

# Global Economic Outlook

———— May 2022



**CNB** CZECH  
NATIONAL  
BANK

Czech National Bank — Global Economic Outlook — May 2022

[www.cnb.cz](http://www.cnb.cz)

<b>I. Introduction</b>	<b>2</b>
<b>II. Economic outlook in selected territories</b>	<b>3</b>
<b>II.1 Euro area</b>	<b>3</b>
<b>II.2 Germany</b>	<b>4</b>
<b>II.3 United States</b>	<b>5</b>
<b>II.4 China</b>	<b>6</b>
<b>II.5 United Kingdom</b>	<b>7</b>
<b>II.6 Japan</b>	<b>7</b>
<b>II.7 Russia</b>	<b>8</b>
<b>II.8 Poland</b>	<b>8</b>
<b>II.9 Hungary</b>	<b>9</b>
<b>II.10 Countries in the spotlight– Republic of South Africa</b>	<b>10</b>
<b>III. Leading indicators and outlook of exchange rates</b>	<b>11</b>
<b>IV. Commodity market developments</b>	<b>12</b>
<b>IV.1 Oil</b>	<b>12</b>
<b>IV.2 Other commodities</b>	<b>13</b>
<b>V. Focus</b>	<b>14</b>
<b>Economic impacts of a possible halt in the supply of energy commodities from Russia to Europe</b>	<b>14</b>
<b>A. Annexes</b>	<b>21</b>
<b>A1. Change in predictions for 2022</b>	<b>21</b>
<b>A2. Change in predictions for 2023</b>	<b>21</b>
<b>A3. GDP growth and inflation outlooks in the euro area countries</b>	<b>22</b>
<b>A4. GDP growth and inflation in the individual euro area countries</b>	<b>22</b>
<b>A5. GDP growth and inflation in other selected countries</b>	<b>29</b>
<b>A6. List of abbreviations</b>	<b>30</b>

#### Cut-off date for data

13 May 2022

#### CF survey date

9 May 2022

#### GEO publication date

20 May 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.

#### Contact

gev@cnb.cz

#### Authors

<b>Luboš Komárek</b>	Editor-in-chief, I. Introduction, V. Focus
<b>Petr Polák</b>	Editor, II.3 United States
<b>Soňa Benecká</b>	II.1 Euro area, II.2 Germany, V. Focus
<b>Michaela Ryšavá</b>	II.5 United Kingdom
<b>Martin Kábrt</b>	II.6 Japan
<b>Alexis Derviz</b>	II.4 China
<b>Oxana Babecká</b>	II.7 Russia
<b>Jaromír Tonner</b>	II.8 Poland, II.9 Hungary
<b>Jan Hošek</b>	II.10 South Africa, IV.1 Oil, IV.2 Other commodities, V. Focus
<b>Martin Motl</b>	V. Focus

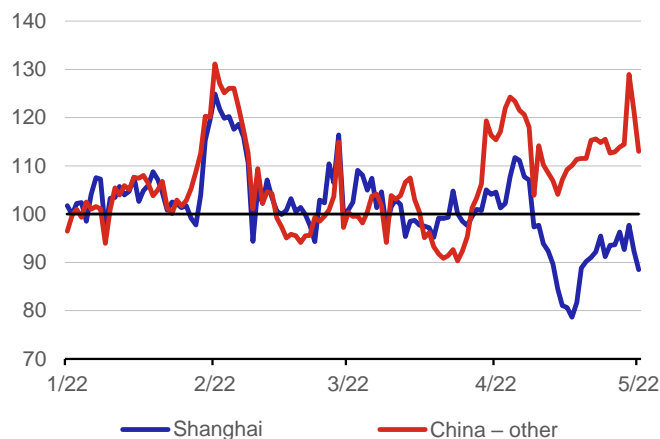
## I. Introduction

**Europe has been exposed to the war for three months!!!** Ukraine has been bravely fighting the Russian aggression with material assistance from the West, while Russia is being increasingly isolated and almost unreservedly condemned for the aggression. Previously neutral Finland and Sweden are considering NATO membership over concerns about their safety.

**The consequences of the war in Ukraine have major economic impacts.** The European Union is calculating how to handle a possible halt in gas supplies from Russia. It has suggested a shift away from Russian oil, which would be painful for many countries. Global food security is also jeopardised; there will mainly be a shortage of Ukrainian wheat, but also maize and sunflower oil, both due to reduced production and the fact it is impossible to export through the war-torn Black Sea ports under Russian blockade.

**Sizeable supply-side constraints will further exacerbate the inflationary effects worldwide,** to which even indecisive central banks will have to respond. The Fed's hawkish tone and actions are sending a clear message. The FOMC confirms the need to increase interest rates further by 50 bp at the meeting in June and probably also in July. They are also signalling to markets that rate increases will inevitably have negative impacts on economic growth and unemployment. Some members of the ECB Governing Council have shifted their views in the last month and admit the possibility of the first increase in the ECB deposit rate at the July meeting, i.e. at the first possible opportunity after the end of net asset purchases under the APP. However, the ECB will be limited by an increase in yields on bonds of overindebted euro area countries, most notably Italy and Greece.

Container freight clearance from Chinese ports, index 100 = January 2022



Source: Kiel Trade Indicator  
Note: 10-day moving average

**The chart in the current issue shows** how the Chinese zero-tolerance Covid-19 policy is affecting sea transport, which is crucial to the global economy. One such example is the operation of the key Chinese port in Shanghai, which has been very limited since early April. This has been reflected in an increase in wait time for ship clearance. It is not clear when the port and the companies in this region will be fully up and running. This situation is prolonging long-running issues with value chains and, together with the war in Ukraine, is fostering faster inflation through supply-side constraints.

**The current issue also contains an analysis:** “Economic impacts of a possible halt in the supply of energy commodities from Russia to Europe”. The aim of the article is to give a general description of the macroeconomic links, which are relevant to understanding the impacts of a halt in the flow of energy commodities from Russia, and also to present the authors' own model simulation of the impacts on the euro area economy.

### Barometr of Global Economic Outlook for selected countries

		EA	DE	US	UK	JP	CN	RU
<b>GDP</b>	<b>2022</b>	2.7	2.0	2.8	3.8	2.0	4.7	-10.0
	<b>2023</b>	2.2	2.4	2.1	1.0	1.9	5.1	-0.7
<b>Inflation</b>	<b>2022</b>	6.8	6.6	7.2	7.8	1.7	2.2	21.8
	<b>2023</b>	2.6	3.0	3.3	4.3	1.1	2.3	7.8
<b>Unemployment</b>	<b>2022</b>	7.0	5.0	3.6	4.0	2.7	3.4	7.6
	<b>2023</b>	6.8	4.9	3.6	4.0	2.6	3.3	7.8
<b>Exchange rate</b> (against USD)	<b>2022</b>	1.11	1.11		1.31	123.3	6.63	85.9
	<b>2023</b>	1.14	1.14		1.34	119.9	6.46	88.8

Source: Consensus Forecasts (CF), Oxford Economics

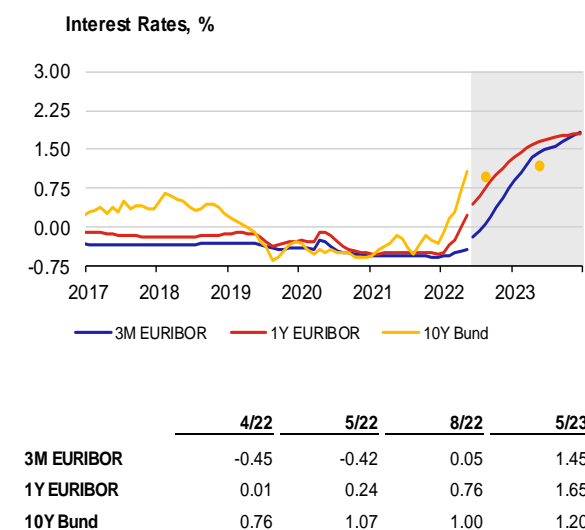
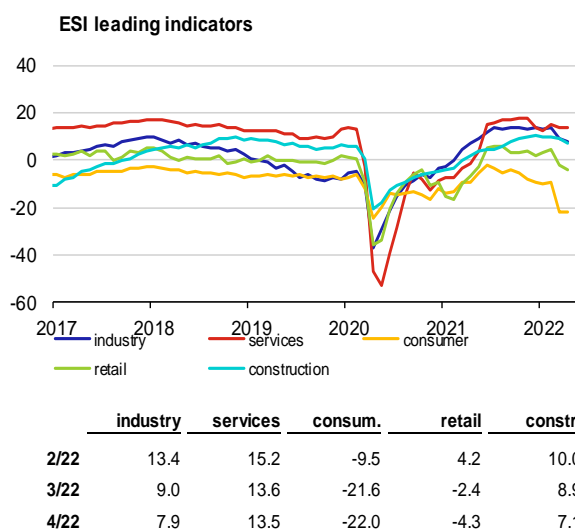
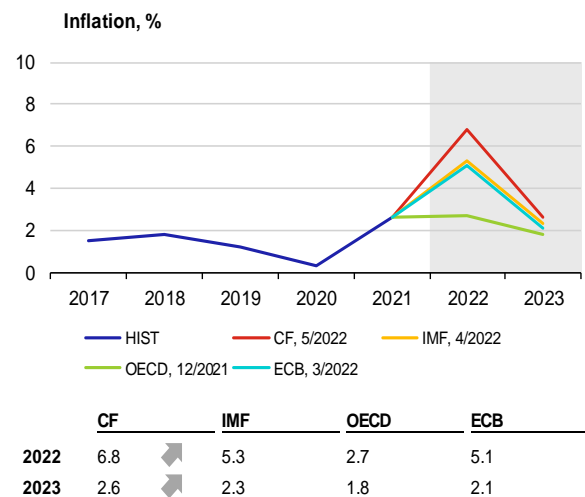
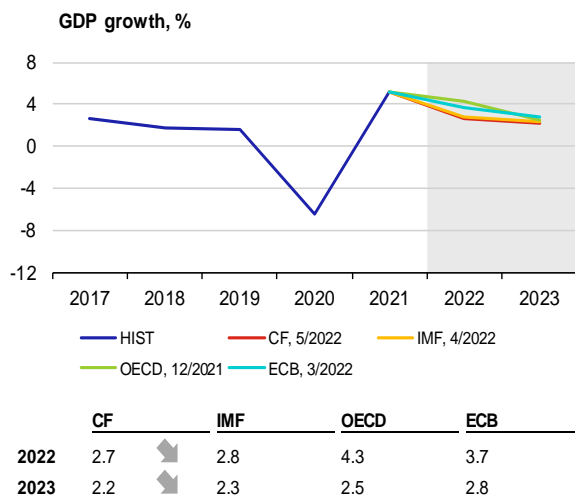
Note: The arrows indicate the direction of the revisions compared with the last GEO.

## II.1 Euro area

According to preliminary data, the euro area economy rose only slightly in 2022 Q1, which was also due to the Russian invasion of Ukraine, in addition to yet another short wave of the pandemic. GDP growth was 0.2% quarter on quarter, with a decline in Italy (-0.2%) being more than offset by positive growth in Spain (+0.3%) and Germany (+0.2%). The French economy was flat quarter on quarter. As suggested by detailed data from France and Spain, pandemic restrictions dampened household consumption growth, while gross capital formation had a positive contribution to growth. This is expected to have been due to higher additions to inventories owing to persisting complications in supply chains. Firms in the euro area are also being affected by difficulties relating to government lockdowns in China and the disruptions to global logistics. The first data for April suggest that there is no easing in sight. Although the PMI for manufacturing remained in the expansion band, the April value is the lowest since January 2021 amid an only very small increase in the sub-index for current output. The growth rate of new orders slowed, while price expectations surged again to a five-month maximum. By contrast, the PMI in services in April approached the levels observed last summer. In addition to substantial growth in new business activity, demand for staff is also increasing.

**Inflation pressures remained significant in the euro area.** Although the surge in energy commodity prices after the outbreak of the war corrected later and many countries quickly implemented measures against energy poverty, the effect of energy remained significant. The high core prices reflect supply chain difficulties, second-round effects of the energy shock and a depreciating euro. Inflation is a great cause for concern for many ECB representatives, who have mentioned that the first rate hike may come in early summer.

**The May CF was again characterised by higher expected euro area inflation and lower growth prospects.** The EURIBOR outlook is much higher and government bond yields (mainly Italian and Greek ones) have already jumped noticeably. The ECB is even considering new tools it could implement quickly in case of further bond market fragmentation.

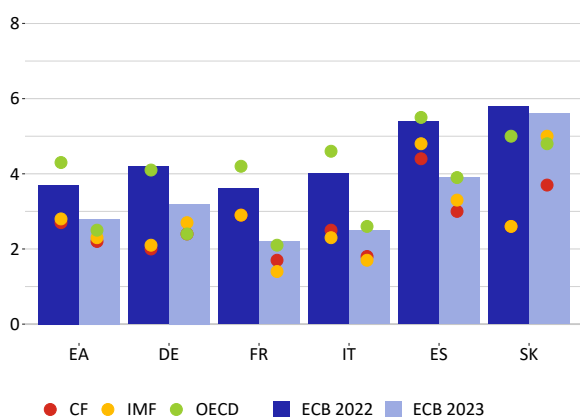


## II.2 Germany

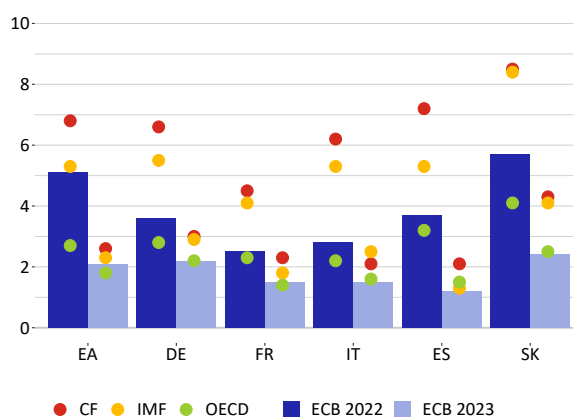
**The German economy recorded only slight growth in 2022 Q1 and the outlooks for Q2 have deteriorated.** GDP grew by 0.2% quarter on quarter and 3.7% year on year. However, it still remains below the pre-pandemic level. Developments in the GDP components are not known yet but based on monthly data, Germany industry suffered in particular, while services started to slowly emerge from the Covid downturn. The fall in German industry in March was significant (-3.9% month on month), as corporate activity was dampened not only by the sanctions against Russia but also lockdowns in China, logistics difficulties and the instant impact of high energy prices. German exports recorded a similar drop, as an increase in exports to the USA did not offset a decrease in exports to the UK and China. Orders from German companies, which were very high at the end of last year, also fell significantly, due mainly to a decline in orders from outside the euro area. The short-term outlook for the German economy is thus less than impressive. The April PMI for manufacturing is not positive either. Although it stayed in the expansion band, the sub-index for output declined for the first time since June 2020. The expectations of an increase in production deteriorated, while input prices rose further. High price growth is affecting German consumers. A number of indicators confirm a decline in consumer sentiment, as inflation in Germany surged to 7.4% in April. Although government support in the energy crisis is unusually generous, high fuel, energy and food bills may slow consumers' post-Covid spending especially on services, which have been recovering after lockdowns. However, the PMI for services has been favourable so far, which might keep the German economy close to stagnation in Q2.

**CF analysts again lowered their outlook for German economic growth and revised expected inflation upwards.** GDP growth will thus reach 2% this year and accelerate slightly to 2.4% next year, while average inflation will be 6.6% this year and slow to 3% in 2023. The new CF outlook is thus close to the outlook of the German Ministry of Economic Affairs and Climate Action. But a halt in gas supplies from Russia is a risk. The Bundesbank estimated its impact at around 5% of GDP this year.

