.7   | 0.7   | 1.7   | (0.4) | (0.1) | 0.6  | 2.1              | 0.9              |
| <b>Canada</b>               | 9.0  | 2.2   | 1.1   | (0.8) | 1.3   | 1.6   | 0.8   | 0.8   | 0.4  | 3.6              | 2.7              |
| <b>Japan</b>                | 5.5  | 1.6   | (0.3) | 0.4   | (0.4) | 1.0   | 0.1   | 0.9   | -    | 0.8              | 1.4              |

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



## Growth in emerging countries

Repetitive lockdowns are causing a major slowdown in China. Many emerging countries should experience substantial slowdown in 2023

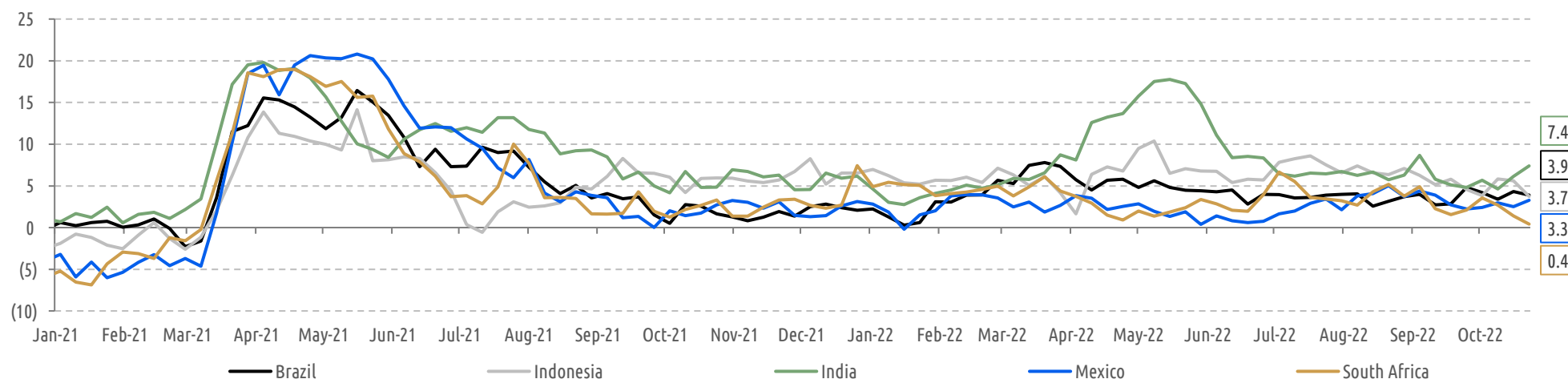
Yearly GDP growth rate (YoY % change)

| Yearly GDP growth rate % |       |      |         |         |         |
|--------------------------|-------|------|---------|---------|---------|
| Country                  | 2020  | 2021 | 2022(P) | 2023(P) | 2024(P) |
| China                    | 2.2   | 8.1  | 3.2     | 4.4     | 4.5     |
| South Africa             | (6.3) | 4.9  | 2.1     | 1.1     | 1.3     |
| Brazil                   | (3.9) | 4.6  | 2.8     | 1.0     | 1.9     |
| India                    | (6.6) | 8.7  | 6.8     | 6.1     | 6.8     |
| Mexico                   | (8.1) | 4.8  | 2.1     | 1.2     | 1.8     |
| Indonesia                | (2.1) | 3.7  | 5.3     | 5.0     | 5.4     |

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

| Quarterly GDP growth rate % |      |      |      |        |       |      |       |       |      | YoY <sup>1</sup> | YoY <sup>1</sup> |
|-----------------------------|------|------|------|--------|-------|------|-------|-------|------|------------------|------------------|
| Country                     | 20Q3 | 20Q4 | 21Q1 | 21Q2   | 21Q3  | 21Q4 | 22Q1  | 22Q2  | 22Q3 | 31/07            | 23/10            |
| China                       | 3.9  | 1.6  | 0.5  | 1.3    | 1.1   | 1.0  | 1.2   | (2.6) | -    |                  |                  |
| S. Africa                   | 13.8 | 2.7  | 0.8  | 1.4    | (1.8) | 1.4  | 1.7   | (0.7) | -    | 3.2              | 0.4              |
| Brazil                      | 8.0  | 3.2  | 1.1  | (0.3)  | 0.1   | 0.8  | 1.1   | 1.2   | -    | 4.0              | 3.9              |
| India                       | 22.8 | 8.0  | 0.5  | (10.0) | 11.2  | 5.0  | (1.4) | (1.4) | -    | 6.7              | 7.4              |
| Mexico                      | 13.7 | 3.7  | 0.5  | 0.9    | (0.5) | 0.3  | 1.1   | 0.9   | 1.8  | 2.1              | 3.3              |
| Indonesia                   | 3.4  | 2.5  | 0.9  | 0.1    | 0.2   | 3.8  | 0.8   | 0.7   | 0.6  | 6.6              | 3.7              |

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

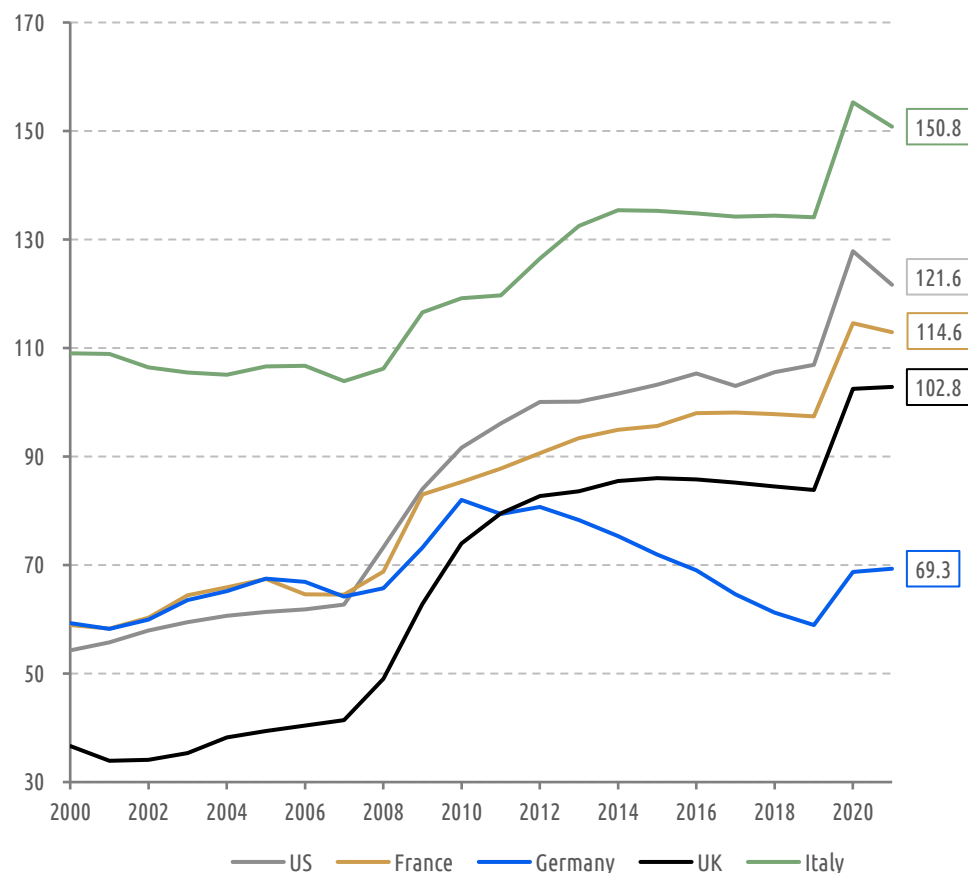




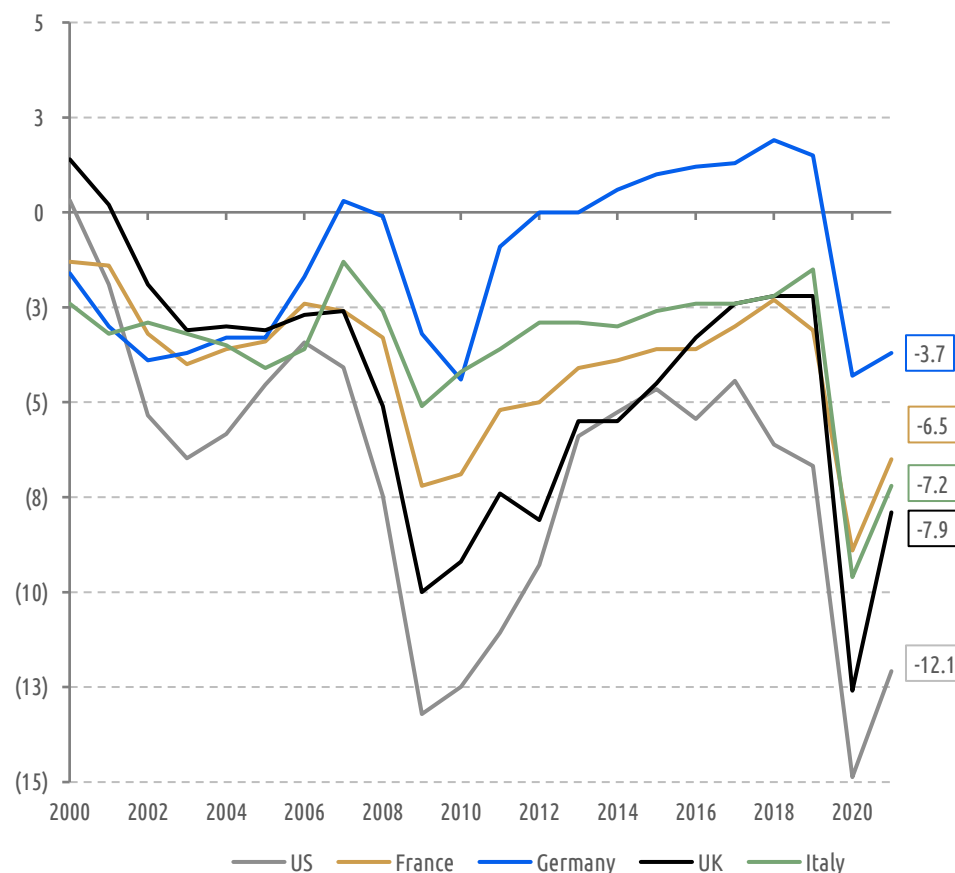
# Government debts and deficits have reached a new plateau in the G5 countries<sup>1</sup>

Fiscal accounts were deteriorated by Covid-19 policy responses with inflation a moderating factor

General Government debt (% of GDP) – Since 2000



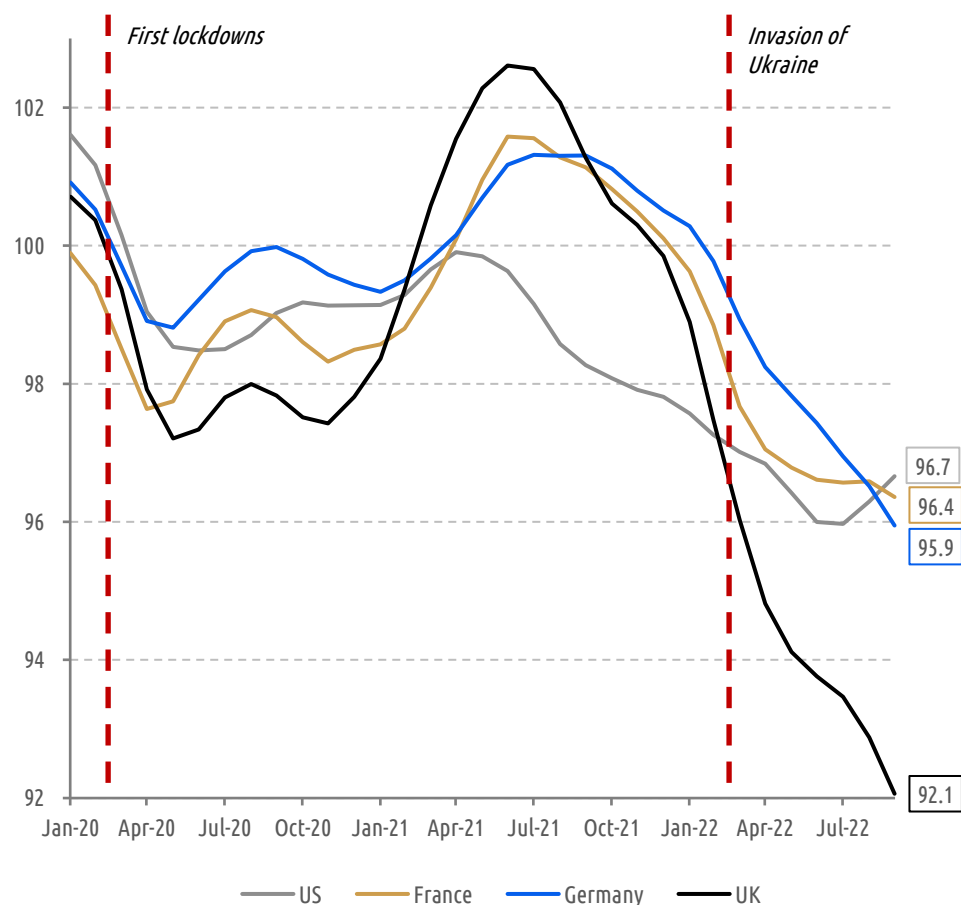
General Government deficit (% of GDP) – Since 2000



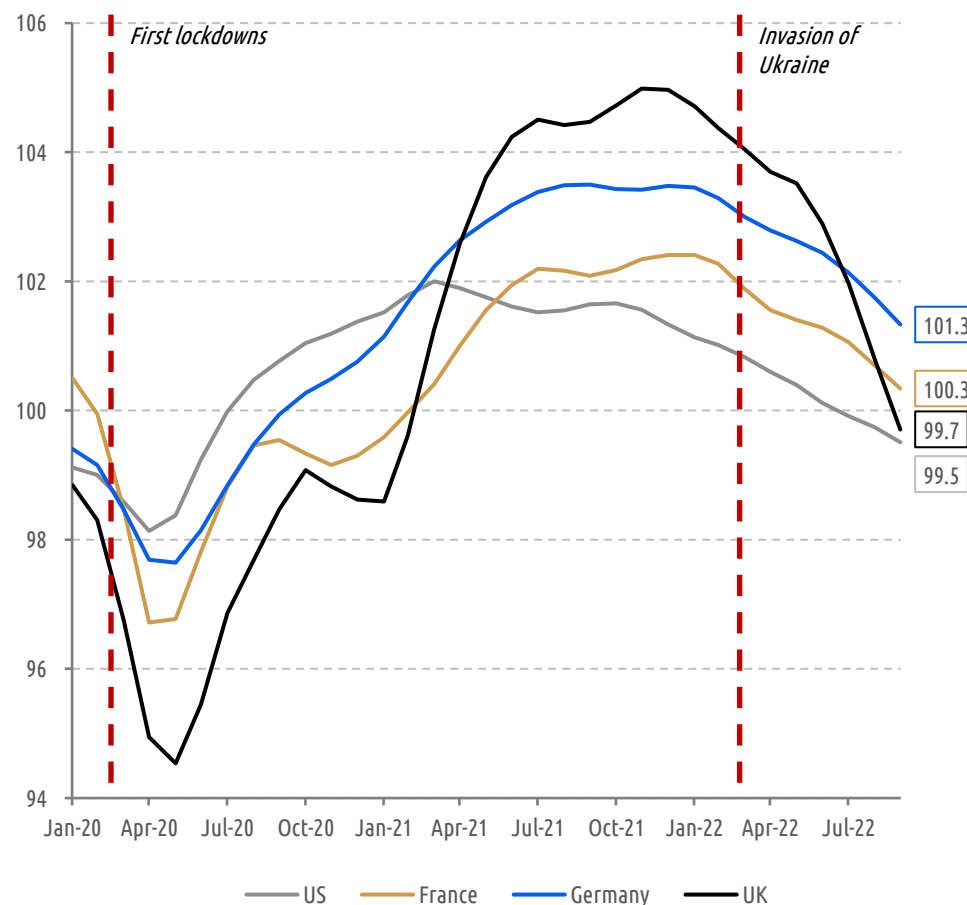
# Confidence indicators are all falling in the G4 countries<sup>1</sup>

