Global Economic Outlook

March 2023

CNB CZECH NATIONAL BANK

Czech National Bank —— Global Economic Outlook —— March 2023

Cut-off date for data
17 March 2023

CF survey date
13 March 2023

GEO publication date
24 March 2023

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 EIU.
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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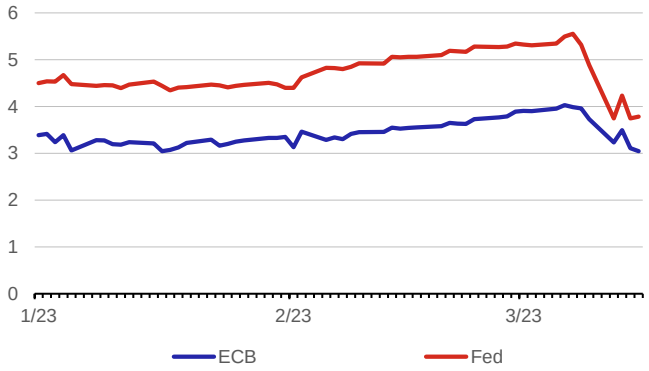
I. Introduction

The Ukrainian army has been standing up to Russian aggression for thirteen months. The West continues to provide political, military, material, humanitarian and other aid to Ukraine. The international criminal court (ICC) in The Hague has issued an arrest warrant for Vladimir Putin and his children's rights commissioner for attacks on civilian targets and the abduction of Ukrainian children on Russian territory. China can play an important role, whether it be in shortening or prolonging the conflict. President Xi Jinping (after his election by the Chinese parliament for an unprecedented third term) arrived in Russia this week on an official visit.

Inflation is slowly starting to decline globally, but it is still unusually high. Annual inflation in the EU has returned to single digits (9.9%), reaching 8.5% in the euro area. Hungary and Latvia have the highest levels of inflation in the EU (over 25% and 20% respectively). Luxembourg and Belgium are "top of the class" with inflation close to 5%, but even that is still visibly higher than the ideal 2%. The moderate drop in US inflation to 6% will be an important factor, not only in setting US interest rates, but also global monetary conditions.

Several banks ran into unexpected difficulties, first in the USA, then in Switzerland. This involved a number of smaller banks in the USA, the exception being the collapse of the sixteenth largest bank, Silicon Valley Bank, which temporarily exacerbated financial market tensions. The problems of Credit Suisse, one of Switzerland's largest banks, came to a head last weekend. It will be taken over by rival UBS in one of the biggest banking transactions of this century. We will have to wait for a more detailed analysis of the reasons for the collapse of these banks, but it looks like all the actors (both central banks and governments, as well as other commercial banks) are well aware of the importance of adopting fast and credible solutions. Indeed, banking is very much built on trust.

Market expectations of key interest rates at the end of 2023, %



Source: Bloomberg
Note: OIS data.

The chart in the current issue issue shows how the collapse of several banks in the USA has shaken financial markets and their monetary policy rate expectations in the USA and in the euro area. In early March, markets were still expecting the Fed to raise rates to 5.5% and the ECB to increase them to 4%. There are now concerns that central banks will prioritise financial stability over the ongoing fight against persistently high inflation. At its March meeting, the ECB raised rates by 0.5 pp, emphasising that the pursuit of price stability is not at the expense of financial stability. Christine Lagarde has also repeatedly said that the euro area banking sector is resilient and, in many respects, is in better shape than before the collapse of Lehman Brothers in 2008.

The March issue also contains an analysis: "Regional sentiment of Central European currencies in the global context." The article focuses on the factors influencing exchange rate movements and shows that they are not only related to macroeconomic fundamentals, but also to changes in global investor sentiment and confidence in the region, especially in times of financial market uncertainty and the flight to safe assets.

GEO barometer for selected countries

		EA	DE	US	UK	JP	CN	RU
GDP	**2023**	0.6 ↗	0.0 ↗	1.0 ↗	-0.5 ↗	1.0 ↘	5.3 ↗	-2.1 ↗
(%)	**2024**	1.1 ↘	1.3 ↘	0.9 ↘	0.7 →	1.1 →	5.2 ↗	1.3 ↗
Inflation	**2023**	5.6 ↗	6.0 ↘	4.2 ↗	6.4 ↘	2.3 ↗	2.3 ↘	6.1 ↗
(%)	**2024**	2.4 →	2.7 →	2.6 ↗	2.9 →	1.3 ↗	2.4 ↗	4.8 ↗
Unemployment	**2023**	6.9 →	5.5 →	4.0 ↘	4.3 ↘	2.5 →	3.6 ↗	3.7 ↘
(%)	**2024**	6.9 ↘	5.4 →	4.6 ↘	4.3 ↘	2.4 →	4.4 ↗	3.7 ↘
Exchange rate	**2023**	1.10 ↗	1.10 ↗		1.24 ↘	126.5 ↘	6.73 ↗	77.1 ↗
(against USD)	**2024**	1.13 ↗	1.13 ↗		1.28 ↘	122.3 ↘	6.54 ↘	78.1 ↘

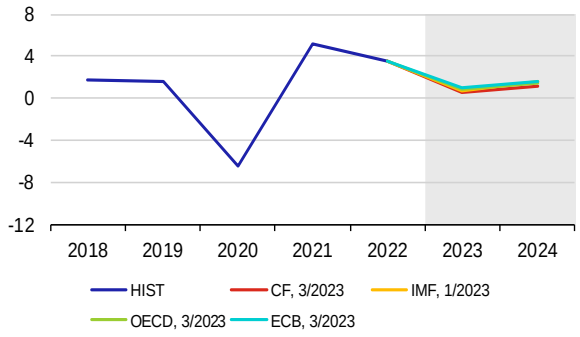
Source: Consensus Forecasts (CF)
Note: The arrows indicate the direction of the revisions compared with the last GEO.

II.1 Euro area

The latest data from the euro area did not meet expectations this time. Not that they were downright disappointing, but their message for near-term economic developments is less clear-cut. GDP growth in 2022 Q4 was revised downwards, specifically from slight growth to flat (1.8% year on year). The economy is threading water for two reasons. Household consumption has declined and investments have dropped significantly due to high inflation. On the other hand, the shortfall of households was almost covered by higher government consumption and the economic performance in the euro area was significantly supported by net exports. Although the euro area entered 2023 on a good footing (industrial production and retail sales rose month on month in January), sentiment indicators – which were recently on an optimistic run – are starting to hit their limits. The PMI in the manufacturing industry decreased slightly in February, remaining below 50 points (the overall PMI still rose due to services). The economic sentiment indicator (ESI) also recorded a slight decline. Within it, the perception of the situation in both industry and services worsened, but consumer sentiment continued to recover. On the other hand, the ZEW indicator achieved another significant improvement. The ECB's new forecast (prepared before the revision of GDP) predicts economic growth of 1% for this year, CF also increased its estimate (but only to 0.6%), and the OECD estimate is exactly between the two.

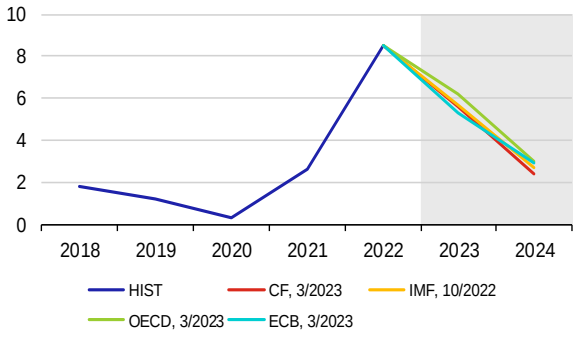
Inflation slowed less than expected in February, by just 0.1% (to 8.5%). Consumer prices rose by 0.8% month on month. What is even more alarming is that core inflation has climbed to a new high (5.6% year on year). Inflation pressures are thus broad-based, and their rapid taming will require continued hawkish monetary policy despite the deteriorating outlook for the real economy. In March, the ECB raised rates by 50 bp as promised, but President Lagarde admitted that some governors did not want a rate hike this time due to concerns about what was happening in financial markets. The new ECB forecast – prepared before the publication of February inflation – expects prices to rise by 5.3% this year. CF managed to incorporate the unpleasant surprise and estimates 5.6%, and the OECD is even more pessimistic.

GDP growth, %



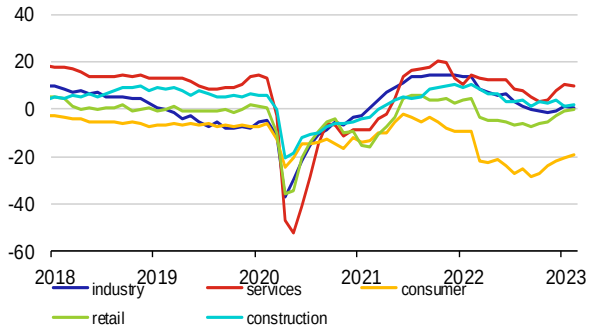
	CF	IMF	OECD	ECB
2023	0.6	0.7	0.8	1.0
2024	1.1	1.6	1.5	1.6

Inflation, %



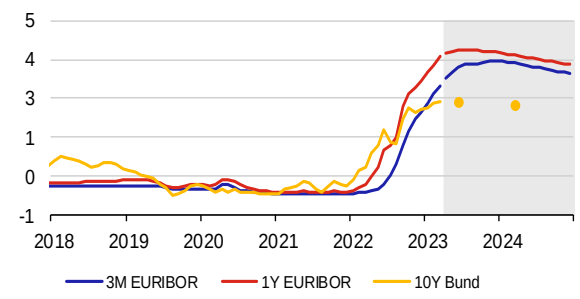
	CF	IMF	OECD	ECB
2023	5.6	5.7	6.2	5.3
2024	2.4	2.7	3.0	2.9

ESI leading indicators



	industry	services	consum.	retail	constr.
12/22	-0.6	7.5	-22.0	-2.6	3.6
1/23	1.2	10.4	-20.7	-0.7	1.4
2/23	0.5	9.5	-19.0	-0.1	1.8

Interest Rates, %



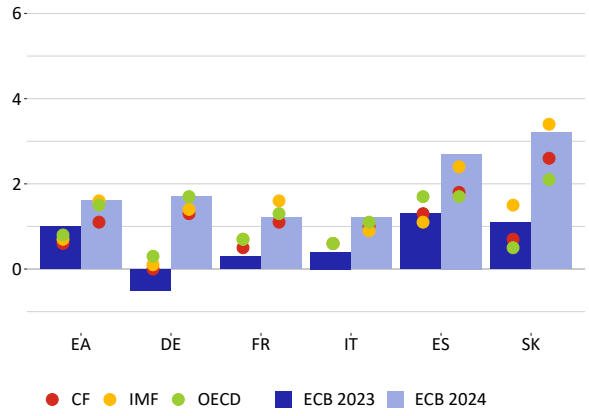
	2/23	3/23	6/23	3/24
3M EURIBOR	2.64	2.90	3.50	3.63
1Y EURIBOR	3.53	3.88	4.03	3.88
10Y Bund	2.37	2.40	2.40	2.30

II.2 Germany

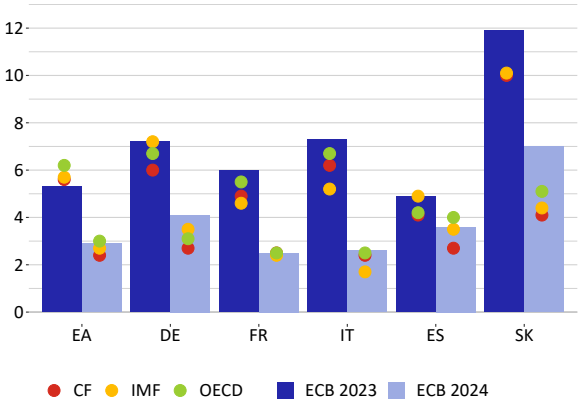
Fears of a recession are returning after the German economy contracted by 0.4% in 2022 Q4. Destatis (the Federal Statistical Office) initially assumed the economy would remain flat. In a first estimate at the end of January, it then announced a 0.2% drop in GDP. The latest revised data brought a further reduction compared to expectations. This was mostly due to high inflation and the energy crisis, which weighed on the economy at the end of 2022, when they mainly caused a sharp drop in consumer spending and investments. This is the largest quarter-on-quarter decline in GDP since the start of 2021, making the avoidance of a further drop in GDP in 2023 Q1 less likely. GDP rose by 0.9% year on year in 2022 Q4. However, CF and the OECD have now increased their GDP outlook for 2023 to between flat and slight growth, and are predicting growth of up to 2% for 2024. Recent business and consumer surveys have painted a relatively optimistic picture for 2023. The February composite PMI pointed to a return to growth in private sector activity, rising to 50.7 (from 49.9). After eight long months, it re-entered the expansion band, due mainly to the services sector (50.9), while the manufacturing sector lagged behind (46.3). The positive business climate is also evidenced by the improving ZEW and Ifo index (mainly due to expectations about future developments). Consumer sentiment is also continuing to recover and, with energy prices falling, optimism is cautiously returning.

February had brought a moderate pick-up in annual inflation, which thus remains high. Harmonised consumer inflation reached 9.3% (compared to 9.2% in January) mainly due to high food prices, and consumer prices rose by 1.0% month on month. Core inflation also slightly exceeded its January level, approaching 6%. This shows that prices are also increasing rapidly for product groups other than energy and food. According to the new outlooks, inflation is expected to slow to 3% in 2024. In January, the year-on-year growth of industrial producer prices slowed for the fourth consecutive time (17.6% compared to 21.6% in December), again mostly due to energy prices.

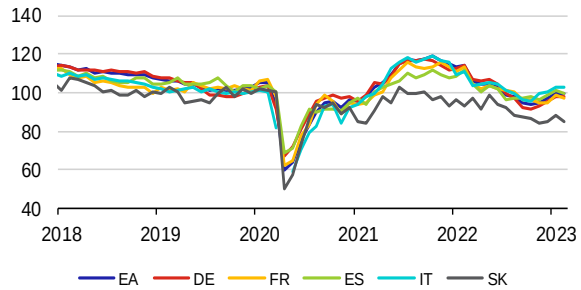
GDP growth in selected euro area countries in 2023 and 2024, %



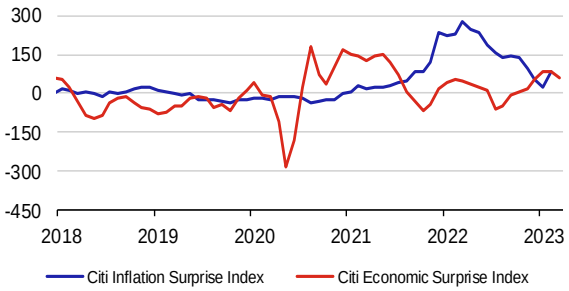
Inflation in selected euro area countries in 2023 and 2024, %



ESI leading indicators



Economic and inflation surprises in the euro area, %



	EA	DE	FR	ES	IT	SK
12/22	97.1	95.3	94.4	98.8	100.7	85.3
1/23	99.8	97.8	98.6	101.5	102.5	88.1
2/23	99.7	97.9	97.1	99.5	102.5	84.8

Inflation expectations based on 5year inflation swap and SPF

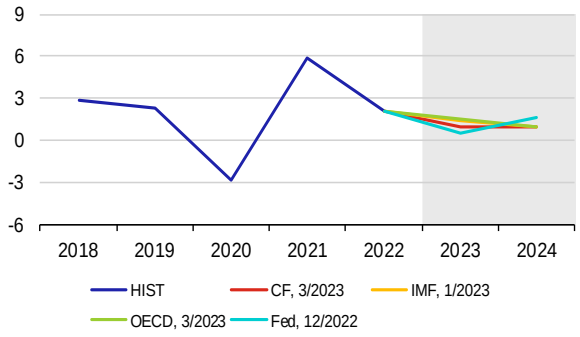
	5y5y	SPF
1/23	2.32	2.12
2/23	2.39	2.12
3/23	2.46	2.12

II.3 United States

The problems of a few US banks have shaken investor confidence not only in the USA, but also in Europe. In early March, Silvergate Capital was the first bank to fail. It suffered losses after the collapse of the crypto exchange FTX last year and has now decided to cease its activities. Subsequently, the US authorities took control of both Silicon Valley Bank, which failed after a run on deposits, and New York-based Signature Bank, which largely worked with risky crypto-assets. In a joint statement with banking regulators, the Treasury Department said that all the depositors would be made whole. However, not only did bank shares considerably weaken on financial markets, there were also concerns that the Fed would continue to tighten monetary policy at its current pace, as rising interest rates reduce the value of bonds that financial institutions have on their balance sheets. In early March, the financial markets expected the Fed to hike rates to 5.5%, and the March monetary policy meeting is now being eagerly awaited.

