Global Economic Outlook

_____ June 2024





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Cut-off date for data

14 June 2024

CF survey date

10 June 2024

GEO publication date

21 June 2024

Notes to charts

ECB, Fed, BoE and BoJ: midpoint of the range of forecasts.

The arrows in the GDP and inflation outlooks indicate the direction of revisions compared to the last GEO. If no arrow is shown, no new forecast is available. Asterisks indicate first published forecasts for given year. Historical data are taken from CF, with exception of MT and LU, for which they come from OE.

Leading indicators are taken from Bloomberg and Refinitiv Datastream.

Forecasts for EURIBOR and LIBOR rates are based on implied rates from interbank market yield curve (FRA rates are used from 4M to 15M and adjusted IRS rates for longer horizons). Forecasts for German and US government bond yields (10Y Bund and 10Y Treasury) are taken from CF.

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I. — Introduction

I. Introduction

War in Ukraine: first peace summit is a certain hope for the future! Its participants from 92 countries (but without a Chinese delegation) signed the final communiqué calling for Moscow and Kyiv to exchange all captives and ensure both nuclear safety and the safety of shipping in the Black Sea and Sea of Azov. The global leaders in attendance again pointed to the unnecessary loss of human life and the huge material impacts of Russian aggression (visible also in the rise of public debt), including the escalation of global tensions.

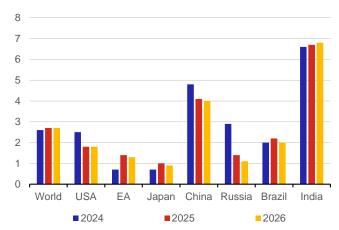
According to a <u>UN report</u> (UNCADT), global public debt has approached the magic threshold of USD 100 trillion. Its increase by USD 5.6 trillion last year led to a rise in the overall debt burden to USD 97 trillion. Not only trends in the USA, but also the rapid growth in public debt in emerging countries with debt service accounting for over 10% of their budget is worrying.

The end of spring brought the first monetary policy easing by key central banks. The ECB lowered rates for the first time since 2019 at its June meeting by the standard 0.25 percentage points. It therefore followed the Bank of Canada,

which took a dovish step a day earlier. Other key central banks, especially the US Fed, are still waiting to make their first rate cut. So far, it seems that the easing of monetary policy will be more gradual than expected before the start of this year. For the ECB, this is confirmed by the words of President Christine Lagarde, who said that the June cut is not the beginning of a coherent series of interest rate cuts. A longer period of tighter monetary policy was also confirmed by the June monetary policy meeting of the Fed, which is expected to cut interest rates by 0.5 percentage point this year. The situation in Japan appears to be complicated, as the March increase in interest rates to a positive number (0.1%) was followed by massive interventions to stabilise the yen.

The chart for June shows the World Bank's outlook, which is broadly similar to that of other international institutions. Growth of the world economy is expected to maintain roughly the same pace, below 3%, over the

Growth outlook for global economies in following years, %



Source: World Bank Global Economic Prospects Note: EA = euro area.

coming years. The euro area economy is expected to grow much more slowly than the US economy in the next two years as well. As regards large developing economies, India is expected to be particularly successful and its growth should even accelerate and approach 7%. The Chinese economy will also continue to support global economic growth, albeit at visibly lower and declining rates, which should stabilise close to 4%.

The current issue also contains an analysis: "Annual assessment of forecasts included in GEO in 2023." This regularly included article assesses how successfully the institution predicted last year's inflation and economic growth. The year 2023 was marked by a return and stabilisation of the macroeconomic environment after the turbulent 2022, which was a sad one in modern history due to Russia's aggression in Ukraine. This Russian aggression also resulted in an energy crisis, which became one of the main causes of the inflation wave last year.

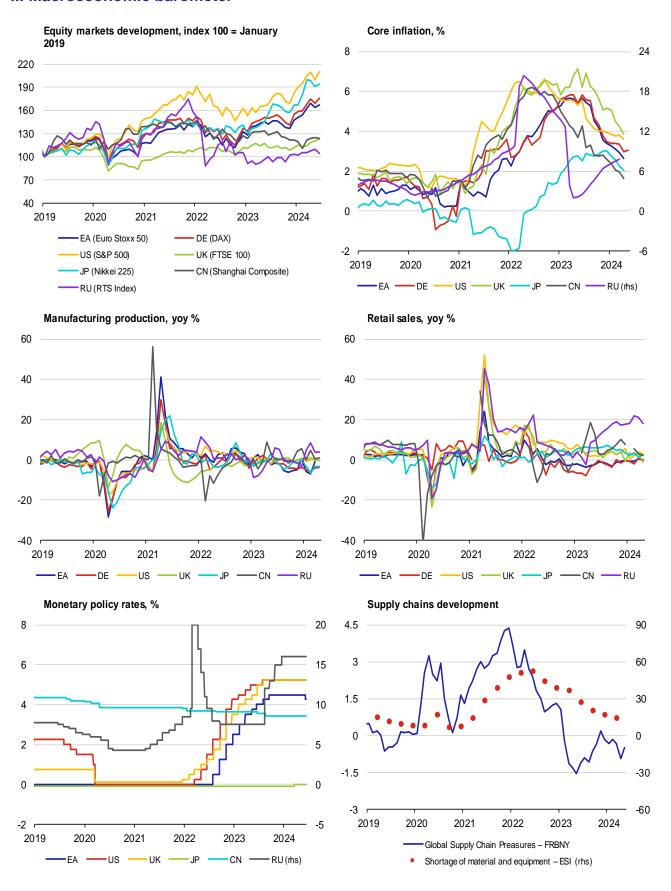
GEO barometer for selected countries

		EA	DE	US	UK	JP	CN	RU
GDP (%)	2024 2025	0.7	0.2	2.3 1 .7	0.6	0.3	5.0	2.6
Inflation (%)	2024 2025	2.4	2.4	3.2 ⇒ 2.4 ⇒	2.6	2.6	0.6	5.3 • 4.4 •
Unemployment (%)	2024 2025	6.6 • 6.5 •	5.9 \$ 5.8 \$	4.0	4.4	2.5	3.4 3 .4 3 .4	2.8
Exchange rate (against USD)	2024 2025	1.09	1.09		1.27	145.9 136.3	7.21 7 .06	95.1 9 6.3

Source: Consensus Forecasts (CF)

Note: The arrows indicate the direction of the revisions compared with the last GEO.

II. Macroeconomic barometer

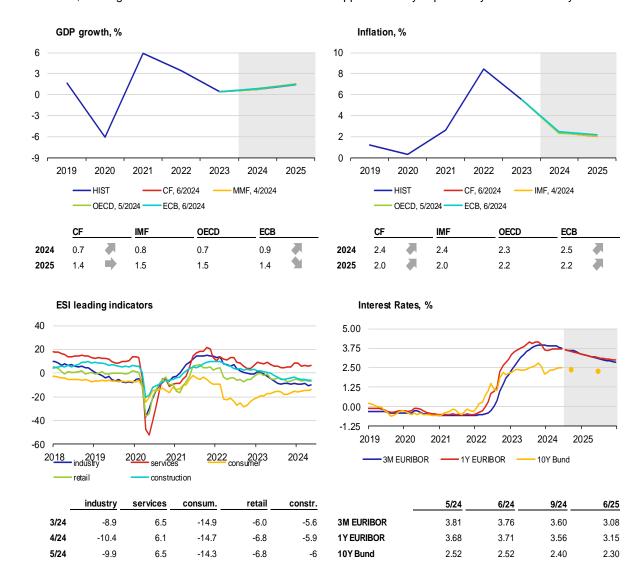


Source: Refinitiv Datastream, European Commision.

III.1 Euro area

The economic growth outlooks for the euro area for this year have improved slightly. GDP rose by 0.3% in Q1. This was due mainly to net exports (export growth rose sharply amid slower import growth). Household consumption also made a positive, albeit only very modest, contribution to quarterly GDP growth. By contrast, investment showed a sizeable quarter-on-quarter decline. From the perspective of the various sectors, the economic recovery at the start of the year was clearly due to services (mostly driven by trade, transport and hospitality), while industry's contribution to GVA growth remained negative. Industrial production fell slightly month on month in April and retail sales also fell. However, the composite PMI is rising steadily (52.2 in May), due to reported continued expansion in services and a moderation of the decline in industry and construction. The ESI consumer sentiment indicator is also continuing to rise. Continued brisk wage growth and record-low unemployment is improving sentiment. Household consumption should be the main driver of growth in the coming quarters. The new ECB forecast revised the growth outlook for this year to 0.9%, whereas CF analysts shifted their estimates more modestly (0.7%). Growth of 1.4% is expected next year.

The new inflation outlooks expect a more gradual slowdown in HICP growth. The disinflation process in the euro area has now come to a halt. Annual inflation rose to 2.6% in May due to renewed growth in energy prices. In the months ahead, its evolution will be subject to higher volatility owing to base effects. Besides energy, pressure is being put on inflation in the services sector, where price growth accelerated. Core inflation therefore also went up in May (to 2.9%). In this context, the new ECB forecast shifted the inflation outlook to 2.5% for this year and 2.2% for next year (which was followed to a lesser extent by the CF). Nevertheless, the ECB's Governing Council lowered its key interest rates by 0.25 pp on the grounds that the time had come to alleviate the restrictiveness of monetary policy. According to President Christine Lagarde, however, it is not the start of a consistent series of interest rate cuts. In the financial markets' opinion, they are not likely to fall further in the near future, although a further reduction of the standard 0.25 pp is currently expected by the end of this year.

