

Global Economic Outlook

October 2022



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Cut-off date for data

14 October 2022

CF survey date

10 October 2022

GEO publication date

21 October 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

The light at the end of the tunnel is still nowhere in sight for the war in Ukraine. Russia's bombing of Ukrainian cities in retaliation for the Kerch bridge attack has further escalated tensions. This, combined with the non-functioning of and damage to the Nord Stream gas pipeline and leaks found in the northern leg of the Druzhba pipeline, is increasing the energy uncertainty and nervousness in financial markets.

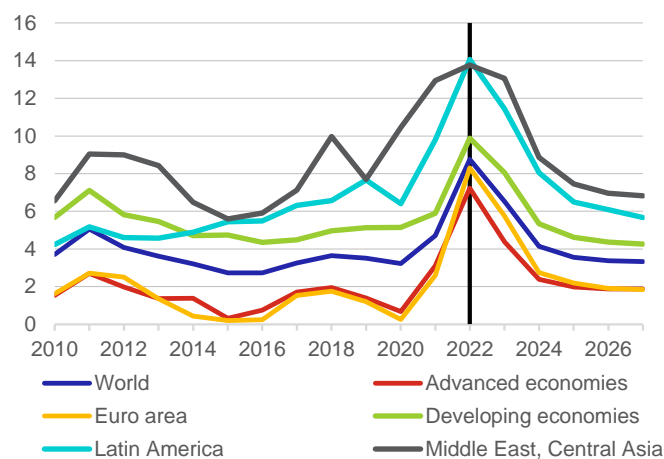
Global economic growth will slow next year amid higher inflation. In its autumn forecast, the IMF lowered its global growth outlook for 2023 to 2.7%. The decline is most evident in advanced countries, which will record growth of only 1.1% next year. Some European economies will even fall into recession (Germany, Italy). Developing countries' growth of 3.7% will support global growth. The IMF attributes this to the economic effects of Russia's invasion of Ukraine, monetary policy tightening and the energy crisis, especially in Europe. There is growing concern among economists that the fight against the energy crisis may turn into a debt crisis due to massive fiscal support. That said, a range of fiscal measures are to be funded by windfall taxes on sectors making excessive profits. Global inflation is expected to average 9.5% in 2022, falling to 4.1% by 2024.

The major central banks will tighten further. The Fed feels that inflation is still disproportionately high above the 2% target, threatening the anchoring of inflation expectations. However, some believe that the pace of rate increases should take into account the expected weak economic growth. ECB officials will confirm a hawkish policy and a large rate increase at their next meeting. Besides facing monetary policy dilemmas, the Bank of England had to take further action to promote financial stability, which came under threat after the new government announced tax reforms.

The chart in the current issue shows that the IMF regards the current elevated consumer price inflation experienced globally this year as not merely transitory. Inflation will be well above central banks' targets and the long-term averages of recent years in 2023 as well. Inflation in advanced economies is expected to be above the 2% ideal in 2024 too, only returning to normal in 2025. A large part of the current inflation consists of elevated energy prices, which will decrease in the longer run. Their decline and negative contribution to headline inflation will thus be offset by growth in other prices.

The current issue also contains an analysis: [Hyperinflation is a different beast](#). The article focuses on the phenomenon of hyperinflation and puts it in the context of current developments in the media. It also tries to shed light on how real the risk of hyperinflation is right now. The analysis builds on historical episodes and cases of hyperinflation and shows that the current developments in the vast majority of countries bear no resemblance to them.

Annual consumer price inflation in selected country groups, %



Source: IMF

Note: The vertical line denotes the start of the outlook

Barometr of Global Economic Outlook for selected countries

		EA	DE	US	UK	JP	CN	RU
GDP (%)	2022	3.0 ↗	1.4 ↗	1.7 ↗	4.1 ↗	1.5 ↗	3.2 ↗	-5.1 ↗
	2023	0.0 ↘	-0.9 ↘	0.2 ↘	-0.3 ↘	1.5 ↗	4.7 ↗	-2.9 ↘
Inflation (%)	2022	8.3 ↗	8.1 ↗	8.0 ↗	8.9 ↗	2.2 ↗	2.2 ↗	13.0 ↗
	2023	5.8 ↗	6.8 ↗	3.9 ↗	6.4 ↗	1.6 ↗	2.3 ↗	6.1 ↗
Unemployment (%)	2022	6.8 ↗	5.3 ↗	3.7 ↗	3.8 ↗	2.6 ↗	3.5 ↗	4.1 ↗
	2023	7.2 ↗	5.6 ↗	4.3 ↗	3.8 ↗	2.5 ↗	3.3 ↗	4.7 ↗
Exchange rate (against USD)	2022	1.03 ↘	1.03 ↘		1.16 ↘	134.4 ↗	7.14 ↗	64.1 ↗
	2023	1.07 ↘	1.07 ↘		1.21 ↘	127.5 ↗	6.97 ↗	78.1 ↗