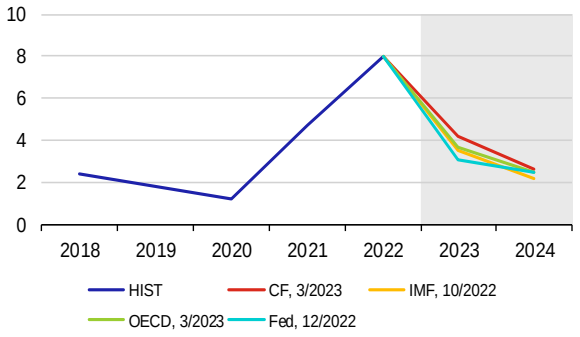
The new GDP growth outlook is moving upwards. CF expects growth of 1% this year, while the new OECD forecast is more optimistic at 1.5%. This is due mainly to the resilience of the US economy despite the Fed's efforts to tame inflation. The labour market remains tight, with unemployment falling to 3.6% and non-farm payrolls rising by 311,000 in February. Despite inflation of 6% in February, real household income jumped by 1.4% month on month and real consumption by more than 1%. Retail sales also rose after two months of moderate decline. Conversely, the outlook for 2024 fell to 0.9%, mainly due to the expected stricter monetary policy. Inflation expectations remain elevated, but there has been some easing of price pressures in food, energy and transport.

GDP growth, %



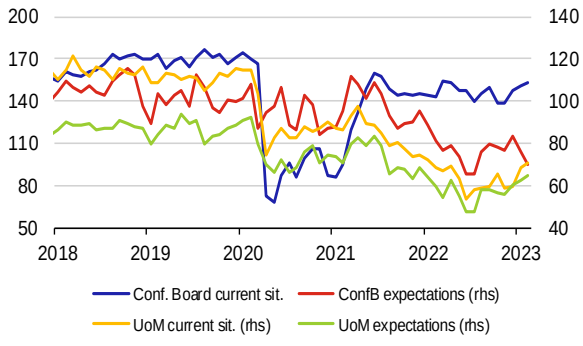
	CF	IMF	OECD	Fed
2023	1.0	1.4	1.5	0.5
2024	0.9	1.0	0.9	1.6

Inflation, %



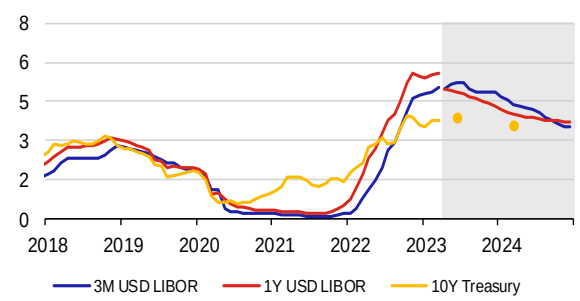
	CF	IMF	OECD	Fed
2023	4.2	3.5	3.7	3.1
2024	2.6	2.2	2.5	2.5

Leading indicators



	ConfB curr.	ConfB exp.	UoM curr.	UoM exp.
12/22	147.4	83.4	59.4	59.9
1/23	151.1	76.0	68.4	62.7
2/23	152.8	69.7	70.7	64.7

Interest Rates, %



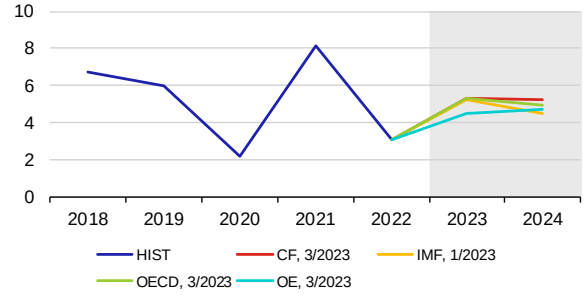
	2/23	3/23	6/23	3/24
USD LIBOR 3M	4.89	5.02	5.21	4.37
USD LIBOR 1R	5.52	5.52	4.85	4.00
Treasury 10R	3.76	3.76	3.90	3.60

II.4 China

The latest data suggest that the Chinese economy performed better in 2023 Q1, reflecting mainly strengthening domestic demand. The manufacturing and non-manufacturing PMIs surged further in February, standing for the second consecutive month above the 50-point benchmark, which separates the economic expansion phase from the contraction phase. The PMI in manufacturing even reached its highest level in more than 10 years, reflecting the recent lifting of anti-epidemic restrictions and the related pent-up demand, as well as the pro-growth fiscal and monetary policy measures. Industrial production, which is a key driver of the Chinese economy, rose by 2.4% year on year in February, the highest level since October 2022. Retail sales also recovered significantly in February, increasing by 3.5% year on year following three months of decline. The March CF expects year-on-year Chinese economic growth to be just above 5% this year and the next. This is also in line with the Chinese government's announcement in early March regarding setting the target of around 5% for economic growth in 2023. The target for last year was 5.5% and the economy grew only by 3% in 2022. The lower targeted growth mainly reflects low global demand, which should be offset by stronger domestic consumer demand due an increase in incomes of medium- and low-income groups of the population.

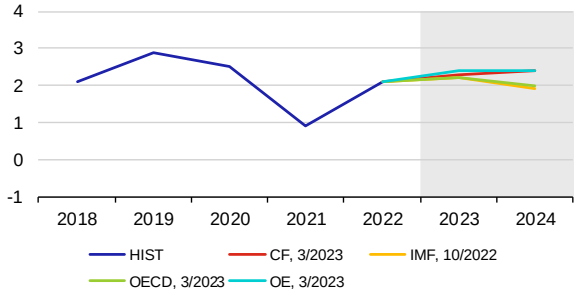
Annual consumer price inflation slowed sharply in February and was thus the lowest in two years, while industrial producer prices fell further. The sharp drop in annual consumer price inflation from 2.1% in January to 1% in February reflected mainly slower food price inflation and weaker demand for services, which was due, among other things, to the earlier timing of the celebrations of the Chinese New Year. However, due to strengthening domestic demand pressures, faster price growth can be expected again in the months ahead, albeit not significant. According to the March CF outlook, inflation will be slightly above 2% in the next two years. The annual decline in producer prices deepened further, from -0.8% in January to -1.4% in February.

GDP growth, %



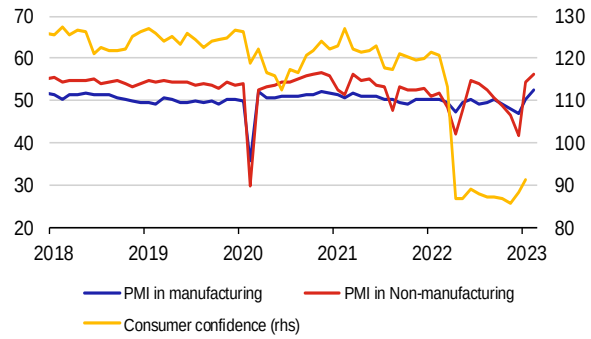
	CF	IMF	OECD	OE
2023	5.3	5.2	5.3	4.5
2024	5.2	4.5	4.9	4.7

Inflation, %



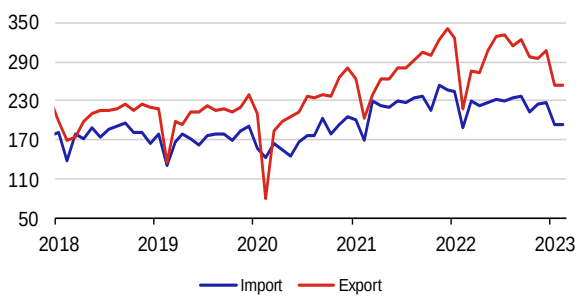
	CF	IMF	OECD	OE
2023	2.3	2.2	2.2	2.4
2024	2.4	1.9	2.0	2.4

Leading indicators



	PMI manuf.	PMI non-manufacturing	Cons. conf (rhs)
12/22	47.0	41.6	88.3
1/23	50.1	54.4	91.2
2/23	52.6	56.3	

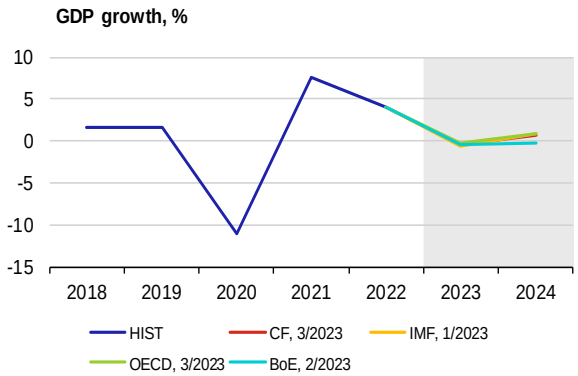
Development of China foreign trade, bil. USD



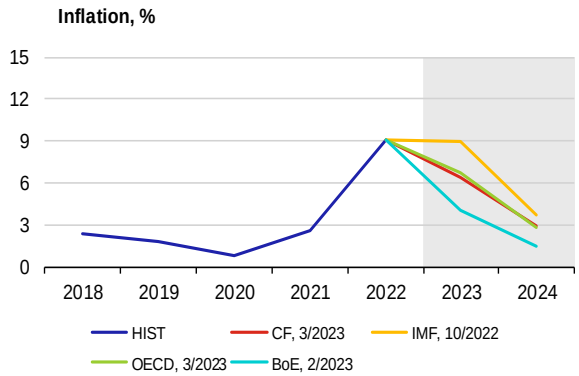
Source: Bloomberg

II.5 United Kingdom

Having avoided a recession so far, the BoE hinted that rates were close to their peak. The UK economy has been dealing with public sector strikes and the cost of living crisis since end-2022. In its recently announced budget, the government has thus focused not only on greater support to households but mainly on GBP 9 billion in tax breaks for firms, aimed at fostering investment and, in turn, economic growth. CF and OECD are now forecasting a smaller decline in GDP this year (up to 0.5%) and growth of almost 1% next year. Headline inflation remains high but is expected to slow below 7% in 2023 and even below 3% in 2024. February business surveys suggested a faster-than-expected increase in activity. The composite PMI surged in February (53.1), entering the expansion band for the first time since July 2022, due mainly to services. The settlement of post-Brexit relations between the UK and the EU thanks to the Windsor Framework for the Northern Ireland Protocol then may have positive long-term consequences for the UK economy.



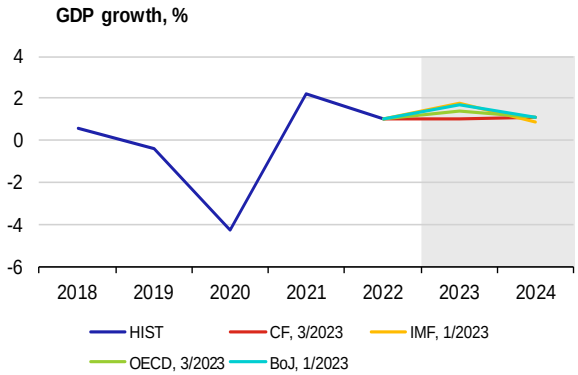
	CF	IMF	OECD	BoE
2023	-0.5	-0.6	-0.2	-0.5
2024	0.7	0.9	0.9	-0.3



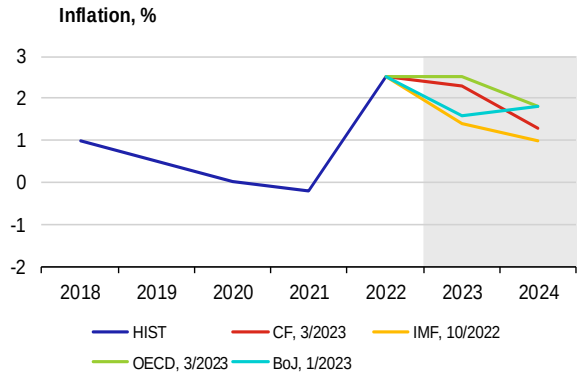
	CF	IMF	OECD	BoE
2023	6.4	9.0	6.7	4.0
2024	2.9	3.7	2.8	1.5

II.6 Japan

The Japanese economy disappointed expectations in Q4, narrowly avoiding a technical recession amid quarterly growth of less than 0.1%. Private consumption grew by 0.3% quarter on quarter, while investment saw a decline of 0.5%. The economy grew only by 0.4%, even in comparison to 2021 Q4. According to the PMI, business sentiment in manufacturing continued to deteriorate in the first three months of 2023, while sentiment in services is improving. Outgoing Governor Kuroda did not change the monetary policy stance at his last BoJ meeting in March. It thus remains extremely loose. However, the pressure by market participants to tighten monetary policy has eased after the recent turmoil in global financial markets caused by the collapse of three US banks. The Japanese bond yield is now below the cap maintained by the BoJ, which can now stop its months-long large-scale asset purchases.



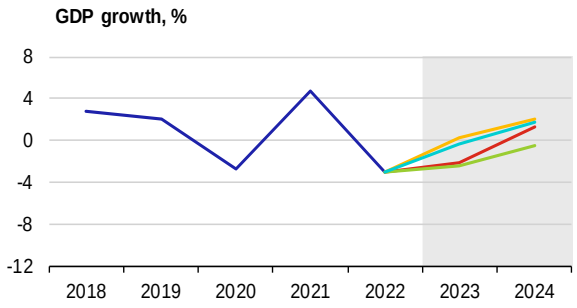
	CF	IMF	OECD	BoJ
2023	1.0	1.8	1.4	1.7
2024	1.1	0.9	1.1	1.1



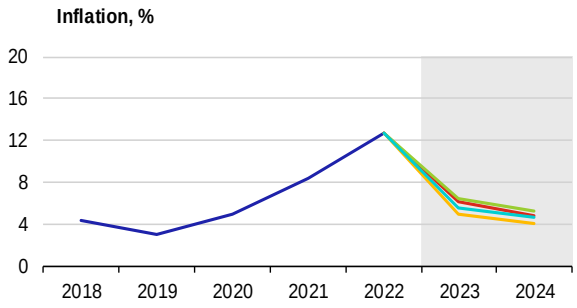
	CF	IMF	OECD	BoJ
2023	2.3	1.4	2.5	1.6
2024	1.3	1.0	1.8	1.8

II.7 Russia

Short-term growth at the start of the year suggests a positive trend. Coincidence indicators are improving. The February PMI in manufacturing grew by 1 point to 53.6, but the PMI in services left the contraction band for the first time since last September, rising to 53.1. The improvement is in both cases due to a recovery in domestic demand and growth in new orders, except export orders. The business climate indicator published by the Russian central bank comes to a similar conclusion. The higher levels of the indicator were due not only to better estimates of the current business environment but also a major improvement in business expectations for the next three months. However, developments are mixed across sectors. While the pharmaceutical, textile and clothing industries, and shipbuilding and ship repair are generally doing well (also thanks to state orders), the mining, chemical and non-ferrous metallurgy industries are facing difficulties. The outlooks for oil and natural gas exports are not very encouraging due to sanctions and a shortage of specialised containers.



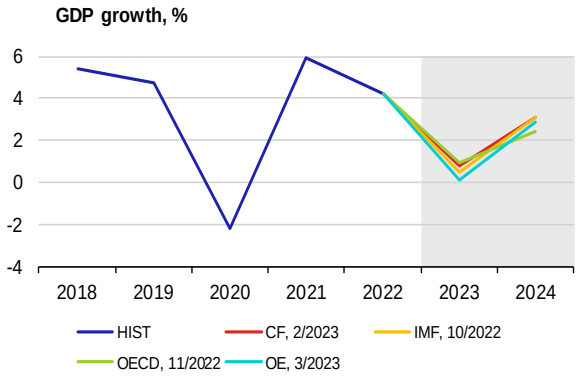
	CF	IMF	OECD	OE
2023	-2.1	0.3	-2.5	-0.3
2024	1.3	2.1	-0.5	1.7



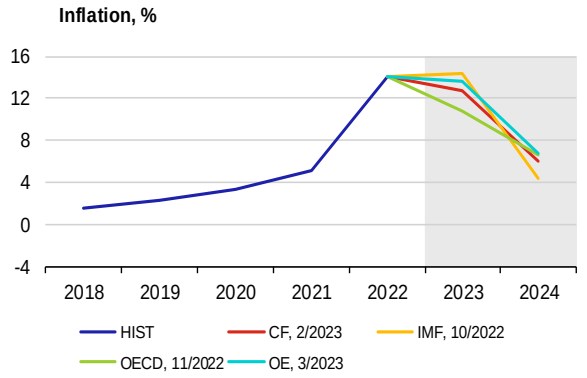
	CF	IMF	OECD	OE
2023	6.1	5.0	6.4	5.5
2024	4.8	4.0	5.3	4.6

II.8 Poland

The latest outlooks for the Polish economy were slightly more favourable. The Polish central bank's new forecast expects GDP to grow by 0.9% this year. CF predicts a similar pace; OE is much more pessimistic. GDP growth is expected to pick up to 2–3% next year. The PMI in manufacturing remains in the contraction band, as production and new orders continue to decrease, albeit at a slower pace. However, it is increasing every month. The labour market situation remains favourable although unemployment rose slightly to 5.5% in January. Wage growth in the private sector picked up again in the same month, exceeding 13% year on year. Inflation outlooks have dropped slightly since the last issue. CF analysts estimate inflation at 12.7% in 2023 as a whole; OE predicts 13.6%. The central bank is significantly more optimistic, estimating inflation of 11.9% this year and 5.7% in 2024. This was published before February inflation, which jumped to 18.4% (core inflation 12%).