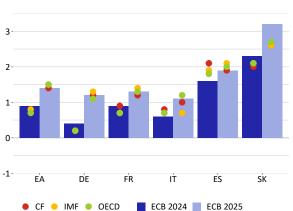


III.2 Germany

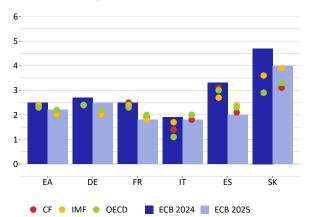
According to a new Bundesbank forecast, the German economy is slowly gaining ground. After around two years of weakness, the German economy is recovering, driven by private consumption and exports. Industry should also grow more strongly in the second half of the year. Detailed results on economic performance confirmed that, following the decline in GDP at the end of last year, the first quarter of this year brought positive quarterly GDP growth of 0.2%. The Bundesbank's and CF's new June forecasts expect GDP to show no more than 0.5% growth this year and to rise more markedly in 2025, specifically by more than 1%. The composite PMI reached the highest number in the last year in May (52.4) and was in the expansion band for the second time. Growth in private sector activity was supported by stronger growth in the services sector (54.2), but also by a slower decline in the manufacturing sector. According to the Ifo index for May, business sentiment remains unchanged. Businesses were less satisfied with their current business situation, but expectations improved. Consumer sentiment continued to recover for the fourth consecutive month in May. The assessment of the economic outlook is improving noticeably. Income expectations are rising slightly, but the willingness to purchase is only increasing a little.

May saw a further slight pick-up in consumer price inflation, although this was not surprising. Harmonised prices rose to 2.8% year on year (compared to 2.4% in April), mainly on account of continued growth in services prices. The one-off effect of last May's introduction of a cheap national travel ticket also played an important role. On the contrary, energy and food prices have had a dampening effect on headline inflation since the beginning of the year, despite the end of energy regulations, the introduction of a higher carbon price at the beginning of the year and the end of the temporary reduction in VAT on gas and long-distance heat in April. Core inflation, excluding food and energy, was flat at 3%. In its new forecast, the Bundesbank expects inflation to decline from last year's average of 6% to 2.8% this year and 2.7% in 2025. The decline in industrial producer prices accelerated to 3.3% year on year in April, mainly because of lower energy prices, although intermediate goods were also cheaper.

GDP growth in selected euro area countries in 2024 and 2025, %



Inflation in selected euro area countries in 2024 and 2025, %

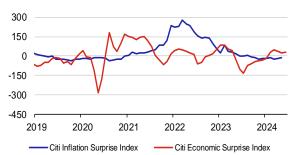


ESI leading indicators



	EA	DE	FR	ES	ІТ	SK
3/24	96.3	90.0	100.9	102.0	100.9	100.1
4/24	95.6	91.6	95.8	104.3	99.6	96.5
5/24	96.0	92.4	97.3	101.1	100.4	95.6

Economic and inflation surprises in the euro area, %



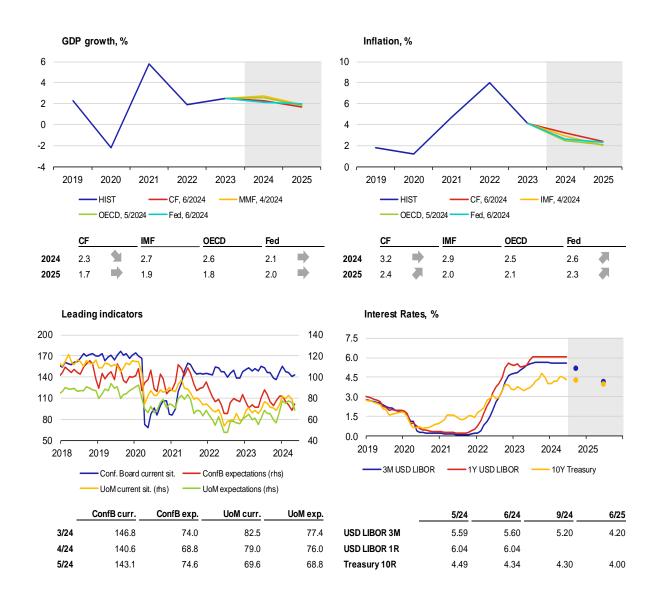
Inflation expectations based on 5year inflation swap and SPF

<u>5y5y</u>	SPF	
4/24	2.35	2.04
5/24	2.35	2.04
6/24	2.34	2.04

III.3 United States

The new GDP growth outlook for the US economy has been revised downwards again. The new CF analysts' outlook expects real GDP to grow by 2.3% this year. However, this is more optimistic than the new US central bank outlook, which expects only 2.1%. Even so, the USA is among the fastest growing of the large G7 economies and only Canada could catch it up this year according to the outlooks. The growth is being driven mainly by consumption, but analysts estimate that households' savings are gradually getting smaller and the growth rate could slow soon. A slowdown in growth is expected in the second half of this year not only by CF analysts, but also by the May Bloomberg survey. Last year, however, the US economy provided us with a surprise, and the same may happen this year, as the economy is facing presidential elections. In June, US President Joe Biden celebrated the 80th anniversary of D-Day at an allied celebration in Normandy, where he met European leaders.

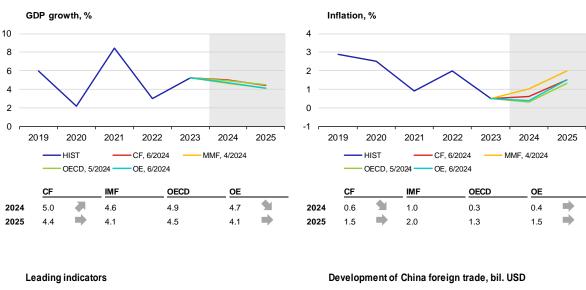
The US Fed left rates unchanged in June, as expected by the financial markets, and now expects higher inflation this year and the next than in the March forecast. Annual consumer price inflation fell to 3.3% and core inflation to 3.4% in May. This represents a gradual decrease compared to previous months. Only new and second-hand cars recorded a decline in prices, otherwise, prices went up, albeit more slowly than expected. According to CF analysts, the new outlook remains at 3.2% this year but rose to 2.4% next year, i.e. a further deviation from the 2% inflation target. A survey conducted by Bloomberg shows the same outlooks. The new US Fed outlook expects inflation of 2.6% this year and 2.3% next year. Market expectations moved down following a press conference by Chair Jerome Powell, which had rather a dovish ton, and a total of two rate cuts are expected this year – at the September and December monetary policy meetings of the US Fed. The updated DOT plot has a similar message



III.4 China

Following relatively strong growth by the Chinese economy in Q1, leading indicators and observed data are providing mixed signals in Q2. Industrial production rose by 6.7% year on year in April, i.e. above market expectations and the 4.5% growth in March. The recovery of the industrial sector contrasts with weak consumer demand, as retail sales lagged behind expectations in April, rising by only 2.3% year on year and confirming the weakening dynamism observed in previous months. In addition, the PMI for the manufacturing sector fell to 49.5 from April's 50.4, suggesting a renewed contraction in this sector after two months of growth. By contrast, the Caixin PMI, which focuses on small and medium-sized enterprises, rose to 51.7 from 51.4 in April, the highest level since July 2022. Thus, the PMI indices point to continued imbalances between large and small businesses, with smaller businesses showing more resilience and growth, while large manufacturing companies face challenges in terms of weakened demand and production. The services sector again performed best in May, with the PMI staying in the expansion band at 51.1, and the Caixin PMI in this sector was even the highest since August last year at 54. Foreign trade contributed significantly to growth in May, with exports rising by 7.6% year on year; imports rose by 1.8% and net exports were over USD 82 billion, the highest level since February this year. According to the June CF analysts' outlook, the annual growth rate of the Chinese economy will reach 5% this year and slow to 4.4% next year.

Consumer prices continued to rise modestly in May, while the decline in producer prices, which are still in deflation territory, slowed. As in April, annual consumer price inflation was 0.3% in May. This signals a continued very modest recovery in domestic demand, but inflation is still well below the 3% target. According to the June CF analysts' outlook, consumer prices will rise by only 0.6% this year and pick up to 1.6% next year. Annual deflation in producer prices slowed further in May, from -2.5% in April to -1.4%, where it last stood in February 2023.





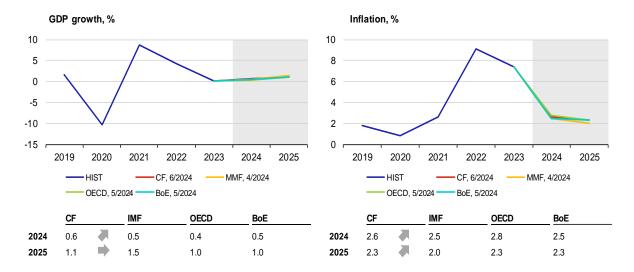
_	PMI manuf.	PMI in Non-manufacturing	PMI service
3/24	50.8	53.0	52.7
4/24	50.4	51.2	52.5
5/24	49.5	51.1	54.0

350 290 230 170 110 50 2019 2020 2021 2022 2023 2024

Source: Bloomberg

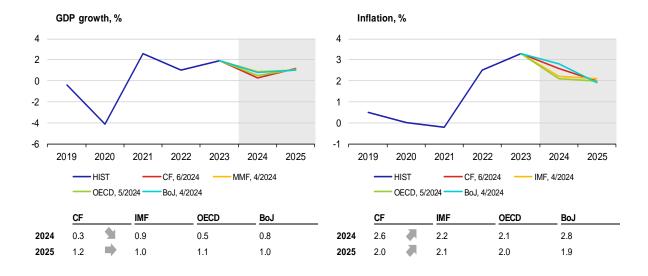
III.5 United Kingdom

Economic growth came to a halt in April, which is not helping the Conservatives' staggering electoral campaign. In opinion polls they remain far behind the opposition Labour Party for the surprise July general elections. However, zero growth was not surprising, as the wettest April in more than ten years hit the services and construction sectors the hardest. By contrast, the May composite PMI suggests expansion in all areas, although it edged down to 52.8 points. Manufacturing showed a recovery in activity (51.2), complemented by a further expansion in the services sector (52.9). Public sentiment reached its highest level in more than two years in May, although pressures on the cost of living are still weighing on households. Consumer price inflation slowed again year on year in April (2.3%), thanks mainly to falling gas and electricity prices. However, it is lasting longer than expected, which complicates the BoE's rate decision-making. Moreover, the key growth in services prices fell to only just below 6%. According to the new, more pessimistic CF outlook, inflation will reach 2.6% this year and fall to 2.3% next year.