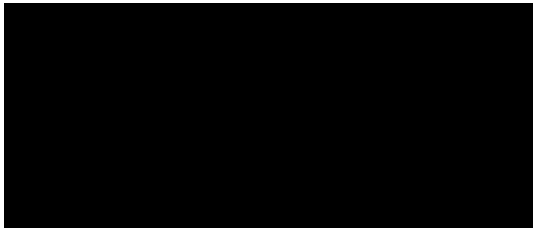
The post Covid momentum has been lost especially in the UK

Consumer confidence indicator – Since Jan. 2020



Business confidence indicator – Since Jan. 2020



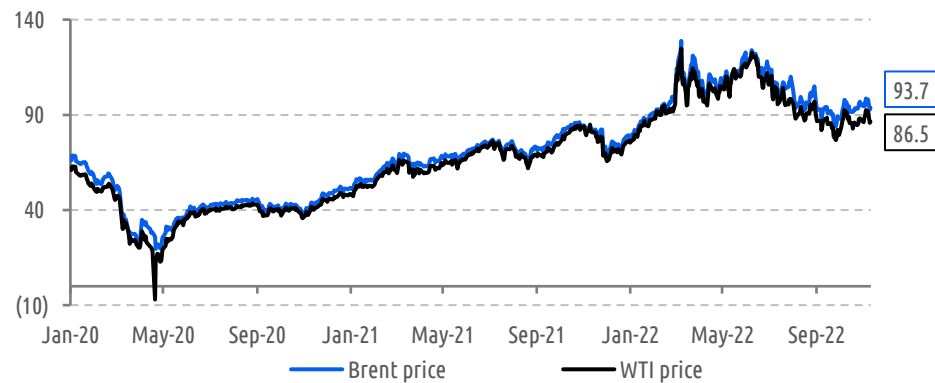


## **B The seeds of inflation**

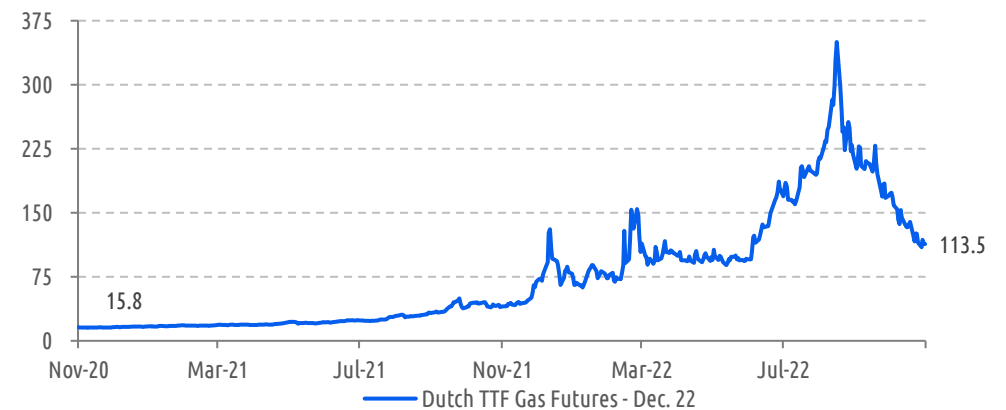
## Energy prices have sharply increased over the last 2 years... - (1/2)

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

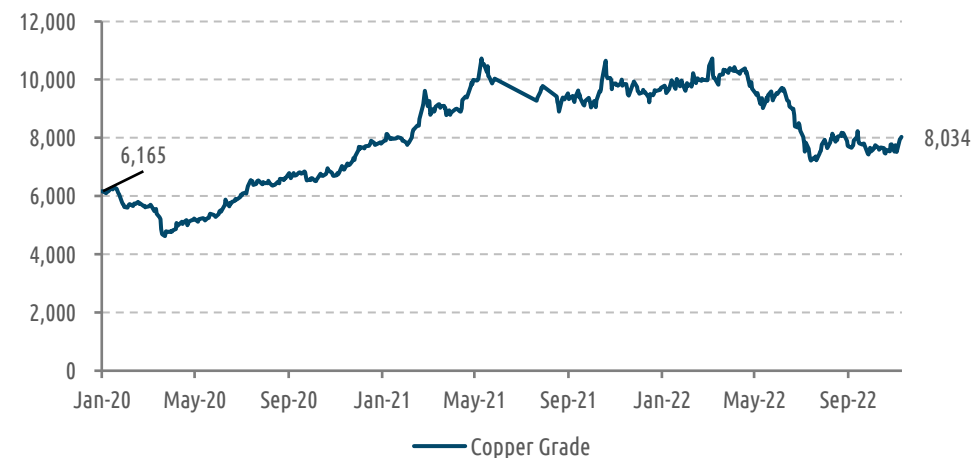
Oil prices in historical perspective (USD per barrel)



Natural Gas (Dutch TTF) prices in historical perspective (€/MWh)



Copper prices in historical perspective (USD/tonne)



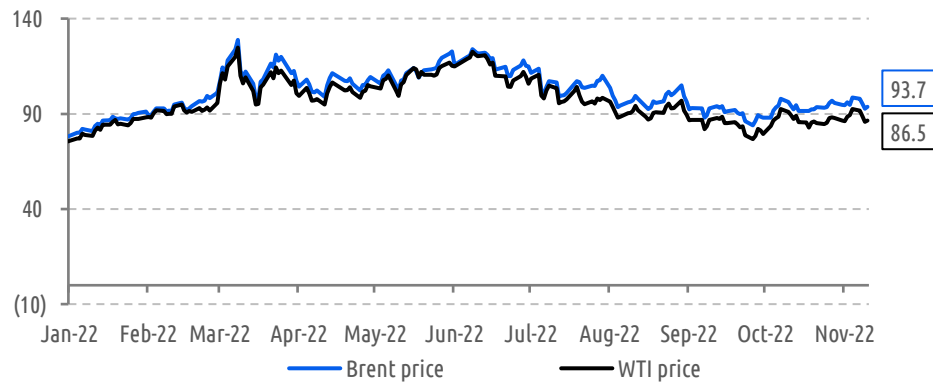
CBOT wheat (USD/bushel)



## ...but may have already peaked - (2/2)

Ukrainian invasion lifted up price. Fear of recession is partially cooling off tensions. OPEC however announced that it cuts supply in 2023, stabilizing prices at a high level. Yet gas prices fell dramatically in Europe as inventories are record high

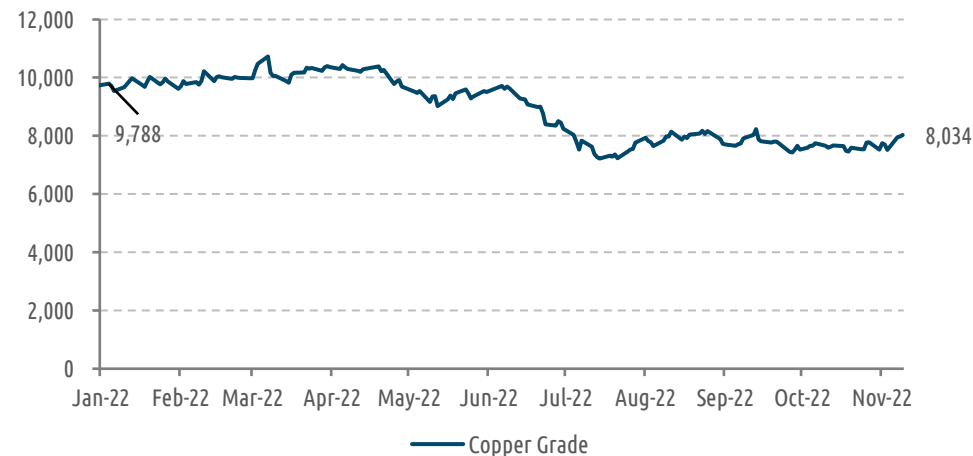
**Oil prices in historical perspective (USD per barrel)**



**Natural Gas (Dutch TTF) prices in historical perspective (€/MWh)**



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

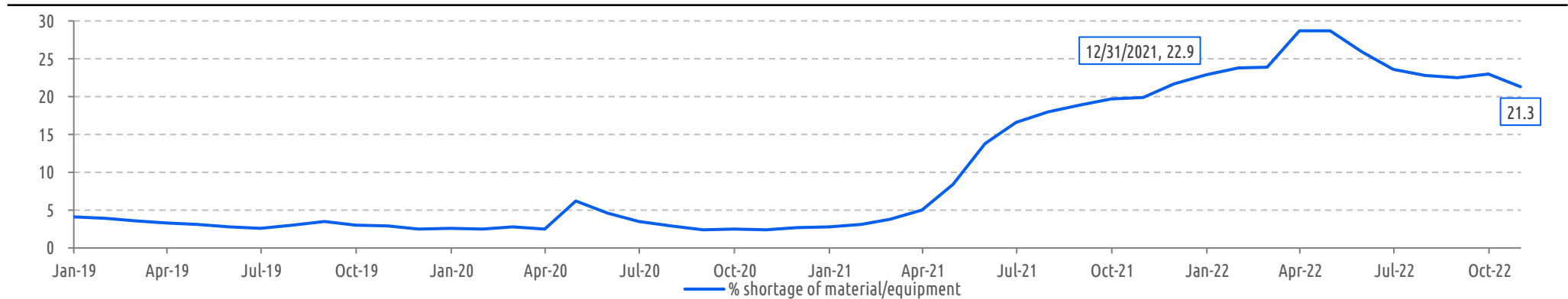


**CBOT wheat (USD/bushel)**



## Supply chain disruptions remain important, but easing up significantly

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



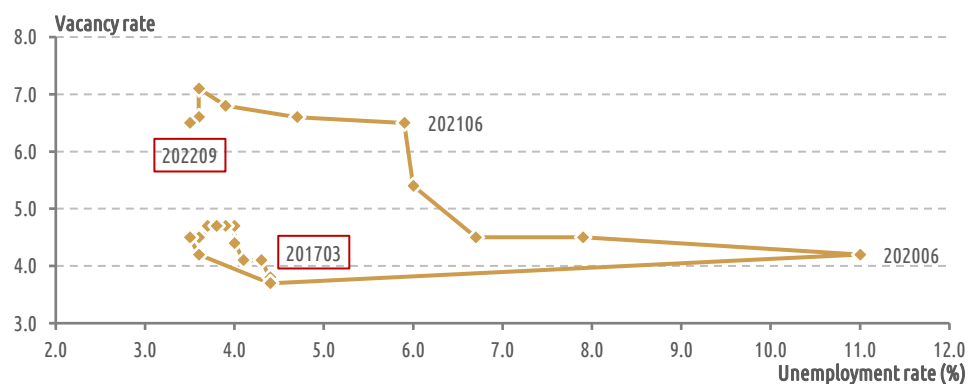
Shipping Container Index (based on spot rate for 40 feet containers)



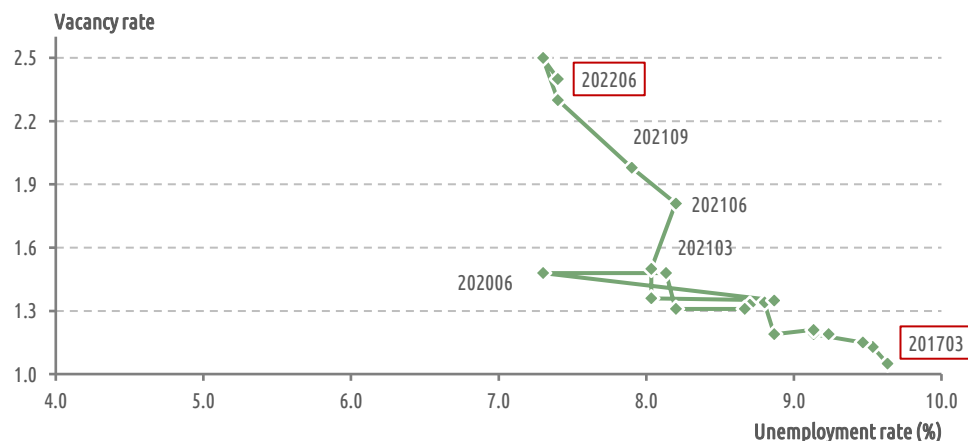
# Labor markets remain tight...

The vacancy/unemployment ratio still at record high levels

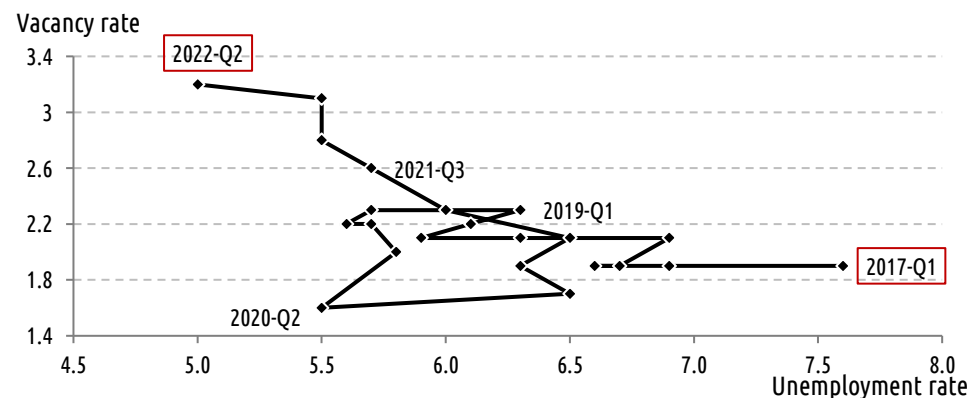
**Beveridge curve - USA (Q1-17 – Q2-22), Quarterly**



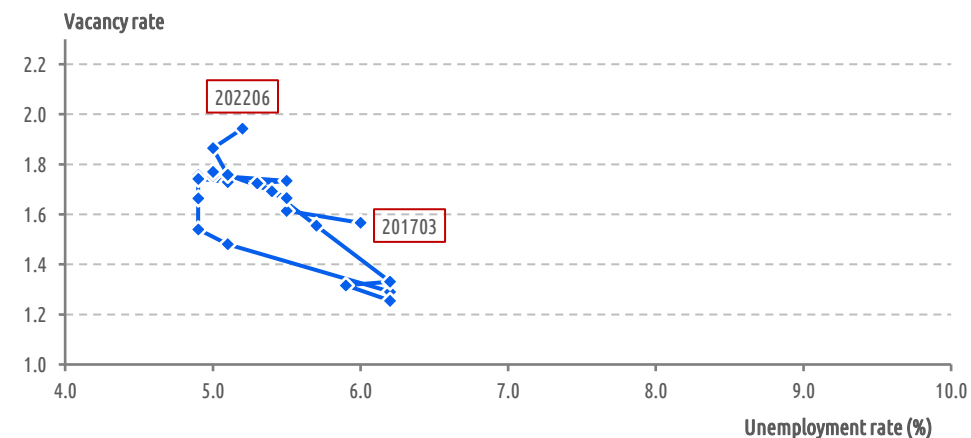
**Beveridge curve - France (Q1-17 – Q2-22), Quarterly**



