

CEPREMAP / DBNOMICS

Macroeconomic Outlook – July 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 6:00pm
- This presentation will not be updated during the August holidays.
- 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 Jocelyn Maillard at CEPREMAP
- Links to the DBnomics data are available in the Appendix
- All materials presented here can be freely used with proper acknowledgment
- Questions and comments about the presentation can be addressed at jocelyn.maillard@cepremap.org

Executive summary

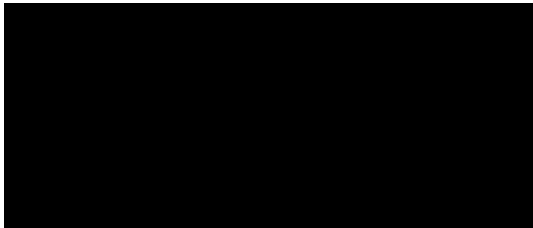
- Markets and policymakers are following in parallel headline inflation, financial and labor market trends.
- In response to inflationary pressures, monetary policy has been tightened up to levels unheard of for the last 20 years, the question being up to which point in 2023. In July, both the Fed and the ECB appeared to signal that the rise on interest rates was about to end.
- The fight against inflation may be tougher in the US than in Europe. In Europe, the focus of the ECB is mostly about inflation while in the US, the Fed is also focused on labor and financial markets.
- The sheer threat of a recession should have reduced the price of energy, potentially cooling down inflationary pressures. The OPEC+ decision to curtail production has lifted up prices, but only temporarily.
- Sovereign yields are at a high level in the main European countries as the uncertainty about inflation remains. However, the spreads between core countries and the periphery have been decreasing.
- 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. However, as US inflation seems to have peaked before the EZ, this trend has reversed since October 2022.

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I Growth and inflation in selected G20 countries



A The growth slowdown

Growth in advanced economies

The first quarter of 2023 has brought low but positive economic growth in all major advanced economies while the IMF has moderately revised upward its growth projections. Germany and the Euro Area, however, experienced two consecutive negative quarterly growth rates.

Yearly GDP growth rate (YoY % change)

| Yearly GDP growth rate % | | | | | |
|--------------------------|--------------------|------|------|---------|---------|
| Country | 2020 | 2021 | 2022 | 2023(P) | 2024(P) |
| Euro Area | (6.1) ¹ | 5.4 | 3.5 | 0.9 | 1.5 |
| <i>Germany</i> | (3.7) | 2.6 | 1.8 | (0.3) | 1.3 |
| <i>France</i> | (7.9) | 6.8 | 2.6 | 0.8 | 1.3 |
| <i>Italy</i> | (9.0) | 7.0 | 3.7 | 1.1 | 0.9 |
| UK | (11.0) | 7.6 | 4.0 | 0.4 | 1.0 |
| USA | (2.8) | 5.9 | 2.1 | 1.8 | 1.0 |
| Canada | (5.1) | 5.0 | 3.4 | 1.7 | 1.4 |
| Japan | (4.3) | 2.1 | 1.1 | 1.4 | 1.0 |

Forecast from IMF World Economic Outlook, July 2023

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

| Quarterly GDP growth rate % | | | | | | | | | |
|-----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Country | 21Q1 | 21Q2 | 21Q3 | 21Q4 | 22Q1 | 22Q2 | 22Q3 | 22Q4 | 23Q1 |
| Euro Area | 0.0 | 1.9 | 2.2 | 0.5 | 0.7 | 0.8 | 0.4 | (0.1) | (0.1) |
| <i>France</i> | 0.0 | 1.0 | 3.1 | 0.5 | (0.1) | 0.5 | 0.2 | (0.0) | 0.2 |
| <i>Germany</i> | (1.5) | 1.9 | 0.8 | (0.0) | 1.0 | (0.1) | 0.5 | (0.5) | (0.3) |
| <i>Italy</i> | 0.5 | 2.5 | 2.9 | 0.9 | 0.1 | 1.0 | 0.4 | (0.1) | 0.6 |
| UK | (1.1) | 6.5 | 1.7 | 1.5 | 0.5 | 0.1 | (0.1) | 0.1 | 0.1 |
| USA | 1.5 | 1.7 | 0.7 | 1.7 | (0.4) | (0.1) | 0.8 | 0.6 | 0.5 |
| Canada | 1.3 | (0.6) | 1.4 | 1.7 | 0.6 | 0.9 | 0.6 | (0.0) | 0.8 |
| Japan | (0.3) | 0.4 | (0.4) | 1.2 | (0.7) | 1.4 | (0.4) | 0.1 | 0.7 |

Growth in emerging countries

The IMF has lifted up 2023 emerging market growth, especially for India, Brazil and Mexico.

Yearly GDP growth rate (YoY % change)

| Yearly GDP growth rate % | | | | | |
|--------------------------|-------|------|------|---------|---------|
| Country | 2020 | 2021 | 2022 | 2023(P) | 2024(P) |
| China | 2.2 | 8.4 | 3.0 | 5.2 | 4.5 |
| S. Africa | (6.3) | 4.9 | 2.0 | 0.3 | 1.7 |
| Brazil | (3.3) | 5.0 | 2.9 | 2.1 | 1.2 |
| India | (5.8) | 9.1 | 6.8 | 6.6 | 5.8 |
| Mexico | (8.0) | 4.7 | 3.1 | 2.6 | 1.5 |
| Indonesia | (2.1) | 3.7 | 5.3 | 5.0 | 5.0 |

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

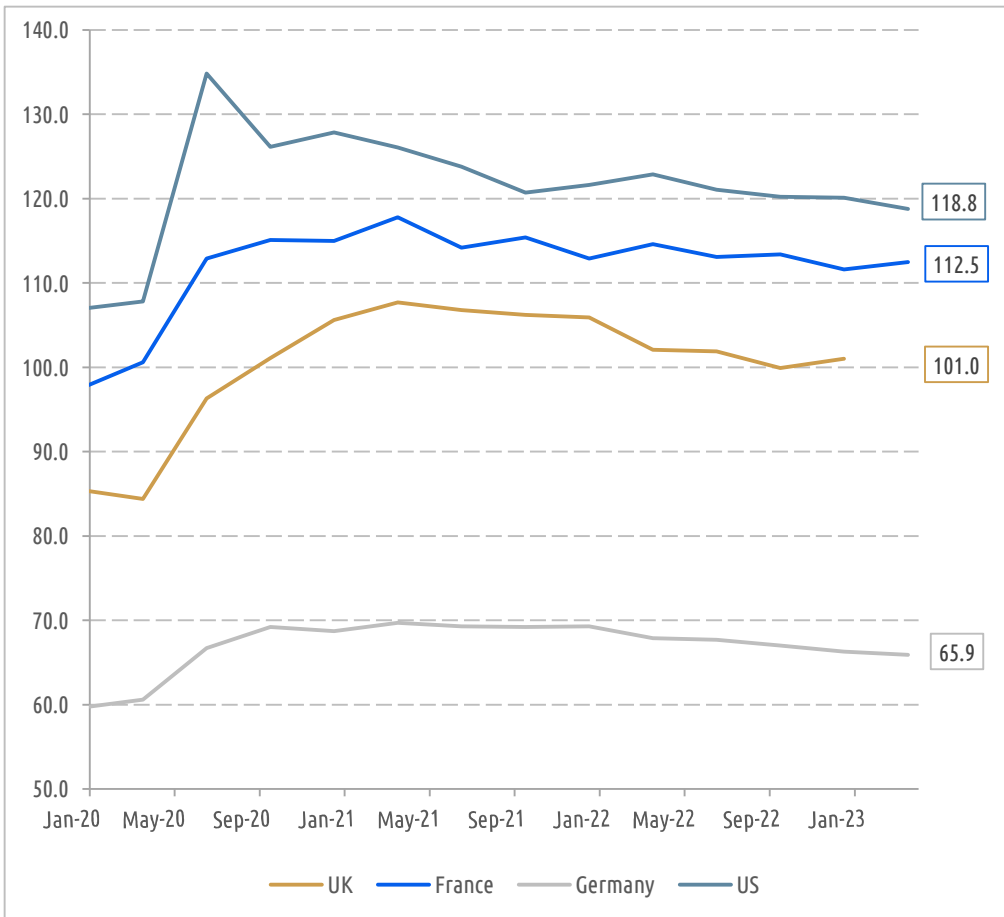
| Quarterly GDP growth rate % | | | | | | | | | |
|-----------------------------|------|-------|-------|------|------|-------|------|-------|------|
| Country | 21Q1 | 21Q2 | 21Q3 | 21Q4 | 22Q1 | 22Q2 | 22Q3 | 22Q4 | 23Q1 |
| China | 0.7 | 1.6 | 0.4 | 1.6 | 0.8 | (2.3) | 3.9 | 0.6 | 2.2 |
| S. Africa | 0.6 | 1.3 | (1.9) | 1.4 | 1.5 | (0.8) | 1.8 | (1.1) | 0.4 |
| Brazil | 0.9 | (0.2) | 0.4 | 1.0 | 1.0 | 1.1 | 0.5 | (0.1) | 1.9 |
| India | 1.4 | (7.5) | 9.3 | 2.0 | 0.5 | 1.1 | 1.9 | 1.0 | 1.9 |
| Mexico | 0.3 | 0.8 | (1.1) | 1.2 | 1.0 | 1.1 | 0.9 | 0.6 | 1.0 |
| Indonesia | 1.1 | 0.2 | 0.1 | 3.3 | 1.0 | 1.0 | 0.7 | 2.2 | 0.7 |

Forecast from IMF World Economic Outlook July 2023

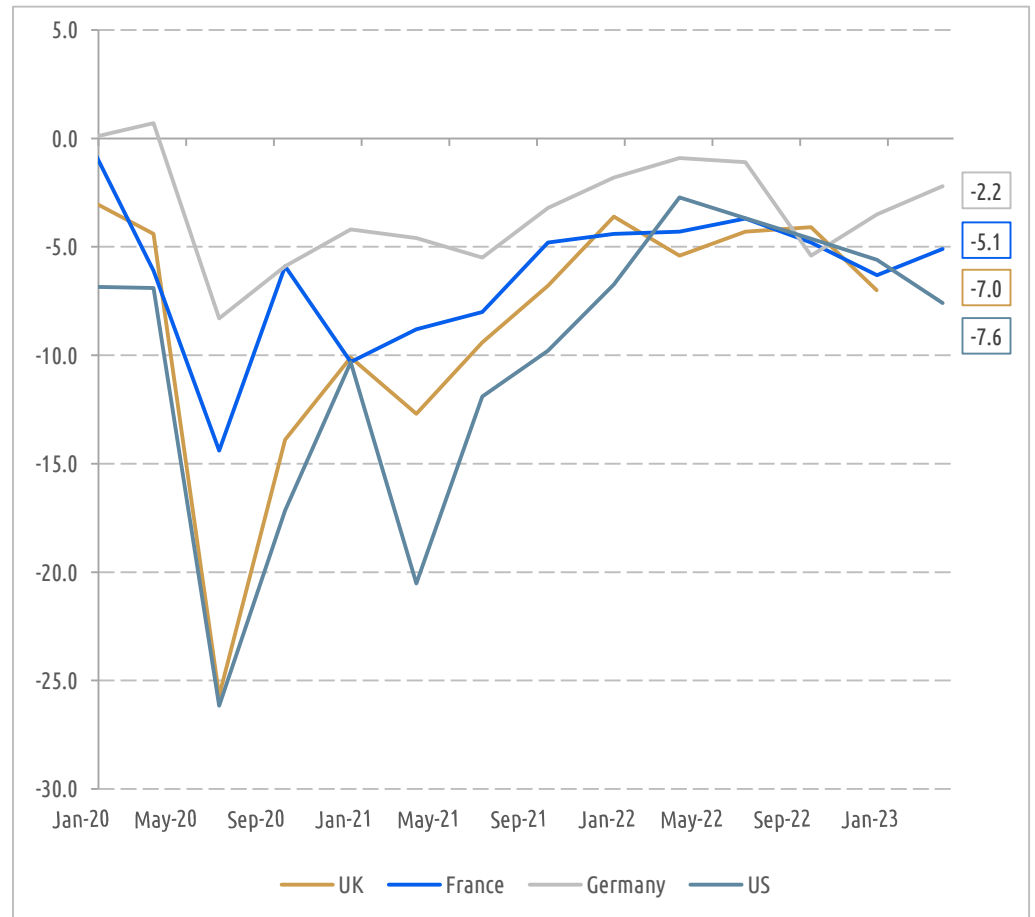
Government debts have reached a new plateau in the G4 countries¹

Inflation acted as a moderating factor on the evolution on debt ratios. Deficits decreased in Europe in the first quarter of 2023 while it kept increasing in the US.

