

CEPREMAP / DBNOMICS

Macroeconomic Outlook - March 2023

DBnomics

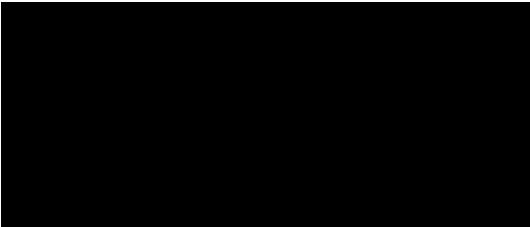
- All data presented in the forthcoming slides are extracted from DBnomics (<https://db.nomics.world/>), an open-sourced databank created at CEPREMAP, and will be automatically updated every Friday at 2:00pm
- The project has been financed by generous grants from Banque de France, AFD, DG Trésor, France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

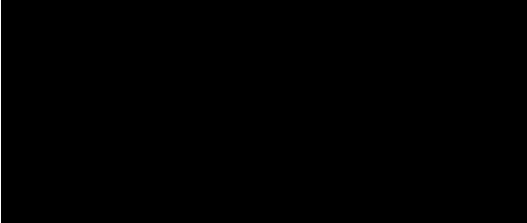
- In response to inflationary pressures, monetary policy has been tightened up to levels unheard of for the last 20 years, the question being up to which point in 2023. Financial stress arising from the bankruptcy of Silicon Valley Bank has put into question the extent to which monetary tightening should continue.
- Markets are now following in parallel financial stress and inflation trends.
- The sheer threat of a recession 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, in 2022, to an appreciation of the USD against the EUR. The expectation that US inflation may peak before the EZ could reverse this trend this 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 growth in advanced economies, but not a major recession.

Yearly GDP growth rate (YoY % change)

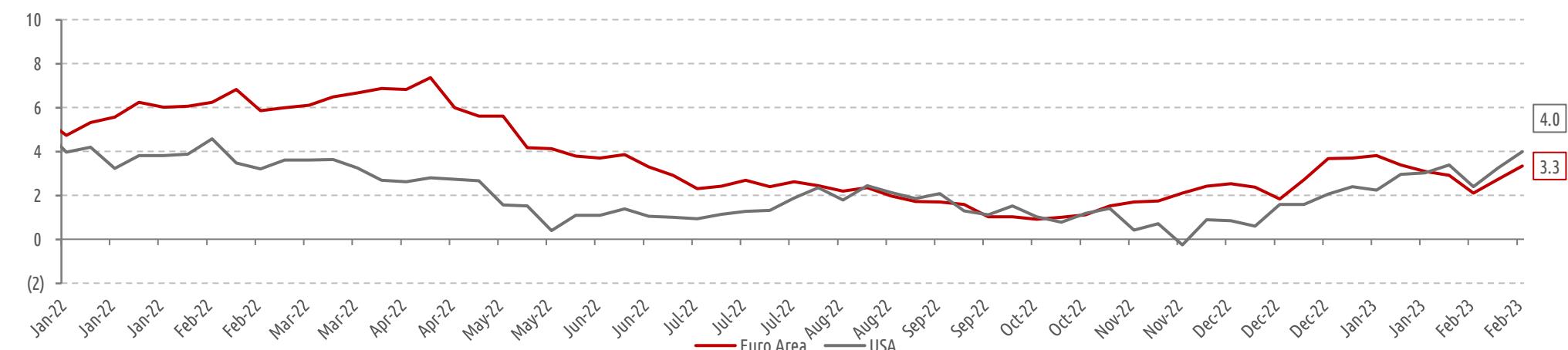
| Country | Yearly GDP growth rate % | | | | |
|------------------|--------------------------|------|---------|---------|---------|
| | 2020 | 2021 | 2022(P) | 2023(P) | 2024(P) |
| Euro Area | (6.2) ¹ | 5.3 | 3.5 | 0.8 | 1.5 |
| <i>Germany</i> | (4.1) | 2.6 | 1.9 | 0.3 | 1.7 |
| <i>France</i> | (7.9) | 6.8 | 2.6 | 0.7 | 1.3 |
| <i>Italy</i> | (9.0) | 7.0 | 3.8 | 0.6 | 1.1 |
| UK | (11.0) | 7.6 | 4.1 | (0.2) | 0.9 |
| USA | (2.8) | 6.0 | 2.1 | 1.5 | 0.9 |
| Canada | (5.1) | 5.0 | 3.4 | 1.1 | 1.4 |
| Japan | (4.3) | 2.1 | 1.0 | 1.4 | 1.1 |

Forecast from OECD Economic Outlook, Interim Report March 2023

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

| Country | Quarterly GDP growth rate % | | | | | | | | | |
|------------------|-----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|--|
| | 20Q4 | 21Q1 | 21Q2 | 21Q3 | 21Q4 | 22Q1 | 22Q2 | 22Q3 | 22Q4 | |
| Euro Area | (0.3) | (0.0) | 2.0 | 2.3 | 0.6 | 0.6 | 0.9 | 0.4 | (0.0) | |
| <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 | (0.4) | |
| <i>Italy</i> | (0.7) | 0.5 | 2.4 | 2.9 | 0.9 | 0.1 | 1.0 | 0.4 | (0.1) | |
| UK | 1.2 | (1.1) | 6.5 | 1.7 | 1.5 | 0.5 | 0.1 | (0.2) | 0.0 | |
| USA | 1.0 | 1.5 | 1.7 | 0.7 | 1.7 | (0.4) | (0.1) | 0.8 | 0.7 | |
| Canada | 2.1 | 1.3 | (0.6) | 1.4 | 1.7 | 0.6 | 0.9 | 0.6 | 0.0 | |
| Japan | 1.9 | (0.1) | 0.3 | (0.3) | 1.1 | (0.4) | 1.1 | (0.3) | 0.2 | |

Weekly growth tracker in Advanced Economies (YoY % change) – Since Jan. 2022



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)

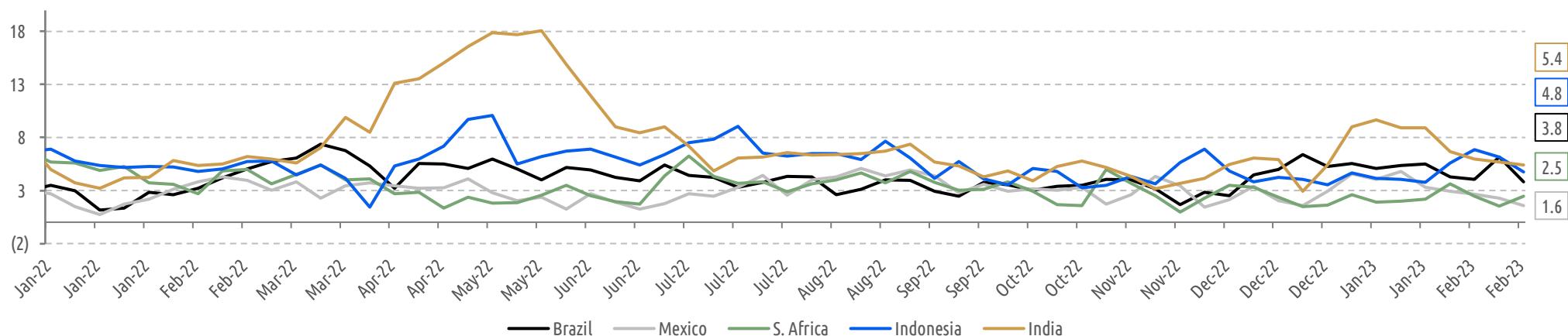
| Country | Yearly GDP growth rate % | | | | |
|-----------|--------------------------|------|---------|---------|---------|
| | 2020 | 2021 | 2022(P) | 2023(P) | 2024(P) |
| China | 2.2 | 8.4 | 3.0 | 5.3 | 4.9 |
| S. Africa | (6.3) | 4.9 | 2.0 | 0.6 | 0.9 |
| Brazil | (3.6) | 5.3 | 3.0 | 1.0 | 1.1 |
| India | (5.9) | 8.8 | 6.7 | 5.0 | 7.7 |
| Mexico | (8.0) | 4.7 | 3.0 | 1.8 | 2.1 |
| Indonesia | (2.1) | 3.7 | 5.3 | 4.7 | 5.1 |

Forecast from OECD Economic Outlook, Interim Report March 2023

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 | N.A |
| S. Africa | 2.7 | 0.8 | 1.4 | (1.8) | 1.4 | 1.6 | (0.8) | 1.8 | (1.3) |
| Brazil | 3.4 | 1.0 | (0.3) | 0.3 | 1.1 | 1.3 | 0.9 | 0.3 | (0.2) |
| India | 6.3 | 1.4 | (7.6) | 9.4 | 1.9 | 0.8 | 1.0 | 1.7 | 0.7 |
| Mexico | 4.3 | 0.4 | 0.7 | (1.1) | 1.2 | 1.2 | 1.1 | 0.9 | 0.5 |
| Indonesia | 2.4 | 1.0 | 0.2 | 0.1 | 3.3 | 1.1 | 0.9 | 0.7 | 2.2 |

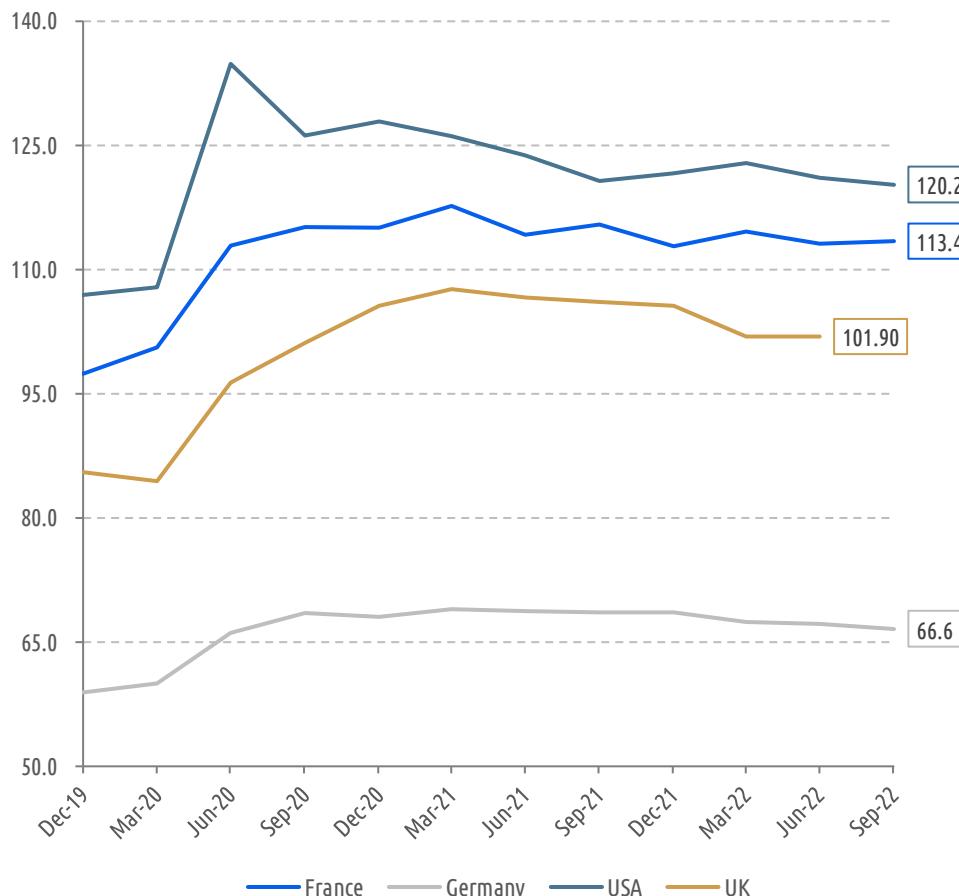
Weekly growth tracker in Emerging Economies (YoY % change) – Since Jan. 2022