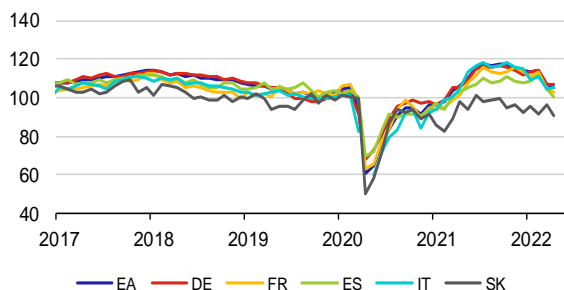
GDP growth in selected euro area countries in 2022 and 2023, %



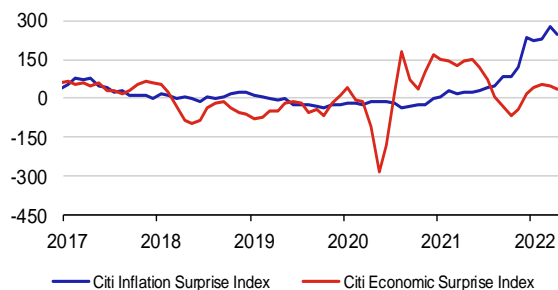
Inflation in selected euro area countries in 2022 and 2023, %



ESI leading indicators



Economic and inflation surprises in the euro area, %



Inflation expectations based on 5year inflation swap and SPF

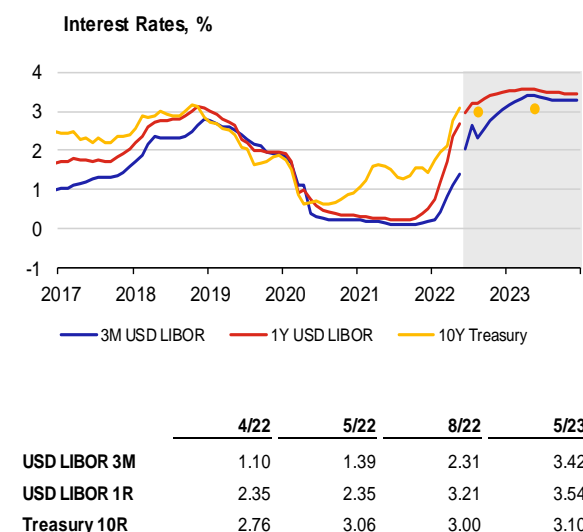
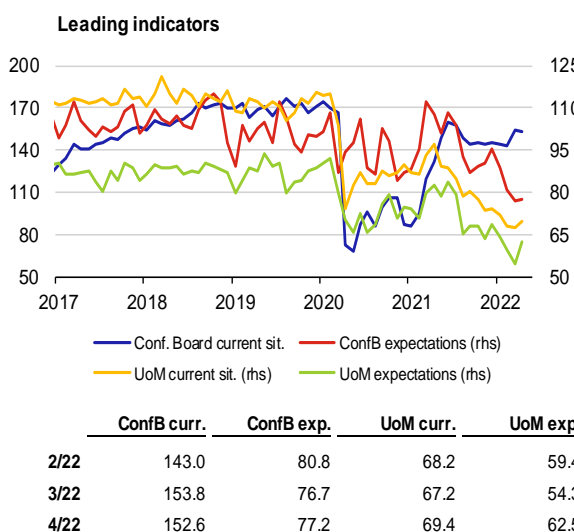
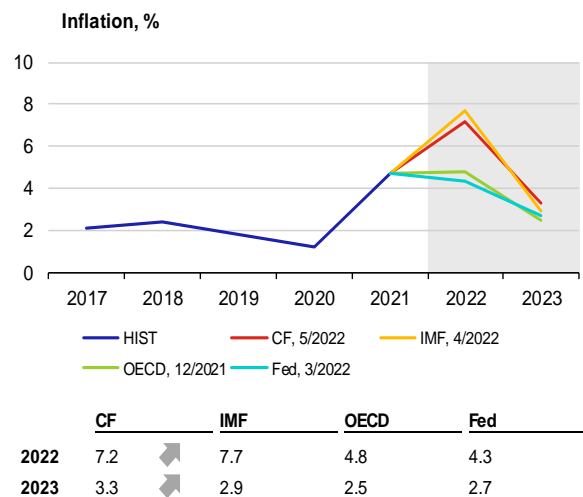
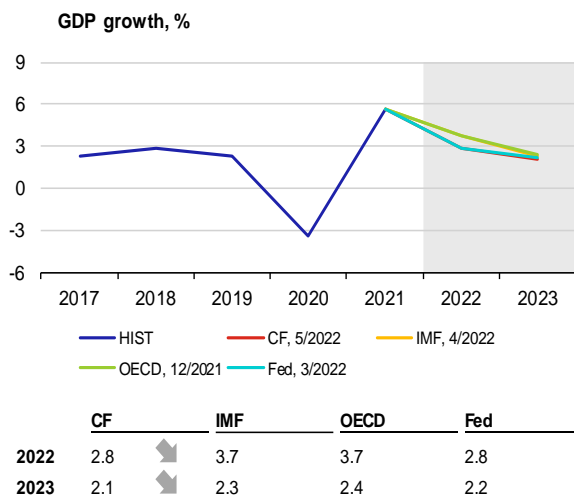
	EA	DE	FR	ES	IT	SK
2/22	114.5	114.1	113.0	111.7	111.2	91.3
3/22	106.7	107.2	104.2	104.7	104.1	96.2
4/22	105.0	107.1	102.8	100.2	105.4	91.1

	5y5y	SPF
3/22	2.17	1.97
4/22	2.37	2.05
5/22	2.35	2.05

### II.3 United States

**The US economy recorded an unexpected fall in 2022 Q1 (down by 1.4% quarter on quarter).** According to outlooks and analysts' comments, though, there is no reason to be concerned about an approaching recession, as this is a decline caused by a decrease in exports and domestic fundamentals remain robust. Household consumption rose by 2.7% and corporate investment by as much as 9.2% year on year in Q1. The labour market remains tight, with non-farm payrolls rising by 428,000 in April. The participation rate has not reached the pre-pandemic level yet and its growth has halted. At the same time, the number of people handing in their notice is increasing, as are salaries. The leading indicators continue to suggest positive sentiment – the PMI in services was 55.6 in April and the PMI in manufacturing amounted to 59.2 in April. The drop in GDP in Q1 was reflected in a decline in the GDP outlook this year. The new CF outlook expects GDP to grow by 2.8% in 2022 and 2.1% in 2023.

**High inflation remains another issue in the US economy, to which the Fed is responding by tightening its monetary policy.** Inflation stood at 8.3% year on year in April, due mainly to growth in prices of energy (30.3%), food (9.4%) and services (5.4%). Headline inflation was lower in April than in March, but food prices grew faster. Like for other countries, the CF outlook for US inflation was shifted upwards again both for this year and the next. The Fed raised the interest rate by 50 bp at its meeting in May and announced that it would start selling the purchased assets at a monthly pace of USD 47.5 billion for the next three months. Chairman Powell has so far ruled out greater rate increases as a sharp raise would pose a risk to the US economy. However, he stated that getting inflation under control would cause some pain anyway. US financial markets are responding to current inflation and the Fed's actions, recording a gradual fall. The cryptoasset market was also affected by a big shock at the start of May, losing tens of per cent. However, despite the declining markets and the appreciating dollar, there were large inflows of capital to the USA.



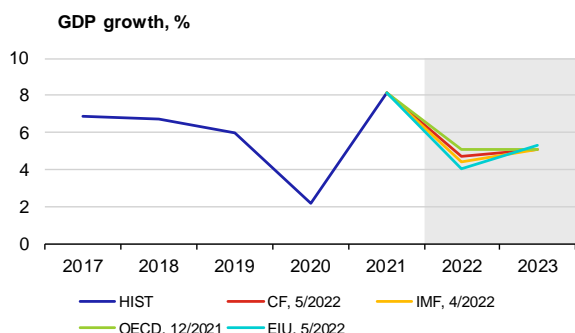
## II.4 China

**Economic growth in China (4.8% in Q1) improved from 4% at the end of 2021.** This figure conceals uneven sectoral developments: while annual growth in industrial production was 5% in March, unemployment (according to official surveys) rose to 5.8% and retail sales even recorded an annual decline of 3.5%. The Chinese government has a growth target of “around 5.5%”. In the meantime, the risks of not meeting this target have been increasing. Consumption and services have been adversely affected by the zero-Covid policy associated with extensive (and often unpredictable) lockdowns, while industry is likely to continue to face problems with commodity supplies and possible sudden price surges. Sources of growth are likely to strengthen on the side of infrastructure investment at the expense of residential construction where the downturn related to debt consolidation persists.

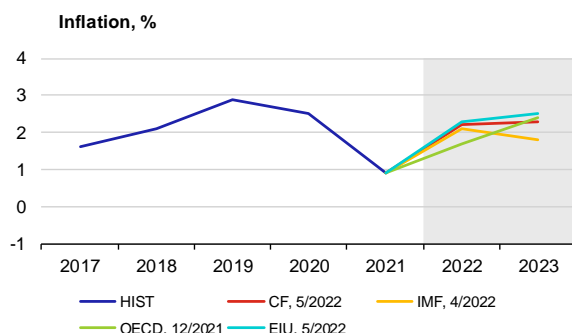
**The economic confidence indicators dropped sharply below 50 points in April.** For example, the Caixin General Manufacturing PMI in industry was 46 – the lowest level in 26 months. The PMI in services was even worse (42 compared to 50.2 in March). Alternative indicators of economic activity available between quarterly GDP statistics, such as the CAT (Cyclical Activity Tracker) for April, point to a continued economic slowdown.

**Consumer price inflation remained at the December level in March (1.5%), as a greater increase was dampened by a decline in food prices.** Commercial bank analysts’ outlook expects growth in CPI to reach around 2.2% this year. As expected by the majority, last year’s PPI growth halted (8.8% in February and 8.3% in March compared with double-digit figures at the end of 2021) but repeated turbulences in commodity markets might disrupt this calming.

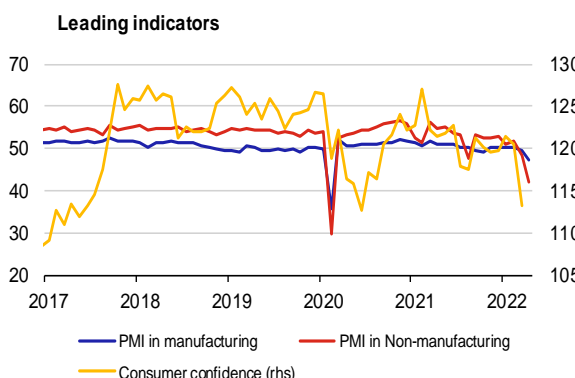
**China’s foreign trade did not maintain the March levels in April.** The volumes of exports were almost 2% below the March level but represent a slight increase compared to the same period a year earlier. Imports also declined slightly from March levels (by around 2.7%), with a downward trend being apparent since autumn 2021, although the fall observed in February 2022 was not repeated. Logistics difficulties affecting imports seem to have a deeper and longer-running impact.



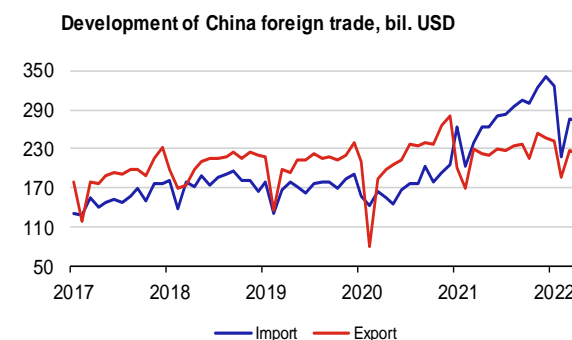
	CF	IMF	OECD	OE
2022	4.7	4.4	5.1	4.0
2023	5.1	5.1	5.1	5.3



	CF	IMF	OECD	OE
2022	2.2	2.1	1.7	2.3
2023	2.3	1.8	2.4	2.5



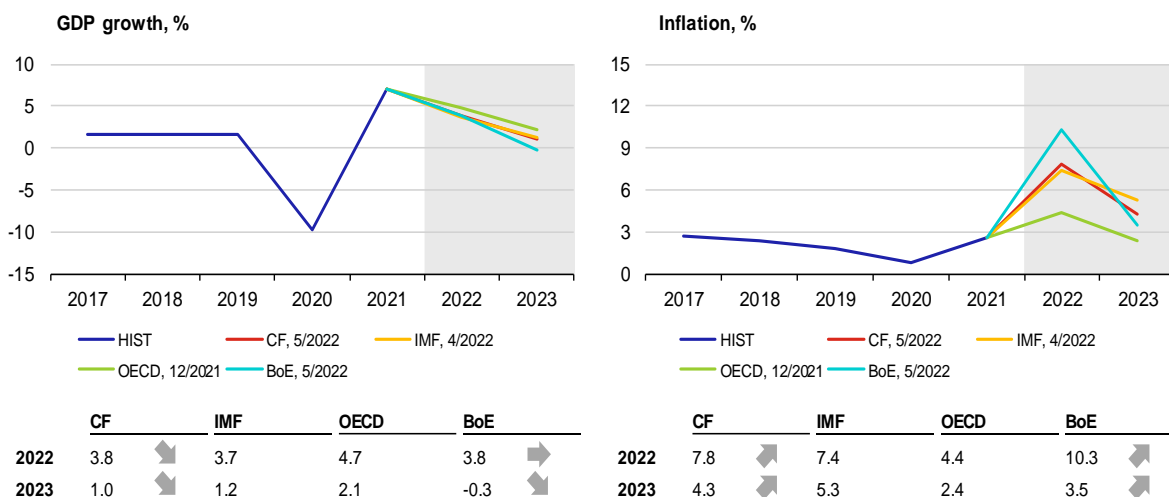
	PMI manuf.	-manufacturing	Cons. conf (rhs)
2/22	50.2	51.6	120.5
3/22	49.5	48.4	113.2
4/22	47.4	41.9	



Source: Bloomberg

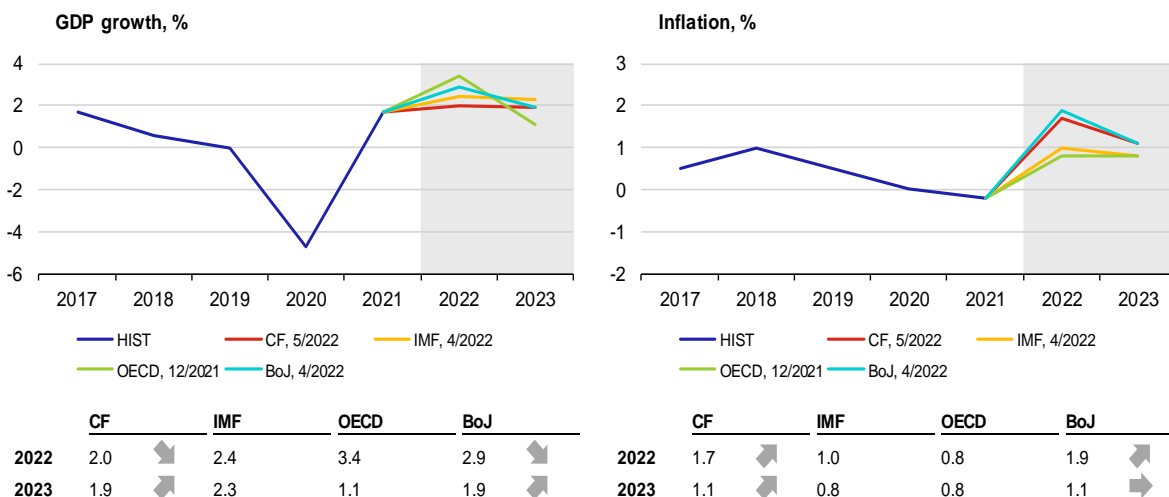
## II.5 United Kingdom

The BoE has warned against an increasing risk of a recession in the UK economy and raised the key interest rate to 1%. The 0.25 pp rate increase pushed it to the highest level since February 2009. In its new forecast, the BoE expects inflation to grow further this year and peak around 10%, which reflects higher prices of energy, food, basic goods and services. Inflation is expected to decline in 2023 and return close to the 2% target in about two years. Economic growth is expected to slow down and even a decline in GDP (of 0.3%) is forecasted for 2023. Real disposable income of households is under pressure in particular, as rising cost of living are dampening consumer spending. Business activity surveys have so far remained generally strong. The composite PMI declined slightly to 58.2 in April but has long remained safely in the expansion band, pointing to strong growth in the private sector. However, the services sector has lost its momentum, among other things due to increasing cost pressures, while manufacturing has improved slightly.



## II.6 Japan

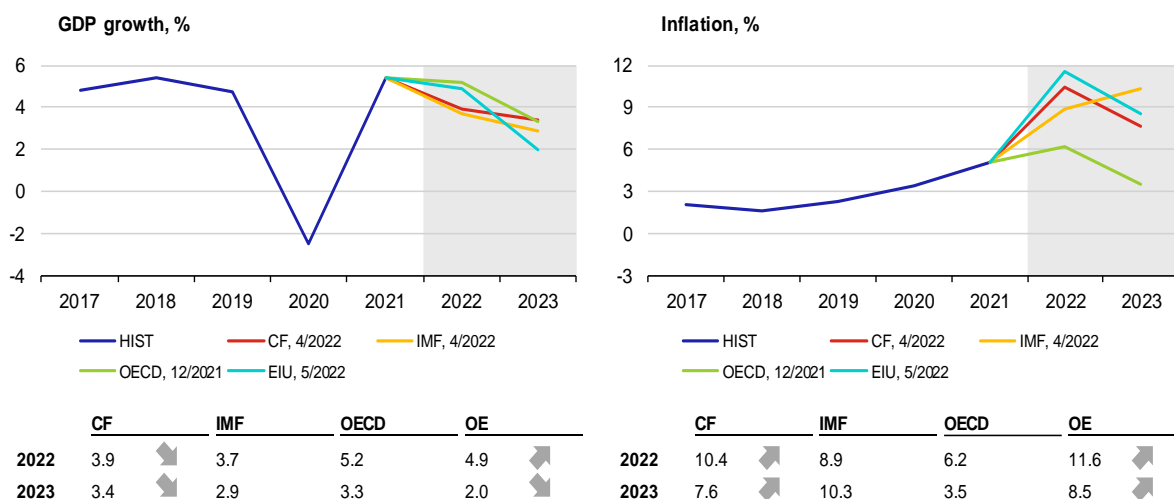
The BoJ continues to perceive too-low inflation as the main challenge for monetary policy in the medium term. Although the central bank's new April forecast expects consumer inflation slightly above the target in the short term, most Policy Board members continue to see the expected return to price stagnation after the effect of the commodity price increase unwinds as a greater problem. Therefore, the BoJ confirmed continued extremely accommodative monetary policy at the meeting in April. The new forecast also expects lower economic growth due to the war in Ukraine, the spread of the Covid-19 pandemic in Asian countries and the related economic risks. April business sentiment indicators pointed to a continued slight improvement in industry and services. Nevertheless, consumer sentiment was broadly flat at the March level, which was the lowest in 12 months. This is also due to perceived inflation, which visibly exceeds official inflation.