General Government debt (% of GDP) – Since 2020



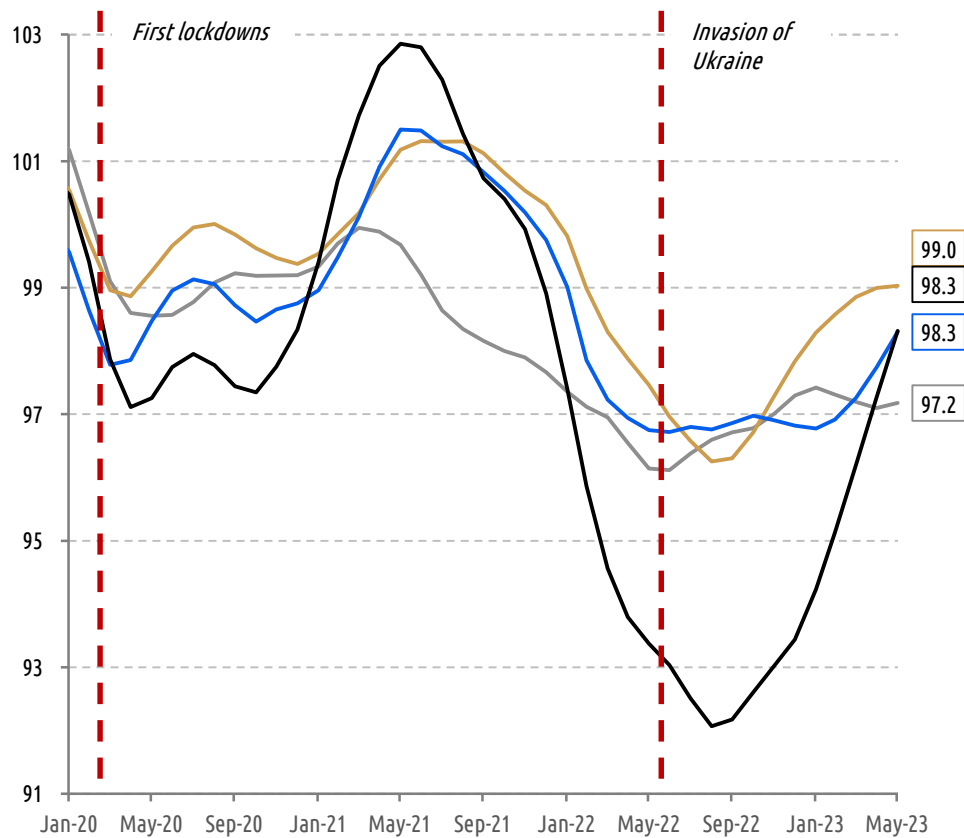
General Government deficit (% of GDP) – Since 2020



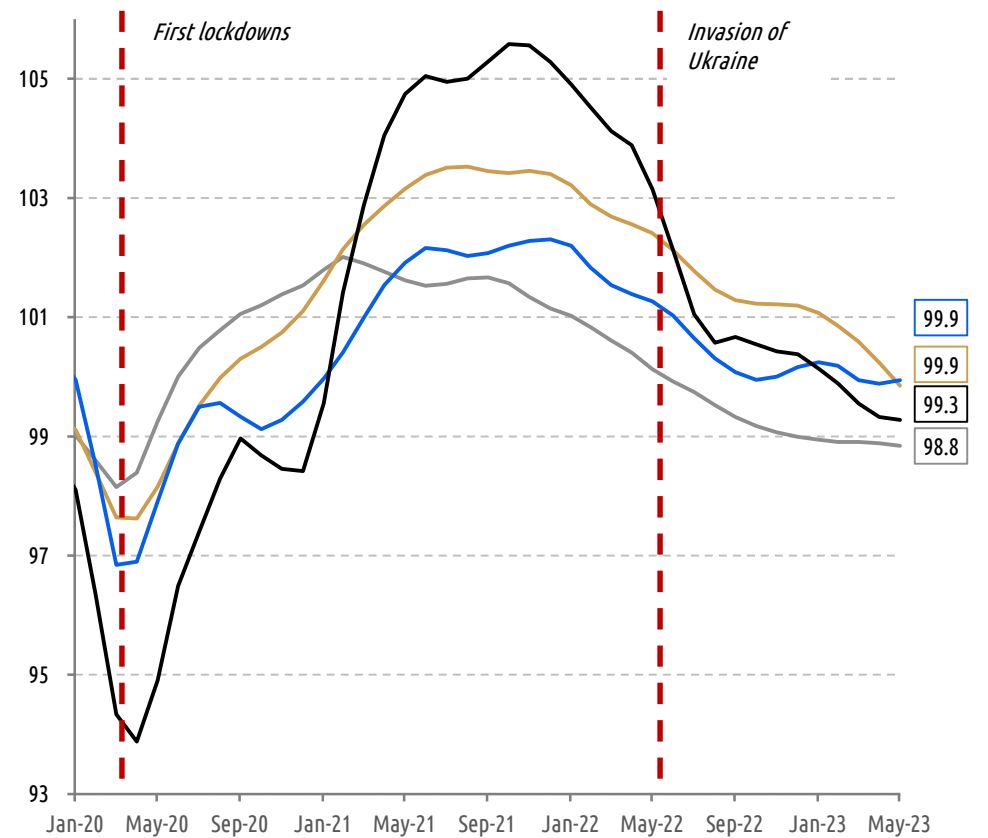
Consumer confidence increased in May for the main European countries

Business confidence, however, is still decreasing in all four countries.

Consumer confidence indicator – Since Jan. 2020

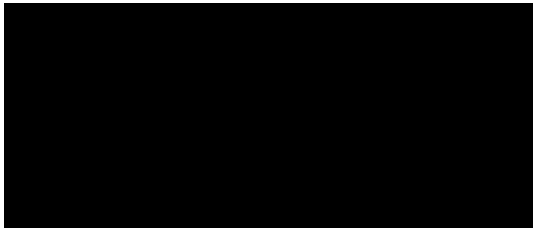


Business confidence indicator – Since Jan. 2020



— USA — Germany — France — UK

— USA — Germany — France — UK

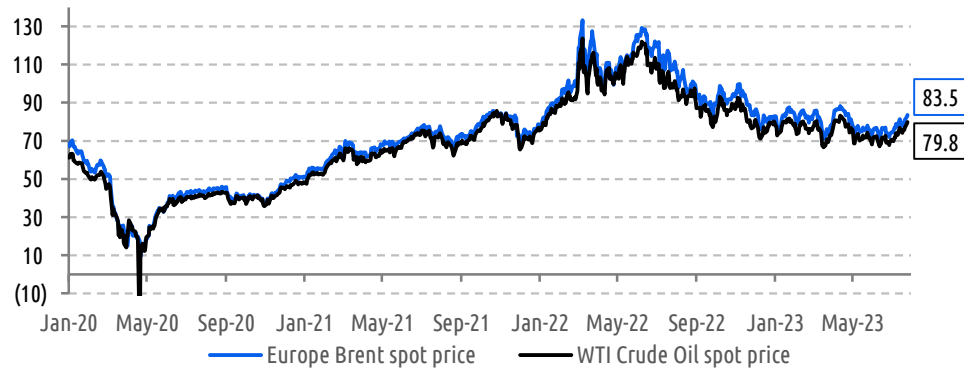


B The seeds of inflation

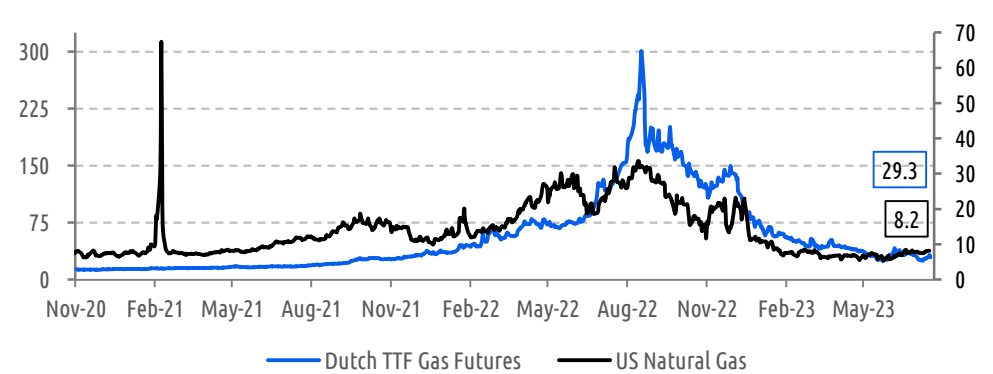
Russian invasion added inflationary pressure. Yet despite OPEC decision to cut supply, prices remain in the pre-war range.

Natural-gas-price difference between the US and Europe has decreased but an almost one to four discrepancy remains between the two markets.

Oil prices in historical perspective (USD per barrel)



EU (left scale) and US (right scale) natural gas prices¹ (€/MWh)



Copper prices in historical perspective (USD/tonne)



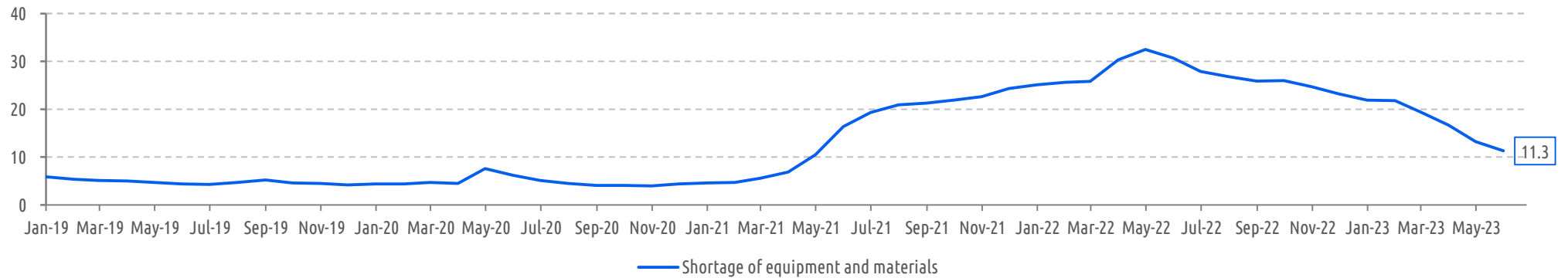
CBOT Wheat (USD/Bushel)



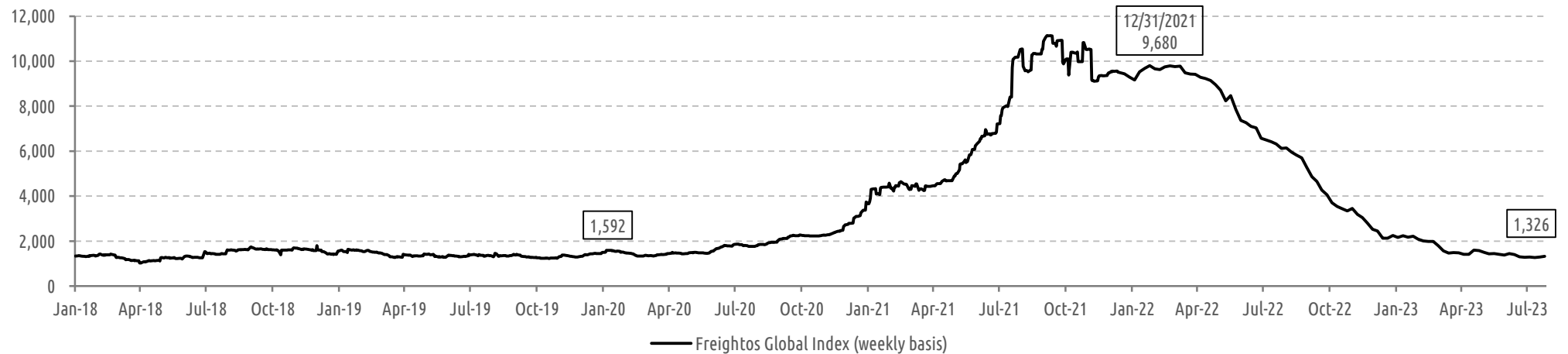
Supply chain disruptions are easing up significantly

Transportation costs returned to their pre-crisis level

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



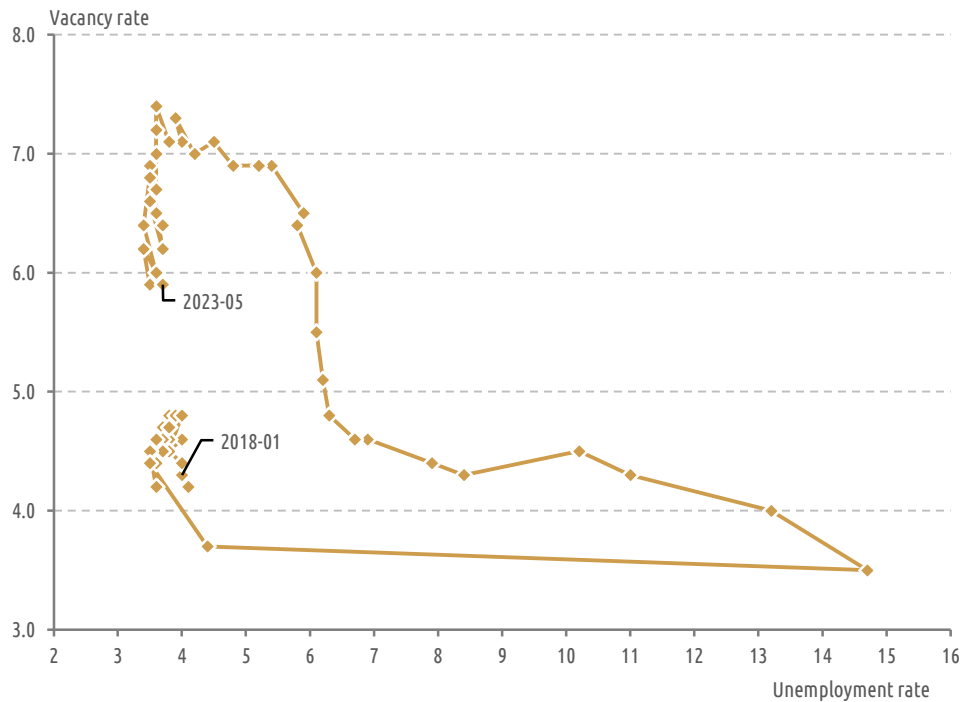
Shipping Container Index (based on spot rate for 40 feet containers)



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

The unemployment rate, both in the US and the EZ, remain at very low levels. In the US, the vacancy/unemployment ratio, however, fell abruptly since February, easing up recruitment constraints (assuming, however, that the vacancy rate is properly measured).

