

Global Economic Outlook

— June 2022



Foreword

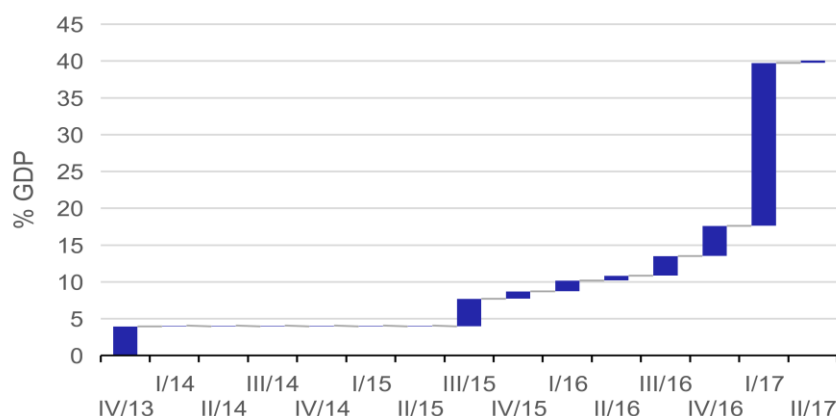
Dear Readers,

In this, my last month as Governor of the Czech National Bank, I would like to share with you my perspective on the three major events that occurred during my term of office. These were the exit from our exchange rate commitment in April 2017, the coronavirus pandemic that affected us profoundly for two years, and the war in Ukraine, which is unfortunately nowhere near its end. These events posed great challenges to our monetary policy decision-making and were related, to varying degrees, to the external environment, which is the focus of this publication.

A retrospective assessment of the exchange rate commitment announced in November 2013 shows that this unconventional monetary policy instrument served the purpose for which it was introduced: it fostered a faster recovery of the Czech economy and earlier fulfilment of our inflation target. In 2017 Q1, however, the central bank was faced with a massive inflow of speculative capital and a sharp increase in its balance sheet. Many voices at the time maintained that the situation was unsustainable and that we should exit the commitment before Q2 although we had previously stated that we would not. I am glad we did not succumb to these pressures and kept our promise. We thus confirmed our credibility with financial markets, which we had purposefully built over the years. We know that whenever we say something in the future, they will take us seriously because financial markets have a very good memory.



In 2017 Q1, we purchased the equivalent of roughly 22% of GDP in international reserves, i.e. more than over the entire previous duration of the exchange rate commitment



Source: CNB

Note: The chart shows the volume of the CNB's foreign exchange interventions relative to GDP in 2017 during the exchange rate commitment period, i.e. from 7 November 2013 to 6 April 2017.

The coronavirus pandemic came out of the blue in early 2020, plunging the global and domestic economies into uncharted territory. In a short period of time, the CNB significantly eased its monetary policy, which went hand in hand with a fiscal policy easing. Fiscal instruments proved better suited and better targeted to dampening the shock than broad-based monetary policy. Unfortunately, the degree of fiscal stimulation proved excessive and sparked demand-driven inflation. Strong domestic inflation pressures prompted us to tighten monetary policy rapidly in the second half of 2021. The main lesson was that optimal economic policy can only be achieved when fiscal and monetary policies act as complements rather than as substitutes. This does not change the fact that monetary policy is responsible for inflation, but we should bear in mind the importance of the whole-economy context in which it operates.

The outbreak of the war in Ukraine in late February 2022 came as a mental and geopolitical shock with far-reaching economic consequences of a stagflationary nature: an extreme rise in uncertainty dampened the post-Covid recovery, but inflation continued to accelerate owing to sharp increases in prices of commodities, energy, food and finished products. Persisting disruptions to global value chains led to a greater excess of demand over supply and a further increase in inflation pressures. We continued to further tighten monetary conditions to prevent an unanchoring of inflation expectations that could lead to an uncontrolled wage-price spiral. For the first time in the almost twenty-five years of inflation targeting, we raised interest rates in May 2022 knowing that we would only be able to return inflation to the target somewhat later than at the usual 18-month horizon. The ongoing external cost shock showed us that it would be too costly to strive to hit the inflation target over the standard monetary policy horizon. The inflation we are witnessing today would have been a nightmare for us a year ago. However, we have the instruments to tackle it and are not afraid to use them. In today's volatile world, this is one of the few certainties we have left.

Dear readers, these three events are already – and will no doubt continue to be – the subject of many historical analyses. I believe my brief retrospective suggests that recent years at the central bank have by no means been boring. You will find a more traditional and more technical evaluation of the performance of our forecasts last year in the *Focus* section. I hope this GEO issue will make for an inspiring read and this publication will remain an interesting source of information for you, as it has been for me over recent years.

Jiří Rusnok, CNB Governor

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Cut-off date for data

17 June 2022

CF survey date

13 June 2022

GEO publication date

24 June 2022

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

With no end in sight, Europe remains exposed to war, with lives still being lost... Ukraine is still bravely standing up to Russian aggression with material assistance from the West, while Russia is becoming increasingly isolated. Ukraine is likely to be granted EU candidate status soon. Sweden and Finland applied to join NATO on 18 May amid security concerns, taking a key step towards redrawing the security map of Europe. The ratification process in many NATO countries has already started, and hopes are high that NATO members, including Turkey, will quickly approve their accession.

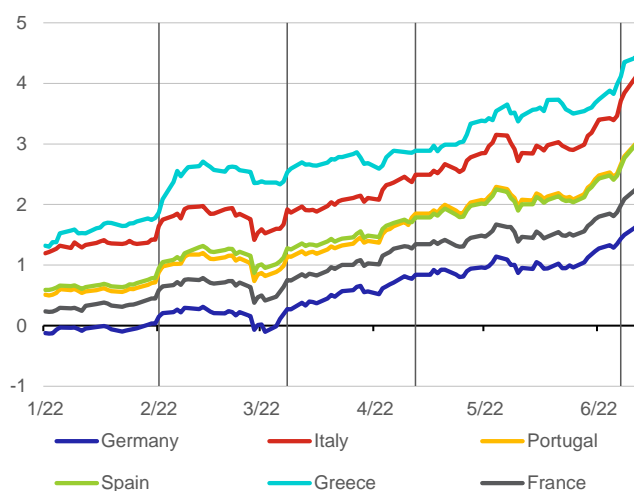
The economic impacts of the war in Ukraine will be staggering. EU countries, especially those most dependent on Russian commodities, are preparing for a potential sudden halt in gas supplies (in addition to the already approved shift away from Russian oil). Gas storage facilities are being filled at a solid pace, while intensive diplomatic talks with alternative suppliers are ongoing, but uncertainty is high and gas prices are rising. The global dimension of the war is being amplified by the dependence of many poor Asian and African countries on food supplies from Ukraine – “Europe’s granary” before the war. Ukraine is unable to export existing agricultural commodity stocks through blockaded Black Sea ports, instead using rail to a limited extent.

Inflation is at all-time highs. Supply factors keep pushing inflation up. Central banks are trying to put out the inflation fire, while accommodative fiscal policy and wage pressures are adding fuel to the fire. The Fed reacted with a sharp rate hike of 0.75 pp in June. The ECB, which has stood on the sidelines so far, announced the end of net asset purchases under the APP from 1 July and presented its plan to raise rates.

The chart in the current issue shows growth in government bond yields of selected euro area economies. It reveals that markets are responding sensitively to changes in the ECB’s communication, which has, since spring, been gradually preparing the public for the upcoming monetary policy tightening (starting with the end to asset purchases). Differences in yields are also growing (fragmentation), which led the ECB to hold an extraordinary meeting on 15 June. The ECB intends to tackle fragmentation by flexible reinvestment in the PEPP. It also announced the creation of a new tool which has calmed markets somewhat. It is clear that the fight against inflation by raising interest rates was postponed amid concerns about costlier funding of the indebted euro area economies.

The current issue also contains an analysis: [Annual assessment of the forecasts included in GEO](#). The article takes a look back at the outlooks presented in GEO last year and assesses how institutions succeeded in forecasting future developments. The analysis shows that, probably due to the initial shock of the Covid pandemic, outlooks for GDP growth tended to be pessimistic (lower than actual growth) and inflation was also underestimated.

Ten-year government bond yields in the euro area, in %



Source: Refinitiv
Note: The vertical lines indicate the ECB’s monetary policy meetings.

Barometr of Global Economic Outlook for selected countries

		EA	DE	US	UK	JP	CN	RU
GDP (%)	2022	2.8 ↗	1.8 ↘	2.6 ↘	3.5 ↘	1.7 ↘	4.3 ↘	-9.6 ↘
	2023	2.0 ↘	2.1 ↘	1.8 ↘	0.8 ↘	1.9 ↗	5.2 ↗	-1.2 ↘
Inflation (%)	2022	7.2 ↗	6.9 ↗	7.7 ↗	8.5 ↗	1.9 ↗	2.3 ↗	20.9 ↘
	2023	3.2 ↗	3.4 ↗	3.6 ↗	5.2 ↗	1.2 ↗	2.3 ↗	7.7 ↘
Unemployment (%)	2022	6.9 ↘	5.0 ↗	3.6 ↗	3.9 ↘	2.6 ↘	3.4 ↗	5.0 ↘
	2023	6.8 ↗	4.9 ↗	3.8 ↗	3.9 ↘	2.5 ↘	3.3 ↗	6.3 ↘
Exchange rate (against USD)	2022	1.09 ↘	1.09 ↘		1.28 ↘	125.7 ↗	6.72 ↗	74.1 ↘
	2023	1.13 ↘	1.13 ↘		1.33 ↘	122.9 ↗	6.63 ↗	81.3 ↘

Source: Consensus Forecasts (CF)

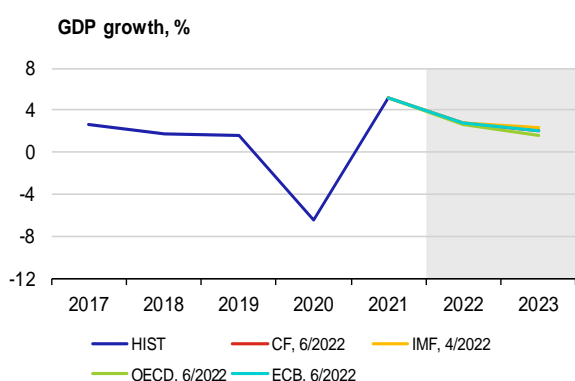
Note: The arrows indicate the direction of the revisions compared with the last GEO.

II.1 Euro area

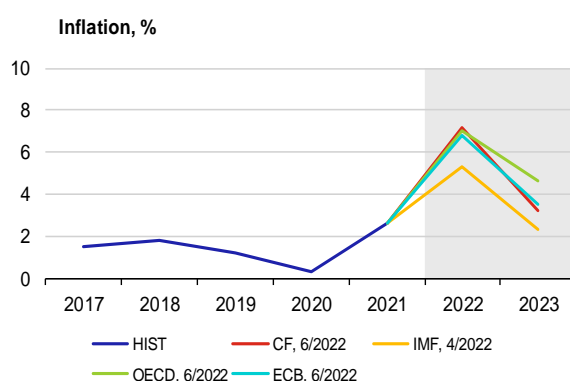
The euro area economy grew only slightly in 2022 Q1, due to a short wave of the pandemic and the Russian invasion of Ukraine. GDP rose by 0.6% quarter on quarter. A drop in household and government consumption was more than offset by growth in inventories and net exports. Higher additions to inventories were probably linked to persisting complications in supply chains. A drop in GDP in France (-0.2%) was accompanied by growth in Spain (+0.3%) and Germany (+0.2%). Of the medium-sized economies, Ireland, Portugal and Austria recorded brisk growth. The Italian economy was broadly flat quarter on quarter. As more detailed data suggest, pandemic restrictions caused the largest fall in household consumption in Spain, France and Italy. In year-on-year terms, euro area GDP rose by 5.4%. Industrial production increased slightly in April following a sharper drop in March. Industry grew in Spain, Italy and Germany, and stagnated in France. However, the May PMI for manufacturing is indicating a worsening of the situation. Companies continue to face problems with supplies of materials and components and weakening demand, which is being redirected into the services sector as consumers increase their spending, especially on travel.

Inflation pressures in the euro area remain significant, with inflation growing to 8.1% in May. Although the surge in energy commodity prices after the outbreak of the war later corrected and many countries implemented measures to combat energy poverty, energy prices accounted for more than half of headline inflation. Moreover, the high core prices reflect supply chain difficulties, second-round effects of the energy shock and a depreciating euro. Inflation is also a great cause for concern for ECB representatives. The ECB announced in June that it would raise its key interest rates in July, and also had to take extraordinary action to respond to the increase in government bond yield spreads in more indebted countries (see this issue's chart).

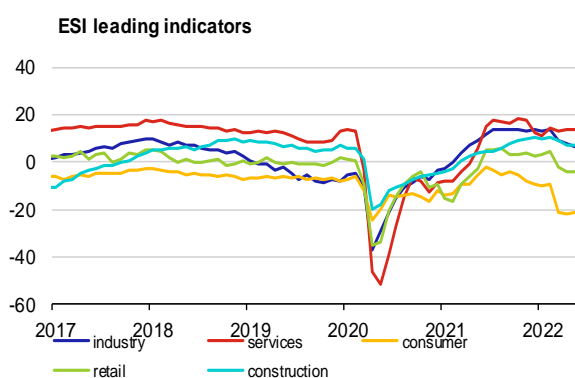
The June CF was again characterised by higher expected euro area inflation and a broadly unchanged GDP growth outlook. The analysts expect the rate on the main refinancing operations to reach 0.75% in September and increase further to 1.5% by March next year.



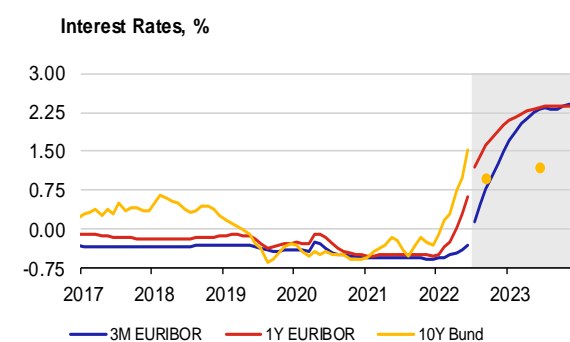
	CF	IMF	OECD	ECB
2022	2.8	2.8	2.6	2.8
2023	2.0	2.3	1.6	2.1



	CF	IMF	OECD	ECB
2022	7.2	5.3	7.0	6.8
2023	3.2	2.3	4.6	3.5



	industry	services	consum.	retail	constr.
3/22	9.0	13.0	-21.5	-2.0	9.0
4/22	7.7	13.6	-22.0	-3.9	7
5/22	6.3	14.0	-21.1	-4.0	7.2



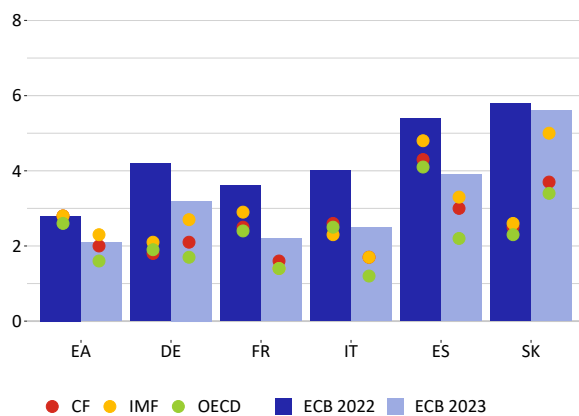
	5/22	6/22	9/22	6/23
3M EURIBOR	-0.39	-0.30	0.77	2.31
1Y EURIBOR	0.29	0.64	1.61	2.35
10Y Bund	1.00	1.53	1.00	1.20

II.2 Germany

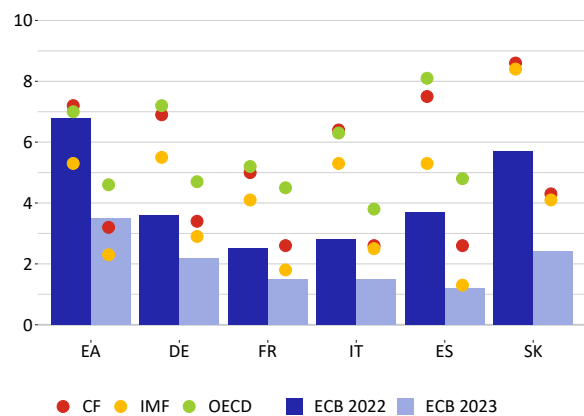
The German economy recorded only moderate growth in 2022 Q1 following a drop at the end of last year, and its outlooks for Q2 have deteriorated. GDP grew by 0.2% quarter on quarter and 3.8% year on year at the start of this year. However, it is still below the pre-pandemic level. Both household and government consumption were broadly flat at the start of 2022. At the same time, exports declined, while gross fixed capital formation increased. The sharp fall in German industry (of 4.5% month on month) in March was followed by a partial correction (growth of 1.3%) in April. In addition to sanctions against Russia and the instant impact of high energy prices, corporate activity was also dampened by Covid lockdowns in China. The short-term outlook for the German economy is not very encouraging. Orders in industry fell for the third month in a row in April (this time by 2.7% month on month). The drop in the car industry alone was as high as 8.6%. Moreover, exports declined month on month in the same month, with those to China seeing the largest drop (of 21.1%). The May PMI for manufacturing, which was at roughly the same level as in April (a 20-month low), is not optimistic either. Retail sales fell by 5.4% month on month in April. High price growth is affecting German consumers, with inflation in Germany growing to 8.7% in May. Core inflation was 4% and energy prices rose by 37.5%. As the risk of a complete halt in natural gas supplies has partially materialised after Russia cut its supplies from mid-June, the German government has called on citizens to limit their use of gas. The Bundesbank has estimated the potential impact at as much as -5% of GDP this year.