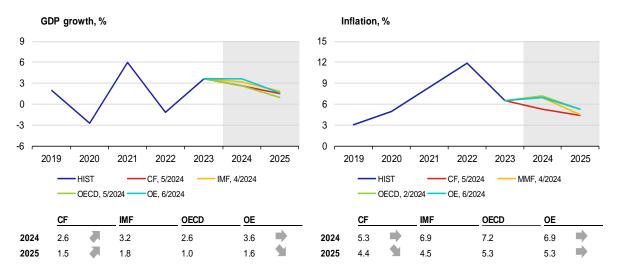
III.6 Japan

Japan's GDP fell by 1.8% in annualised terms in Q1, driven down mainly by private consumption and net exports. By contrast, inventories were the biggest contributor to growth. Meanwhile, strong inflation in industry (2.4% year on year in May) and for final consumers further limits households' purchasing power. The inflation rate is also not helped by the very weak yen, which weakened further following the BoJ's vague statement about the future tapering of bond purchases. The central bank is thus in a difficult situation where, on the one hand, the weak yen and high import prices are pushing inflation upwards, but, on the other hand, anaemic household consumption and negative real wage growth do not allow monetary policy to normalise. The markets thus delayed the expected rate increase. Wages which are expected to outpace consumer price inflation over the coming months, could be positive. This would support household spending and more stable demand-driven inflation.



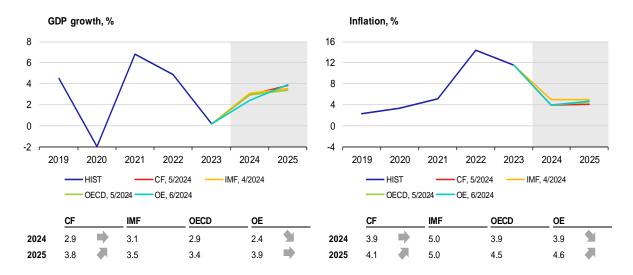
III.7 Russia

The annual inflation rate of 8.3% in May continued to rise for the third consecutive month. GDP grew by 5.4% in Q1 this year, exceeding market expectations. High consumer demand remained the main inflationary factor, while persistent labour shortages, with the unemployment rate again hitting a record low of 2.6% in April, exerted upward pressure on wages. Production capacities continued to be unable to respond adequately to growing demand. Households' inflation expectations increased. Although the CBRF left its key interest rate at 16% for the fourth time at its June meeting, the markets expect rates to be raised in July. The rouble appreciated slightly in April due to reduced demand from importers and higher export earnings.



III.8 Poland

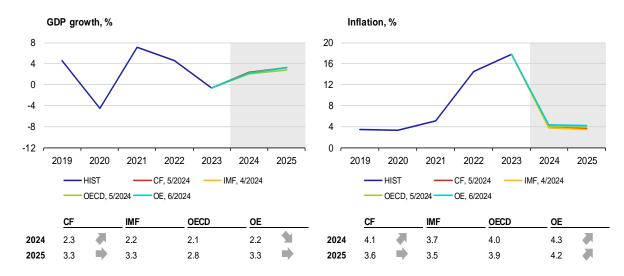
Annual GDP growth accelerated further in the first quarter of 2024, from 1% to 2%. Adjusted for seasonal effects, growth was 1.3%, or 0.5% quarter on quarter. This was due mainly to government expenditures and household consumption. It was counteracted mainly by a continuing decline in inventories and slightly also by a decline in fixed investment due to the completion of drawing of EU funds from the previous period. The contribution made by foreign trade was only slightly positive. The situation in industry remains poor, the PMI in manufacturing dropped from 45.9 to 45 points in May and has thus remained in the contraction band for 25 months now. Nevertheless, industrial production surprisingly rose by 7.9% year on year in April, after a previous decline of 5.6%. Year-on-year growth in retail sales declined from 6.1% to 4.1% in April and the unemployment rate fell from 5.3% to 5.1%. The CPI rose by just 0.1% month on month in May and annual inflation thus increased from 2.4% to 2.5%. The market consensus expected inflation to rise more sharply in response to the renewed VAT on basic food. However, the central bank (NBP) is still concerned about the lifting of energy price caps, which is expected to occur during the summer, and thus left its reference rate at 5.75% in June. Strict monetary policy is keeping the PLN exchange rate on an strengthening path. The NBP expects rates to go down further next year.



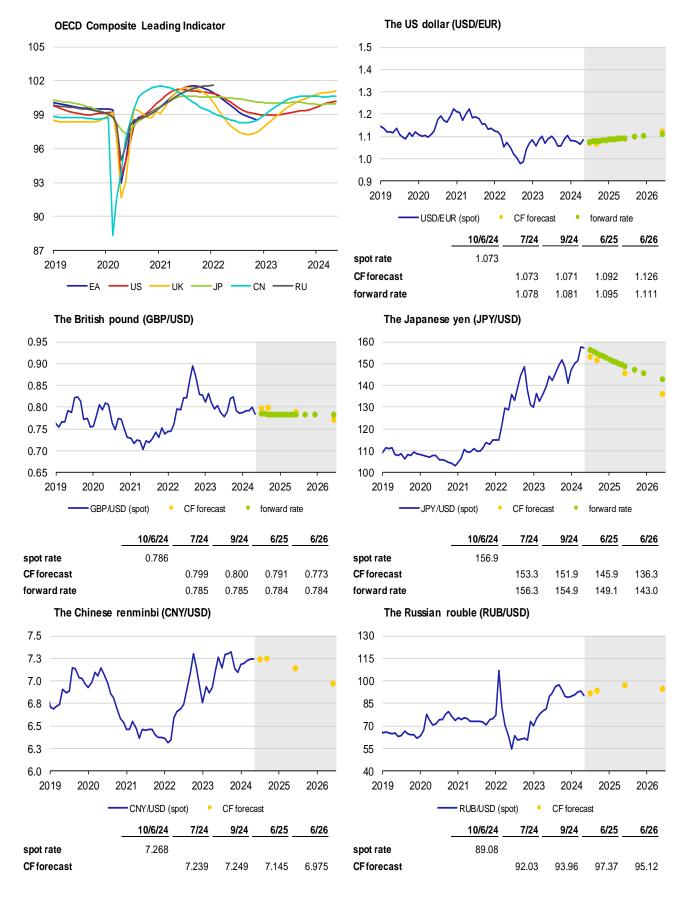
III.9 Hungary

The Hungarian economy is starting to recover, with GDP returning tu annual growth in the first quarter of 2024 after one year (1.1%). The quarter-on-quarter growth rate (as in previous quarters) was 0.8% and the seasonally adjusted annual growth rate was 1.7%. Services, and partly also construction and agriculture, were the biggest contributors to GDP growth. By contrast, industry continued to push GDP growth downwards. On the consumption side, GDP was supported (surprisingly) by household consumption, whereas investment declined. Foreign trade made a positive contribution thanks to a larger year-on-year decline in imports than in exports. The outlook remains uncertain, but exports enjoyed year-on-year growth again in April (8.8%) and the trade surplus thus reached another record high, which should offset the falling interest rate differential and support the fluctuating forint exchange rate. By contrast, retail sales showed a month-on-month decline of 0.9% and a year-on-year increase of only 3.2% in April, indicating persisting caution of the part of households. This is confirmed by low consumer confidence survey data. However, the situation should start to improve gradually this year, as real wage growth resumes. Industrial production continues to decline (-0.7% month on month in April and -2.4% year on year after seasonal adjustment).

Although the CPI fell by 0.1% month on month in May, annual inflation increased from 3.7% to 4%. Core inflation was flat at 4%. A further rise in inflation can be expected in the months ahead, as the favourable base effects observed last year fade out. As expected, the central bank (MNB) lowered its reference rate by 0.5 pp to 7.25% at its May meeting. It continues to see a risk of elevated inflation, especially in the services sector. Moreover, the persistence of high rates in the United States is causing higher volatility in financial markets in emerging economies. The course of monetary policy easing will thus depend on inflation and external risks, but as the MNB wants to keep real interest rates in positive territory, the cycle of interest rate cuts can be expected to be close to an end.