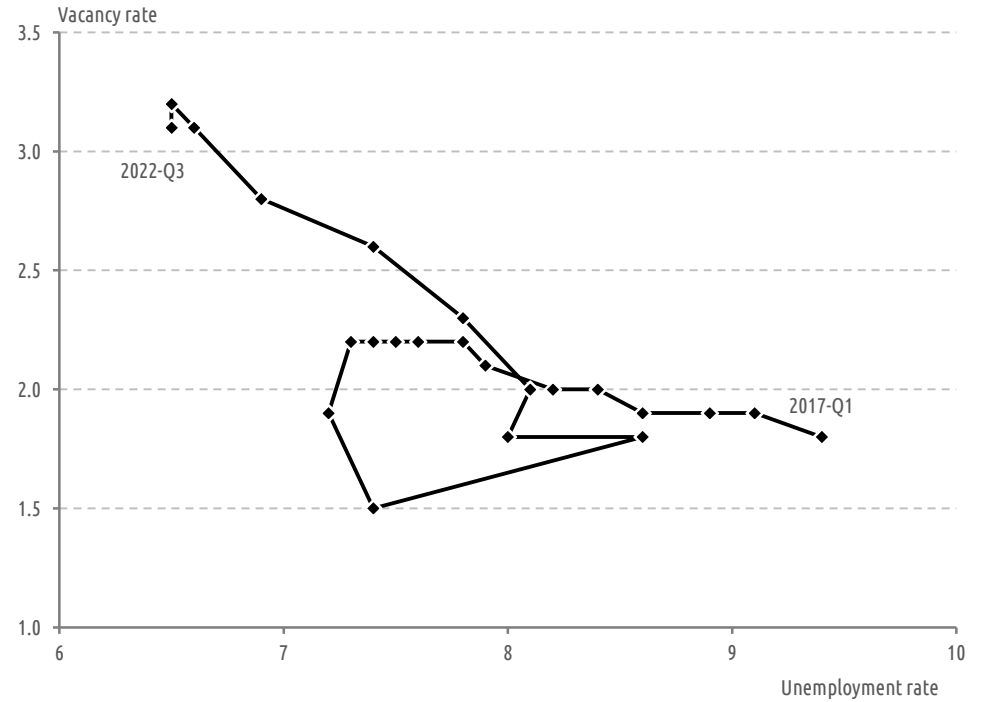
Beveridge curve - USA (01-2018 – 05-2023), Monthly



Unemployment rate (% of labor force) - Monthly

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

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



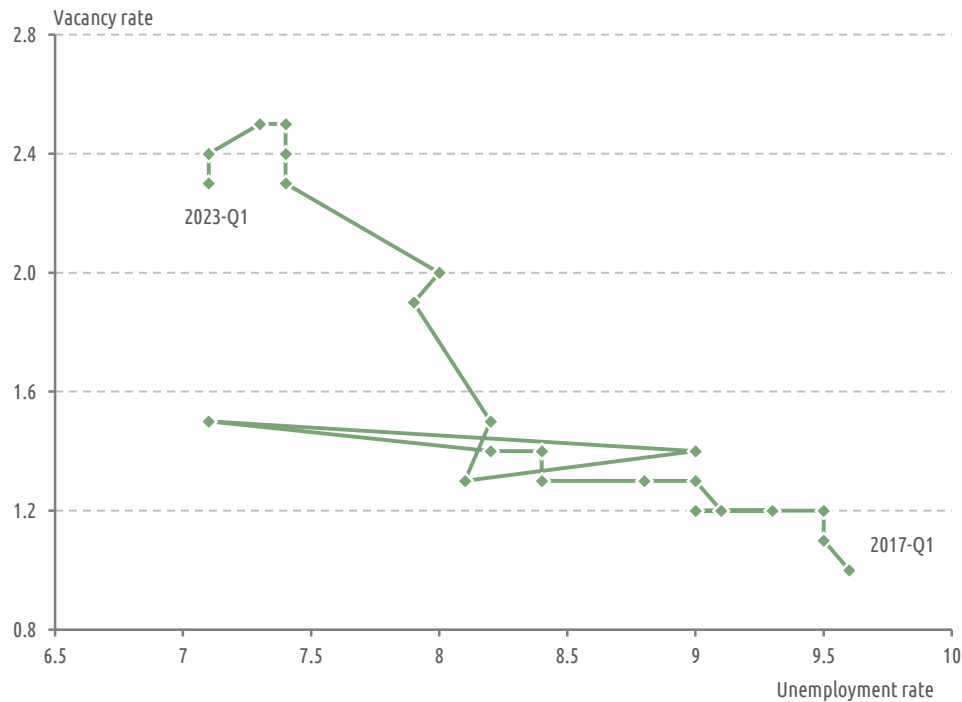
Unemployment rate (% of labor force) - Monthly

| Unemployment according to ILO definition - Total – Euro area – Seasonally adjusted | | | | | | | | | | | | |
|--|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Indicator | 06-22 | 07-22 | 08-22 | 09-22 | 10-22 | 11-22 | 12-22 | 01-23 | 02-23 | 03-23 | 04-23 | 05-23 |
| Rate | 6.7 | 6.7 | 6.7 | 6.7 | 6.7 | 6.7 | 6.7 | 6.7 | 6.6 | 6.6 | 6.5 | 6.5 |

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

The vacancy/unemployment ratio still at record high levels in France.

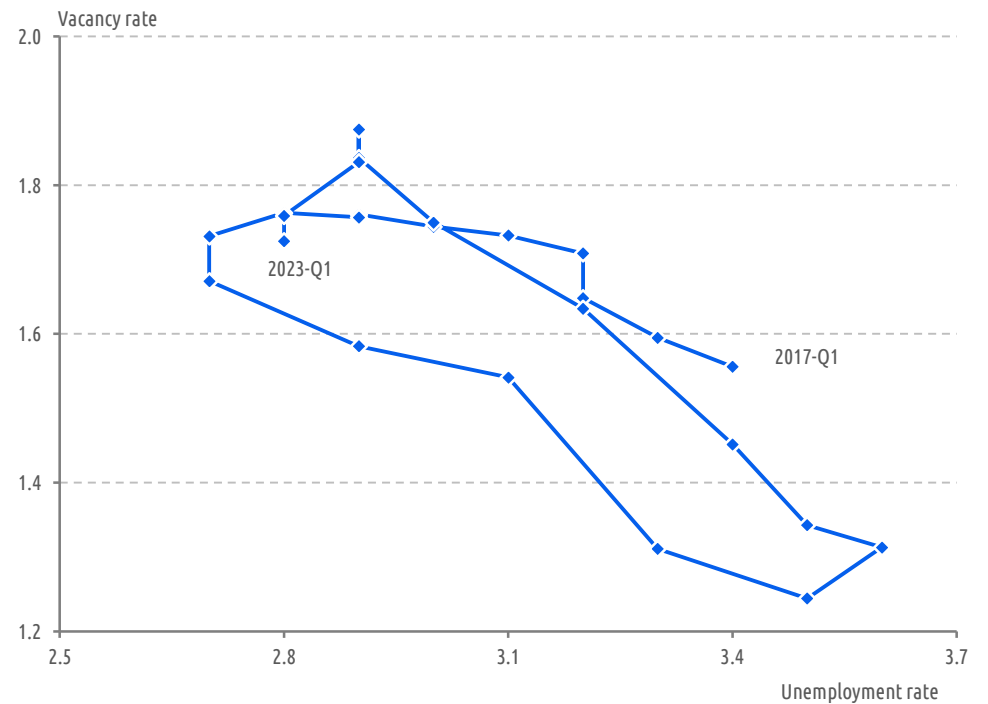
Beveridge curve - France (Q1-17 – Q1-23), Quarterly



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

| Unemployment rate – Total – France- Seasonally adjusted | | | | | | | | | | | | |
|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Indicator | 06-22 | 07-22 | 08-22 | 09-22 | 10-22 | 11-22 | 12-22 | 01-23 | 02-23 | 03-23 | 04-23 | 05-23 |
| Rate | 7.5 | 7.3 | 7.2 | 7.1 | 7.2 | 7.2 | 7.2 | 7.1 | 7.1 | 7.0 | 7.0 | 7.0 |

Beveridge curve - Germany (Q1-17 – Q1-23), Quarterly



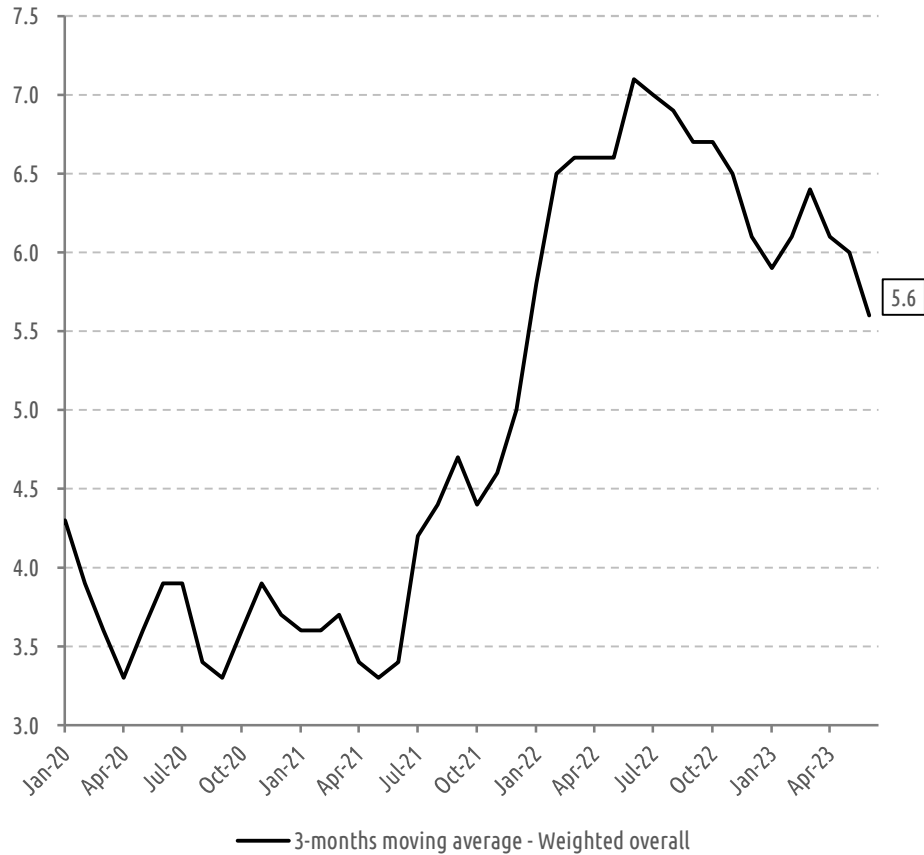
Unemployment rate (% of labor force) - Monthly

| Unemployment according to ILO definition - Total – Germany – Seasonally adjusted | | | | | | | | | | | | |
|--|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Indicator | 06-22 | 07-22 | 08-22 | 09-22 | 10-22 | 11-22 | 12-22 | 01-23 | 02-23 | 03-23 | 04-23 | 05-23 |
| Rate | 3.0 | 3.0 | 3.1 | 3.1 | 3.1 | 3.1 | 3.1 | 3.0 | 3.0 | 3.0 | 2.9 | 2.9 |