**Beveridge curve – Euro Area (Q1-17 – Q2-22), Quarterly**

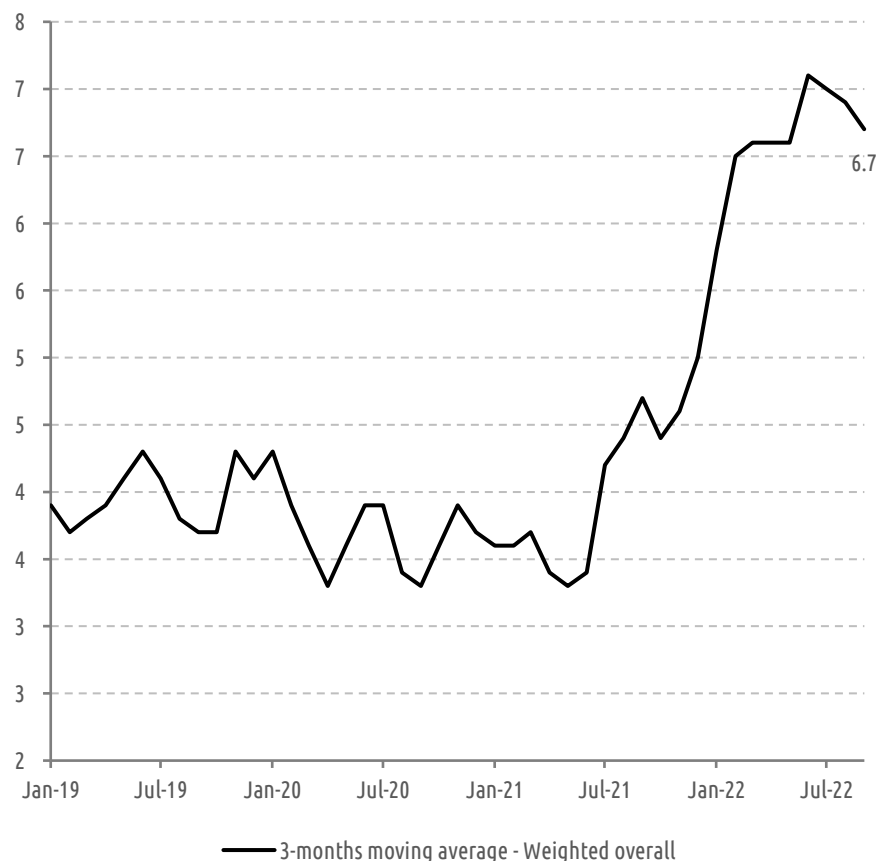


**Beveridge curve - Germany (Q1-17 – Q2-22), Quarterly**

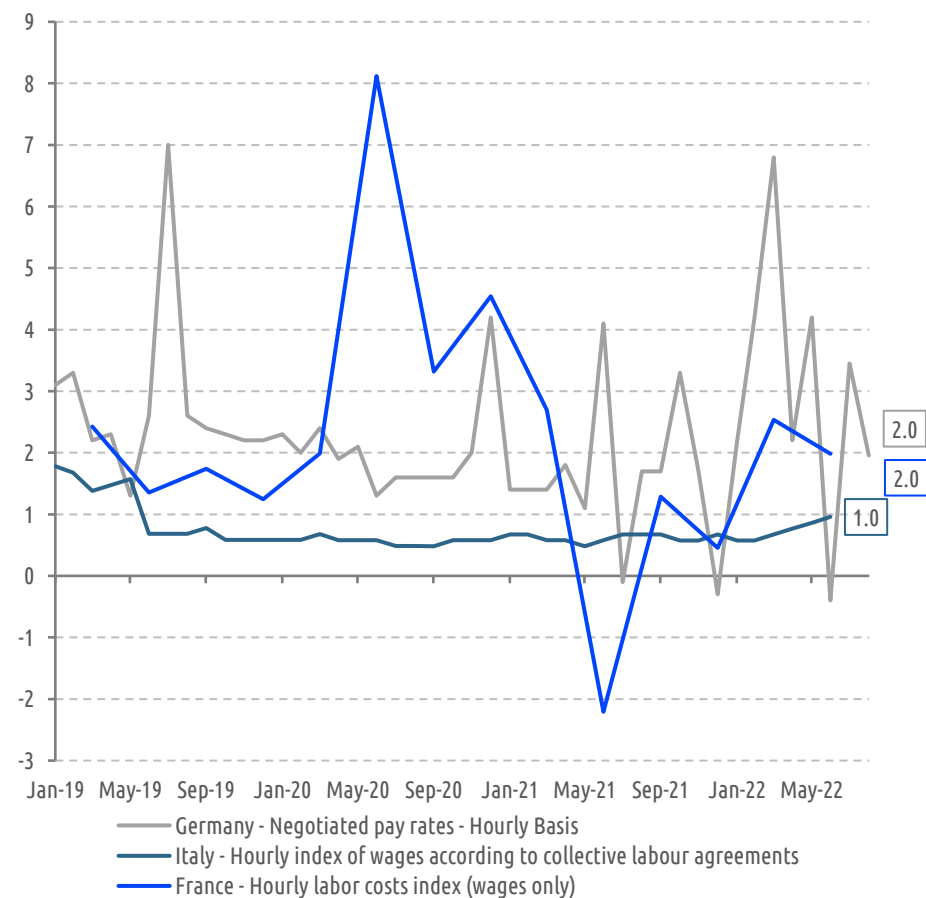


## ... resulting in rising labor costs, especially in the US

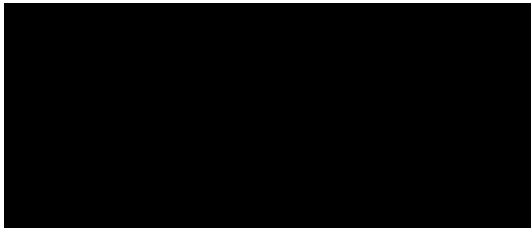
Wage growth tracker (nominal wage growth of individuals) – US (Monthly)



Wage growth tracker – Germany, Italy and France<sup>1</sup> (Monthly - Quarterly)







## **C Inflation unbound**

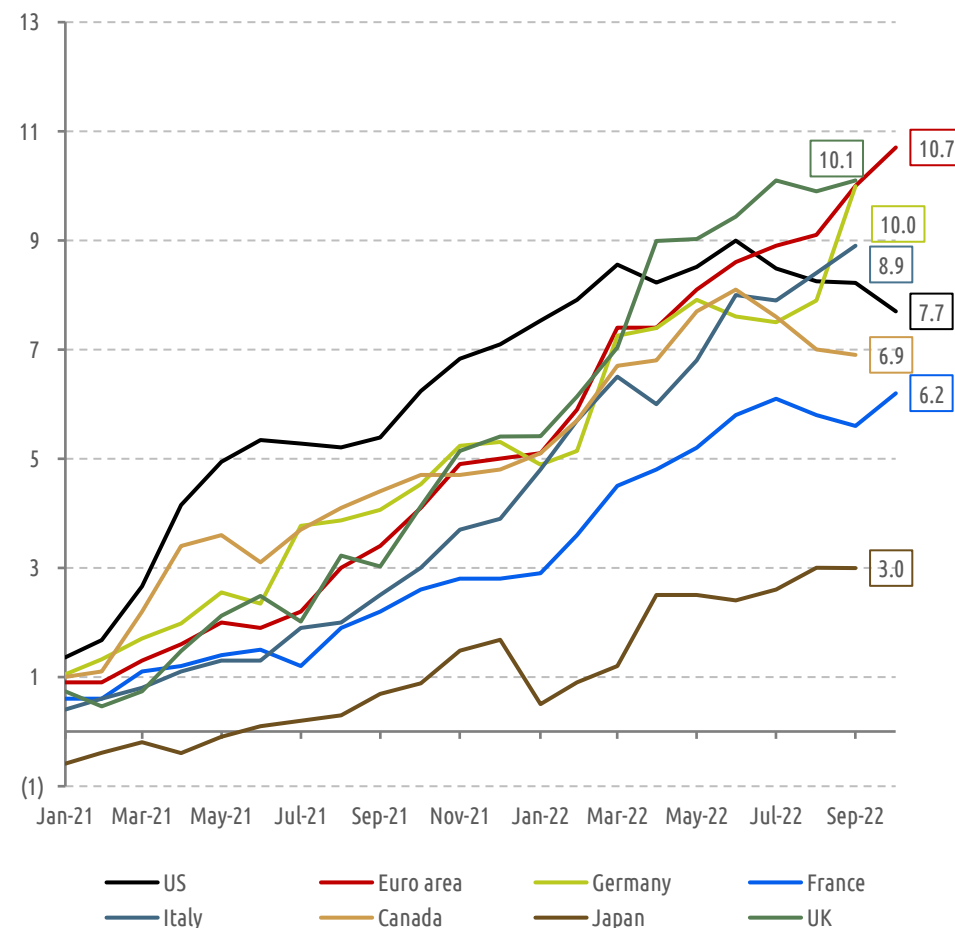
# In 2022, inflation have reached record high levels

Latest data indicates that US inflation may have peaked

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

| Monthly Year-on-Year inflation rates (%) - 2022 |       |       |       |      |     |      |      |      |       |      |
|-------------------------------------------------|-------|-------|-------|------|-----|------|------|------|-------|------|
| Country                                         | Jan.  | Feb.  | Mar.  | Apr. | May | Jun. | Jul. | Aug. | Sept. | Oct. |
| <b>US</b>                                       | 7.5   | 7.9   | 8.6   | 8.2  | 8.5 | 9.0  | 8.5  | 8.2  | 8.2   | 7.7  |
| Core                                            | 6.0   | 6.4   | 6.4   | 6.1  | 6.0 | 5.9  | 5.9  | 6.3  | 6.6   | 6.3  |
| <b>Euro Area</b>                                | 5.1   | 5.9   | 7.4   | 7.4  | 8.1 | 8.6  | 8.9  | 9.1  | 10.0  | 10.7 |
| Core                                            | 2.3   | 2.7   | 3.0   | 3.5  | 3.8 | 3.7  | 4.0  | 4.3  | 4.8   | 5.0  |
| <b>France</b>                                   | 2.9   | 3.6   | 4.5   | 4.8  | 5.2 | 5.8  | 6.1  | 5.8  | 5.6   | 6.2  |
| Core                                            | 1.6   | 2.5   | 2.5   | 3.2  | 3.7 | 3.7  | 4.3  | 4.7  | 4.5   | -    |
| <b>Germany</b>                                  | 4.9   | 5.1   | 7.3   | 7.4  | 7.9 | 7.6  | 7.5  | 7.9  | 10.0  | -    |
| Core                                            | 2.9   | 3.0   | 3.4   | 3.8  | 3.8 | 3.2  | 3.2  | 3.5  | 4.6   | -    |
| <b>Italy</b>                                    | 4.8   | 5.7   | 6.5   | 6.0  | 6.8 | 8.0  | 7.9  | 8.4  | 8.9   | -    |
| Core                                            | 1.5   | 1.7   | 1.9   | 2.4  | 3.2 | 3.8  | 4.1  | 4.4  | 5.0   | -    |
| <b>UK</b>                                       | 5.4   | 6.1   | 7.0   | 9.0  | 9.0 | 9.4  | 10.1 | 9.9  | 10.1  | -    |
| Core                                            | 4.4   | 5.2   | 5.7   | 6.2  | 5.9 | 5.8  | 6.2  | 6.3  | 6.5   | -    |
| <b>Canada</b>                                   | 5.1   | 5.7   | 6.7   | 6.8  | 7.7 | 8.1  | 7.6  | 7.0  | 6.9   | -    |
| Core                                            | 3.5   | 3.9   | 4.7   | 4.6  | 5.2 | 5.3  | 5.5  | 5.3  | 5.4   | -    |
| <b>Japan</b>                                    | 0.5   | 0.9   | 1.2   | 2.5  | 2.5 | 2.4  | 2.6  | 3.0  | 3.0   | -    |
| Core                                            | (1.2) | (0.9) | (0.7) | 0.8  | 0.8 | 0.9  | 1.2  | 1.6  | 1.8   | -    |

CPI Inflation (YoY % change) – since January 2021



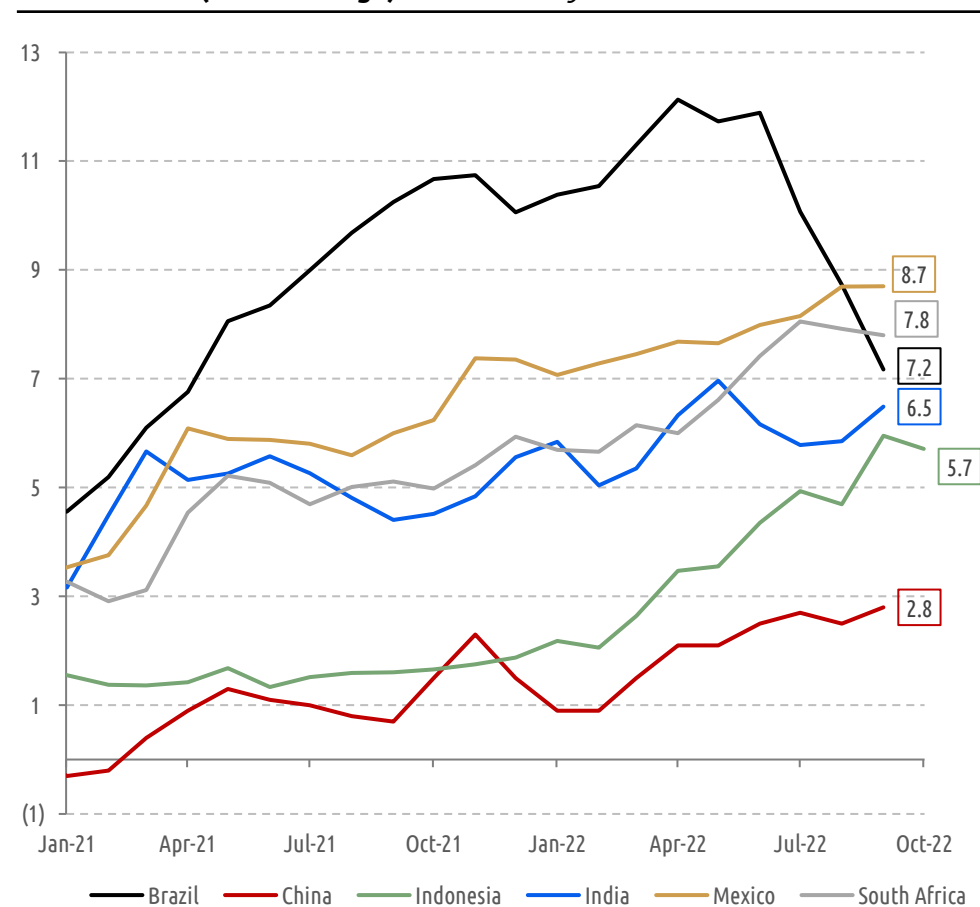
# Inflation in emerging economies

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

CPI inflation in advanced economies (YoY % change)

| Monthly Year-on-Year inflation rates (%) – 2022 |      |      |      |      |      |      |      |      |       |      |
|-------------------------------------------------|------|------|------|------|------|------|------|------|-------|------|
| Country                                         | Jan. | Feb. | Mar. | Apr. | May  | Jun. | Jul. | Aug. | Sept. | Oct. |
| China                                           | 0.9  | 0.9  | 1.5  | 2.1  | 2.1  | 2.5  | 2.7  | 2.5  | 2.8   | -    |
| India                                           | 5.8  | 5.0  | 5.4  | 6.6  | 7.0  | 6.2  | 5.8  | 5.9  | 6.5   | -    |
| South Africa                                    | 5.7  | 5.7  | 6.1  | 6.0  | 6.6  | 7.4  | 8.1  | 7.9  | 7.8   | -    |
| Brazil                                          | 10.4 | 10.5 | 11.3 | 12.1 | 11.7 | 11.9 | 10.1 | 8.7  | 7.2   | -    |
| Mexico                                          | 7.1  | 7.3  | 7.5  | 7.7  | 7.7  | 8.0  | 8.2  | 8.7  | 8.7   | -    |
| Indonesia                                       | 2.2  | 2.1  | 2.6  | 3.5  | 3.6  | 4.3  | 4.9  | 4.7  | 6.0   | 5.7  |