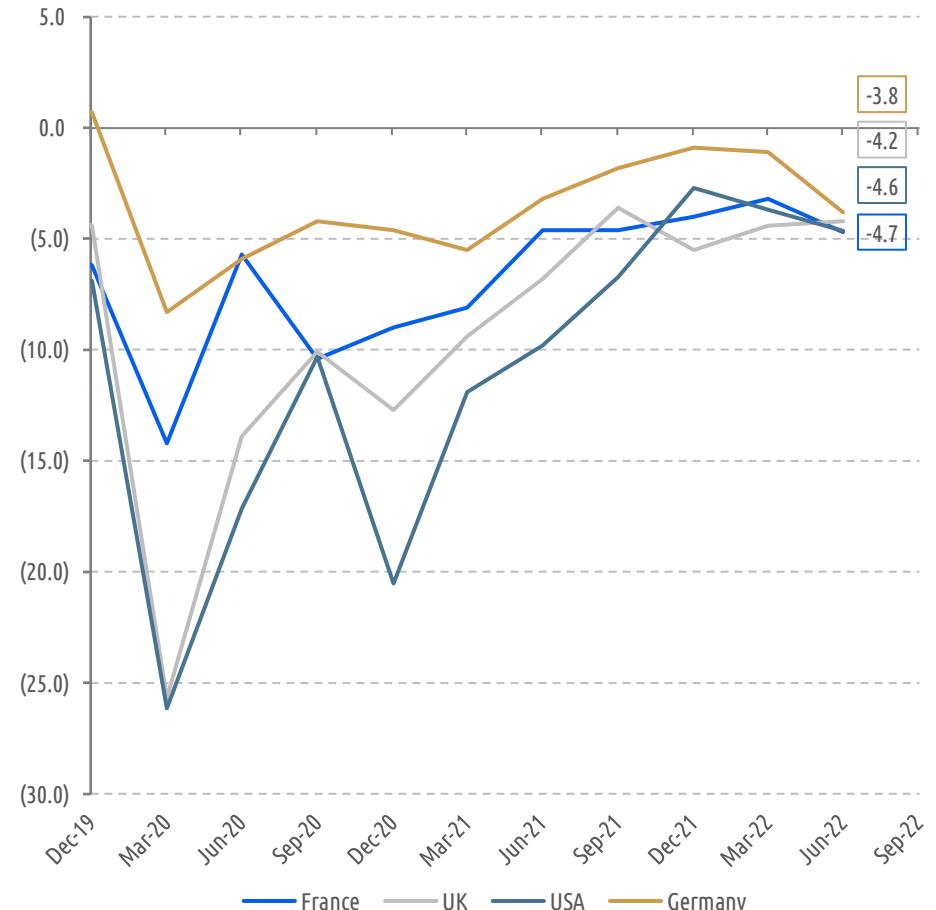
Government debts and deficits have reached a new plateau in the G4 countries¹

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 2020



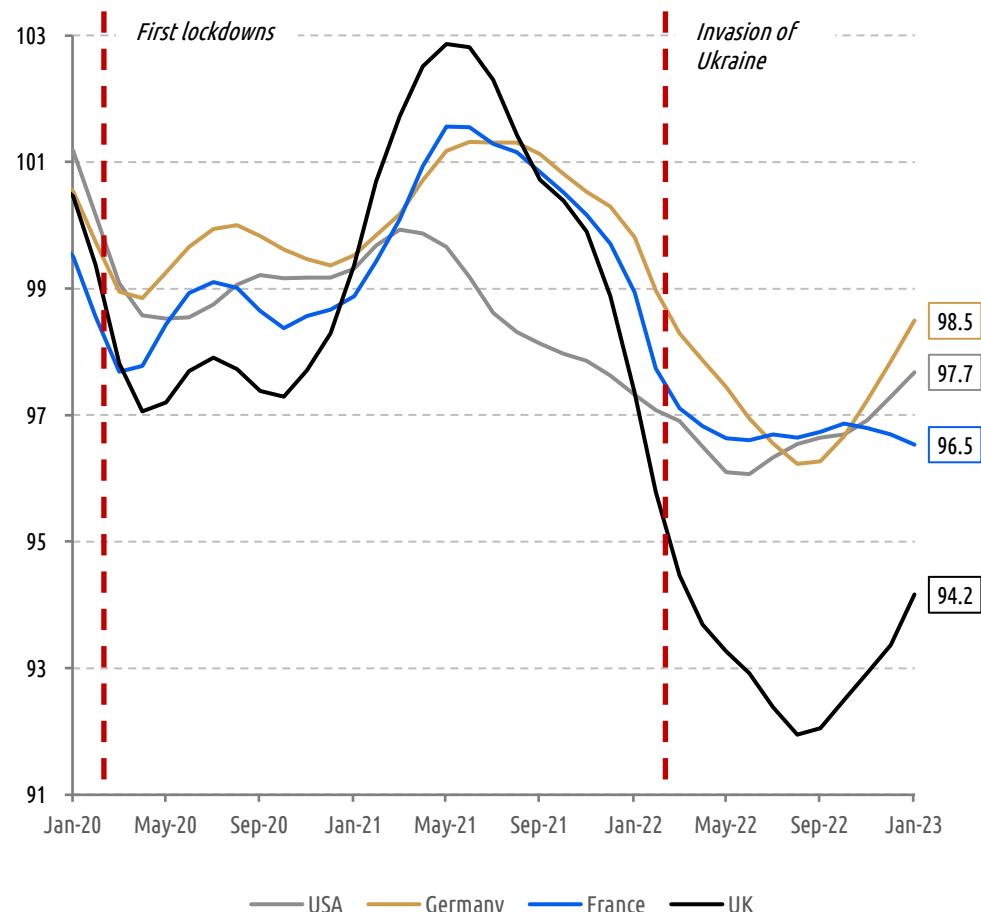
General Government deficit (% of GDP) – Since 2020



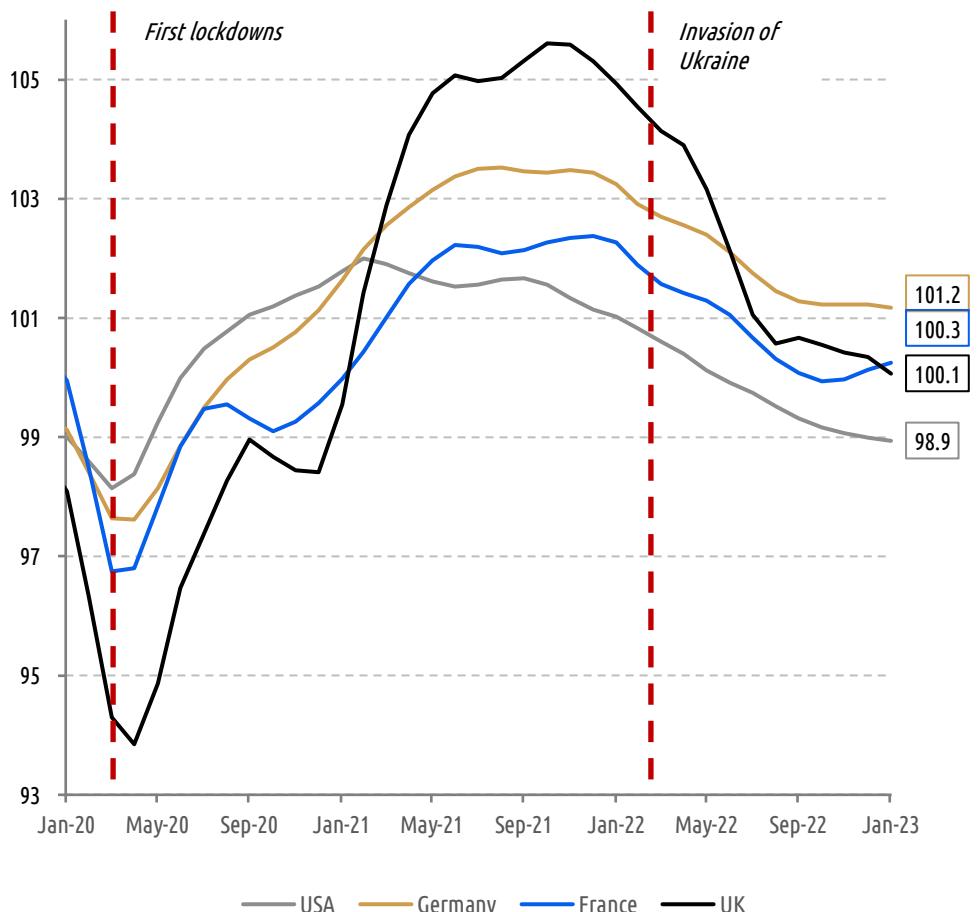
Consumer confidence indicators may have bottomed down in the G4 countries¹

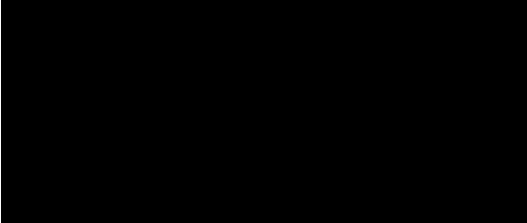
Business confidence, however, while below post-Covid peaks, remains at pre-crisis level

Consumer confidence indicator – Since Jan. 2020



Business confidence indicator – Since Jan. 2020





B The seeds of inflation

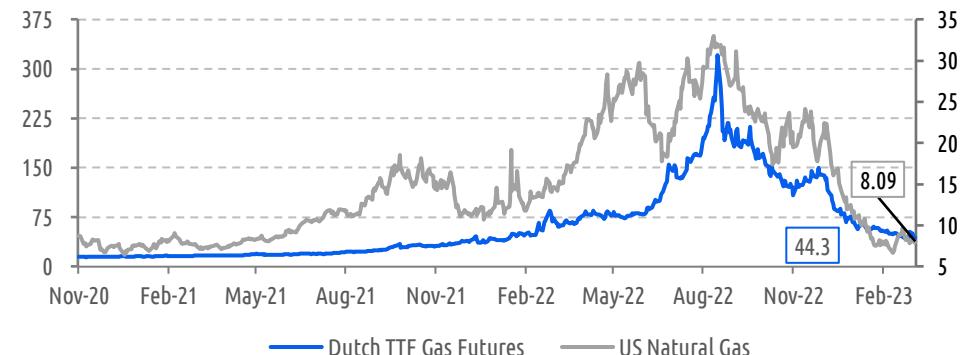
Energy prices have sharply increased over the last 2 years - (1/2)

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

Oil prices in historical perspective (USD per barrel)



EU (left scale) and US (right scale) natural gas prices¹ (€/MWh) – Apr. 23



Copper prices in historical perspective (USD/tonne)



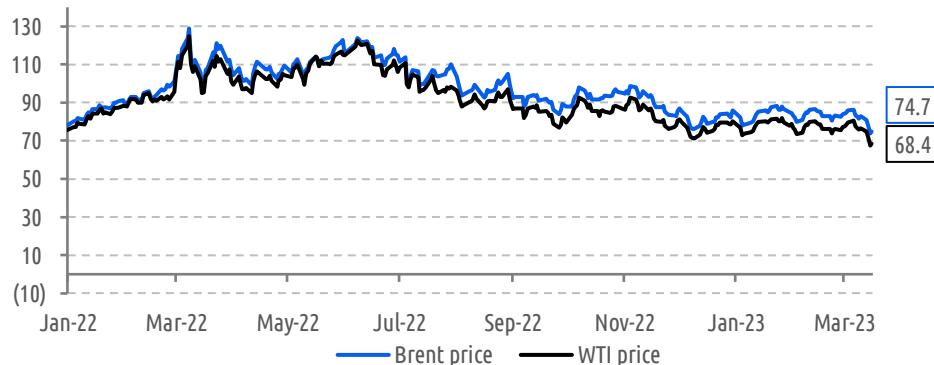
CBOT Wheat (USD/Bushel)



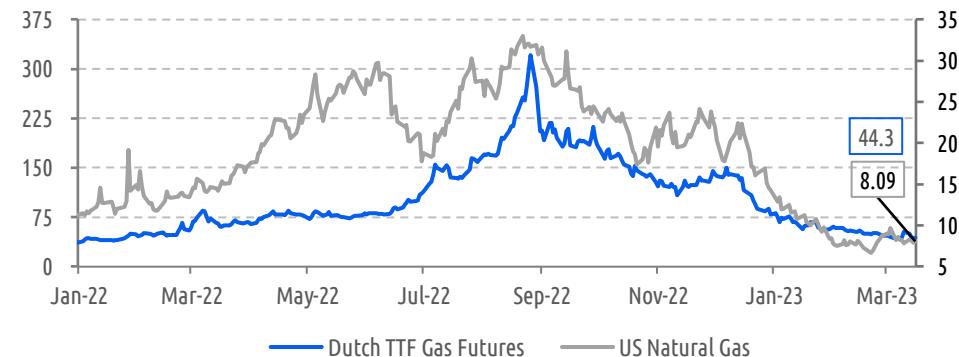
But have already peaked - (2/2)

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)



EU (left scale) and US (right scale) natural gas prices¹ (€/MWh) – Apr. 23



Copper prices in historical perspective (USD/tonne)