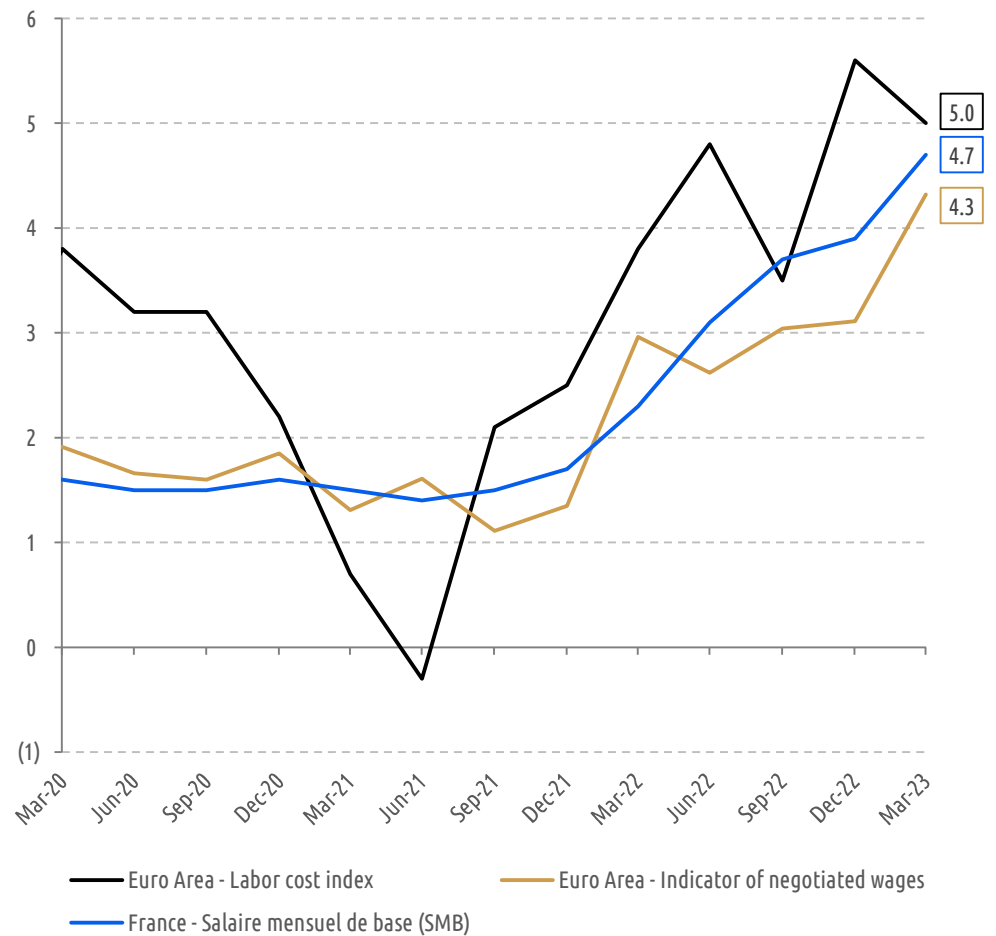
The verdict on wage inflation in 2023, both in the US and the EZ, is still open

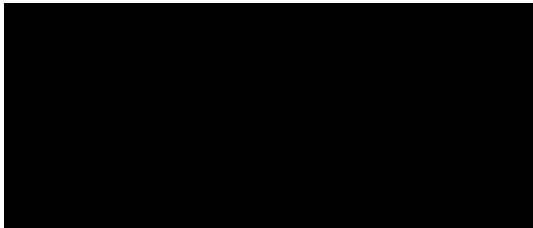
Although wage inflation is lower in the Euro Area, it may not have reached its peak yet, leaving open the question of the extend of monetary tightening.

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



Indicator of negotiated wages¹ in the Euro Area (Quarterly)





C Inflation unbound

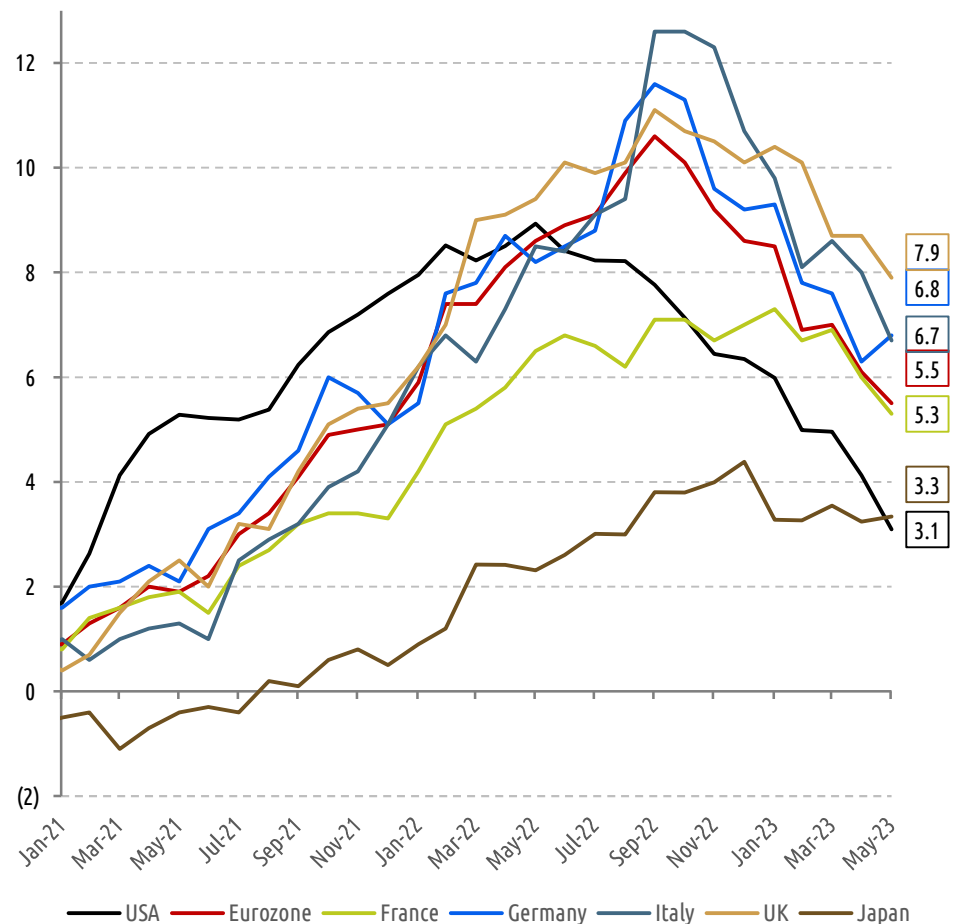
Inflation is coming down from its peak both in Europe and the US

Headline inflation is decreasing quickly in the US while remaining at high levels in Europe. Germany and the UK have particularly high inflations. Core inflation remains at high levels in the US and the EZ, making it difficult to speculate about the course of monetary policy.

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

| Monthly Year-on-Year inflation rates (%) – 2022/2023 | | | | | | | | | | | | |
|--|------|-----|------|------|------|------|------|------|------|-----|-----|-----|
| Country | Jul | Aug | Sep | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | Jun |
| US | 8.4 | 8.2 | 8.2 | 7.8 | 7.1 | 6.4 | 6.3 | 6.0 | 5.05 | 5.0 | 4.1 | 3.1 |
| <i>US core</i> | 5.9 | 6.3 | 6.6 | 6.3 | 6.0 | 5.7 | 5.5 | 5.5 | 5.6 | 5.5 | 5.3 | 4.9 |
| Euro Area* | 8.9 | 9.1 | 9.9 | 10.6 | 10.1 | 9.2 | 8.6 | 8.5 | 6.9 | 7.0 | 6.1 | 5.5 |
| <i>Euro Area core*</i> | 4.0 | 4.3 | 4.8 | 5.0 | 5.0 | 5.2 | 5.3 | 5.6 | 5.7 | 5.6 | 5.3 | 5.5 |
| France* | 6.8 | 6.6 | 6.2 | 7.1 | 7.1 | 6.7 | 7.0 | 7.3 | 6.7 | 6.9 | 6.0 | 5.3 |
| <i>France core*</i> | 4.0 | 4.1 | 3.7 | 4.1 | 4.2 | 4.2 | 4.2 | 4.6 | 4.6 | 4.7 | 4.4 | 4.4 |
| France INSEE | 6.1 | 5.9 | 5.6 | 6.2 | 6.2 | 5.9 | 6.0 | 6.3 | 5.7 | 5.9 | 5.1 | 4.5 |
| <i>France core INSEE</i> | 4.3 | 4.7 | 4.5 | 5.0 | 5.3 | 5.3 | 5.6 | 6.1 | 6.2 | 6.3 | 5.8 | 5.7 |
| Germany* | 8.5 | 8.8 | 10.9 | 11.6 | 11.3 | 9.6 | 9.2 | 9.3 | 7.8 | 7.6 | 6.3 | 6.8 |
| <i>Germany core*</i> | 3.2 | 3.4 | 4.7 | 5.1 | 5.1 | 5.4 | 5.1 | 5.4 | 5.9 | 5.6 | 5.1 | 6.1 |
| Italy* | 8.4 | 9.1 | 9.4 | 12.6 | 12.6 | 12.3 | 10.7 | 9.8 | 8.1 | 8.6 | 8.0 | 6.7 |
| <i>Italy core*</i> | 3.4 | 4.1 | 4.4 | 4.6 | 4.7 | 4.8 | 5.2 | 5.5 | 5.3 | 5.3 | 5.1 | 4.9 |
| UK | 10.1 | 9.9 | 10.1 | 11.1 | 10.7 | 10.5 | 10.1 | 10.4 | 10.1 | 8.7 | 8.7 | 7.9 |
| <i>UK core</i> | 6.2 | 6.3 | 6.5 | 6.5 | 6.3 | 6.3 | 5.8 | 6.2 | 6.2 | 6.8 | 7.1 | 6.9 |
| Japan | 2.6 | 3.0 | 3.0 | 3.8 | 3.8 | 4.0 | 4.4 | 3.3 | 3.3 | 3.5 | 3.2 | 3.3 |
| <i>Japan core</i> | 1.2 | 1.6 | 1.8 | 2.5 | 2.8 | 3.0 | 3.2 | 3.4 | 3.7 | 4.1 | 4.2 | 4.3 |

CPI Inflation (YoY % change) – since January 2021



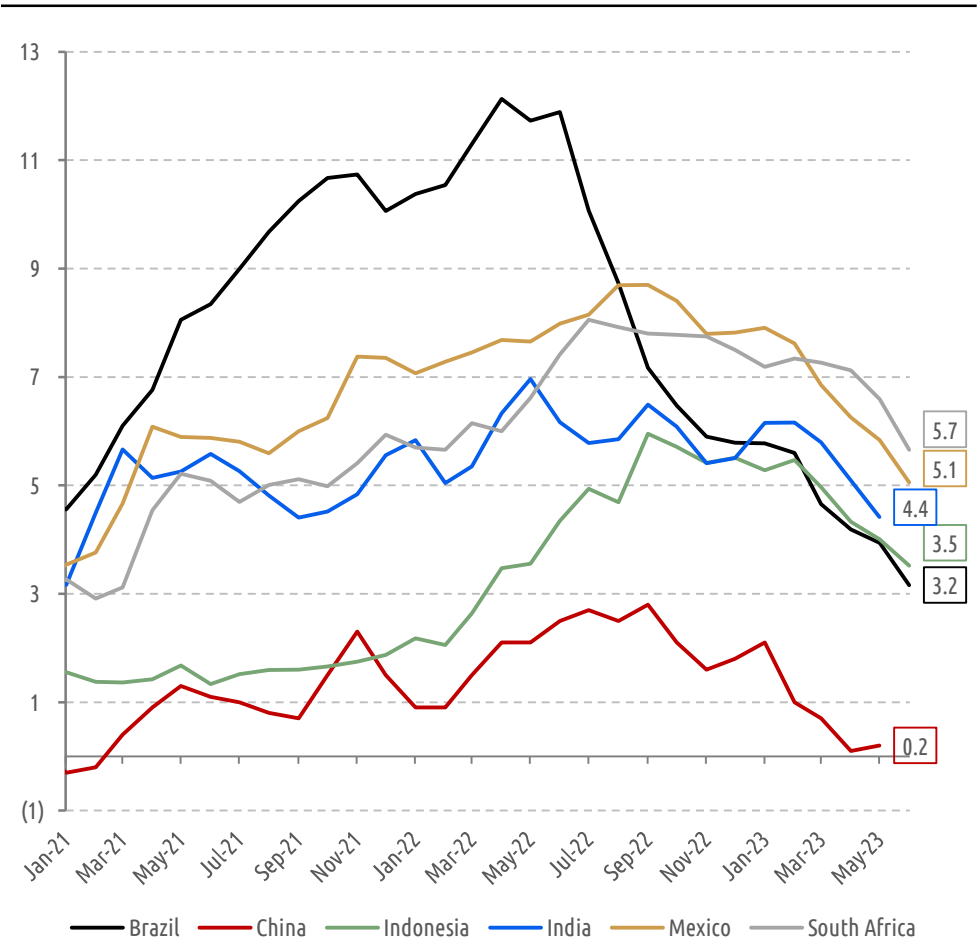
Inflation in emerging economies

Inflationary pressures are cooling. China remains an extraordinary exception with a very low level.