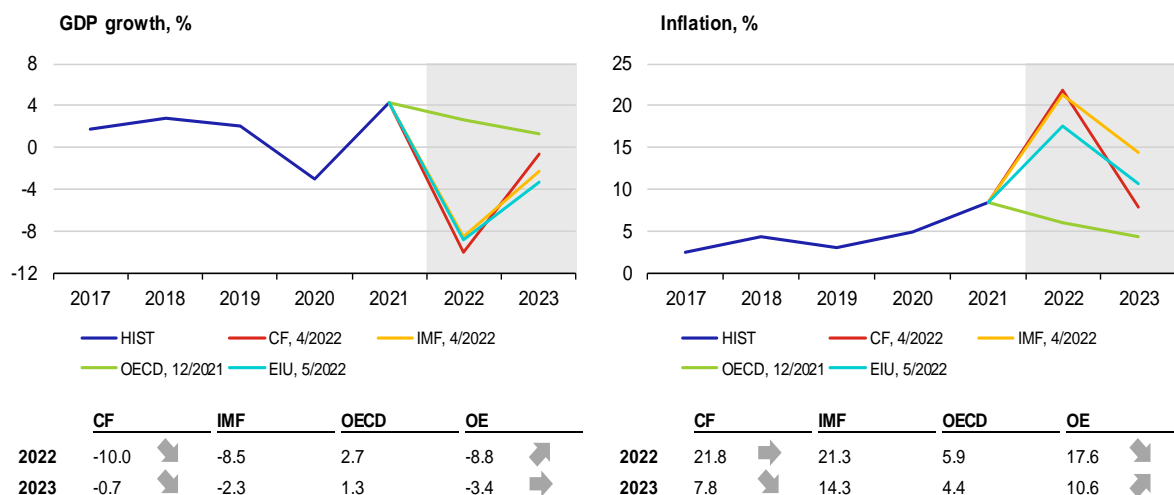
## II.7 Russia

**A significant change in course is needed for the Russian economy.** The Central Bank of Russia's (CBR) May forecast for 2022 expects a GDP decline of 8–10%, in line with the CF forecast. Unlike CF, the Bank is more pessimistic about next year, expecting an economic decline of up to 3%. This is based on the need for a major reshaping of Russia's production and international trade due to sanctions. The CBR expects the economy to do so before 2024. GDP, exports and imports should return to growth afterwards. According to the new assumptions of the CBR forecast, imports and exports will decline by 32.5%–36.5% and 17%–21% respectively this year. Russia's international reserves dropped to USD 592.1 billion on 6 May, down by 7.9% (USD 51.1 billion) from the record-high level reached on 18 February 2022. Exchange rate and capital flow management was eased slightly. The monetary policy rate was lowered by 3 basis points to 14%. Under favourable circumstances, the CBR's medium-term outlook expects it to decrease to 12% this year. Inflation reached 17.8% in April.



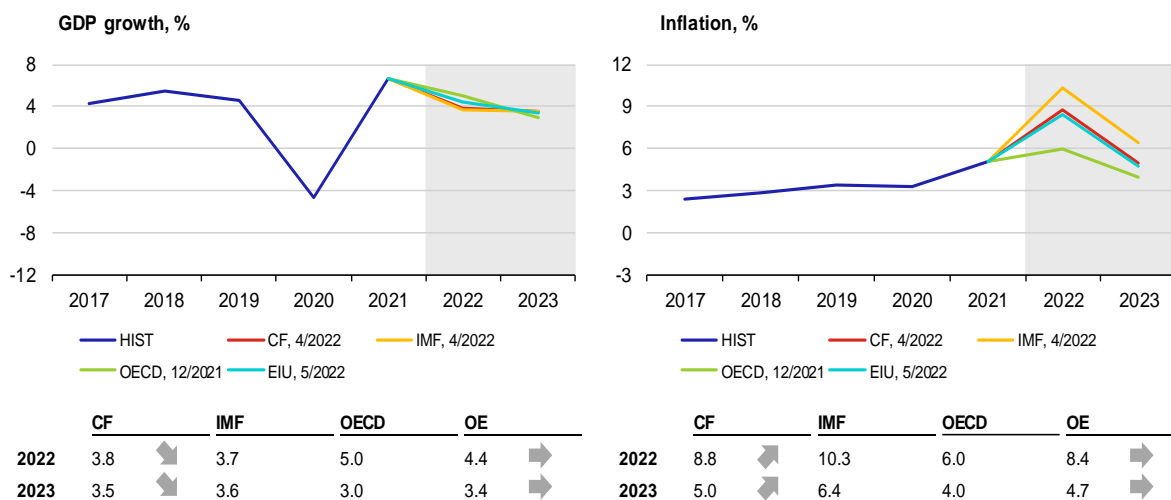
## II.8 Poland

**The inflow of refugees to Poland due to the war in Ukraine and the surge in commodity prices are pushing Polish inflation to historical highs.** Annual consumer price inflation accelerated again in April (to 12.4% from 11% in March) due to the war-disrupted global supply chains, energy price growth and growing demand from Ukrainian refugees. Consumer confidence in the Polish economy remains at historical lows and the business confidence survey is also strongly pessimistic, despite slight corrections of the March shock. However, the threat of high inflation and its spillover into inflation expectations seems to outweigh all other risks, and so the Monetary Policy Council of the Polish central bank decided to increase the interest rate again from 4.5% to 5.25% at its meeting on 5 May. The labour market has so far shown a high degree of resilience. Nominal wage growth in the business sector keeps accelerating (12.4% in March), unemployment remains at historical lows around 5.5%.



## II.9 Hungary

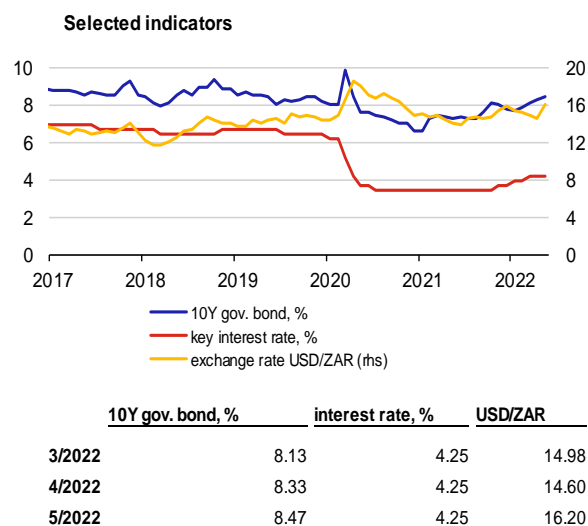
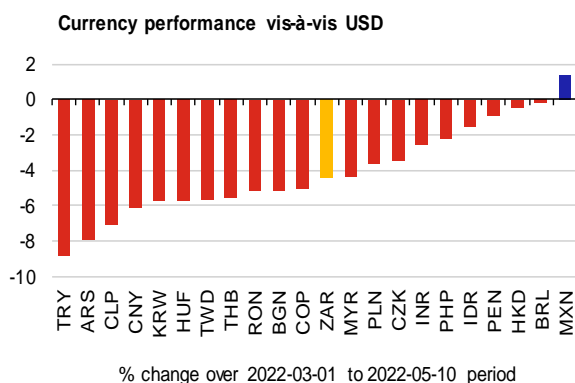
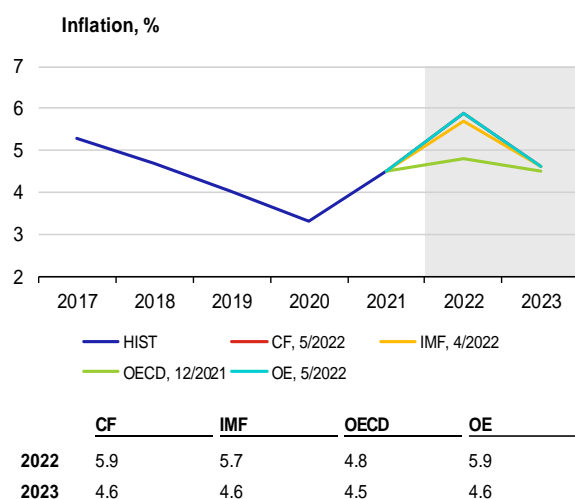
The Magyar Nemzeti Bank (MNB) is not giving up its fight against high inflation and the selling pressure on the forint due to commodity price growth and the war in Ukraine. At its meeting on 26 April, the MNB’s Monetary Council therefore decided to increase the key interest rate for the eleventh time in a row, once again by a record-high 1 percentage point from 4.4% to 5.4%. This must also have been due to the fact that annual consumer price inflation picked up from 8.5% in March to 9.5% in April and core inflation surged to 10.3%. According to GKI Economic Research, the downward trend in business confidence in the Hungarian economy came to a halt, with confidence reaching a high level of 10.5, comparable with the levels last measured in 2019. The Hungarian labour market has not shown signs of a downturn yet either, which can be seen in double-digit wage increases and very low unemployment. By contrast, industrial production slowed year on year in March (to 3.6% from 4.8% in February), virtually in all industries.



## II.10 Countries in the spotlight – Republic of South Africa

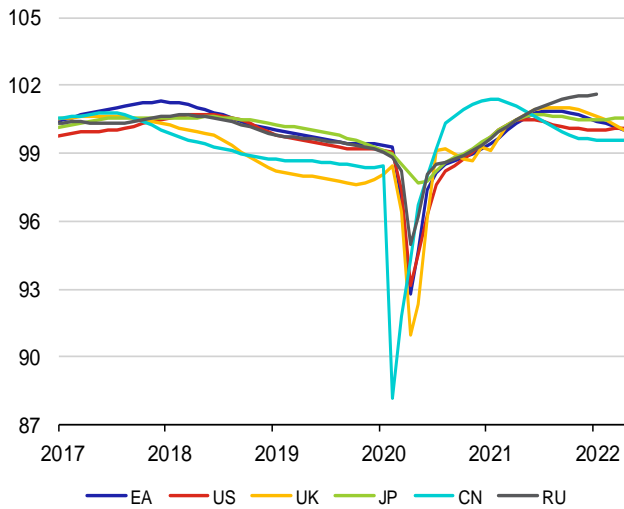
**The economy of the Republic of South Africa has historically been largely dependent on mining.** Although this dependence has been quickly decreasing in recent years in favour of a rising share of services in GDP, a large part of the economy continues to depend on exports of commodities and the rand (ZAR) is still considered a commodity currency by financial markets. The mining industry (gold, diamonds, coal, platinum ores, iron ore, chrome) furthers the development of the related industries and infrastructure. The rest of the economy faces structural problems, especially in the labour market and due to low growth. The unemployment rate is currently around 35%. The economy grew by 4.9% on average in 2021 and GDP thus reached 98% of the 2019 level, but a marked slowdown in growth is expected this year. High commodity prices currently provide the RSA with a welcome relief, fostering a post-pandemic recovery and improving the government budget, which is tight due to stimulus measures taken in the past. In February 2021, the National Treasury expected a government budget deficit of 14% of GDP for the 2020/2021 financial year and its gradual decline to 6.3% of GDP in the next three years. The current forecast improved significantly to 7.8% of GDP in the previous financial year and the decline is expected to continue to 4.9% of GDP at the three-year horizon. Government debt is currently around 70% of GDP.

**The monetary policy system in the RSA is based on inflation targeting, with the inflation band of 3–6% in effect since 2000.** Inflation, which stood around the lower boundary of the band for most of 2020, rose sharply in mid-2021 and increased further at the end of the year, when it reached 6%. This was due mainly to growth in prices of fuels and food. Inflation edged down later, standing at 5.9% in March. The South African Reserve Bank increased the forecast for this year's average inflation to 5.8% (from 4.2% six months ago – the MPR is published biannually), with the risks being on the upside due to the war in Ukraine. Owing to increasing inflation pressures, the MPC raised the repo rate by a total of 0.75 pp since November 2021, to the current level of 4.25%. However, the fiscal and monetary policy stance should continue to foster the economic recovery, especially in the sectors hit the hardest by the pandemic (construction, transport and trade), which are the largest contributors to the high unemployment rate.

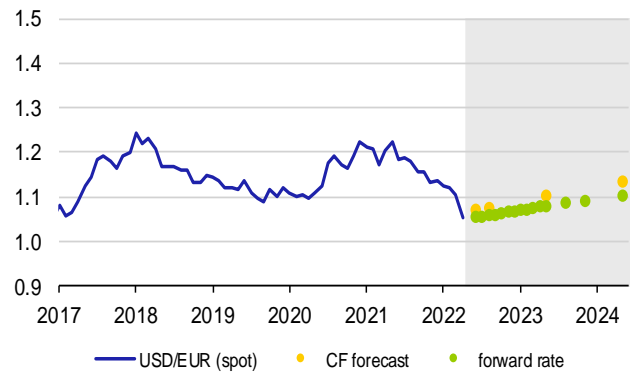


### III. Leading indicators and outlook of exchange rates

OECD Composite Leading Indicator

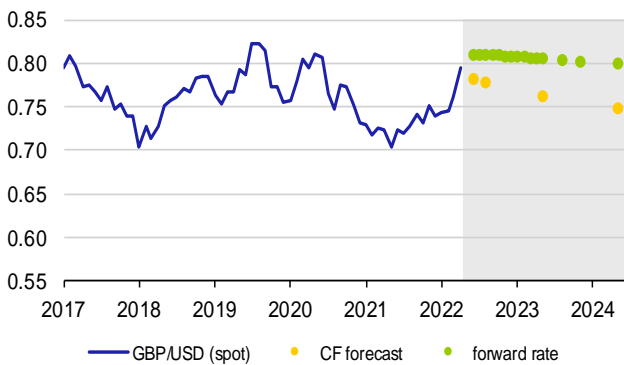


The US dollar (USD/EUR)



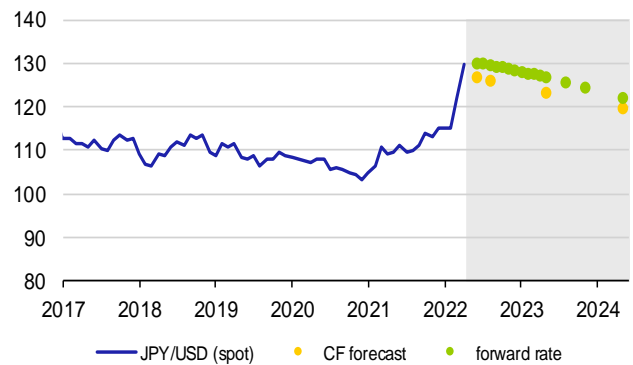
	9/5/22	6/22	8/22	5/23	5/24
spot rate	1.053				
CF forecast		1.073	1.079	1.107	1.135
forward rate		1.058	1.061	1.082	1.104

The British pound (GBP/USD)



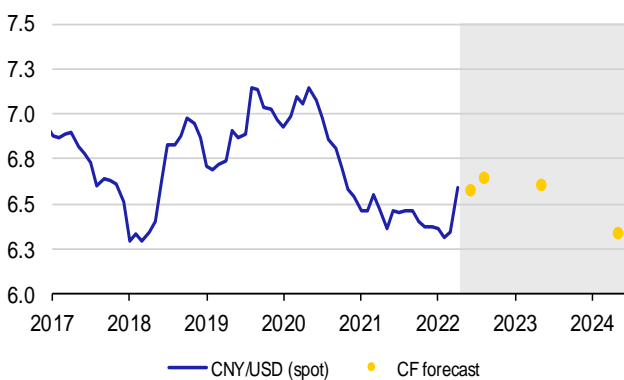
	9/5/22	6/22	8/22	5/23	5/24
spot rate	0.812				
CF forecast		0.784	0.779	0.764	0.749
forward rate		0.811	0.810	0.806	0.800

The Japanese yen (JPY/USD)



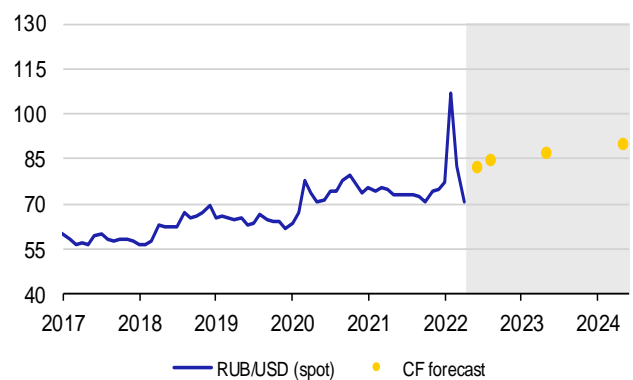
	9/5/22	6/22	8/22	5/23	5/24
spot rate	130.5				
CF forecast		127.0	126.0	123.3	119.9
forward rate		130.2	129.8	126.8	122.4

The Chinese renminbi (CNY/USD)



	9/5/22	6/22	8/22	5/23	5/24
spot rate	6.724				
CF forecast		6.577	6.655	6.607	6.347

The Russian rouble (RUB/USD)



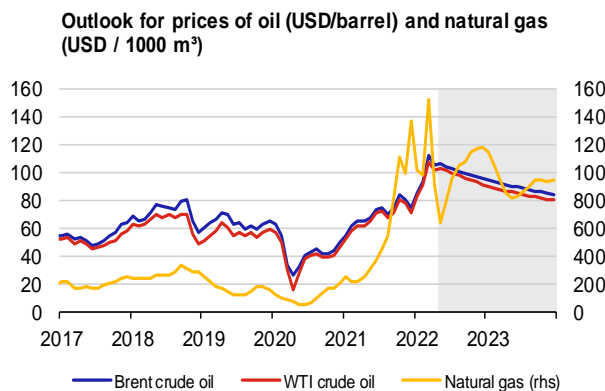
	9/5/22	6/22	8/22	5/23	5/24
spot rate	70.01				
CF forecast		82.43	85.01	87.10	90.03

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.