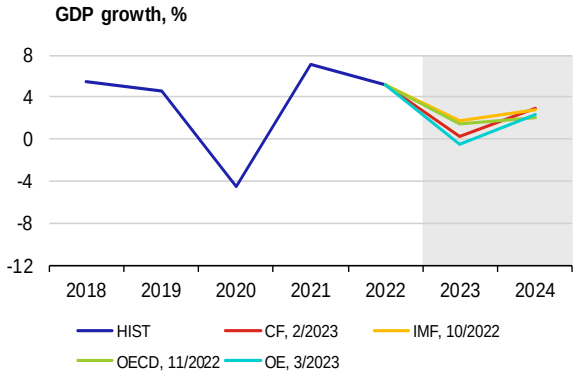
	CF	IMF	OECD	OE
2023	0.8	0.5	0.9	0.1
2024	3.1	3.1	2.4	2.9



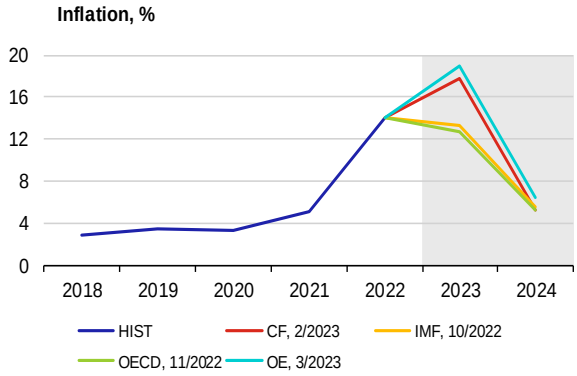
	CF	IMF	OECD	OE
2023	12.7	14.3	10.8	13.6
2024	6.0	4.3	6.6	6.7

II.9 Hungary

There may be slightly better prospects for the Hungarian economy, at least for the real economy. CF analysts now expect a slight expansion this year. However, it is not clear where this hint of optimism comes from. Industrial production switched to a slight annual decline in January. Construction has been experiencing a substantial annual decrease for the second consecutive month. Retail sales are almost 5% lower than last January (both in the categories of food and other goods). The impacts of extremely high inflation are clearly affecting consumer demand. Although the labour market is in good shape (a low unemployment rate and nominal wage growth exceeding 17%), the drop in real income is significant. OE may be right, having lowered its GDP growth outlook to -0.5% for this year. Although inflation slowed slightly in February, it still exceeds 25% (both headline and core inflation). CF and OE estimate it to reach around 18% for 2023 as a whole.



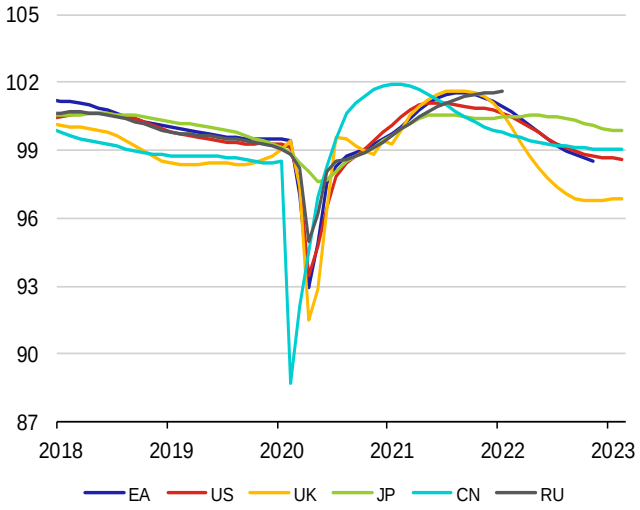
	CF	IMF	OECD	OE
2023	0.2	1.8	1.5	-0.5
2024	3.0	2.8	2.1	2.4



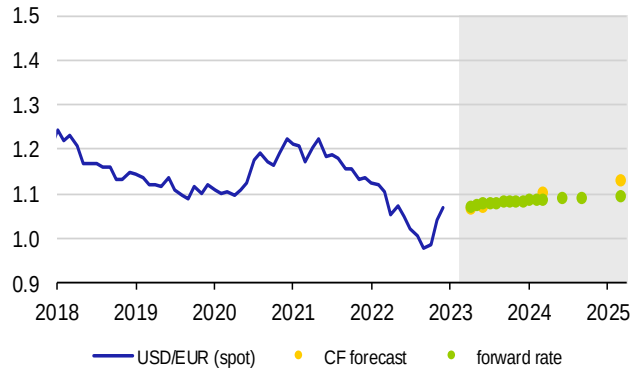
	CF	IMF	OECD	OE
2023	17.8	13.3	12.7	18.9
2024	5.3	5.6	5.2	6.5

III. Leading indicators and outlook of exchange rates

OECD Composite Leading Indicator

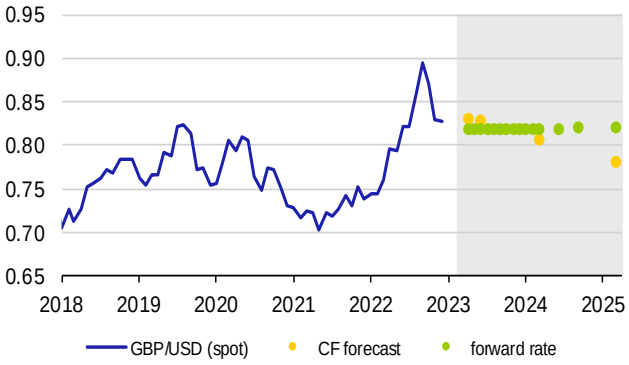


The US dollar (USD/EUR)



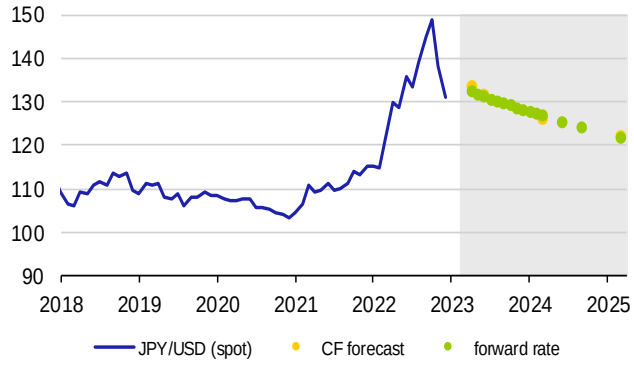
	13/3/23	4/23	6/23	3/24	3/25
spot rate	1.073				
CF forecast		1.070	1.075	1.104	1.132
forward rate		1.075	1.080	1.090	1.098

The British pound (GBP/USD)



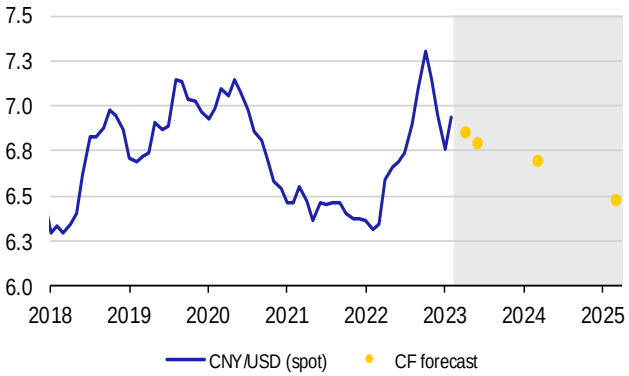
	13/3/23	4/23	6/23	3/24	3/25
spot rate	0.822				
CF forecast		0.831	0.830	0.808	0.782
forward rate		0.820	0.819	0.819	0.821

The Japanese yen (JPY/USD)



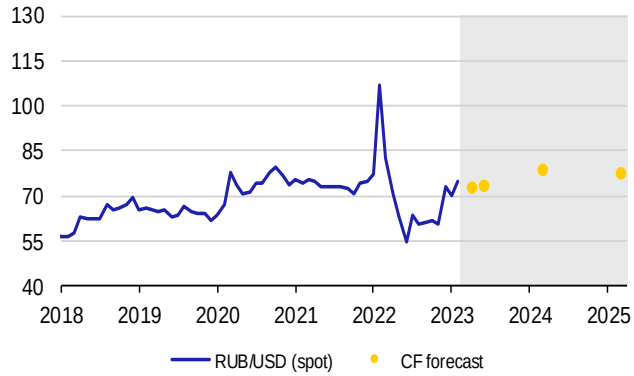
	13/3/23	4/23	6/23	3/24	3/25
spot rate	133.2				
CF forecast		133.7	131.9	126.5	122.3
forward rate		132.6	131.4	126.9	122.0

The Chinese renminbi (CNY/USD)



	13/3/23	4/23	6/23	3/24	3/25
spot rate	6.900				
CF forecast		6.856	6.795	6.697	6.487

The Russian rouble (RUB/USD)



	13/3/23	4/23	6/23	3/24	3/25
spot rate	75.20				
CF forecast		73.20	73.72	78.82	77.85

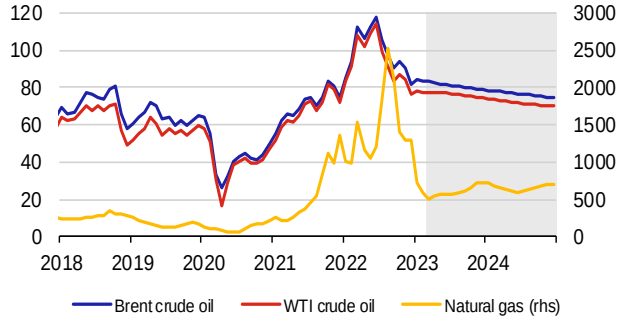
Note: Exchange rates as of last day of month. Forward rate does not represent outlook; it is based on covered interest parity, i.e. currency of country with higher interest rate is depreciating. Forward rate represents current (as of cut-off date) possibility of hedging future exchange rate.

IV.1 Oil

The Brent oil price declined for most of February and fell sharply in mid-March due to turmoil in the banking sector. The Brent oil price rose in early February amid concerns of a drop in Russian supplies, but later declined for most of the month due to weak demand from refineries, which began seasonal maintenance in most regions. At the same time, optimism about a fast recovery of the Chinese economy was fading, while fears grew about a further rise in central banks' interest rates, which would dampen economic growth and the demand for oil. Weeks-long increases in US oil inventories are pushing down the WTI oil price, boosting its exports to global markets. Commodity prices were also generally pushed down by an appreciating dollar. The IEA states that the oil glut has lasted three quarters and global inventories are at an 18-month high. It expects the market to enter a deficit after demand from China increases significantly in 2023 H2, which some analysts see as a reason why the oil price might rise above USD 100/bbl at the end of the year. However, the EIA expects the opposite. According to its March forecast, oil prices should remain higher until mid-2023 due to the strong activity of refineries, which will try to take advantage of higher margins due to the drop in supplies of diesel from Russia. The oil glut should later result in a fall in oil prices. However, the current oil market developments are affected mainly by uncertainty caused by banking sector turmoil in the USA and Europe. The Brent oil price thus fell sharply below USD 75/bbl in mid-March. If this situation were to last longer, a reaction by OPEC+ is expected (a cut in production).

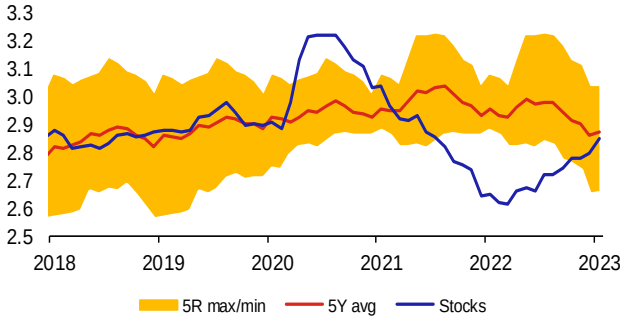
The market curve shifted again slightly downwards in mid-March (even before the bank failures). It remained slightly falling, signalling the Brent oil price at USD 79/bbl and USD 74.5/bbl at the end of 2023 and 2024 respectively. The EIA forecast expects virtually the same path. By contrast, the March CF continues to expect the Brent price to stand close to USD 85/bbl at both the three-month and one-year horizons.

Outlook for prices of oil (USD/barrel) and natural gas (USD / 1000 m³)

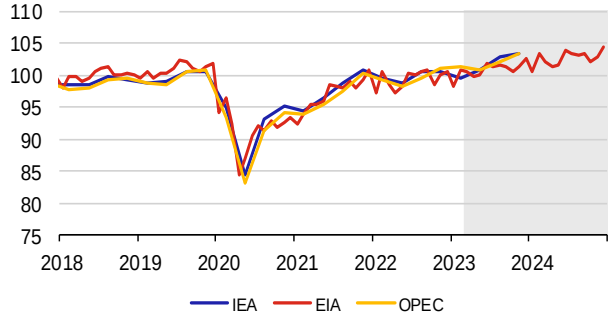


	Brent	WTI	Natural gas
2023	81.40	76.29	616.86
2024	76.53	71.75	659.07

Industrial stocks of oil and oil products in OECD (bil. barrel)

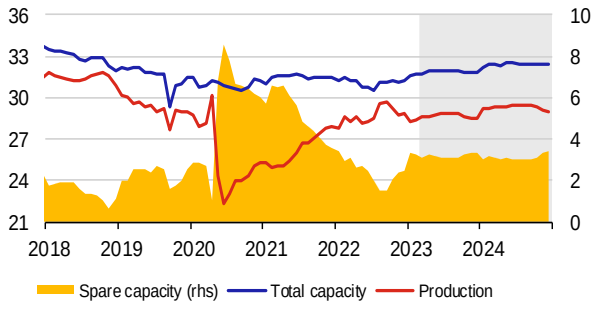


Global consumption of oil and oil products (mil. barrel / day)



	IEA	EIA	OPEC
2023	101.71	100.90	101.90
2024		102.69	

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



	Production	Total capacity	Spare capacity
2023	28.63	31.83	3.20
2024	29.29	32.41	3.12

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.

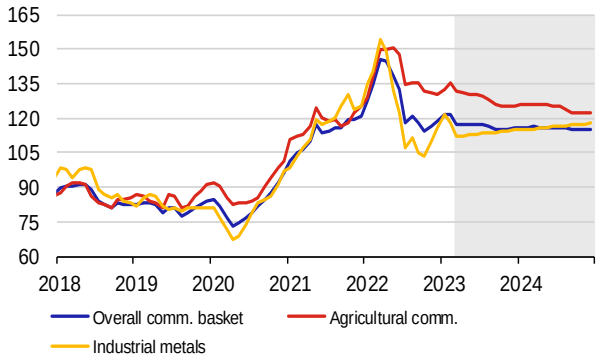
IV.2 Other commodities

The three months-long decline in natural gas prices in Europe halted in early March. The price of natural gas at the TTF virtual hub and the price of LNG in Asia converged to each other in early February, reaching their lowest level since August 2021 in March. However, no further major declines are expected in the next two years. Although European gas storage facilities remain fuller than usual after a mild winter, Europe will have to compete for necessary supplies of LNG with other customers, especially from Asia, before next winter. The production capacity of LNG will grow more significantly worldwide only in 2025. The drop in natural gas prices and warm weather in winter also resulted in a sharp decline in prices of coal imported to Europe. However, their decline halted at the end of January. (Coal prices for Asia remain much higher and continued to decline into the first half of March).

The food commodity price index has remained within a relatively narrow band without a major trend since last July but it is very high from a historical perspective. After a temporary slight increase in February, the index bounced back in mid-March, due to an improved outlook for the US harvest, higher exports of agricultural commodities from Black Sea ports and an appreciating dollar. The index is expected to decline further after the next harvest.

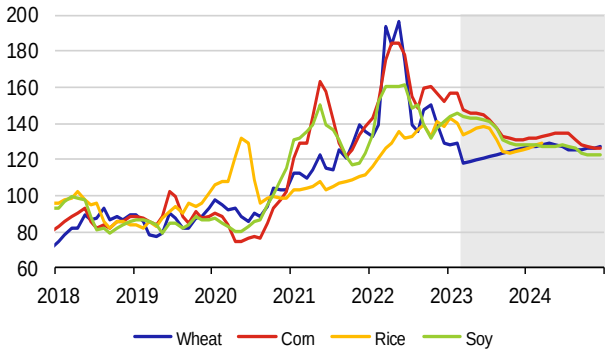
The industrial metal price index fell in February and the first half of March, but its outlook remains rising. Industrial activity in China is improving due to monetary and fiscal stimuli, but so far this has only been reflected in an increased supply of metals. Demand from Chinese industry remains weak, which is curbing initial optimism about the opening of the economy. Industrial activity remains rather subdued outside China. Optimism that the Fed might slow the pace of interest rate hikes is also waning, and commodity prices are generally being pushed down by an appreciating dollar. Prices of most base metals also declined due to growth in their inventories on the LME. On the ohter hand, iron ore and steel prices have been rising since November.