CF analysts have again lowered their outlook for German economic growth and revised expected inflation upwards. GDP growth will thus stay below 2% this year and accelerate only slightly to 2.1% next year, while average inflation is expected to reach 6.9% this year and slow to 3.4% in 2023. The ten-year German government bond yield rose to 1.7% in mid-June.

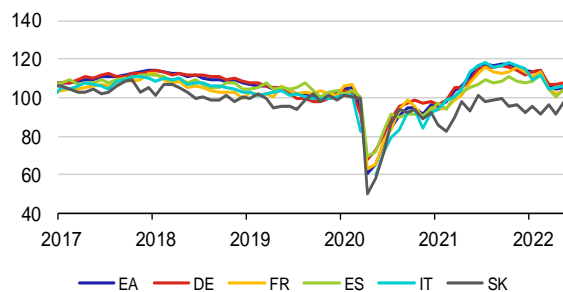
GDP growth in selected euro area countries in 2022 and 2023, %



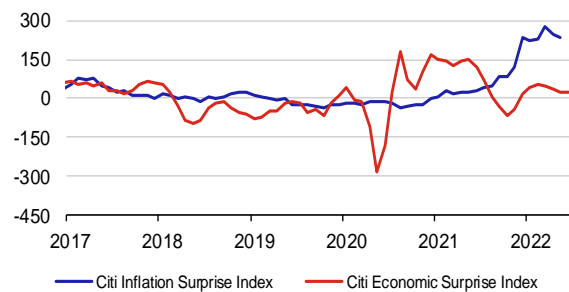
Inflation in selected euro area countries in 2022 and 2023, %



ESI leading indicators



Economic and inflation surprises in the euro area, %



	EA	DE	FR	ES	IT	SK
3/22	106.5	107.3	104.1	104.7	104.3	96.4
4/22	104.9	107.2	102.2	100.2	105.5	91.3
5/22	105.0	107.4	103.7	104.3	106.3	98.2

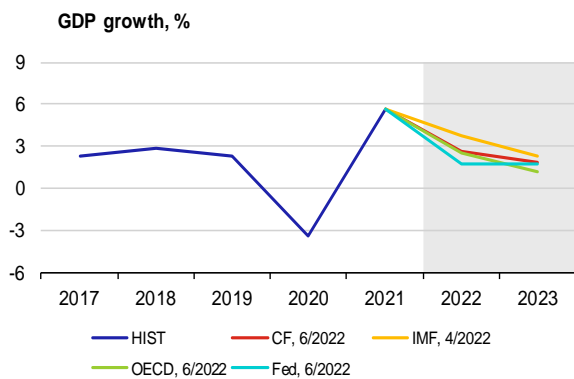
Inflation expectations based on 5 year inflation swap and SPF

	5y5y	SPF
4/22	2.37	2.05
5/22	2.24	2.05
6/22	2.21	2.05

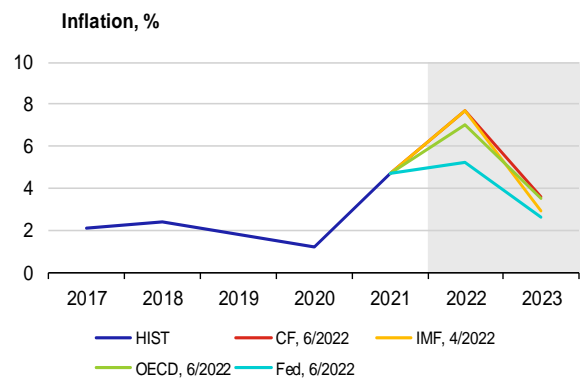
II.3 United States

The current outlook for US economic growth has decreased again, while the inflation outlook continues to rise. The new CF expects real GDP to grow by 2.6% this year. GDP growth is revised downwards regularly each month. The GDP growth outlook for next year has also been lowered (to 1.8%). Still, this is the most optimistic outlook, as the OECD now expects the economy to grow by 2.5% this year and just 1.2% next year. In its new forecast, the Fed expects only 1.7% growth this year. The CF inflation outlook has jumped to 7.7% for 2022 and to 3.6% for 2023. The OECD is more optimistic, predicting inflation of 7% this year and 3.5% next year. Annual consumer price inflation reached 8.6% in May. This was due mainly to continued growth in prices of energy (34.6%), food (10.1%) and services (5.2%). Industrial producer prices also keep rising (10.7%) and the growth in prices of finished products continues to accelerate (16.4%). May's labour market figures are still signalling tightness. A total of 390,000 jobs were created and the unemployment rate stays low at 3.6% for the third month in a row. Retail sales fell slightly in May (by 0.3% month on month). Leading indicators for companies are still optimistic, as the services PMI remains in the expansion band (53.4) and the manufacturing PMI is even slightly higher (57). However, consumer confidence has fallen.

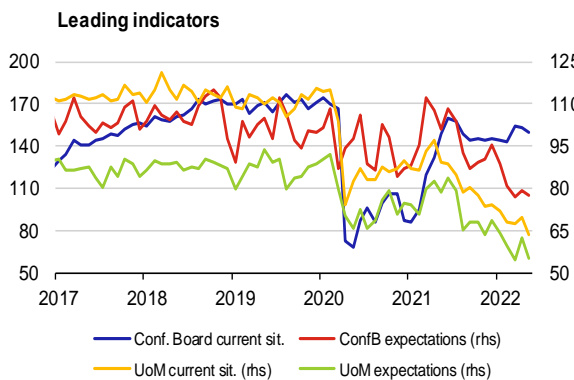
The Fed raised rates by 0.75 pp in June, the highest increase since 1992. Fed Chair Jerome Powell emphasised that rates should go up further at the July meeting. The Fed's new forecast expects inflation at 5.2% this year, thus believing its potential. The forecast also indicates that rates should rise from their current level (a range of 1.50%–1.75%) to above 3% this year. The US dollar maintains a strong position against the euro. Although outlooks expect it to depreciate, the current approach to monetary policy in both regions suggest that this will not happen any time soon.



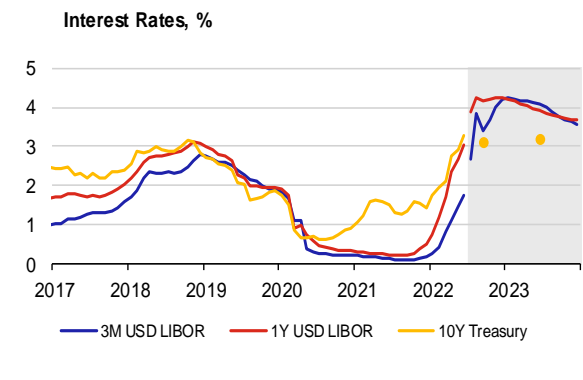
	CF	IMF	OECD	Fed
2022	2.6	3.7	2.5	1.7
2023	1.8	2.3	1.2	1.7



	CF	IMF	OECD	Fed
2022	7.7	7.7	7.0	5.2
2023	3.6	2.9	3.5	2.6



	ConfB curr.	ConfB exp.	UoM curr.	UoM exp.
4/22	152.9	79.0	69.4	62.5
5/22	149.6	77.5	63.3	55.2
6/22			55.4	46.8



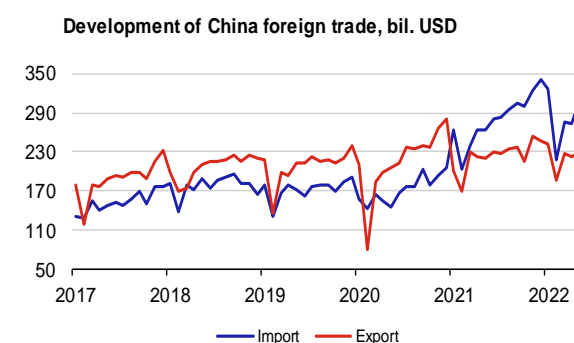
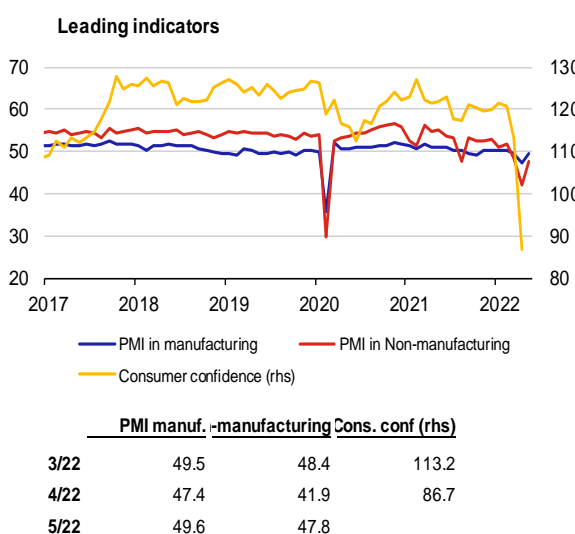
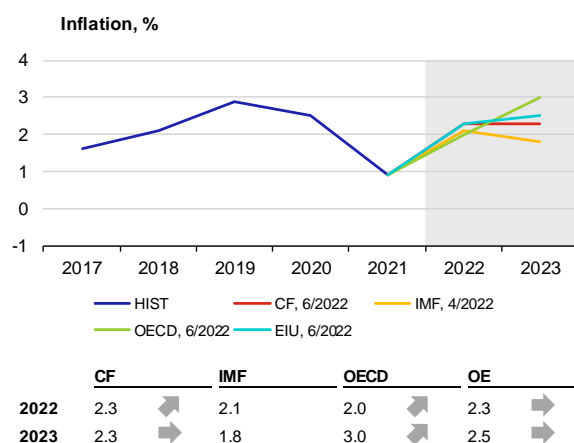
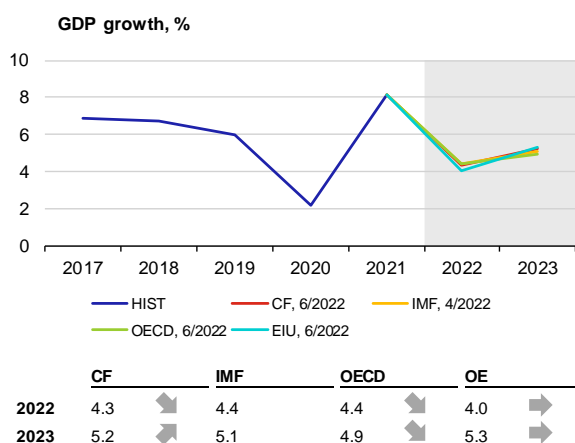
	5/22	6/22	9/22	6/23
USD LIBOR 3M	1.47	1.75	3.42	4.09
USD LIBOR 1R	2.68	2.68	4.16	3.91
Treasury 10R	2.90	3.26	3.10	3.20

II.4 China

Following a sizeable downturn in the Chinese economy in April, reflecting extensive restrictions in response to the largest Covid-19 wave hitting the country so far, the May data indicated noticeable improvements. Shanghai and Beijing, China’s two largest cities in terms of GDP – which were shut down in April and May, with only some large companies allowed to operate – started to reopen on a large scale in early June. However, some plants started to gradually resume production in May, which helped to ease tensions in supply chains not just in China, but also globally. The unemployment rate in China’s 31 largest cities grew further to a record 6.9% in May. Industrial production rose slightly year on year (by 0.7%) in May following a significant drop in April (of 2.9%), the sharpest fall since spring 2020. Retail sales fell by as much as 11.1% in April; this decline only slowed in May, falling by 6.7% year on year. The lifting of lockdowns of key Chinese ports was reflected in a sharp increase in exports, which rose by 16.9% year on year in May. Imports also recovered after a slight drop in the previous two months, rising by 4.1%.

Growth in economic activity is not expected to pick up more significantly until the second half of this year, due mainly to aggressive monetary and fiscal stimuli. These are expected to include, for example, a further lowering of interest rates, assistance in loan provision, significant growth in public investment and extended tax relief. According to the CF analysts’ June outlook, the Chinese economy will grow by 4.3% year on year in 2022 and by 5.2% in 2023. The risks are tilted towards slower growth. In addition to weaker external demand and ongoing stress in the Chinese property market with potential broader implications for the entire economy, the slowdown would be caused by the re-emergence of new, highly contagious Covid-19 variants, which would reduce the overall effectiveness of policy support measures.

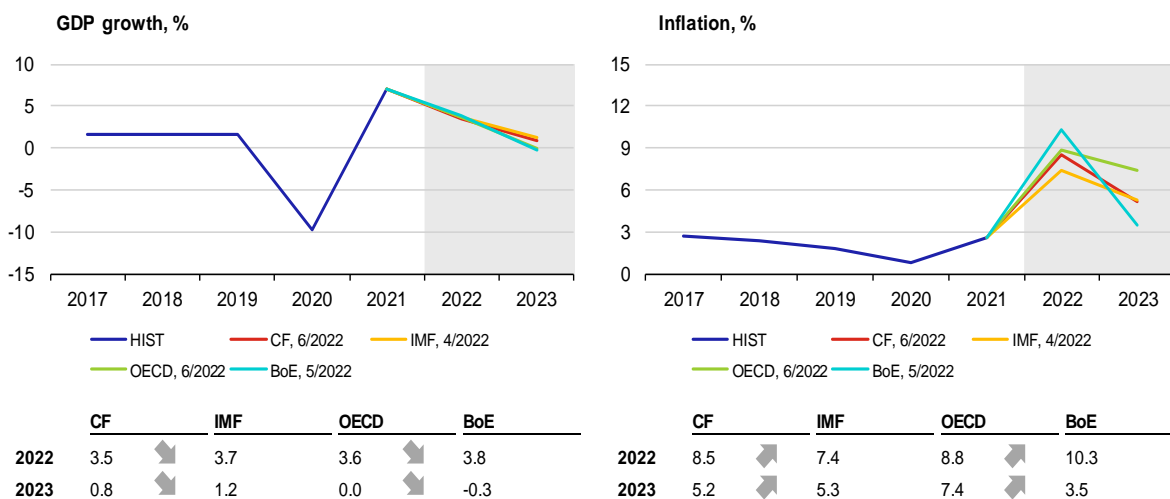
As in the previous month, consumer prices grew by 2.1% year on year in May, the biggest rise since November 2021. In addition to continued growth in energy and food prices, inflation also increased due to a significant weakening of the renminbi against the US dollar. According to CF, consumer prices will grow by 2.3% on average this year and the next.



Source: Bloomberg

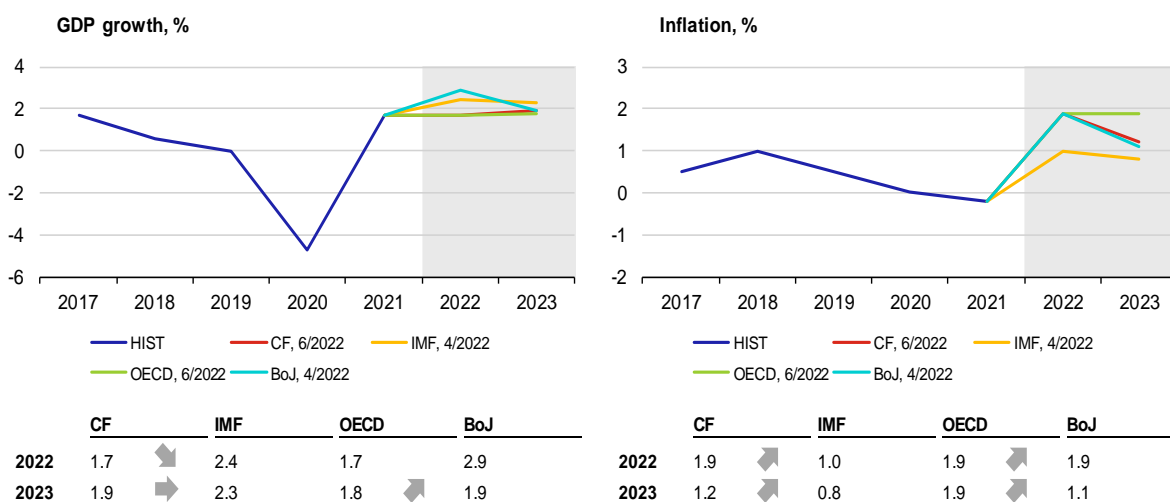
II.5 United Kingdom

The BoE raised the key interest rate by 0.25 pp to 1.25% in June against a backdrop of weakening growth outlooks and rising inflation. The new OECD and CF forecasts point to lower economic growth both this year (around 3.5%) and the next (up to 1%). At the same time, year-on-year inflation reached 9% in April (a 40-year high), further exacerbating the cost of living crisis. Finance Minister Rishi Sunak has introduced additional support of GBP 15 billion to help ease the crisis. However, in addition to weaker consumer confidence, business confidence is also beginning to wane. The composite PMI fell sharply to 53.1 in May as a result of higher inflation pressures and increased geopolitical uncertainty. On the political scene, UK Prime Minister Boris Johnson survived a vote of no-confidence and will remain in office. Johnson has faced criticism over “Partygate” affair and the complicated post-Brexit situation in Northern Ireland. Following London’s plan to unilaterally amend the Northern Ireland Protocol, the EC has taken legal action against the UK but still sees room for a dialogue.