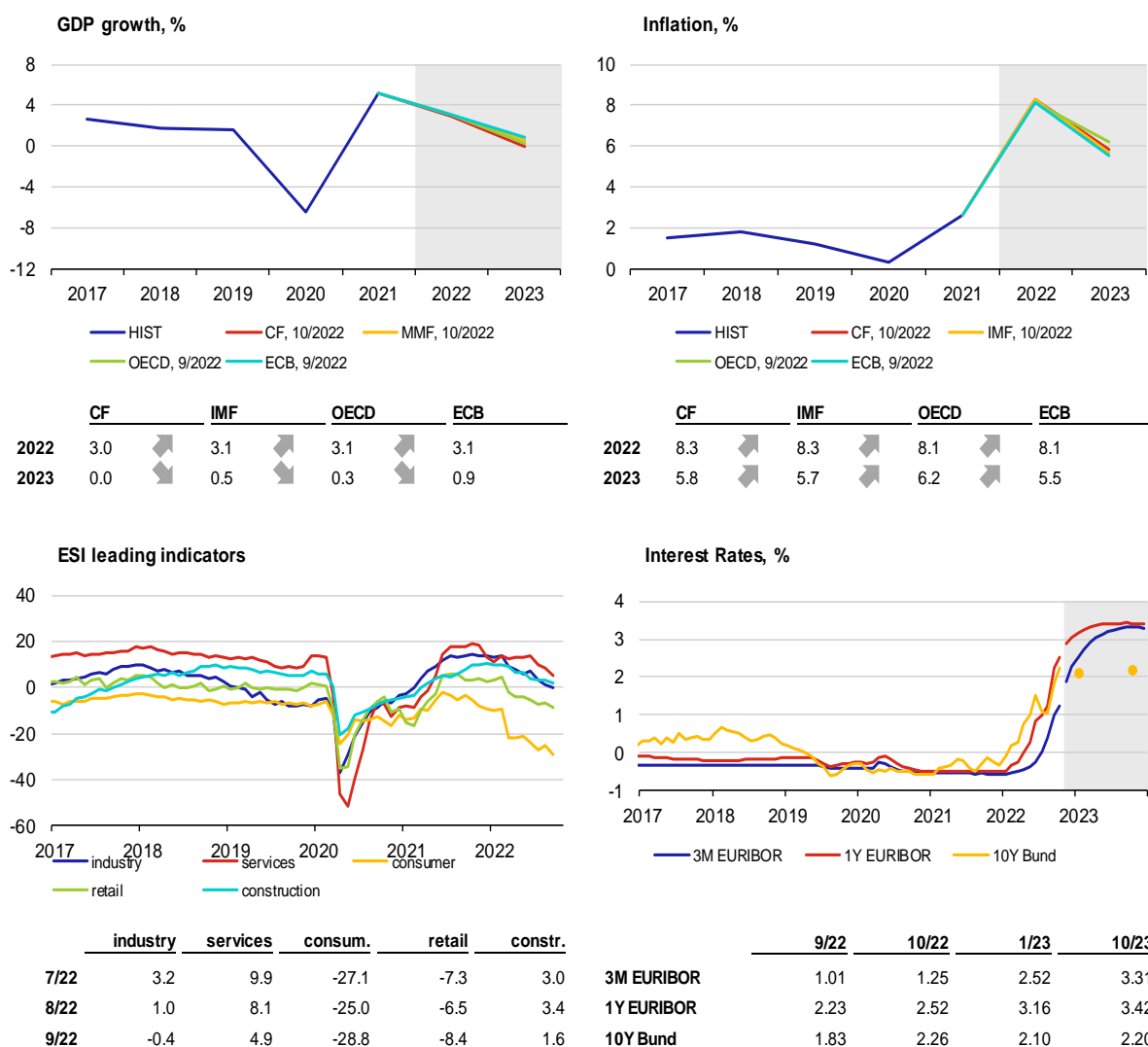
Source: Consensus Forecasts (CF)

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

II.1 Euro area

After recording surprisingly high growth in Q2, the euro area economy will decline for the rest of this year. Quarterly GDP growth was 0.8% in Q2. The annual growth rate slowed slightly to 4.1% and the euro area economy returned to the pre-pandemic output level. The very positive outcome was due to the opening of economies after the last Omicron wave, a recovery in demand for services and a boom in tourism. However, the current leading indicators are negative. According to the September PMI, output dropped rapidly in both manufacturing and services due to weakening demand. New orders and exports fell considerably. The decline in orders is fostering lower demand for inputs, which is further reducing supply chain tensions and also contributing to more moderate price growth in industry. Prices of container shipping saw a further significant decline in October. The high inflation associated with the energy crisis in Europe, which in turn was triggered by the war in Ukraine, is greatly dampening demand and undermining business confidence. Real retail sales fell continuously from June to August. Inflation in the euro area rose further in September to 10%, mainly due to the rise in energy prices. In addition to energy prices, food prices rose markedly. However, the core of the consumer basket also went up to almost 5%. The high core inflation is a growing cause for concern for the ECB Governing Council, which decided unanimously to raise rates by 0.75 pp in September. Rapid increases in key interest rates are also expected at the next meetings, even at the cost of a recession. The 3M Euribor could thus be above the 3% level one year ahead.