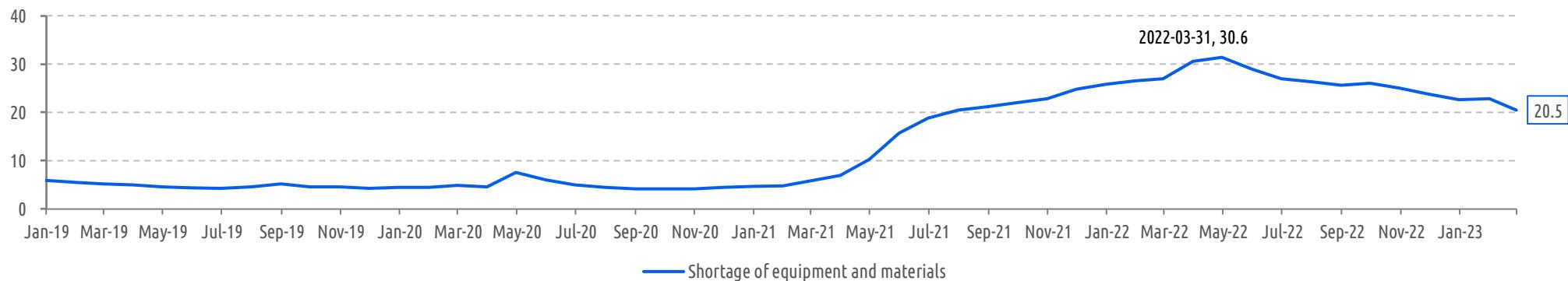
CBOT Wheat (USD/Bushel)



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)

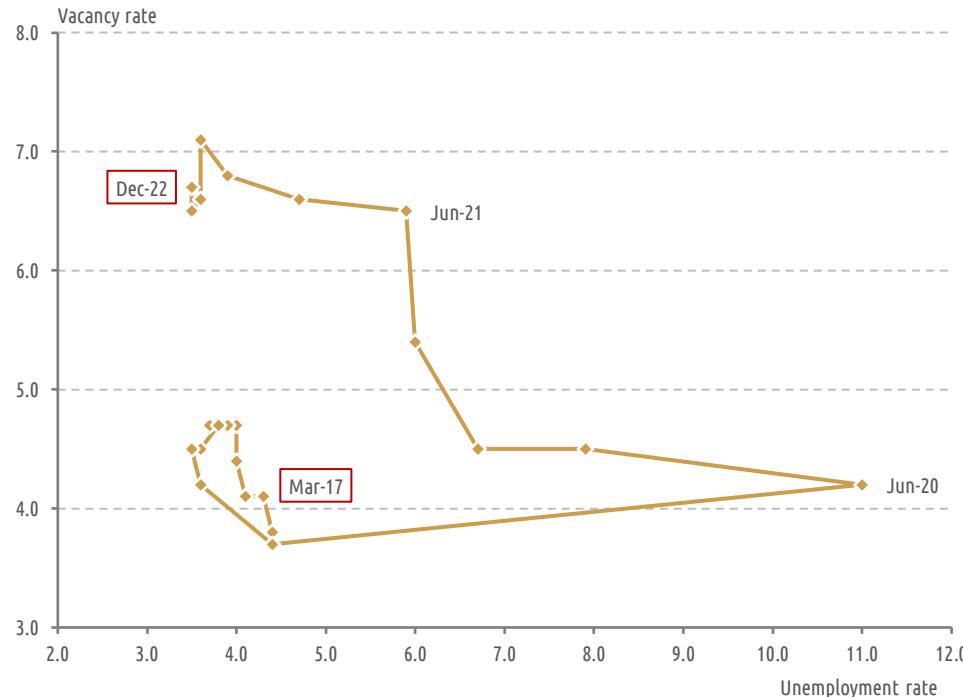


Sources: Eurostat, Freightos Data, Sea intelligence as of 17/03/2023

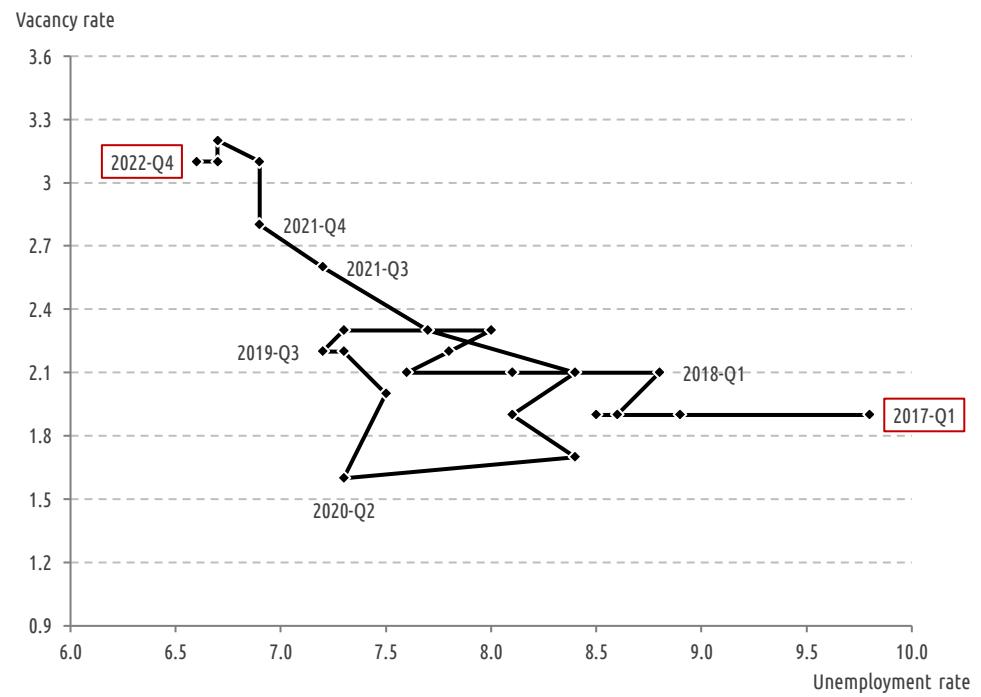
Labor markets remain tight... (1/2)

The vacancy/unemployment ratio still at record high levels

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



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



Unemployment rate (% of labor force) - Monthly

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

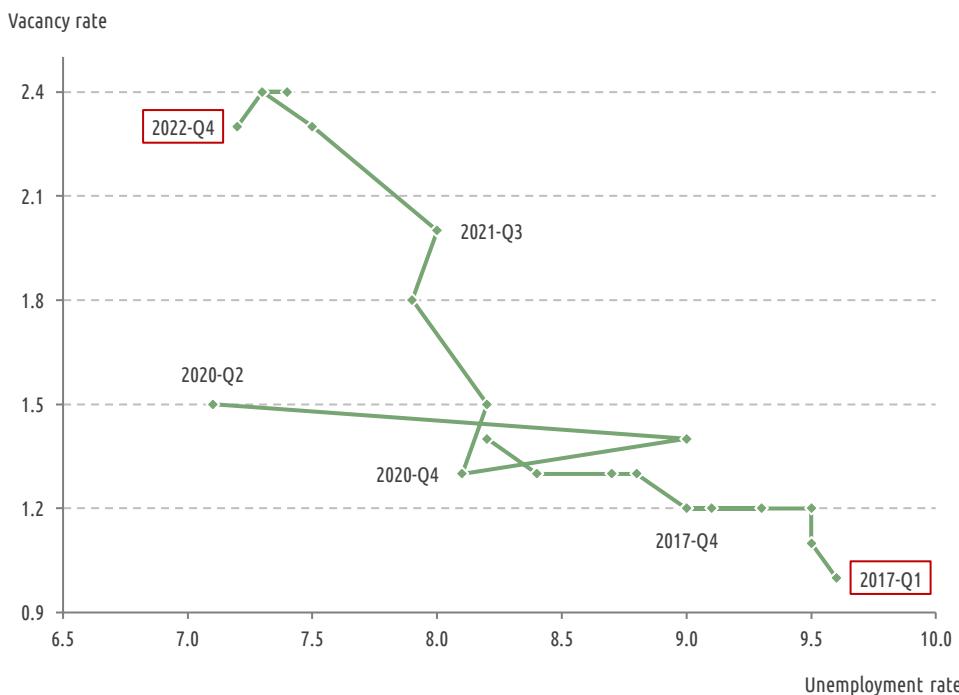
Unemployment rate (% of labor force) - Monthly

| Unemployment according to ILO definition – Total – Euro area – 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 | 6.8 | 6.8 | 6.7 | 6.7 | 6.7 | 6.7 | 6.7 | 6.7 | 6.7 | 6.7 | 6.6 | 6.6 |

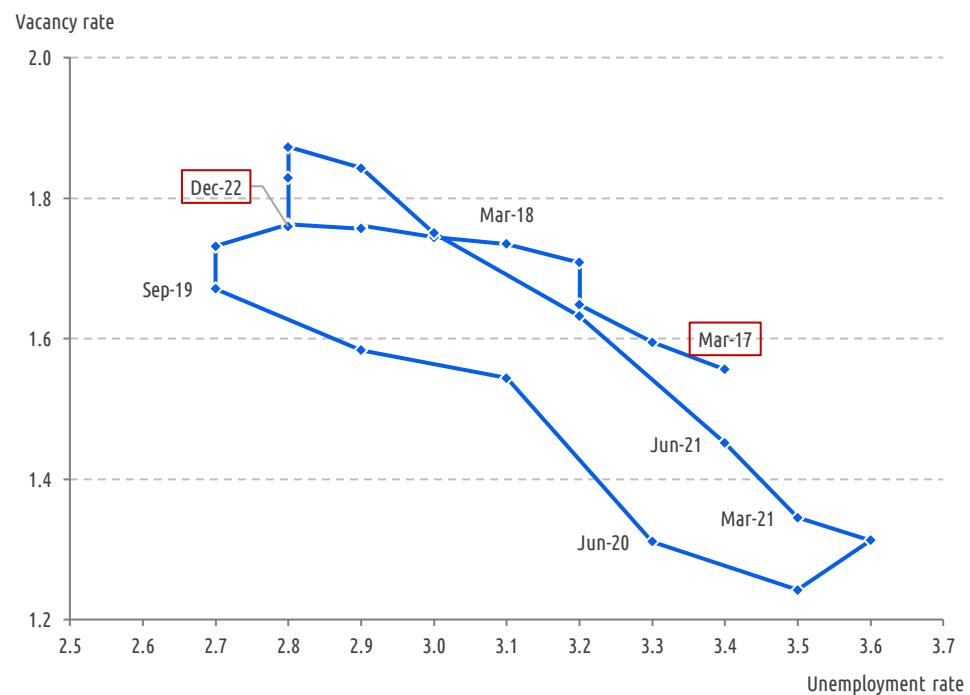
Labor markets remain tight... (2/2)

The vacancy/unemployment ratio still at record high levels

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



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



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

| Unemployment rate – Total – France – 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 | 7.3 | 7.4 | 7.5 | 7.5 | 7.5 | 7.4 | 7.2 | 7.1 | 7.2 | 7.1 | 7.2 | 7.1 |

Labor costs, however, seem constrained

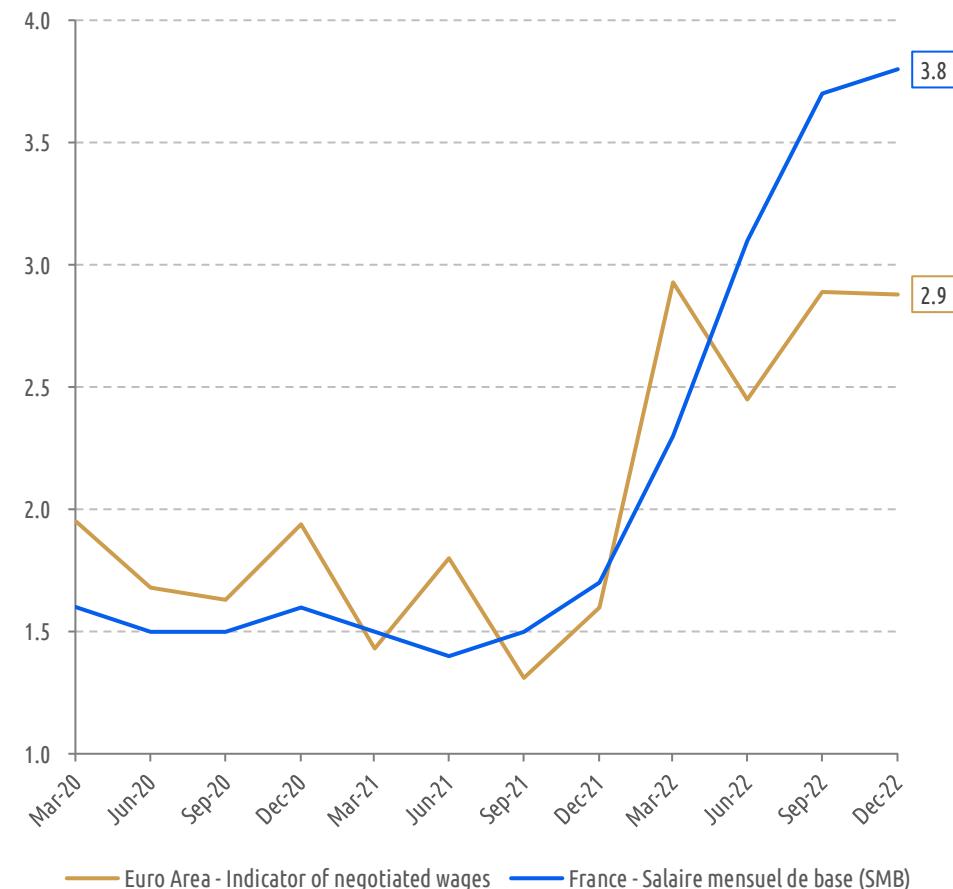
The verdict on EZ wage inflation still open