CPI Inflation (YoY % change) – since January 2021



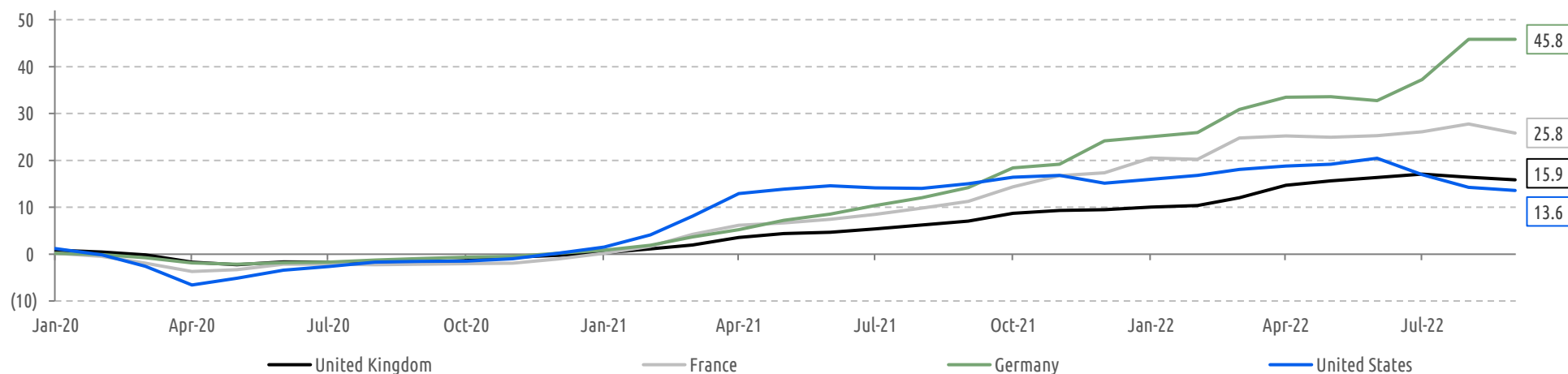
# Producer price index for the G4 countries<sup>1</sup>

Producer price inflation way higher

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

| Producer price index for industrial products in France, Germany, the UK and the US (YoY % change) – Since Jan. 2020 |       |       |       |       |       |       |       |       |       |
|---------------------------------------------------------------------------------------------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Country                                                                                                             | 01-22 | 02-22 | 03-22 | 04-22 | 05-22 | 06-22 | 07-22 | 08-22 | 09-22 |
| US                                                                                                                  | 16.0  | 16.8  | 18.0  | 18.8  | 19.2  | 20.4  | 17.0  | 14.2  | 13.6  |
| Germany                                                                                                             | 25.0  | 25.9  | 30.9  | 33.5  | 33.6  | 32.7  | 37.2  | 45.8  | 45.8  |
| France                                                                                                              | 20.5  | 20.2  | 24.8  | 25.2  | 25.0  | 25.3  | 26.2  | 27.7  | 25.8  |
| UK                                                                                                                  | 10.0  | 10.3  | 12.0  | 14.7  | 15.7  | 16.4  | 17.1  | 16.1  | 15.9  |

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



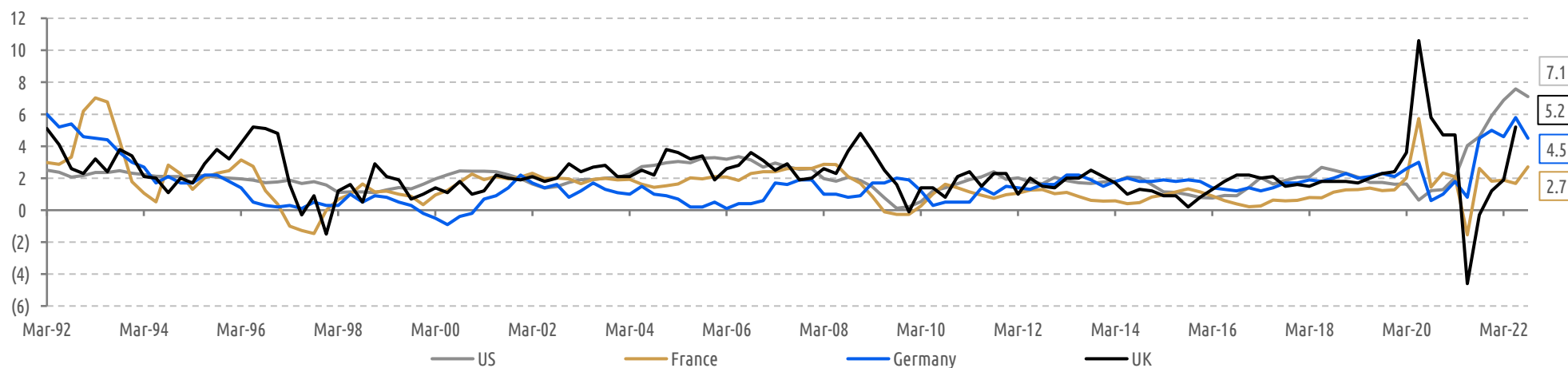
# Implied GDP deflator in G4 countries<sup>1</sup>

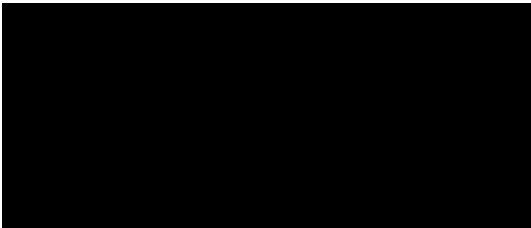
Implied GDP deflators have also sharply increased

Quarterly implied GDP deflator – Since Q1-2021

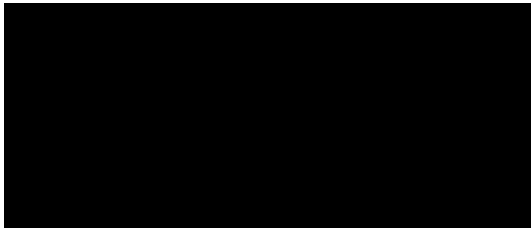
| Country | Implied GDP deflator (YoY % change) – Since Q1-2019 |       |       |       |       |       |       |
|---------|-----------------------------------------------------|-------|-------|-------|-------|-------|-------|
|         | Q1-21                                               | Q2-21 | Q3-21 | Q4-21 | Q1-22 | Q2-22 | Q3-22 |
| US      | 2.0                                                 | 4.0   | 4.6   | 5.9   | 6.9   | 7.6   | 7.1   |
| Germany | 1.8                                                 | 0.8   | 4.5   | 5.0   | 4.6   | 5.8   | 4.5   |
| France  | 2.1                                                 | (1.5) | 2.6   | 1.8   | 1.9   | 1.7   | 2.7   |
| UK      | 4.7                                                 | (4.6) | (0.3) | 1.2   | 1.9   | 5.2   | -     |

Quarterly implied GDP deflator – Since Q1-1992





## **II Monetary policy**

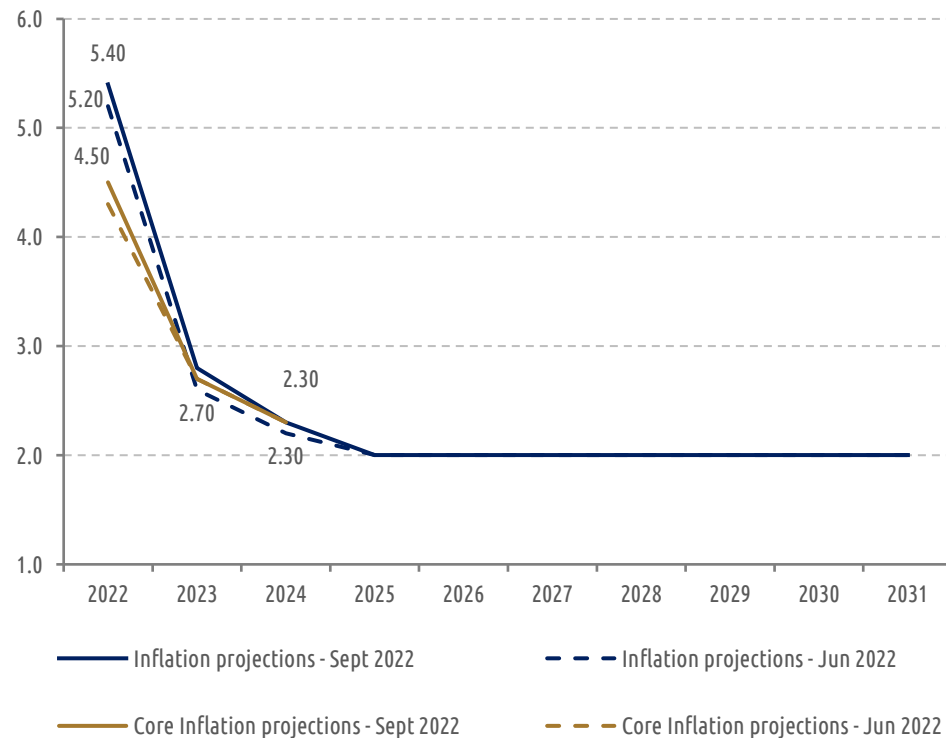


**A In the US**

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

For the fourth time in a row, the Fed has raised interest rates by 75 bps in November, amid persistent high inflation levels and tight labor market

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



### Key considerations

- The target range of the federal fund rates was lifted from 3.00%-3.25% to 3.75%-4.00%
- "In determining the pace of future increases in the target range, the Committee will take into account the cumulative tightening of monetary policy, the lags with which monetary policy affects economic activity and inflation, and economic and financial developments"
- This increase follows persistent high US inflation and job reports surprisingly showing tight labor market
- The next meeting will be on the 13-14 December



"We may ultimately move to higher levels of rates than we thought at the time of the September meeting"

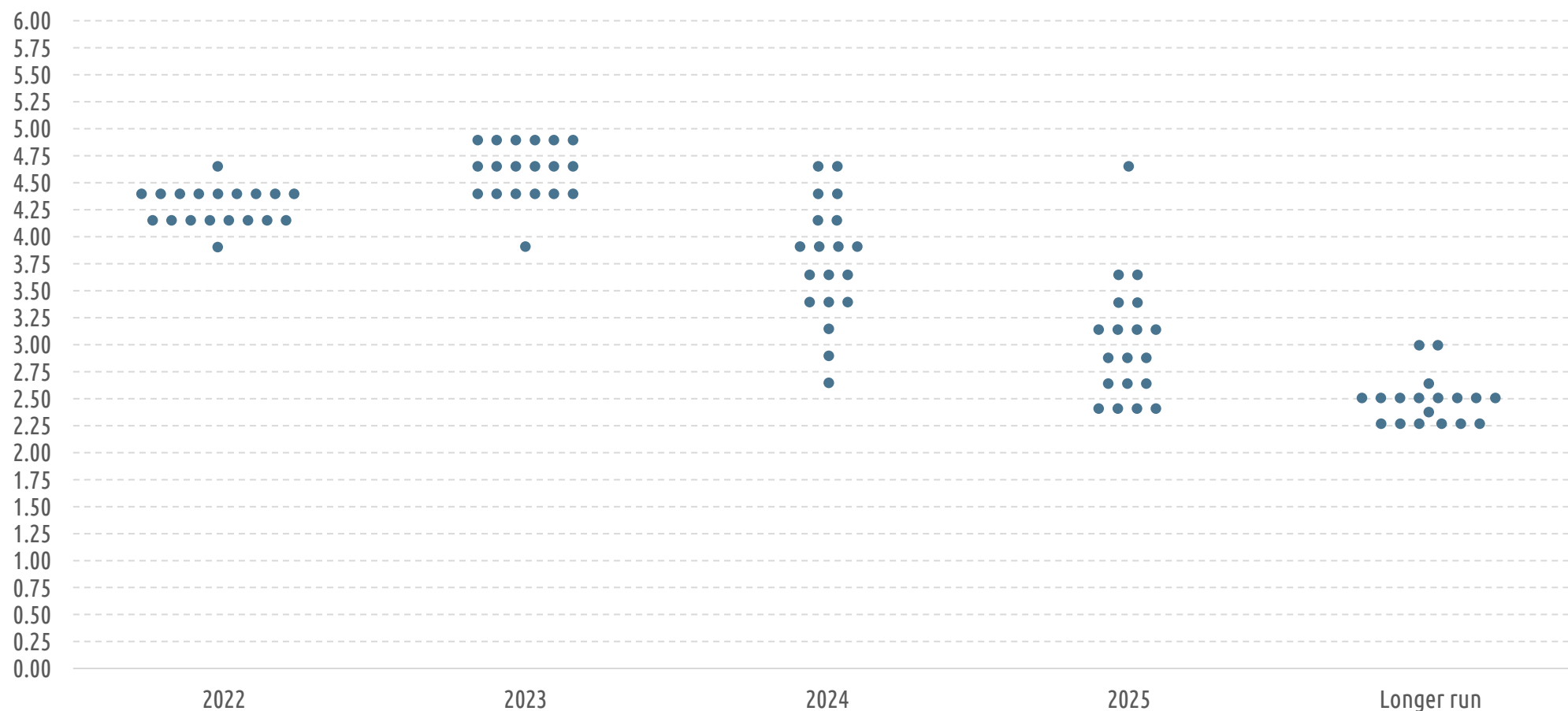
JEROME POWELL, PRESS CONFERENCE, 2 NOVEMBER 2022



## 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 funds rate moved up to 4.4%. The estimate for the end of 2023 is 4.6%. In its September meeting, the Fed has raised the target range of the federal fund rates up to 3.00% - 3.25% and anticipates further increase

**FOMC participants' assessments of appropriate monetary policy: Midpoint of target range or target level for the federal funds rate as of 21 September**



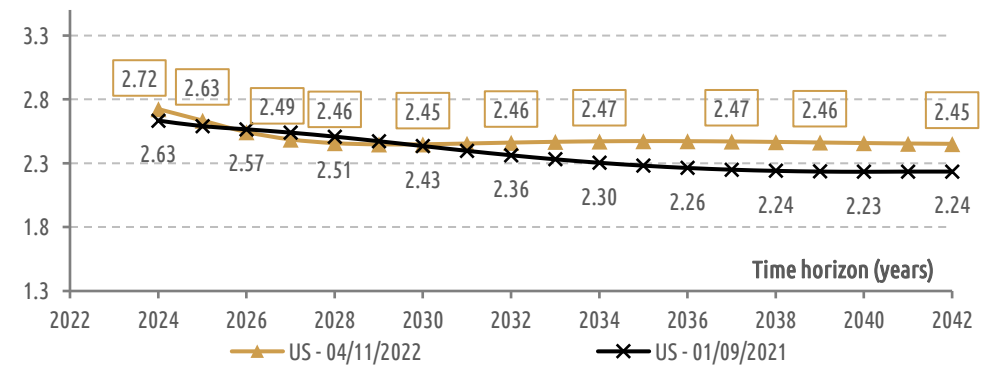
# In the US, nominal rates at new height, and real rates expected to turn positive

Inflation expectations remain anchored (past 2024) but expected real rates have turned positive in the longer run as forward rates were lifted-up dramatically