IV. Leading indicators and exchange rate outlooks

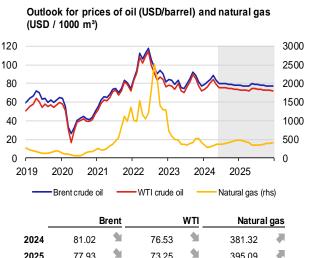


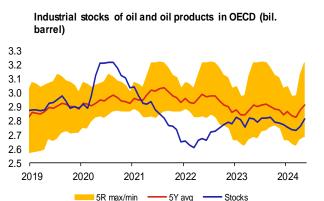
Note: Exchange rates as of last day of month. Forward rate does not represent outlook; it is based on covered interest parity, i.e. currency of country with higher interest rate is depreciating. Forward rate represents current (as of cut-off date) possibility of hedging future exchange rate.

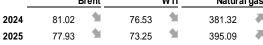
V.1 Oil

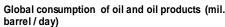
In April and May, the oil price was pushed down by decreasing physical market tensions, deteriorating financial investor sentiment and a falling geopolitical risk premium. The Brent crude oil price thus moved from this year high of USD 92 per barrel at the start of April to a four-month low of USD 77 per barrel in early June, when OPEC+ published a plan to phase out a voluntary output cuts from October (while the market had mostly expected this at the start of 2025). However, OPEC+ representatives then emphasised that rising output would be conditional on the market situation, and the Brent crude oil price thus climbed back above USD 82 per barrel by mid-June. However, market sentiment remains pessimistic due to a still fragile outlook for the Chinese economy, the slowdown in the US economy and uncertainty regarding the Fed's monetary policy. Money managers are thus reducing their net long positions, especially in Brent crude oil. Various institutes' estimates of oil demand growth this year vary considerably - the OPEC cartel's forecast of 2.2 million barrels per day (mbd) is the highest, while the IEA lowered its estimate by 0.1 to just 0.96 mbd. The EIA increased its estimate from 0.9 to 1.1 mbd, but even this value would not allow OPEC+ to increase production this year, as non-OPEC+ production growth is expected to be 1.2 (OPEC) to 1.4 mbd (IEA). Refineries' margins fell for the third consecutive month in all regions in May, but most of all in Asia, where the risk of falling production is highest.

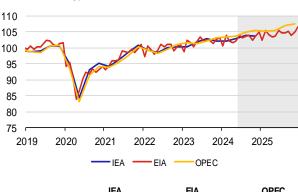
The market curve in the first half of June shifted slightly downwards, is still falling and implies a Brent crude oil price of USD 78.2 and USD 74.7 per barrel at the end of this year and the next respectively. Although the EIA also lowered its forecast, it continues to expect the Brent crude oil price to rise until January 2025 (to USD 88 per barrel); only from Q2 onwards will it fall to USD 82 per barrel at the end of next year. The June CF lowered the outlook for the Brent crude oil price to USD 82 per barrel at the one-year horizon. However, the outlook also remains well above the market curve.





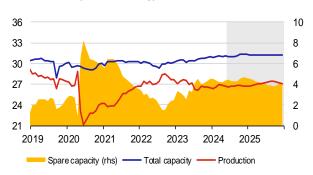






	IEA	EIA	OPEC
2024	103.17	102.99	104.45
2025		104.52	106.30

Production, total and spare capacity in OPEC countries (mil. barrel / day)



_	Production	Total capacity	Spare capacity
2024	26.70	31.09	4.39
2025	27.15	31.27	4.12

Source: Bloomberg, IEA, EIA, OPEC, CNB calculation

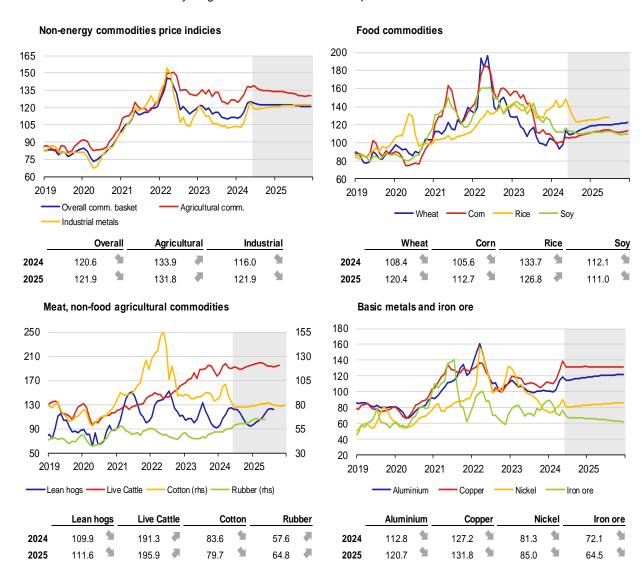
Note: Oil price at ICE, average natural gas price in Europe - World Bank data. Future oil and gas prices (grey area) are derived from futures. Industrial oil stocks in OECD countries – IEA estimate. Production and extraction capacity of OPEC – EIA estimate.

V.2 Other commodities

The price of natural gas in Europe (unlike the oil price) rose to EUR 34.5/MWh in mid-June compared to a low of EUR 22.2/MWh in February. The gas price is currently being pushed up by strong demand for LNG from Asia due to warm weather there. The price of gas in Europe remains below the price of LNG in Asia, signalling a sufficient supply to the European market. In mid-May, however, the price rose on concerns about a potential reduction in Russian gas supplies to the Austrian company OMC due to legal disputes with Gazprom. The pace of filling European gas reservoirs is also decreasing.

The industrial metals price index rose sharply in May, but returned roughly to its April level in the first half of June. The growth in May was partly due to a further recovery in global industry activity (when the JPMorgan Global Manufacturing PMI rose to 50.9 and was thus in the expansion band for the fourth consecutive month), as well as concerns about underproduction of some metals and subsequent speculation by financial investors, supported by the Chinese government's intensified stimulus measures. However, price growth of virtually all metals in the index reversed in the second half of May, as the official Chinese PMI signalled a decline in Chinese industry. Physical demand from China thus remains weak despite the government stimulus programmes, as confirmed by rising inventories of metals in China.

The food commodity price index has been high since April. Grain prices fell slightly in the first half of June, but this was counteracted by growth in prices of coffee, cocoa and beef. Wheat and soy prices are being pushed down by expectations of a high harvest in the USA. By contrast, the price of cocoa is about 4 times higher than in 2019–2022, due to a drop in production in West Africa caused by long-term adverse weather and plant diseases.



Source: Bloomberg, CNB calculations.

Note: Structure of non-energy commodity price indices corresponds to composition of The Economist commodity indices. Prices of individual commodities are expressed as indices 2010 = 100.

VI. — Focus 14

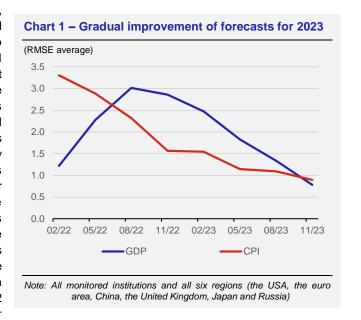
Annual assessment of the forecasts included in GEO in 2023¹

Global Economic Outlook (GEO) provides a monthly overview of the latest economic forecasts from international institutions, selected central banks and Consensus Economics. The impacts of the ongoing war in Ukraine and the resulting energy crisis in Europe also affected the outlooks for last year, especially the longer-term ones. The optimism of the monitored institutions regarding the GDP growth outlooks for 2023 did not materialise in the case of the European states (except Russia), while the monitored non-European states and Russia achieved higher economic growth compared to the outlooks. Also, at the beginning of 2022, none of the monitored institutions expected elevated inflation for 2023 in the monitored states (except China). The outlooks for short-term interest rates at the one-year horizon for the euro area and the United States were accordingly underestimated. The volatility of the exchange rates of the monitored currencies against the US dollar has decreased, and the expected weakening of the dollar has not materialised at the longer end. Over the entire period under review, the forecasts had generally expected a slightly higher oil price.

Introduction

Every year, we assess the accuracy of the forecasts of economic variables regularly monitored in the GEO. The results of this assessment provide valuable information about which of the monitored institutions were closest in their estimates to the subsequently recorded reality and were therefore the most successful in their forecasts. For interest rate,

USD exchange rate and oil price forecasts, we also assess, in addition to Consensus Forecasts (CF), outlooks derived from market contracts. The assessment always applies to the previous year. In the case of GDP growth and CPI inflation forecasts for the given calendar year (fixed-event forecasts), forecasts for 2023 are currently assessed. In the case of forecasts published for a fixed horizon, which shifts further into the future each time a new forecast is published (rolling-event forecasts), the assessment includes predictions starting in 2020. From the outlooks regularly published in the GEO, this category of rolling forecasts includes, for example, the three-month and one-year outlooks for foreign interest rates, the price of oil and the outlooks for the exchange rates of the monitored currencies against the US dollar. The general characteristics of the outlooks are quite clear - they become more accurate as the forecast horizon shortens (Chart 1). However, in the case of the GDP growth outlooks, there was initially an increase in the inaccuracy in the outlooks until mid-2022 owing to uncertainty regarding the impacts of Russia's war in Ukraine.



Owing to the shortness of the time series under assessment, the analysis mainly uses the simple mean forecast error (MFE). The forecast error e_t is calculated as the difference between the ex post known actual value a_t and the f_t corresponding forecast: $e_t = a_t - f_t$. A positive forecast error thus means that a lower value was forecasted for the given variable than the actual outcome (undershooting reality). By contrast, a negative forecast error means that the forecast value was higher than the subsequent outcome (overshooting reality). The Consensus Forecasts publication is the source of the actual GDP growth and consumer price inflation figures for 2023. The Bloomberg database is the source of the actual values of the other variables assessed – this also draws on futures for interest rates, exchange rates and Brent crude oil prices.