CPI inflation in advanced economies (YoY % change)

| Monthly Year-on-Year inflation rates (%) – 2022/2023 | | | | | | | | | | | | |
|--|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Country | Jul | Aug | Sep | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | Jun |
| China | 2.7 | 2.5 | 2.8 | 2.1 | 1.6 | 1.8 | 2.1 | 1.0 | 0.7 | 0.1 | 0.2 | - |
| India | 5.8 | 5.9 | 6.5 | 6.1 | 5.4 | 5.5 | 6.2 | 6.2 | 5.8 | 5.1 | 4.4 | - |
| South Africa | 8.1 | 7.9 | 7.8 | 7.8 | 7.7 | 7.5 | 7.2 | 7.3 | 7.3 | 7.1 | 6.6 | 5.7 |
| Brazil | 10.1 | 8.7 | 7.2 | 6.5 | 5.9 | 5.8 | 5.8 | 5.6 | 4.7 | 4.2 | 3.9 | 3.2 |
| Mexico | 8.2 | 8.7 | 8.7 | 8.4 | 7.8 | 7.8 | 7.9 | 7.6 | 6.8 | 6.3 | 5.8 | 5.1 |
| Indonesia | 4.9 | 4.7 | 6.0 | 5.7 | 5.4 | 5.5 | 5.3 | 5.5 | 5.0 | 4.3 | 4.0 | 3.5 |

CPI Inflation (YoY % change) – since January 2021



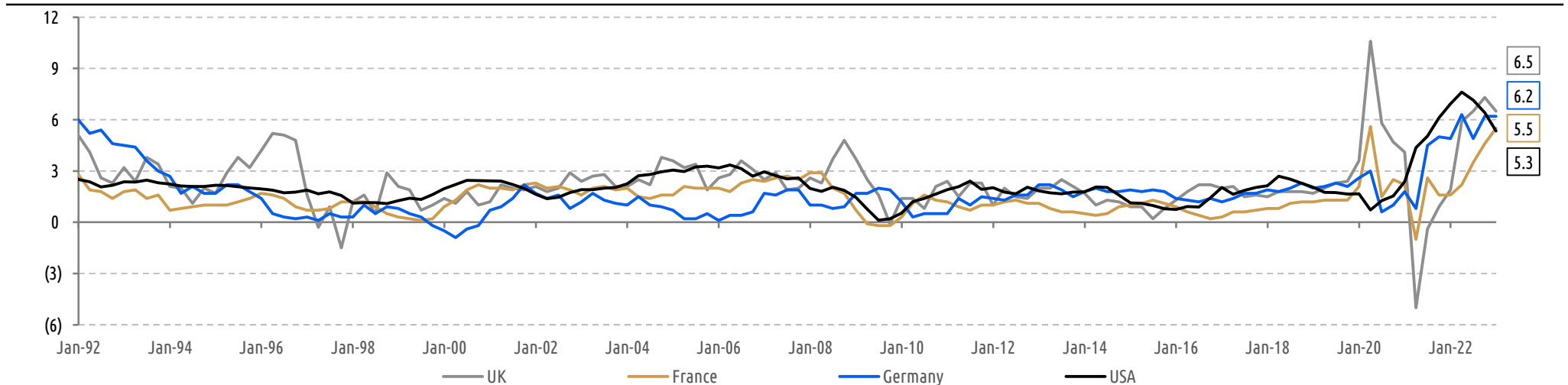
Implied GDP deflators appear to be converging towards headline inflation in G4 countries¹

Although at similar levels in those four main countries, GDP deflator is only increasing in France for the first quarter of 2023.

Quarterly implied GDP deflator – Since Q1-2021

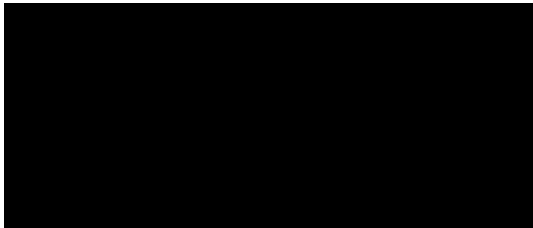
| Implied GDP deflator (YoY % change) – Since Q1-2021 | | | | | | | | |
|---|-------|-------|-------|-------|-------|-------|-------|-------|
| Country | Q2-21 | Q3-21 | Q4-21 | Q1-22 | Q2-22 | Q3-22 | Q4-22 | Q1-23 |
| USA | 4.4 | 5.0 | 6.1 | 6.9 | 7.6 | 7.1 | 6.4 | 5.3 |
| Germany | 0.8 | 4.5 | 5.0 | 4.9 | 6.3 | 4.9 | 6.2 | 6.2 |
| France | (1.0) | 2.6 | 1.6 | 1.6 | 2.2 | 3.5 | 4.6 | 5.5 |
| UK | (5.0) | (0.4) | 0.9 | 1.9 | 5.9 | 6.5 | 7.3 | 6.5 |

Quarterly implied GDP deflator – Since Q1-1992





II Monetary policy



A In the US

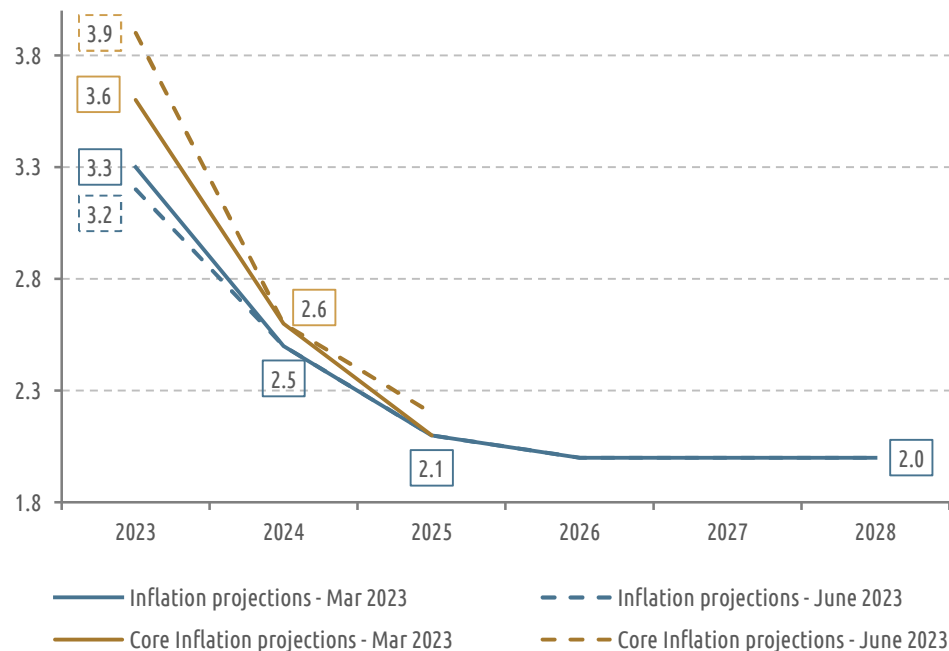
Monetary Policy Decisions from the Fed (1/2)

The Fed decided to increase the interest rate by 25 bps in July after its pause in June. Provisions imply another 25-bps increase before the end of the year.

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

| Price indexes for Personal Consumption Expenditures | | | | | | | |
|---|-------|-------|-------|-------|-------|-------|-------|
| Indicator | 11-22 | 12-22 | 01-23 | 02-23 | 03-23 | 04-23 | 05-23 |
| PCE inflation | 5.7 | 5.3 | 5.4 | 5.0 | 4.2 | 4.3 | 3.8 |

PCE Inflation Projections as of March 2023 (%)



Key considerations

- The target range of the federal fund rates was increased to 5.25%-5.50% on July 26th.
- This hike comes after a pause in June that followed 10 consecutive interest rate increases.
- The Fed said that it was waiting to see the impact of the previous increases. However, they consider that the strong labor market will push up inflation, requiring to increase interest rates at levels unheard of in more than 20 years.
- Next meeting will be on September 19th. The key issue is whether a new hike will occur.

Federal Reserve economic projections as of 14 June 2023

| Indicator | 2023 | 2024 | 2025 | Longer run |
|--------------------|------|------|------|------------|
| Change in real GDP | 1.0 | 1.1 | 1.8 | 1.8 |
| Unemployment rate | 4.1 | 4.5 | 4.5 | 4.0 |
| Inflation | 3.2 | 2.5 | 2.1 | 2.0 |
| Federal funds rate | 5.6 | 4.6 | 3.4 | 2.5 |

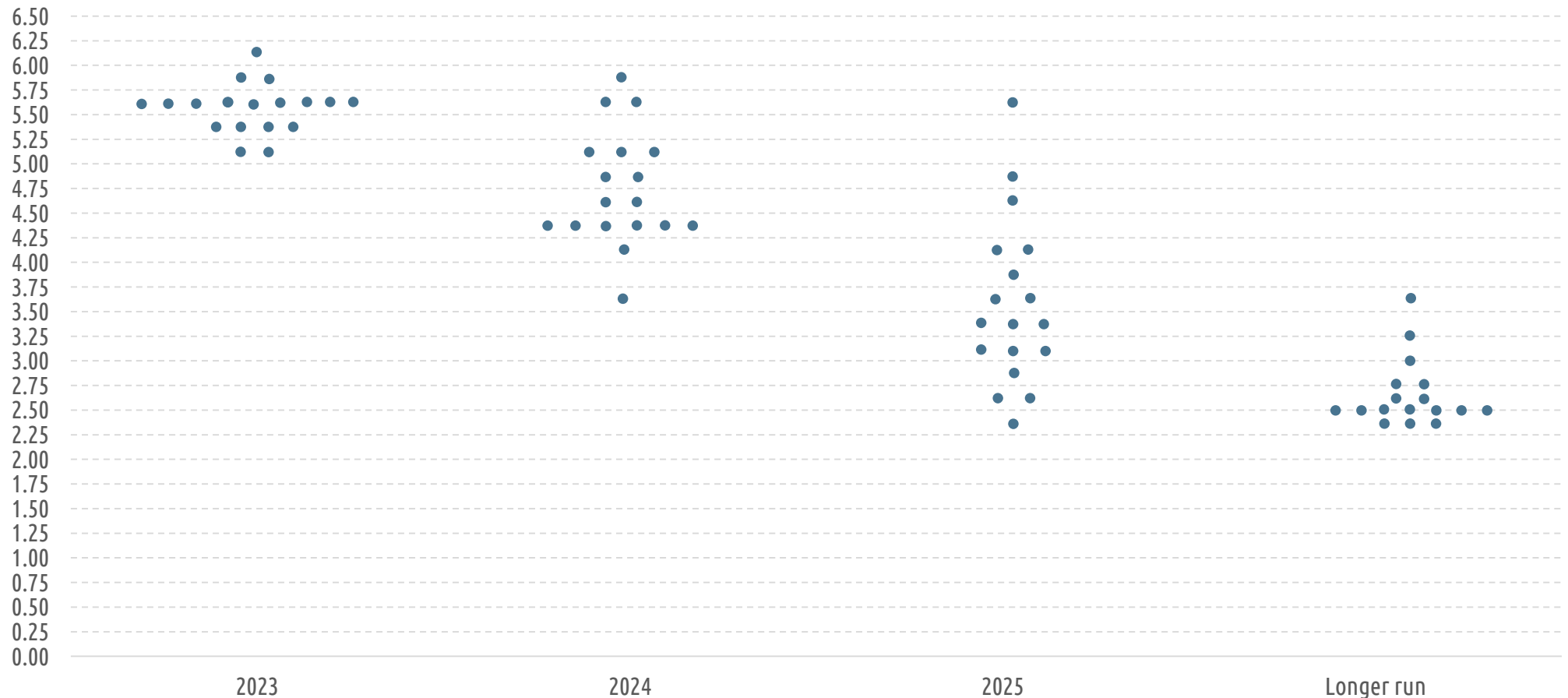
“We intend to keep policy restrictive until we’re confident inflation is coming down sustainably to our 2% target, and we’re prepared to further tighten if that’s appropriate.”

JEROME POWELL, PRESS CONFERENCE, JULY 26TH, 2023

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 5.6%, a 50bps increase with the previous expectations in March.

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



Source: Fed as of 14/06/2023

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.