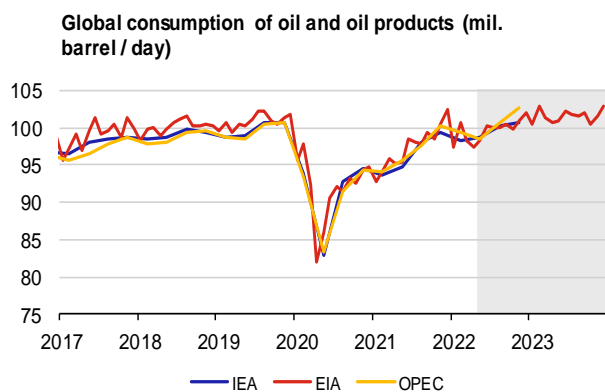
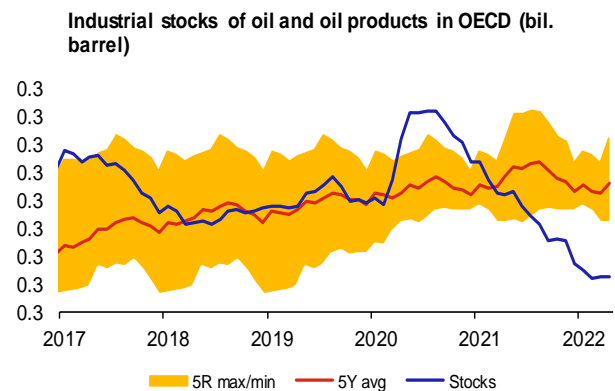
### IV.1 Oil

The average Brent oil price dropped in April after three months of growth. The extent of volatility in prices, which have mostly fluctuated between USD 100 and USD 110/bbl since April, has also been declining. The negative slope of the futures curve (backwardation) flattened markedly at the short end, which suggests that the physical market is relatively well supplied, among other things due to the release of oil from strategic reserves (1 million barrels daily in the USA from May to October, with additional 60 million barrels released by the IEA). The drop in oil prices was also due to the IMF's lower outlook for global economic growth in 2022. Weaker demand is expected in China due to lockdowns in large cities. The appreciation of the dollar (due to an expected interest rate increase in the USA) also pushed oil prices down. Last but not least, the decline in oil prices was also affected by seasonally weaker demand from refineries. Oil exports from Russia have so far dropped less than expected (among other things because Russian oil is being sold at a discount of more than USD 30/bbl). However, the price of oil retains a high risk premium due to uncertainty caused by the war in Ukraine and the sanctions on imports of Russian oil under consideration by the EU. Fuel prices (mainly those of diesel) are growing further due to globally rising refining margins, as the product market is tight because of weak supply and low stocks.

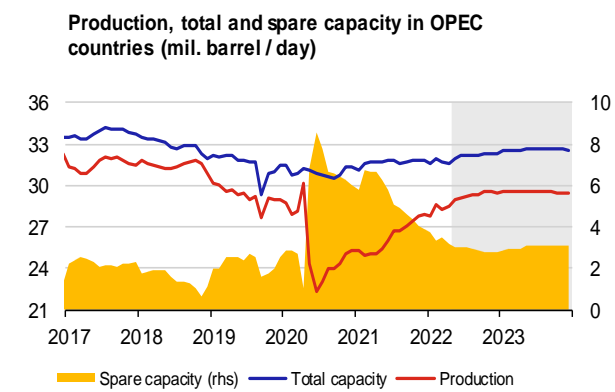
The mid-May Brent market curve is signalling a fairly strong drop to USD 95/bbl in late 2022 and USD 85/bbl in late 2023, but the EIA expects only a gradual decline from current levels to USD 97/bbl at the end of 2023 Q1 and then broad stability. The May CF is also above the market curve, with USD 106.1 and 93.3/bbl three and 12 months ahead respectively. But future oil prices will reflect mainly the situation in Ukraine, the Covid-19 pandemic and other risks like high inflation, persisting supply chain problems, high government debt and expected monetary policy tightening by major central banks.



	Brent	WTI	Natural gas
2022	100.20	96.92	1039.26
2023	89.27	85.00	931.94



	IEA	EIA	OPEC
2022	99.45	99.62	100.28
2023		101.56	



	Production	Total capacity	Spare capacity
2022	28.95	32.03	3.08
2023	29.54	32.58	3.04

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.

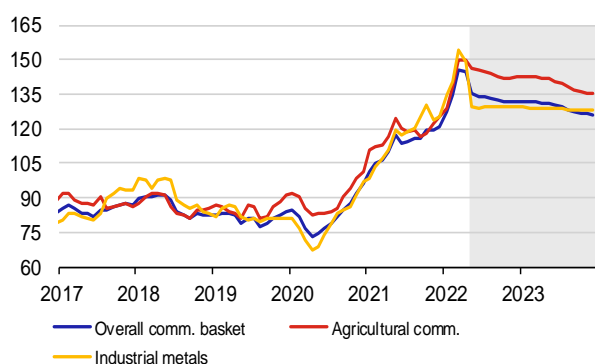
## IV.2 Other commodities

**Although the average natural gas price in Europe fell by a quarter from the record-high March level in April, it was still almost double the LNG price in Japan.** The decline in prices in Europe was due to lower demand thanks to good weather. Lower demand in China (also due to weather) and high stocks there allowed higher LNG exports to Europe. Last but not least, many European firms continue to buy Russian gas after they accepted Russia's payment terms. However, the high global prices of natural gas are starting to affect prices in the USA, where the average price reached the highest level since end-2008 in April. US gas stocks were 16% below the five-year average at the end of April due to this year's cold winter and they are being replenished only slowly due to weaker extraction in Q1 and high LNG exports. The price of coal rose in early April after reports that the EU and Japan would ban imports of Russian coal. It stabilised later due to weaker imports of coal to China, which had been declining since 2021 Q4 as the country has been increasing domestic production.

**Slower economic growth in China led to a drop in prices of most base metals in April.** Weaker demand by China's construction sector was reflected in a sharp decline in prices of aluminium, even though a fall in its stocks at the LME and high energy prices counteracted this, reducing its production in Europe. For the same reason, there was a drop in the price of copper (amplified by a rise in stocks at the LME) and nickel. Lower stocks at the LME in early April boosted prices of zinc, lead and tin, but even these prices started to fall in the second half of April. The average base metal price index thus fell in April and the first half of May, but prices stayed high, as trade in some commodities was disrupted by the geopolitical situation in Eastern Europe, Western sanctions against Russia and large Western companies withdrawing from Russia.

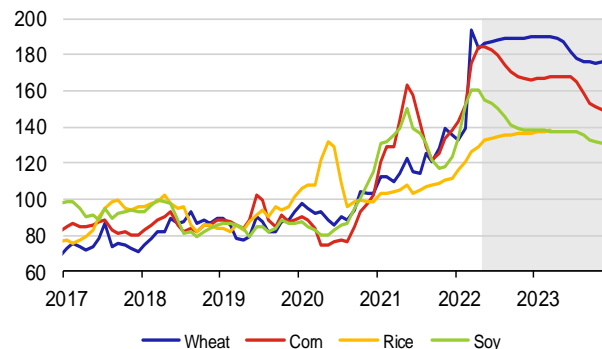
**The average food commodity price index remained at a record high in April and recorded a slight decline only in the first half of May.** Food commodity prices increased not only due to the war in Ukraine and the blockade of Ukrainian ports, but also because of bad weather (continued drought in Latin America, cold weather in the USA).

Non-energy commodities price indices



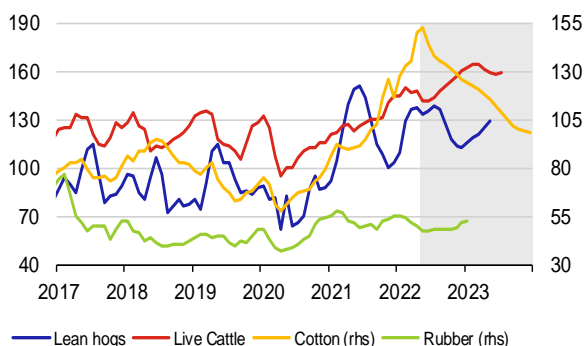
	Overall	Agricultural	Industrial
2022	134.7	143.0	134.5
2023	129.4	139.4	128.6

Food commodities



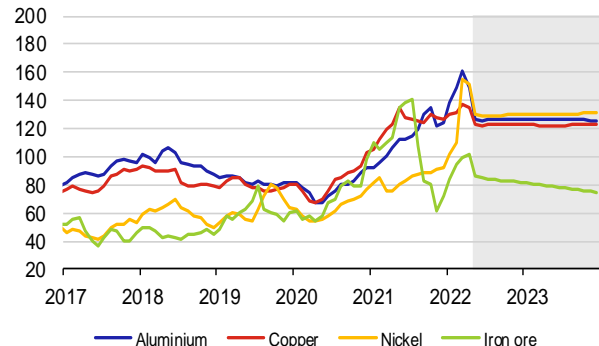
	Wheat	Corn	Rice	Soy
2022	179.7	170.5	131.2	147.2
2023	181.9	160.9	137.4	135.5

Meat, non-food agricultural commodities



	Lean hogs	Live Cattle	Cotton	Rubber
2022	127.1	148.7	136.2	49.9
2023	121.7	161.1	110.3	52.6

Basic metals and iron ore



	Aluminium	Copper	Nickel	Iron ore
2022	134.1	126.3	129.6	87.3
2023	126.5	122.6	130.5	77.9

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.

## Economic impacts of a possible halt in the supply of energy commodities from Russia to Europe<sup>1</sup>

The aim of the analysis is (i) to give a general description of the macroeconomic links in the context of a further pronounced reduction or a complete halt in the flow of natural gas, oil and other commodities from Russia to Europe; (ii) to give a flavour of emerging studies which aim to estimate the potential economic costs of this decision, and (iii) to present our own model scenario of the impacts of a halt in oil, coal and natural gas supplies from Russia on the euro area economy. Overall, a halt in the supply of natural gas in particular would have a stagflationary, or slumpflationary, effect on European economies. To conclude, we summarise the general recommendations for minimising the negative impacts of a possible halt in natural gas supplies from Russia.

### Introduction

EU officials regard the halt in the supply of natural gas and other commodities from Russia to the EU currently being considered as a conflict between political and economic interests. From a political perspective, imports from Russia should be decreased to a minimum to reduce Russia's revenues, thus limiting its ability to finance the war in Ukraine<sup>2</sup>. However, this would lead to huge economic losses in many EU countries which are heavily dependant on imports of these commodities. Estimates of these losses vary significantly, depending on whether they are made by politicians or production sector representatives. Renowned economists also have differing opinions on the impacts of a complete halt in Russian gas supplies to the EU. Politicians mostly consider the embargo on imports of Russian commodities to the EU to be necessary. They also believe this is achievable by making savings (both in industry and households) and by replacing Russian gas with increased supplies of pipeline gas from Norway and Algeria and LNG from Qatar and the USA. By contrast, many corporate sector representatives are concerned about the very survival of their firms in the event of a reduction in supplies of key energy commodities. Some "non-essential" production would have to stop or significantly limit operations. Firms are thus trying to show how important their particular area of production is for critical infrastructure. Some see a possible disintegration of society due to social unrest among hard-hit sections of the population already badly affected by high energy prices. There is also talk of discord within the EU as countries seek to secure the necessary energy supplies at the expense of others.

### Sensitivity of European countries to disruptions to natural gas supplies from Russia

A halt in gas supplies would be a greater problem for some European countries than for others. It is not just the share of gas imports from Russia in total imports that has to be taken into account. A larger number of factors also need to

**Table 1: Important factors affecting the vulnerability of European countries if gas supplies from Russia were restricted**

	Share in gas imports from Russian in gas imports (in %)	Share in gas imports from EA19 in gas imports (in %)	Dependence on gas imports from abroad (in %)	Gas share in energy mix (in %)	Storage filling rate (in %; April 2022)	Gas extraction (mil. m3; December 2021)	Number of LNG terminals	LNG storage filling rate (in %; April 2022)
Latvia	100	0	100	8	35			
Slovakia	100	0	88	26	21			
Czech Republic	100	0	86	20	39			
Hungary	95	0	76	31	20			
Bulgaria	79	20	96	14	18			
Poland	55	23	78	16	77	330	1	
Austria	50	50	73	19	18			
Germany	49	0	89	25	34			
Italy	47	3	93	30	35	267		44
Lithuania	43	0	99	23			1	
Romania	37	0	17	26	22	723		
Netherlands	32	4	45	34	26	1215	1	60
Greece	32	3	101	10			1	59
France	20	11	95	19	31		3	47
Spain	9	8	97	19	61		4	57
Belgium	8	37	99	27	14		1	65
UK	7	4			89	2996	3	52
Portugal	2	1	99	11	88		2	58
Sweden	0	14	100	4	67			
Croatia	0	24	69	21	19		1	
Norway	0	78	-2031	0		11000		
Denmark	0	87	37	12	41	113		

Source: Eurostat, Bruegel, Bloomberg. As Austria has not published the structure, the first and second indicators are estimates according to the literature. Some data for LNG storage facilities is not available. The breakdown into the green/red groups is based on the distribution of values.

<sup>1</sup> Written by Martin Motl, Luboš Komárek, Jan Hošek and Soňa Benecká. The views expressed in this article are those of the authors and do not necessarily reflect the official position of the Czech National Bank.

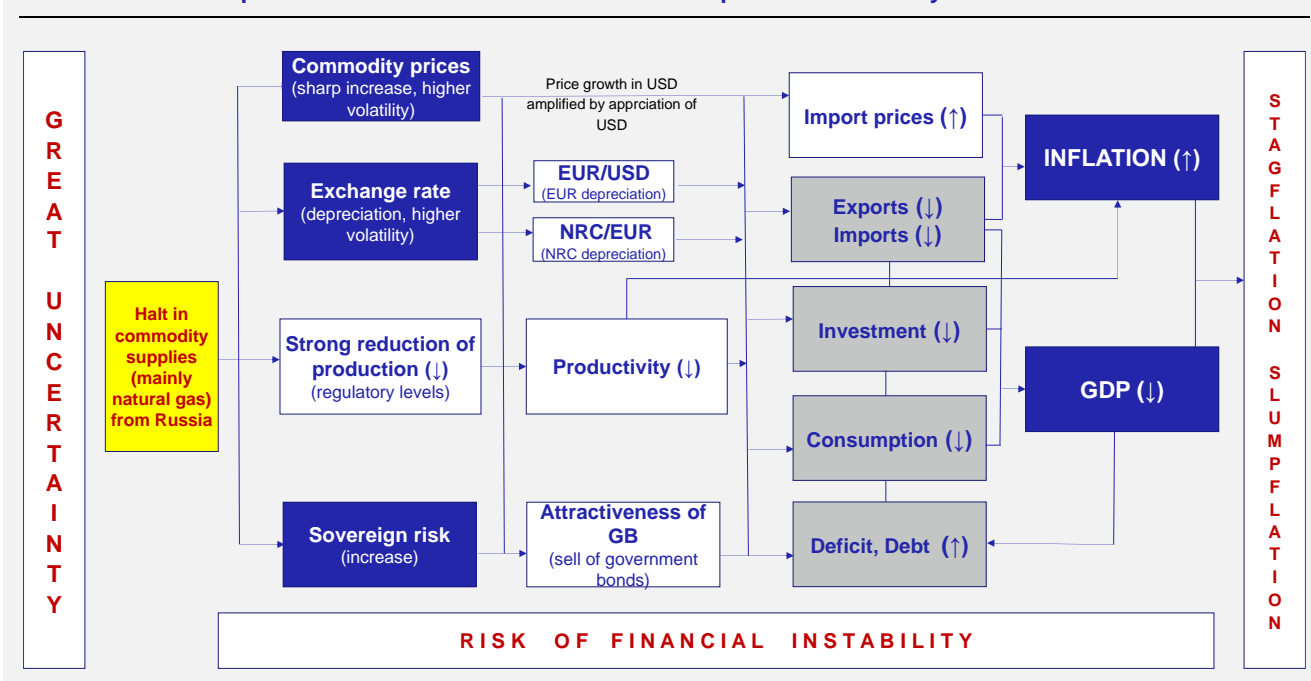
<sup>2</sup> On the other hand, shortfalls in Russian budget revenues due to the halt in supplies (of oil and coal in particular) are expected to be partly offset by increased exports for instance to China and India.

be considered. Table 1 shows some of them – the more red fields, the greater the country’s vulnerability in the event of Russian gas supplies being restricted. This can be illustrated by looking at Poland and Hungary. In Poland, direct gas supplies from Russia accounted for more than 50% in 2019. Although Poland gradually increased imports from other euro area partners, its natural gas supplies were largely from Russia. The importance of gas in the Polish economy is rather low and the storage filling rate is currently very high. Moreover, the country has its own LNG terminal and own extraction. The situation for Hungary is much worse. It almost fully depends on Russian gas, the share of gas in the energy mix is high, the storage filling rate is low, and the ability to diversify its gas supplies is minimal.