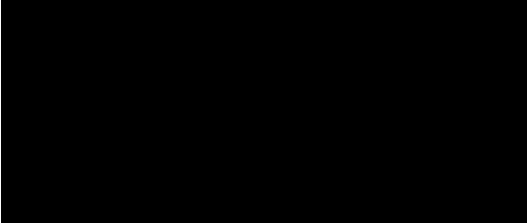
Wage growth tracker (nominal wage growth of individuals) – US (Monthly)



Sources: Federal reserve of Atlanta, ECB, Dares
Note : (1) Do not include bonuses

Indicator of negotiated wages¹ in the Euro Area (Quarterly)





C Inflation unbound

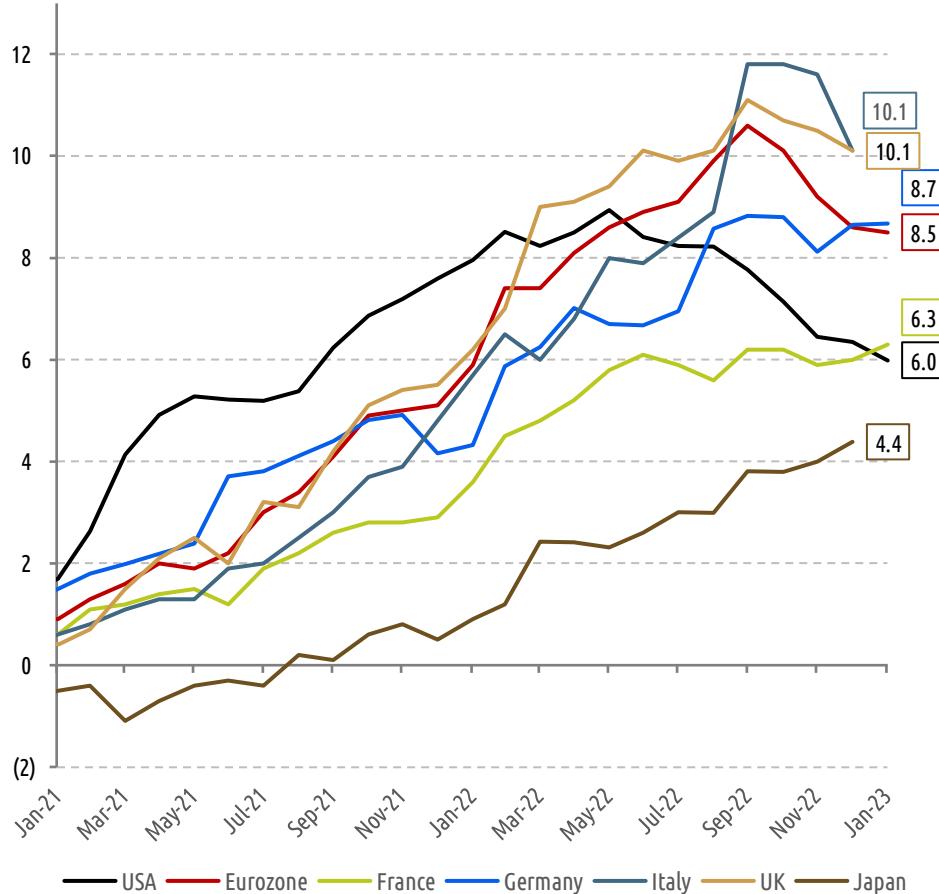
Inflation is (very) slowly getting down

The latest headline US number is down to 6.0% on the back of stabilizing core inflation. In Europe, inflation reached a disappointing 8.5% level with core inflation rising

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

| Country | Monthly Year-on-Year inflation rates (%) – 2022/2023 | | | | | | | | | | | |
|-----------------------|--|-----|-----|-----|------|-----|------|------|------|------|------|-----|
| | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Jan | Feb |
| US | 8.5 | 8.2 | 8.5 | 8.9 | 8.4 | 8.2 | 8.2 | 7.8 | 7.1 | 6.5 | 6.4 | 6.0 |
| <i>US core</i> | 6.5 | 6.1 | 6.0 | 5.9 | 5.9 | 6.3 | 6.6 | 6.3 | 6.0 | 5.7 | 5.5 | 5.5 |
| Euro Area | 7.4 | 7.4 | 8.1 | 8.6 | 8.9 | 9.1 | 9.9 | 10.6 | 10.1 | 9.2 | 8.6 | 8.5 |
| <i>Euro Area core</i> | 3.0 | 3.5 | 3.8 | 3.7 | 4.0 | 4.3 | 4.8 | 5.0 | 5.0 | 5.2 | 5.3 | 5.6 |
| France | 4.5 | 4.8 | 5.2 | 5.8 | 6.1 | 5.9 | 5.6 | 6.2 | 6.2 | 5.9 | 6.0 | 6.3 |
| <i>France core</i> | 2.6 | 3.3 | 3.7 | 3.7 | 4.3 | 4.7 | 4.5 | 5.0 | 5.3 | 5.3 | 5.6 | 6.1 |
| Germany | 5.9 | 6.2 | 7.0 | 6.7 | 6.7 | 7.0 | 8.6 | 8.8 | 8.8 | 8.1 | 8.7 | 8.7 |
| <i>Germany core</i> | 3.0 | 3.4 | 3.7 | 3.3 | 3.5 | 3.7 | 4.6 | 4.8 | 5.0 | 5.2 | 5.6 | 5.7 |
| Italy | 6.5 | 6.0 | 6.8 | 8.0 | 7.9 | 8.4 | 8.9 | 11.8 | 11.8 | 11.6 | 10.1 | – |
| <i>Italy core</i> | 1.9 | 2.4 | 3.2 | 3.8 | 4.1 | 4.4 | 5.0 | 5.3 | 5.6 | 5.8 | 6.0 | – |
| UK | 7.0 | 9.0 | 9.1 | 9.4 | 10.1 | 9.9 | 10.1 | 11.1 | 10.7 | 10.5 | 10.1 | – |
| <i>UK core</i> | 5.7 | 6.2 | 5.9 | 5.8 | 6.2 | 6.3 | 6.5 | 6.5 | 6.3 | 6.3 | 5.8 | – |
| Canada | 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 |
| Japan | 1.2 | 2.4 | 2.4 | 2.3 | 2.6 | 3.0 | 3.0 | 3.8 | 3.8 | 4.0 | 4.4 | – |
| <i>Japan core</i> | (0.7) | 0.8 | 0.8 | 0.9 | 1.2 | 1.6 | 1.8 | 2.5 | 2.8 | 3.0 | 3.2 | – |

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

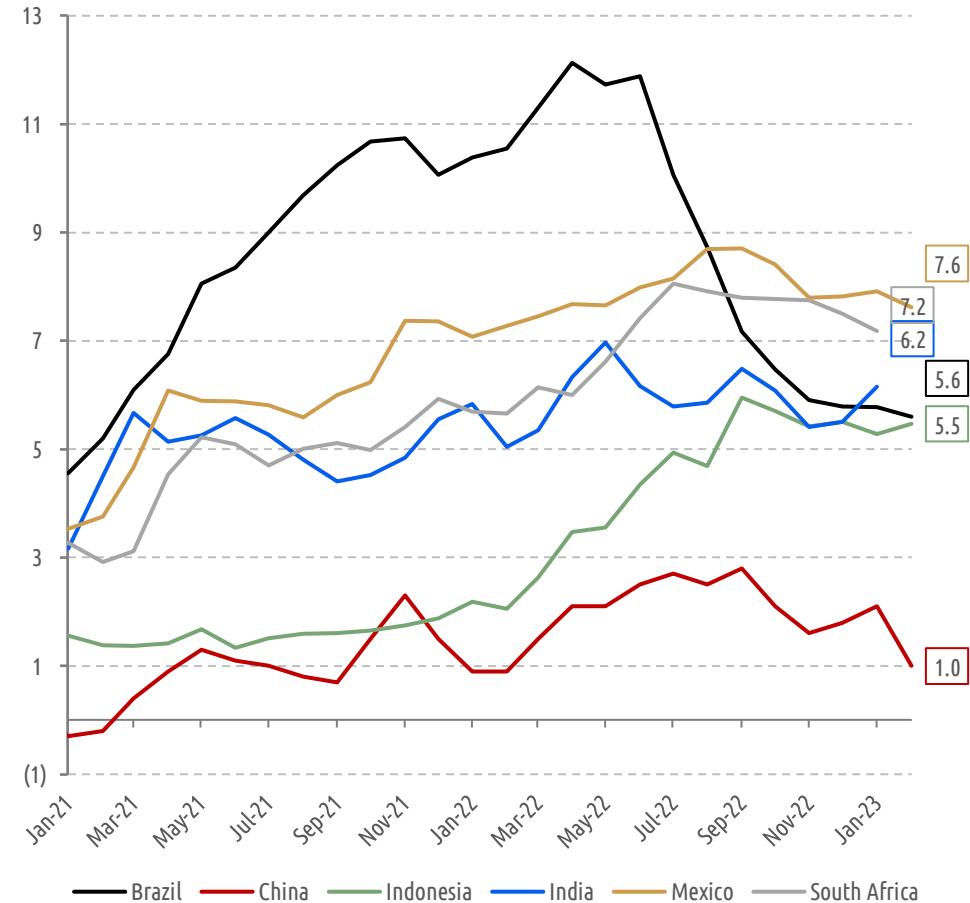
Inflation in emerging economies

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

CPI inflation in advanced economies (YoY % change)

| Country | Monthly Year-on-Year inflation rates (%) – 2022/2023 | | | | | | | | | | | |
|--------------|--|------|------|------|------|-----|-----|-----|-----|-----|-----|-----|
| | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Jan | Feb |
| China | 1.5 | 2.1 | 2.1 | 2.5 | 2.7 | 2.5 | 2.8 | 2.1 | 1.6 | 1.8 | 2.1 | 1.0 |
| India | 5.4 | 6.3 | 7.0 | 6.2 | 5.8 | 5.9 | 6.5 | 6.1 | 5.4 | 5.5 | 6.2 | – |
| South Africa | 6.1 | 6.0 | 6.6 | 7.4 | 8.1 | 7.9 | 7.8 | 7.8 | 7.7 | 7.5 | 7.2 | – |
| Brazil | 11.3 | 12.1 | 11.7 | 11.9 | 10.1 | 8.7 | 7.2 | 6.5 | 5.9 | 5.8 | 5.8 | 5.6 |
| Mexico | 7.5 | 7.7 | 7.7 | 8.0 | 8.2 | 8.7 | 8.7 | 8.4 | 7.8 | 7.8 | 7.9 | 7.6 |
| Indonesia | 2.6 | 3.5 | 3.6 | 4.3 | 4.9 | 4.7 | 6.0 | 5.7 | 5.4 | 5.5 | 5.3 | 5.5 |

CPI Inflation (YoY % change) – since January 2021



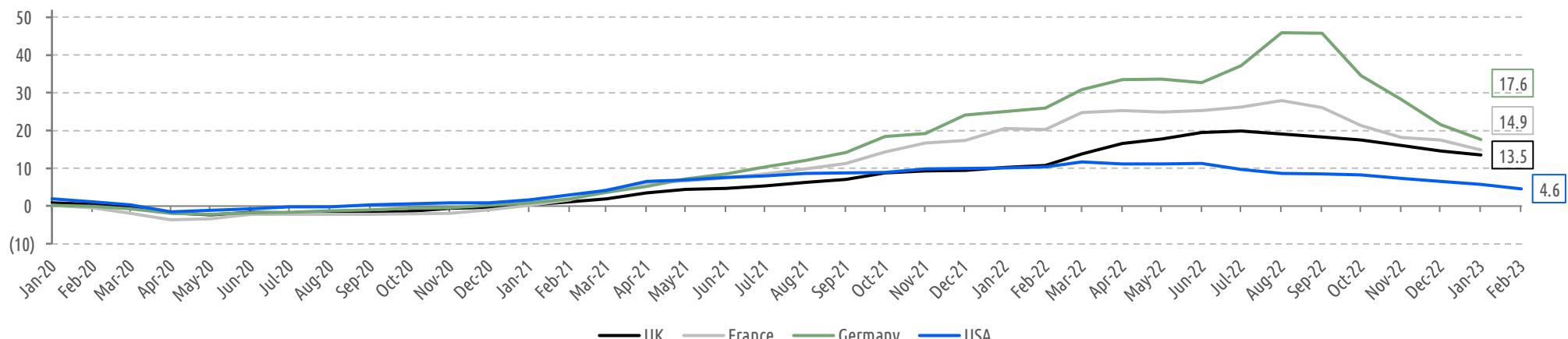
Producer price index for the G4 countries¹