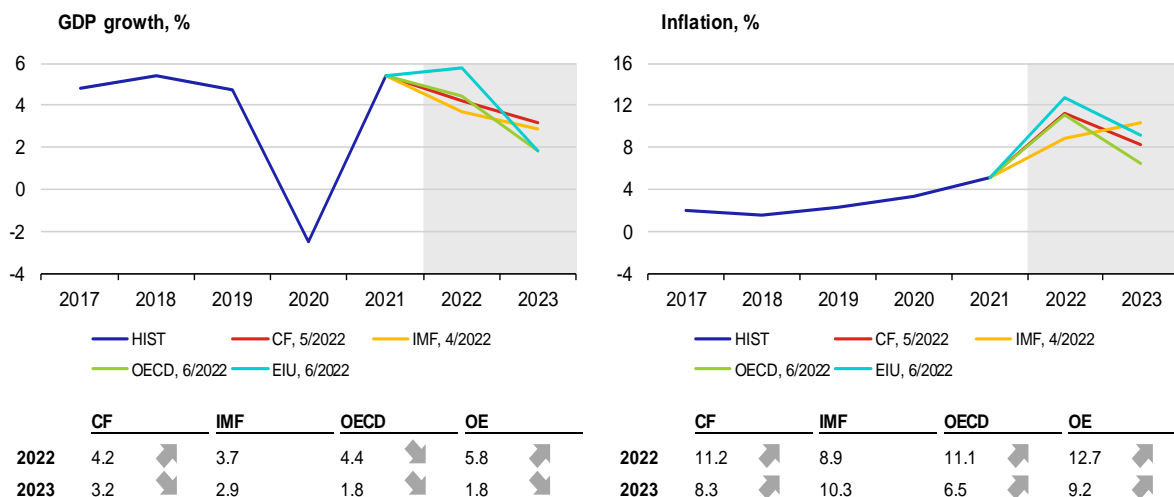
II.6 Japan

The Japanese economy declined in Q1 due to Covid restrictions and growing commodity prices after the Russian invasion of Ukraine. The quarter-on-quarter GDP drop of 0.1% was due mainly to lower investment and net exports, while household and particularly government consumption increased. Unlike most other advanced countries, the Japanese economy has not yet returned to the pre-pandemic level but is projected to do so in the second half of the year. The April inflation rate of 2.4% exceeded the BoJ’s target, but after adjusting for energy and food prices it remains below 1%. Moreover, the April figure was affected by base effects, which no longer included the effect of last year’s reduction in mobile tariffs. June’s leading indicators of economic activity remained in a band indicating improvement. However, volatility on financial markets has surged – currency derivatives are volatile, bond spreads are growing and, as in Europe and the USA, stock prices are falling.



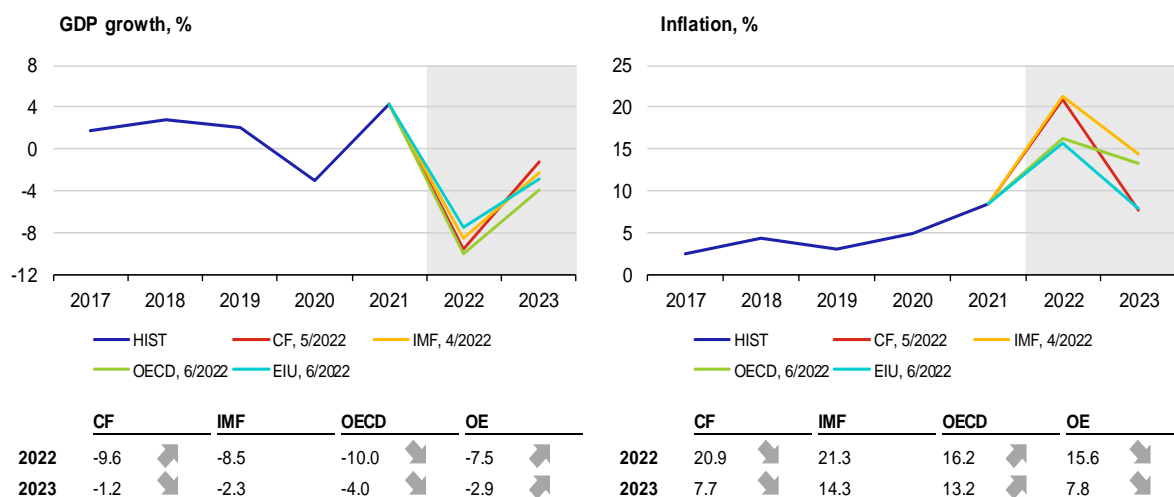
II.7 Russia

Despite high inflation, the Russian central bank continues to cut monetary policy rates sharply. Inflation slowed somewhat to 17.1% in May from its peak in April (17.8%). Over the last three months, annual consumer price inflation has roughly doubled compared to January and February 2022. On the other hand, the key interest rate has returned to 9.5% in the past two months, where it last stood in mid-February 2022. However, in addition to the control of capital flows, economic activity cooled compared to the start of the year. The PMI index is gradually recovering from the fall in March, but remains in the economic contraction band in May. Following more than a year of growth, industrial production declined year on year in April (down by 1.6%), with retail sales falling by almost 10%. Retail sales in May were also weaker year on year and car sales have been falling for the third consecutive month. Based on the available data, the number of cars sold fell to a historical low in May.



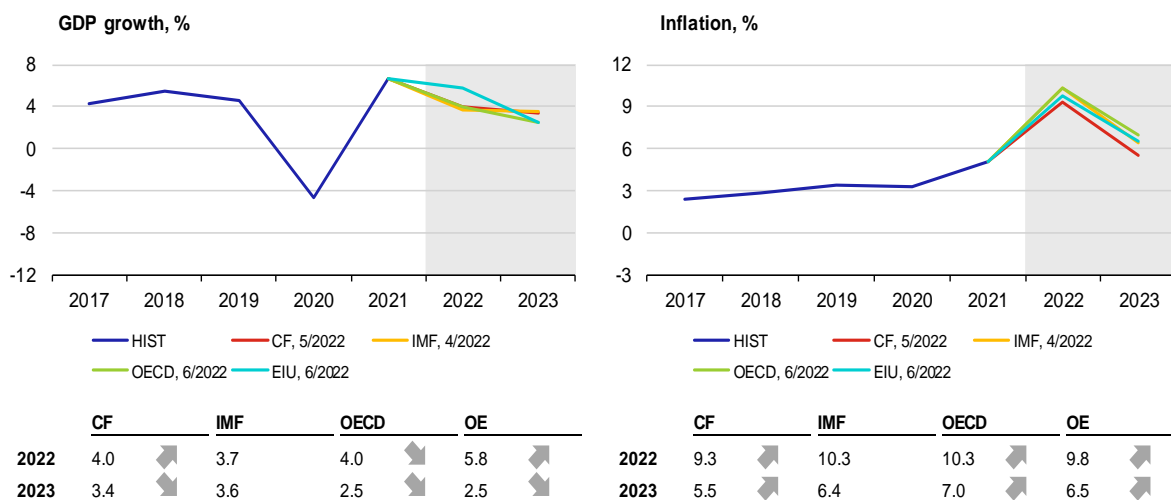
II.8 Poland

Annual growth in Polish GDP picked up to 8.5% in Q1, from 7.6% in 2021 Q4, and was thus in line with market expectations. Polish inflation also continues to break historical records. Annual consumer price inflation accelerated again in May (to 13.9%, up from 12.4% in April), due largely to a surge in global commodity prices caused by the war in Ukraine. At its meeting on 8 June, the Monetary Policy Council of the Polish central bank decided to again raise interest rates (from 5.25% to 6%). The labour market recorded a further decrease in unemployment to 5.2% in April (from 5.4% in March). Annual wage growth in the corporate sector reached a record-high of 14.1% compared to 12.4% in March. On the other hand, consumer confidence in the Polish economy remains at historical lows and the business confidence survey is also extremely pessimistic.



II.9 Hungary

Annual growth in GDP in Hungary accelerated to 8.2% in Q1 from 7.1% in 2021 Q4, which was higher than market expectations (6.9%). Annual consumer price inflation also picked up in May, to 10.7% from 9.5% in April, with core inflation increasing to 12.2%. The Hungarian labour market recorded a further decrease in unemployment to 3.5% in April (from 3.8% in March). At its meeting on 31 May, the Monetary Council of the Hungarian central bank (MNB) therefore decided to increase the key interest rate for the twelfth consecutive time, this time by 0.5 pp, from 5.4% to 5.9%, which was slightly below the increase of 0.6 pp expected by the market. By doing so, the MNB aims to limit rising inflation pressures and a weakening forint as a result of shocks to the supply of commodities. Annual industrial production growth slowed in April (to 3.1% compared to 3.6% in March). According to GKI Economic Research, business confidence in the Hungarian economy decreased to 6.9 in May from 10.5 in April.

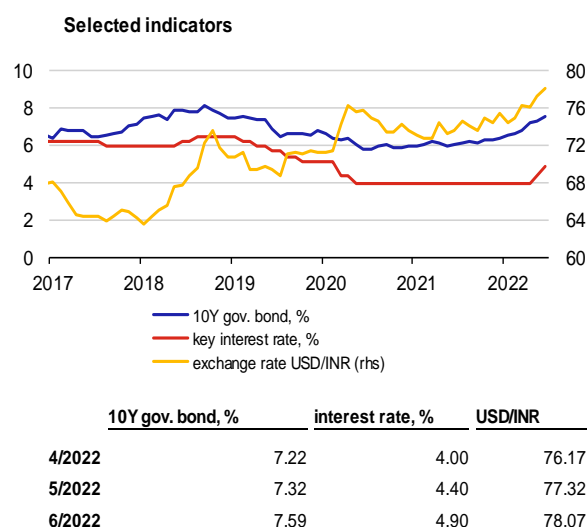
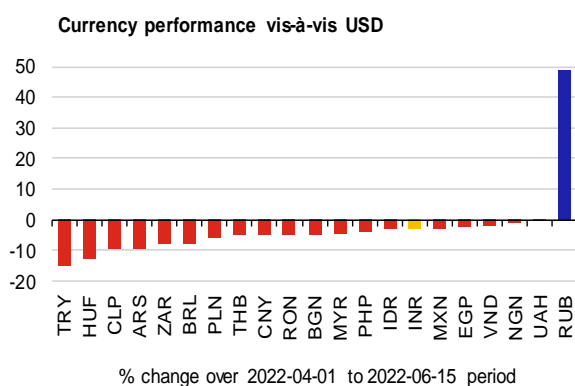
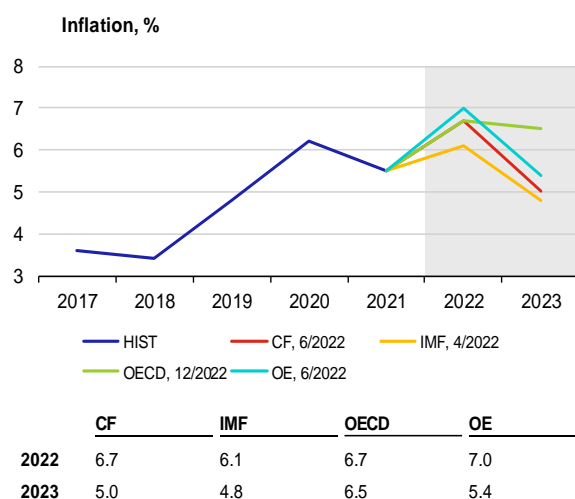
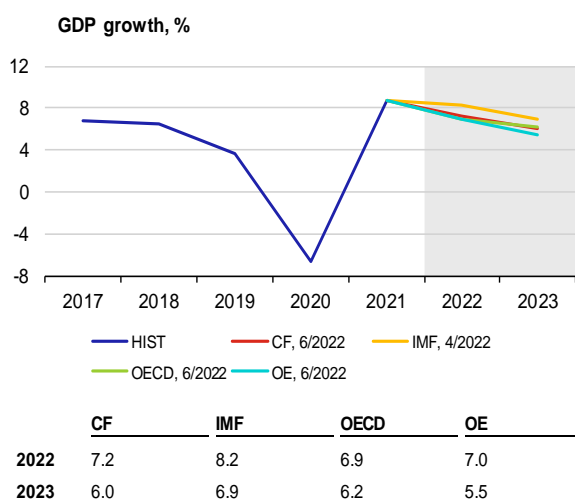


II.10 Countries in the spotlight – India

In May, India contributed to the global food crisis by banning wheat exports. The second largest global wheat producer promised in April that it would release part of its extensive stocks to global markets to mitigate the shortage of Ukrainian wheat. However, heat waves reduced estimates of this year's domestic production and the government dramatically reversed its position by imposing an export embargo, under which all exports require permission from the government. As a result, prices of wheat on global commodity exchanges rose by more than 6%, with the total increase exceeding 60% since the start of the Russian invasion of Ukraine. Emerging economies in Africa and the Middle East are particularly vulnerable to food shortages.

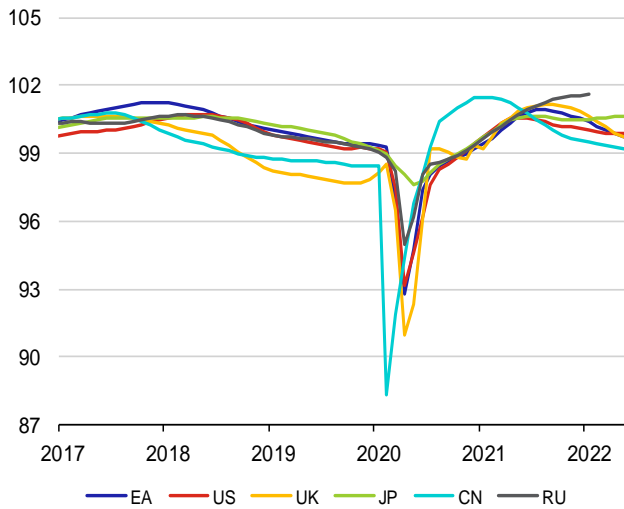
The response of Indian monetary policy to growth in inflation has been rather cautious so far. Having reached an eight-year high of 7.8% in April, consumer price inflation slowed slightly to 7% in May. Inflation also slowed due to a reduction in the excise duty on fuels and the introduction of export restrictions on certain foods. Even so, price growth remains above the upper boundary of the Reserve Bank of India's (RBI) tolerance band. The RBI started to gradually increase monetary policy rates in May, which combined with the meeting in June, rose by 0.9 pp to the current 4.9%. Although the RBI announced a further increase, it has so far withstood the calls for a more aggressive tightening, emphasising that the inflation pressures are largely due to growth in global commodity prices, which it cannot influence.

India is negotiating trade deals with the EU and the United Kingdom, but mutual relations are being worsened by India's stance on Russian aggression in Ukraine. The UK aims to conclude a comprehensive trade agreement with India in October 2022. Another round of negotiations with the EU is also planned. However, diplomatic relations are deteriorating due to India's geopolitical stance. India has refused to condemn Russia's invasion of Ukraine, abstained from a key UN vote and started to purchase large volumes of Russian Urals oil, which is currently trading much more cheaply than Brent oil.