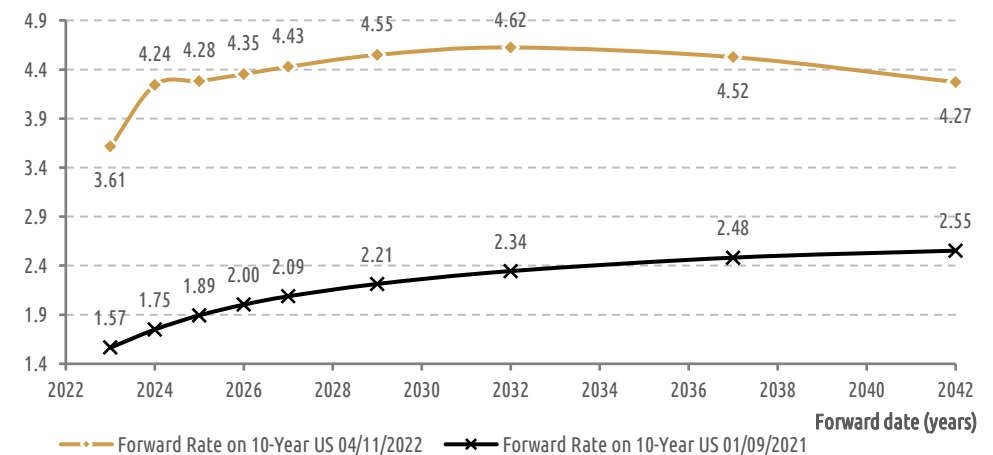
### 10-Y Nominal yield – US



### Inflation Expectations – US (%)



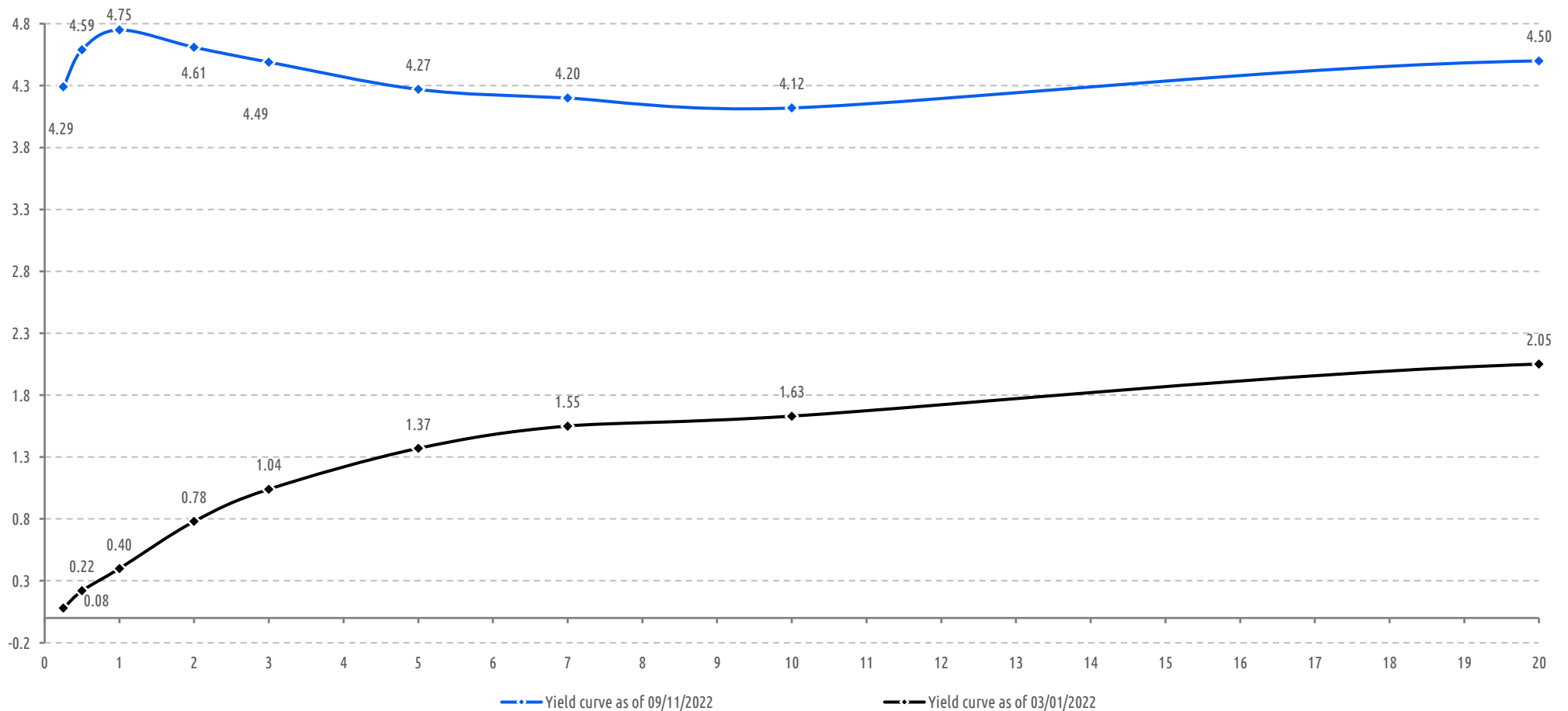
### Forward Rates on 10-Year U.S. Treasuries (%)

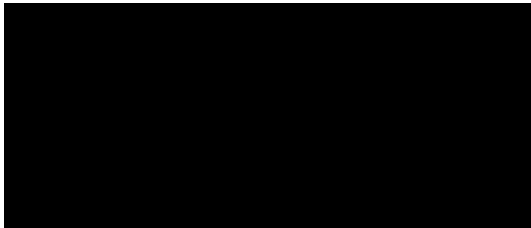


# The US yield curve is inverted, harbinger of a recession

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

Yield curve - US



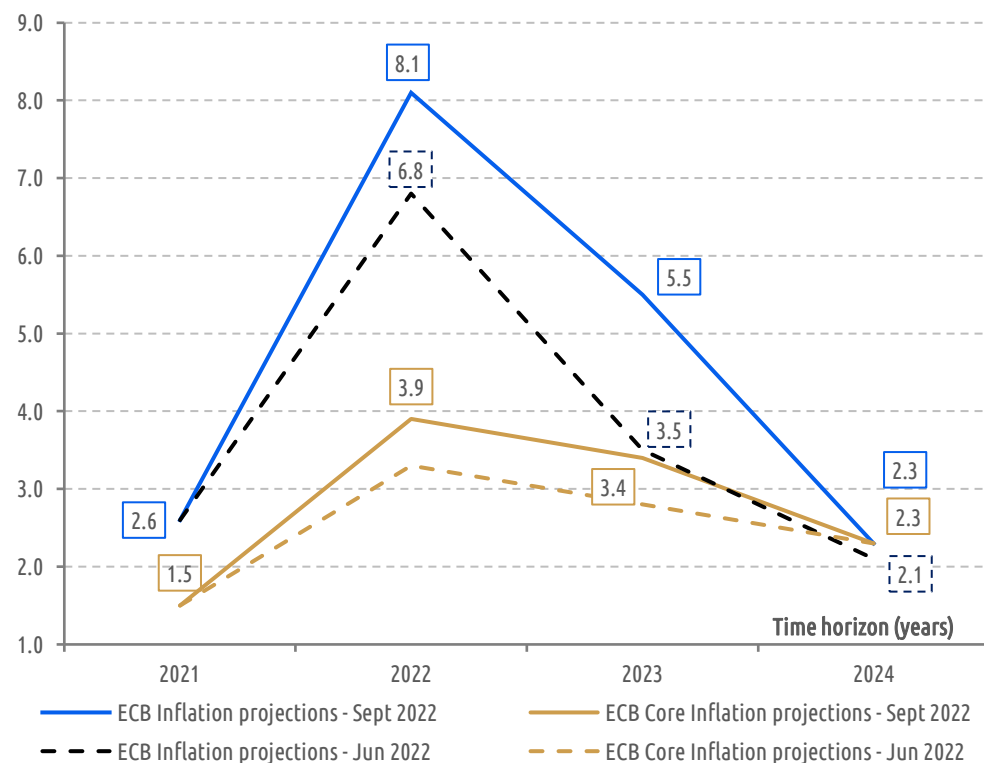


## **B In the Euro Area**

# The ECB has raised its interest rates by 75 bps in October for the second time, following a 75-bps hike in September

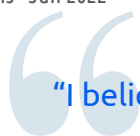
Taking into account growing inflationary pressure, Christine Lagarde has acknowledged that more rate rises are expected

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



## Key considerations

- The Governing Council decided to raise the three key ECB interest rates by 75 basis points, following a 75-bps hike in September
- Looking ahead, ECB staff have significantly revised in July their inflation projections up and inflation is now expected to average 8.1% in 2022, 5.5% in 2023 and 2.3% in 2024
- The interest rate on the main refinancing operations has been lifted-up to 2.00% (so-called neutral rate)
- The next meeting of the ECB is set on December 15<sup>th</sup>



“I believe that in the euro area the neutral rate can be estimated as below or close to 2% in nominal terms, and we could be there by the end of the year”

FRANÇOIS VILLEROY DE GALHAU, IMF, WASHINGTON, 14 SEPTEMBER

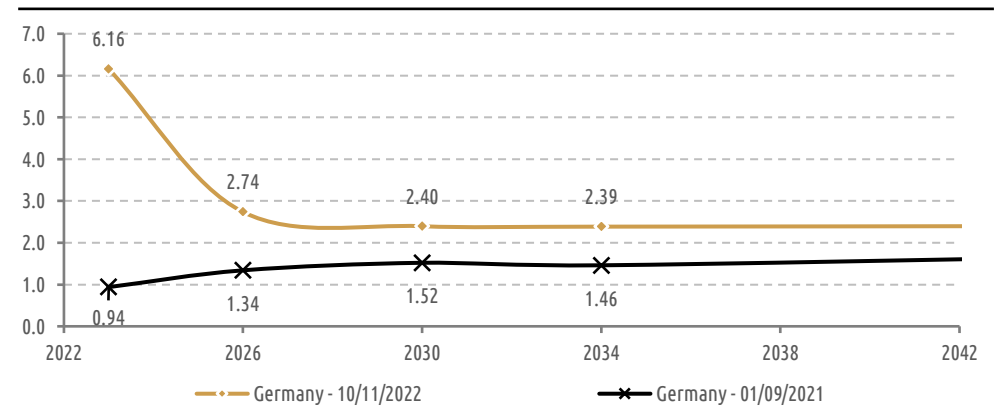
# In the Eurozone, the German bund has crossed the 2% level and expected real rates near zero

As forward rates have been lifted-up dramatically

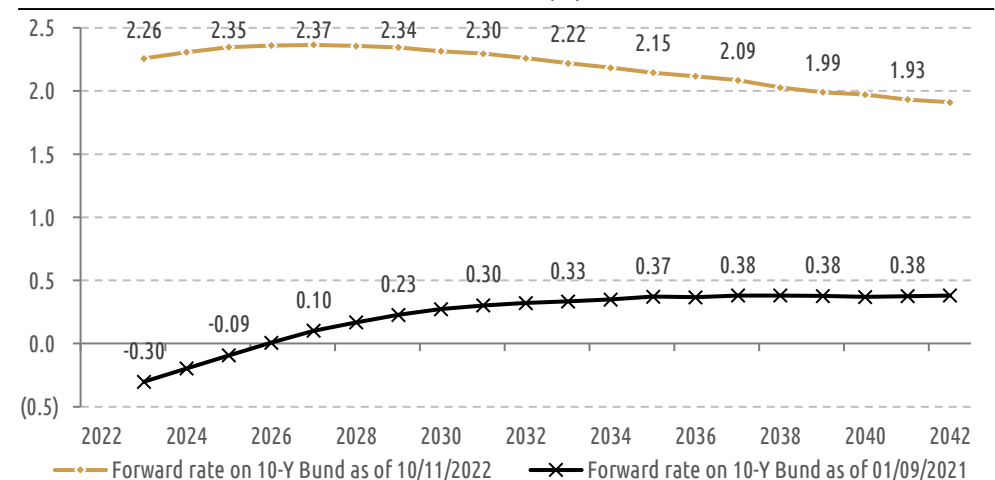
### 10-Y Nominal yield – German Bund



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

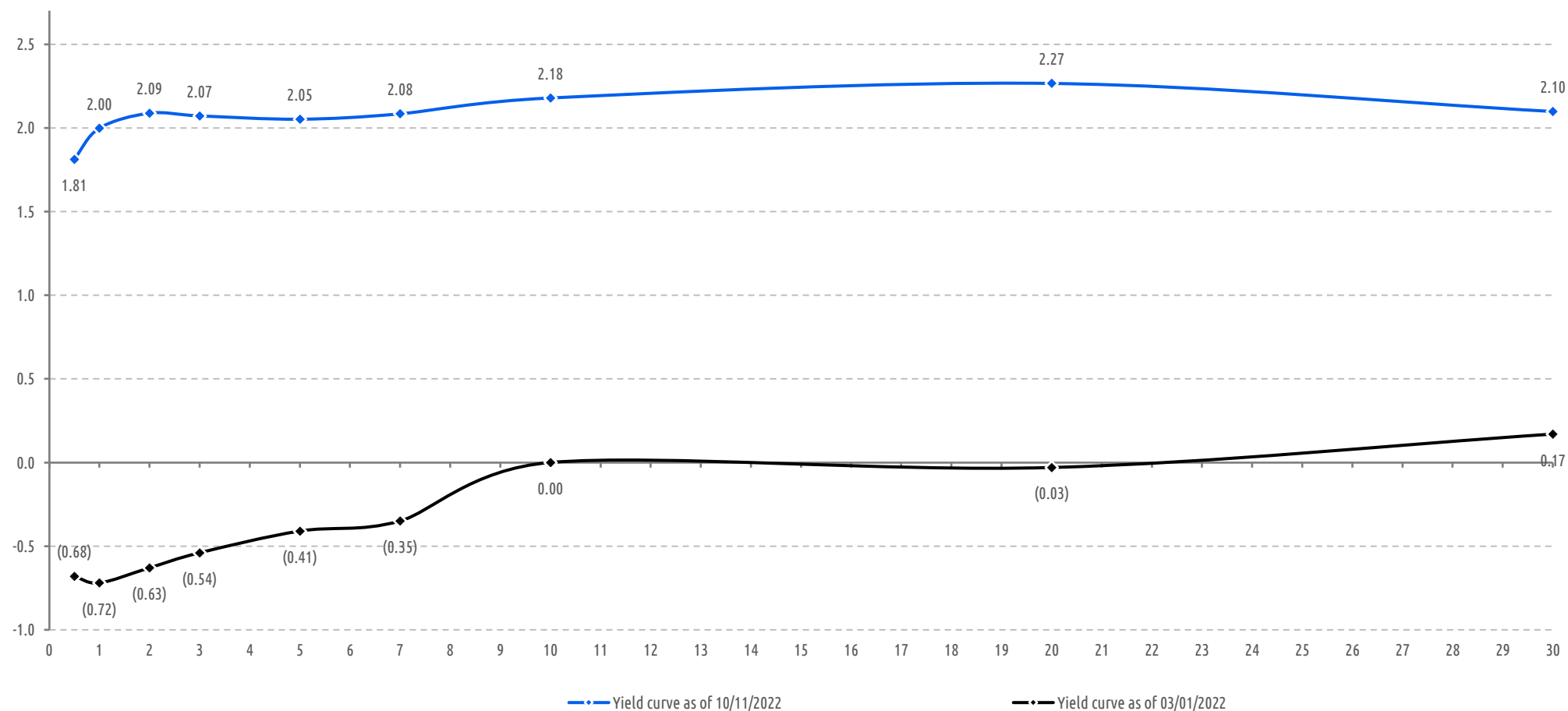


### Forward Rates on 10-Year German Bund (%)



# The German yield curve is not (yet) inverted

## Yield curve – Germany



## As a result, Euro has been weakening

The disconnect between the rapid tightening path in the US and the monetary policy normalization in Europe has weighted on the Euro's value