Producer price inflation are still way above consumer inflation in Europe, the difference with the US originating from import of liquefied gas

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 | 03-22 | 04-22 | 05-22 | 06-22 | 07-22 | 08-22 | 09-22 | 10-22 | 11-22 | 12-22 | 01-23 | 02-23 |
| USA | 11.7 | 11.2 | 11.1 | 11.2 | 9.7 | 8.7 | 8.5 | 8.2 | 7.3 | 6.5 | 5.7 | 4.6 |
| Germany | 30.9 | 33.5 | 33.6 | 32.7 | 37.2 | 45.8 | 45.8 | 34.5 | 28.2 | 21.6 | 17.6 | - |
| France | 24.8 | 25.2 | 25.0 | 25.3 | 26.2 | 27.9 | 26.1 | 21.3 | 18.1 | 17.5 | 14.9 | - |
| UK | 13.7 | 16.6 | 17.8 | 19.5 | 19.9 | 19.1 | 18.3 | 17.5 | 16.0 | 14.5 | 13.5 | - |

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



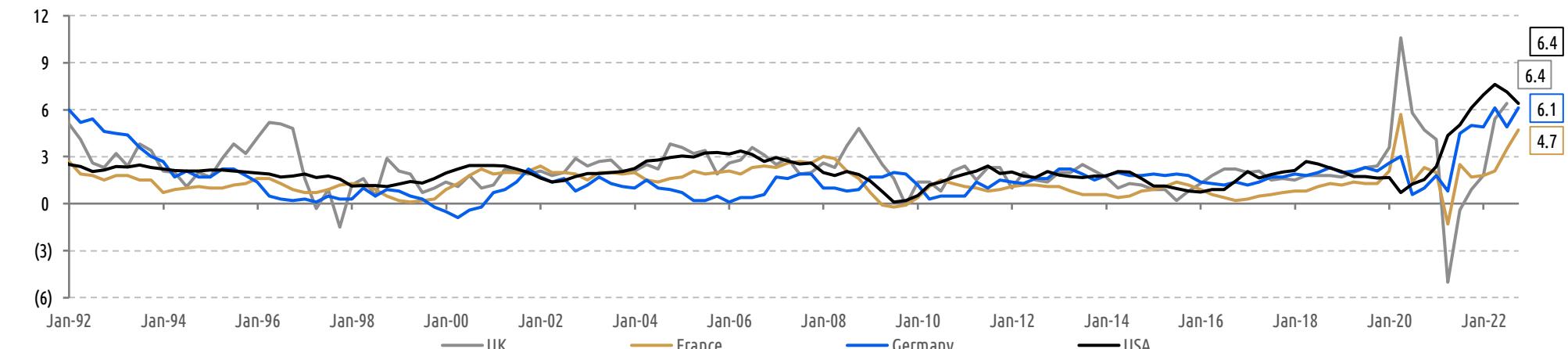
Implied GDP deflator in G4 countries¹

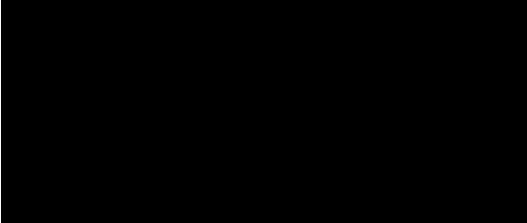
Implied GDP deflators have also sharply increased although to a lesser extent than headline inflation

Quarterly implied GDP deflator – Since Q1-2021

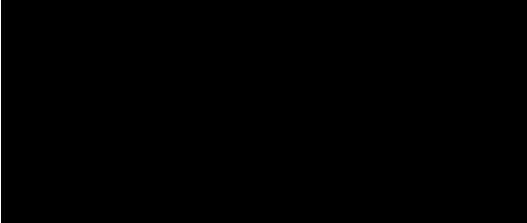
| Country | Implied GDP deflator (YoY % change) – Since Q1-2021 | | | | | | | | |
|---------|---|-------|-------|-------|-------|-------|-------|-------|--|
| | Q1-21 | Q2-21 | Q3-21 | Q4-21 | Q1-22 | Q2-22 | Q3-22 | Q4-22 | |
| USA | 2.4 | 4.4 | 5.0 | 6.1 | 6.9 | 7.6 | 7.1 | 6.4 | |
| Germany | 1.8 | 0.8 | 4.5 | 5.0 | 4.9 | 6.1 | 4.9 | 6.1 | |
| France | 2.0 | (1.3) | 2.5 | 1.7 | 1.8 | 2.1 | 3.5 | 4.7 | |
| UK | 4.1 | (5.0) | (0.4) | 0.9 | 1.8 | 5.4 | 6.4 | – | |

Quarterly implied GDP deflator – Since Q1-1992





II Monetary policy



A In the US

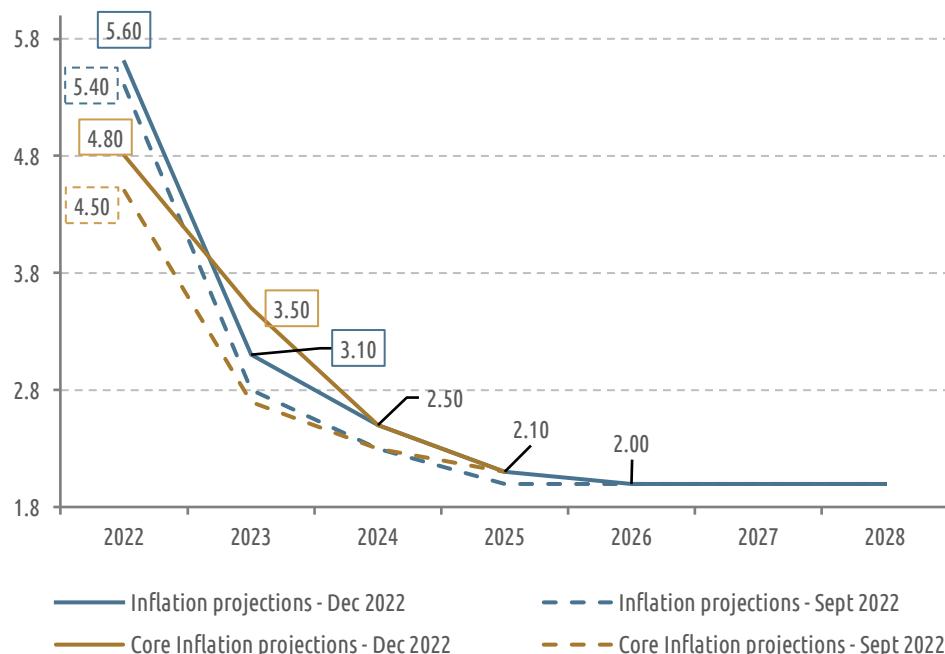
Monetary Policy Decisions from the Fed (1/2)

The latest increase by the Fed of 25 basis points signaled the beginning of a new cycle of lower rate increases.

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

| Indicator | Price indexes for Personal Consumption Expenditures | | | | | | |
|---------------|---|-------|-------|-------|-------|-------|-------|
| | 07-22 | 08-22 | 09-22 | 10-22 | 11-22 | 12-22 | 01-23 |
| PCE inflation | 6.4 | 6.3 | 6.3 | 6.1 | 5.6 | 5.3 | 5.4 |

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 1st
- “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 22nd. The collapse of SVB will be on everyone's mind

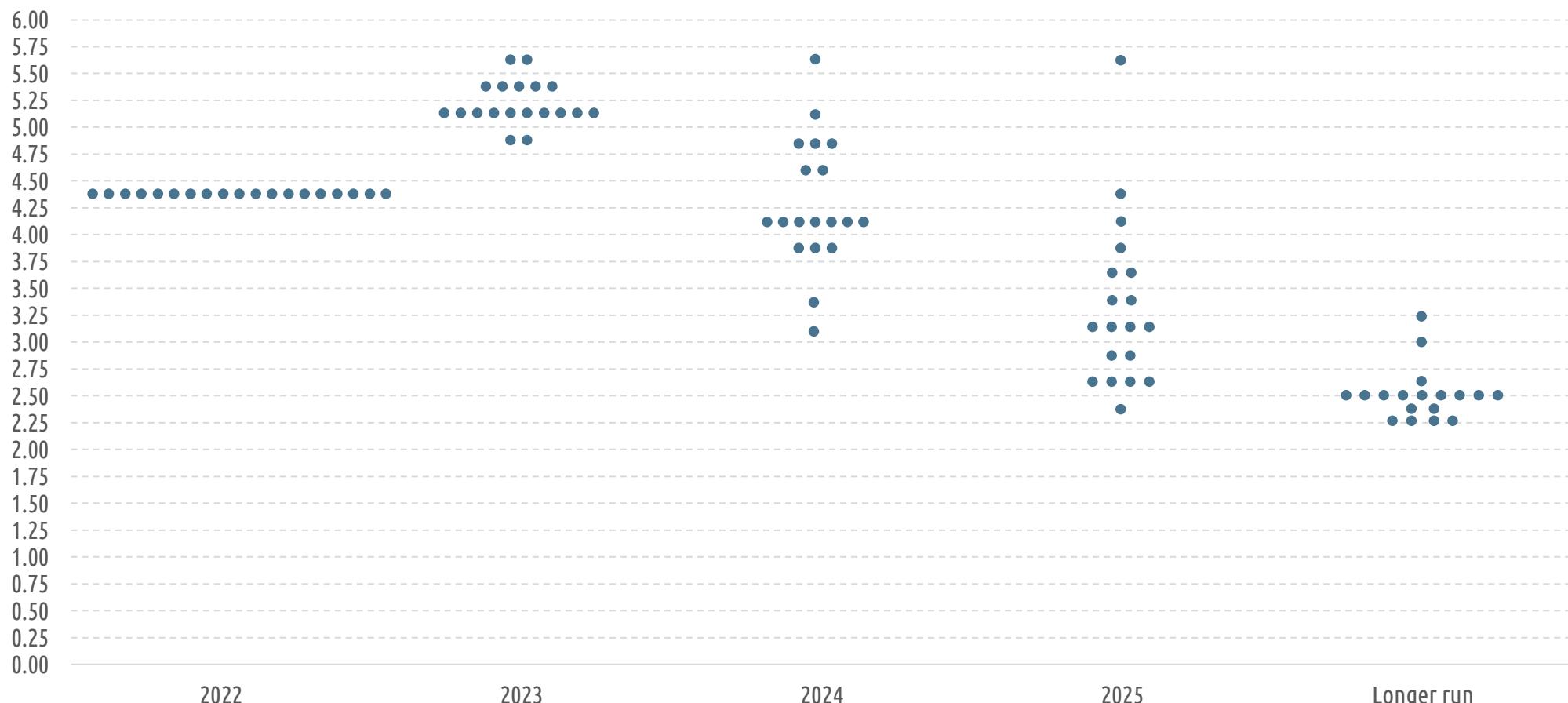
| Federal Reserve economic projections as of 14 December 2022 | | | | |
|---|------|------|------|------|
| Indicator | 2022 | 2023 | 2024 | 2025 |
| Change in real GDP | 0.5 | 0.5 | 1.6 | 1.8 |
| Unemployment rate | 3.7 | 4.6 | 4.6 | 4.5 |
| Inflation | 5.6 | 3.1 | 2.5 | 2.1 |
| Federal funds rate |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

“Although inflation has been moderating in recent months, the process of getting inflation back down to 2% has a long way to go and is likely to be bumpy”