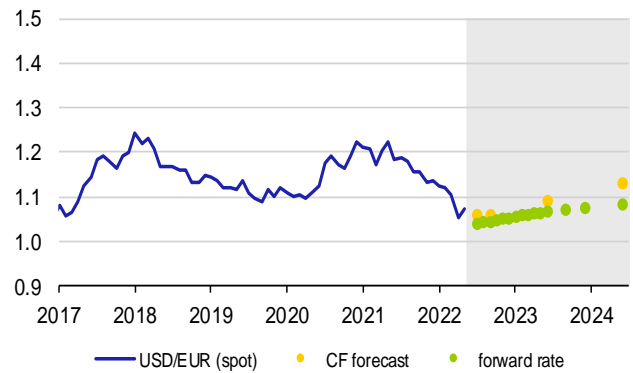


III. Leading indicators and outlook of exchange rates

OECD Composite Leading Indicator

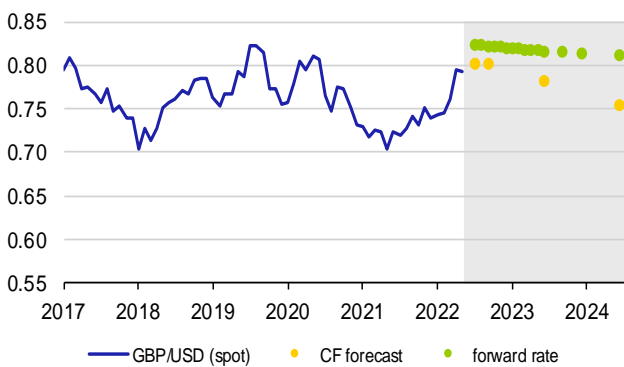


The US dollar (USD/EUR)



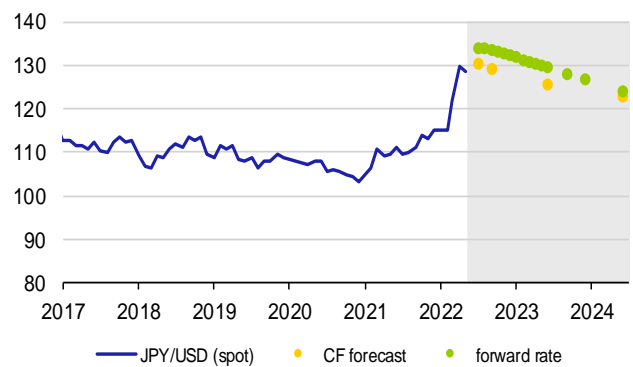
	13/6/22	7/22	9/22	6/23	6/24
spot rate	1.046				
CF forecast		1.060	1.063	1.094	1.132
forward rate		1.043	1.047	1.069	1.086

The British pound (GBP/USD)



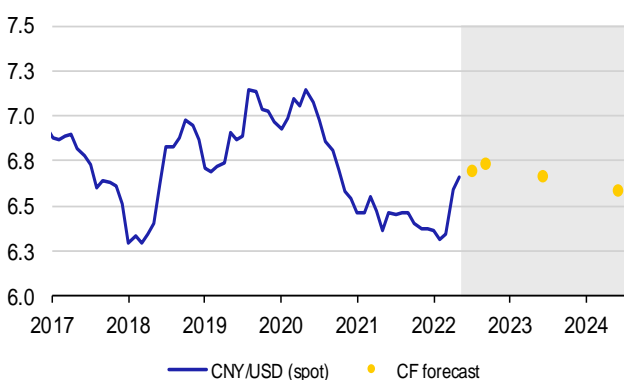
	13/6/22	7/22	9/22	6/23	6/24
spot rate	0.824				
CF forecast		0.803	0.802	0.782	0.755
forward rate		0.824	0.823	0.817	0.812

The Japanese yen (JPY/USD)



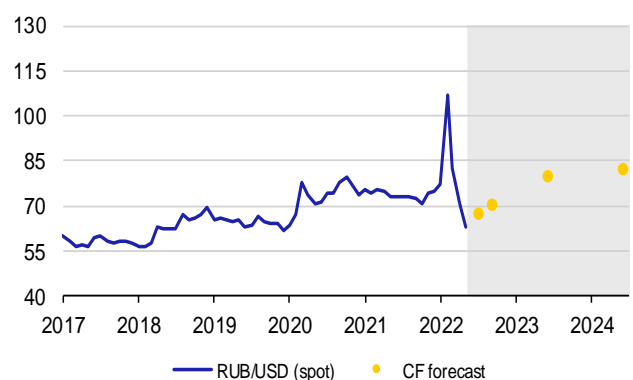
	13/6/22	7/22	9/22	6/23	6/24
spot rate	133.9				
CF forecast		130.4	129.5	125.7	122.9
forward rate		134.2	133.7	129.5	124.1

The Chinese renminbi (CNY/USD)



	13/6/22	7/22	9/22	6/23	6/24
spot rate	6.757				
CF forecast		6.702	6.744	6.668	6.588

The Russian rouble (RUB/USD)



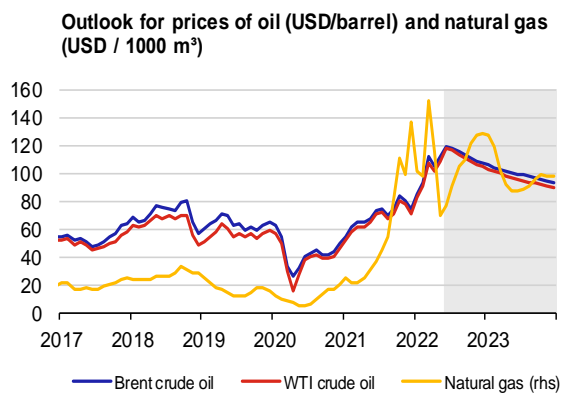
	13/6/22	7/22	9/22	6/23	6/24
spot rate	57.78				
CF forecast		68.03	71.01	80.13	82.46

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.

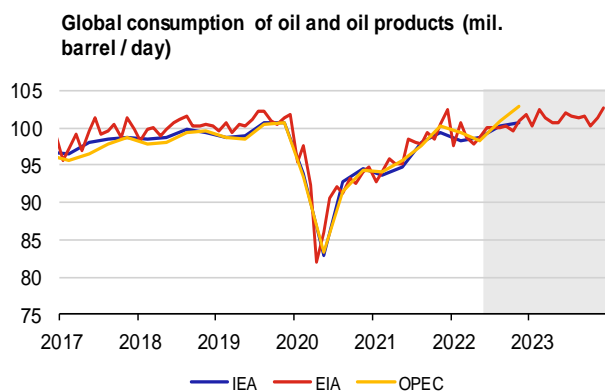
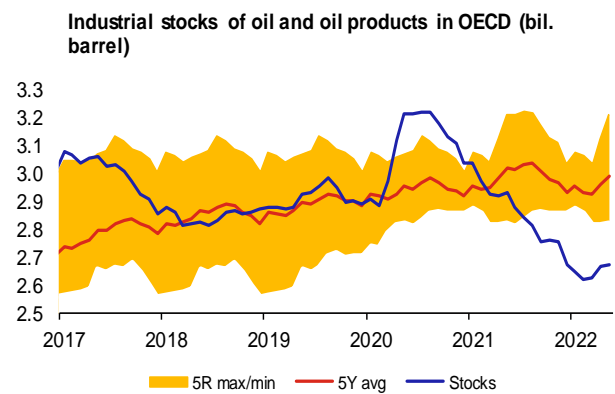
IV.1 Oil

The Brent oil price surged in the second half of May and has stood at around USD 120/bbl since early June. This is due mainly to European Union sanctions on exports of Russian oil and fuels by sea to the EU, which should be introduced within 6–8 months. It was also affected by expected growth in demand in China in connection with the relaxation of anti-epidemic measures and production shortfalls in Libya due to heightened political tensions. By contrast, OPEC+’s plan to increase production in the summer months did not calm the market. The situation, mainly on the physical oil market, is extremely tense, as demand from refineries – which have completed their seasonal maintenance and are increasing their production – has surged. However, the situation in the fuel market is even more critical. Some refineries were closed permanently during the pandemic due to insufficient demand and their capacity is currently missing from the market. (According to Goldman Sachs analysts, there is spare production capacity only in China and Russia). In addition, wholesale fuel prices and prices at filling stations include high refining margins and a risk premium due to low global fuel and the war in Ukraine. The further rapid rise in oil prices should be counteracted by aggressive interest rate increases in the USA, which should cool the US economy and hence oil demand. A strong dollar also traditionally fosters lower oil prices.

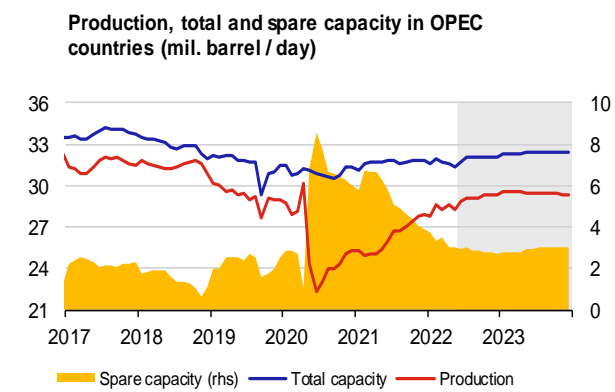
The market curve shifted upwards significantly in mid-June compared with the previous month, but is signalling a fairly strong decline in the Brent oil price to USD 108/bbl at the close of 2022 and USD 94/bbl at the end of 2023. In line with the market curve, the June CF outlook forecasts USD 113.5/bbl and USD 99.8/bbl at the three-month and one-year horizon respectively. The EIA expects a stronger decline in the Brent oil price this year – to USD 101/bbl in December. The decline should slow to USD 97/bbl at the end of next year.



	Brent	WTI	Natural gas
2022	108.70 ↗	106.30 ↗	1083.38 ↗
2023	99.64 ↗	96.07 ↗	991.89 ↗



	IEA	EIA	OPEC
2022	99.45 →	99.64 ↗	100.27 ↗
2023		101.33 ↗	



	Production	Total capacity	Spare capacity
2022	28.80 ↘	31.85 ↘	3.05 ↘
2023	29.46 ↘	32.38 ↘	2.92 ↘

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

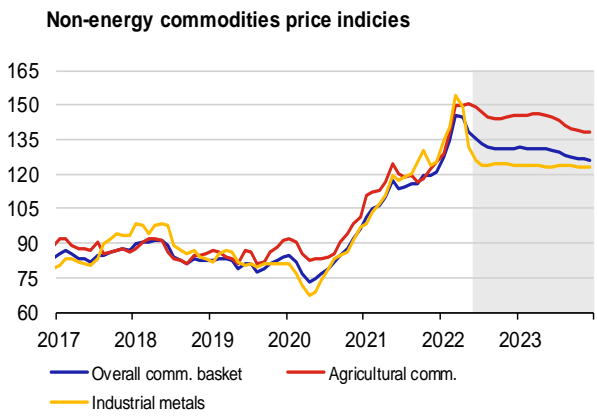
Note: Oil price at ICE, average gas price in Europe – World Bank data, smoothed by the HP filter. Future oil prices (grey area) are derived from futures and future gas prices are derived from oil prices using model. Total oil stocks (commercial and strategic) in OECD countries – IEA estimate. Production and extraction capacity of OPEC – EIA estimate.

IV.2 Other commodities

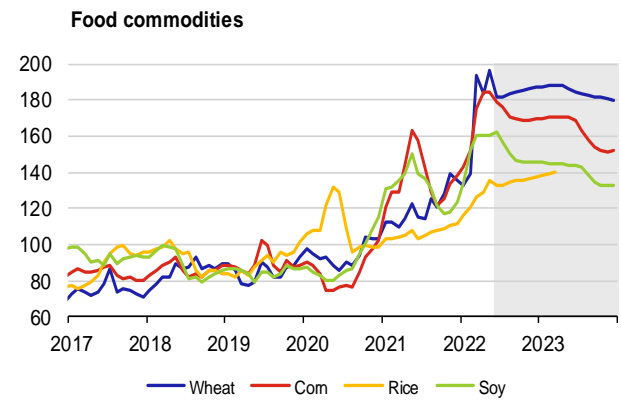
Having dropped sharply in April, the average price of natural gas in Europe fell again in May, yet surged in mid-June. The favourable spot gas prices (TTF) have been fostered by high supplies of LNG and mild weather since April, which allowed tanks to be filled in line with typical seasonal effects. In mid-June, however, the price of natural gas in Europe reacted sharply to the problems at the LNG export terminal in Texas and the reduction of supplies from Russia. The Texas terminal accounts for around 20% of exports from the USA. The partial cut in production due to the explosion and fire should last until September and full production should resume at end-2022. Gazprom reported a major drop in exports via the Nordstream pipeline to Germany due to technical issues (delayed delivery of a repaired turbine from Canada). However, even without these events, prices of natural gas and electricity were expected to record a further major seasonal increase before next winter. The coal price remains close to historical highs because of higher demand by power plants in Asia due to high temperatures and air-conditioning needs. Moreover, demand from Europe and Japan rose in response to a ban on imports of coal from Russia, while demand from China was also higher due to the relaxation of anti-epidemic measures.

The average base metals price index fell for the second consecutive month in May and dropped further in the first half of June. This was due to higher production and lower demand in China and a deterioration of the economic outlook in other regions. Price growth was virtually the same across the index – a sharp drop in April and in the first half of May was followed by a slight increase until the end of the month, but the increases were virtually erased again in the first half of June.

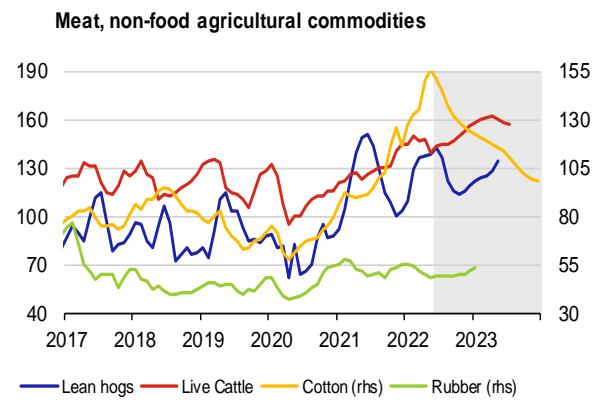
By contrast, the food commodity price index rose to another all-time high in May and decreased only slightly in the first half of June. The price of wheat fell slightly in mid-May when Russia announced that it would allow exports from Ukraine under certain conditions. Other food commodities showed only marginal price declines.



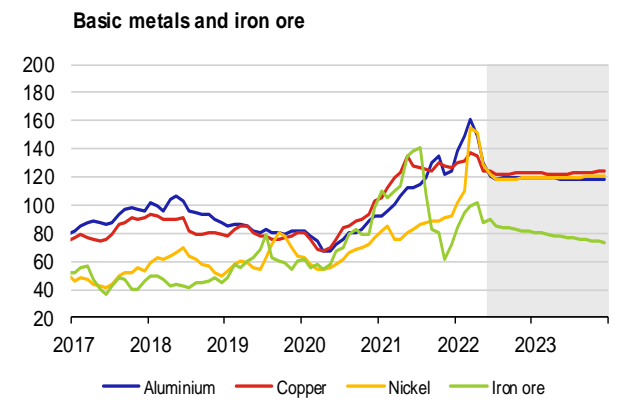
	Overall	Agricultural	Industrial
2022	134.5	144.7	131.7
2023	129.2	142.8	123.6



	Wheat	Corn	Rice	Soy
2022	177.9	170.0	131.1	151.5
2023	184.2	162.6	138.9	140.2



	Lean hogs	Live Cattle	Cotton	Rubber
2022	126.4	147.1	136.9	50.5
2023	126.5	159.6	110.7	53.4



	Aluminium	Copper	Nickel	Iron ore
2022	130.1	126.2	123.4	87.8
2023	118.7	122.7	119.8	76.9

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.

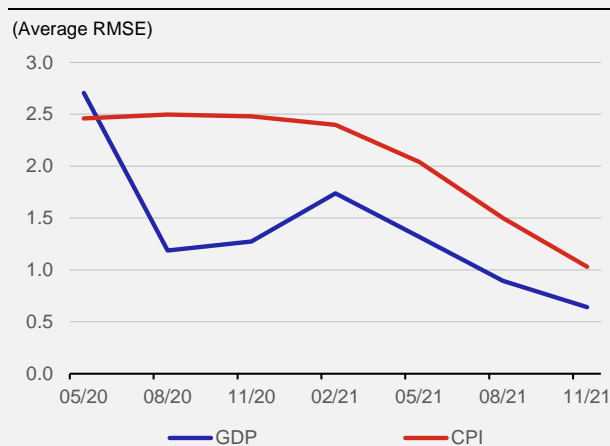
Annual assessment of the forecasts included in GEO¹

Every month, *Global Economic Outlook (GEO)* provides an overview of the latest economic forecasts issued by international institutions, selected central banks and Consensus Economics. With the benefit of hindsight, it can be said that the monitored institutions tended to be pessimistic with their economic outlooks for 2021, probably due to the initial shock of the Covid pandemic. Their GDP forecasts thus expected lower growth on average. Similarly, lower consumer price inflation was expected in most cases compared to the subsequent outcome. In line with this, the outlooks for short-term interest rates at the one-year horizon were slightly overestimated for both the euro area and the USA. As regards the exchange rates of the monitored currencies against the dollar, forecasters expected a weaker dollar last year compared to what transpired. The crude oil price was underestimated in the forecasts over the entire assessment period.

Introduction

Every year, we assess the accuracy of the forecasts of the economic variables regularly monitored in GEO. The results of this assessment provide valuable information about which of the monitored institutions produced estimates that were the closest to the subsequently recorded outcomes and were thus the most successful in their forecasts. In addition to Consensus Forecasts (CF), we assess the outlooks derived from market contracts when assessing the forecasts for interest rates, the dollar exchange rate and oil prices. The assessment always applies to the past year. In the case of the forecasts for GDP growth and CPI inflation for a given calendar year (fixed-event forecasts), we are now assessing the forecasts for 2021. In the case of the forecasts published for a fixed horizon that shifts further into the future each time a new forecast is published (rolling-event forecasts), the assessment covers the predictions since 2020. From the outlooks regularly published in GEO, this category of rolling forecasts contains, for example, the three-month and one-year outlooks for foreign interest rates, oil prices and the outlooks for the exchange rates of the monitored currencies against the dollar. The general characteristic of the outlooks is quite clear – the shorter the forecast horizon, the more accurate the forecasts become (see Chart 1). The forecasts from 2020 Q2 onwards – when the onset of the Covid pandemic was already known – were included in our assessments. We thus eliminate the effect of the unpredictable Covid shock, although forecasting was more difficult during Covid than in previous periods.

Chart 1 – Gradual improvement of forecasts for 2021



Note: All the monitored institutions and all 6 regions (the USA, the euro area, China, the United Kingdom, Japan and Russia).

Owing to the short length 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 corresponding forecast f_t : $e_t = a_t - f_t$. A positive forecast error therefore means that the forecasted value undershot the subsequent outcome, while a negative error means that it overshot it. The source of actual levels of GDP growth and consumer price inflation for 2021 is the Consensus Forecasts publication. The source of the actual levels of the other variables is Refinitiv. Futures contracts for interest rates, exchange rates and the Brent crude oil price are obtained from the Bloomberg database.

We also use the RMSE indicator to assess the accuracy of the GDP growth and inflation forecasts across institutions. In addition, we use the mean absolute percentage error (MAPE) to assess forecast accuracy across the currencies' exchange rates against the dollar. This variable, expressed in percentages, is suitable for cross-checking variables of various dimensions. Moreover, the individual errors are given in absolute terms, so (like for the RMSE) positive and negative forecast errors do not cancel each other out, as in the case with the MFE. The formal notation is as follows:

$$MAPE = \frac{100}{n} \sum_{t=1}^n \left| \frac{a_t - f_t}{a_t} \right|. \quad (1)$$

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.