Non-energy commodities price indicies



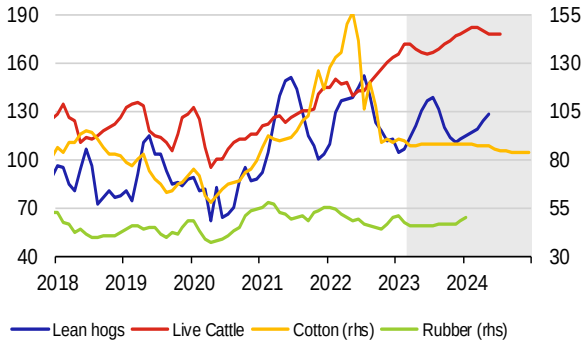
	Overall	Agricultural	Industrial
2023	117.3	129.3	114.5
2024	115.7	124.5	116.4

Food commodities



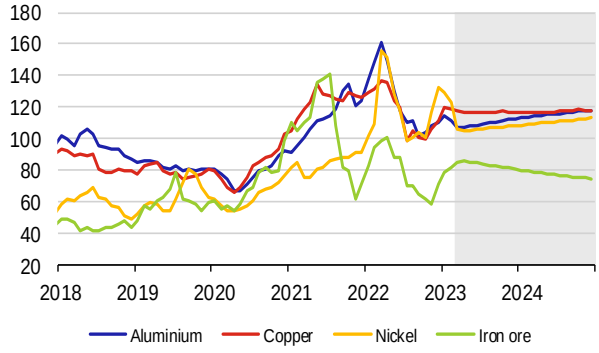
	Wheat	Corn	Rice	Soy
2023	123.3	141.9	132.8	137.9
2024	127.0	131.0	127.8	125.9

Meat, non-food agricultural commodities



	Lean hogs	Live Cattle	Cotton	Rubber
2023	119.9	170.2	88.2	46.7
2024	120.4	179.4	85.4	49.9

Basic metals and iron ore



	Aluminium	Copper	Nickel	Iron ore
2023	110.4	117.6	110.0	83.1
2024	115.9	117.5	111.0	77.5

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.

Regional sentiment of Central European currencies in the global context[1]

The co-movement of Central European currencies is due not only to economic links and the common history of the economies in the region. It also often reflects changes in global investor sentiment or the region's credibility, especially in times of financial market uncertainty and flight to safe assets. Therefore, one way to analyse the effect of external factors influencing short-term FX dynamics is via the co-movement of currencies. In this article, we outline a method for extracting the co-movement of currencies in a region and concentrating it into a simple indicator. With this method, we revive the discussion on the factors affecting exchange rates. As well as macroeconomic fundamentals, these include financial market sentiment, which reflects investor sentiment and confidence in the region. We show that the depreciation of Central European currencies in the past year was due not only to geopolitical uncertainty in Europe, but also to unprecedentedly high investor interest in the US dollar, which benefited from the Fed's assertiveness in combating inflation. Conversely, concerns of an economic downturn and the less resolute and – in the opinion of some – belated actions of the ECB had a negative impact on the euro.

Regional sentiment – definition

Terms such as regional and global sentiment are regularly used by analysts and economists. The expression "regional sentiment" encompasses a whole range of effects for which there is often no room for a more detailed explanation or differentiation in the media and the short statements made on various platforms. In this section, we will outline a method for working with regional sentiment, what influences it in this context, and how it relates to changes in global investor sentiment.

Regional sentiment can be understood to be, among other things, the co-movement of currencies in a region. If, for example, all the currencies depreciate against the euro in a synchronised manner, they are affected by negative regional sentiment.[2] If only one currency in the region weakens and the other currencies in the region react to this in a similar way, the co-movement measure will also shift to weaker values. This, once again, is a situation of negative regional sentiment. The weakening of one currency without any impact on the others should not affect the co-movement and hence should not indicate a change in sentiment. In the case of Central European currencies, the reference currency will be the euro, as most financial and commercial transactions in Central Europe are conducted in relation to the euro.

We therefore focus mainly on short-term FX dynamics. We start by largely removing the long-term trends from the data[3] and subsequently extract the co-movement of currencies. We then look at two factors. The first is ***domestic or technical*** effects, such as the effects of a large one-off inflow of foreign direct investment or, conversely, an outflow of dividends. Another example would be one-off conversions into Central European currencies. The second factor is ***regional sentiment***, with the help of which we try to identify the external pressures which affect a country's currency. They can come *directly from the region* through spillovers from other countries in the region. This is due on the one hand to geopolitical factors, which are similar in these regions, and on the other to investor expectations that the problems of one country in the region may easily spill over to neighbouring countries. However, the primary source of fluctuations in regional sentiment are *changes in risk aversion in global financial markets*. Many analyses (e.g. CNB, 2022) show that the sensitivity of asset prices on the FX market to global news is very similar and stable over time for Central European countries.

External factors and changes in sentiment can override the expected functioning of exchange rates according to economic theory. For example, the uncovered interest rate parity (UIP) theory tries to explain how the exchange rate between two countries moves depending on the interest rates of those countries. According to UIP, foreign currency investment income (measured as the difference in interest rates between the domestic and foreign currency) should be offset by the expected change in the exchange rate. However, changes in regional sentiment can override the functioning of UIP. This occurred in the second half of 2022, when growth in the interest rate differential between the Central European economies and the euro area was not accompanied by the expected appreciation of their currencies against the euro. According to market commentaries, this was due to strong investor interest in investing in the US dollar, which corresponds to the effect of sentiment. Although investors were offered a high return on Central European currencies, they did not avail of this opportunity, as the US dollar was more attractive from their perspective. In addition to the yield on a portfolio, investors consider its safety. Our method can offer an insight into the importance of the dollar in this episode, but the non-linearities in the effect of the interest rate differential and the interaction with regional factors go beyond the method presented here.

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[1] Written by Soňa Benecká 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.

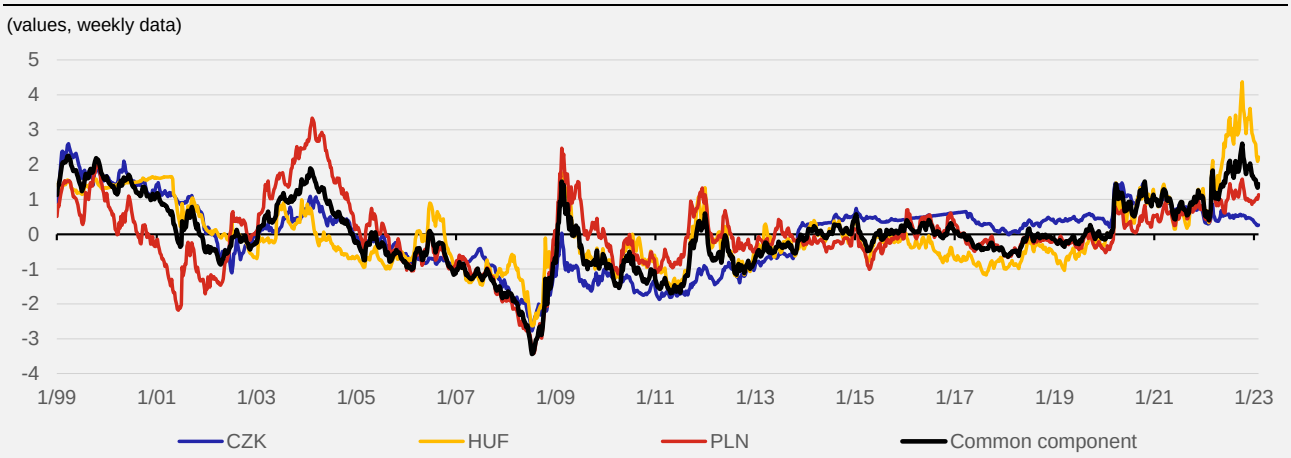
[2] This is a purely technical definition of the term as the co-movement of currencies. In market commentaries, situations in which currencies depreciate against the euro in a synchronised manner due to changes in sentiment, for example, in US markets, are termed differently. For the sake of simplicity, however, we will stick to the definition using the co-movement of currencies.

[3] We focus on nominal exchange rates. See Komárek (2017) for a more in-depth analysis of real exchange rates.

Co-movement of Central European currencies

Historically, Central European currencies have tended to show similar exchange rate movements, though with different magnitudes. Since the start of the millennium, it has been evident that Central European currencies tend to co-move against the euro (see Chart 1). The strength of the response has varied over time, although the koruna's movements as a whole have been smaller than those of other currencies in the region. The activities of the central banks in the region have also affected the exchange rates of Central European currencies. For example, while the CNB's exchange rate commitment was in place (November 2013–April 2017) the koruna could only move to values weaker than CZK 27 to the euro, which meant that it diverged from the other currencies in the region. However, where, in the past, currencies were able to move without central bank interventions, synchronisation of their paths was often visible.

Chart 1 – Common component of the movement of Central European currencies



Source: ECB, CNB calculations
Note: Exchange rates against euro (CZK – Czech koruna, HUF – Hungarian forint, PLN – Polish zloty; statistically detrended and normalised for comparison

The co-movement of currencies can be described in various ways, but for illustrative purposes we will use a simple principal component analysis.[4] We extracted the first component, denoted as the *common component* in Chart 1, from the adjusted data – the weekly averages of the exchange rates of the V3 countries (the Czech Republic, Hungary and Poland) against the euro.[5] Of course, this approach is based on statistical methods and is purely technical. As it draws on observed market exchange rate data, it cannot completely eliminate the effect of any central bank interventions or other non-market factors. At the same time, the extracted co-movement of currencies is still affected by the rate volatility of the individual currencies, which unfortunately cannot be fully filtered out. However, Chart 2 clearly shows that the common component is significant for all the currencies in the region. This is also evidenced by the correlation between the common component and the individual currencies. This is very high for the weekly data (0.85 for the koruna, 0.87 for the forint and 0.80 for the zloty).

Why do the region's currencies tend to co-move? All three Central European economies have trade and ownership links with the euro area. Their financial markets are closely interconnected with the euro area and they draw on EU funds.[6] This means that fundamentally they should face similar asset flows with effects on the exchange rate. Of course, domestic factors are significant and feed back to the whole region. For example, the negative regional sentiment seen in 2022 was due to Hungary's (and party Poland's) dispute over the tying of the disbursement of EU funds to compliance with the rule of law.[7] EU institutions have long criticised Prime Minister Viktor Orbán's government's approach to the judiciary, accusing Hungary of limiting media pluralism and minority rights, as well as restricting NGOs' activities and academic freedoms. As a

[4] Principal component analysis (PCA) is a statistical technique used to analyse data. The aim is to identify the most important factors or components in a data set and use them to reduce the size of the data set. PCA is based on a linear algebraic transformation of the data, in which new variables (principal components) are sought which best explain the variance of the original data. These new variables are orthogonal (uncorrelated) and ranked according to how much of the variance in the data they explain. PCA is often used to reduce the size of data sets. This means that a new set of variables with fewer dimensions is created from the original data which retains as much of the information contained in the original data as possible. PCA can also be used to visualise data and uncover hidden relationships between variables.

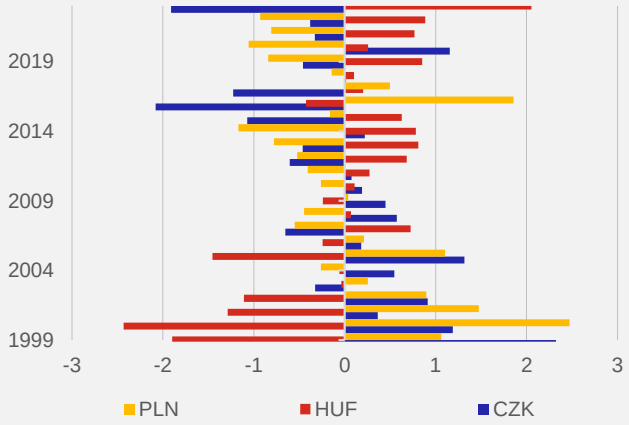
[5] In the first step, the data were detrended and normalised to identify the common component. We understand changes in trend to be a manifestation of long-term changes in the economy, such as convergence, and we abstract from this effect.

[6] The V3 countries' approaches to EU fund flows differ. In 2008, the CNB and the Czech government agreed that currency conversions of financial flows between the Czech Republic and EU authorities would continue to be effected as far as possible off the foreign exchange market. Until recently, Poland's approach was similar, while the Hungarian central bank has not been intervening in the flow of funds in any way.

[7] Case C-156/21 Hungary v Parliament and Council and C-157/21 Poland v Parliament and Council. For details see, for example, https://www.consilium.europa.eu/en/press/press-releases/2022/12/12/rule-of-law-conditionality-mechanism/

Chart 2 – Sensitivity of Central European currencies to the common component

(annual averages of estimated rolling regression coefficients based on weekly data for changes in common component and exchange rate)



Source: ECB, CNB calculations
Note: Positive values indicate larger movements and negative values smaller movements in the currency than the common component; exchange rates against euro (CZK – Czech koruna, HUF – Hungarian forint, PLN – Polish zloty)

result, the Commission proposed to withdraw EUR 7.5 billion of EU funds from Hungary. In addition, the Hungarian economy is suffering from high inflation and falling living standards. This has contributed to the biggest depreciation of the forint against the euro in history.

Our analysis confirms that the forint has had the dominant effect on regional sentiment in recent years. Chart 2 captures the sensitivity of each currency to the common component. It is estimated from rolling regressions of the weekly changes in the exchange rates and the common component and then aggregated into annual averages. As the region's largest economy, Poland would be expected to have the dominant effect on the behaviour of the currencies in the region. However, the zloty only showed a strong link to the common component in the first years after the introduction of the euro. Like the koruna, it stabilised to a large extent in the following years. After 2010, the forint became the main driver of the common component, despite being the currency of the country with the weakest economy (in terms of GDP). In the case of the koruna, we see a significant effect of the 2022 interventions.

Interconnectedness and the transmission of shocks between currencies has naturally been a source of interest in the economic literature as well. The co-movement of currencies against the dollar was described in a whole range of papers in the last century (for example, Dornbusch,1985, and Aggarwal and Mougoue, 1996). The volatility spillover effect between currency pairs is also documented in numerous studies, be they dynamic correlations or GARCH models. For example, Kočenda and Moravcová (2018) used some of these methods on Central European currency data. In their work, they confirm the dominant influence of the forint as a source of volatility in the region after the global crisis. In previous years, the zloty was the driver. Similar to our analysis, they assert that the koruna was mostly a recipient of volatility from other currencies. An IMF study (Pramor and Tamirisa, 2006) arrives at the same results. Using wavelet analysis,[8] Andrieş et al. (2016) confirm that Central European currencies are highly integrated, especially in the short and medium run. The approach we describe has no precedent in the literature, but is inspired by it. It is loosely based on financial stress indicators (see Box 1).

Regional versus global sentiment

Regional sentiment is not a phenomenon unique to Central European currencies, but also applies to other groups of currencies. Correct classifying currencies into groups is key to identifying it. "Market stories" are a good starting point. They divide currencies into groups depending on their response to the main global currencies (EUR, USD and JPY, and to a lesser extent GBP and CHF). Some studies (such as Ranaldo and Soderlind, 2010, and Habib and Stracca, 2012) classify currencies as "safe havens" or "risky" depending on their response to a tightening of global financial conditions. For example, the yen (JPY) is usually considered a safe haven, because it tends to appreciate on such occasions, whereas the Australian dollar (AUD) tends to depreciate and is thus usually placed in the risky camp. After dividing the currencies into the two camps, we looked for the geographically closest countries and again extracted the common component from their currencies, as in the previous section. We set aside the safe havens and the USD/EUR rate as the main currency pair.

The risky currencies in a region are highly interconnected. The "advanced dollar currencies" (the Australian, Canadian and New Zealand dollars) probably co-move most strongly against the US dollar (see Chart 6 in the annex).[9] Interventions in these currencies are limited, so their movement better reflects change in market conditions. This is not the case for many other currencies pegged primarily to the dollar (such as the Asian currencies in Chart 7 in the appendix). Even here, though, co-movement is evident, as it is for some currencies of American emerging economies (Chart 8 in the appendix). It is interesting to compare the common components across regions (see Chart 3). Despite technical and data limitations, the

[8] Wavelet analysis is a mathematical data analysis technique which allows one to decompose time series into the frequency components contained in the series and obtain information about the frequency content.

[9] The choice of reference currency is based mainly on the significance of commercial and financial transactions for the currency pair. The euro is used as reference currency for European economies due to their high degree of integration. The reference currency for the rest of the world is the US dollar. The comparability of the results for the euro and dollar regions is lower because the movement of the USD/EUR rate comes into play. Depending on the current situation, the US dollar and the euro can also be safe havens. For simplicity, we do not assess sterling, as its exchange rate was fundamentally affected by Brexit.