**Of course, European countries are taking numerous steps to reverse the unfavourable situation.** First, they are trying to secure natural gas supplies from other sources. Poland has accelerated the completion the country’s connection to the gas pipeline from Norway. Bulgaria is working on being able to connect to the TAP pipeline (from Azerbaijan via Turkey to Greece and Italy) as quickly as possible, and Greece wants to increase the capacity of its storage facilities and LNG terminals. Italy has concluded a new contract for gas supplies from Algeria. In order to make use the large capacity of Spanish LNG terminals, there are plans to increase the currently insufficient capacity of the pipeline between Spain and France. According to the Financial Times, there are plans to build or modernise about 23 LNG loading, storage and regasification terminals in Europe, some of which will be completed this year. Floating terminals will also be used, which require a much shorter construction time (1–2 years) than conventional terminals. Countries which do not have direct access to LNG terminals due to their geographical location rely more on creating sufficient gas inventories in storage facilities and concluding contracts with partners in Europe. In addition, several countries (e.g. Germany) must primarily ensure sufficient capacity in privately held gas storage facilities. Some storage facilities in Europe are also owned by the Russian firm Gazprom, which has maintained their filling rate at a minimum since last year. The German authorities have responded to this by taking temporary control over Gazprom Germania (until the end of September). Legislation allowing the nationalisation of Russian firms has also been approved. The German government has also allocated EUR 2.94 billion in the budget to purchase four floating terminals for the import of LNG before 2024. At least one of them is expected to go live this year.

**However, despite the preparations, many countries may find themselves in a difficult situation if gas supplies from Russia are stopped before the storage facilities are filled.** Winter 2022/2023 will be particularly important. The current capacity of LNG terminals and other gas pipelines is currently insufficient to offset a greater fall in supplies from Russia. Most institutions estimate that around two-thirds of Russian gas supplies can be replaced quickly without running into difficulties. The IEA and the Commission expect LNG supplies and a greater use of renewable resources (solar and wind) to play a key role. Part of the shortfall could also be made up by larger use of biofuel plants or savings due to a greater use of building insulation and the installation of heat pumps. However, it would be impossible to meet the remaining gas demand in the short term and gas supplies would have to be limited on the basis of regulatory stages. The Bruegel (2022) think tank, for example, is more optimistic in its estimates and expects that Europe would have to reduce demand just by 10–15%, which should be easier to achieve. According to current reports, households have already started to reduce consumption.

Chart 1 – Halt in imports of commodities from Russia to Europe: overview of key macroeconomic links



Source: Authors.  
 Note: NRC – non-reserve currencies of EU countries



## Macroeconomic links and context

**A halt in natural gas supplies from Russia would have a noticeably stagflationary, or slumpflationary, effect on some European economies, heavily dependent on these imports.** Of all the commodities imported to the EU, especially to countries with a higher share of industry in GDP, the real economy would be hit mainly by a possible sudden halt in natural gas supplies. A halt in supplies of oil, coal and other commodities would have a negative effect on economic activity, albeit to a slightly lesser extent. A shortage of these commodities may be caused by unilateral action by Russia or the international community due to the imposition of further sanctions related to the Russian invasion of Ukraine. A surge in costs due to a sudden reduction in the supply of key commodities, most notably energy and, in part, food, would act as a strong inflationary factor in the affected countries and in a stagflationary or slumpflationary direction overall (see Chart 1). In addition to a general increase in uncertainty, a sudden halt in gas and oil supplies from Russia would cause both a surge in natural gas and other commodity prices on commodity markets and a simultaneous weakening of exchange rates in the affected countries (reflecting negative sentiment on foreign exchange markets and sales of assets considered more risky by investors), i.e. the euro against the US dollar, or non-reserve currencies of EU countries against the euro. These price effects would pass through to domestic inflation via a rise in import prices. An increase in dollar prices of commodities would be further intensified by the appreciation of the US dollar against non-reserve currencies of EU countries.

**The reduced availability of natural gas would lead to the application of crisis scenarios in those economies directly affected, for example, through the application of regulatory stages to natural gas consumption.** Countries with no restrictions on their natural gas supplies would try to provide the countries affected with part of their gas supplies based on agreed mutual assistance between the EU countries (the principle of solidarity<sup>3</sup>), and would thus ultimately also be partially affected. Restrictions on natural gas supplies would have the largest and fastest impact on wholesale customers in a given country, while retail customers (households) would be the last to feel the effects. The strength of the pass-through to customers would depend on the gas storage filling rate and on when gas supplies can be diversified away from Russia or when alternative supplies can be used either partially or fully in production.

**Production input shortages due to a halt in natural gas supplies from Russia and the lack of alternatives would lead to reduced production, which might be devastating for some industrial companies.** This would pass through to lower potential (supply) via a decline in production capacity. Growth in prices of (energy) inputs and would act as an additional inflationary factor. The worsened expectations would subsequently reduce corporate investment, and household consumption would also ultimately decrease due to the negative income effect reflecting lower disposable income. A drop in external demand and domestic industrial production would lead to a reduction in exports. Weakened domestic demand, coupled with a sizeable decrease in the supply of key commodities in particular, would be reflected in a decline in imports.

**An increase in sovereign risk and sales of government bonds in mainly non-euro area countries would result in an increase in long-term interest rates and a rise in debt servicing costs.** In an effort to offset the economic losses incurred and mitigate the sharp fall in GDP, this would reduce the room for a more relaxed government fiscal policy, whose contribution would remain positive in this case. The room for greater fiscal expansion would also be limited due to a drop in the tax revenues of public budgets.

## Estimates by international and national institutions

**In 2022, the International Monetary Fund prepared two illustrative scenarios for a complete shutting-off of Russian gas supplies.** The first assumes zero supplies from Russia this summer only. In this case, supplies from other traditional suppliers and the probable increased imports from other sources would cover usual European consumption, and the shortfall in Russian supplies would only be reflected in a lower storage filling rate before the winter. However, if the shortfall continued into next winter (the second scenario), there would be a severe shortage of gas on the European market and normal consumption would have to be significantly reduced. This would have a major negative impact on economic activity in the EU, although it is difficult to quantify. Moreover, the current shortage in the market would depend on many other factors, such as the weather or country-specific government measures.

**The impacts would vary from country to country depending on how dependent the country is on (Russian) gas (households and firms).** Another difference across countries is the ability of industry to replace gas with other sources or the extent to which it is possible to replace gas-intensive products with other products (domestic or imported). The estimates of the negative impacts on GDP in individual countries are in the range of -1% to -6% (for Germany).

**The message from the 2022 Bundesbank study is also one of stagflation.** In its April report, it presents simulations of a complete embargo on imports of energy commodities from Russia. There are three reasons for the negative impacts – which were modelled using the standard approach – on the GDP of the euro area and Germany:

- High commodity prices will result in lower household disposable income, i.e. reduce private consumption.
- Lower external demand will sharply reduce German net exports.
- Increased uncertainty will lead to lower investment in industry and a further reduction in private consumption.

<sup>3</sup> Regulation (EU) 2017/1938 of the European Parliament and of the Council concerning measures to safeguard the security of gas supply.

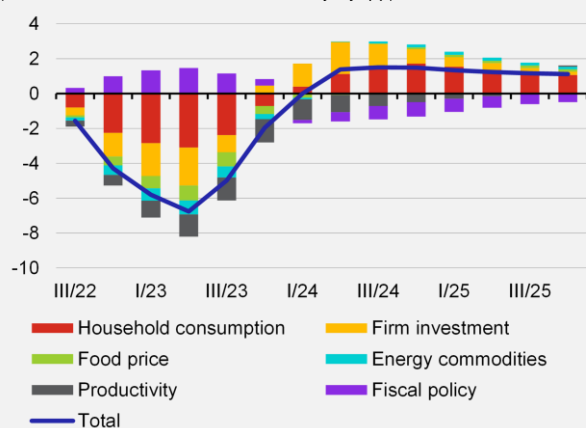
Using the standard modelling approach, the impacts point to a reduction in euro area GDP due to the war in Ukraine and the embargo on imports of commodities from Russia of around 1.5% each year in 2022–2024. GDP losses are more pronounced for Germany: including fiscal compensation, around 2% this year and more than 3% in the next two years. However, a complete halt in supplies from Russia would lead to a rationing system in industry, the consequences of which are not reflected in standard models. The additional calculations thus also anticipate a scenario in which oil, gas and coal shortages would be 40% in the affected sectors from Q2 until the end of the year and could not be replaced this year. Two further options are considered. The more moderate option assumes that only firms in the energy sector are affected. In this case, the decline in German GDP would be 1 pp higher this year. If other primary energy-intensive firms were also hit, the additional decline would be 3.25% higher. German GDP could thus be up to 5.1% lower than in the baseline scenario of the ECB's March report (which would imply an annual decline of 2%) and could drop by around 3.5% in the next two years. The impact on inflation would also be significant. It would be higher in Germany for longer (up by 1.6 pp this year and 2 pp in 2023 compared to the ECB's March scenario). Slightly elevated inflation would continue into 2024 (up by 0.9 pp). The uncertainty surrounding GDP growth estimates is symmetrical in both directions.

### Our scenario of the impacts of a possible halt in supplies of energy commodities from Russia to Europe

In addition to the above estimates in foreign studies, we have conducted our own comprehensive simulation using the global NiGEM model<sup>4</sup>. This model situation assumes a halt in supplies of energy commodities from Russia to Europe from 2022 Q3. Household consumption (see Chart 2) decreases due to negative consumer sentiment and a decline in disposable income. It is due to a major cost shock stemming from a surge in energy commodity prices. We expect the highest increase in the price of natural gas in 2022 Q4, with prices of oil and coal rising to a lesser extent. The higher prices will reflect a limited supply of commodities including high transport costs due to their transport from more distant locations. Increased uncertainty, accompanied by soaring input prices and input shortages, would also be reflected in a temporary decline in corporate investment. High energy prices over the forecasting horizon would also result in a surge in food prices (see Chart 3), which would also reflect a drop in production and exports of cereals, oil crops and fertilisers from Ukraine and Russia. High and persistent cost-push price pressures should start to gradually unwind in the second half of next year. The drop in production inputs would lead to a decline in productivity – since it is not possible to replace them with other alternatives soon. A more pronounced fall in real economic activity would be dampened to a lesser extent by easy fiscal policy through an increase in consumption and transfers by the government, whose aim would be to partly compensate households and businesses for rising costs. Inflationary pressures would lead to the tightening of the ECB monetary policy<sup>5</sup> (see Chart 4).

Chart 2a – Euro area real GDP

(deviations from the baseline scenario; y-o-y; pp)

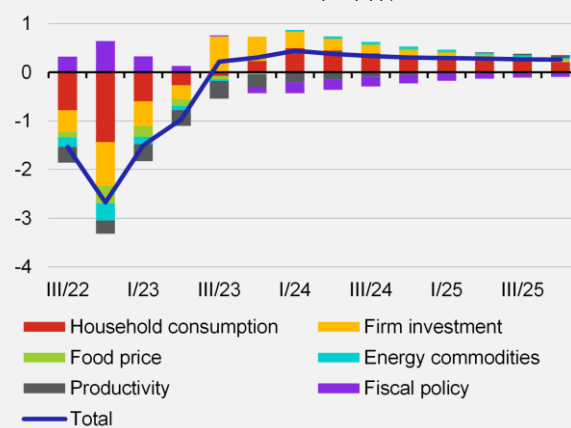


Source: Authors' calculations.

Note: The baseline scenario is the NiGEM forecast of 10 May 2022 excluding the impacts of a possible complete halt of supplies of commodities from Russia.

Chart 2b – Euro area real GDP

(deviations from the baseline scenario; q-o-q; pp)



Source: Authors' calculations.

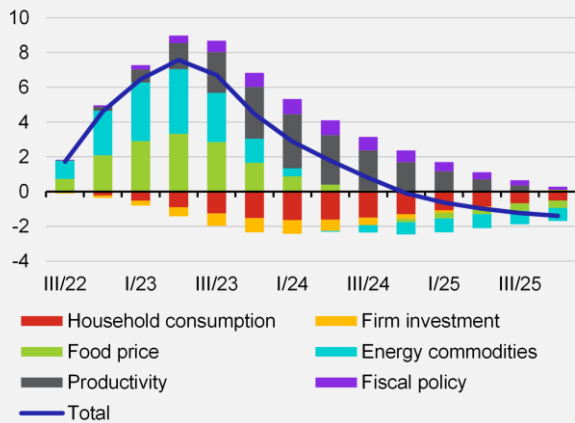
Note: The baseline scenario is the NiGEM forecast of 10 May 2022 excluding the impacts of a possible complete halt of supplies of commodities from Russia.

<sup>4</sup> This is a global econometric model that captures the interconnectedness of all territories of the global economy in detail. For further details on the NiGEM model and its structure, see Hantzschke, Lopresto and Young (2020).

<sup>5</sup> However, the simulation does not assume a reaction of monetary authorities to an inflationary positive demand shock in the form of easy fiscal policy. This should prevent the conflicting impacts of economic policy implementation. In a situation of unprecedented uncertainty regarding the combination of the cost, supply and demand effects during a marked drop in GDP, this assumption partly takes into account the tolerance of a greater overshooting of monetary authorities' inflation target to dampen the decline in economic activity by keeping monetary conditions slightly easier than consistent with the endogenous model interest rate response.

**Chart 3 – Euro area HICP**

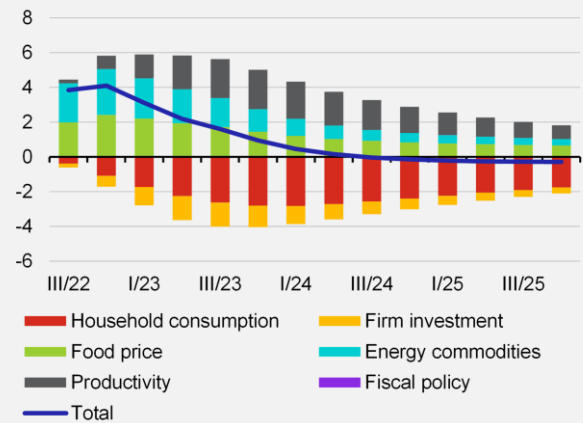
(deviations from the baseline scenario; y-o-y; pp)



Source: Authors' calculations.  
 Note: The baseline scenario is the NiGEM forecast of 10 May 2022 excluding the impacts of a possible complete halt of supplies of commodities from Russia

**Chart 4 – ECB interest rate**

(deviations from the baseline scenario; pp)

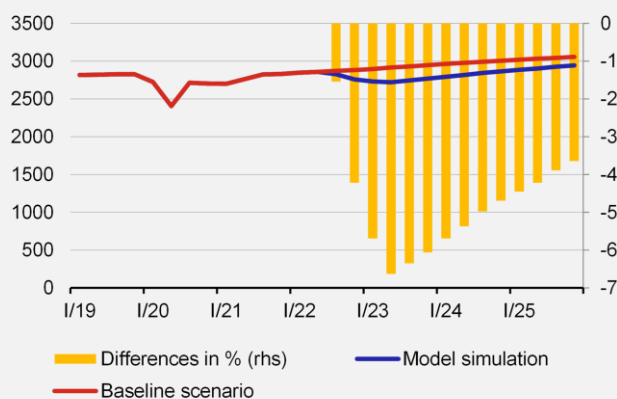


Source: Authors' calculations.  
 Note: The baseline scenario is the NiGEM forecast of 10 May 2022 excluding the impacts of a possible complete halt of supplies of commodities from Russia.

**Overall, the scenario would thus result in pronounced inflationary effects amid a marked decline in economic activity in the period ahead.** A complete halt in supplies of energy commodities from Russia to Europe from 2022 Q3 would result in a decline in real GDP of 1.5% and 6% on average this year and the next (see Chart 5). At the same time, the output gap would open into negative territory, by around 1 pp compared with the baseline scenario. This moderate negative output gap compared with the assumed sharp decline in real economic activity reflects above all a fall in production capacity (potential) in connection with a forced reduction in production (Chart 6). The average annual consumer price inflation in the euro area would increase by 1.6 pp this year compared with the baseline scenario; in 2023, the increase would be as much as 6.3 pp (see Chart 7). The marked increase in consumer price inflation is consistent with the endogenous model response of ECB monetary policy<sup>6</sup> to prevailing strong cost and supply price pressures that would imply a forceful interest rate hike of up to 400 basis points in the second half of this year (see Chart 8). The euro would also weaken sharply against the US dollar by 5% on average over the modelled horizon (Chart 9). The halt of the in supply of energy commodities from Russia would also mean in sharp increase of Brent crude oil price up to 65% (Chart 10), while the natural gas price would increase by 130% compared to the baseline scenario (Chart 11).

**Chart 5a – Euro area real GDP**

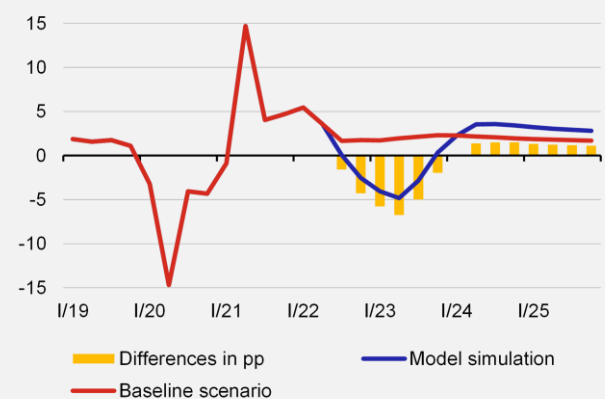
(bil. EUR)



Source: Authors' calculations.  
 Note: The baseline scenario represents the NiGEM forecast of 10 May 2022 excluding the impacts of a possible complete halt of supplies of commodities from Russia.