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

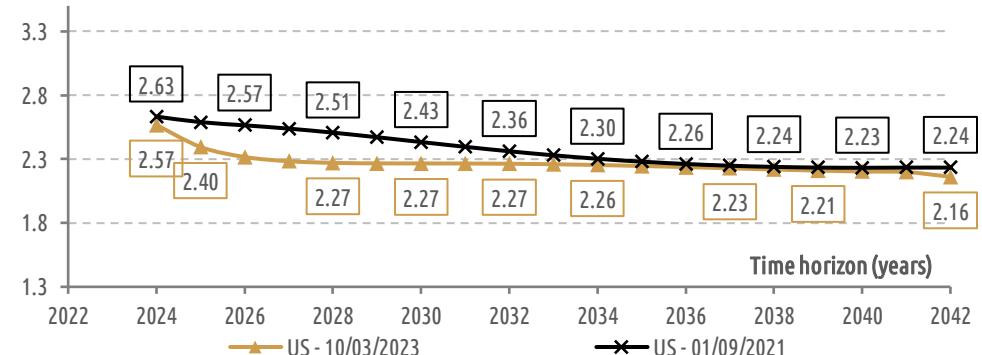
Note: Each shaded circle indicates the value (rounded to the nearest 1/8 percentage point) of an individual participant's judgment of the midpoint of the appropriate target range for the federal funds rate or the appropriate target level for the federal funds rate at the end of the specified calendar 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 banking crisis

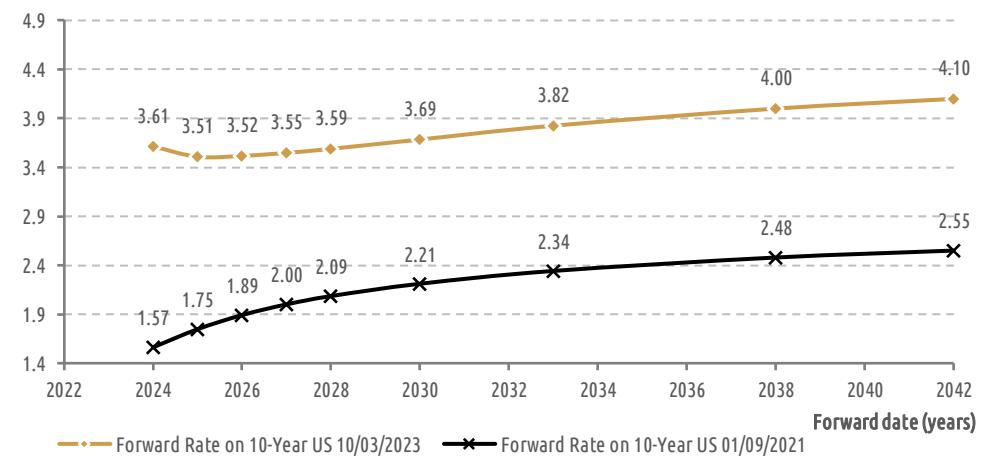
10-Y Nominal yield – US



Inflation Expectations – US (%)



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

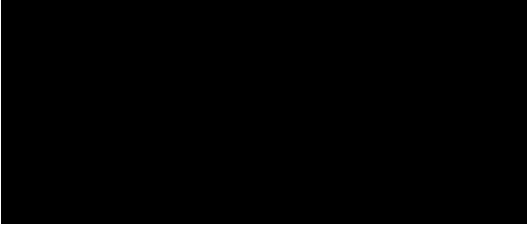


The US yield curve is inverted, usually a harbinger of recession

The SVB collapse, however, has reduced the spread by half

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



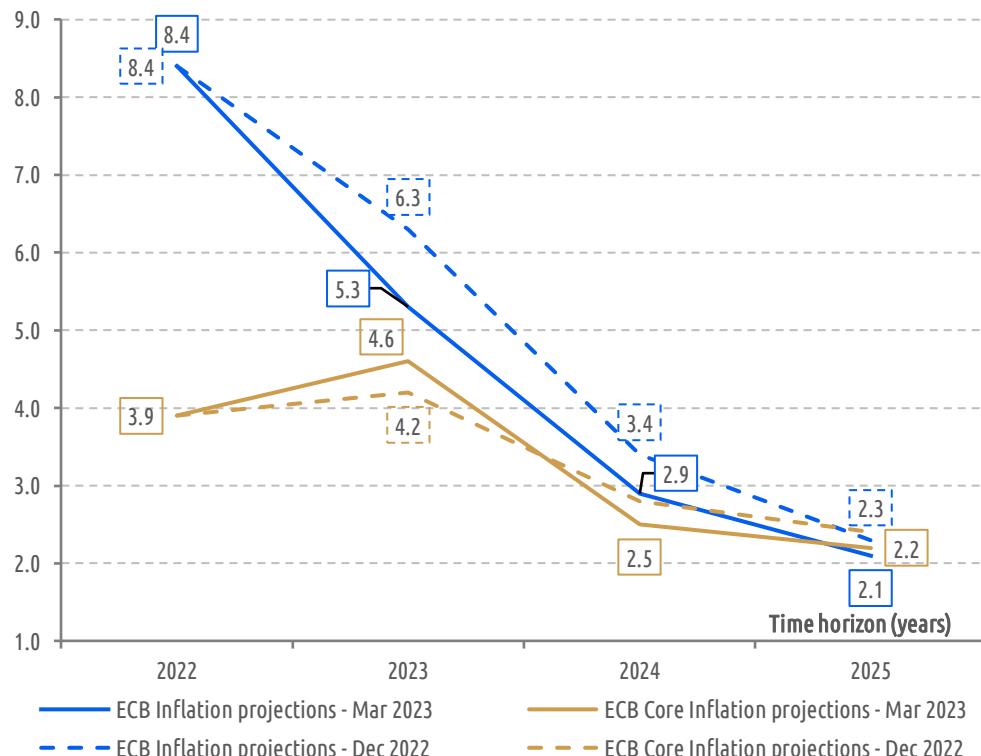


B In the Euro Area

The ECB has raised its interest rates by 50 bps in March as planned in last February meeting

President Lagarde signaled that market unrest would direct next steps. New forecasts point to lower inflation than forecasted in December, on the back, however, of rising core inflation.

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



"We are monitoring current market tensions closely and stand ready to respond as necessary to preserve price stability and financial stability in the euro area"

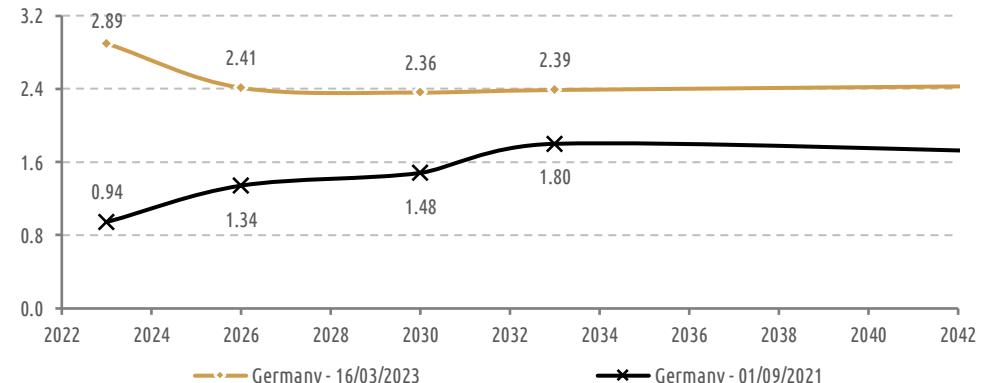
In the Eurozone, the banking crisis also pushed down long-term rates

Expected real rates, however, near zero in the longer run

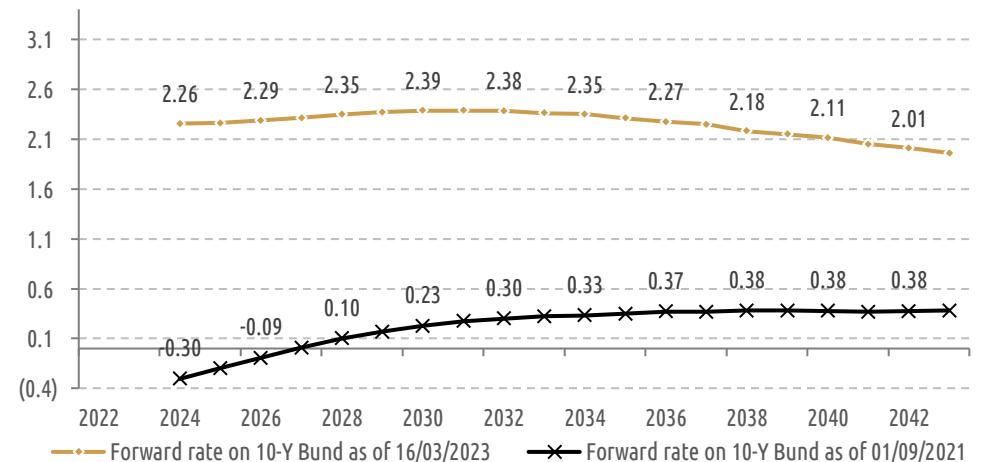
10-Y Nominal yield – German Bund



Inflation Expectations¹ - Germany (%)



Forward Rates on 10-Year German Bund (%)



Source: Bundesbank as of 16/03/2023, Internal calculations

Note: Inflation expectations are derived from German indexed bonds and German nominal bonds²

The German yield curve is getting inverted for the first time since 2008, reflecting risk of recession/sluggish growth in 2023

The banking crisis also brought the spread down

Bund 2Yr/10Yr Spread – Since Jan 1998

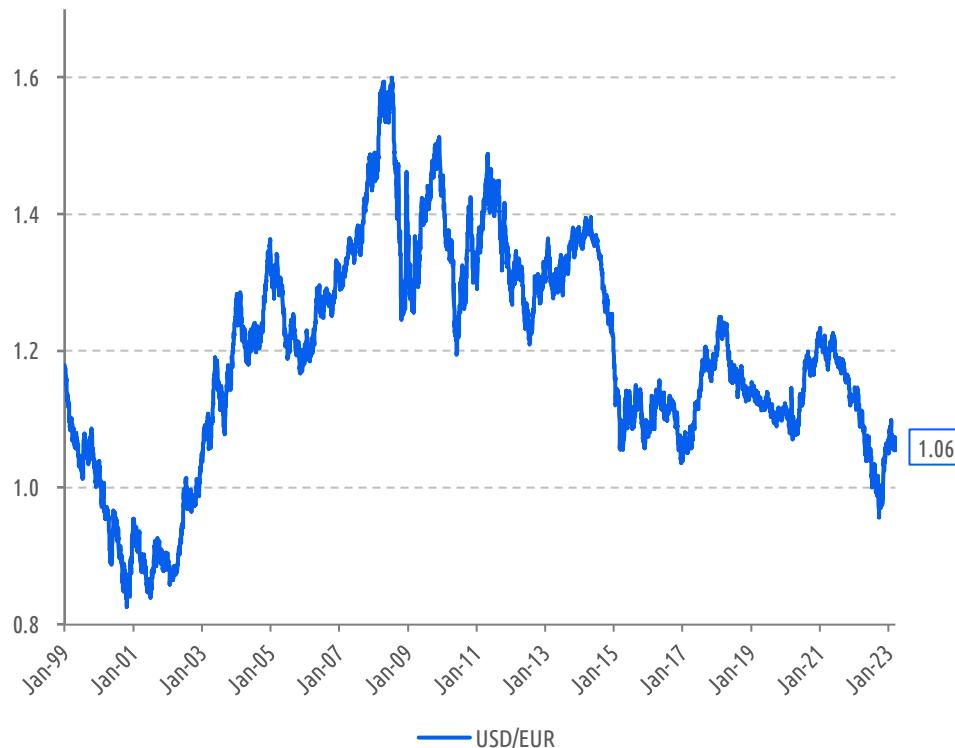


Source: Bundesbank as of 16/03/2023

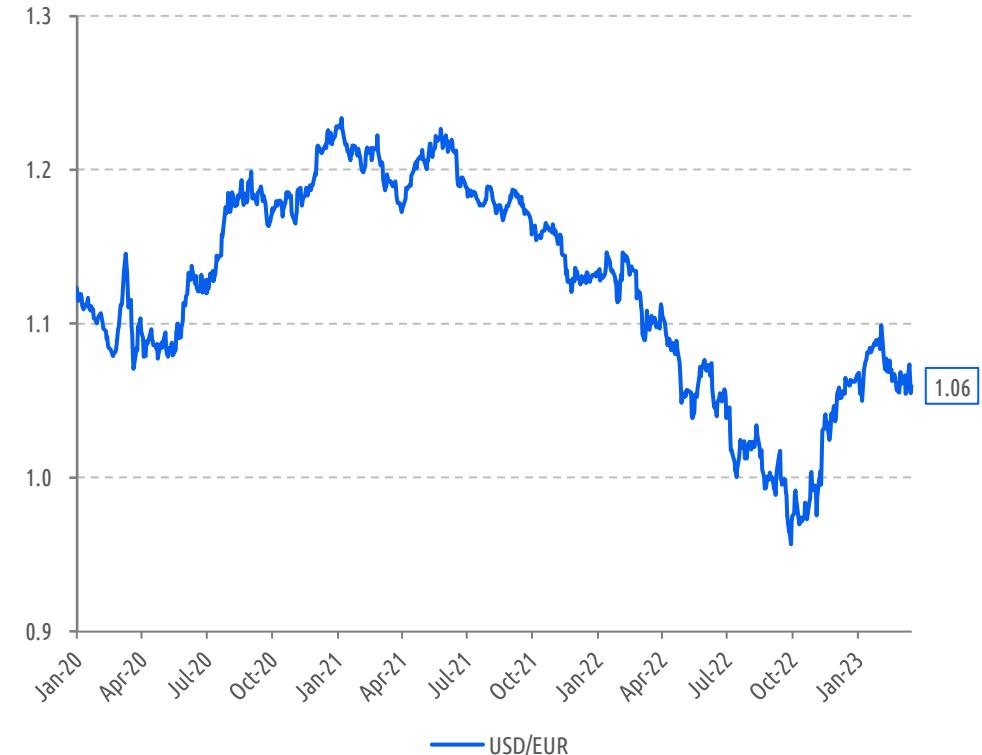
The Euro has weakened for most of the year 2022, staging a recovery in the final months

Uncertainty regarding the Fed's next move prevails.