Box 1 – Regional sentiment versus financial market sentiment – close terms, different content

In the main text of this article, we introduced the concept of regional sentiment in relation to currencies. This is very closely related to that of sentiment in financial markets. Both involve the description of movements in market instruments, and the two are interconnected.

Sentiment (mood) in financial markets refers to the interest and sensitivity of investors and other financial market participants. When sentiment is positive, investors are willing to take on more risk and are more optimistic about the future. This should reflect the fact that the economy is in good shape and will continue to grow and its rating is unchanged or has a positive outlook. In such cases, investors often buy new assets and invest. Negative sentiment captures distrust in the future course of the economy. In times like these, investors therefore often get rid of their assets, especially if the economy's rating is downgraded or has a negative outlook. It is important for economists to understand investors' mood, hence they try to measure sentiment using various indicators.

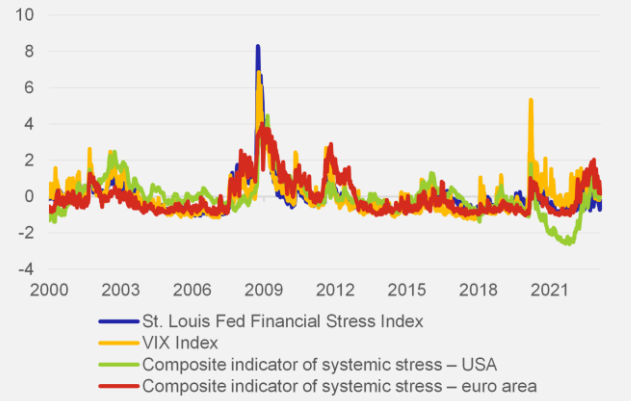
A knowledge of sentiment helps explain mismatches between other macroeconomic indicators. In turbulent times, contradictory or even conflicting macroeconomic statistical data come in, so it is useful to look at other indicators capturing, for example, consumer sentiment or company managers' expectations. Financial market reports are likewise useful, especially in advanced economies, where financial markets mirror the current situation in the economy.

The construction of our regional sentiment indicator was inspired by the financial stress index (FSI). The FSI tries to measure the current state of instability, i.e. friction or tension (or the absence thereof), in the financial system. Individual FSIs therefore aggregate information from various segments of financial markets and use various statistical methods to extract their co-movement. These composite indicators thus analyse, for example, newspaper articles, analytical reports, social networks, surveys, asset prices and patterns of behaviour, as well as "hard data" or data taken directly from financial markets. The best known include the Composite Indicator of Systemic Stress (CISS), the Chicago Board Options Exchange's Volatility Index (VIX) and the St. Louis Fed Financial Stress Index (see Chart Box). However, the last two are derived mainly from financial market developments in the USA, which are closely linked to global developments, so they do not capture fluctuations in different regions.

VIX is one of the best known indicators and is often referred to as the "fear index". It is derived from S&P 500 options on the Chicago exchange. If investors fear for their portfolios, they buy more options. This increases their prices and VIX rises. So, when VIX is high, investors expect high volatility on financial markets – not only the stock market, but also commodity and foreign exchange markets.

The CISS puts greater emphasis on situations where stress is present in several market segments at once. Such cases involve a systemic problem where the situation is dangerous to the economy as a whole. The CISS was pioneered by Hollo et al. (2012) and the ECB regularly publishes it for individual countries not only in the EU, but also elsewhere. It is therefore available for the USA.

Chart Box – Financial market sentiment indicators

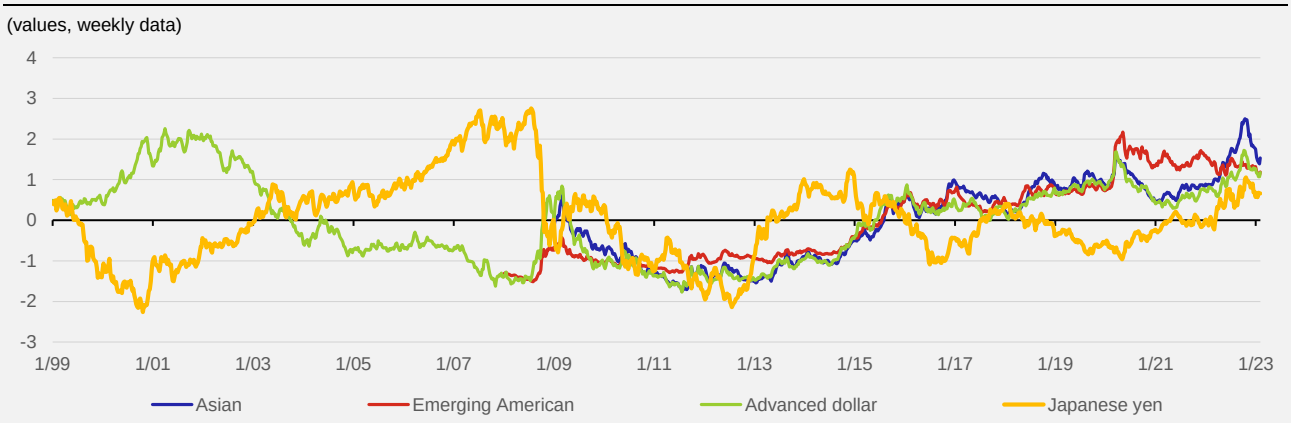


Source: Bloomberg, authors calculations
Note: The indices are normalised for comparison – the average is subtracted and the value is then divided by the standard deviation

common components by region showed very similar movement between 2009 and 2022. This movement was to an extent the inverse of that of the yen with respect to the dollar. The yen is usually seen as a safe haven, recording increased interest when risk aversion grows in financial markets. Unlike the yen, risky currencies tend to appreciate when risk aversion increases and depreciate when it decreases.

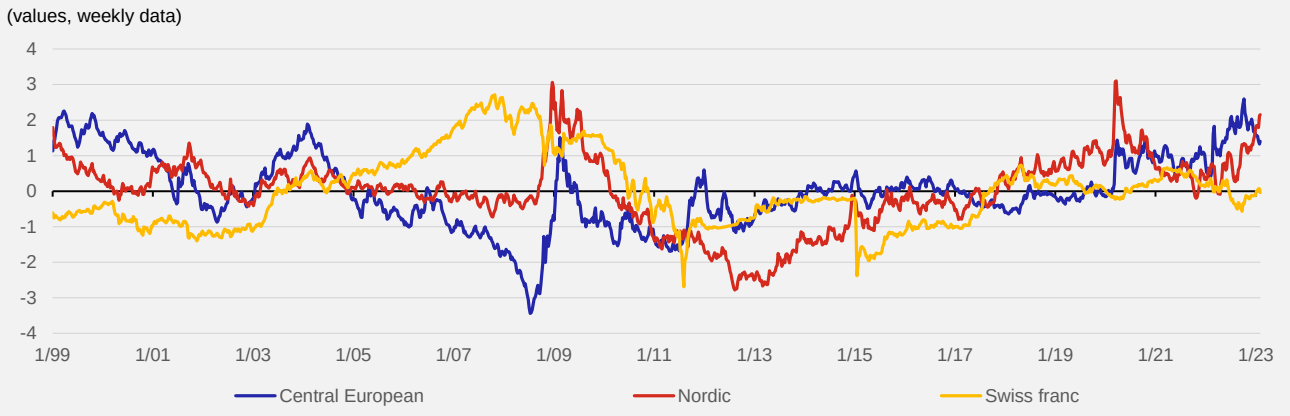
We should also mention two Scandinavian currencies linked primarily to the euro. However, the co-movement of the Swedish krona and Norwegian krone (see Chart 9 in the appendix) does not show a high degree of correlation with the common component for the Central European region (see Chart 4). The Swedish krona and Norwegian krone respond to only a limited extent to developments elsewhere and tend to fluctuate around the trend. An exception was the period of significant uncertainty at the height of the Global Financial Crisis (GFC), when the currencies also depreciated sharply. They conversely appreciated during the euro area debt crisis. This indicates that they are a safer alternative for investments in Europe in uncertain times. The Swiss franc traditionally played the role of safe currency in Europe in the past, but its inverse relation with the common components for euro regions is also weaker. One reason for this was the introduction of an exchange rate cap against the euro in autumn 2011, when the Swiss central bank faced strong pressure to strengthen the franc relative to the euro after the onset of the euro area debt crisis.

Chart 3 – Comparison of common components for the dollar regions



Source: ECB, CNB calculations
Note: Exchange rates against dollar (Asian – CNY, IDR, INR, KRW, MYR, PHP,SGD, emerging, Central American – BRL, MXN, advanced dollar – AUD, CAD, NZD), adjusted for trend, average and standard deviation

Chart 4 – Comparison of common components for the euro regions



Source: ECB, CNB calculations
Note: Exchange rates against euro (Central European – CZK, PLN, HUF, Nordic – SEK, NOK), adjusted for trend, average and standard deviation

Co-movement thus dominates currencies on the global scale, so the source of that co-movement should also have a global dimension. Numerous studies, and also our data, suggest that financial conditions and swings in global investor sentiment are a source of currency co-movement. When investor aversion is low, a search for yield is triggered and investment in risky assets and currencies increases. When conditions are favourable, risky investments are financed in low-interest currencies ("carry trades"). Conversely, in times of panic these transactions are closed and demand for safe assets and currencies rises. The panic depreciation at the height of the GFC has been well documented (for example by Fratzscher, 2009). The currencies of countries which had lower levels of international reserves, worse current account balances or direct exposures to the US financial system depreciated more. The global panic factor and the individual component associated with a country's performance by international comparison are again evident here.

Changes in the sentiment of global players can be captured using changes in global financial conditions or financial stress indicators. A new study by Eguren-Martin and Sokol (2022) even indicates what sort of FX volatility can be expected when investor sentiment changes. The authors also identify the macroeconomic fundamentals associated with different FX dynamics: currencies of countries with higher interest rates, low levels of international reserves and large fiscal deficits display a higher likelihood of large losses in response to a tightening of global financial conditions. An earlier study by Adam, Benecká and Matějů (2014) tried to identify regimes for Central European currencies on the basis of financial stress indicators. They found three regimes: in good times the koruna exchange rate stays close to the trend; as sentiment improves on financial markets it strengthens (risk-on); but in times of panic it weakens (risk-off). It is thus closer to the behaviour of advanced dollar currencies.

What explains the regional sentiment of Central European currencies?

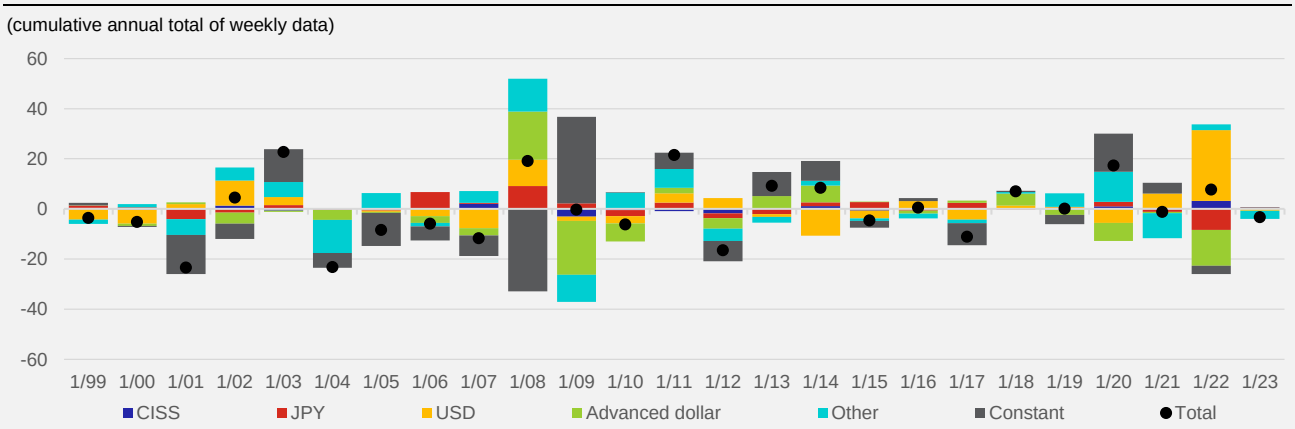
Sentiment on global financial markets should therefore be reflected primarily in regional sentiment. We have thus prepared a small model that will try to decompose the historical evolution of the common components according to the

effects of the main factors. As the view of the region is derived from the euro, the currency pairs are euro-denominated. The explanatory variables include:

- the Composite Indicator of Systemic Stress (CISS), which is published regularly by the ECB. Besides the financial stress indicator, it takes into account whether the stress is isolated in just one sub-sector or whether the entire financial system is affected. By including this indicator, we try to address investors' non-linear behaviour in the markets, as documented in Adam et al. (2014).
- the exchange rate of the yen and US dollar against the euro – in times of significant uncertainty, the yen appreciates against the dollar, while how the dollar responds to the euro depends on the situation.
- the common component for the advanced dollar currencies – if this indicator records a decrease, it is very likely that market sentiment is tilted towards risky assets.

Chart 5 shows the resulting decompositions for the cumulative annual contributions from the rolling regressions.[10] It turns out that in extreme situations (the GFC and the war in Ukraine) financial stress plays a major role and is accompanied by changes in the exchange rates of the yen, the US dollar and the advanced dollar currencies. The hypothesis that investor sentiment has an effect applies here as well. The depreciation pressure on currencies in the region in 2022 was mainly due to the US dollar strengthening against the euro, with the Fed surprising the financial market with its assertiveness in combating inflation. So, not every appreciation of the dollar is a flight to safe assets, as there have been periods in the past when the US dollar strengthened as uncertainty increased. On the other hand, concerns about the effects of the crisis in Ukraine on Europe and the markedly less resolute approach of the ECB were reflected in a weaker euro. There were also new carry trades and demand for risky currencies. To sum up, without the dominant influence of the dollar (especially compared to the euro, which weakened), regional sentiment would have been more favourable, especially in the second half of 2022. The dampening effect of global factors fades out at the start of 2023.

Chart 5 – Factors behind the movement of the common component for the Central European region



Source: ECB, CNB calculations
Note: Cumulative annual contributions of factors from rolling regressions for week-on-week logarithmic returns; 53-week rolling window; CISS – Composite Indicator of Systemic Stress; JPY – Japanese yen to euro; USD – US dollar to euro; advanced dollar currencies – common component for Australian, Canadian and New Zealand dollars; Other – residuals from regressions; Constant – constant from rolling regressions

Conclusion

In this article, we introduced one possible approach to analysing short-term changes in FX dynamics through the lens of co-movement in a particular region and to identifying the main sources of co-movement in currencies. We showed that the Central European currencies are strongly interconnected and that the Hungarian forint was one of the sources of the FX dynamics in the region in the last year and at other times. However, global factors, especially changes in financial market sentiment, have a key effect. In times of crisis, there is interest in safe assets, but after the financial markets have calmed, there are flows into riskier currencies as well. From this perspective, the Central European currencies, as risk complements of the euro, appreciate in times of calm but tend to depreciate when there is interest in the Japanese yen or the US dollar, regardless of why.

Regional sentiment is therefore often driven by global factors, which presents a challenge for central banks in small open economies. The literature agrees that currencies play a key role in the adjustment mechanisms of converging economies and act as a shock absorber.[11] For central banks, however, changes in sentiment represent another exogenous factor that is taken into account in monetary policy-making in non-euro area EU countries.