**Chart 5b – Euro area real GDP**

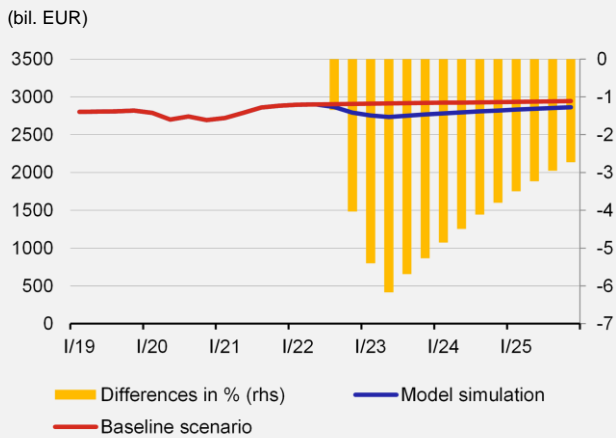
(yoy %)



Source: Authors' calculations.  
 Note: The baseline scenario represents the NiGEM forecast of 10 May 2022 excluding the impacts of a possible complete halt of supplies of commodities from Russia.

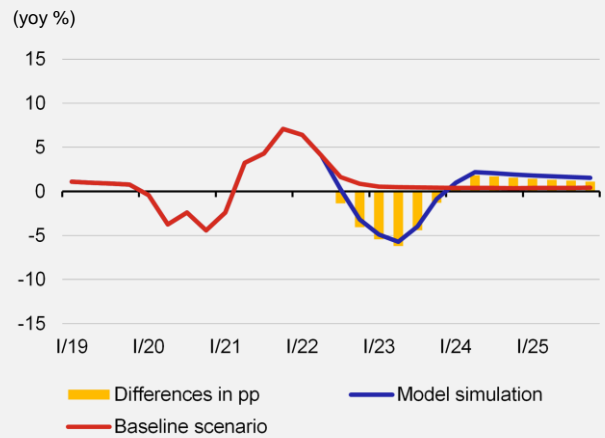
<sup>6</sup> A possible less restrictive monetary policy response by the ECB – than implied by the model simulation – would lead to a greater weakening of the euro against the US dollar, which would also contribute to a higher and longer-term overshooting of the inflation target. On the other hand, more easy monetary conditions would at the same time slightly dampen the sharp decline in real economic activity.

**Chart 6a – Euro area potential GDP**



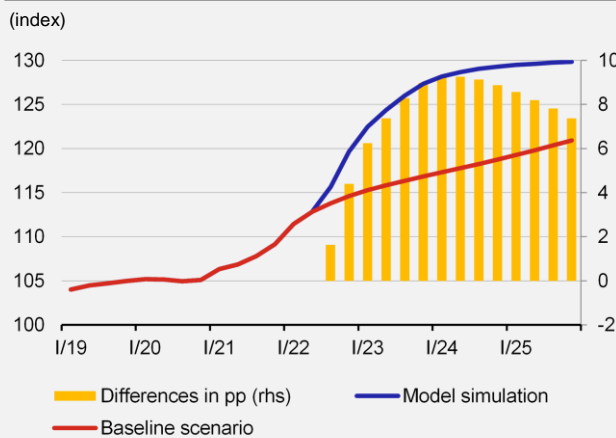
Sourcej: Authors' calculations.  
 Note: The baseline scenario represents the NiGEM forecast of 10 May 2022 excluding the impacts of a possible complete halt of supplies of commodities from Russia.

**Chart 6b – Euro area potential GDP**



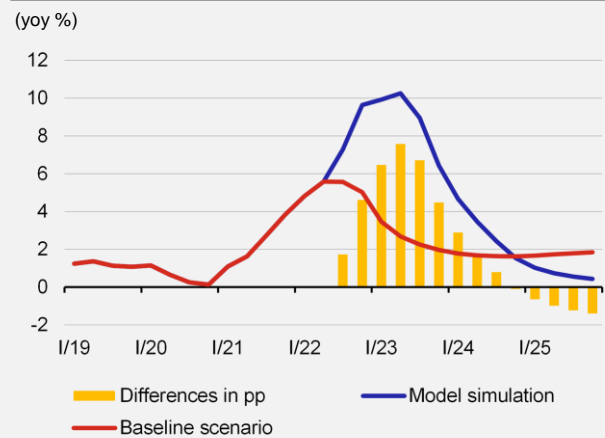
Sourcej: Authors' calculations.  
 Note: The baseline scenario represents the NiGEM forecast of 10 May 2022 excluding the impacts of a possible complete halt of supplies of commodities from Russia.

**Chart 7a – Euro area HICP**



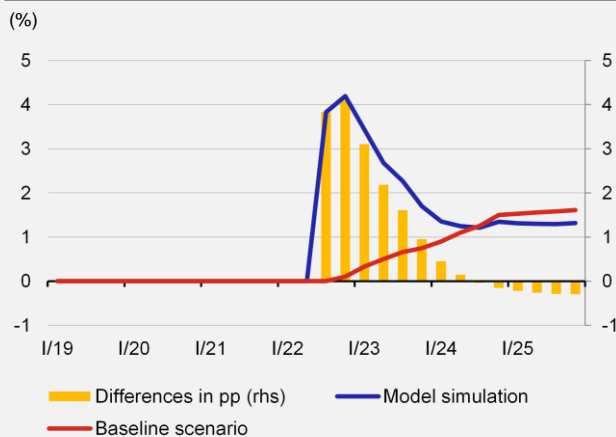
Sourcej: Authors' calculations.  
 Note: The baseline scenario represents the NiGEM forecast of 10 May 2022 excluding the impacts of a possible complete halt of supplies of commodities from Russia.

**Chart 7b – Euro area HICP**



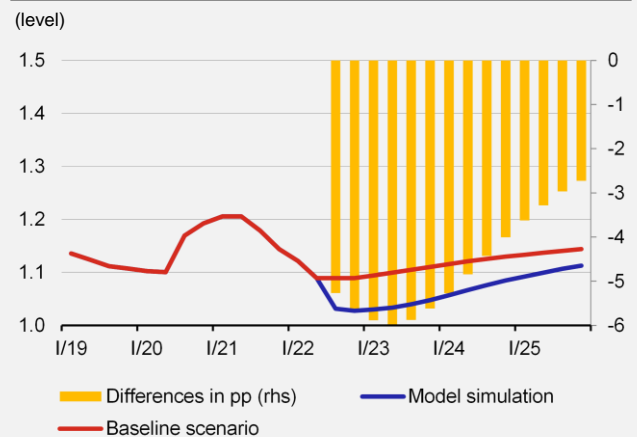
Sourcej: Authors' calculations.  
 Note: The baseline scenario represents the NiGEM forecast of 10 May 2022 excluding the impacts of a possible complete halt of supplies of commodities from Russia.

**Chart 8 – ECB Interest rate**



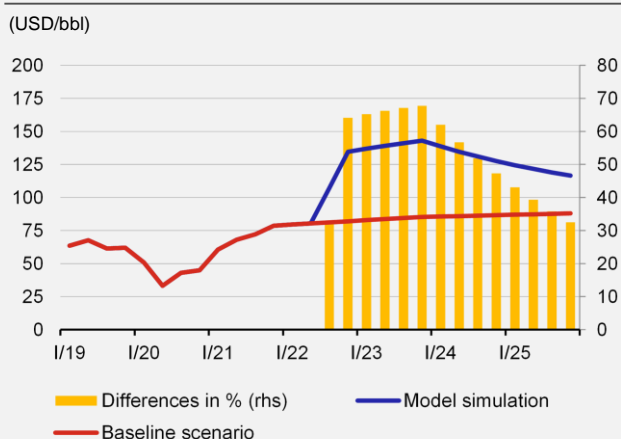
Sourcej: Authors' calculations.  
 Note: The baseline scenario represents the NiGEM forecast of 10 May 2022 excluding the impacts of a possible complete halt of supplies of commodities from Russia.

**Chart 9 – USD/EUR Nominal exchange rate**



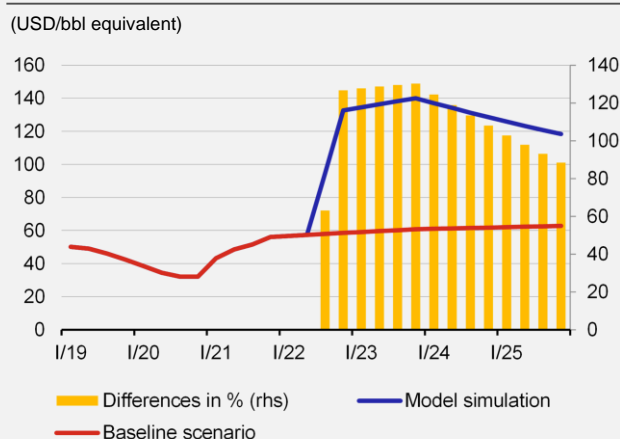
Sourcej: Authors' calculations.  
 Note: The baseline scenario represents the NiGEM forecast of 10 May 2022 excluding the impacts of a possible complete halt of supplies of commodities from Russia.

Chart 10 – Brent crude oil price



Sourcej: Authors' calculations.  
 Note: The baseline scenario represents the NiGEM forecast of 10 May 2022 excluding the impacts of a possible complete halt of supplies of commodities from Russia.

Chart 11 – Natural gas price



Sourcej: Authors' calculations.  
 Note: The baseline scenario represents the NiGEM forecast of 10 May 2022 excluding the impacts of a possible complete halt of supplies of commodities from Russia.

## Conclusion

**The dependence of some European countries on natural gas supplies from Russia is 100% or very high and must be addressed urgently at both the national and international level.** The IMF study (2022) provides a summary of general recommendations in the event of a halt in gas supplies from Russia: (i) Europe should buy gas from alternative sources at a pan-European level to prevent competition among the individual countries; (ii) Solidarity and gas sharing agreements should be implemented; (iii) Countries should establish or update their national crisis plans and explain how gas will be allocated to minimise economic losses; (iv) The decommissioning of nuclear and coal power plants should be temporarily reduced; (v) Firms should maximise energy efficiency and (vi) Government interventions should allow growth in energy prices for final consumers to motivate them to save. At the same time, (only) those households and firms who are badly affected should be given assistance.

**The results of the performed model simulation of a complete halt in supplies of energy commodities from Russia to Europe point to a pronounced inflationary effect amid a sizeable decline in economic activity, i.e. in a stagflationary, or slumpflationary, direction.** European countries are trying to prevent the unfavourable situation and are urgently seeking new suppliers and building the necessary infrastructure. In this respect, geographical location and access to the sea are of key importance, as alternative supplies for Russian commodities can, for the most part, be transported to Europe by sea only. A shortage of commodities would lead to the forced regulation of consumption. This could, however, be devastating for some industrial firms. Government support of the economy will also lead to further debt and hence an increase in debt servicing costs, which has consequences for future developments.

**According to optimistic estimates, it would be enough to reduce natural gas consumption by around 15% in the EU, which might be feasible.** Most studies agree that around two-thirds of supplies from Russia can be replaced by implementing supply-side and demand-side measures. It is imperative that Europe remains united in order to handle the energy crisis in the short term (most notably in winter 2022/2023). So far this has involved the imposition of joint sanctions on Russia in response to the war in Ukraine.

## References

International Monetary Fund (2022): World Economic Outlook, April 2022: *War Sets Back The Global Recovery*.

Bundesbank (2022): Monatsbericht – April 2022,

<https://www.bundesbank.de/de/publikationen/berichte/monatsberichte/monatsbericht-april-2022-889450>.

Bruegel (2022): Preparing for the first winter without Russian gas, <https://www.bruegel.org/2022/02/preparing-for-the-first-winter-without-russian-gas/>

Hantzsche, A., Lopresto, M., & Young (2020). Using NiGEM in uncertain times: Introduction and overview of NiGEM. Cambridge University Press.

## Keywords

natural gas, stagflation, structural modelling, NiGEM

## JEL Classification

E58, F31, F41

## A1. Change in predictions for 2022

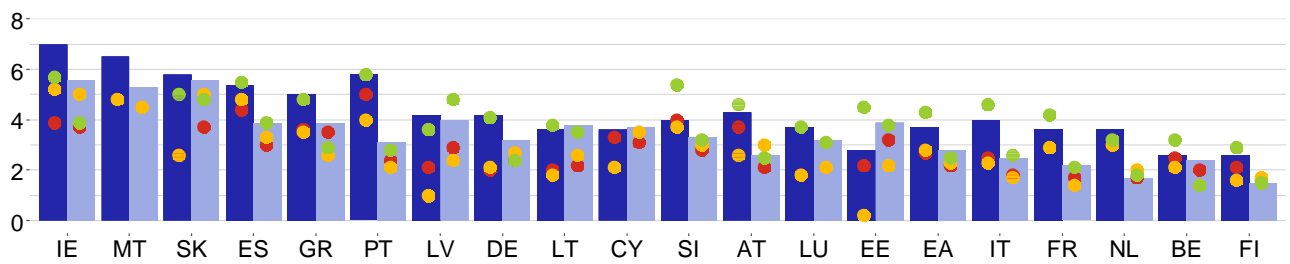
	GDP growth, %				Inflation, %			
	CF	IMF	OECD	CB / EIU	CF	IMF	OECD	CB / EIU
EA	-0.1	-1.1	-0.3	-0.5	+0.3	+3.6	+0.8	+1.9
US	-0.4	-0.3	-0.2	-1.2	+0.2	+4.2	+1.7	+1.7
UK	-0.1	-1.0	-0.5	0	+0.6	+4.8	+1.3	+4.5
JP	-0.1	-0.9	+1.3	-0.9	+0.1	+0.5	+0.3	+0.8
CN	-0.2	-0.4	-0.7	-0.8	+0.1	+0.3	-0.5	0
RU	-0.1	-11.3	-0.7	+1.5	0	+16.5	+0.4	-6.1

## A2. Change in predictions for 2023

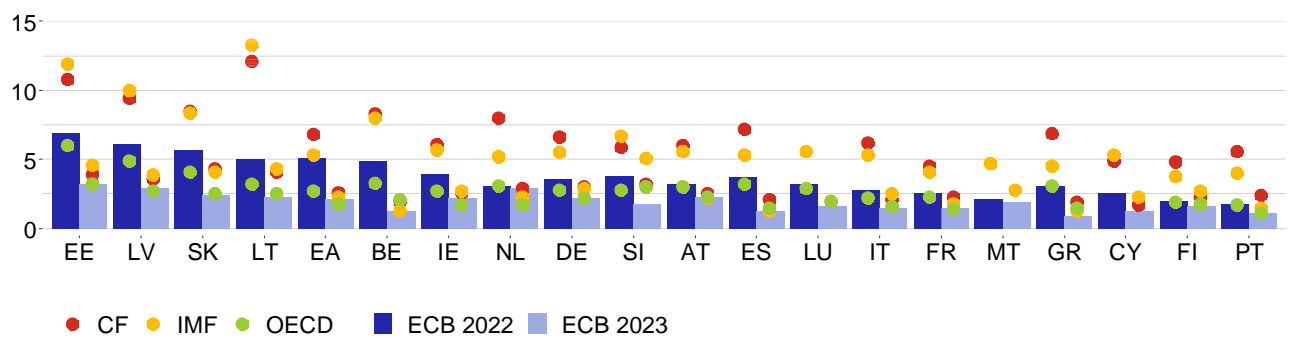
	GDP growth, %				Inflation, %			
	CF	IMF	OECD	CB / EIU	CF	IMF	OECD	CB / EIU
EA	-0.1	-0.2	--	-0.1	+0.2	+0.9	--	+0.3
US	-0.1	-0.3	--	0	+0.1	+0.2	--	+0.4
UK	-0.4	-1.1	--	-1.6	+0.4	+3.3	--	+1.0
JP	+0.1	+0.5	--	+0.8	+0.1	+0.1	--	0
CN	0	-0.1	--	-0.1	+0.1	-0.1	--	0
RU	-0.5	-4.4	--	0	-0.9	+9.8	--	+4.2

### 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, %



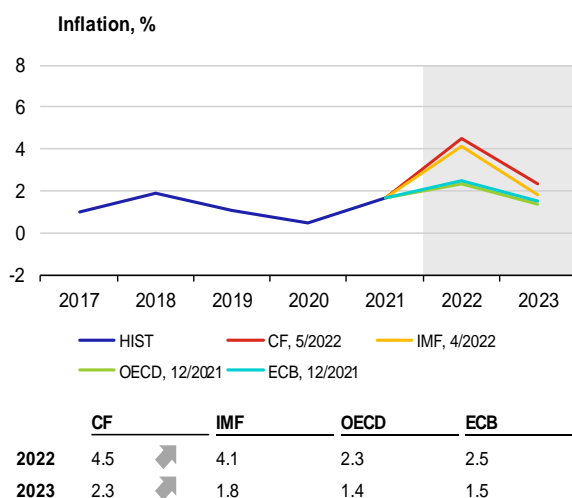
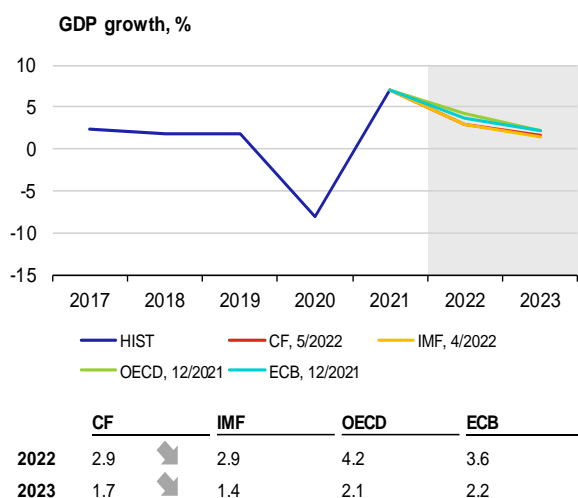
● CF ● IMF ● OECD ■ ECB 2022 ■ ECB 2023