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

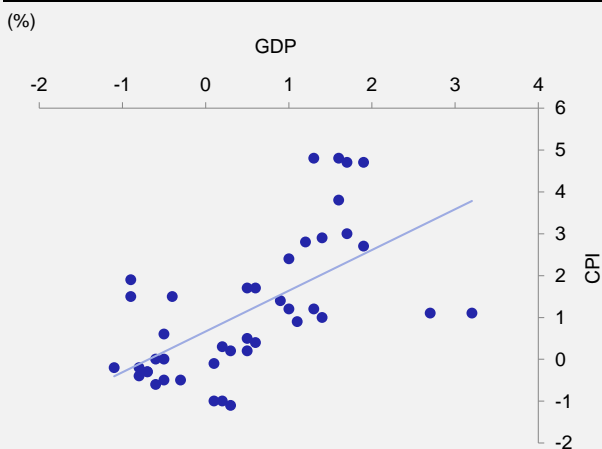
Assessment of the accuracy of the GDP growth and CPI inflation forecasts for 2021

In GEO we regularly monitor actual and predicted GDP growth and CPI inflation in the euro area, the USA, the United Kingdom, Japan, China and Russia. The forecasts for GDP growth and inflation for these countries are taken primarily from the CF survey, the International Monetary Fund (IMF) and the Organisation for Economic Cooperation and Development (OECD). These three institutions cover all the countries monitored. In the case of advanced economies, we also monitor the forecasts of their central banks, i.e. the European Central Bank (ECB), the Federal Reserve, the Bank of Japan (BoJ) and the Bank of England (BoE). For China and Russia, the forecasts of the Economist Intelligence Unit (EIU) are used instead. These institutions differ in the frequency and date of publication of their forecasts. The forecast updates are either monthly (CF and the EIU) or quarterly (the IMF, OECD, ECB, Fed and BoJ). The quarterly forecasts (i.e. the February, May, August and November forecasts) are assessed.

The average expected economic growth and inflation were lower than the actual outcomes in the monitored European economies and in the USA. The opposite was true in Japan and in China. The charts in Appendix 1 show the deviations of the GDP growth forecasts for the monitored countries from the subsequent outcomes. The GDP growth outlooks for China (measured by RMSE) were the most accurate and were, as usual, characterised by the lowest variability in forecasted growth. According to CF, GDP growth was ultimately only 0.1 percentage point lower than the expected GDP growth of 8.2%. By contrast, the outlooks for UK economic growth were the least accurate. On average, the CF analysts expected 5.9% growth for the period as a whole. However, growth ended up being a significant 1.5 pp higher. Unsurprisingly, the outlooks for the UK were also characterised by the greatest variability.² The outlooks for most countries were most underestimated during 2020, when the effects of the Covid shock to the economy were just beginning to show. The outlooks for 2021 were revised as these effects became known. CF and the IMF predicted economic growth in the euro area most accurately. The same applied to the outlooks for the USA and China. This was naturally reflected in the highest accuracy of the forecasts of these two institutions across all countries (see Chart 3).

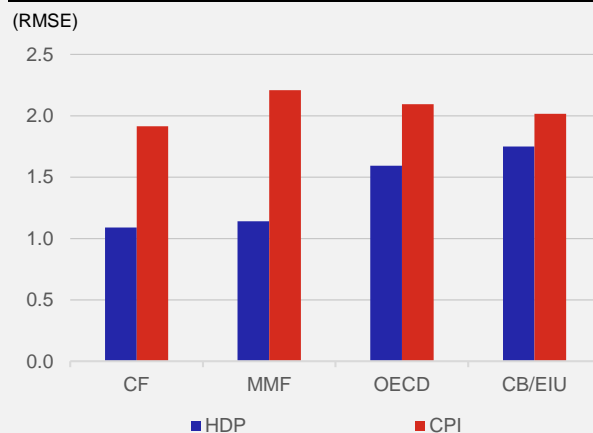
As with GDP growth, lower inflation was also expected on average for 2021 in most of the countries assessed, compared to the actual outcomes (see Appendix 2). However, this did not apply to Japan and China where, despite expectations, actual inflation was lower. Chart 2 shows the positive relationship between the forecast errors for economic growth and inflation according to CF for all the countries assessed. We can thus speak of the mutual consistency of the outlooks for these key macroeconomic variables. The inflation outlooks of central banks were characterised by similar inaccuracies as the outlooks of other institutions. The largest inflation forecast variability was recorded for the USA and the UK. The average expected inflation in the euro area for 2021 was 1.4%. However, the reality was 1.2 pp higher than expected. CF analysts had the most accurate inflation outlooks on average for all countries, ahead of the OECD and the IMF (see Chart 3).

Chart 2 – Relationship between GDP and CPI deviations



Note: CF forecasts for countries assessed.

Chart 3 – Comparison of the accuracy of institutions forecasting GDP growth and inflation for all countries



Note: CF – Consensus Forecasts, IMF – International Monetary Fund, OECD – Organisation for Economic Cooperation and Development, EIU – Economist Intelligence Unit.

² In the analysis, variability is measured by the standard deviation.

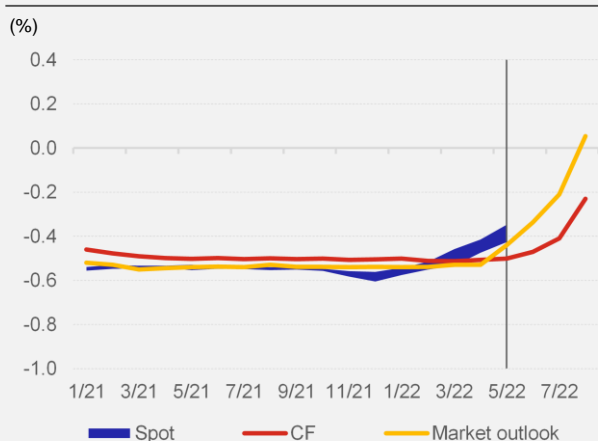
However, it is not possible to draw more general conclusions from the results of only one year, as the accuracy of forecasts usually changes over time and across institutions.³ However, the chart capturing GDP and CPI deviations shows that, in general, as the forecast horizon becomes shorter, the forecasts gradually become more accurate.

Assessment of the accuracy of the forecasts for foreign interest rates

In GEO, interest rate outlooks are monitored for the euro area and the USA. In addition to the CF outlook, the outlooks for three-month interest rates are also accompanied by an outlook derived from futures. By contrast, the outlooks for long-term (ten-year) government bond yields are taken only from CF. Owing to the period of low interest rates, the three-month and one-year outlooks were very similar, and thus we will focus primarily on the shorter-term one.

Short-term interest rate expectations were higher and, at the same time, were unable to capture the growing trend in time (see Charts 4 and 5). In the case of the three-month outlooks, the accuracy of the predictions was affected mainly by central banks' communications which tried for a long time to put forward a convincing argument regarding the temporary nature of inflation, especially in the euro area, and thus delay any increase in interest rates. As regards the short-term outlooks for euro rates, the forecasts were led by the ECB, so expectations were firmly anchored (see Chart 4) and also affected by the ECB's continued easy monetary policy through asset purchases under the APP and the PEPP programmes, which did not come to an end until during the first half of 2022. Chart 4b, which captures the outlooks at the one-year horizon, shows the positive sentiment from mid-2020 when rates were expected to start rising one year ahead, but this did not transpire. The rapid rise in expectations and long-term rates was also reflected in the rapid growth of the forecasts for the next year. The situation is similar for three-month outlooks, where the present is strongly reflected in the outlooks.

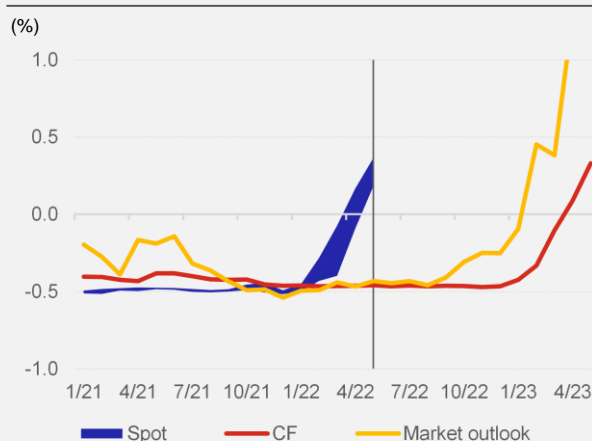
Chart 4a – Three-month outlook for three-month interest rates in the euro area and a comparison with the actual outcome



Source: CF, Bloomberg.

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

Chart 4b – One-year outlook for annual interest rates in the euro area and a comparison with the actual outcome



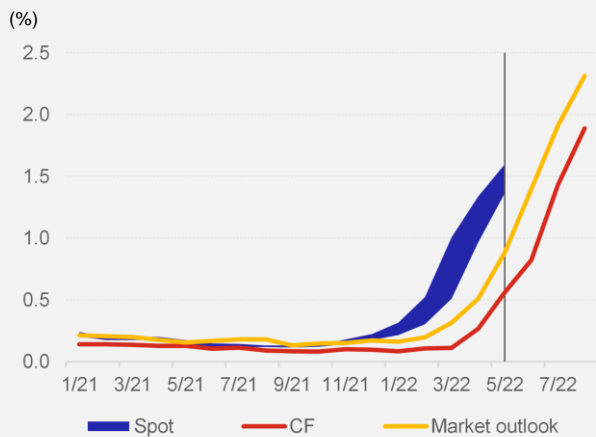
Source: CF, Bloomberg.

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

In 2021, the situation in the USA was also strongly affected by easy monetary policy, which only started to tighten at the end of the year. Although the Fed, similarly to the ECB, continued to purchase assets in 2021, Fed officials responded more quickly to continued inflation pressures. The Fed moved away from the rhetoric of transitory inflation in autumn, setting a very hawkish tone at the end of last year. This was reflected in growth of the outlooks for both short- and long-term interest rates (see Chart 5). Here again, market outlooks have responded much more flexibly and quickly than CF outlooks, which are thus significantly delayed and rather conservative. The assessment also shows that market outlooks in 2020 were more cautious at the one-year horizon, expecting some normalisation of interest rates, while the CF outlooks inclined towards long-term monetary policy easing.

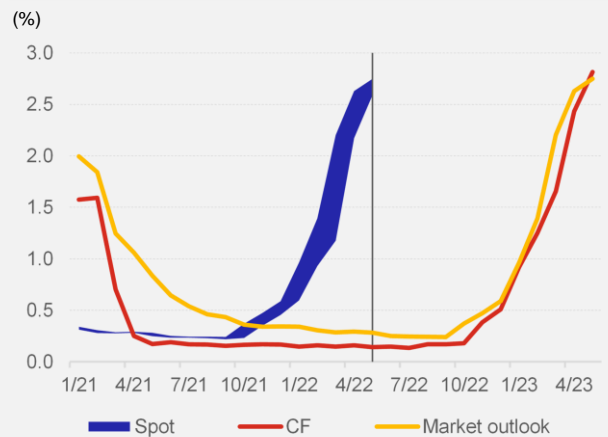
³ A longer forecast period was assessed, for example, in Novotný and Raková (2010) Assessment of Consensus Forecasts Accuracy: The Czech National Bank Perspective. CNB WP.

Chart 5a – Three-month outlook for three-month interest rates in the USA and a comparison with the actual outcome



Source: CF, Bloomberg.
 Note: The blue area indicates the range between the minimum and maximum prices in the given month. The vertical line denotes the end of observed data.

Chart 5b – One-year outlook for annual interest rates in the USA and a comparison with the actual outcome



Source: CF, Bloomberg.
 Note: The blue area indicates the range between the minimum and maximum prices in the given month. The vertical line denotes the end of observed data.

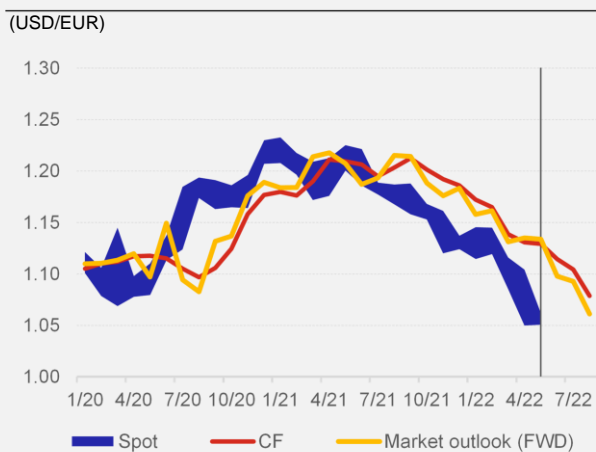
Assessment of the accuracy of the forecasts for the dollar exchange rate

The deviations of the monitored exchange rates were very small on average, especially for the three-month outlook, owing mainly to the stability of the exchange rates last year (see Chart 7). GEO provides information about the outlooks for the exchange rates of selected currencies against the US dollar based on CF forecasts. In addition, forward rates are provided for the euro, the Japanese yen and, since 2017, sterling. They are based on covered interest parity and represent the current ability to hedge the future exchange rate rather than the outlook. The accuracy of the CF outlooks and market contracts does not differ much as illustrated in Chart 6, which shows their monthly development over the last two years.

Overall, the three-month outlooks for the euro-dollar rate were relatively closely linked to the observed reality in the period under review. Given that the dollar initially weakened against the euro over the last two years and has been gradually strengthening since last spring, both the market outlooks and the CF outlooks were always equally skewed. At first they were unable to capture the appreciation of the euro and then, in the last year, the strengthening of the dollar (see Chart 6).

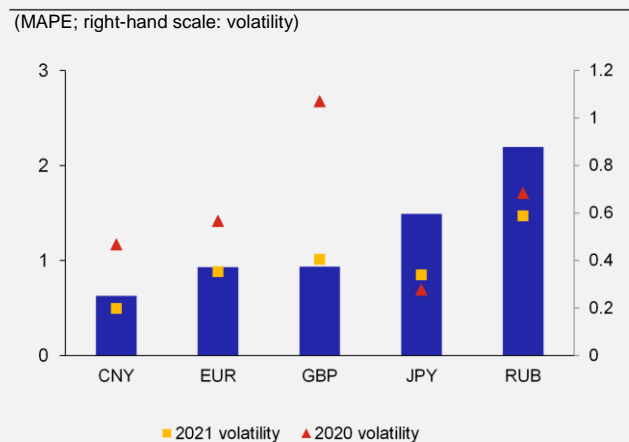
The exchange rate of the Chinese renminbi was the most accurate of all the currency pairs at both the three-month and one-year horizons. The Japanese yen forecasts were the most accurate in recent years. By contrast, the forecasts for the Russian rouble were the worst performers at the three-month horizon (see Chart 7). The accuracy of the forecasts was also determined by the observed volatility of the monitored currencies which decreased last year compared to 2020, when the coronavirus crisis started. The biggest forecast errors were for the Russian rouble and the Japanese yen.

Chart 6 – Three-month outlook for the exchange rate of the euro against the dollar and the actual outcome



Source: CF, Bloomberg.
 Note: The blue area indicates the range between the minimum and maximum prices in the given month. The vertical line denotes the end of

Chart 7 – Forecast errors for the exchange rates of selected currencies against the dollar (three-month outlooks)

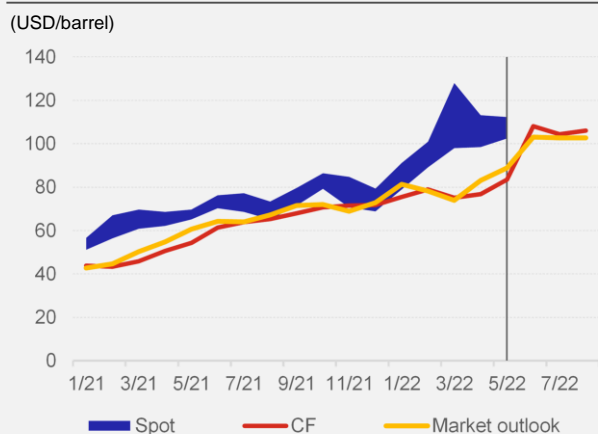


Source: CF, Bloomberg.
 Note: MAPE, volatility

Assessment of the accuracy of the Brent crude oil price forecasts

The Brent crude oil price is one of the most important commodity price outlooks we cover in GEO. The accuracy of the forecasts for the Brent crude oil price based on futures contracts and according to CF was the same on average. GEO regularly describes both sources of outlooks, and Charts 8 and 9 show that the values and trends of the forecasts record little difference. Given that oil prices rose steadily last year, both of these sources underestimated the actual price of oil at the three-month and the one-year horizon on average. The prediction error was of course higher at the one-year horizon, when no such price increase was expected. The current very high prices are almost constant in the short term, at around USD 100/bbl, with the price expected to be around USD 90/bbl at the one-year horizon. In light of the ongoing conflict in Ukraine and Europe's energy dependence on Russia, a significant drop in prices cannot be expected yet.

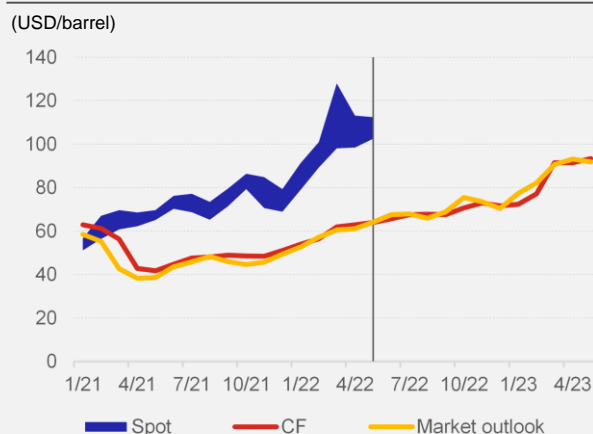
Chart 8 – Three-month Brent crude oil price outlook



Source: CF, Bloomberg.