We also use the RMSE to assess the accuracy of the GDP growth and inflation forecasts across institutions. We also use the mean absolute percentage error (MAPE) to assess the accuracy of the forecasts across the exchange rates of individual currencies against the US dollar. This indicator, given as a percentage, is suitable for the mutual comparison of variables of different dimensions. In addition, the individual errors are given in absolute terms and thus (as in the case of the RMSE) there is no mutual compensation of positive and negative forecast errors, as is the case with the MFE indicator. The formal notation is as follows:

Czech National Bank ——— Global Economic Outook ——— June 202

¹ Authors: Filip Novotný and Petr Polák. The views expressed in this article are those of the authors and do not necessarily reflect the official position of the Czech National Bank.

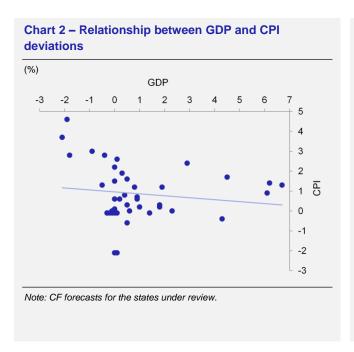
$$MAPE = \frac{100}{n} \sum_{t=1}^{n} \left| \frac{a_{t} - f_{t}}{a_{t}} \right|. \tag{1}$$

$$RMSE = \sqrt{\frac{\sum_{t=1}^{n} (a_t - f_t)^2}{n}}$$
 (2)

Assessment of the accuracy of the GDP growth and CPI inflation forecasts for 2023

In the GEO, we regularly monitor the development and forecasts of GDP growth and CPI inflation in the euro area, the USA, the UK, Japan, China and Russia. The GDP growth and inflation forecasts for these countries are taken primarily from the CF questionnaire survey, from the International Monetary Fund (IMF) and from the Organisation for Economic Cooperation and Development (OECD). These three institutions cover all the states monitored. In the case of advanced economies, the forecasts of their central banks, i.e. the European Central Bank (ECB), the US Fed, the Bank of Japan (BoJ) and the Bank of England (BoE), are also monitored. For China and Russia, Oxford Economics forecasts are used instead. The outlooks of the above institutions differ from each other in terms of the frequency of new editions during the year, and the publication dates. The frequency of forecast updates is either monthly (CF and OE forecasts) or quarterly (IMF, OECD, ECB, Fed and BoJ). The quarterly forecasts (the February, May, August and November forecasts) are assessed.

On average, expected economic growth was higher than the reality for the euro area and the United Kingdom, while for the USA, Japan, China and especially for Russia, the reality was a surprise with higher-than-expected figures. Thus, in the context of the war in Ukraine in 2023, the euro area and UK economies faced inconveniences with stagflation features, i.e. stagnation of economic growth amid rising inflation. There is therefore an obvious inverse relationship between the errors in the forecasts for economic growth and inflation for these states. Looking at the errors in the CF forecasts for all the states monitored, the inverse relationship seen in previous assessments is no longer evident (Chart 2). The deviations of the GDP growth forecasts for the states we monitor from the subsequent reality are shown in the charts in Annex 1. Russia had the greatest variability² in GDP growth and inflation outlooks. In its case, the monitored institutions expected the war to have much worse economic impacts. However, Russia's actual GDP growth for 2023 ended up being significantly higher (the second highest of all the states surveyed, after China). In Russia's case, this was probably an effect of the war economy and the limited real impact of Western sanctions. The GDP growth outlooks for Japan and China were the most accurate (as measured by the RMSE indicator). In addition, both these states were characterised by low variability of the growth forecasts. With expected GDP growth for Japan of 1.8% according to the CF at the beginning of 2022, actual growth was only 0.1 percentage point higher in the end. In the case of the United States, at the beginning of 2022 the CF even showed the same GDP growth figure for 2023 that was eventually achieved. However, unfortunately, the CF (and other institutions) excessively worsened the expected US GDP growth during the forecast horizon. There were much larger differences in the euro area and the UK, both of which were hit hard by the war in Ukraine and the subsequent energy crisis. The difference between the first CF estimate of euro area GDP growth and the actual situation was 2.1 percentage points. The accuracy of the economic growth forecasts across all the states was very similar for all the institutions compared (Chart 3).



(RMSE)

2.5

2.0

1.5

1.0

CF IMF OECD CB/OE

GDP CPI

Note: CF - Consensus Forecasts, IMF - International Monetary Fund,

Development, CB/OE = central bank or Oxford Economics

Organisation for Economic Co-operation

Chart 3 – Comparison of the accuracy of institutions

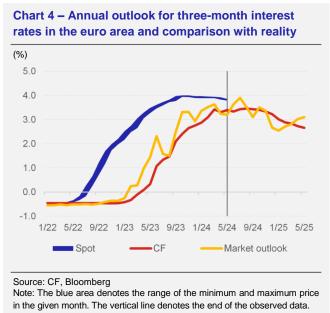
² Variability is measured in the analysis using standard deviation.

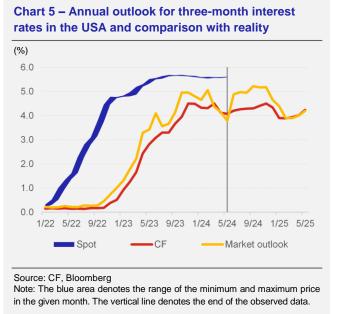
Due to the war-induced energy crisis and lingering post-pandemic effects in particular, actual inflation (with the exception of China) exceeded its initial expected levels from the beginning of 2022 (Annex 2). Central banks' inflation outlooks were characterised by similar inaccuracy as those of other institutions (the Fed and the BoE had worse inflation outlooks). Russia and, to a lesser extent, the UK again showed the greatest inflation-forecast variability. In the euro area, average expected inflation for 2023 was 1.7% at the start of 2022, yet the actual figure was 3.7 percentage points higher. The CF analysts achieved the most accurate inflation outlooks for all states on average (Chart 3). However, more general conclusions cannot be drawn from the results for only one assessed year, as the accuracy of the forecasts usually changes over time and between individual institutions. However, the charts of deviations in GDP growth and inflation show a general pattern in which the forecasts are gradually refined as their time horizon shortens.

Assessment of the accuracy of foreign interest rate forecasts

The interest rate outlooks are monitored for the euro area and the United States in GEO. In addition to the CF outlook, the monitored outlooks for three-month interest rates are accompanied by outlooks derived from futures. By contrast, the outlooks for long-term (ten-year) government bond yields are taken from CF only. Last year saw inflation peak, and the end of 2023 in particular shifted optimistic expectations about the timing of major central bank rate cuts.

Short-term market expectations regarding the path of short-term interest rates were relatively reliable last year, yet not very forward-looking for the annual outlook (Charts 4 and 5). The rate hike process started around mid-2022, yet the expected pace of rate hikes reflected current developments rather than a forward-looking approach. The CF analysts were mostly more restrained than the markets on the future tightness of monetary policy by both the ECB (Chart 4) and the Fed (Chart 5), while at the same time the analysts did not expect the current rates level. Market expectations are showing greater volatility, i.e. greater sensitivity to information coming from the economy and a willingness to change the direction of the outlook, and this has been the case since the start of this year. In Chart 5 in particular, we can see a change in expectations regarding rate hikes in the spring of last year, when rates were already expected to fall at the one-year horizon (spring 2024).





The outlook for government bond yields with longer maturities again shows a rather conservative approach, especially for the United States (Charts 6 and 7). Bond yields have been rising since the beginning of 2022, when it was clear that monetary policy would be tightened in both the euro area and the US economy. The CF analysts' short-term (three-month) outlooks for 10-year bond yields in the euro area were reliable last year, although they failed to capture the decline at the beginning of the year. The annual outlooks show a striking similarity to the short-term ones and have not so far been very reliable for last year. They have been stable for this year so far, but below the current value. However, the short-term outlooks for US government bond yields tended to follow current events and did not do very well last year. The outlooks for the one-year horizon were burdened by uncertainty and expectations of a rapid return by the rates to lower levels and at the same time expectations of a recession in the US economy, which did not happen last year. As a result, the one-year outlooks did not do well at all last year, expecting yields to be about 1 percentage point lower than they actually were.

VI. — Focus 17

Chart 6 – Outlook for 10Y German government bond yields and comparison with reality



Chart 7 – Outlook for 10Y US government bond yields and comparison with reality



Source: CF, Bloomberg

Note: The blue area denotes the range of the minimum and maximum yield in the given month. The vertical line denotes the end of the observed data.

Assessment of the accuracy of dollar exchange rate forecasts

Note: The blue area denotes the range of the minimum and maximum yield

in the given month. The vertical line denotes the end of the observed data

Last year, the exchange rates under review were more stable than in turbulent 2022 (Chart 8). GEO provides information on the outlooks for the exchange rates of selected currencies against the US dollar based on CF forecasts. For the euro and the Japanese yen and, since 2017, for the British pound, forward rates are also quoted based on covered interest rate parity and thus represent a current opportunity to hedge the future exchange rate rather than an outlook. We excluded the exchange rate of the Russian rouble from this year's assessment, as the exchange rate is fully market-based due to the Russian aggression in Ukraine. The accuracy of the CF outlooks and market contracts does not differ much, as illustrated by Chart 8, which shows their monthly development over the last more than three years.