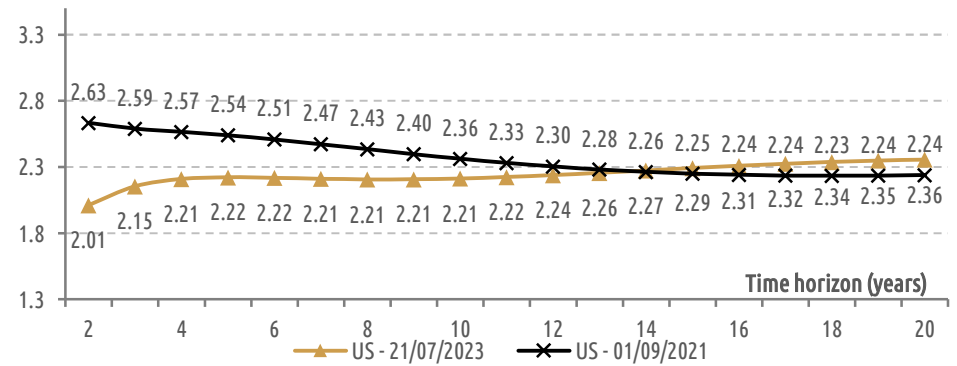
Long-term rates fell after the banking crisis, but are slowly recovering

Real rate however are expected to stay around 2% in real terms

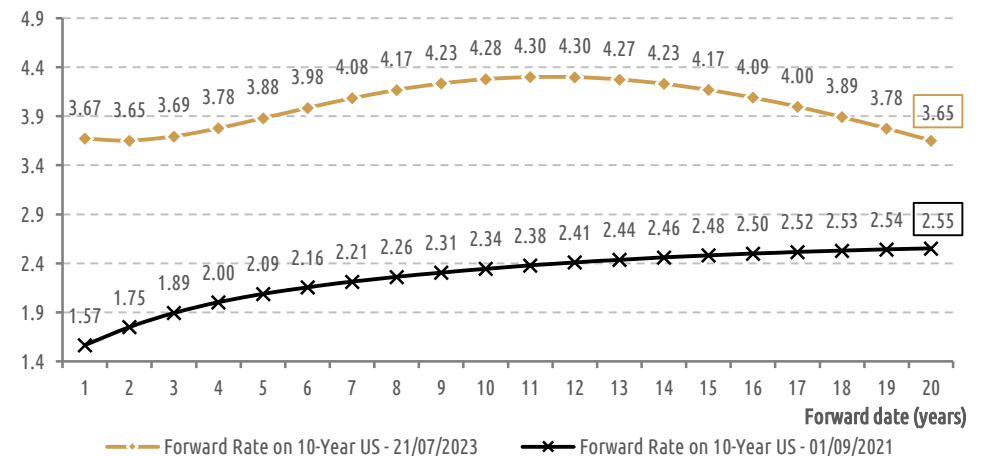
10-Y Nominal yield – US



Inflation Expectations – US (%)



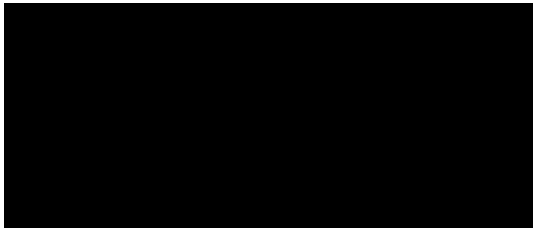
Forward Rates on 10-Year U.S. Treasuries (%)



The US yield curve is inverted at levels unheard of since 1982

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



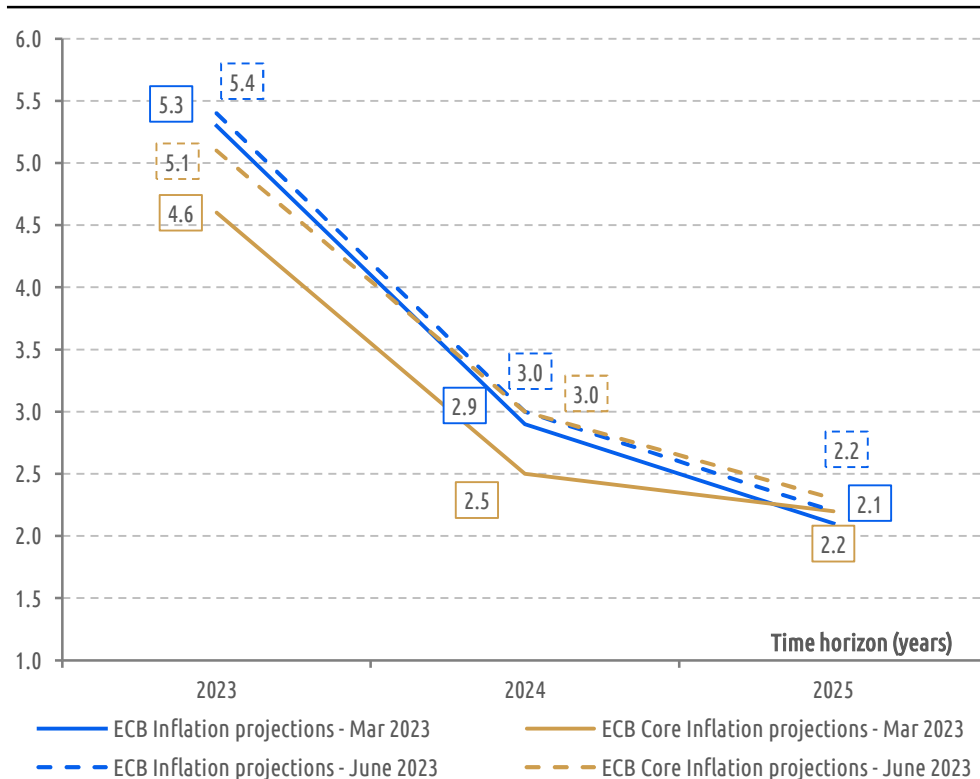


B In the Euro Area

The ECB has raised its interest rates by 25 bps in July as expected

President Lagarde signaled that despite a decrease of headline inflation over the last few months, further rises of interest rate are required to ensure a timely return of inflation to the 2% target. The required time to reach that target remains highly uncertain given the open questions regarding wage inflation.

CPI and core inflation expectations & projections as of June 2023 (%)



Key considerations

- **The Governing Council decided to raise the three key ECB interest rates by 25 basis points, following two other 25-bps increase in May and June and several previous 50-bps increases.**
- Looking ahead, ECB staff have slightly revised their inflation projections up. Headline inflation is now expected to average 5.4% in 2023 while core inflation should reach 5.1%.
- The interest rate on the main refinancing operations has been lifted-up to 4.25%. The benchmark deposit rate is set at 3.75%, its highest level since 2000.
- **The next meeting is set on September 20th The ECB hinted at a possible pause in the hikes.**

| ECB economic projections as of 15 June 2023 | | | |
|---|------|------|------|
| Indicator | 2023 | 2024 | 2025 |
| Change in real GDP | 0.9 | 1.5 | 1.6 |
| Unemployment rate | 6.5 | 6.4 | 6.3 |
| Inflation | 5.4 | 3.0 | 2.3 |



“While some measures show signs of easing, underlying inflation remains high overall.”

CHRISTINE LAGARDE, MONTERAY POLICY DECISION, JULY 27TH 2023

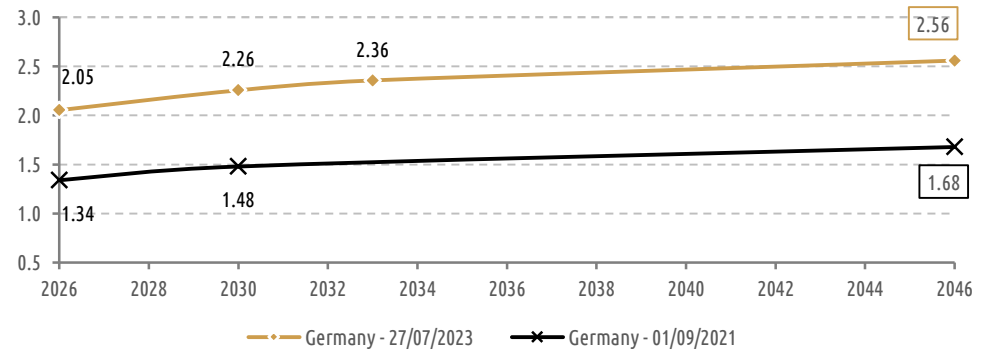
In the Eurozone, the banking crisis had no lasting effect on long-term rates

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

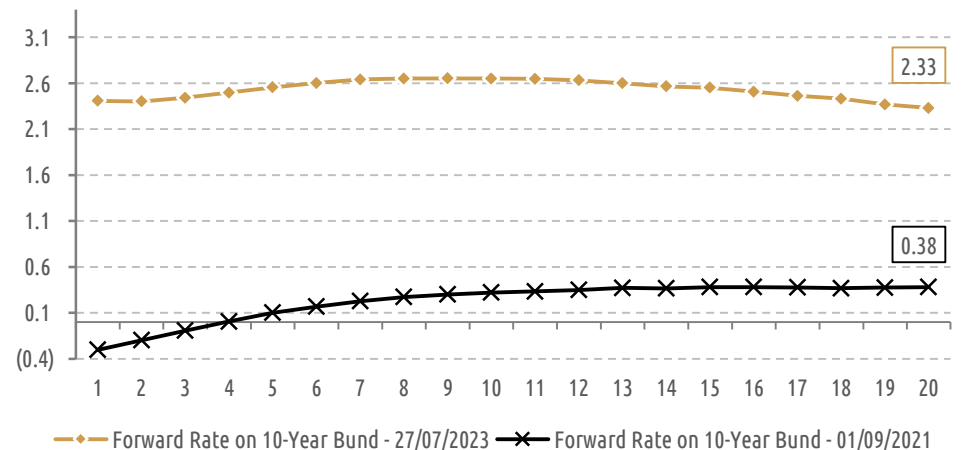
10-Y Nominal yield – German Bund



Inflation Expectations¹ - Germany (%)



Forward Rates on 10-Year German Bund (%)



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

Bund 2Yr/10Yr Spread – Since Jan 1998



After 18 months of a weakening euro, the trend has reversed since October 2022

Nominal Foreign exchange rate in historical perspective – Since Jan. 1999



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 2022



III Impact on yields and spreads

In Europe, sovereign yields remain at high levels

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



Tensions on spreads have slightly eased off since their peak late 2022

In spite of new financial uncertainties, Greece benefit from a strong revival of investors' confidence, especially compared to Italy. France is slightly up compared to pre-war levels.

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

In bps

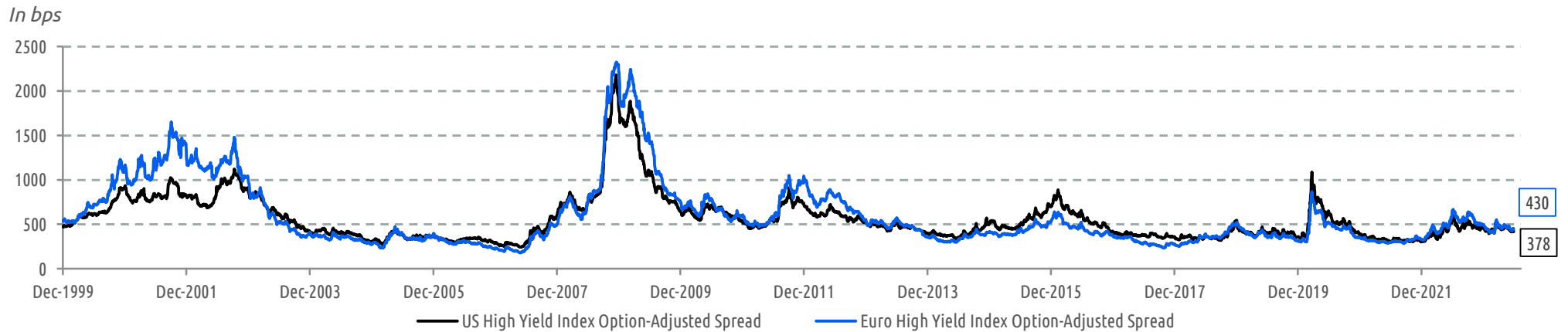


Sources: Banque de France, Bundesbank and Eurostat as of 28/07/2023, Internal calculations

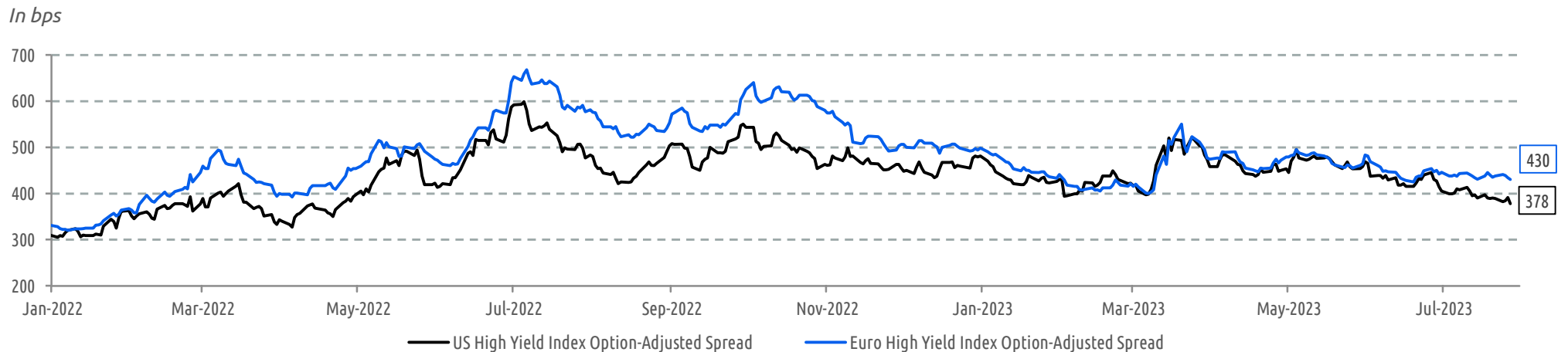
High yield corporate bond spreads rose in the wake of SVB bankruptcy

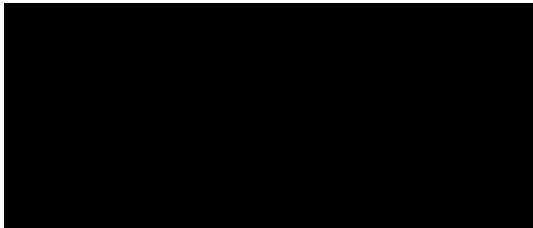
They are now decreasing, coming back to pre-war levels