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

Chart 9 – One-year Brent crude oil price outlook



Source: CF, Bloomberg.

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

Conclusion

Economies were still being very much affected by the coronavirus pandemic last year, but the situation was much more stable than in 2020. Financial variables in particular were strongly affected by easy monetary policies of central banks. On the other hand, the reopening of economies had a significant effect, with strong demand, combined with the disruption of supply chains, causing growth in inflation pressures, which fully manifested itself at the end of 2021.

This article uses simple methods to assess the accuracy of the forecasts monitored in GEO over the past year. The accuracy of the forecasts of the institutions covered by GEO changes from year to year. This is one of the reasons why several institutions' forecasts are monitored in GEO. The accuracy of the CF forecasts has long been comparable with the available alternative forecasts, and this was also the case in 2021. In addition, CF has the advantage of being published monthly and covering a relatively wide range of economic variables. The accuracy of CF stems from its defining characteristic, namely that it is the simple average of the forecasts from the contributing private institutions.⁴ The disadvantage is that – particularly in turbulent times – the predicted variables are slow to respond and often “lag behind” market outlooks.

In principle, 2021 exceeded expectations for all the indicators assessed. The pessimistic expectations were shaped by the initial Covid shock in the first half of 2020. However, the outlooks for the main macroeconomic variables gradually adjusted to the stronger subsequent recovery which was fostered by generous fiscal and monetary policies. This was driven mainly by growth in demand for durable goods at the expense of services. This was also consistent with the underestimation of the growth in the Brent price and the path of interest rates in the euro area and in the USA.

Keywords

forecast error, economic outlook, Consensus Forecasts

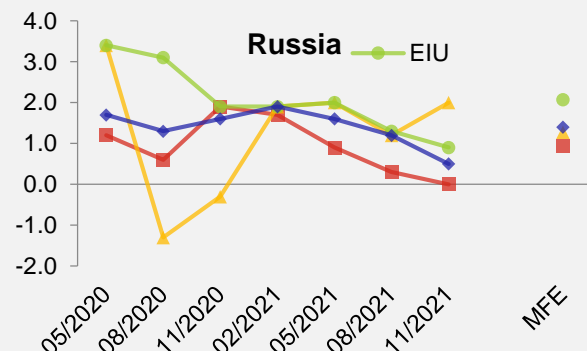
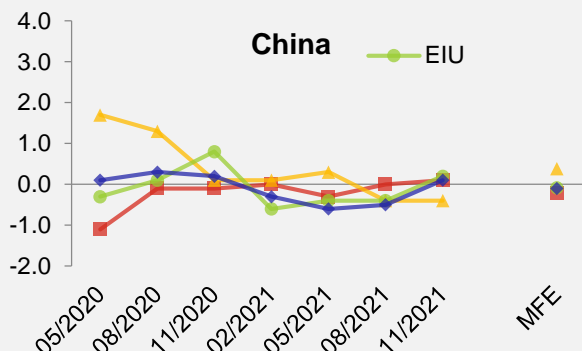
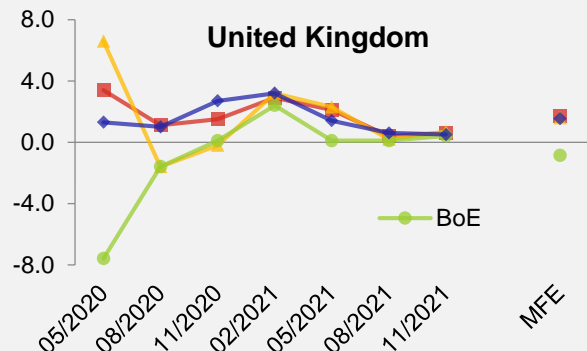
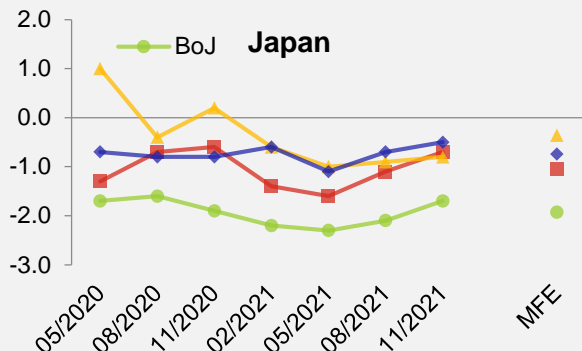
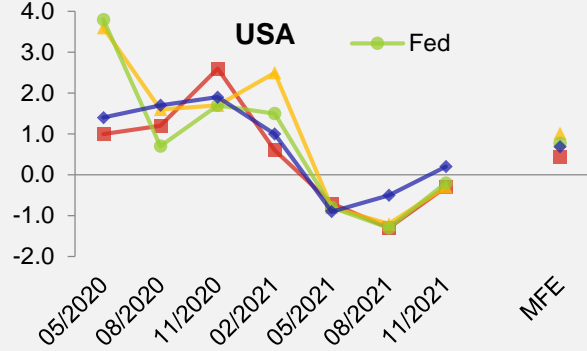
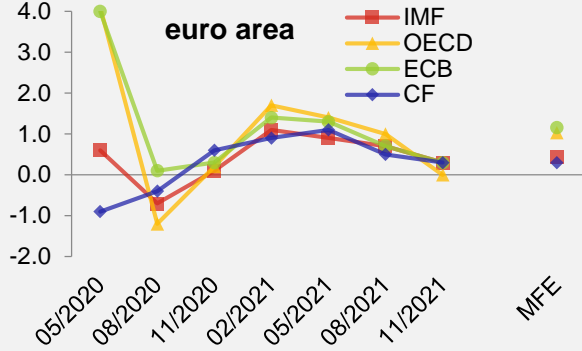
JEL Classification

E66, E27, C18

⁴ The characteristics of CF are described in more detail in an earlier article “How consensus has evolved in Consensus Forecasts” by Tomáš Adam and Jan Hošek in GEO 4/2015.

Appendix 1– Forecast errors for GDP growth for 2021

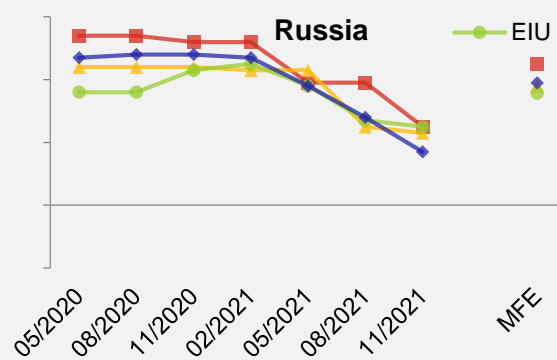
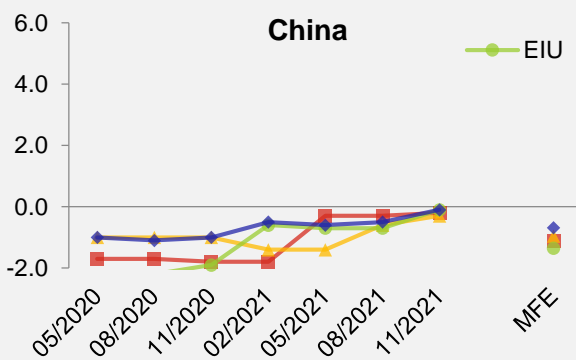
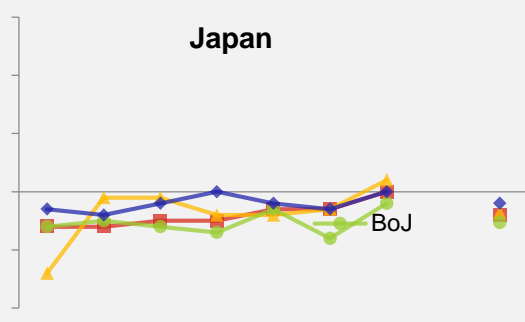
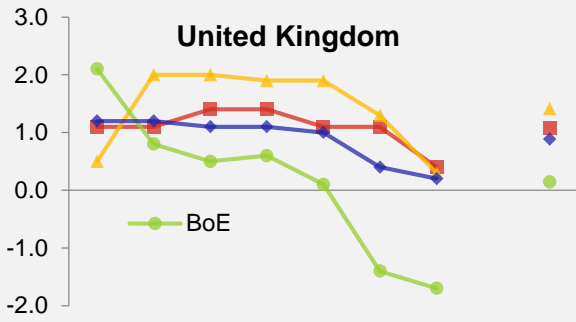
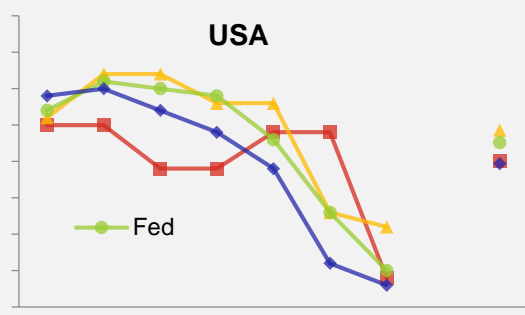
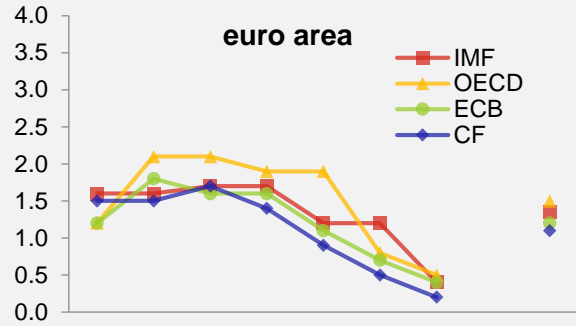
(percentage points)



Note: CF – Consensus Forecasts, IMF – International Monetary Fund, OECD – Organisation for Economic Cooperation and Development, ECB – European Central Bank, Fed – Federal Reserve System of the USA, BoE – Bank of England, BoJ – Bank of Japan, EIU - Economist Intelligence Unit. MFE is the mean forecast error for the given year.

Appendix 2 – Forecast errors for consumer price inflation for 2021

(percentage points)



Note: CF – Consensus Forecasts, IMF – International Monetary Fund, OECD – Organisation for Economic Cooperation and Development, ECB – European Central Bank, Fed – Federal Reserve System of the USA, BoE – Bank of England, BoJ – Bank of Japan, EIU - Economist Intelligence Unit. MFE is the mean forecast error for the given year.

A1. Change in predictions for 2022

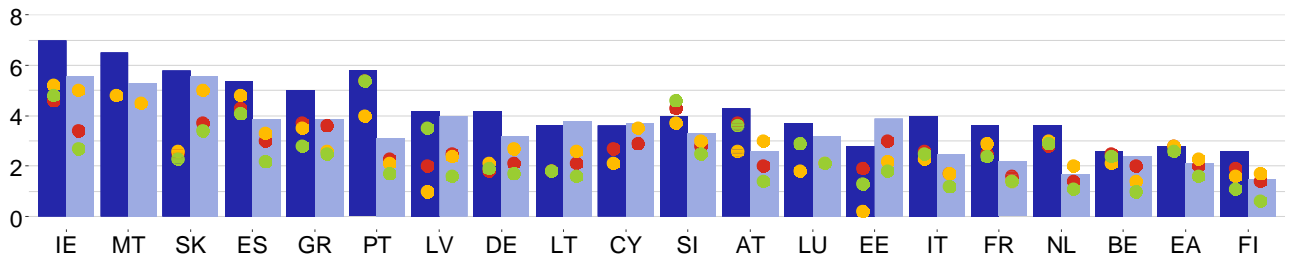
	GDP growth, %				Inflation, %			
	CF	IMF	OECD	CB / EIU	CF	IMF	OECD	CB / EIU
EA	+0.1	-1.1	-1.7	-0.9	+0.4	+3.6	+4.3	+1.7
US	-0.2	-0.3	-1.2	-1.1	+0.5	+4.2	+2.2	+0.9
UK	-0.3	-1.0	-1.1	0	+0.7	+4.8	+4.4	+4.5
JP	-0.3	-0.9	-1.7	-0.9	+0.2	+0.5	+1.1	+0.8
CN	-0.4	-0.4	-0.7	0	+0.1	+0.3	+0.3	0
RU	+0.4	-11.3	-12.7	+1.3	-0.9	+16.5	+10.3	-2.0

A2. Change in predictions for 2023

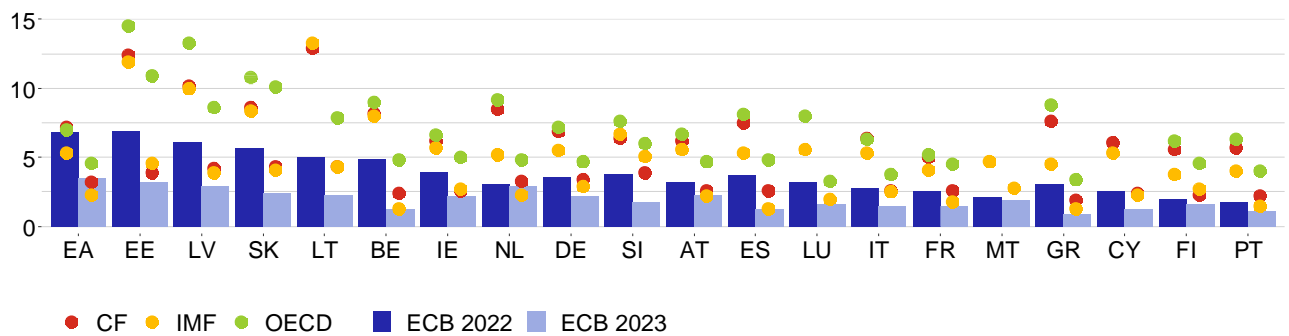
	GDP growth, %				Inflation, %			
	CF	IMF	OECD	CB / EIU	CF	IMF	OECD	CB / EIU
EA	-0.2	-0.2	-0.9	-0.7	+0.6	+0.9	+2.8	+1.4
US	-0.3	-0.3	-1.2	-0.5	+0.3	+0.2	+1.0	-0.1
UK	-0.2	-1.1	-2.1	-1.6	+0.9	+3.3	+5.0	+1.0
JP	0	+0.5	+0.7	+0.8	+0.1	+0.1	+1.1	0
CN	+0.1	-0.1	-0.2	0	0	-0.1	+0.6	0
RU	-0.5	-4.4	-5.3	+0.5	-0.1	+9.8	+8.8	-2.8

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

GDP growth in the euro area countries in 2022 and 2023, %



Inflation in the euro area countries in 2022 and 2023, %

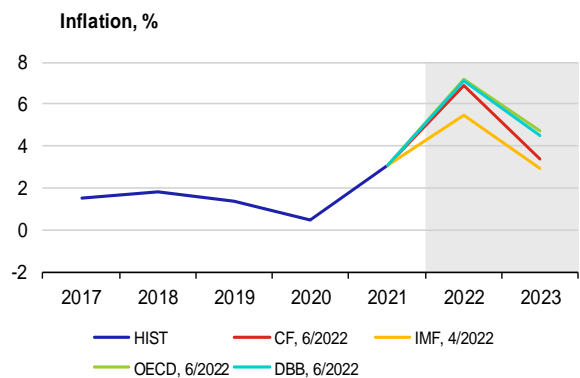
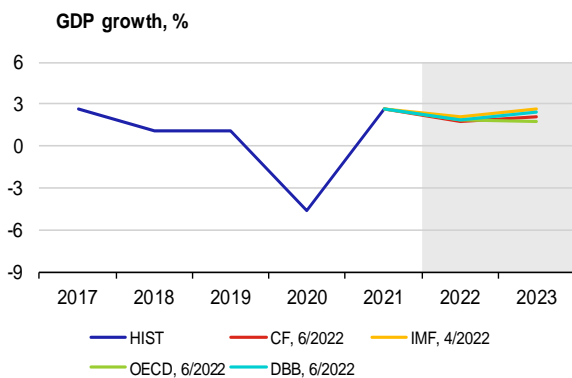


● CF ● IMF ● OECD ■ ECB 2022 ■ ECB 2023

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

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

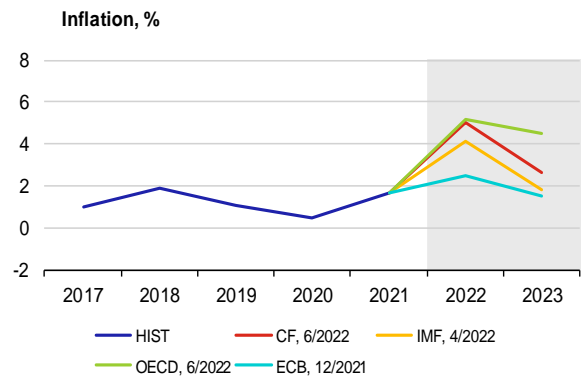
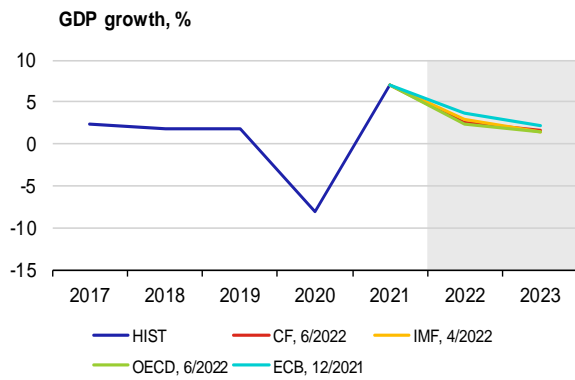
Germany