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

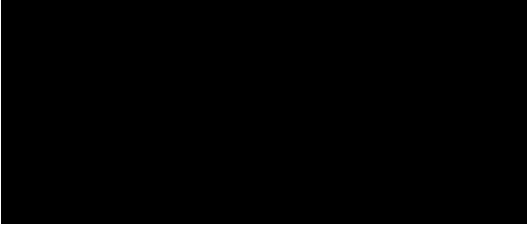


Nominal Foreign exchange rate in historical perspective – Since Jan. 2020



"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 reaching 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

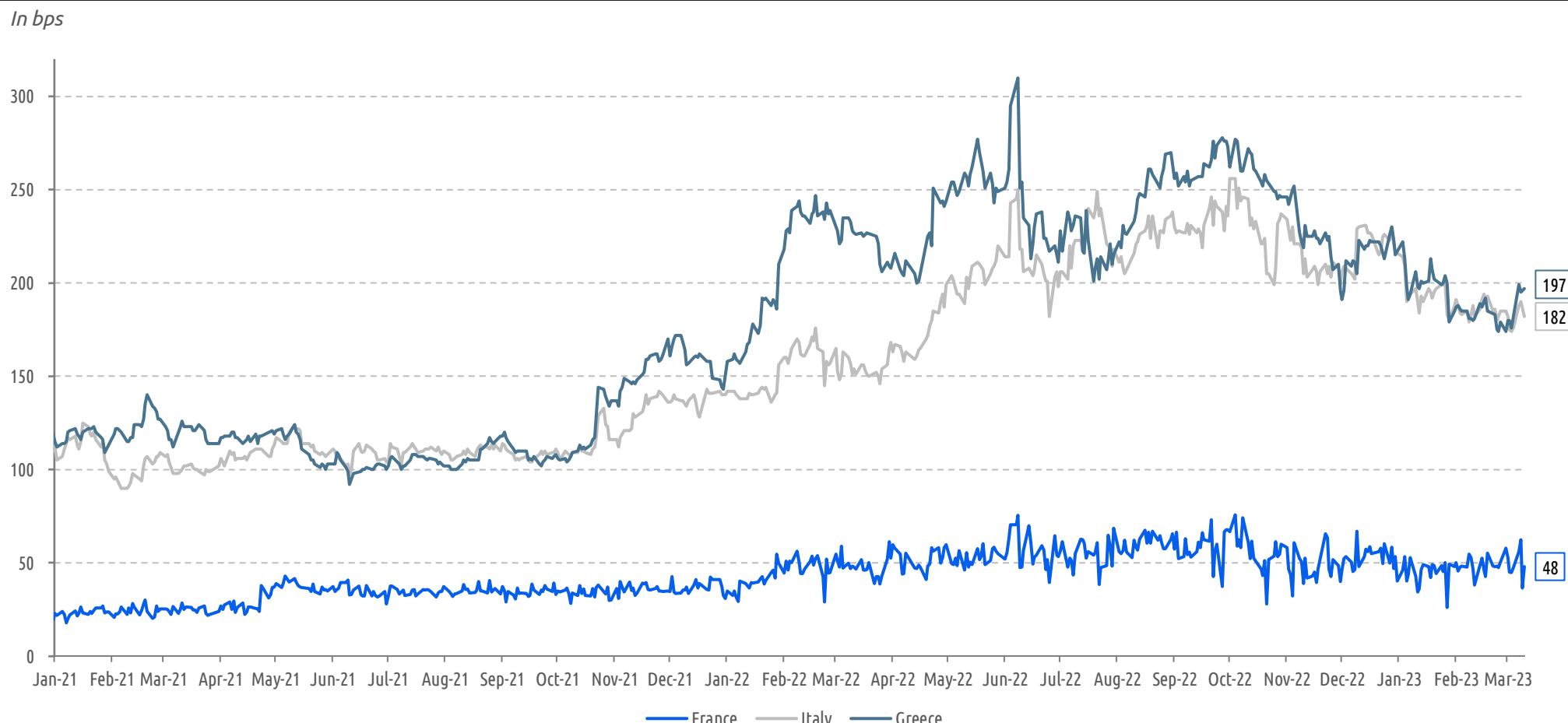


Sources: Banque de France as of 16/03/2023, Eurostat as of 16/03/2023

Tensions on spreads have slightly eased off

In spite of new financial uncertainties

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



Sources: Banque de France as of 16/03/2023, Bundesbank as of 16/03/2023, Eurostat as of 16/03/2023, Internal calculations

High yield corporate bond spreads rising in the wake of SVB bankruptcy

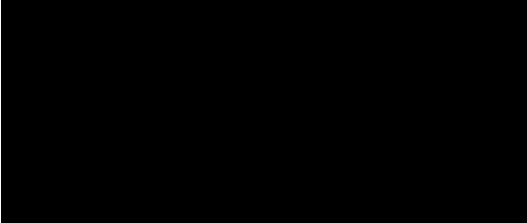
Both Europe and US corporate sector took the hit

High yield corporate bond spreads – Since 2000



High yield corporate bond spreads – Since 2022



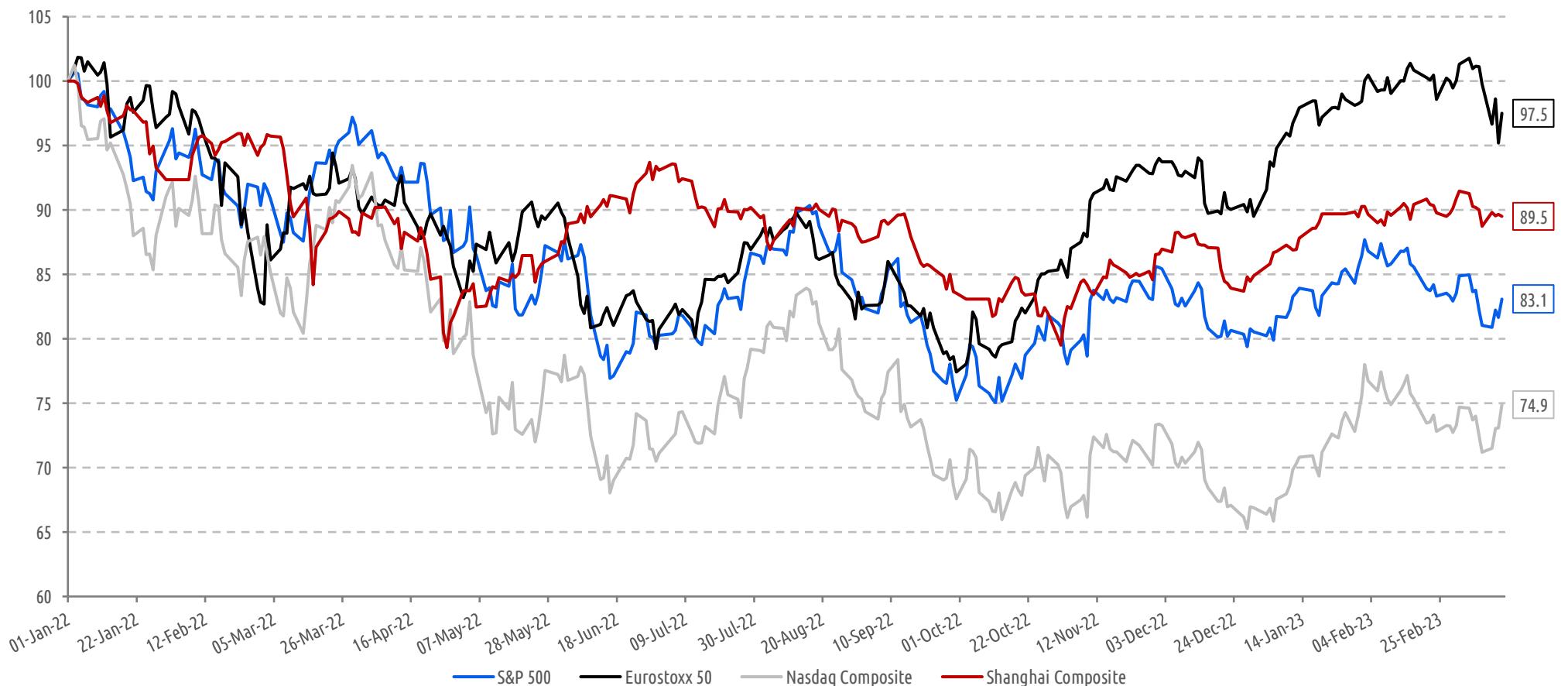


IV Impact on stock markets

Stock market prices recovering from post war trough especially in Europe

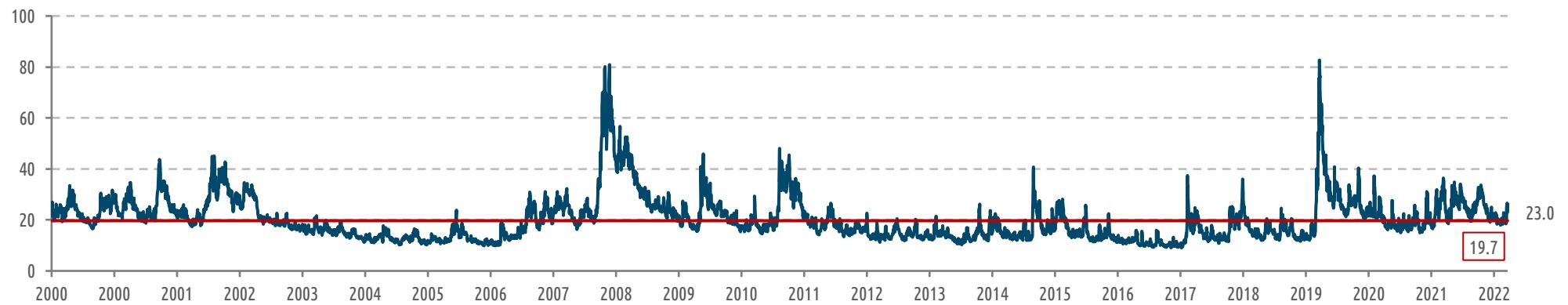
And keeping the momentum despite ECB's rate increase