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



— USD/EUR as of 10/11/2022

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



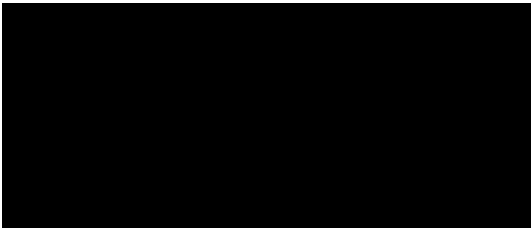
— USD/EUR as of 10/11/2022



“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

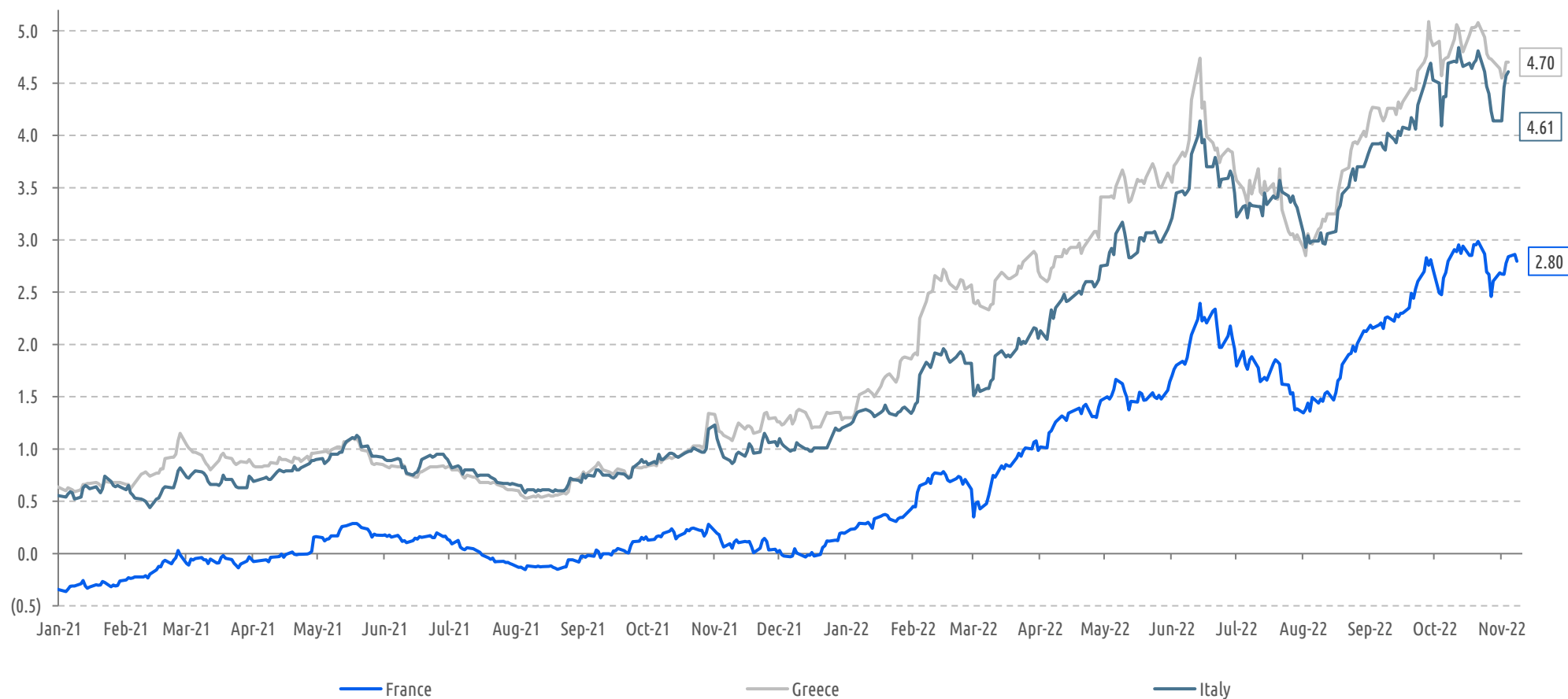




### **III Impact on yields and spreads**

## In Europe, sovereign yields are mounting ...

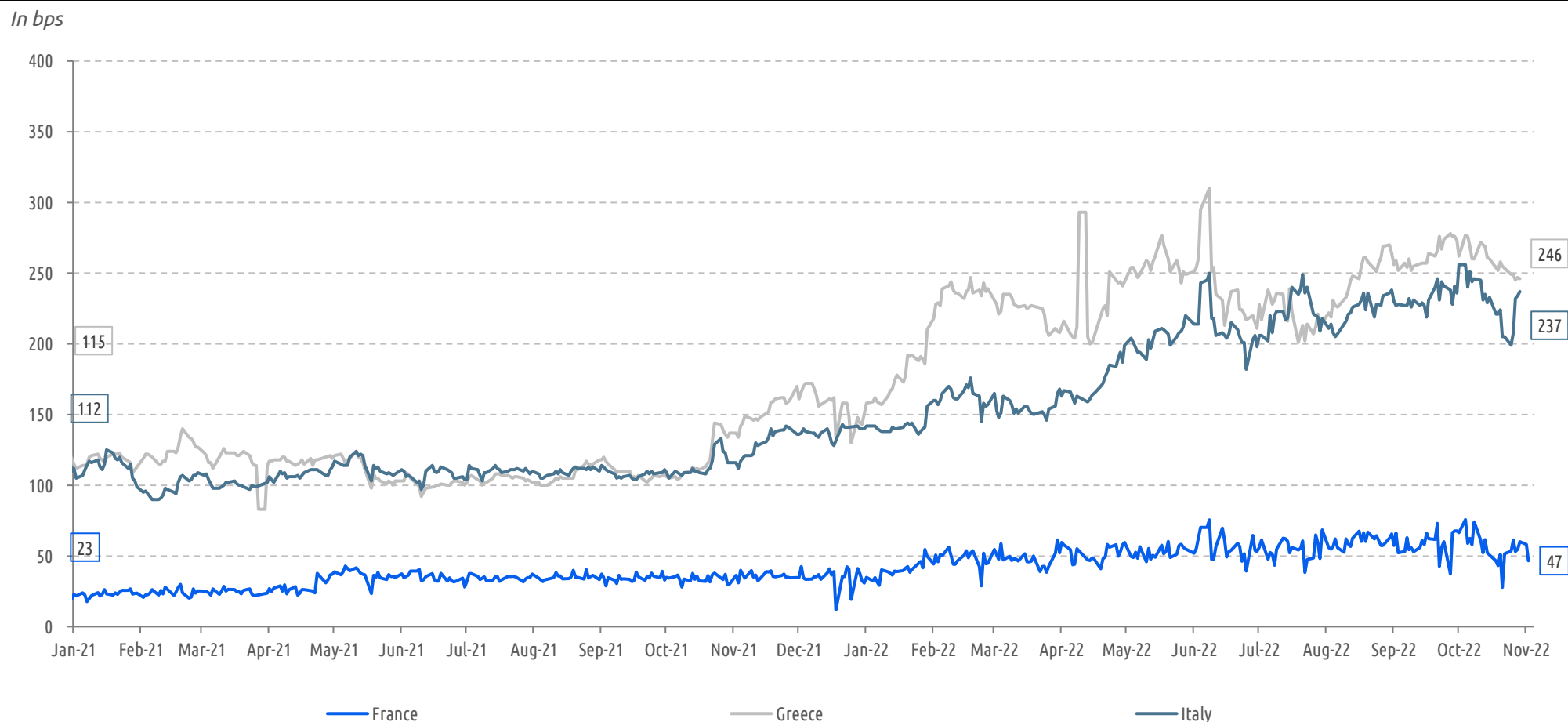
Italian, Greek and French 10-Y yields – Since Jan. 2021



## ... resulting in diverging spreads in European countries

Greek and Italian spreads reach a higher plateau

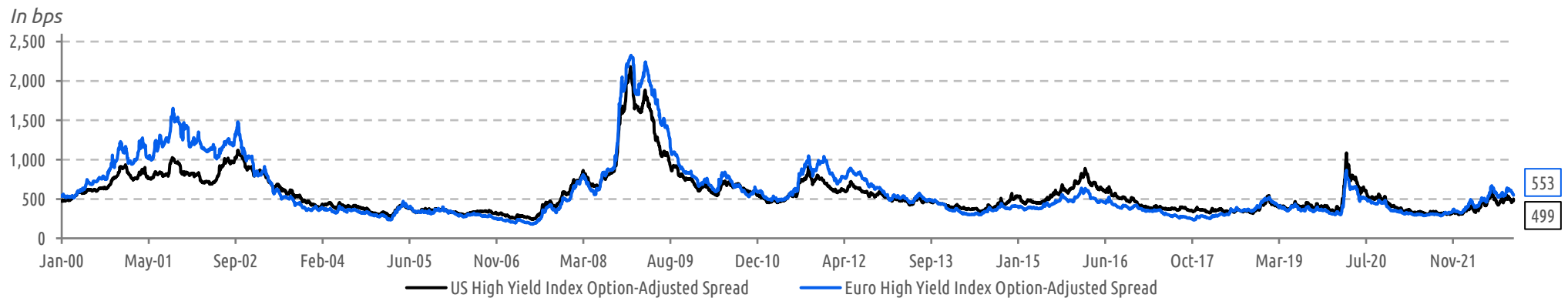
Italian, Greek and French spreads over 10Y German bund – Since Jan. 2021



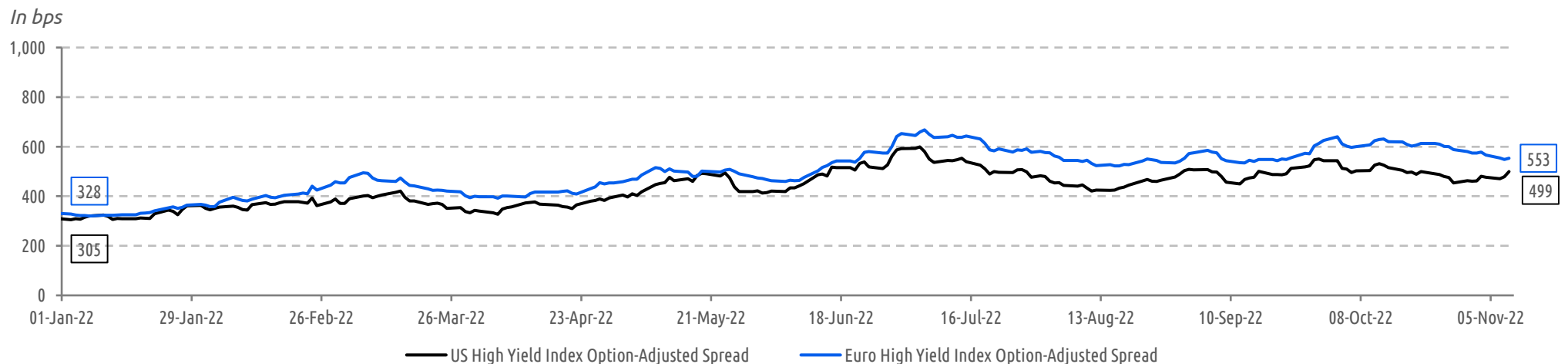
## High yield corporate bond spreads have also risen

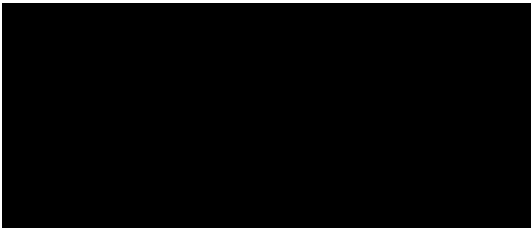
Spreads for corporate bonds<sup>1</sup> in the US and in Europe have increased since the beginning of 2022 and are now c. 100-200 bps above their pre Covid-19 crisis level

High yield corporate bond spreads – Since 2000



High yield corporate bond spreads – Since 2022



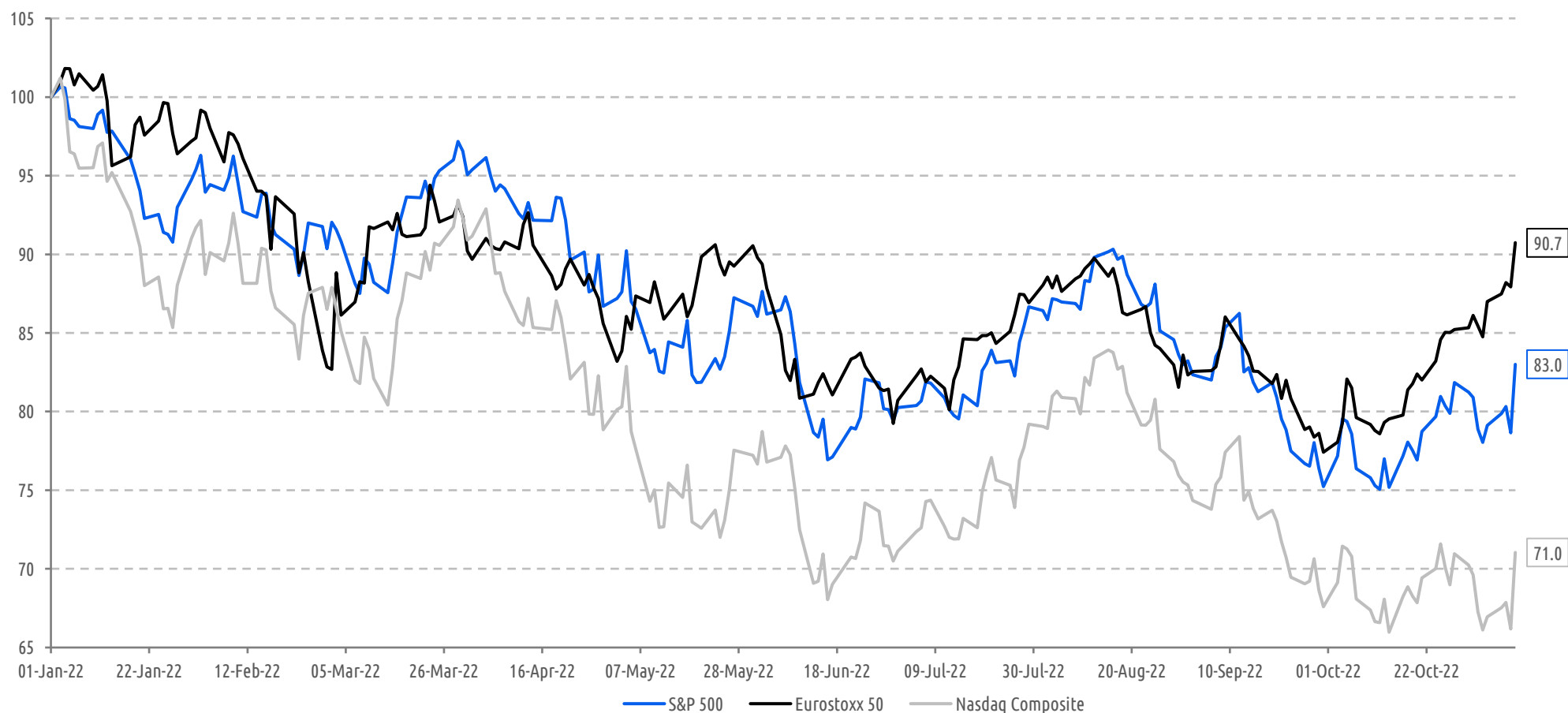


## **IV    Impact on stock markets**

# Stock market prices have fallen since the beginning of 2022

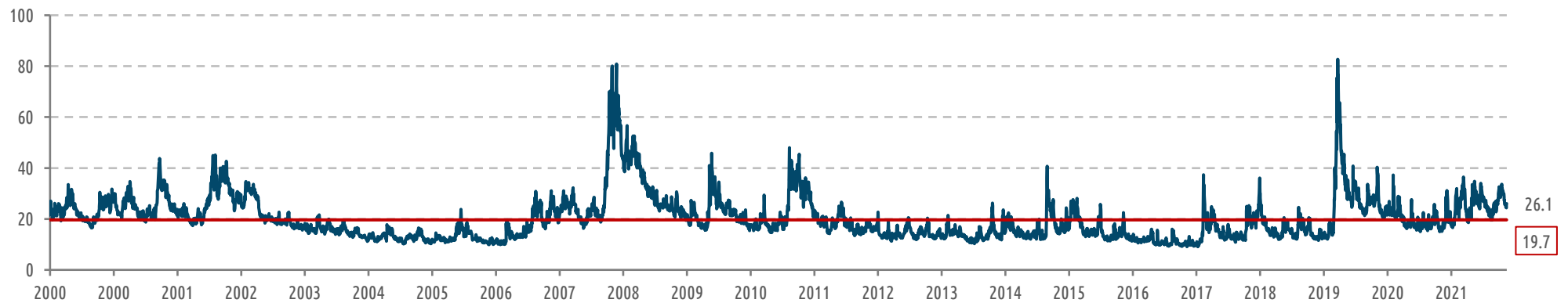
Latest inflation data brought relief to stocks