	CF	IMF	OECD	DBB
2022	1.8	2.1	1.9	1.9
2023	2.1	2.7	1.7	2.4

	CF	IMF	OECD	DBB
2022	6.9	5.5	7.2	7.1
2023	3.4	2.9	4.7	4.5

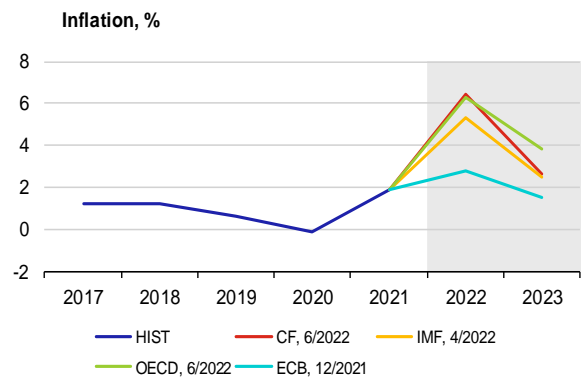
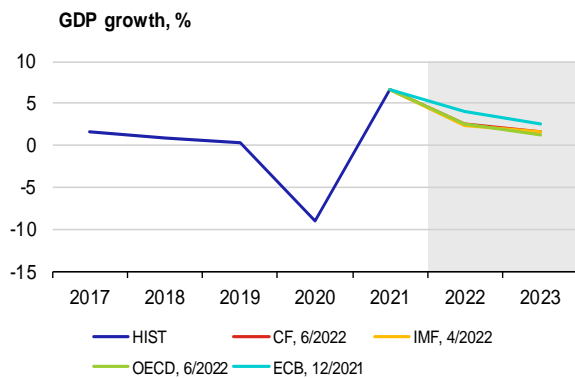
France



	CF	IMF	OECD	ECB
2022	2.5	2.9	2.4	3.6
2023	1.6	1.4	1.4	2.2

	CF	IMF	OECD	ECB
2022	5.0	4.1	5.2	2.5
2023	2.6	1.8	4.5	1.5

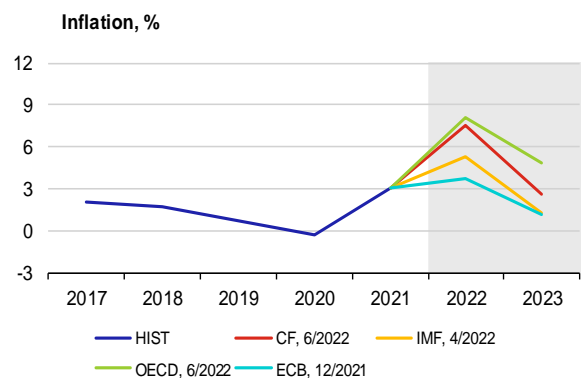
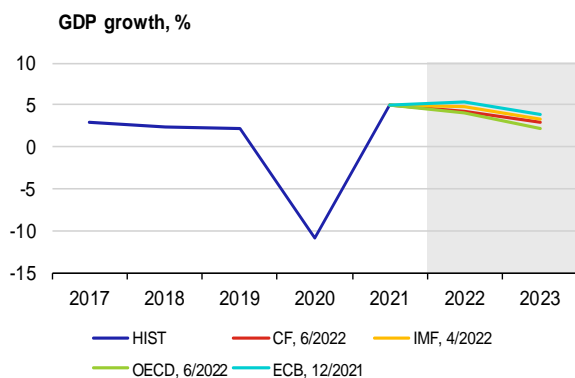
Italy



	CF	IMF	OECD	ECB
2022	2.6	2.3	2.5	4.0
2023	1.7	1.7	1.2	2.5

	CF	IMF	OECD	ECB
2022	6.4	5.3	6.3	2.8
2023	2.6	2.5	3.8	1.5

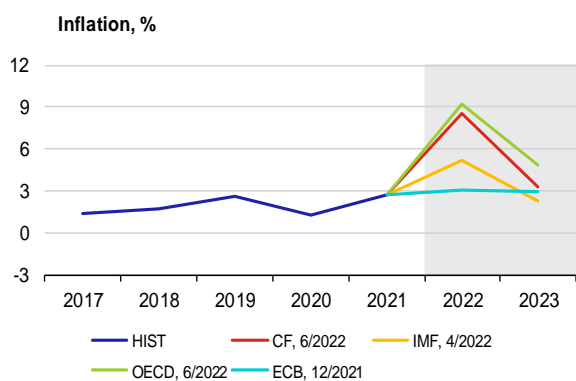
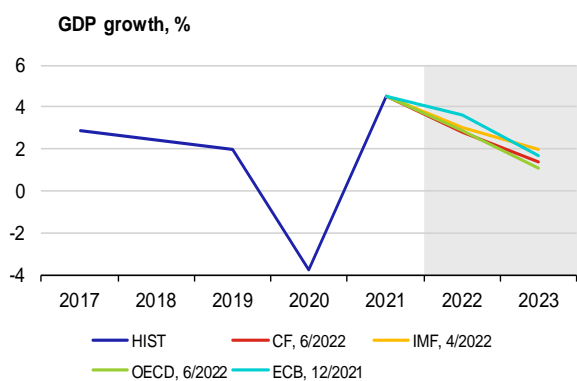
Spain



	CF	IMF	OECD	ECB
2022	4.3	4.8	4.1	5.4
2023	3.0	3.3	2.2	3.9

	CF	IMF	OECD	ECB
2022	7.5	5.3	8.1	3.7
2023	2.6	1.3	4.8	1.2

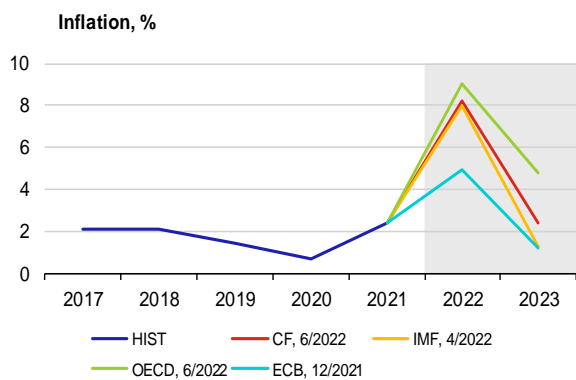
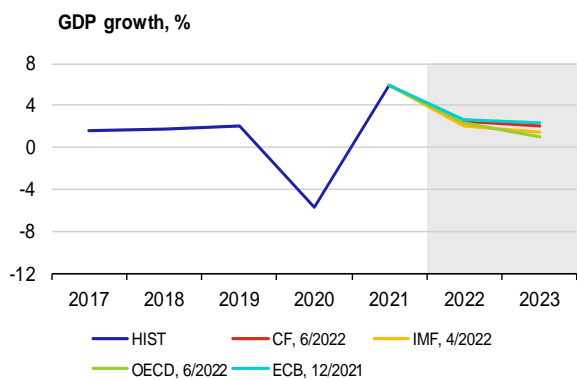
Netherlands



	CF	IMF	OECD	ECB
2022	2.8	3.0	2.9	3.6
2023	1.4	2.0	1.1	1.7

	CF	IMF	OECD	ECB
2022	8.5	5.2	9.2	3.0
2023	3.3	2.3	4.8	2.9

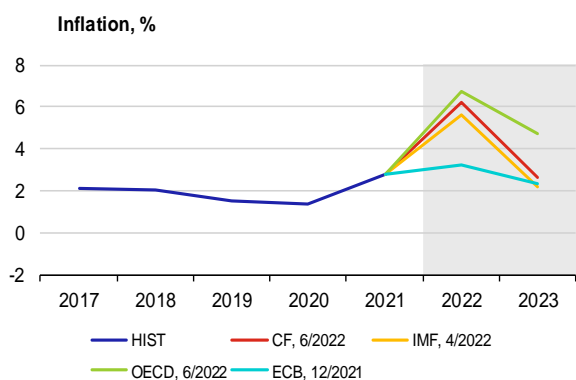
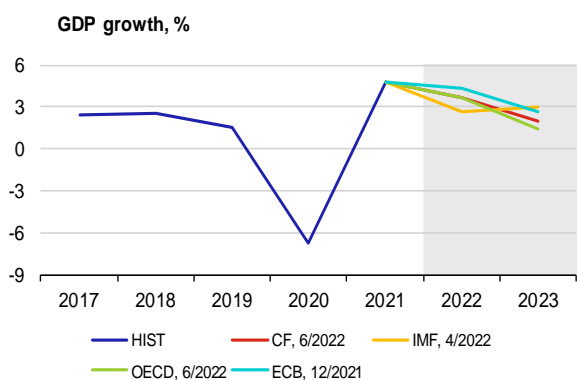
Belgium



	CF	IMF	OECD	ECB
2022	2.5	2.1	2.4	2.6
2023	2.0	1.4	1.0	2.4

	CF	IMF	OECD	ECB
2022	8.2	8.0	9.0	4.9
2023	2.4	1.3	4.8	1.2

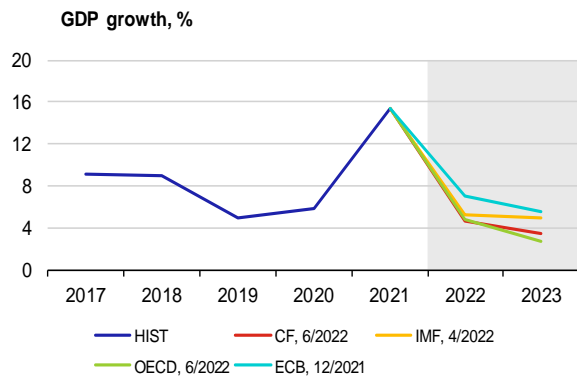
Austria



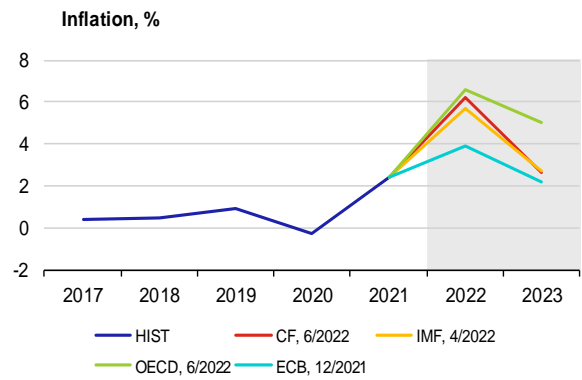
	CF	IMF	OECD	ECB
2022	3.7	2.6	3.6	4.3
2023	2.0	3.0	1.4	2.6