High yield corporate bond spreads – Since 2000



High yield corporate bond spreads – Since 2022



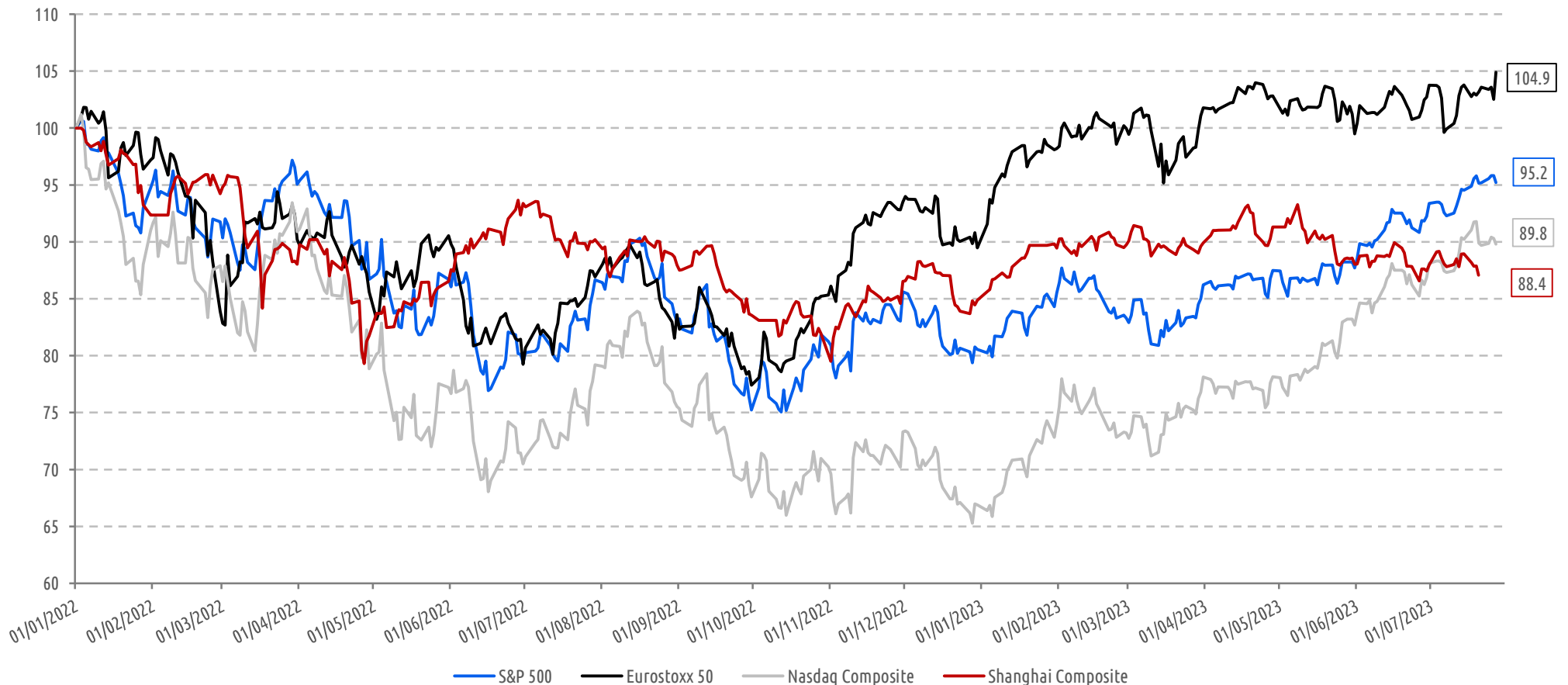


IV Impact on stock markets

Except for Eurostoxx 50, prices remain below pre-war levels

The Nasdaq index is staging an impressive recovery (due to tech-hungry investors) despite relatively low interest rates.

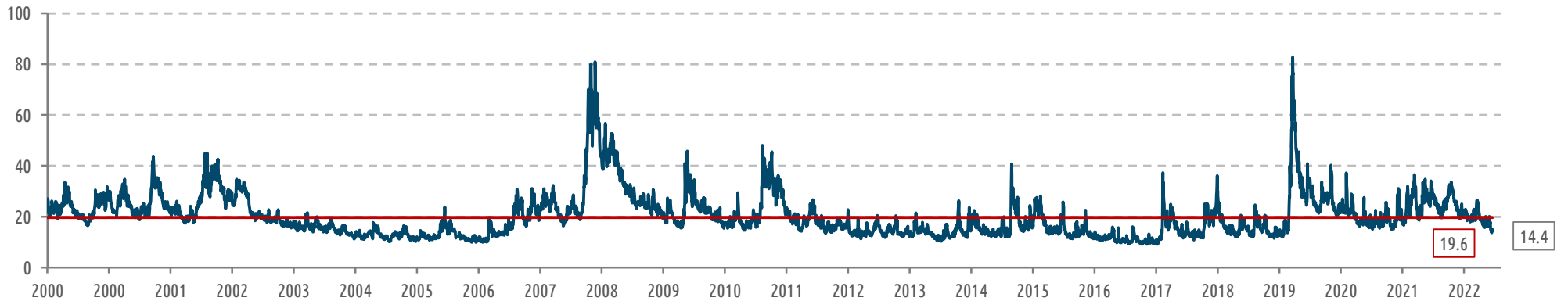
Nasdaq Composite, S&P 500, Shanghai Composite and Eurostoxx 50 indices – Jan. 2022 = 100



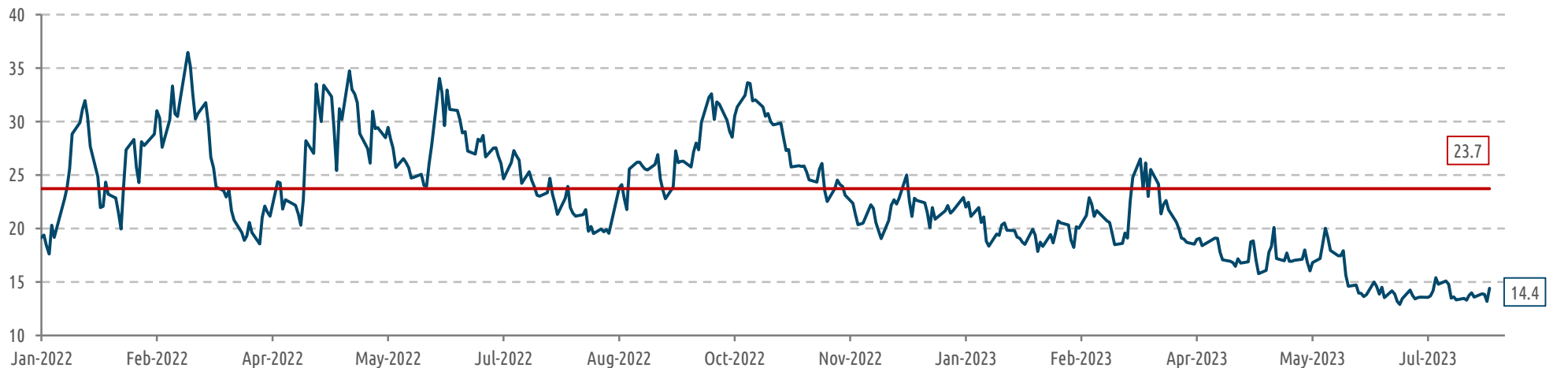
Volatility on US financial markets has fallen below its historical average level

Ignoring the consequences of the banking crisis.

VIX index – Since 2000



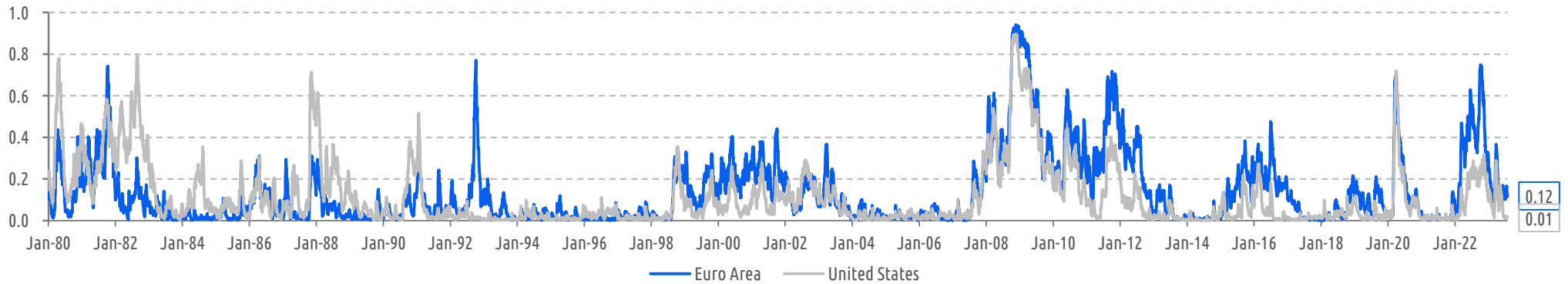
VIX index – Since 2022



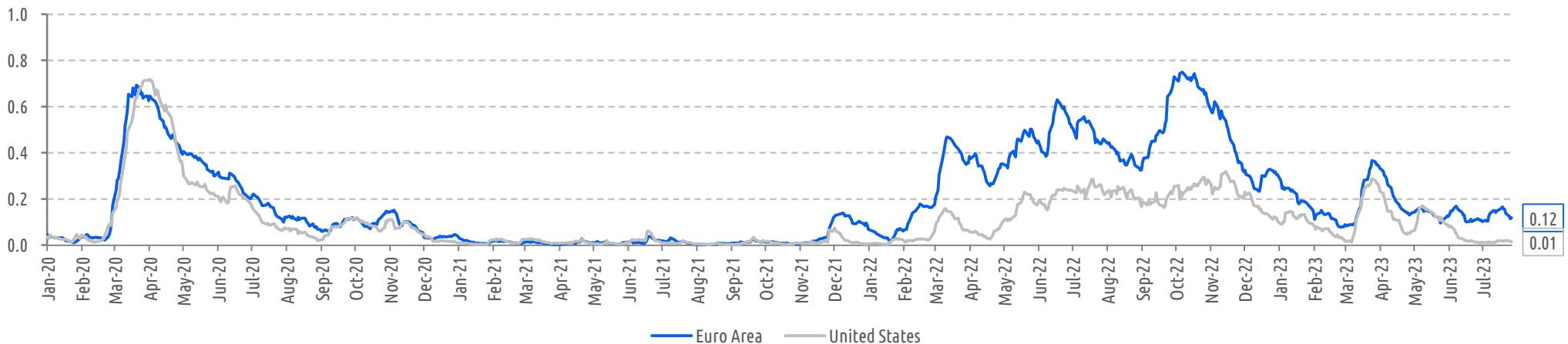
Financial stress indicators returned to pre-war levels

The index, however, is higher in Europe than in the US.

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



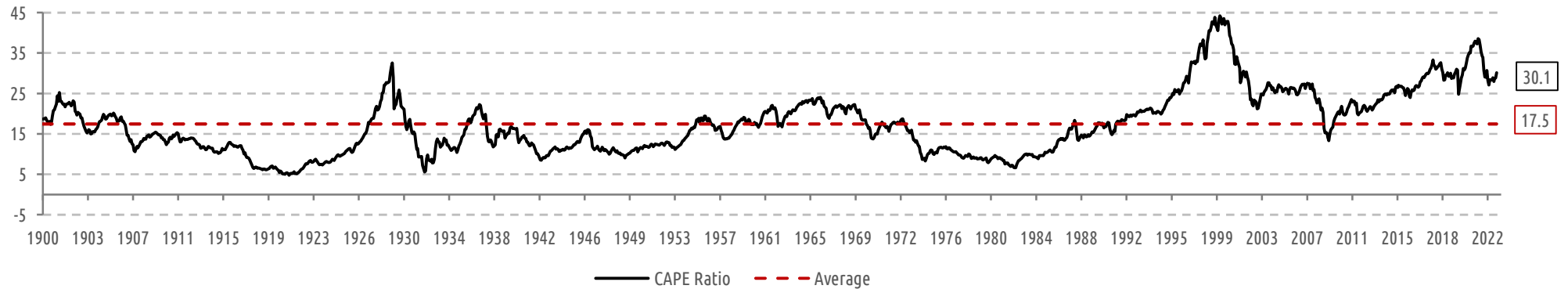
Composite Indicator of Systemic Stress (daily) – Since Jan. 2020