For all currency pairs, the euro exchange rate was most accurately predicted in both the three-month and one-year outlooks. By contrast, the Japanese yen forecasts fared worst, although for most of the past years the outlooks for the Japanese yen had been the best performers (Chart 6). The exchange rate of the Japanese yen also experienced great volatility last year, associated with the Fed's tightening of monetary policy and the maintenance of the BoJ's loose policy. The observed volatility of the currencies under review decreased significantly last year compared to 2022, yet still did not reach the pre-war level of 2021.

Overall, the three-month outlooks for the euro-dollar exchange rate were relatively closely aligned with observed reality and stable over the period under review. Chart 9 illustrates first the depreciation of the US dollar against the euro from the beginning of 2020, then its appreciation from the spring of 2021 to the end of 2022, and then the renewed appreciation of the euro. The US dollar has been maintaining a stable position vis-à-vis the euro since the start of last year, although the long-term outlooks consistently expect it to weaken. This is mainly due to the steady growth of the American economy and the tight monetary policy of the Fed.

Chart 8 – Forecast errors for the selected currencies' exchange rates against the US dollar (three-month outlooks)

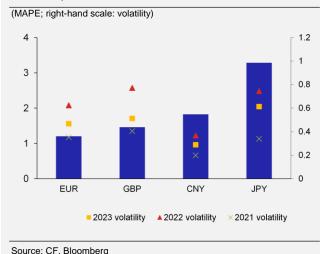
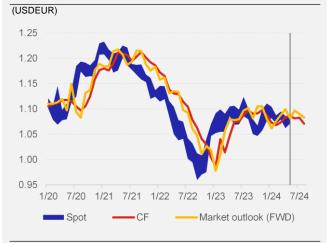


Chart 9 – Three-month outlook for the euro-dollar exchange rate and the reality



Source: CF, Bloomberg

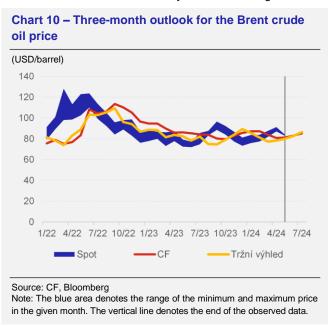
Note: The blue area denotes the range of the minimum and maximum price in the given month. The vertical line denotes the end of the observed data.

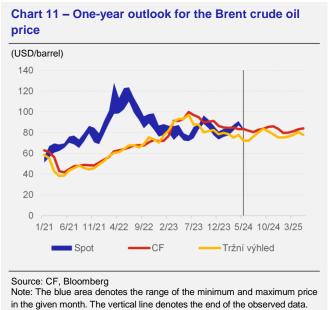
Note: MAPE, volatility

VI. —— Focus 18

Assessment of the accuracy of Brent crude oil price forecasts

Of the commodity price outlooks that we provide in GEO, the price of Brent crude oil is one of the most important; the accuracy of its predictions through futures contracts and the CF was on average the same. Both sources of outlooks are regularly described in GEO, and it is clear from Charts 10 and 11 that the value and trend of the forecasts differ only slightly, although the market outlooks were lower last year and, at the same time, closer to the subsequently observed reality. The price of oil fluctuated close to USD 80 per barrel last year, and there was a significant fluctuation only in the autumn due to the conflict in the Middle East, with oil becoming more expensive, but this was followed by a reverse price correction. Of course, this situation could not be captured over a three-month or one-year horizon, and in this it was similar to the conflict in Ukraine in 2022. Naturally, the larger error was at the one-year horizon, where the 2022 expectations, i.e. from the time of the energy crisis, were incorporated into the outlooks throughout the year. In general, higher prices were expected by the CF analysts compared to market contracts last year. At present, the outlook is almost constant at around USD 85 a barrel in the short term, and just below USD 80 a barrel at the one-year horizon using market outlooks and just above USD 80 a barrel from the CF analysts.





Conclusion

Last year saw a gradual normalisation after the significant unexpected external shock in the form of the start of the war in Ukraine in 2022. This significantly reshuffled the original estimates for GDP growth and inflation for 2023 in the countries under review. The subsequent energy crisis in Europe caused a sharp increase in previously unexpected inflation pressures and, to a lesser extent, led to a downward revision of GDP growth. Financial variables in particular were strongly affected by central banks' changing monetary policy outlooks.

This article uses simple methods to assess the accuracy of the forecasts monitored in GEO over the past year. The accuracy of the forecasts from the institutions covered by GEO changes from year to year. This is one of the reasons why several institutions' forecasts are monitored in the GEO. The accuracy of the CF forecasts has long been comparable with the available alternative forecasts, and this was also the case in 2023. The CF accuracy stems from their defining characteristic, namely that they are the simple average of the forecasts from the contributing private institutions.³ The disadvantage, especially in turbulent times, is the slow reaction of predicted variables, which often "lag" behind market outlooks, as was the case last year, for example, with financial variables.

2023 was basically marked by a certain stabilisation for all the indicators evaluated. Last year saw not only the gradual fading of the energy crisis, but also the end of the monetary policy tightening cycle. From the point of view of economic developments, economies have adapted to new economic ties, the problems related to supply chains subsided, and there was a general stabilisation. The outlooks for macroeconomic fundamentals were gradually adjusted accordingly.

Keywords

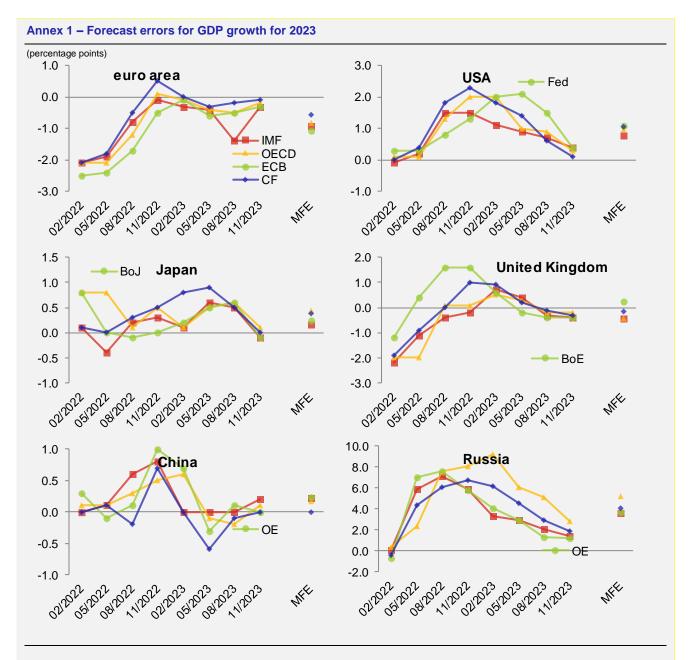
forecast error, economic outlook, Consensus Forecasts

JEL Classification

E66, E27, C18

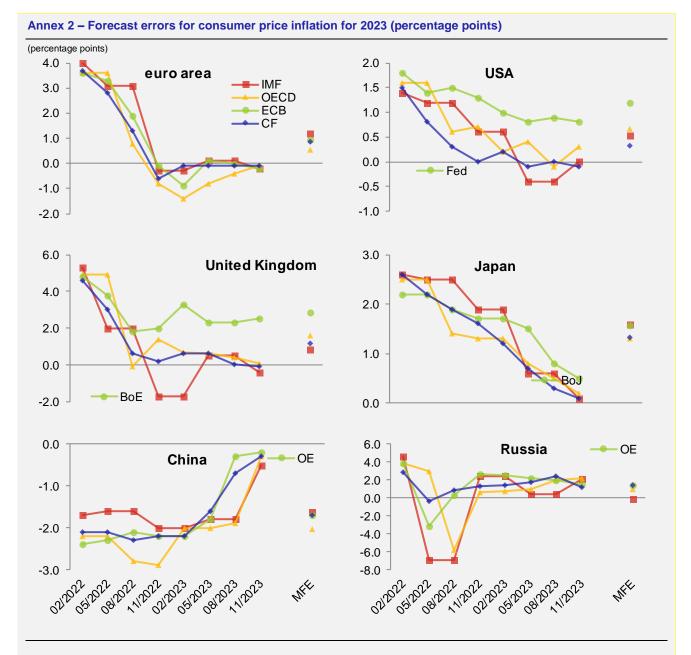
³ The CF characteristics were discussed in more detail in an earlier article by Adam and Hošek "How consensus has evolved in Consensus Forecasts" in the April 2015 issue of GEO.

VI. —— Focus 19



Note: CF – Consensus Forecasts, IMF – International Monetary Fund, OECD – Organisation for Economic Co-operation and Development, ECB – European Central Bank, Fed – United States Federal Reserve, BoE – Bank of England, BoJ – Bank of Japan, OE – Oxford Economics. MFE (mean forecast error) indicates the average forecast error for the given year.

VI. — Focus 20



Note: CF – Consensus Forecasts, IMF – International Monetary Fund, OECD – Organisation for Economic Co-operation and Development, ECB – European Central Bank, Fed – United States Federal Reserve, BoE – Bank of England, BoJ – Bank of Japan, OE – Oxford Economics. MFE (mean forecast error) indicates the average forecast error for the given year.