	CF	IMF	OECD	ECB
2022	6.2	5.6	6.7	3.2
2023	2.6	2.2	4.7	2.3

Ireland

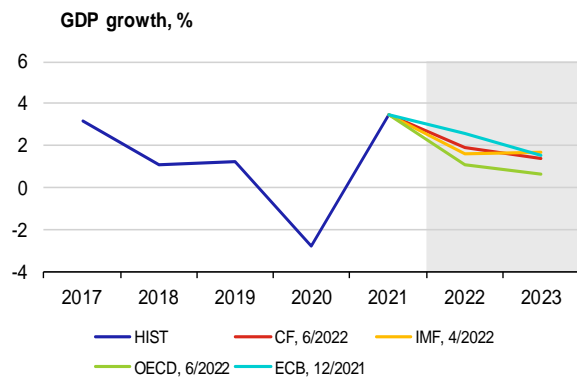


	CF	IMF	OECD	ECB
2022	4.6	5.2	4.8	7.0
2023	3.4	5.0	2.7	5.6

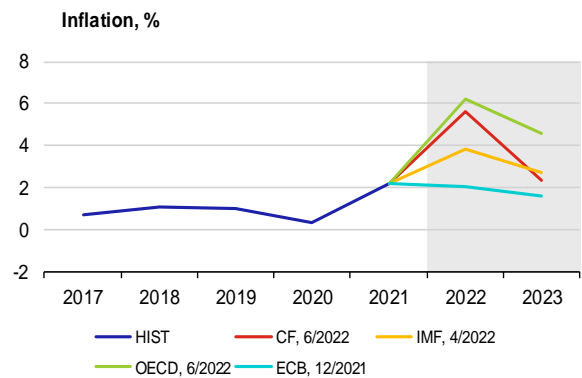


	CF	IMF	OECD	ECB
2022	6.2	5.7	6.6	3.9
2023	2.6	2.7	5.0	2.2

Finland

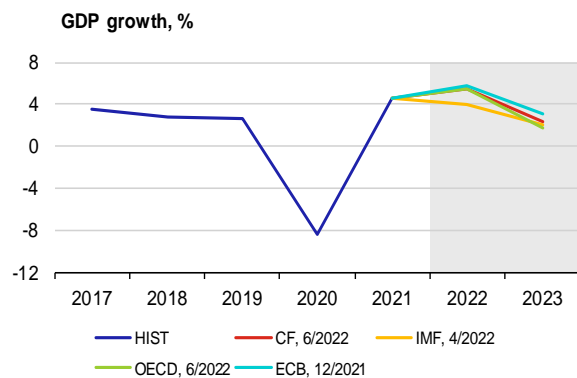


	CF	IMF	OECD	ECB
2022	1.9	1.6	1.1	2.6
2023	1.4	1.7	0.6	1.5

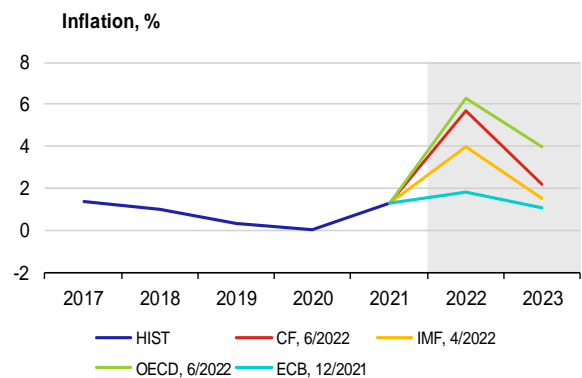


	CF	IMF	OECD	ECB
2022	5.6	3.8	6.2	2.0
2023	2.3	2.7	4.6	1.6

Portugal

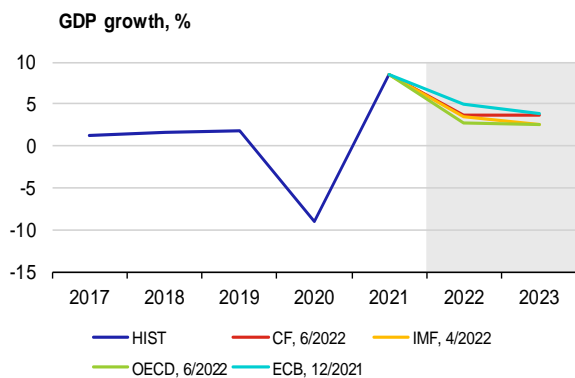


	CF	IMF	OECD	ECB
2022	5.4	4.0	5.4	5.8
2023	2.3	2.1	1.7	3.1

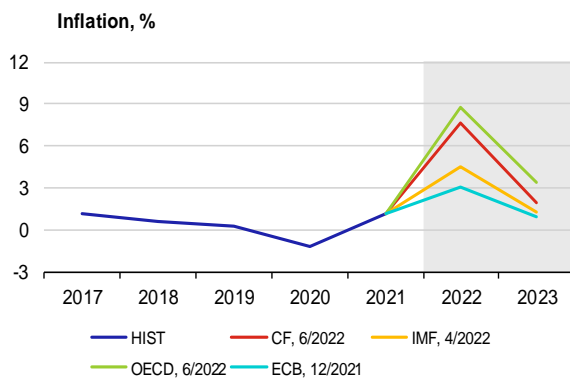


	CF	IMF	OECD	ECB
2022	5.7	4.0	6.3	1.8
2023	2.2	1.5	4.0	1.1

Greece

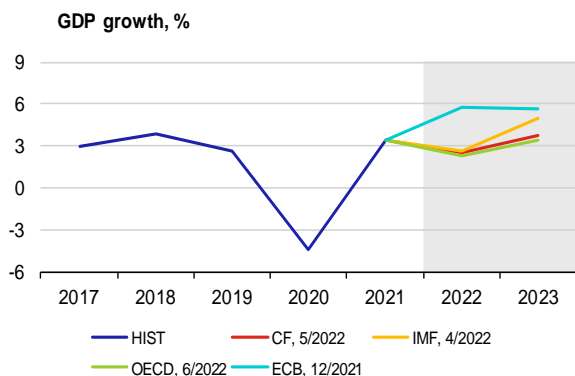


	CF	IMF	OECD	ECB
2022	3.7	3.5	2.8	5.0
2023	3.6	2.6	2.5	3.9

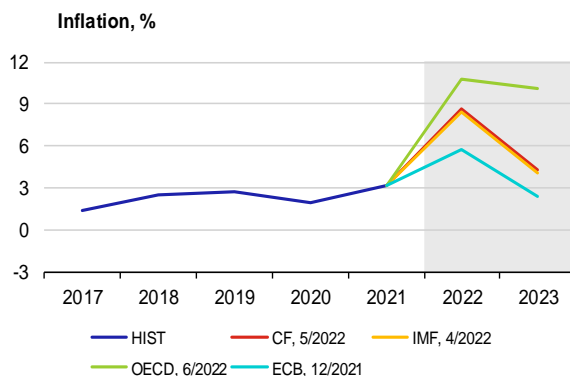


	CF	IMF	OECD	ECB
2022	7.6	4.5	8.8	3.0
2023	1.9	1.3	3.4	0.9

Slovakia

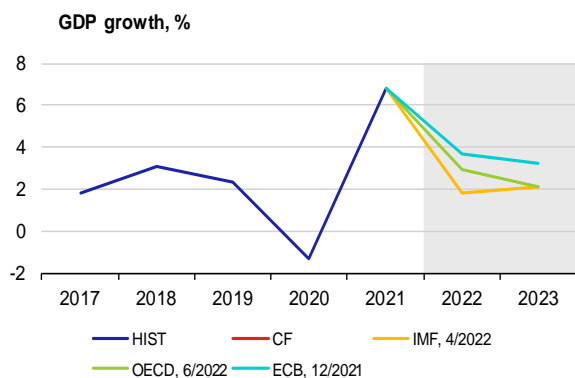


	CF	IMF	OECD	ECB
2022	2.5	2.6	2.3	5.8
2023	3.7	5.0	3.4	5.6

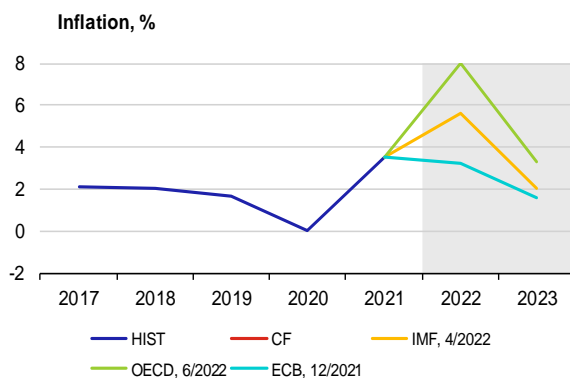


	CF	IMF	OECD	ECB
2022	8.6	8.4	10.8	5.7
2023	4.3	4.1	10.1	2.4

Luxembourg

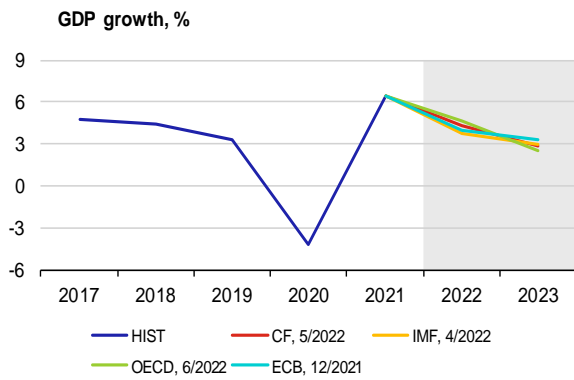


	CF	IMF	OECD	ECB
2022	n. a.	1.8	2.9	3.7
2023	n. a.	2.1	2.1	3.2

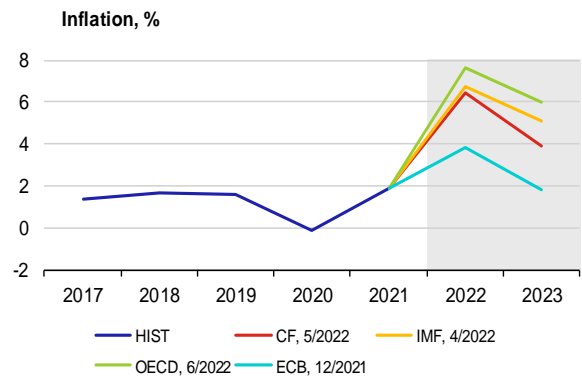


	CF	IMF	OECD	ECB
2022	n. a.	5.6	8.0	3.2
2023	n. a.	2.0	3.3	1.6

Slovenia

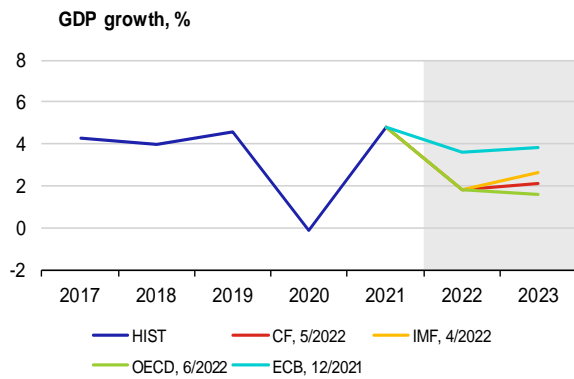


	CF	IMF	OECD	ECB
2022	4.3	3.7	4.6	4.0
2023	2.8	3.0	2.5	3.3

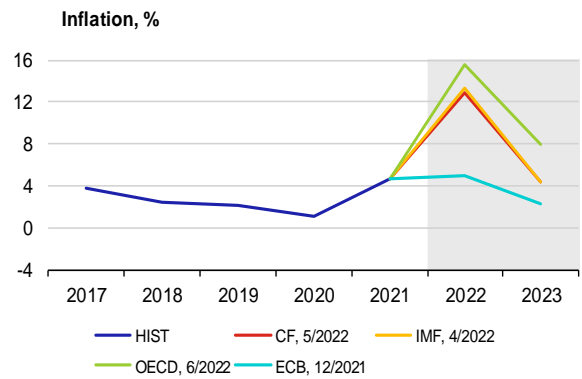


	CF	IMF	OECD	ECB
2022	6.4	6.7	7.6	3.8
2023	3.9	5.1	6.0	1.8

Lithuania

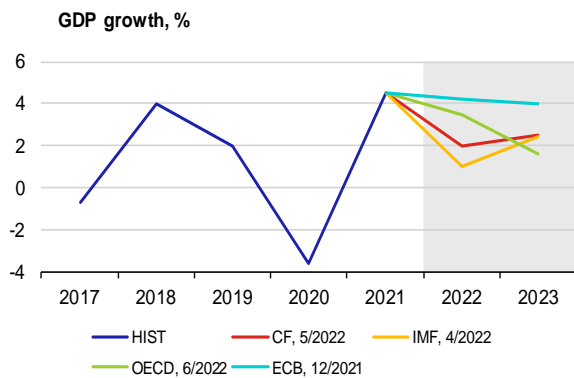


	CF	IMF	OECD	ECB
2022	1.8	1.8	1.8	3.6
2023	2.1	2.6	1.6	3.8

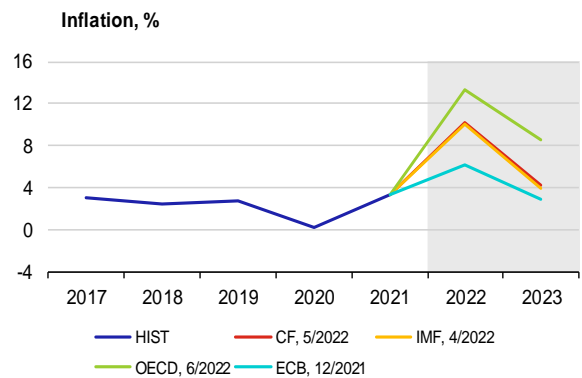


	CF	IMF	OECD	ECB
2022	12.9	13.3	15.6	5.0
2023	4.3	4.3	7.9	2.3

Latvia

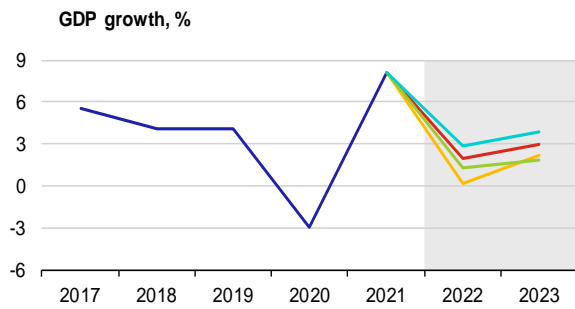


	CF	IMF	OECD	ECB
2022	2.0	1.0	3.5	4.2
2023	2.5	2.4	1.6	4.0

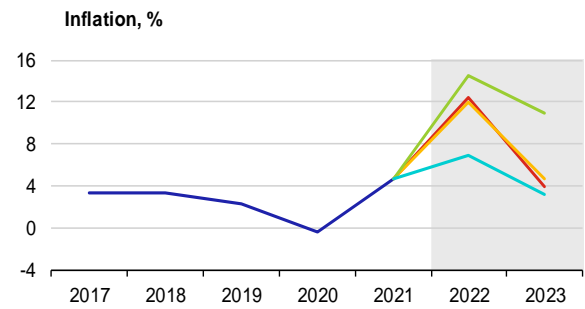


	CF	IMF	OECD	ECB
2022	10.2	10.0	13.3	6.1
2023	4.2	3.9	8.6	2.9

Estonia

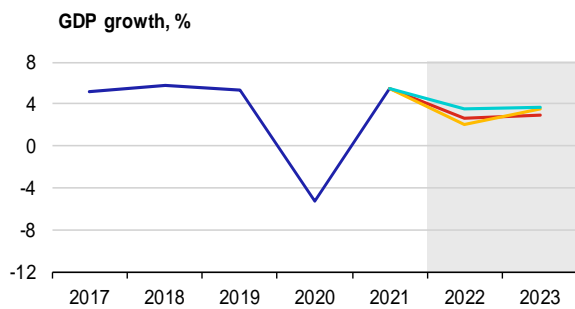


	CF	IMF	OECD	ECB
2022	1.9	0.2	1.3	2.8
2023	2.2	2.2	1.8	3.9

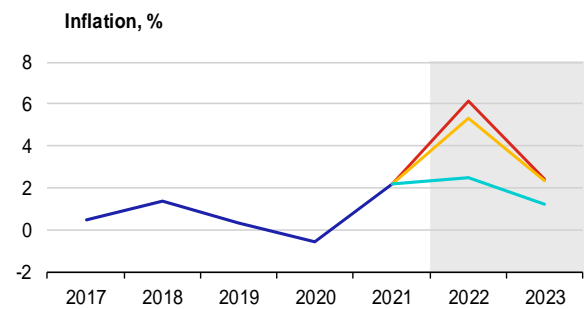


	CF	IMF	OECD	ECB
2022	12.4	11.9	14.5	6.9
2023	3.9	4.6	10.9	3.2

Cyprus

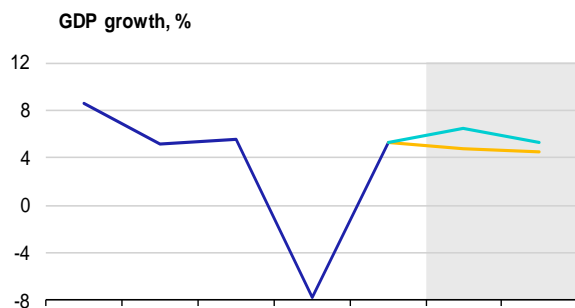


	CF	IMF	OECD	ECB
2022	2.7	2.1	n. a.	3.6
2023	2.9	3.5	n. a.	3.7

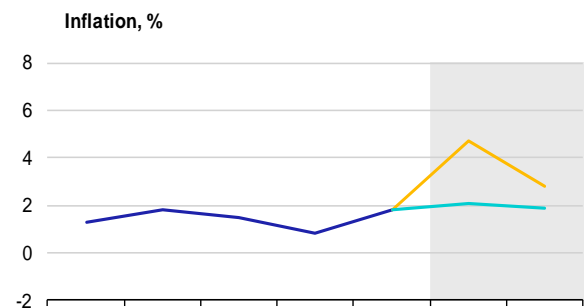


	CF	IMF	OECD	ECB
2022	6.1	5.3	n. a.	2.5
2023	2.4	2.3	n. a.	1.2

Malta



	CF	IMF	OECD	ECB
2022	n. a.	4.8	n. a.	6.5
2023	n. a.	4.5	n. a.	5.3

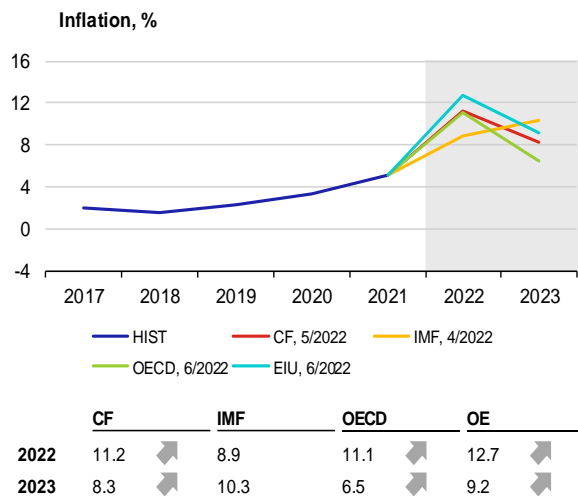
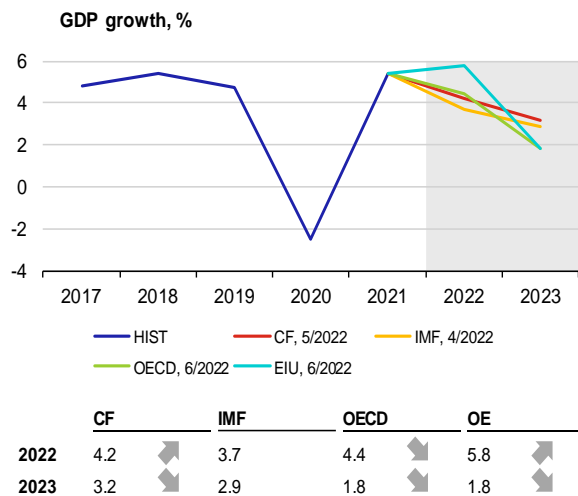


	CF	IMF	OECD	ECB
2022	n. a.	4.7	n. a.	2.1
2023	n. a.	2.8	n. a.	1.9

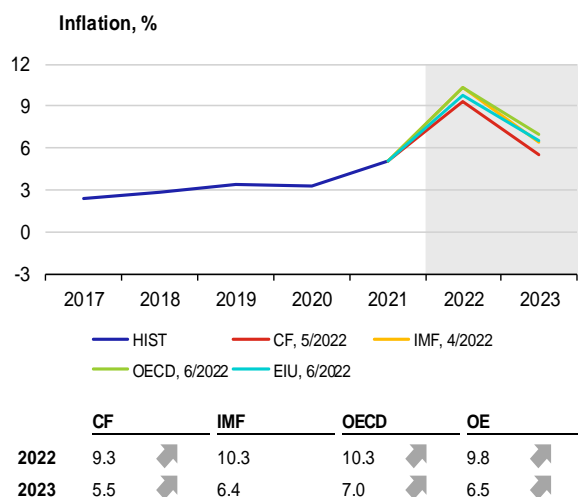
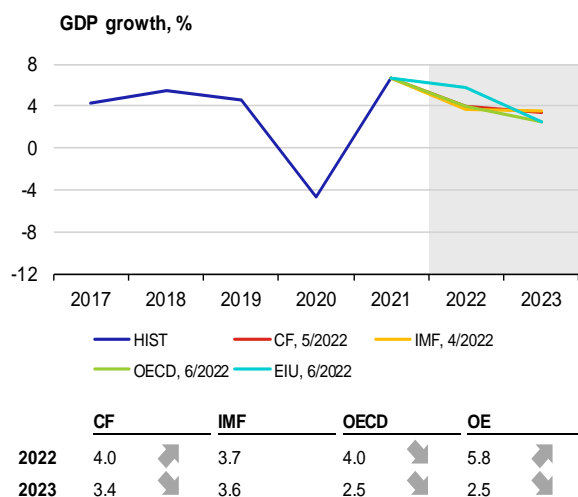
Ddd

A5. GDP growth and inflation in other selected countries

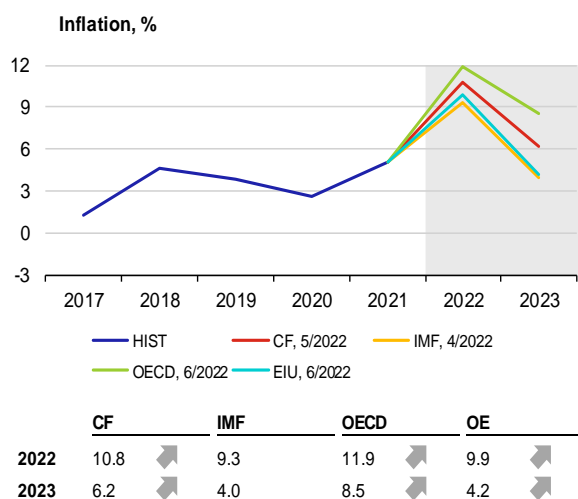
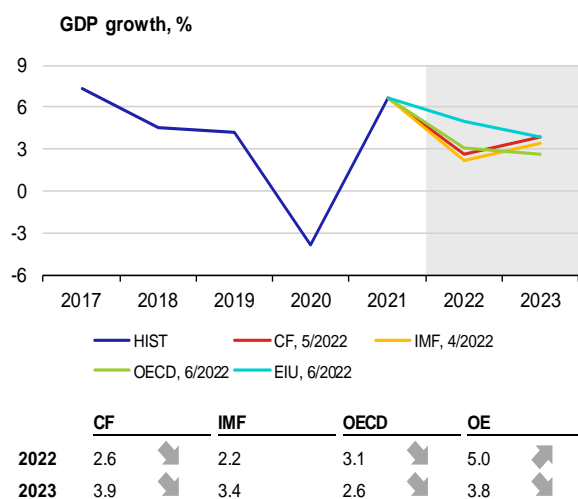
Poland



Hungary



Romania



A6. List of abbreviations

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

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