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



Volatility on US financial markets are (moderately) edging up

VIX index – Since 2000

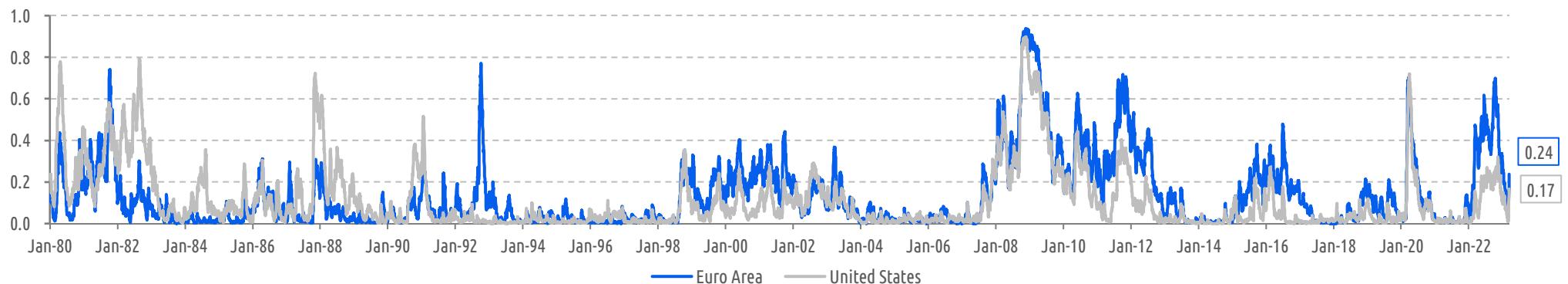


VIX index – Since 2022

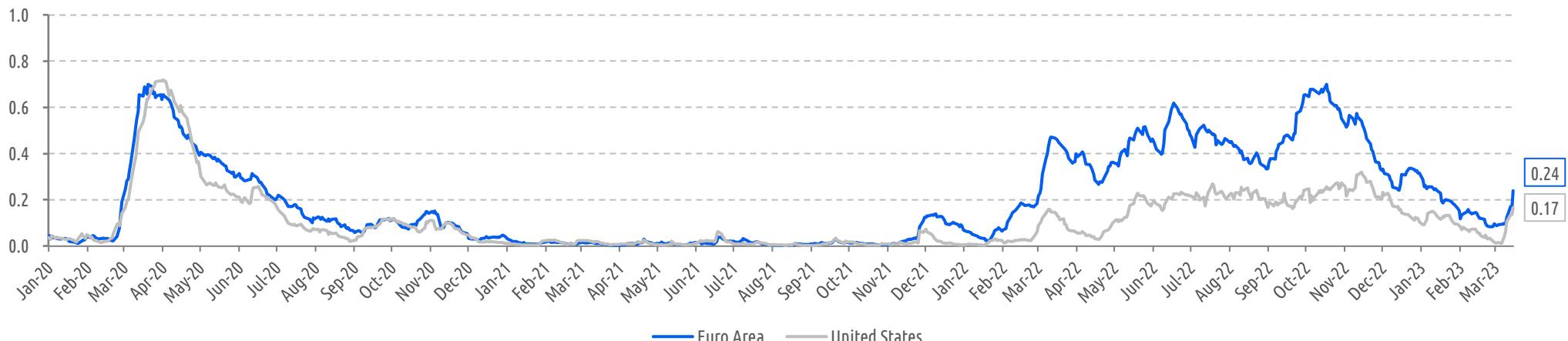


Financial stress indicators are (moderately) stepping up

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



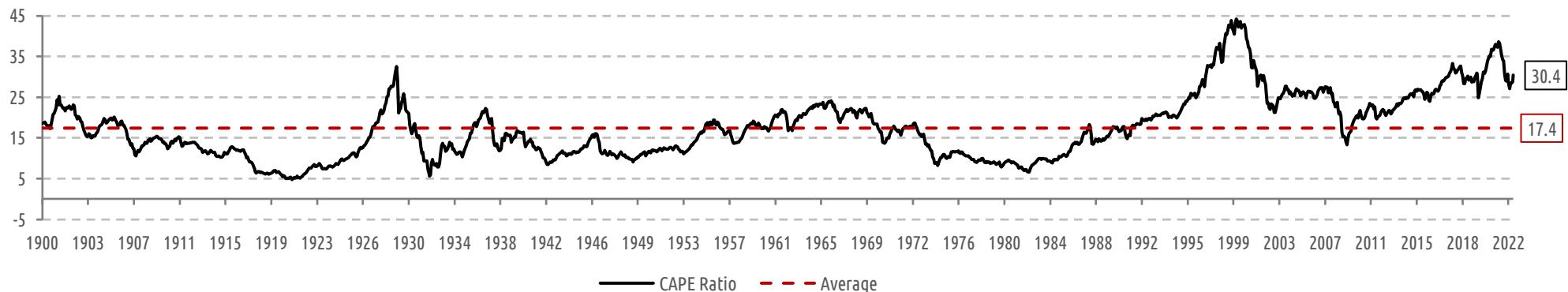
Composite Indicator of Systemic Stress (daily) – Since Jan. 2020



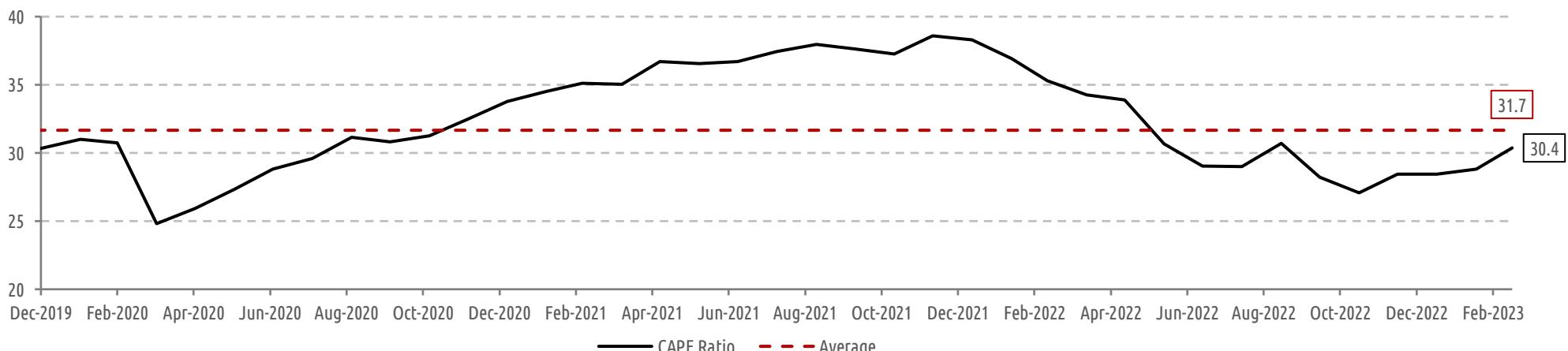
US Shiller Cyclically Adjusted Price to Earnings ratio (CAPE ratio)¹

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



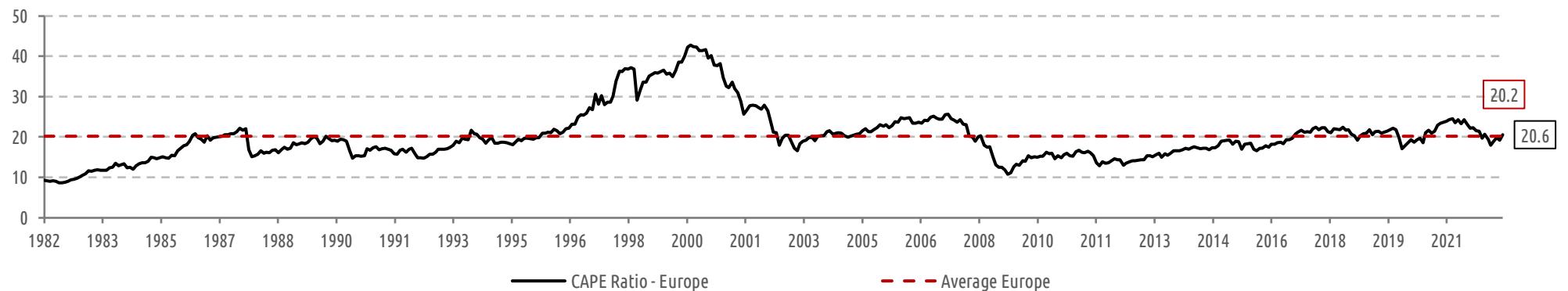
Source: Robert Shiller (last data available – Feb 23)

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

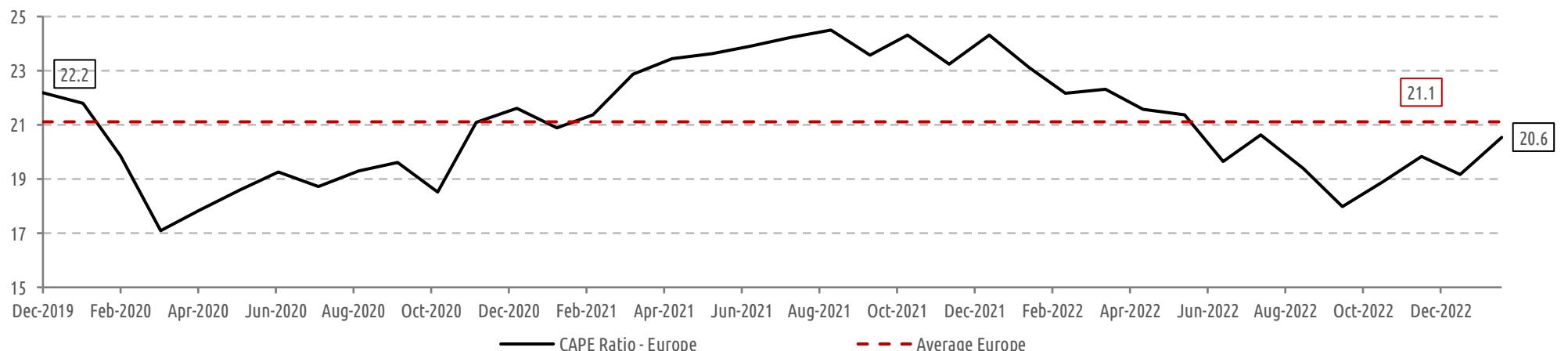
Shiller CAPE ratio in Europe

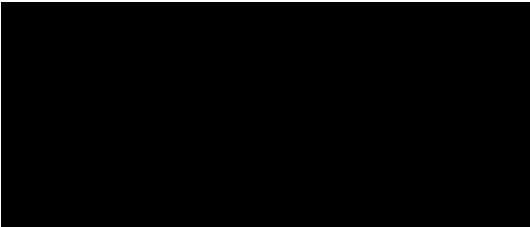
Shiller CAPE ratio is still close to its pre-Covid level and to its historical average

Cyclically Adjusted Price Earnings ratio – Since 1982



Cyclically Adjusted Price Earnings ratio – Since 2020





V Appendix

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| 4 | Quarterly GDP growth (% change over the previous period) – France | OECD/KEI/NAEXKP01.FRA.GP.Q |
| 4 | Quarterly GDP growth (% change over the previous period) – UK | OECD/KEI/NAEXKP01.GBR.GP.Q |
| 4 | Quarterly GDP growth (% change over the previous period) – Italy | OECD/KEI/NAEXKP01.ITA.GP.Q |
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| 4 | Yearly GDP growth rate (YoY % change) – Germany | OECD/EO/DEU.GDPV_ANNPCT.A |
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| 4 | Yearly GDP growth rate (YoY % change) – UK | OECD/EO/GBR.GDPV_ANNPCT.A |
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| 5 | Quarterly GDP growth (% change over the previous period) – China | OECD/DP_LIVE/CHN.QGDP.TOT.PC_CHGPP.Q |
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| 5 | Quarterly GDP growth (% change over the previous period) – Mexico | OECD/KEI/NAEXKP01.MEX.GP.Q |
| 5 | Quarterly GDP growth (% change over the previous period) – South Africa | OECD/KEI/NAEXKP01.ZAF.GP.Q |
| 5 | Quarterly GDP growth (% change over the previous period) – Indonesia | OECD/KEI/NAEXKP01.IDN.GP.Q |
| 5 | Quarterly GDP growth (% change over the previous period) – India | OECD/KEI/NAEXKP01.IND.GP.Q |
| 5 | Yearly GDP growth rate (YoY % change) – Brazil | OECD/EO/BRA.GDPV_ANNPCT.A |
| 5 | Yearly GDP growth rate (YoY % change) – Mexico | OECD/EO/MEX.GDPV_ANNPCT.A |
| 5 | Yearly GDP growth rate (YoY % change) – South Africa | OECD/EO/ZAF.GDPV_ANNPCT.A |
| 5 | Yearly GDP growth rate (YoY % change) – Indonesia | OECD/EO/IDN.GDPV_ANNPCT.A |

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| 6 | General government debt – United Kingdom | ONS/EDP2/YEQJ.Q |
| 6 | General government debt – Italy | Eurostat/gov_10dd_edpt1/A.PC_GDP.S13.GD.IT |
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| 6 | General government deficit – United States | BEA/NIPA-T30100/AD01RC-Q |
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| 13 | Beveridge curve - France (Q1-17 – Q2-22), Quarterly | Eurostat/jvs_q_nace2/Q.NSA.B-S.GE10.JOBRATE.FR INSEE/CHOMAGE-TRIM-NATIONAL/T.CTTXC.TAUX.FR-D976.0.00-POURCENT.CVS.FALSE |
| 13 | Unemployment according to ILO definition - Total – France – Seasonally adjusted | Eurostat/une_rt_m/M.SA.TOTAL.PC_ACT.T.FR |
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| 14 | Wage growth tracker – France (Quarterly) | INSEE/ICT-2016/T.BDM_EUR.ICT.A21-BTN.INDICE.SSE.FE.SO.CVS-CJO.2016 |
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| 16 | CPI Inflation (YoY % change) – Germany | DESTATIS/61111BM001/DG.PREIS1 DESTATIS/61111BM006/DG.CC13-63E.PREIS1 |
| 16 | CPI Inflation (YoY % change) – United Kingdom | ONS/MM23/D7G7.M ONS/MM23/DKO8.M |
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