[10] The high contributions of constants and other factors (residuals) also show that there is still considerable room for improving the method. The fluctuations in the data were beyond the analytical capabilities of simple regressions, especially during the financial crisis.
[11] https://www.cnb.cz/en/economic-research/conferences-seminars-and-workshops/exchange-rate-a-shock-absorber-or-a-shock-generator/

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Keywords

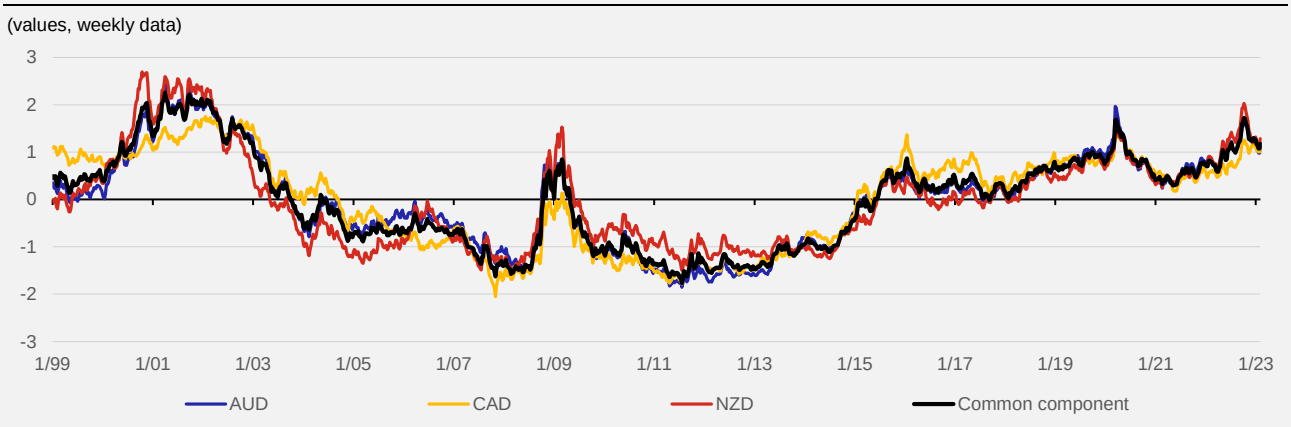
exchange rates, volatility, financial stress, financial crisis

JEL Classification

E58, F31, F41

Appendix – Charts

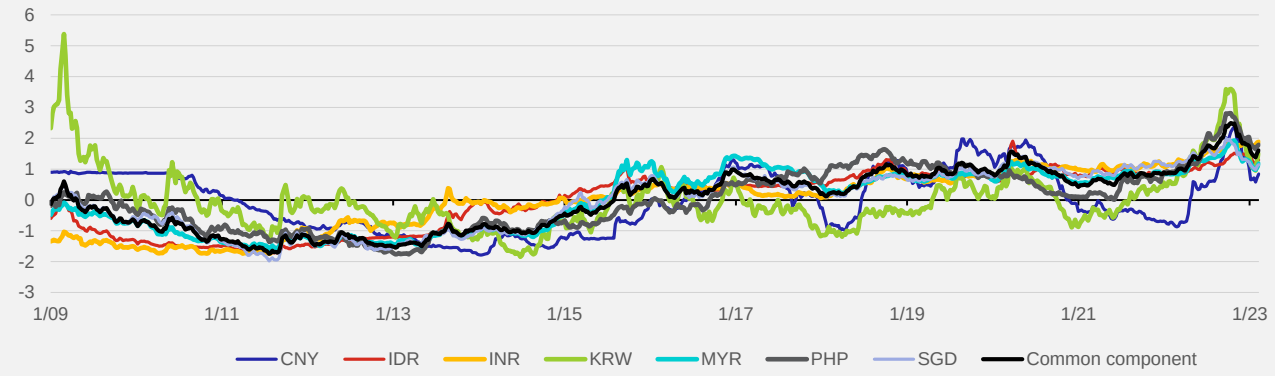
Chart 6 – Common component of the movement of dollar currencies



Source: ECB, CNB calculations
Note: Exchange rates against dollar (AUD – Australian dollar, CAD – Canadian dollar, NZD – New Zealand dollar), adjusted for trend, average and standard deviation

Chart 7 – Common component of the movement of Asian currencies

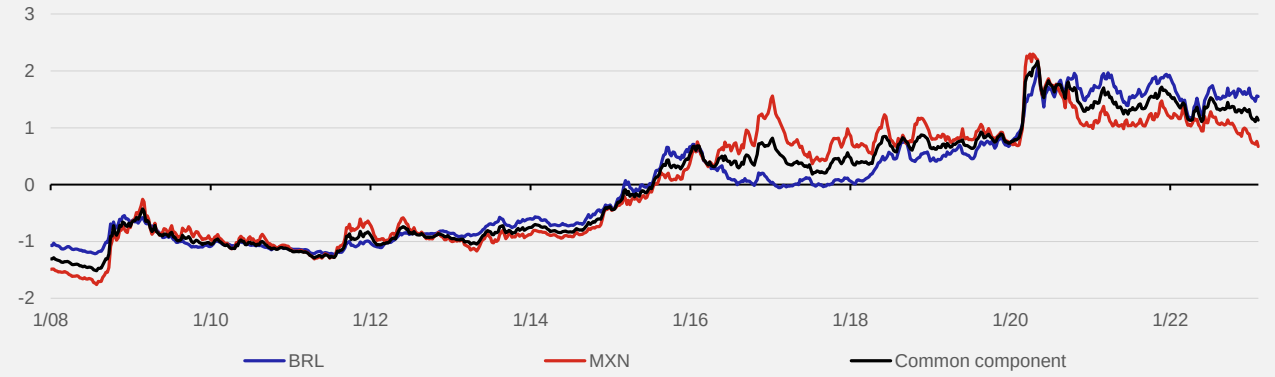
(values, weekly data)



Source: ECB, CNB calculations
Note: Exchange rates against dollar (CNY – Chinese yuan, IDR – Indonesian rupee, INR – Indian rupee, KRW – Korean won, MYR – Malaysian ringgit, PHP – Philippine peso, SGD – Singapore dollar), adjusted for trend, average and standard deviation

Chart 8 – Common component of the movement of American currencies

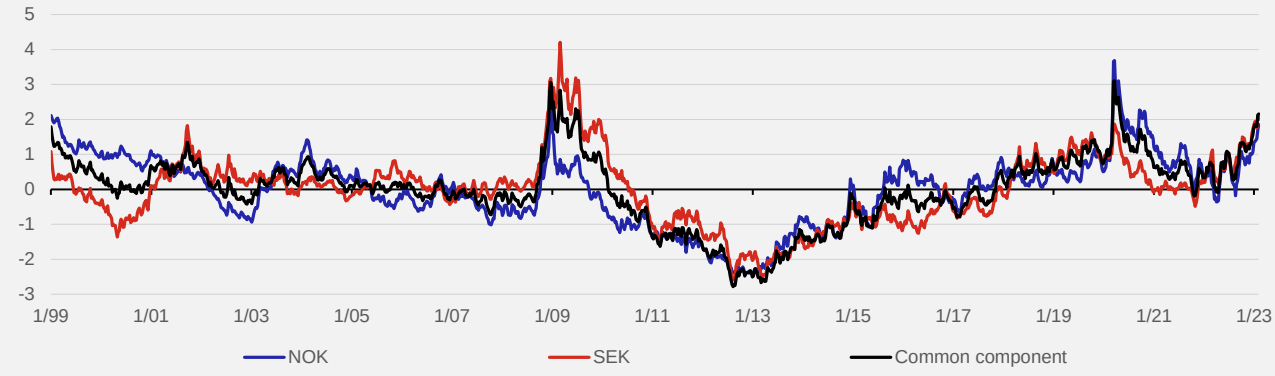
(values, weekly data)



Source: ECB, CNB calculations.
Note: Exchange rates against euro (BRL – Brazilian real, MXN – Mexican peso), adjusted for trend, average and standard deviation

Chart 9 – Common component of the movement of Nordic currencies

(values, weekly data)



Source: ECB, CNB calculations
Note: Exchange rates against euro (NOK – Norwegian krone, SEK – Swedish krona), adjusted for trend, average and standard deviation

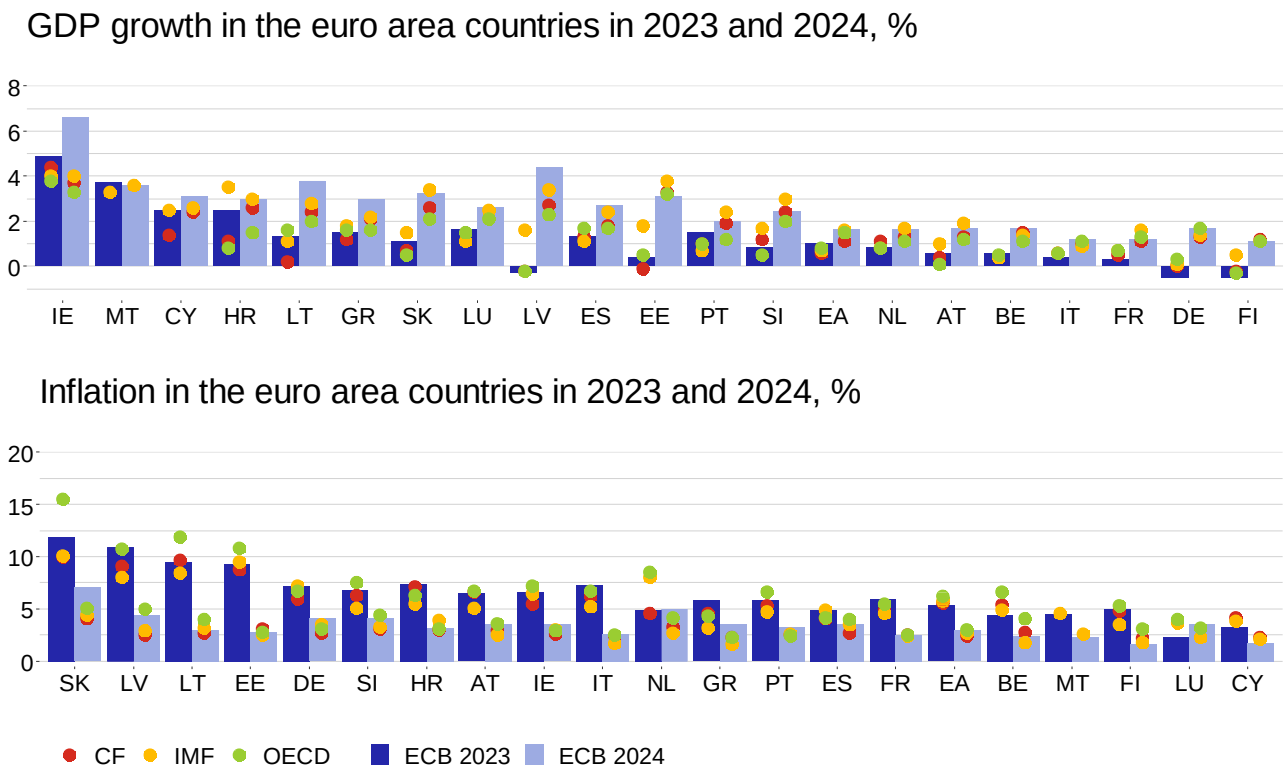
A1. Change in predictions for 2023

	GDP growth, %								Inflation, %							
	CF		IMF		OECD		CB / OE		CF		IMF		OECD		CB / OE	
EA	+0.2	2023/3 2023/2	+0.2	2023/1 2022/10	+0.3	2023/3 2022/11	+0.5	2023/3 2022/12	+0.1	2023/3 2023/2	+3.4	2022/10 2022/4	-0.6	2023/3 2022/11	-1.0	2023/3 2022/12
US	+0.3	2023/3 2023/2	+0.4	2023/1 2022/10	+1.0	2023/3 2022/11	-0.7	2022/12 2022/9	+0.3	2023/3 2023/2	+0.6	2022/10 2022/4	-0.2	2023/3 2022/11	+0.3	2022/12 2022/9
UK	+0.3	2023/3 2023/2	-0.9	2023/1 2022/10	+0.2	2023/3 2022/11	+1.0	2023/2 2022/11	-0.3	2023/3 2023/2	+3.7	2022/10 2022/4	+0.1	2023/3 2022/11	-1.3	2023/2 2022/11
JP	-0.1	2023/3 2023/2	+0.2	2023/1 2022/10	-0.4	2023/3 2022/11	-0.2	2023/1 2022/10	+0.2	2023/3 2023/2	+0.6	2022/10 2022/4	+0.5	2023/3 2022/11	0	2023/1 2022/10
CN	+0.1	2023/3 2023/2	+0.8	2023/1 2022/10	+0.7	2023/3 2022/11	0	2023/3 2023/2	-0.1	2023/3 2023/2	+0.4	2022/10 2022/4	0	2023/3 2022/11	0	2023/3 2023/2
RU	+0.5	2023/2 2023/1	+2.6	2023/1 2022/10	+3.1	2023/3 2022/11	+0.2	2023/3 2023/2	+0.1	2023/2 2023/1	-9.3	2022/10 2022/4	-0.3	2023/3 2022/11	+0.6	2023/3 2023/2

A2. Change in predictions for 2024

	GDP growth, %								Inflation, %							
	CF		IMF		OECD		CB / OE		CF		IMF		OECD		CB / OE	
EA	-0.1	2023/3 2023/2	-0.2	2023/1 2022/10	+0.1	2023/3 2022/11	-0.3	2023/3 2022/12	0	2023/3 2023/2	+0.9	2022/10 2022/4	-0.4	2023/3 2022/11	-0.5	2023/3 2022/12
US	-0.2	2023/3 2023/2	-0.2	2023/1 2022/10	-0.1	2023/3 2022/11	-0.1	2022/12 2022/9	+0.1	2023/3 2023/2	-0.1	2022/10 2022/4	-0.1	2023/3 2022/11	+0.2	2022/12 2022/9
UK	0	2023/3 2023/2	+0.3	2023/1 2022/10	+0.7	2023/3 2022/11	+0.7	2023/2 2022/11	0	2023/3 2023/2	+1.1	2022/10 2022/4	-0.5	2023/3 2022/11	0	2023/2 2022/11
JP	0	2023/3 2023/2	-0.4	2023/1 2022/10	+0.2	2023/3 2022/11	-0.4	2023/1 2022/10	+0.1	2023/3 2023/2	+0.1	2022/10 2022/4	+0.1	2023/3 2022/11	+0.2	2023/1 2022/10
CN	+0.1	2023/3 2023/2	0	2023/1 2022/10	+0.8	2023/3 2022/11	0	2023/3 2023/2	+0.1	2023/3 2023/2	-0.1	2022/10 2022/4	0	2023/3 2022/11	0	2023/3 2023/2
RU	+0.1	2023/2 2023/1	+0.6	2023/1 2022/10	-0.3	2023/3 2022/11	-1.0	2023/3 2023/2	+0.1	2023/2 2023/1	-5.0	2022/10 2022/4	-0.8	2023/3 2022/11	+0.3	2023/3 2023/2

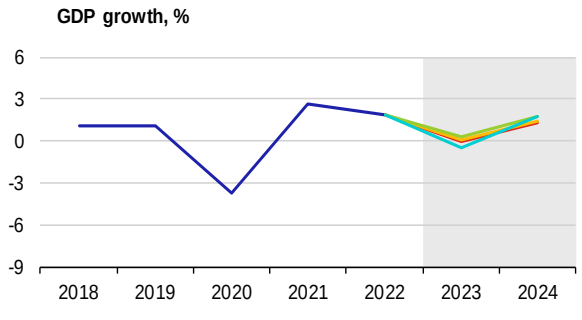
A3. GDP growth and inflation outlooks in the euro area countries



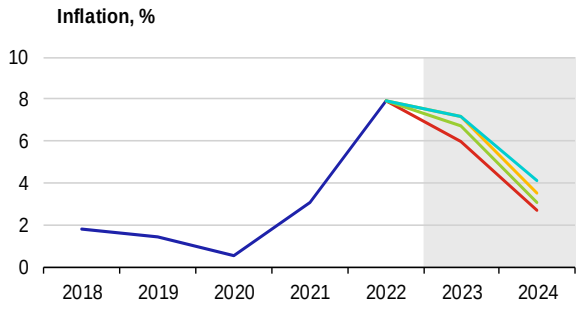
Note: Charts show institutions' latest available outlooks of for the given country.