A1. Change in predictions for 2024

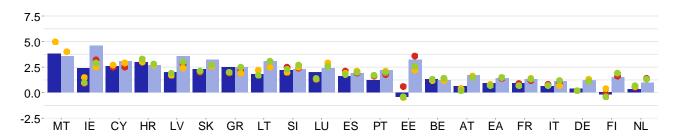
	GDP g	growth, %							Inflati	on, %						
		CF		IMF	(DECD	C	B / OE		CF		IMF	(DECD	C	B / OE
EA	+0.1	2024/6 2024/5	-0.1	2024/4 2024/1	+0.1	2024/5 2024/2	+0.3	2024/6 2024/3	+0.1	2024/6 2024/5	-0.9	2024/4 2023/10	-0.3	2024/5 2024/2	+0.2	2024/6 2024/3
US	-0.1	2024/6 2024/5	+0.6	2024/4 2024/1	+0.4	2024/5 2024/2	0	2024/6 2024/3	0	2024/6 2024/5	+0.1	2024/4 2023/10	+0.3	2024/5 2024/2	+0.2	2024/6 2024/3
UK	+0.1	2024/6 2024/5	-0.1	2024/4 2024/1	-0.3	2024/5 2024/2	+0.2	2024/5 2024/2	+0.1	2024/6 2024/5	-1.2	2024/4 2023/10	0	2024/5 2024/2	-0.3	2024/5 2024/2
JP	-0.2	2024/6 2024/5	0	2024/4 2024/1	-0.5	2024/5 2024/2	-0.4	2024/4 2024/1	+0.1	2024/6 2024/5	-0.7	2024/4 2023/10	-0.5	2024/5 2024/2	+0.4	2024/4 2024/1
CN	+0.1	2024/6 2024/5	0	2024/4 2024/1	+0.2	2024/5 2024/2	-0.1	2024/6 2024/5	-0.1	2024/6 2024/5	-0.7	2024/4 2023/10	-0.8	2024/5 2024/2	0	2024/6 2024/5
RU	+0.3	2024/5 2024/4	+0.6	2024/4 2024/1	+0.8	2024/5 2024/2	0	2024/6 2024/5	0	2024/5 2024/4	+0.6	2024/4 2023/10	0	2024/2 2023/11	0	2024/6 2024/5

A2. Change in predictions for 2025

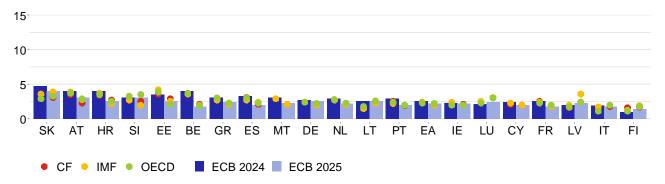
	GDP g	growth, %							Inflati	on, %						
		CF		IMF		DECD	С	B / OE		CF		IMF		DECD	C	B / OE
EA	0	2024/6 2024/5	-0.2	2024/4 2024/1	+0.2	2024/5 2024/2	-0.1	2024/6 2024/3	+0.1	2024/6 2024/5	-0.2	2024/4 2023/10	0	2024/5 2024/2	+0.2	2024/6 2024/3
US	0	2024/6 2024/5	+0.2	2024/4 2024/1	+0.1	2024/5 2024/2	0	2024/6 2024/3	+0.1	2024/6 2024/5	-0.4	2024/4 2023/10	+0.1	2024/5 2024/2	+0.1	2024/6 2024/3
UK	0	2024/6 2024/5	-0.1	2024/4 2024/1	-0.2	2024/5 2024/2	+0.2	2024/5 2024/2	+0.1	2024/6 2024/5	-0.1	2024/4 2023/10	-0.1	2024/5 2024/2	-0.2	2024/5 2024/2
JP	0	2024/6 2024/5	+0.2	2024/4 2024/1	+0.1	2024/5 2024/2	0	2024/4 2024/1	+0.1	2024/6 2024/5	+0.2	2024/4 2023/10	-0.1	2024/5 2024/2	+0.1	2024/4 2024/1
CN	0	2024/6 2024/5	0	2024/4 2024/1	+0.3	2024/5 2024/2	0	2024/6 2024/5	0	2024/6 2024/5	-0.2	2024/4 2023/10	-0.2	2024/5 2024/2	0	2024/6 2024/5
RU	+0.1	2024/5	+0.7	2024/4	0	2024/5	-0.1	2024/6 2024/5	-0.1	2024/5	+0.5	2024/4	0	2024/2	0	2024/6

A3. GDP growth and inflation outlooks in the euro area countries

GDP growth in the euro area countries in 2024 and 2025, %



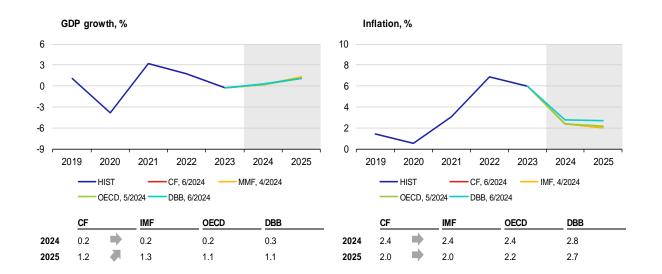
Inflation in the euro area countries in 2024 and 2025, %



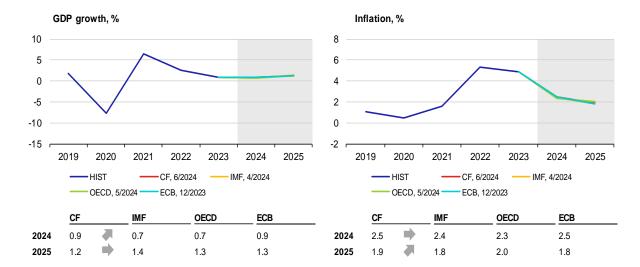
Note: Charts show institutions' latest available outlooks of for the given country.