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

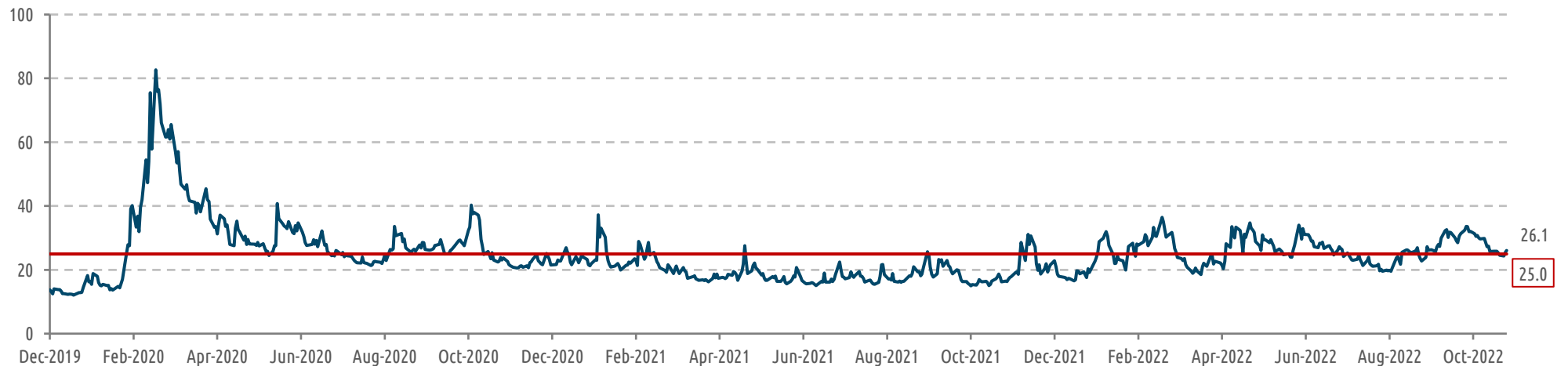


## Volatility on US financial markets are (moderately) edging up

VIX index – Since 2000



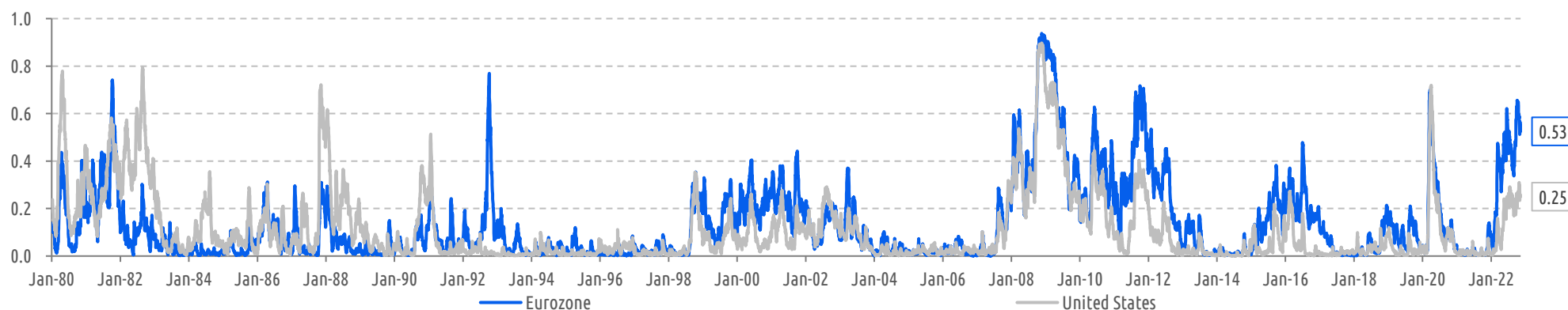
VIX index – Since 2020



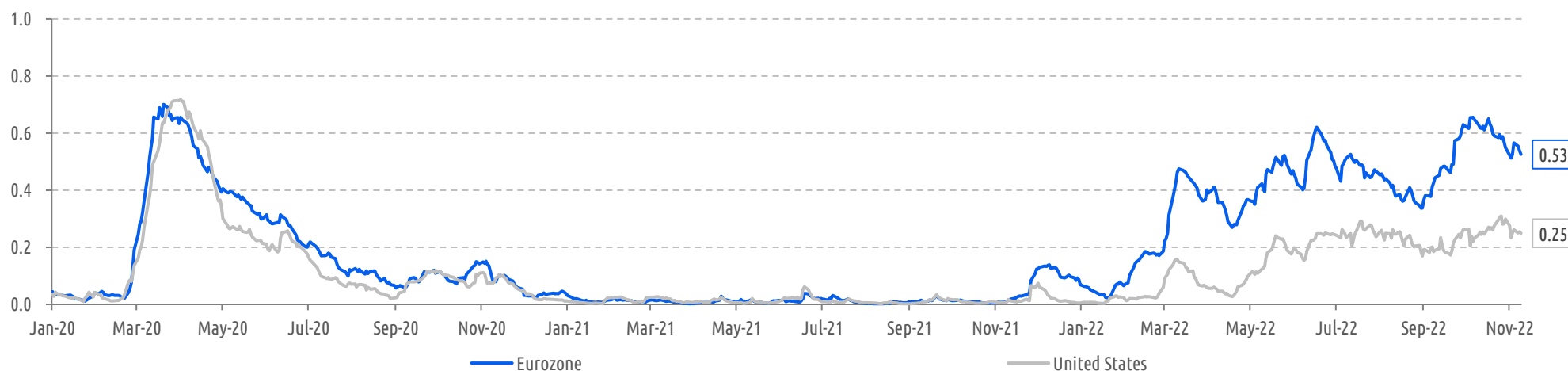
## ... while financial stress indicators are soaring

Indicators of financial distress have sharply increased since the beginning of 2022, especially in Europe after Russian invasion of Ukraine

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



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

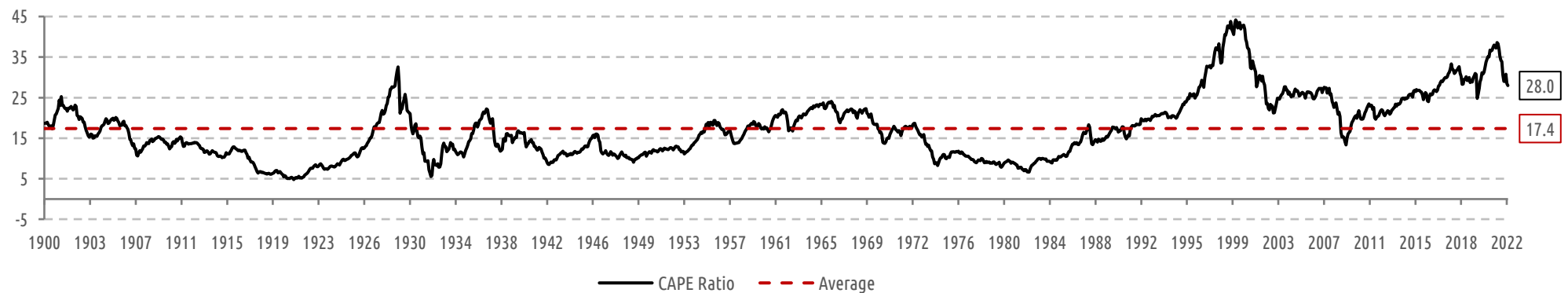




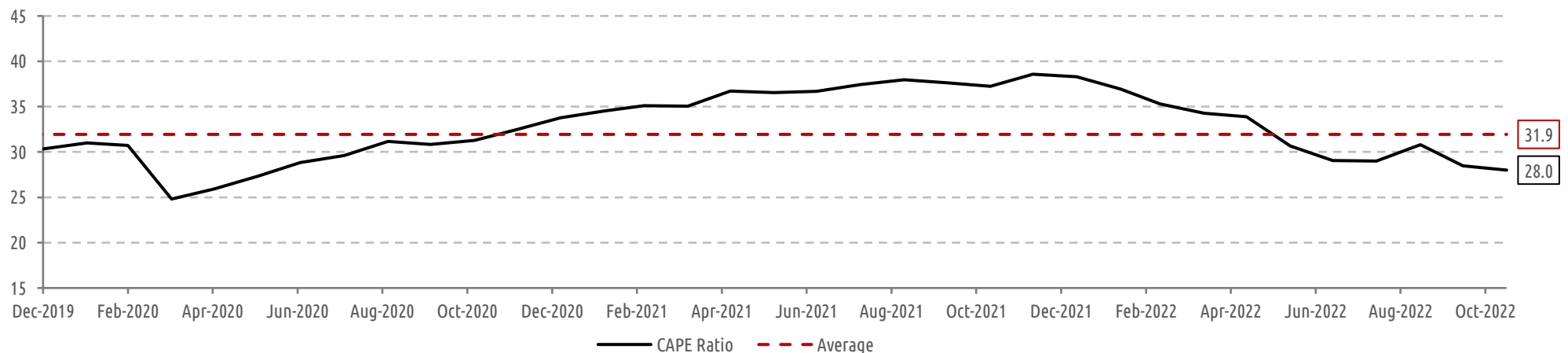
# US Shiller Cyclically Adjusted Price to Earnings ratio (CAPE ratio)<sup>1</sup>

Shiller CAPE ratio remains at record high level in historical perspective

Cyclically Adjusted Price Earnings ratio – Since 1900

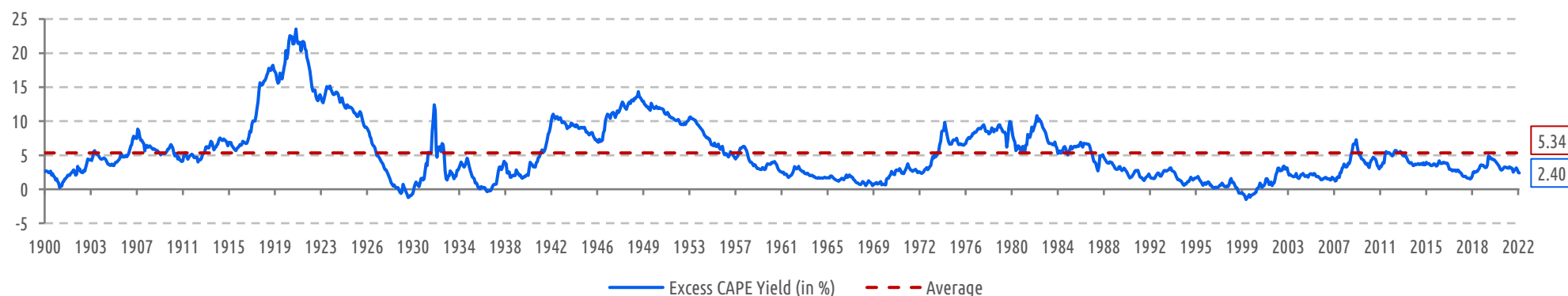


Cyclically Adjusted Price Earnings ratio – Since 2020

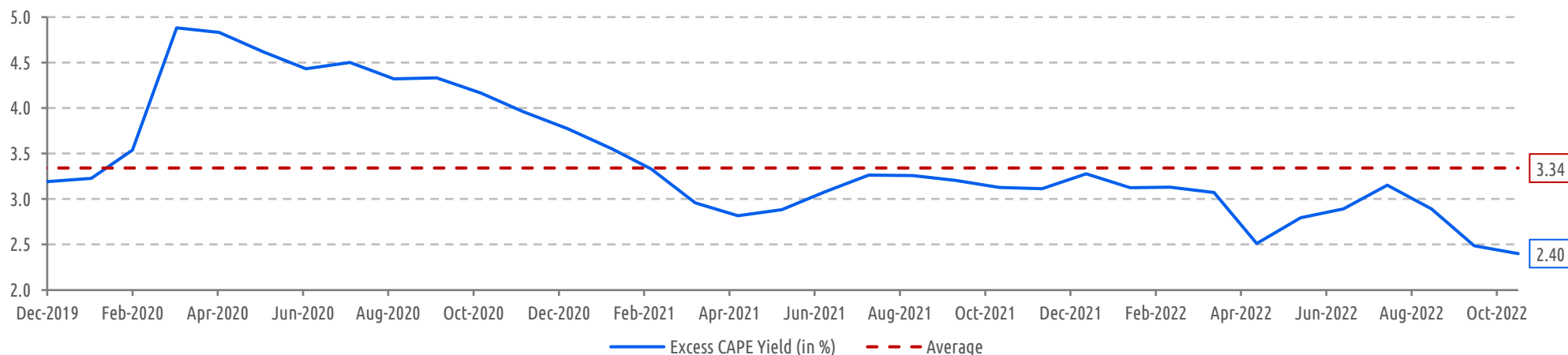


## Shiller excess CAPE return index remains at moderate level in the US

Excess Cyclically Adjusted Price Earnings return – Since 1900



Excess Cyclically Adjusted Price Earnings return – Since 2020



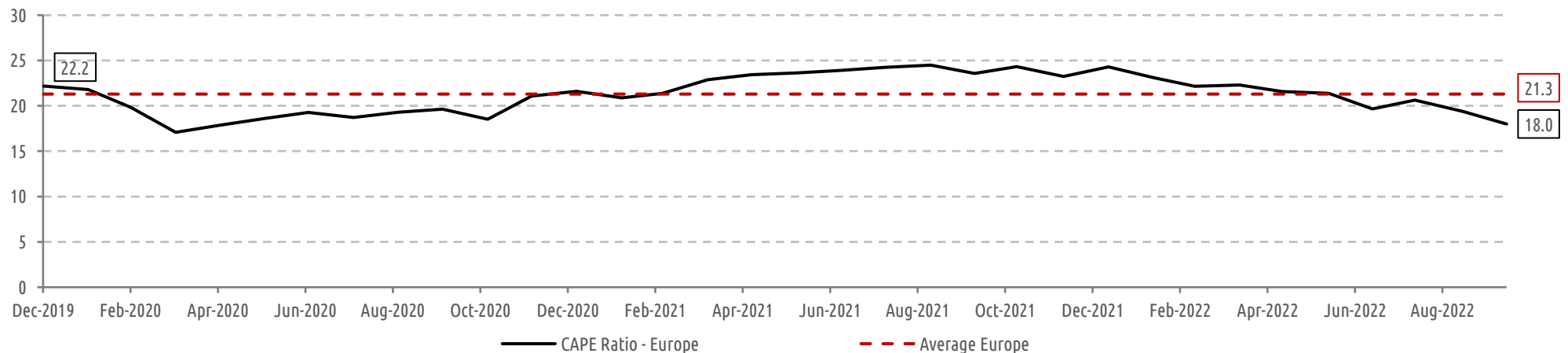
# Shiller CAPE ratio in Europe

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

Cyclically Adjusted Price Earnings ratio – Since 1982

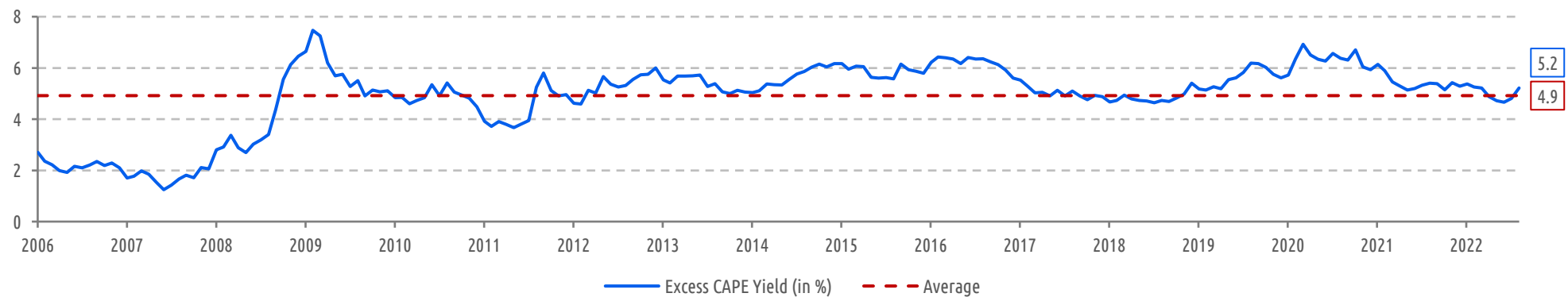


Cyclically Adjusted Price Earnings ratio – Since 2020

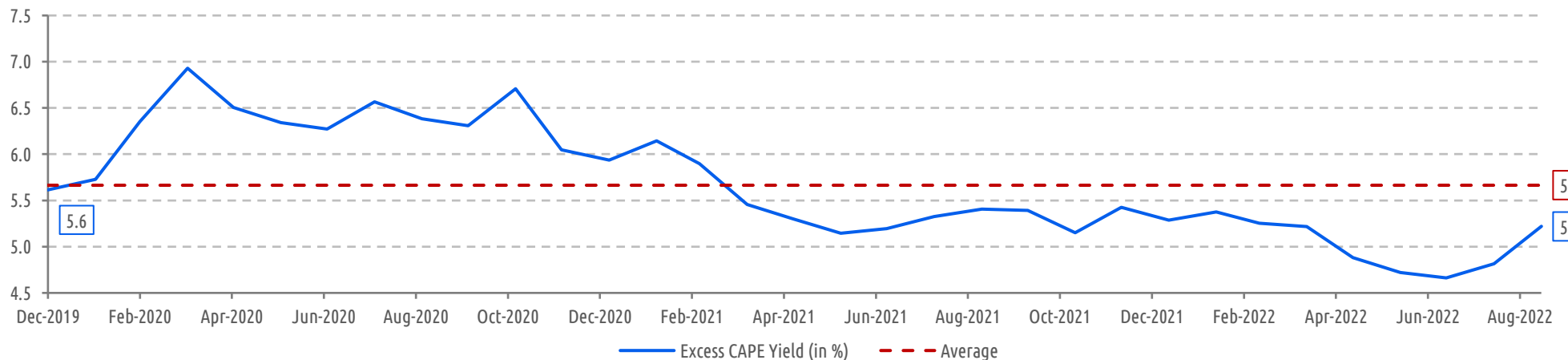


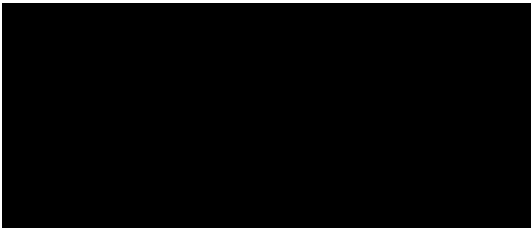
## Shiller excess CAPE return index in the Euro Area back to average