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

Germany

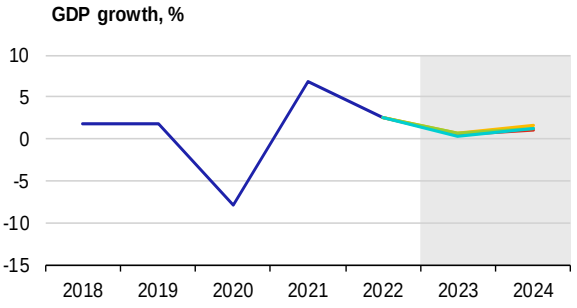


	CF	IMF	OECD	DBB
2023	0.0	0.1	0.3	-0.5
2024	1.3	1.4	1.7	1.7

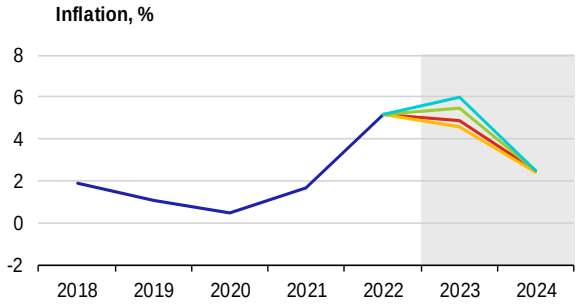


	CF	IMF	OECD	DBB
2023	6.0	7.2	6.7	7.2
2024	2.7	3.5	3.1	4.1

France

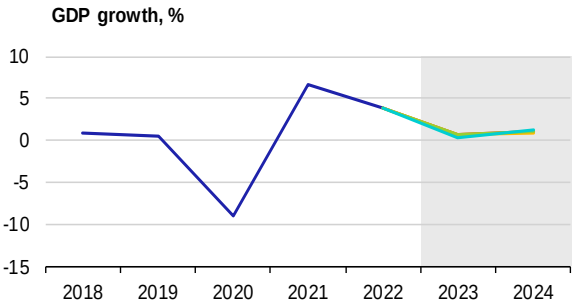


	CF	IMF	OECD	ECB
2023	0.5	0.7	0.7	0.3
2024	1.1	1.6	1.3	1.2

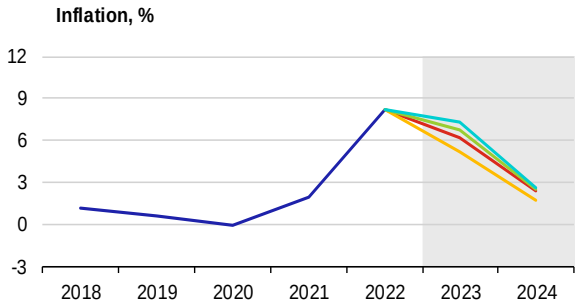


	CF	IMF	OECD	ECB
2023	4.9	4.6	5.5	6.0
2024	2.5	2.4	2.5	2.5

Italy

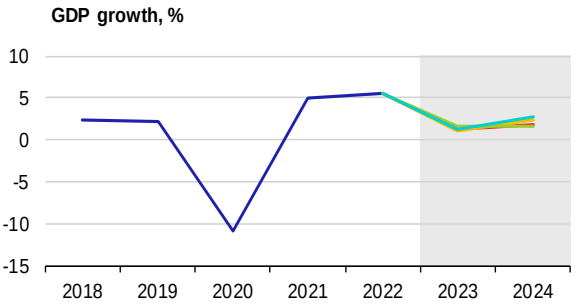


	CF	IMF	OECD	ECB
2023	0.6	0.6	0.6	0.4
2024	1.0	0.9	1.1	1.2

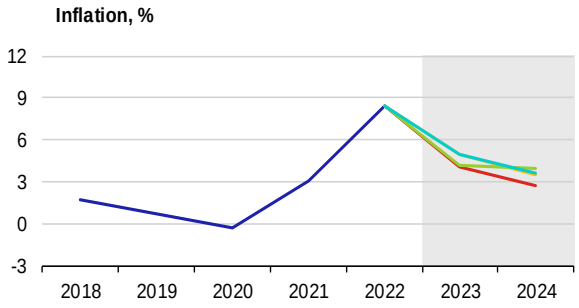


	CF	IMF	OECD	ECB
2023	6.2	5.2	6.7	7.3
2024	2.4	1.7	2.5	2.6

Spain



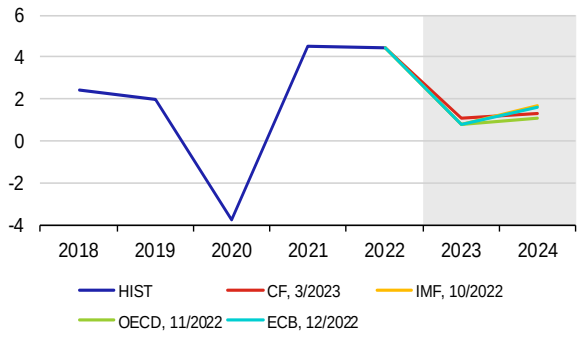
	CF	IMF	OECD	ECB
2023	1.3	1.1	1.7	1.3
2024	1.8	2.4	1.7	2.7



	CF	IMF	OECD	ECB
2023	4.1	4.9	4.2	4.9
2024	2.7	3.5	4.0	3.6

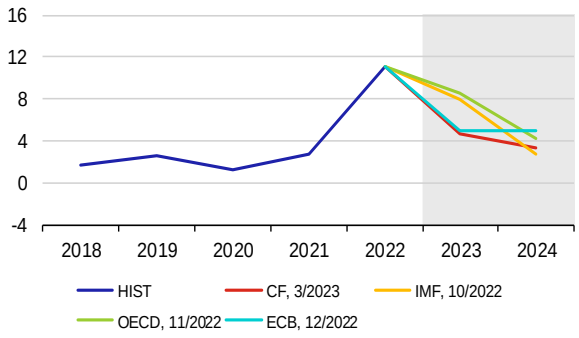
Netherlands

GDP growth, %



	CF	IMF	OECD	ECB
2023	1.1	0.8	0.8	0.8
2024	1.3	1.7	1.1	1.6

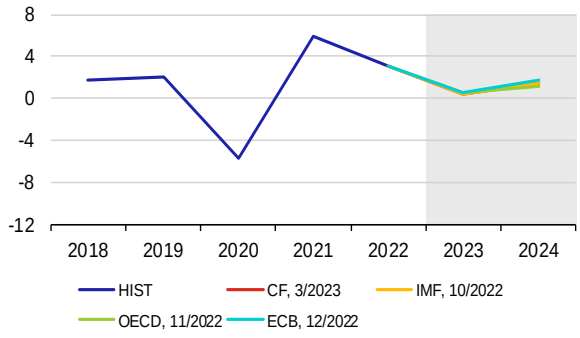
Inflation, %



	CF	IMF	OECD	ECB
2023	4.6	8.0	8.5	4.9
2024	3.3	2.7	4.2	5.0

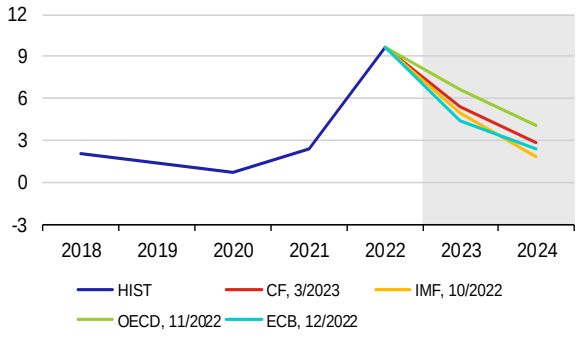
Belgium

GDP growth, %



	CF	IMF	OECD	ECB
2023	0.4	0.4	0.5	0.6
2024	1.5	1.4	1.1	1.7

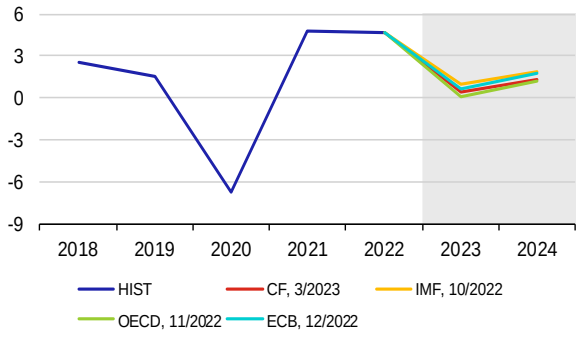
Inflation, %



	CF	IMF	OECD	ECB
2023	5.4	4.9	6.6	4.4
2024	2.8	1.8	4.1	2.4

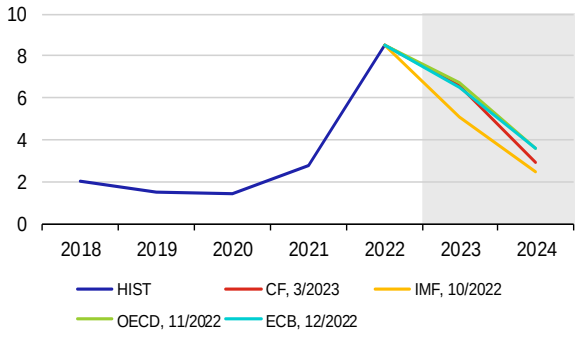
Austria

GDP growth, %



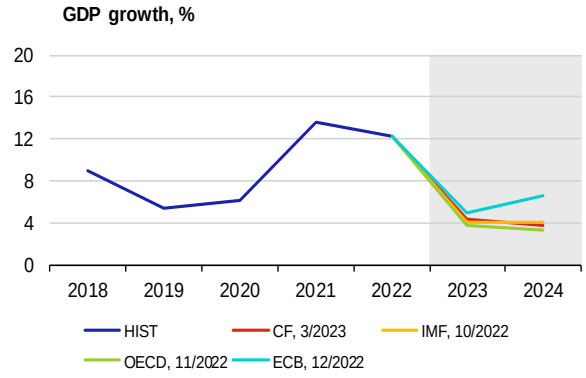
	CF	IMF	OECD	ECB
2023	0.4	1.0	0.1	0.6
2024	1.3	1.9	1.2	1.7

Inflation, %

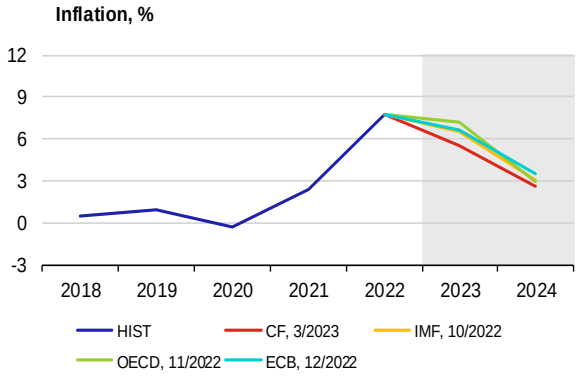


	CF	IMF	OECD	ECB
2023	6.6	5.1	6.7	6.5
2024	2.9	2.5	3.6	3.6

Ireland

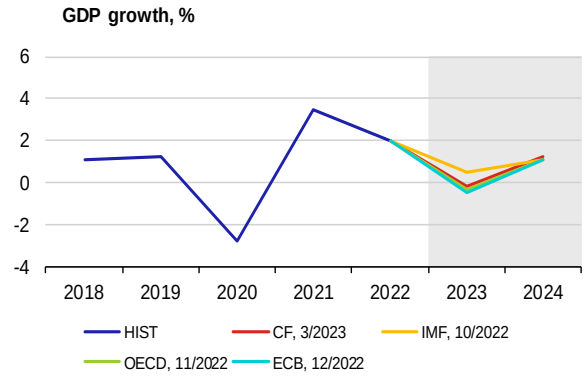


	CF	IMF	OECD	ECB
2023	4.4	4.0	3.8	4.9
2024	3.7	4.0	3.3	6.6

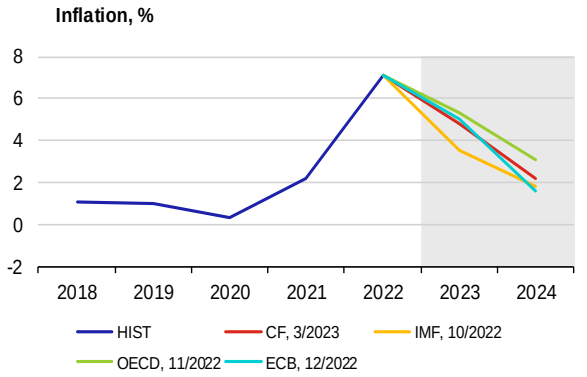


	CF	IMF	OECD	ECB
2023	5.5	6.5	7.2	6.6
2024	2.6	3.0	2.9	3.5

Finland

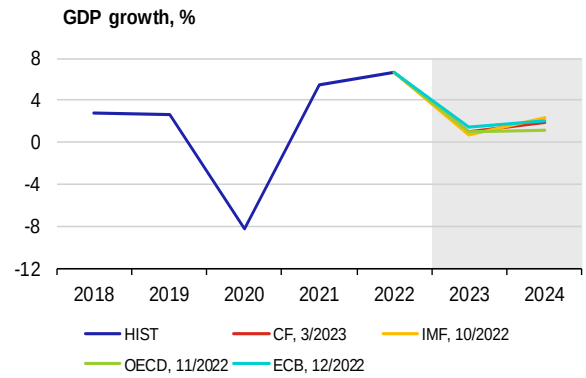


	CF	IMF	OECD	ECB
2023	-0.2	0.5	-0.3	-0.5
2024	1.2	1.1	1.1	1.1

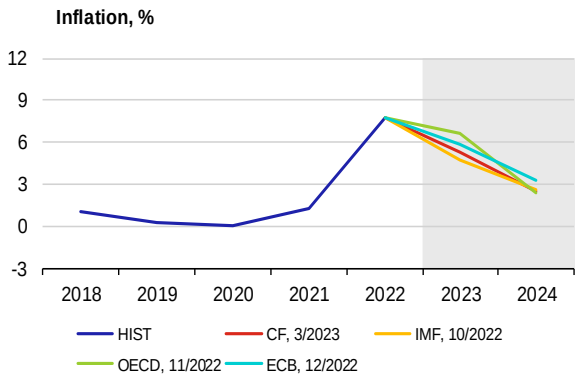


	CF	IMF	OECD	ECB
2023	4.8	3.5	5.3	5.0
2024	2.2	1.8	3.1	1.6

Portugal



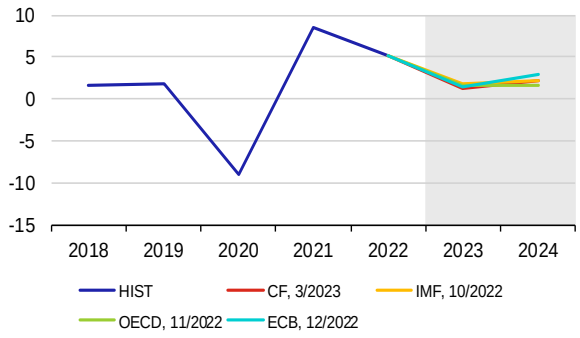
	CF	IMF	OECD	ECB
2023	1.0	0.7	1.0	1.5
2024	1.9	2.4	1.2	2.0