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

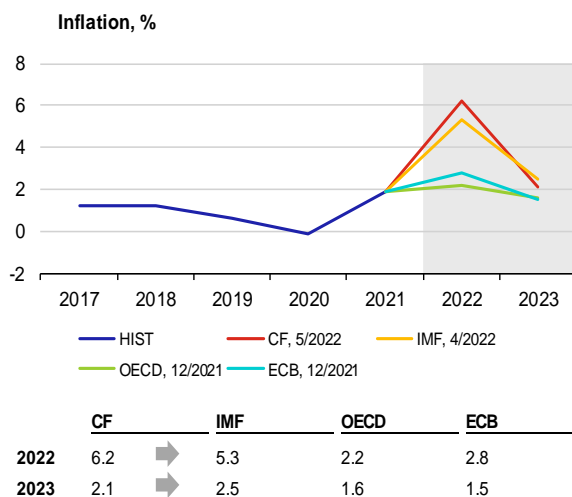
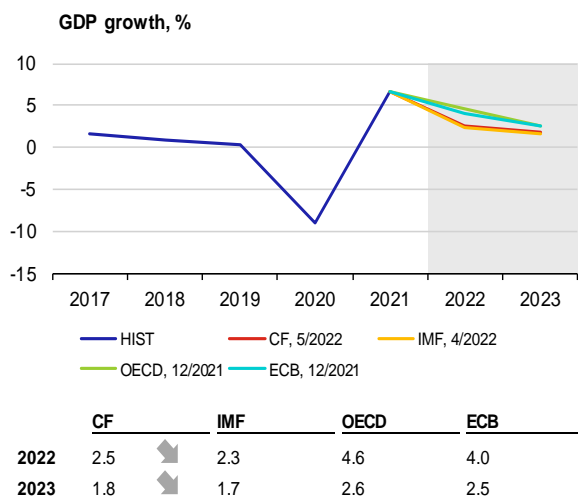
### A4. GDP growth and inflation in the individual euro area countries

#### Germany

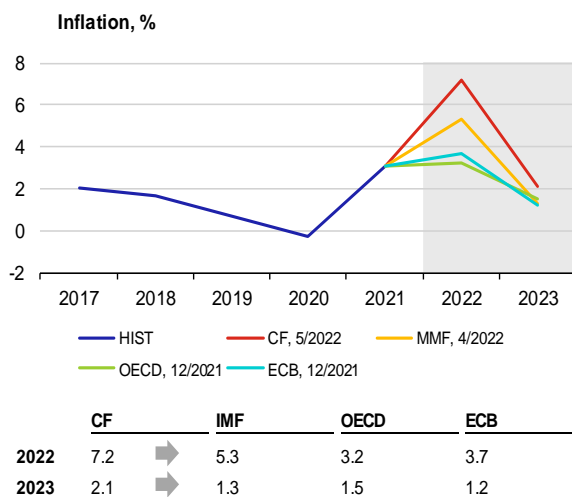
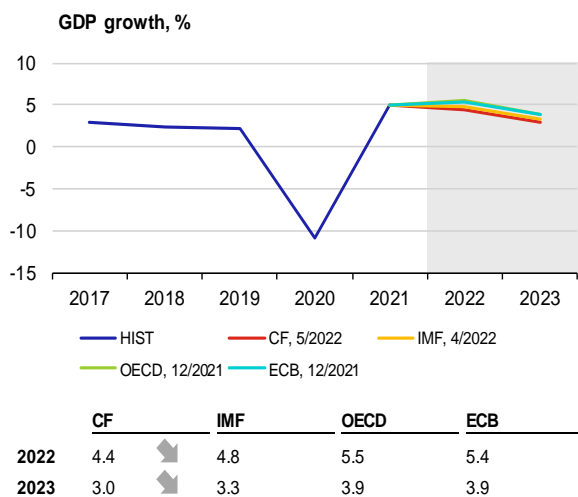
## France



## Italy

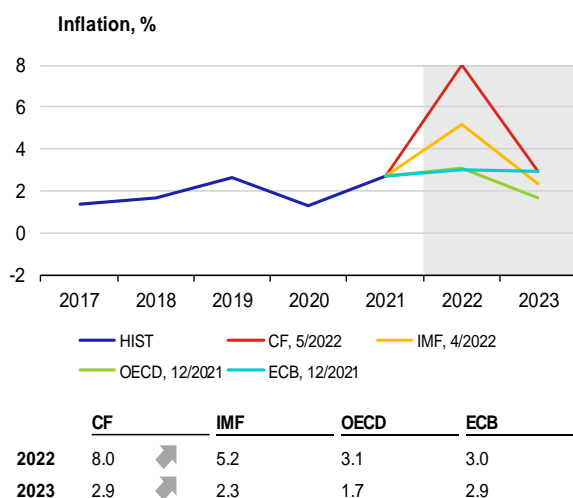
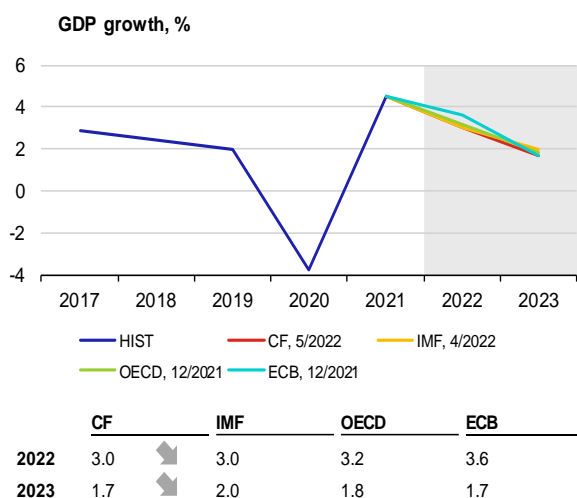


## Spain

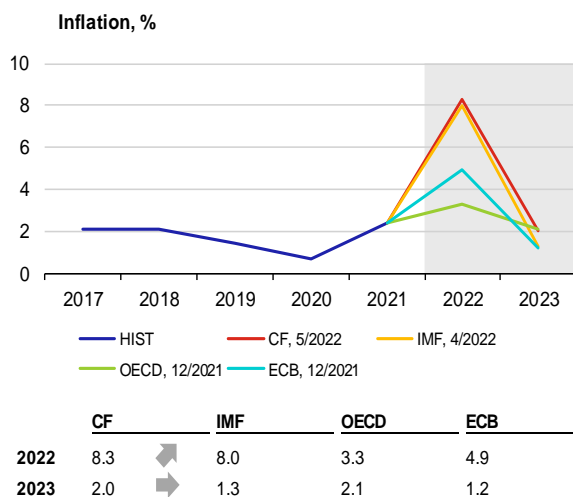
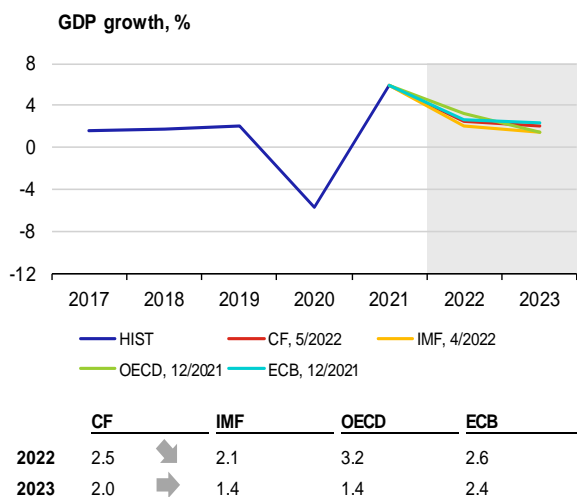




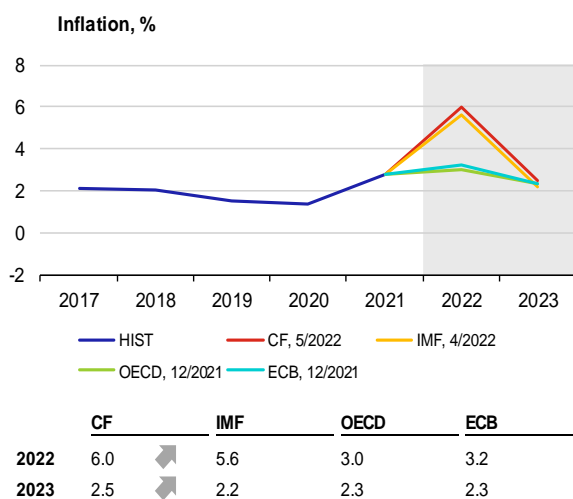
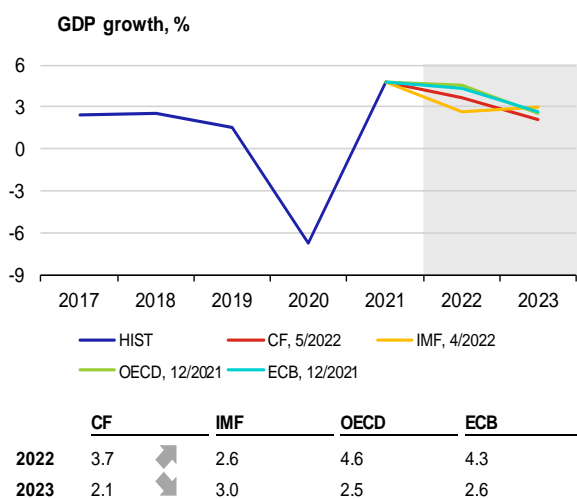
## Netherlands