Excess Cyclically Adjusted Price Earnings return – Since 2006



Excess Cyclically Adjusted Price Earnings return – Since 2020





## **V Appendix**

## Links to DBnomics data

| Page # | Graph / Table                                                       | Web link                                                                                                                |
|--------|---------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|
| 4      | Quarterly GDP growth (% change over the previous period) – Canada   | <a href="https://data.oecd.org/gdp/quarterly-gdp-growth-canada">OECD/KEI/NAEXKP01.CAN.GP.Q</a>                          |
| 4      | Quarterly GDP growth (% change over the previous period) – Germany  | <a href="https://data.oecd.org/gdp/quarterly-gdp-growth-germany">OECD/KEI/NAEXKP01.DEU.GP.Q</a>                         |
| 4      | Quarterly GDP growth (% change over the previous period) – Eurozone | <a href="https://data.oecd.org/gdp/quarterly-gdp-growth-eurozone">OECD/KEI/NAEXKP01.EA19.GP.Q</a>                       |
| 4      | Quarterly GDP growth (% change over the previous period) – France   | <a href="https://data.oecd.org/gdp/quarterly-gdp-growth-france">OECD/KEI/NAEXKP01.FRA.GP.Q</a>                          |
| 4      | Quarterly GDP growth (% change over the previous period) – UK       | <a href="https://data.oecd.org/gdp/quarterly-gdp-growth-uk">OECD/KEI/NAEXKP01.GBR.GP.Q</a>                              |
| 4      | Quarterly GDP growth (% change over the previous period) – Italy    | <a href="https://data.oecd.org/gdp/quarterly-gdp-growth-italy">OECD/KEI/NAEXKP01.ITA.GP.Q</a>                           |
| 4      | Quarterly GDP growth (% change over the previous period) – Japan    | <a href="https://data.oecd.org/gdp/quarterly-gdp-growth-japan">OECD/KEI/NAEXKP01.JPN.GP.Q</a>                           |
| 4      | Quarterly GDP growth (% change over the previous period) – US       | <a href="https://data.oecd.org/gdp/quarterly-gdp-growth-us">OECD/KEI/NAEXKP01.USA.GP.Q</a>                              |
| 4      | IMF yearly GDP growth rate (YoY % change) – Canada                  | <a href="https://www.imf.org/en/Data/2022/10/CAN.NGDP_RPCH.pcent_change">IMF/WEO:2022-10/CAN.NGDP_RPCH.pcent_change</a> |
| 4      | IMF yearly GDP growth rate (YoY % change) – Germany                 | <a href="https://www.imf.org/en/Data/2022/10/DEU.NGDP_RPCH.pcent_change">IMF/WEO:2022-10/DEU.NGDP_RPCH.pcent_change</a> |
| 4      | IMF yearly GDP growth rate (YoY % change) – France                  | <a href="https://www.imf.org/en/Data/2022/10/FRA.NGDP_RPCH.pcent_change">IMF/WEO:2022-10/FRA.NGDP_RPCH.pcent_change</a> |
| 4      | IMF yearly GDP growth rate (YoY % change) – UK                      | <a href="https://www.imf.org/en/Data/2022/10/GBR.NGDP_RPCH.pcent_change">IMF/WEO:2022-10/GBR.NGDP_RPCH.pcent_change</a> |
| 4      | IMF yearly GDP growth rate (YoY % change) – Italy                   | <a href="https://www.imf.org/en/Data/2022/10/ITA.NGDP_RPCH.pcent_change">IMF/WEO:2022-10/ITA.NGDP_RPCH.pcent_change</a> |
| 4      | IMF yearly GDP growth rate (YoY % change) – Japan                   | <a href="https://www.imf.org/en/Data/2022/10/JPN.NGDP_RPCH.pcent_change">IMF/WEO:2022-10/JPN.NGDP_RPCH.pcent_change</a> |

## Links to DBnomics data

| Page # | Graph / Table                                                           | Web link                                                             |
|--------|-------------------------------------------------------------------------|----------------------------------------------------------------------|
| 4      | IMF yearly GDP growth rate (YoY % change) – US                          | <a href="#"><u>IMF/WEO:2022-10/USA.NGDP_RPCH.pcent_change</u></a>    |
| 4      | IMF yearly GDP growth rate (YoY % change) – Eurozone                    | <a href="#"><u>IMF/WEOAGG:2022-10/163.NGDP_RPCH.pcent_change</u></a> |
| 4      | OECD Weekly growth tracker – Eurozone                                   | <a href="#"><u>OECD/GDP_GROWTH/W.Eurozone.tracker_yoy</u></a>        |
| 4      | OECD Weekly growth tracker – United States                              | <a href="#"><u>OECD/GDP_GROWTH/W.USA.tracker_yoy</u></a>             |
| 5      | Quarterly GDP growth (% change over the previous period) – Brazil       | <a href="#"><u>OECD/KEI/NAEXKP01.BRA.GP.Q</u></a>                    |
| 5      | Quarterly GDP growth (% change over the previous period) – Mexico       | <a href="#"><u>OECD/KEI/NAEXKP01.MEX.GP.Q</u></a>                    |
| 5      | Quarterly GDP growth (% change over the previous period) – South Africa | <a href="#"><u>OECD/KEI/NAEXKP01.ZAF.GP.Q</u></a>                    |
| 5      | Quarterly GDP growth (% change over the previous period) – Indonesia    | <a href="#"><u>OECD/KEI/NAEXKP01.IDN.GP.Q</u></a>                    |
| 5      | Quarterly GDP growth (% change over the previous period) – India        | <a href="#"><u>OECD/KEI/NAEXKP01.IND.GP.Q</u></a>                    |
| 5      | IMF yearly GDP growth rate (YoY % change) – Brazil                      | <a href="#"><u>IMF/WEO:2022-10/BRA.NGDP_RPCH.pcent_change</u></a>    |
| 5      | IMF yearly GDP growth rate (YoY % change) – Mexico                      | <a href="#"><u>IMF/WEO:2022-10/MEX.NGDP_RPCH.pcent_change</u></a>    |
| 5      | IMF yearly GDP growth rate (YoY % change) – South Africa                | <a href="#"><u>IMF/WEO:2022-10/ZAF.NGDP_RPCH.pcent_change</u></a>    |
| 5      | IMF yearly GDP growth rate (YoY % change) – Indonesia                   | <a href="#"><u>IMF/WEO:2022-10/IDN.NGDP_RPCH.pcent_change</u></a>    |
| 5      | IMF yearly GDP growth rate (YoY % change) – India                       | <a href="#"><u>IMF/WEO:2022-10/IND.NGDP_RPCH.pcent_change</u></a>    |

## Links to DBnomics data

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|--------|---------------------------------------------------|------------------------------------------------------------|
| 5      | IMF yearly GDP growth rate (YoY % change) – China | <a href="#">IMF/WEO:2022-10/CHN.NGDP_RPCH.pcent_change</a> |
| 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>          |
| 7      | Consumer confidence index – United States         | <a href="#">OECD/MEI_CLI/CSCICP03.USA.M</a>                |
| 7      | Consumer confidence index – Germany               | <a href="#">OECD/MEI_CLI/CSCICP03.DEU.M</a>                |
| 7      | Consumer confidence index – France                | <a href="#">OECD/MEI_CLI/CSCICP03.FRA.M</a>                |
| 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>                |
| 7      | Business confidence index – Germany               | <a href="#">OECD/MEI_CLI/BSCICP03.DEU.M</a>                |
| 7      | Business confidence index – France                | <a href="#">OECD/MEI_CLI/BSCICP03.FRA.M</a>                |
| 7      | Business confidence index – United Kingdom        | <a href="#">OECD/MEI_CLI/BSCICP03.GBR.M</a>                |



## Links to DBnomics data

| Page # | Graph / Table                                                                                                                | Web link                                                                                                                                                    |
|--------|------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 9/10   | Natural Gas (Dutch TTF) prices in historical perspective (€/MWh)                                                             | <a href="#">ICE/DUTCH TTF GAS FUTURES/D.5460494</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.F5.EA.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><br><a href="#">Eurostat/jvs_q_nace2/Q.NSA.B-S.TOTAL.JOBRATE.EA19</a>                           |
| 13     | Beveridge curve - France (Q1-17 – Q2-22), Quarterly                                                                          | <a href="#">Eurostat/jvs_q_nace2/Q.NSA.B-S.GE10.JOBRATE.FR</a><br><a href="#">INSEE/CHOMAGE-TRIM-NATIONAL/T.CTTXC.TAUX.FR-D976.0.00-.POURCENT.CVS.FALSE</a> |
| 14     | Wage growth tracker – France (Quarterly)                                                                                     | <a href="#">INSEE/ICT-2016/T.BDM_EUR.ICT.A21-BTN.INDICE.SSE.FE.SO.CVS-CJO.2016</a>                                                                          |
| 15     | CPI Inflation (YoY % change) – United States                                                                                 | <a href="#">BLS/cu/CUSR0000SA0</a><br><a href="#">BLS/cu/CUSR0000SA0L1E</a>                                                                                 |
| 15     | CPI Inflation (YoY % change) – Eurozone                                                                                      | <a href="#">Eurostat/prc_hicp_manr/M.RCH_A.CP00.EA</a><br><a href="#">Eurostat/prc_hicp_manr/M.RCH_A.TOT_X_NRG_FOOD.EA</a>                                  |
| 15     | CPI Inflation (YoY % change) – France                                                                                        | <a href="#">INSEE/IPC-2015/M.IPC.SO.SO.4035.GLISSEMENT_ANNUEL.ENSEMBLE.FE.POURCENT.BRUT.SO.FALSE</a>                                                        |
| 15     | CPI Inflation (YoY % change) – Germany                                                                                       | <a href="#">DESTATIS/61111BM001/DG.PREIS1</a><br><a href="#">DESTATIS/61111BM006/DG.CC13-63E.PREIS1</a>                                                     |
| 15     | CPI Inflation (YoY % change) – United Kingdom                                                                                | <a href="#">ONS/MM23/D7G7.M</a><br><a href="#">ONS/MM23/DK08.M</a>                                                                                          |
| 15     | CPI Inflation (YoY % change) – Japan                                                                                         | <a href="#">STATJP/CPIm/001</a><br><a href="#">STATJP/CPIm/740</a>                                                                                          |
| 16     | CPI Inflation (YoY % change)                                                                                                 | <a href="#">OECD/KEI/CPALTT01.CHN.GY.M</a>                                                                                                                  |
| 17     | Quarterly implied GDP deflator – Germany                                                                                     | <a href="#">Eurostat/namq_10_gdp/Q.PD_PCH_SM_NAC.SCA.B1GQ.DE</a>                                                                                            |
| 17     | Quarterly implied GDP deflator – France                                                                                      | <a href="#">Eurostat/namq_10_gdp/Q.PD_PCH_SM_NAC.SCA.B1GQ.FR</a>                                                                                            |

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|--------|---------------------------------------------------------------|-------------------------------------------------------------------------------------------------|
| 17     | Quarterly implied GDP deflator - United Kingdom               | <a href="#"><u>ONS/QNA/IHYU.Q</u></a>                                                           |
| 17     | Quarterly implied GDP deflator - United States                | <a href="#"><u>BEA/NIPA-T10109/A191RD-Q</u></a>                                                 |
| 18     | Producer price index for industrial products - United Kingdom | <a href="#"><u>ONS/MM22/GB7S.M</u></a>                                                          |
| 18     | Producer price index for industrial products – France         | <a href="#"><u>INSEE/IPPI-2015/M.BDM EUR.ENS IPP.SO.NA A10-BE.INDICE.FE.SO.BRUT.2015.SO</u></a> |
| 18     | Producer price index for industrial products – Germany        | <a href="#"><u>DESTATIS/61241BM001/DG.PRE001</u></a>                                            |
| 18     | Producer price index for industrial products - United States  | <a href="#"><u>BLS/pc/PCUOMFG--OMFG--</u></a>                                                   |
| 24     | 10-Y Nominal yield – US                                       | <a href="#"><u>FED/H15/RIFLGFCY10 N.B</u></a>                                                   |
| 25     | Yield curve – US                                              | <a href="#"><u>FED/H15/RIFLGFCM03 N.B</u></a>                                                   |
| 28     | 10-Y Nominal yield – German Bund                              | <a href="#"><u>BUBA/BBK01/WT1010</u></a>                                                        |
| 28     | Inflation Expectations - Germany                              | <a href="#"><u>BUBA/BBSSY/D.KCP.EUR.A607.DE0001102523.A</u></a>                                 |
| 28     | Forward Rates on 10-Year German Bund                          | <a href="#"><u>BUBA/BBSIS/D.I.ZAR.ZI.EUR.S1311.B.A604.R10XX.R.A.A. Z. Z.A</u></a>               |
| 29     | Yield curve – Germany                                         | <a href="#"><u>BUBA/BBSSY/D.KCP.EUR.A607.DE0001102523.A</u></a>                                 |
| 30     | Nominal Foreign exchange rate in historical perspective       | <a href="#"><u>BDF/EXR/EXR.D.USD.EUR.SP00.A</u></a>                                             |
| 33     | Italian 10-Y yield                                            | <a href="#"><u>Eurostat/irt lt mcby d/D.MCBY.IT</u></a>                                         |

## Links to DBnomics data

| Page # | Graph / Table                                  | Web link                                                |
|--------|------------------------------------------------|---------------------------------------------------------|
| 33     | Greek 10-Y yield                               | <a href="#">Eurostat/irt_lt_mcby_d/D.MCBY.EL</a>        |
| 33     | French 10-Y yield                              | <a href="#">BDF/FM/FM.D.FR.EUR.FR2.BB.FR10YT_RR.YLD</a> |
| 38     | Composite Indicator of Systemic Stress (daily) | <a href="#">ECB/CISS/D.U2.Z0Z.4F.EC.SS_CIN.IDX</a>      |