	CF	IMF	OECD	ECB
2023	5.3	4.7	6.6	5.8
2024	2.5	2.6	2.4	3.3

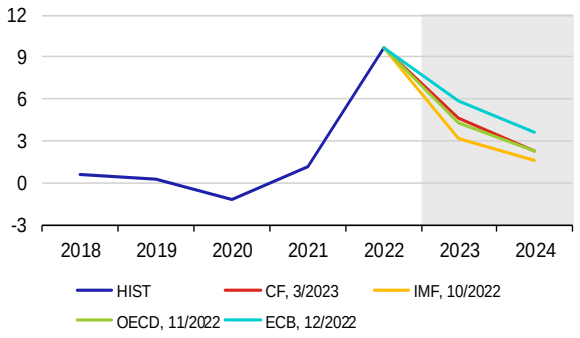
Greece

GDP growth, %



	CF	IMF	OECD	ECB
2023	1.2	1.8	1.6	1.5
2024	2.1	2.2	1.6	3.0

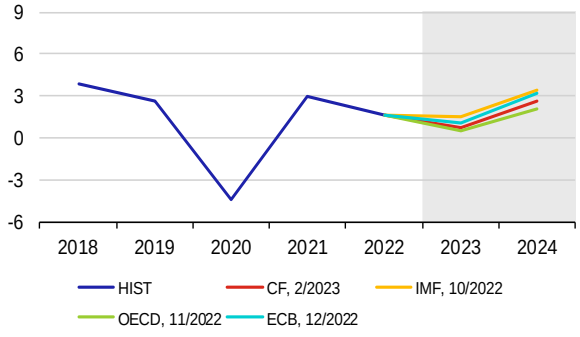
Inflation, %



	CF	IMF	OECD	ECB
2023	4.6	3.2	4.3	5.8
2024	2.3	1.6	2.3	3.6

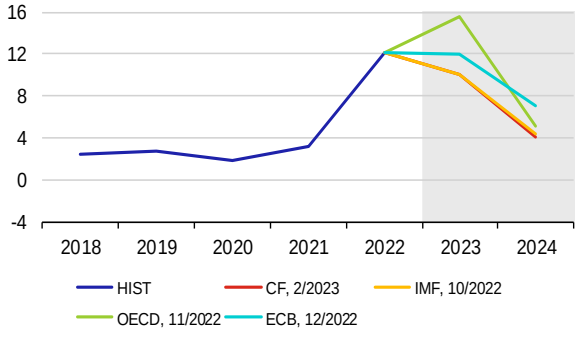
Slovakia

GDP growth, %



	CF	IMF	OECD	ECB
2023	0.7	1.5	0.5	1.1
2024	2.6	3.4	2.1	3.2

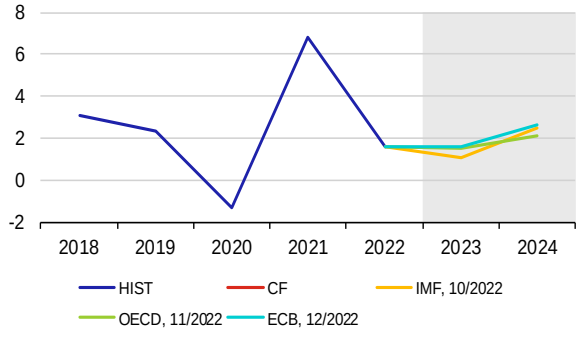
Inflation, %



	CF	IMF	OECD	ECB
2023	10.0	10.1	15.5	11.9
2024	4.1	4.4	5.1	7.0

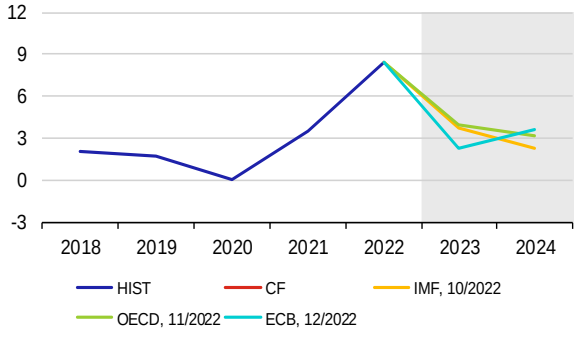
Luxembourg

GDP growth, %



	CF	IMF	OECD	ECB
2023	n. a.	1.1	1.5	1.6
2024	n. a.	2.5	2.1	2.6

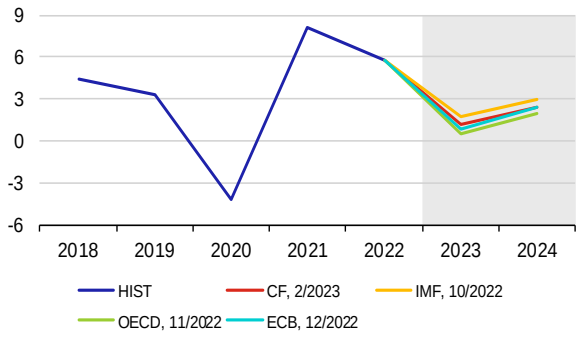
Inflation, %



	CF	IMF	OECD	ECB
2023	n. a.	3.7	4.0	2.3
2024	n. a.	2.3	3.2	3.6

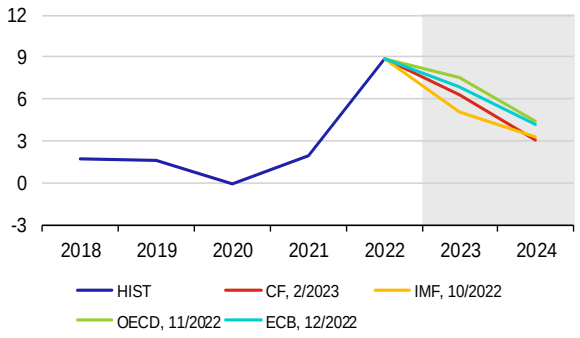
Slovenia

GDP growth, %



	CF	IMF	OECD	ECB
2023	1.2	1.7	0.5	0.8
2024	2.4	3.0	2.0	2.4

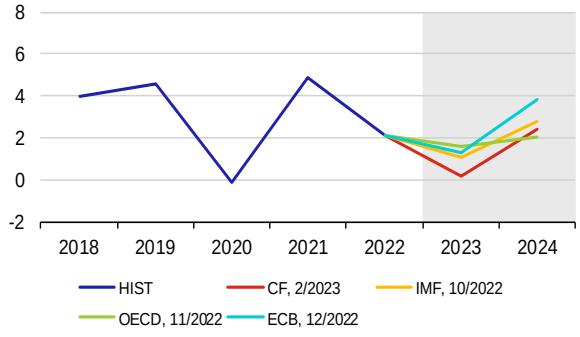
Inflation, %



	CF	IMF	OECD	ECB
2023	6.3	5.1	7.5	6.8
2024	3.1	3.3	4.4	4.2

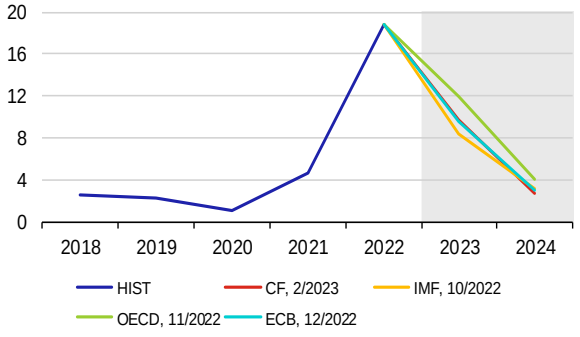
Lithuania

GDP growth, %



	CF	IMF	OECD	ECB
2023	0.2	1.1	1.6	1.3
2024	2.4	2.8	2.0	3.8

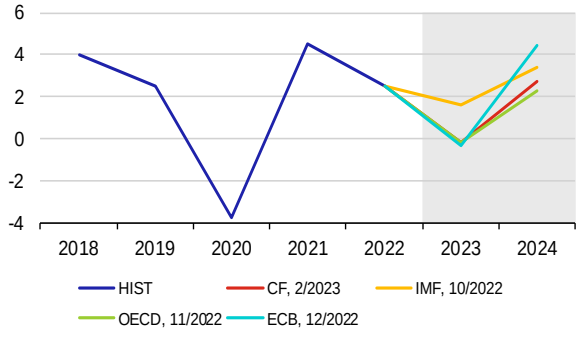
Inflation, %



	CF	IMF	OECD	ECB
2023	9.7	8.4	11.9	9.5
2024	2.7	3.2	4.0	3.0

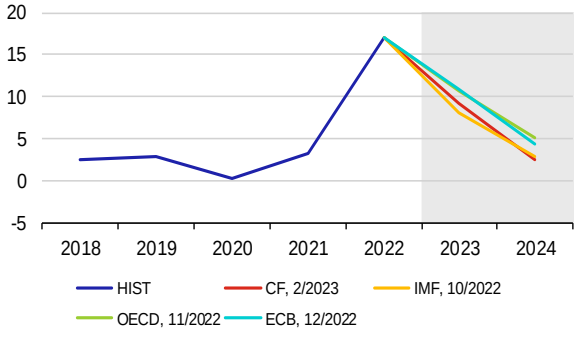
Latvia

GDP growth, %



	CF	IMF	OECD	ECB
2023	-0.2	1.6	-0.2	-0.3
2024	2.7	3.4	2.3	4.4

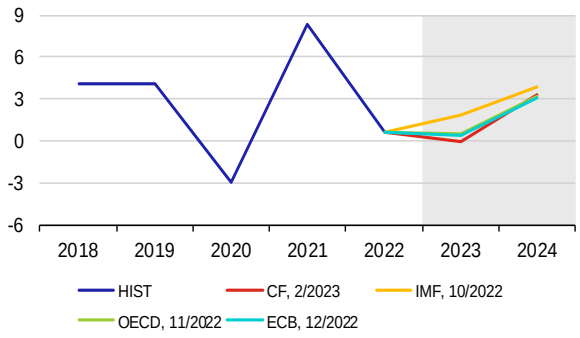
Inflation, %



	CF	IMF	OECD	ECB
2023	9.1	8.0	10.7	10.9
2024	2.5	2.9	5.0	4.4

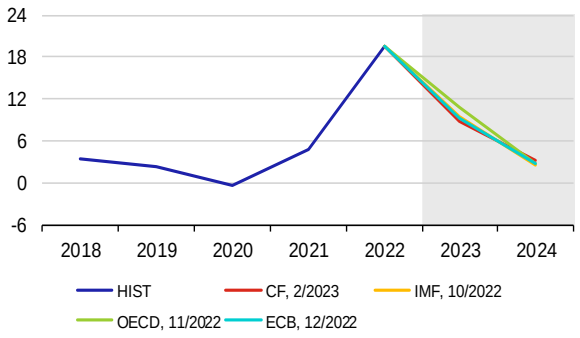
Estonia

GDP growth, %



	CF	IMF	OECD	ECB
2023	-0.1	1.8	0.5	0.4
2024	3.3	3.8	3.2	3.1

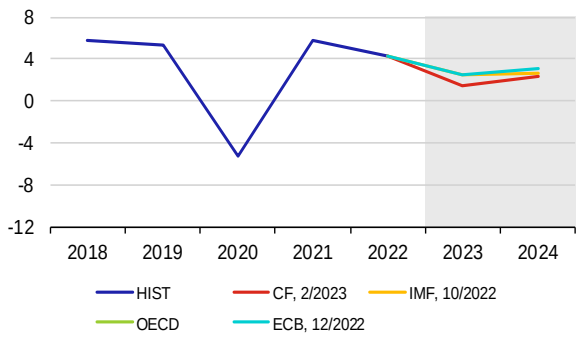
Inflation, %



	CF	IMF	OECD	ECB
2023	8.8	9.5	10.8	9.3
2024	3.1	2.5	2.8	2.8

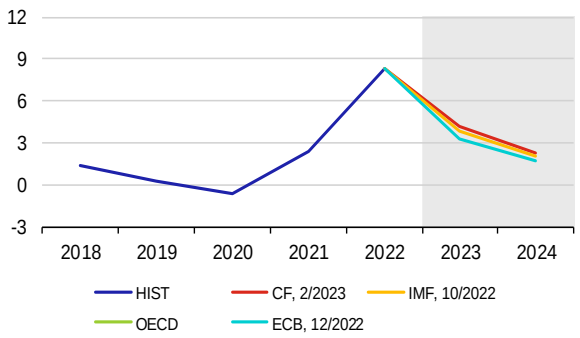
Cyprus

GDP growth, %



	CF	IMF	OECD	ECB
2023	1.4	2.5	n. a.	2.5
2024	2.4	2.6	n. a.	3.1

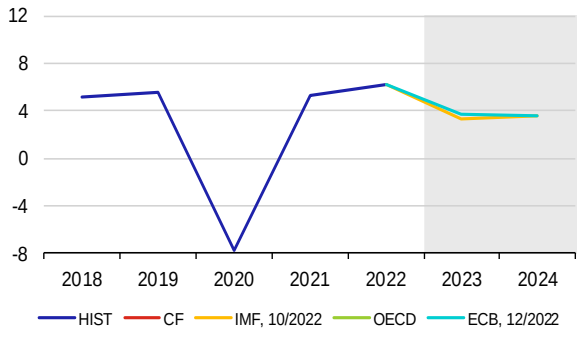
Inflation, %



	CF	IMF	OECD	ECB
2023	4.2	3.8	n. a.	3.3
2024	2.3	2.1	n. a.	1.7

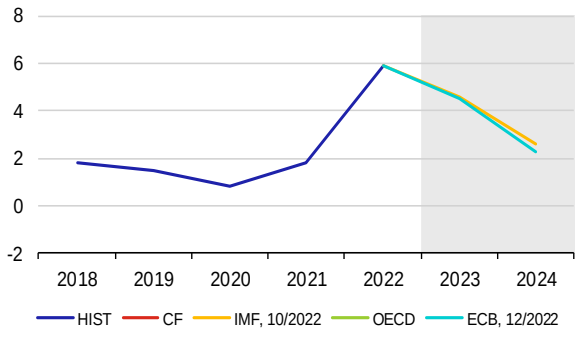
Malta

GDP growth, %



	CF	IMF	OECD	ECB
2023	n. a.	3.3	n. a.	3.7
2024	n. a.	3.6	n. a.	3.6

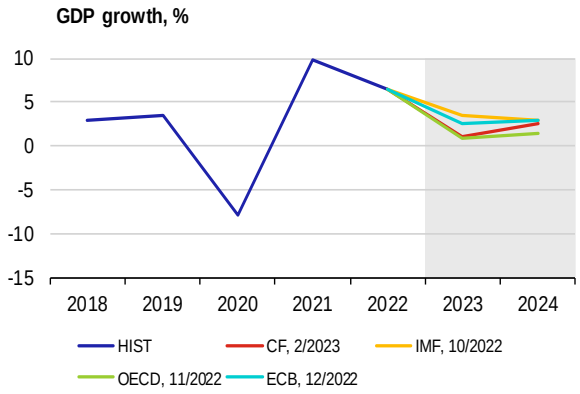
Inflation, %



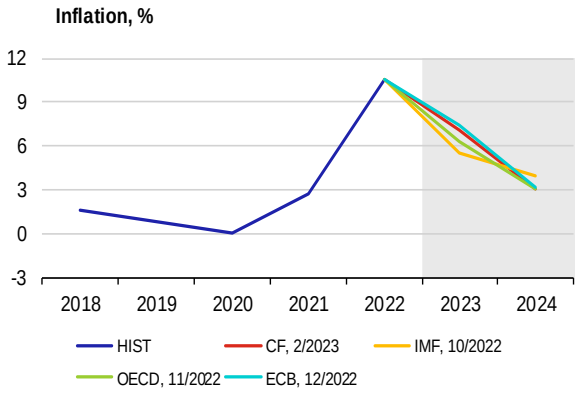
	CF	IMF	OECD	ECB
2023	n. a.	4.6	n. a.	4.5
2024	n. a.	2.6	n. a.	2.3

Ddd

Croatia



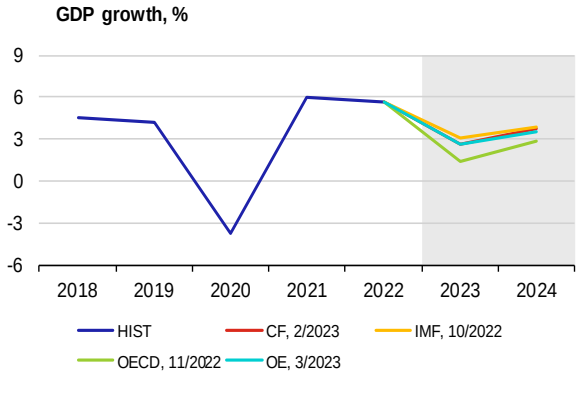
	CF	IMF	OECD	ECB
2023	1.1	3.5	0.8	2.5
2024	2.6	3.0	1.5	3.0



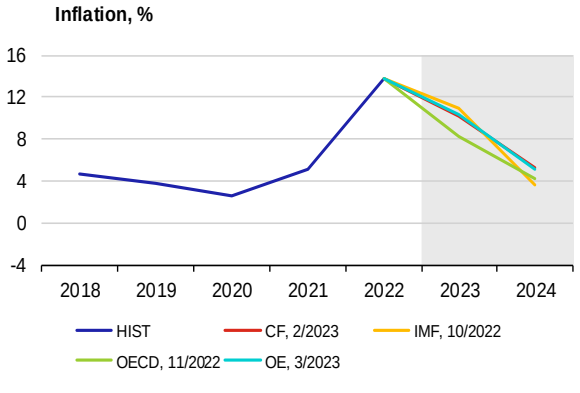
	CF	IMF	OECD	ECB
2023	7.1	5.5	6.3	7.4
2024	3.0	3.9	3.1	3.2

A5. GDP growth and inflation in other selected countries

Romania



	CF	IMF	OECD	OE
2023	2.6	3.1	1.4	2.6
2024	3.7	3.8	2.8	3.5



	CF	IMF	OECD	OE
2023	10.2	11.0	8.3	10.3
2024	5.2	3.6	4.2	5.1

A6. List of abbreviations

AT	Austria
bbl	barrel
BE	Belgium
BoE	Bank of England (the UK central bank)
BoJ	Bank of Japan (the central bank of Japan)
bp	basis point (one hundredth of a percentage point)
CB	central bank
CBR	Central Bank of Russia
CF	Consensus Forecasts
CN	China
CNB	Czech National Bank
CNY	Chinese renminbi
ConfB	Conference Board Consumer Confidence Index
CXN	Caixin
CY	Cyprus
DBB	Deutsche Bundesbank (the central bank of Germany)
DE	Germany
EA	euro area
ECB	European Central Bank
EE	Estonia
EIA	Energy Information Administration
ES	Spain
ESI	Economic Sentiment Indicator of the European Commission
EU	European Union
EUR	euro
EURIBOR	Euro Interbank Offered Rate
Fed	Federal Reserve System (the US central bank)
FI	Finland
FOMC	Federal Open Market Committee
FR	France
FRA	forward rate agreement
FY	fiscal year
GBP	pound sterling
GDP	gross domestic product
GR	Greece
HICP	Harmonised Index of Consumer Prices
HR	Croatia
ICE	Intercontinental Exchange
IE	Ireland
IEA	International Energy Agency
IFO	Leibniz Institute for Economic Research at the University of Munich
IMF	International Monetary Fund
IRS	Interest Rate swap
ISM	Institute for Supply Management
IT	Italy
JP	Japan
JPY	Japanese yen
LIBOR	London Interbank Offered Rate
LME	London Metal Exchange
LT	Lithuania
LU	Luxembourg
LV	Latvia
MKT	Markit
MNB	Magyar Nemzeti Bank (the central bank of Hungary)
MT	Malta
NBP	Narodowy Bank Polski (the central bank of Poland)
NIESR	National Institute of Economic and Social Research (UK)
NKI	Nikkei
NL	Netherlands
OE	Oxford Economics
OECD	Organisation for Economic Co-operation and Development
OECD-CLI	OECD Composite Leading Indicator
OPEC+	member countries of OPEC oil cartel and 10 other oil-exporting countries (the most important of which are Russia, Mexico and Kazakhstan)
PMI	Purchasing Managers' Index
pp	percentage point
PT	Portugal
RU	Russia
RUB	Russian rouble
SI	Slovenia
SK	Slovakia
SPF	Survey of Professional Forecasters
TTF	Title Transfer Facility (virtual trading point for natural gas in the Netherlands)
UK	United Kingdom
UoM	University of Michigan Consumer Sentiment Index - present situation
US	United States
USD	US dollar
WEO	World Economic Outlook
WTI	West Texas Intermediate (crude oil used as a benchmark in oil pricing)
ZEW	Centre for European Economic Research

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