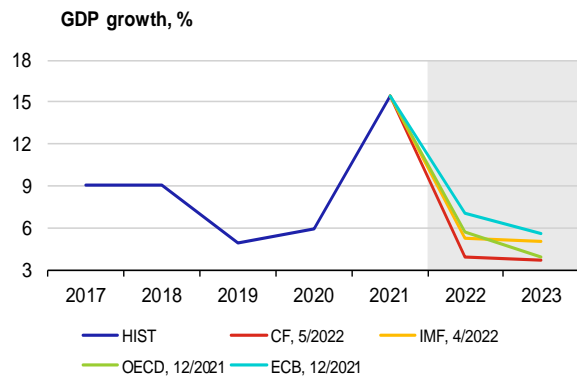
## Belgium



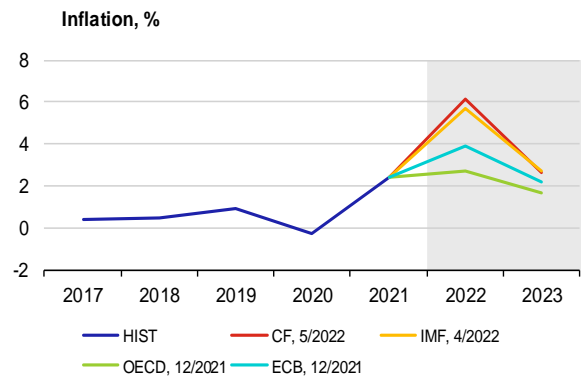
## Austria



## Ireland

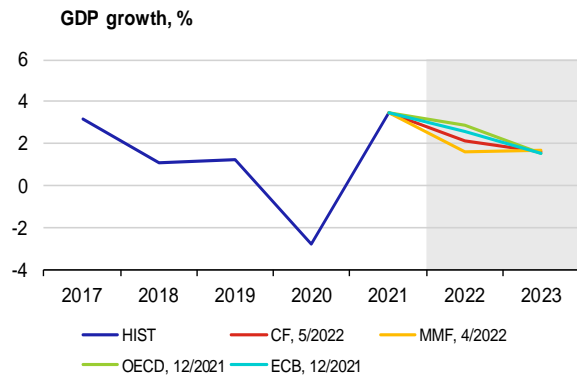


	CF	IMF	OECD	ECB
2022	3.9	5.2	5.7	7.0
2023	3.7	5.0	3.9	5.6

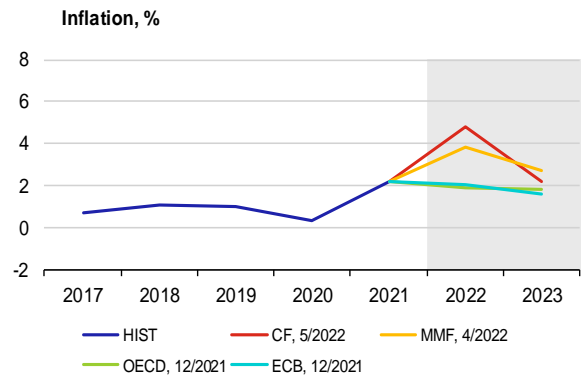


	CF	IMF	OECD	ECB
2022	6.1	5.7	2.7	3.9
2023	2.6	2.7	1.7	2.2

## Finland

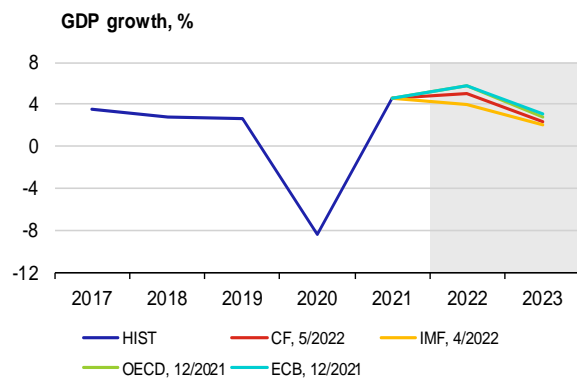


	CF	IMF	OECD	ECB
2022	2.1	1.6	2.9	2.6
2023	1.6	1.7	1.5	1.5

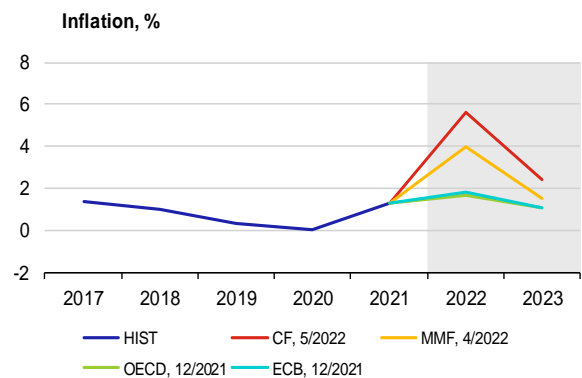


	CF	IMF	OECD	ECB
2022	4.8	3.8	1.9	2.0
2023	2.2	2.7	1.8	1.6

## Portugal

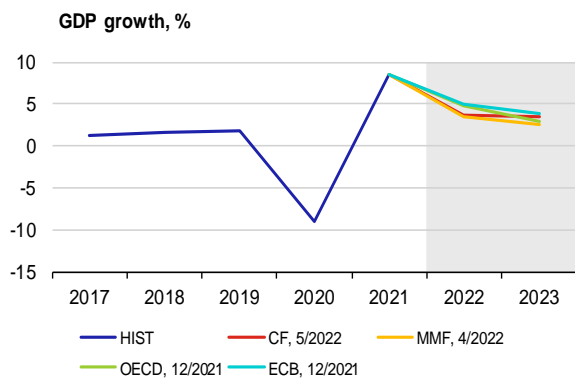


	CF	IMF	OECD	ECB
2022	5.0	4.0	5.8	5.8
2023	2.4	2.1	2.8	3.1

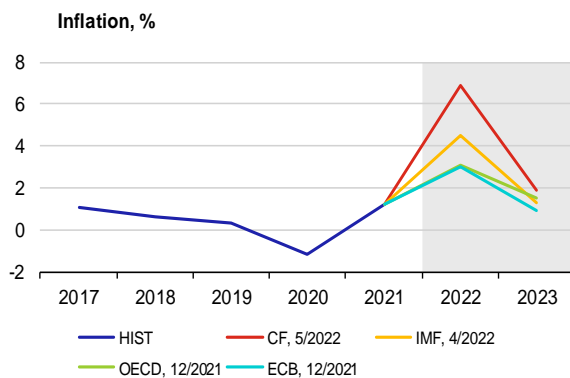


	CF	IMF	OECD	ECB
2022	5.6	4.0	1.7	1.8
2023	2.4	1.5	1.1	1.1

### Greece

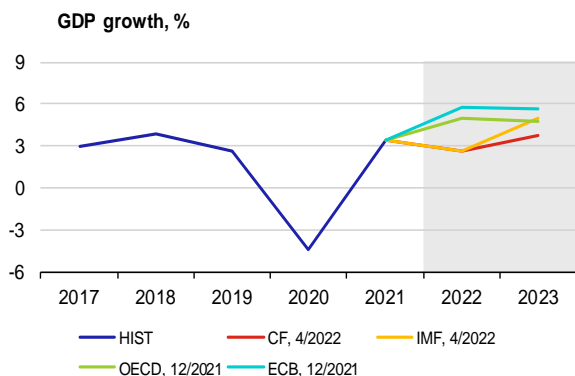


	CF	IMF	OECD	ECB
2022	3.6	3.5	4.8	5.0
2023	3.5	2.6	2.9	3.9

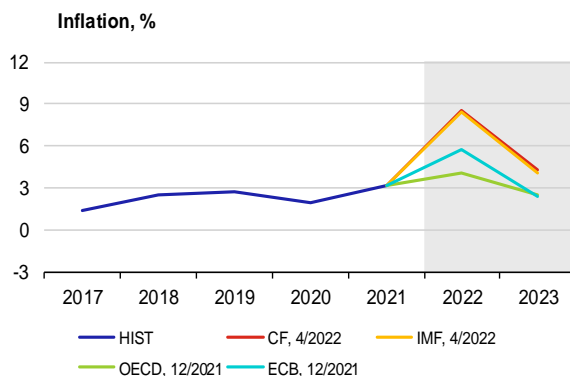


	CF	IMF	OECD	ECB
2022	6.9	4.5	3.1	3.0
2023	1.9	1.3	1.5	0.9

### Slovakia

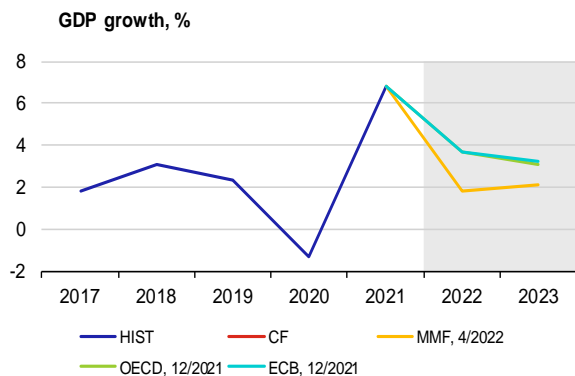


	CF	IMF	OECD	ECB
2022	2.6	2.6	5.0	5.8
2023	3.7	5.0	4.8	5.6

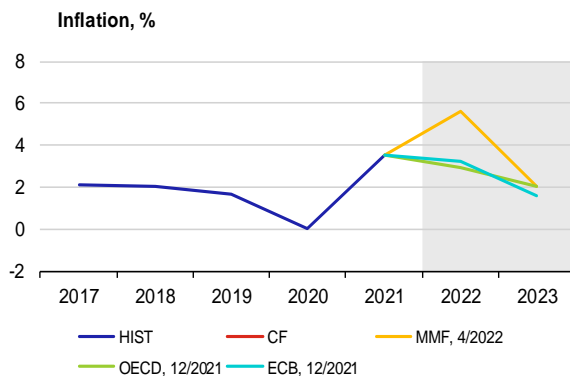


	CF	IMF	OECD	ECB
2022	8.5	8.4	4.1	5.7
2023	4.3	4.1	2.5	2.4

### Luxembourg

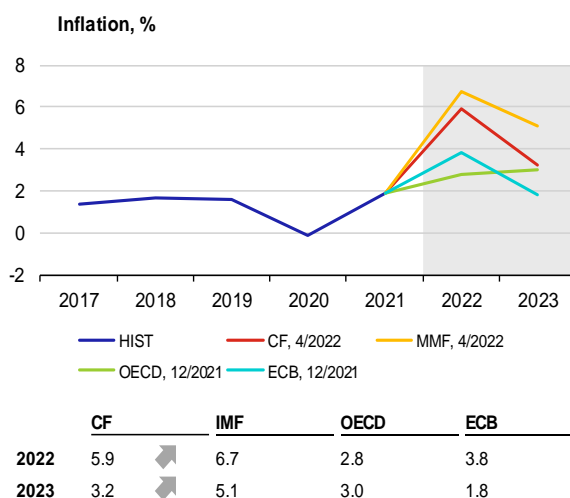
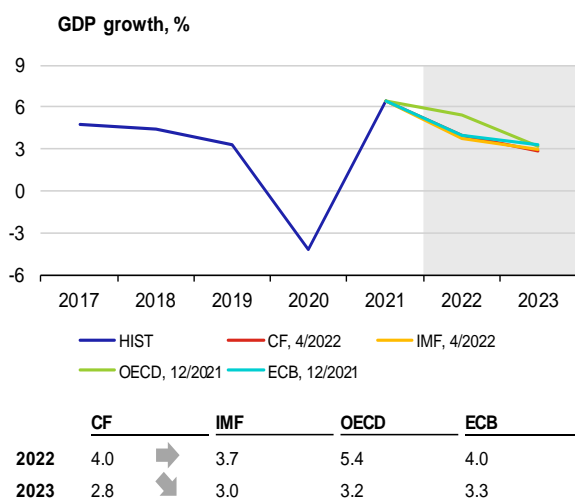


	CF	IMF	OECD	ECB
2022	n. a.	1.8	3.7	3.7
2023	n. a.	2.1	3.1	3.2

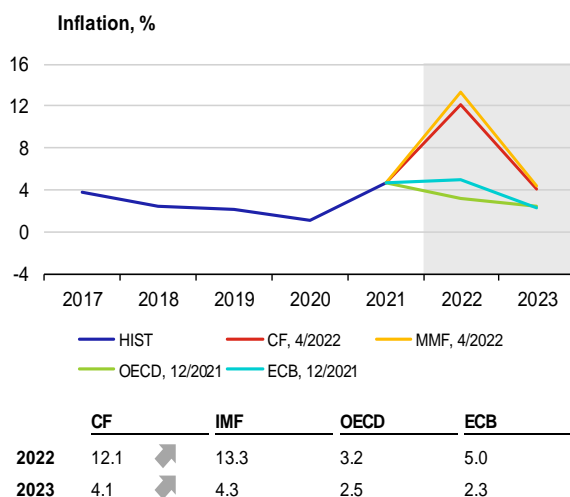


	CF	IMF	OECD	ECB
2022	n. a.	5.6	2.9	3.2
2023	n. a.	2.0	2.0	1.6

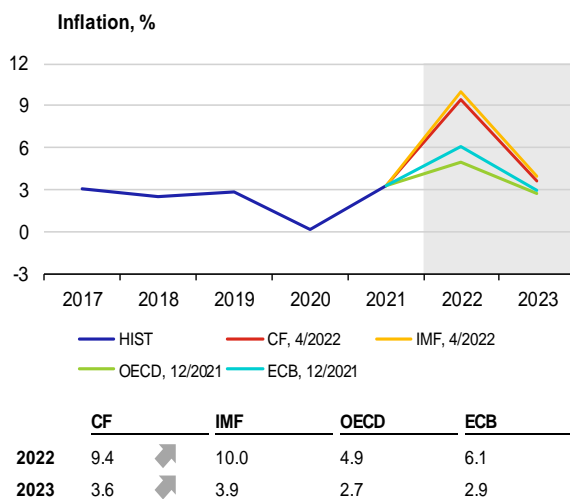
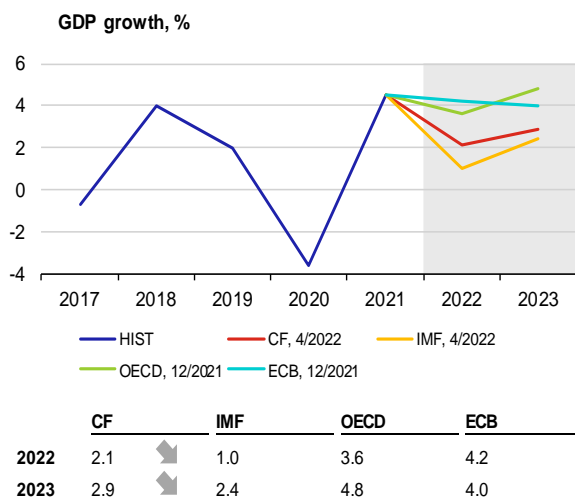
## Slovenia



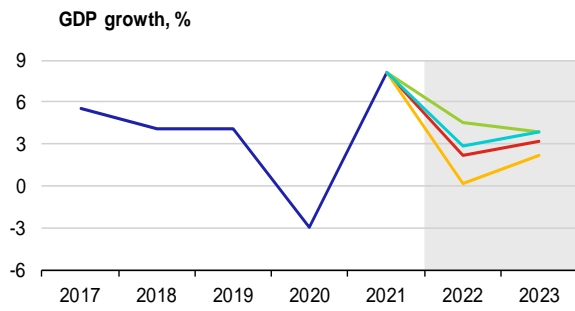
## Lithuania



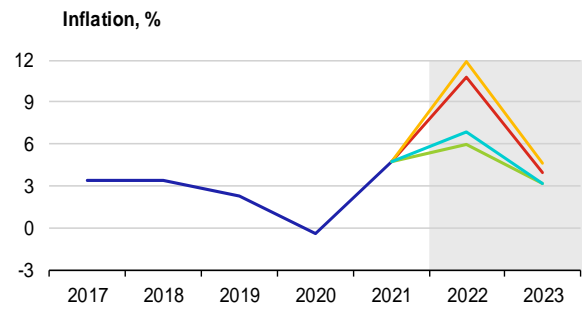
## Latvia



## Estonia

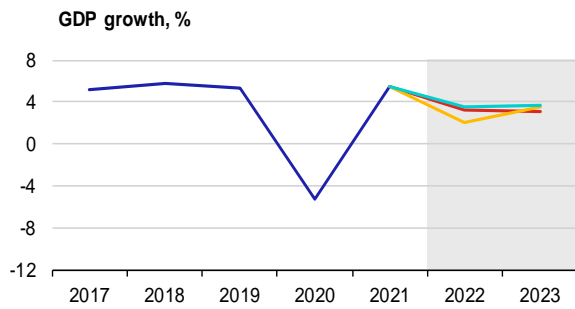


	CF	IMF	OECD	ECB
2022	2.2	0.2	4.5	2.8
2023	2.2	2.2	3.8	3.9

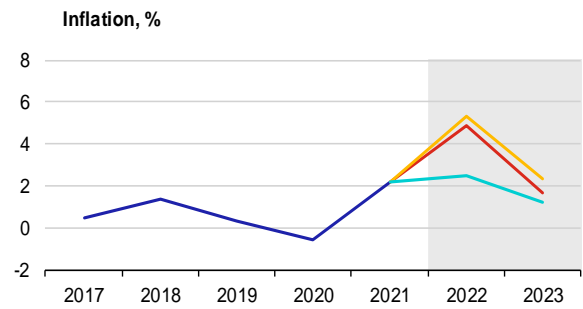


	CF	IMF	OECD	ECB
2022	10.8	11.9	6.0	6.9
2023	3.9	4.6	3.2	3.2

## Cyprus

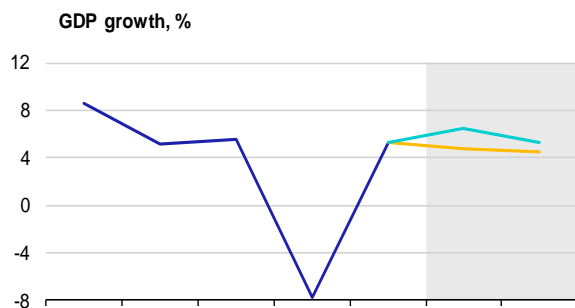


	CF	IMF	OECD	ECB
2022	3.3	2.1	n. a.	3.6
2023	3.1	3.5	n. a.	3.7

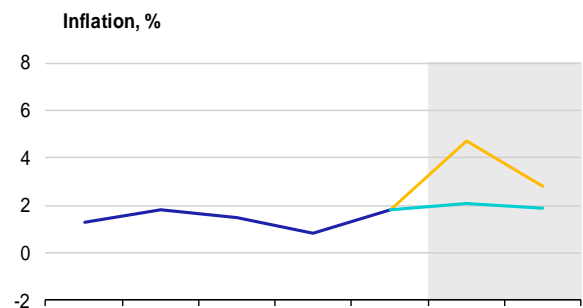


	CF	IMF	OECD	ECB
2022	4.9	5.3	n. a.	2.5
2023	1.7	2.3	n. a.	1.2

## Malta



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

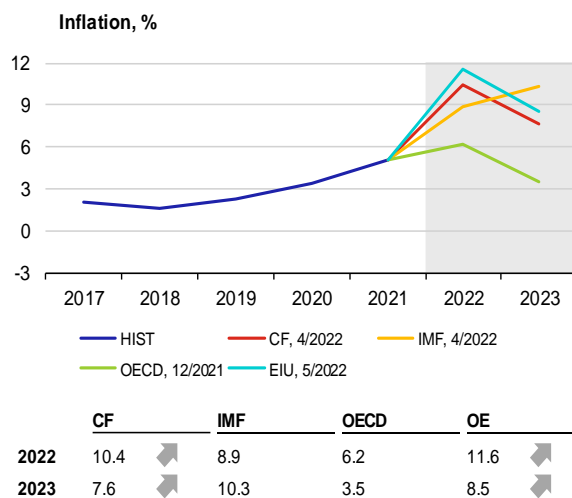
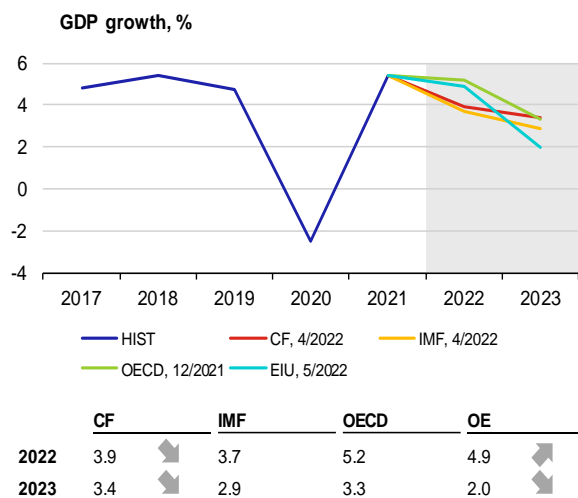


	CF	IMF	OECD	ECB
2022	n. a.	4.7	n. a.	2.1
2023	n. a.	2.8	n. a.	1.9

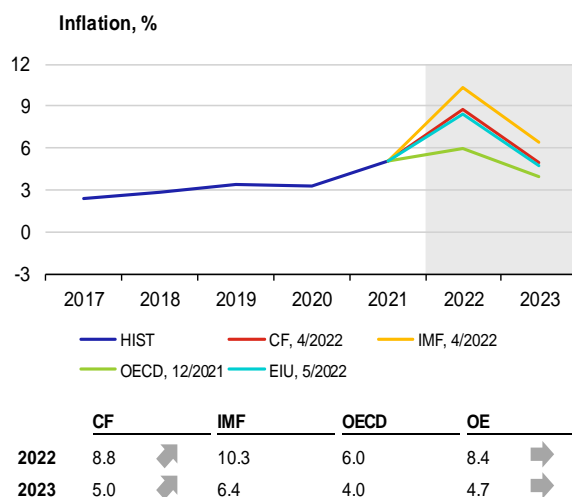
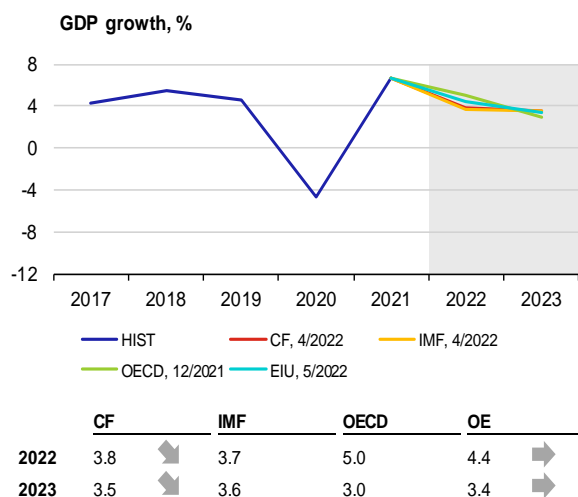
Ddd

## A5. GDP growth and inflation in other selected countries

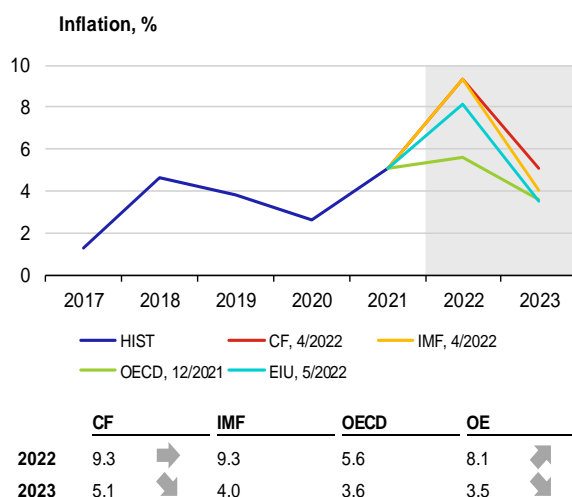
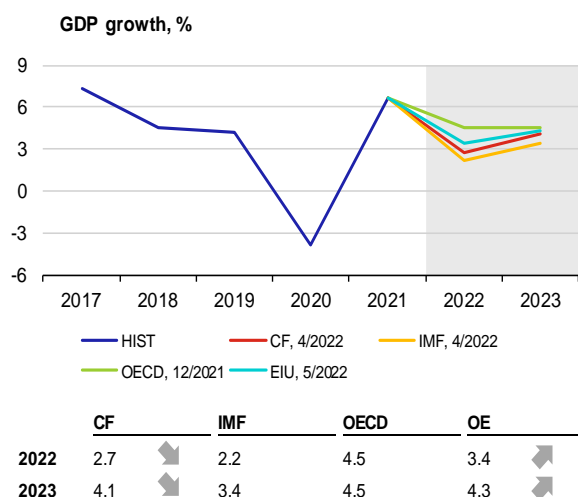
### Poland



### Hungary



### Romania



## A6. List of abbreviations

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

Publisher:  
ČESKÁ NÁRODNÍ BANKA  
Na Příkopě 28  
115 03 Praha 1  
Česká republika

Contact:  
ODBOR KOMUNIKACE SEKCE KANCELÁŘ  
Tel.: 224 413 112  
Fax: 224 412 179  
[www.cnb.cz](http://www.cnb.cz)