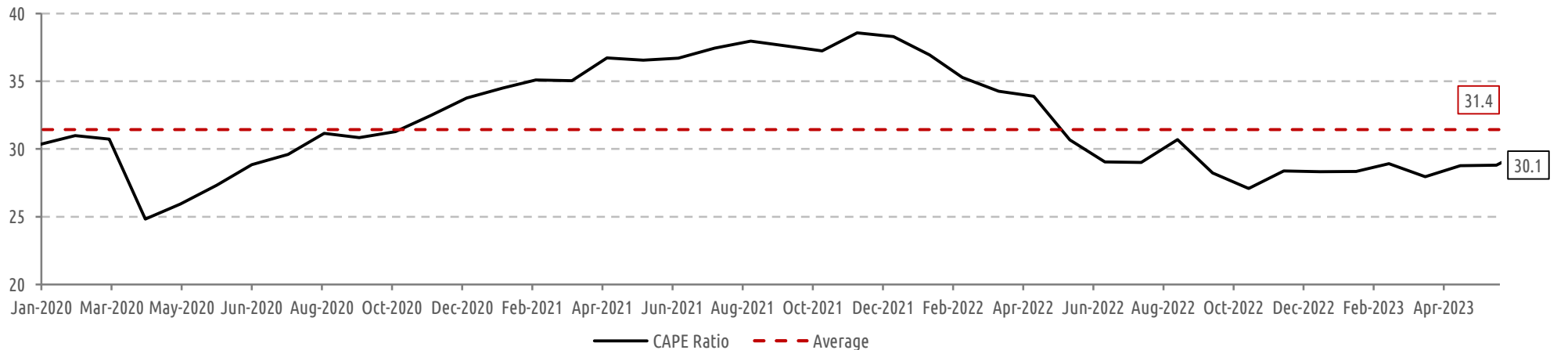
US Shiller Cyclically Adjusted Price to Earnings ratio (CAPE ratio)¹

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

Cyclically Adjusted Price Earnings ratio – Since 1900



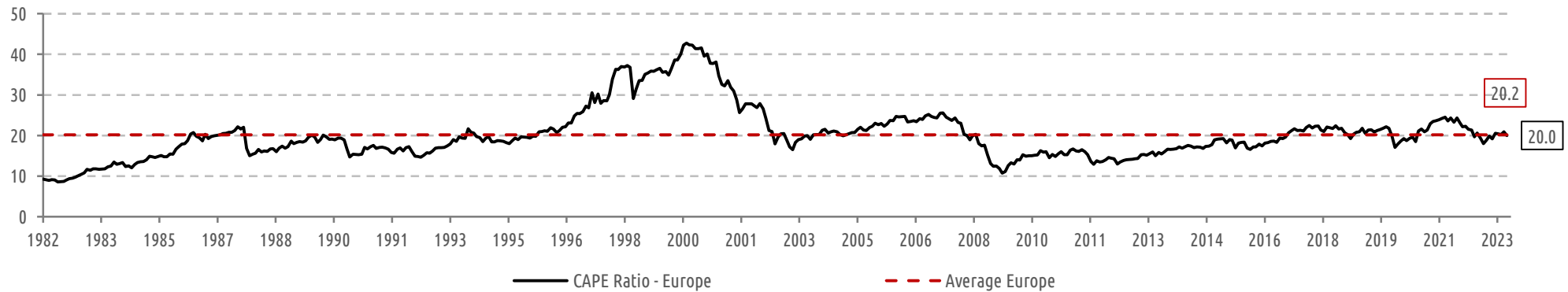
Cyclically Adjusted Price Earnings ratio – Since 2020



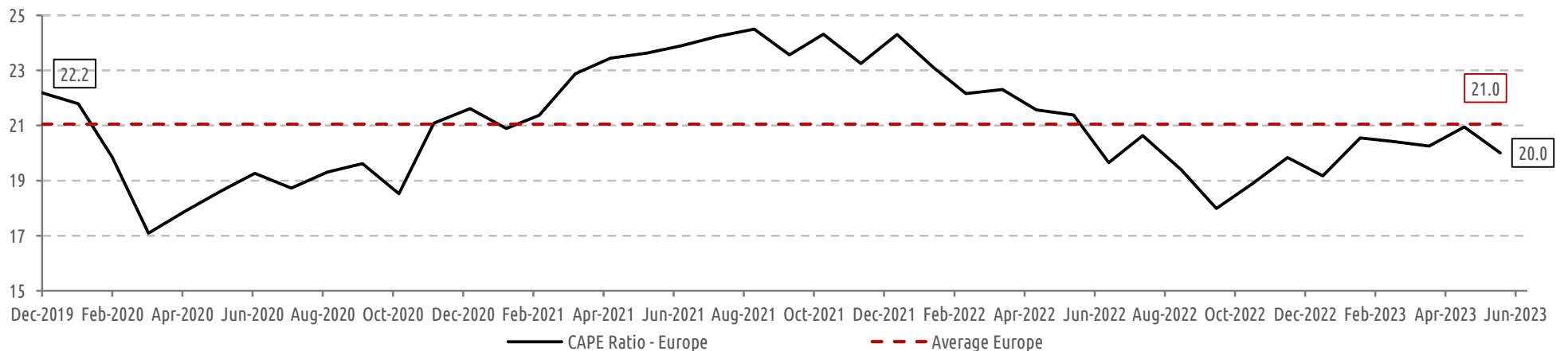
Shiller CAPE ratio in Europe

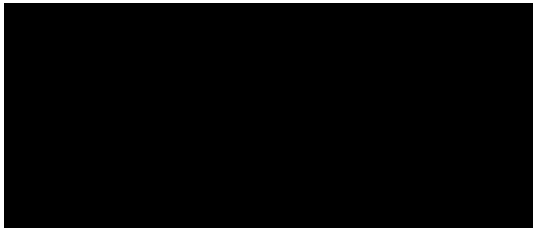
Shiller CAPE ratio is still close to its pre-Covid level and to its historical average

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) – Canada | OECD/KEI/NAEXKP01.CAN.GP.Q |
| 4 | Quarterly GDP growth (% change over the previous period) – Germany | OECD/KEI/NAEXKP01.DEU.GP.Q |
| 4 | Quarterly GDP growth (% change over the previous period) – Eurozone | OECD/KEI/NAEXKP01.EA19.GP.Q |
| 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 |
| 4 | Quarterly GDP growth (% change over the previous period) – Japan | OECD/KEI/NAEXKP01.JPN.GP.Q |
| 4 | Quarterly GDP growth (% change over the previous period) – US | OECD/KEI/NAEXKP01.USA.GP.Q |
| 4 | Yearly GDP growth rate (YoY % change) – Canada | IMF/WEO:2023-04/CAN.NGDP_RPCH.pcent_change |
| 4 | Yearly GDP growth rate (YoY % change) – Germany | IMF/WEO:2023-04/DEU.NGDP_RPCH.pcent_change |
| 4 | Yearly GDP growth rate (YoY % change) – France | IMF/WEO:2023-04/FRA.NGDP_RPCH.pcent_change |
| 4 | Yearly GDP growth rate (YoY % change) – UK | IMF/WEO:2023-04/GBR.NGDP_RPCH.pcent_change |
| 4 | Yearly GDP growth rate (YoY % change) – Italy | IMF/WEO:2023-04/ITA.NGDP_RPCH.pcent_change |
| 4 | Yearly GDP growth rate (YoY % change) – Japan | IMF/WEO:2023-04/JPN.NGDP_RPCH.pcent_change |

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| 4 | Yearly GDP growth rate (YoY % change) – Eurozone | IMF/WEOAGG:2023-04/163.NGDP_RPCH.pcent_change |
| 5 | Quarterly GDP growth (% change over the previous period) – China | OECD/DP_LIVE/CHN.QGDP.TOT.PC_CHGPP.Q |
| 5 | Quarterly GDP growth (% change over the previous period) – Brazil | OECD/KEI/NAEXKP01.BRA.GP.Q |
| 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 | IMF/WEO:2023-04/BRA.NGDP_RPCH.pcent_change |
| 5 | Yearly GDP growth rate (YoY % change) – Mexico | IMF/WEO:2023-04/MEX.NGDP_RPCH.pcent_change |
| 5 | Yearly GDP growth rate (YoY % change) – South Africa | IMF/WEO:2023-04/ZAF.NGDP_RPCH.pcent_change |
| 5 | Yearly GDP growth rate (YoY % change) – Indonesia | IMF/WEO:2023-04/IDN.NGDP_RPCH.pcent_change |
| 5 | Yearly GDP growth rate (YoY % change) – India | IMF/WEO:2023-04/IND.NGDP_RPCH.pcent_change |
| 5 | Yearly GDP growth rate (YoY % change) – China | IMF/WEO:2023-04/CHN.NGDP_RPCH.pcent_change |

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| 5 | OECD Weekly growth tracker – Brazil | OECD/GDP_GROWTH/W.BRA.tracker_yoy |
| 5 | OECD Weekly growth tracker – Mexico | OECD/GDP_GROWTH/W.MEX.tracker_yoy |
| 5 | OECD Weekly growth tracker – South Africa | OECD/GDP_GROWTH/W.ZAF.tracker_yoy |
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| 6 | General government debt – France | Eurostat/gov_10q_ggdebt/Q.GD.S13.PC_GDP.FR |
| 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 |
| 6 | General government deficit – Germany | Eurostat/teina205/Q.B9.S13.PC_GDP_SCA.DE |
| 6 | General government deficit – France | Eurostat/teina205/Q.B9.S13.PC_GDP_SCA.FR |
| 6 | General government deficit – United Kingdom | ONS/UKEA/CT8O.Q |
| 6 | General government deficit – Italy | OECD/DP_LIVE/ITA.GGNLEND.TOT.PC_GDP.A |
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| 7 | Consumer confidence index – United Kingdom | OECD/MEI CLI/CSCICP03.GBR.M |
| 7 | Business confidence index – United States | OECD/MEI CLI/BSCICP03.USA.M |
| 7 | Business confidence index – Germany | OECD/MEI CLI/BSCICP03.DEU.M |
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| 10 | % of EU business reporting shortages of materials and equipment in the construction industry as a limiting production factor | EC/CONSTRUCTION/TOT.2.F5S.EU.M |
| 11 | Beveridge curve – Euro Area (Q1-17 – Q2-22), Quarterly | Eurostat/une rt q/Q.NSA.Y20-64.PC POP.T.EA19 Eurostat/jvs q nace2/Q.NSA.B-S.TOTAL.JOBRATE.EA19 |
| 11 | Civilian unemployment rate – Total – USA - Seasonally adjusted | BLS/ln/LNS1400000 |
| 11 | Unemployment according to ILO definition - Total – Euro area – Seasonally adjusted | Eurostat/ei lmhr m/M.PC ACT.SA.LM-UN-T-TOT.EA20 |
| 12 | 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 |

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| 12 | Unemployment according to ILO definition - Total – France – Seasonally adjusted | Eurostat/une_rt_m/M.SA.TOTAL.PC.ACT.T.FR |
| 12 | Unemployment according to ILO definition - Total – Germany – Seasonally adjusted | Eurostat/une_rt_m/M.SA.TOTAL.PC.ACT.T.DE |
| 13 | Wage growth tracker – France (Quarterly) | INSEE/ICT-2016/T.BDM_EUR.ICT.A21-BTN.INDICE.SSE.FE.SO.CVS-CJO.2016 |
| 15 | CPI Inflation (YoY % change) – United States | BLS/cu/CUSR0000SA0 BLS/cu/CUSR0000SA0L1E |
| 15 | CPI Inflation (YoY % change) – Eurozone | Eurostat/prc_hicp_manr/M.RCH.A.CP00.EA Eurostat/prc_hicp_manr/M.RCH.A.TOT.X.NRG.FOOD.EA |
| 15 | CPI Inflation (YoY % change) – France | Eurostat/prc_hicp_manr/M.RCH.A.CP00.FR Eurostat/prc_hicp_manr/M.RCH.A.TOT.X.NRG.FOOD.FR |
| 15 | CPI Inflation (YoY % change) – Germany | Eurostat/prc_hicp_manr/M.RCH.A.CP00.DE Eurostat/prc_hicp_manr/M.RCH.A.TOT.X.NRG.FOOD.DE |
| 15 | CPI Inflation (YoY % change) – Italy | Eurostat/prc_hicp_manr/M.RCH.A.CP00.IT Eurostat/prc_hicp_manr/M.RCH.A.TOT.X.NRG.FOOD.IT |
| 15 | CPI Inflation (YoY % change) – United Kingdom | ONS/MM23/D7G7.M ONS/MM23/DKO8.M |
| 15 | CPI Inflation (YoY % change) – Japan | STATJP/CPIm/001 STATJP/CPIm/740 |
| 16 | CPI Inflation (YoY % change) - Brazil | OECD/KEI/CPALTT01.BRA.GY.M |
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| 17 | Quarterly implied GDP deflator – France | Eurostat/namq_10_gdp/Q.PD_PCH_SM_NAC.SCA.B1GQ.FR |
| 17 | Quarterly implied GDP deflator - United Kingdom | ONS/QNA/IHYU.Q |
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| 20 | Personal consumption expenditures (PCE) | BEA/NIPA-T20804/DPCERG-M |
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| 27 | 10-Y Nominal yield – German Bund | BUBA/BBK01/WT1010 |
| 27 | Inflation Expectations - Germany | BUBA/BBSSY/D.KCP.EUR.A607.DE0001102523.A |
| 27 | Forward Rates on 10-Year German Bund | BUBA/BBSIS/D.I.ZAR.ZI.EUR.S1311.B.A604.R10XX.R.A.A. Z. Z.A |
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| 28 | Nominal Foreign exchange rate in historical perspective | BUBA/BBEX3/D.USD.EUR.BB.AC.000 |
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| 36 | Composite Indicator of Systemic Stress (daily) – Euro Area | ECB/CISS/D.U2.Z0Z.4F.EC.SS_CIN.IDX |
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