A4. GDP growth and inflation in the individual euro area countries

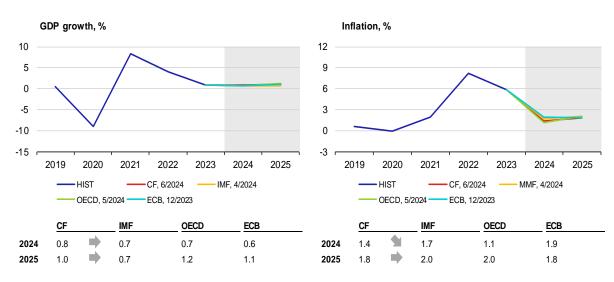
Germany



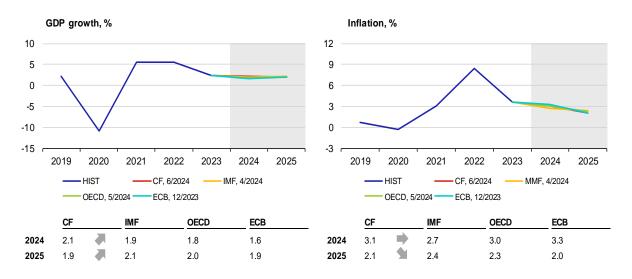
France



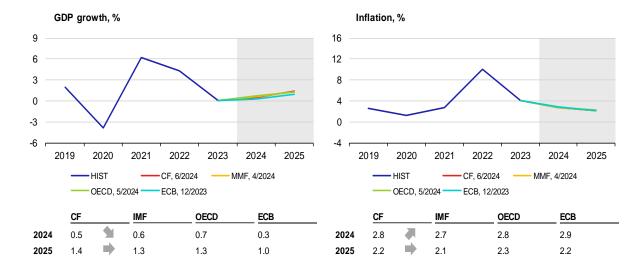
Italy



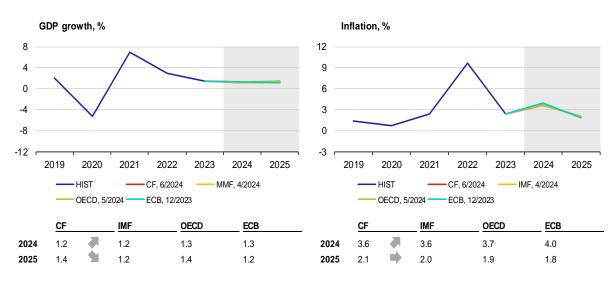
Spain



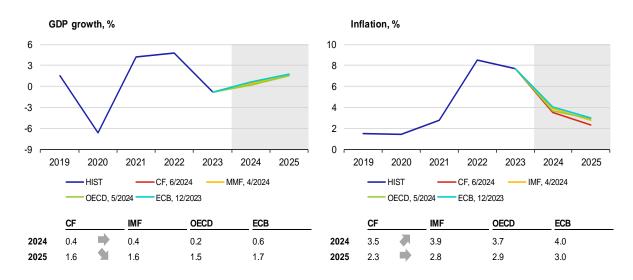
Netherlands



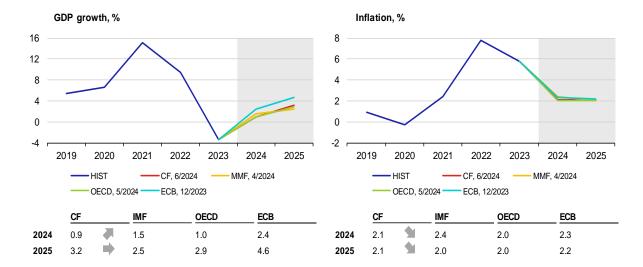
Belgium



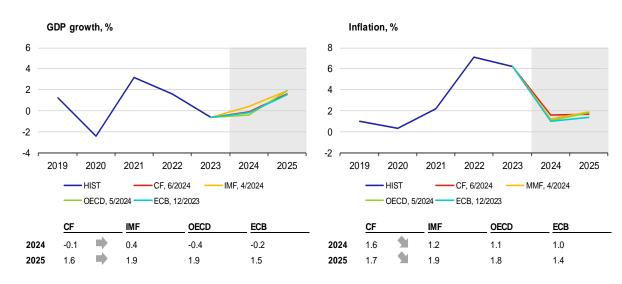
Austria



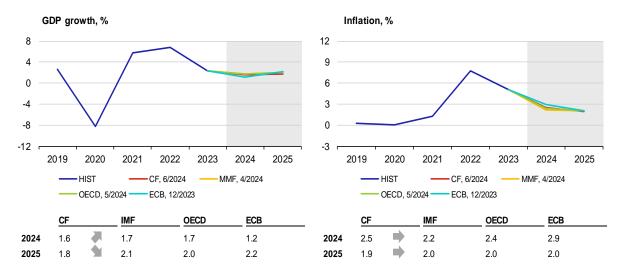
Ireland



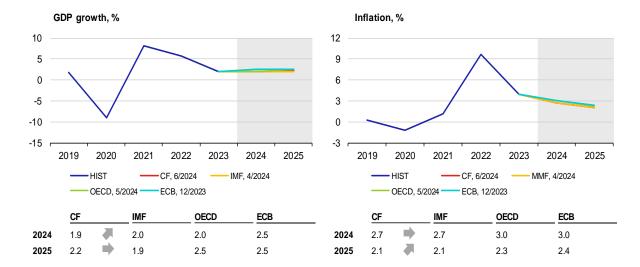
Finland



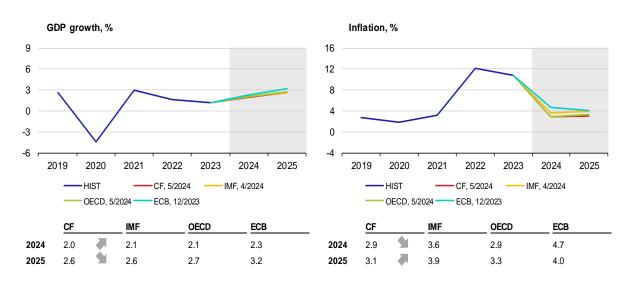
Portugal



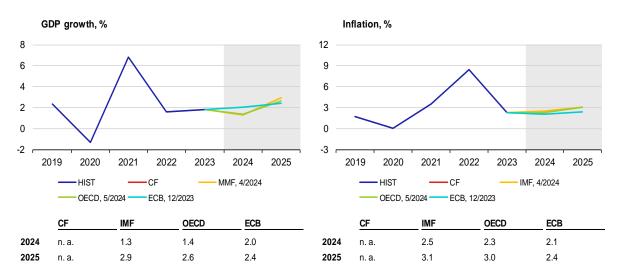
Greece



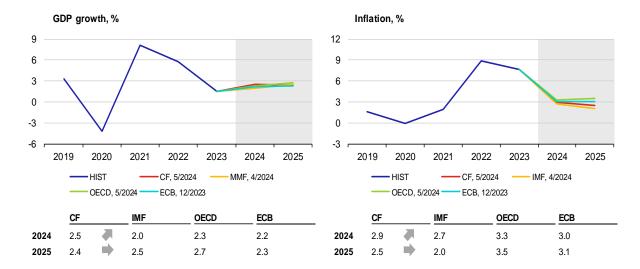
Slovakia



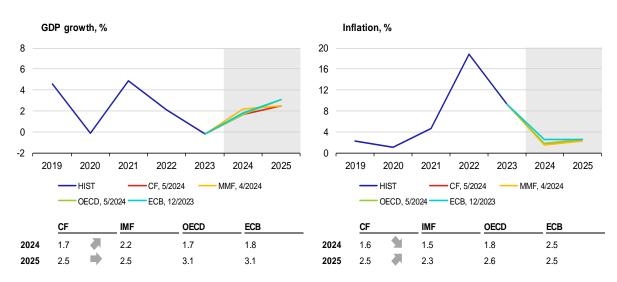
Luxembourg



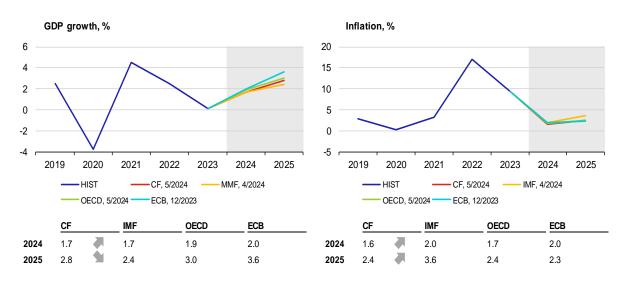
Slovenia



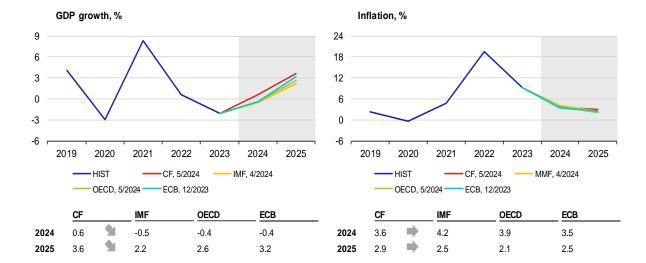
Lithuania



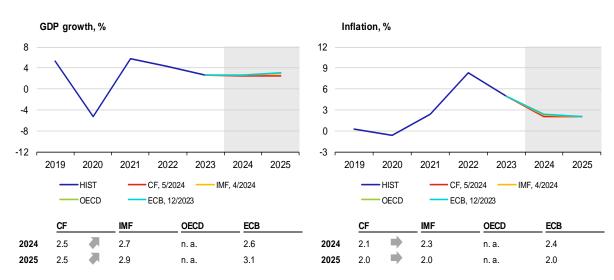
Latvia



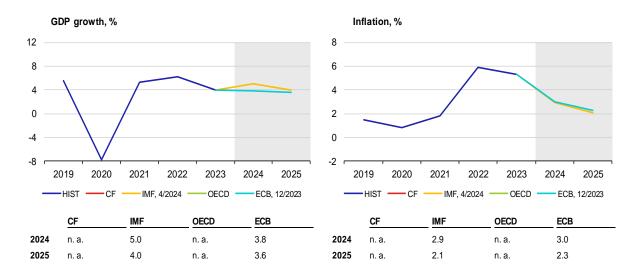
Estonia



Cyprus

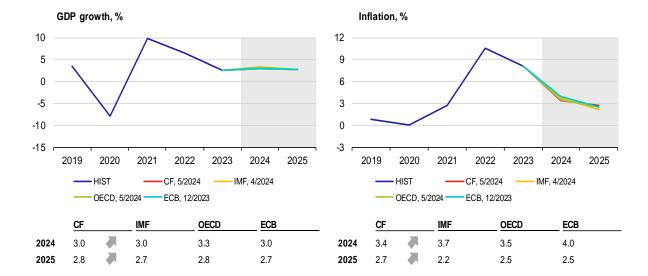


Malta



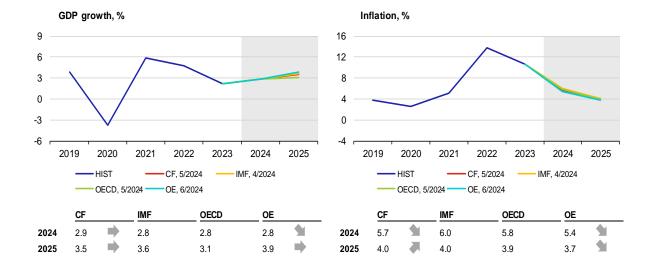
Ddd

Croatia



A5. GDP growth and inflation in other selected countries

Romania



A6. List of abbreviations

AT	Austria	IRS	Interest Rate swap
bbl	barrel	ISM	Institute for Supply Management
BE	Belgium	IT	Italy
BoE	Bank of England (the UK central bank)	JP	Japan
BoJ	Bank of Japan (the central bank of Japan)	JPY	Japanese yen
bp	basis point (one hundredth of a percentage point)	LIBOR	London Interbank Offered Rate
СВ	central bank	LME	London Metal Exchange
CBR	Central Bank of Russia	LT	Lithuania
CF	Consensus Forecasts	LU	Luxembourg
CN	China	LV	Latvia
CNB	Czech National Bank	MKT	Markit
CNY	Chinese renminbi	MNB	Magyar Nemzeti Bank (the central bank of
ConfB	Conference Board Consumer Confidence Index		Hungary)
CXN	Caixin	MT	Malta
CY	Cyprus	NBP	Narodowy Bank Polski (the central bank of Poland)
DBB	Deutsche Bundesbank (the central bank of Germany)	NIESR	National Institute of Economic and Social Research (UK)
DE	Germany	NKI	Nikkei
EA	euro area	NL	Netherlands
ECB	European Central Bank	OE	Oxford Economics
EE	Estonia	OECD	Organisation for Economic Co-operation and
EIA	Energy Information Administration		Development
ES	Spain	OECD-CLI	OECD Composite Leading Indicator
_	•	OECD-CLI	OECD Composite Leading Indicator
ESI	Economic Sentiment Indicator of the European Commission	OPEC+	member countries of OPEC oil cartel and 10 other oil-exporting countries (the most important of
ESI	Economic Sentiment Indicator of the European Commission European Union	OPEC+	member countries of OPEC oil cartel and 10 other oil-exporting countries (the most important of which are Russia, Mexico and Kazakhstan)
ESI EU EUR	Economic Sentiment Indicator of the European Commission European Union euro	OPEC+	member countries of OPEC oil cartel and 10 other oil-exporting countries (the most important of which are Russia, Mexico and Kazakhstan) Purchasing Managers' Index
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