The GDP growth outlook has improved slightly for this year but worsened for 2023. CF indicates a stagnation of the economy in 2023. However, the outlook may move to recession very soon. By contrast, expected inflation has shifted slightly upwards for both this year and the next. According to the long-term CF outlook, inflation will not cool to the ECB's target until 2024.



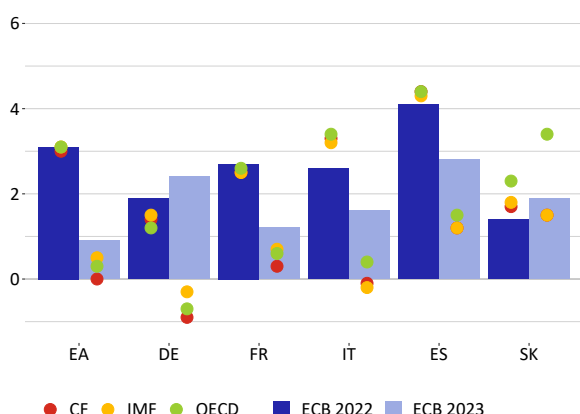
II.2 Germany

The German economy will probably fall into a technical recession this year. GDP seems to have declined already in Q3 (as indicated by PMI indices) and is not likely to return to growth until the spring. However, only a shallow recession is expected. The energy crisis in Europe is the main cause of the problems of the German economy, which has benefited from international trade and is now being hit by a marked cooling of demand, especially from the euro area. Exports rose month on month in August (after a drop in July), but import growth was higher. As a result, the celebrated German trade surplus shrank to just EUR 0.6 billion (a 30-year low). August saw declines in retail sales and industrial production (which, in addition to high energy prices and shortages of supplies of intermediate products, was hindered by low river levels).

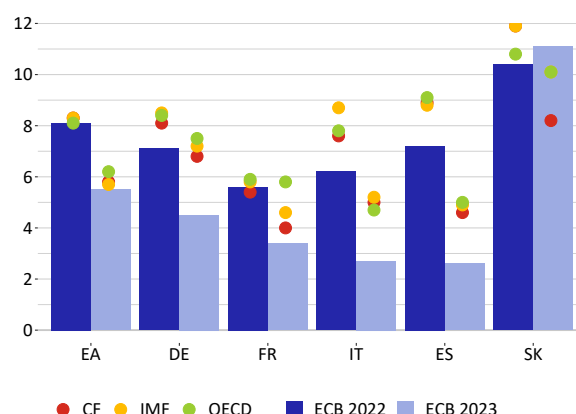
Consumer sentiment and corporate expectations continue to worsen markedly. Indicators are at levels comparable to the GFC and coronavirus crisis, and even at new historical lows. However, the labour market remains resilient. The unemployment rate is extremely low and is not rising. Nominal wage growth is failing to keep up with inflation, but a further rise in the minimum wage in October (the third this year) should partially spill over to other wages. The government is trying to mitigate the effects of the energy crisis. In addition to three support packages, it unveiled at the end of September an intention to invest up to EUR 200 billion to protect the economy from the effects of high energy prices. It plans to cap gas and electricity prices for households and firms. German gas storage is already 94% full. Assuming an average winter and continued gas consumption savings, the adverse scenario of shutting down parts of the economy might not materialise. Inflation is yet to peak. It entered double figures in September (10.9%). Producer price inflation also went up (45.8%).

The outlooks for the real economy mostly shifted down; inflation will be higher and not slow as much. GDP will grow by only about 1.5% in 2022. CF, the IMF and the OECD expect it to fall in 2023. Consumer price inflation may peak in December. This year inflation will exceed 8%. Newly published forecasts indicate it will not slow much in 2023, staying at about 7%.

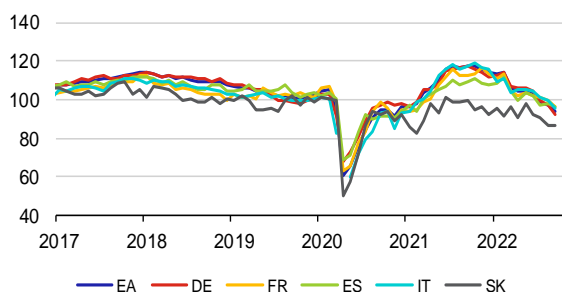
GDP growth in selected euro area countries in 2022 and 2023, %



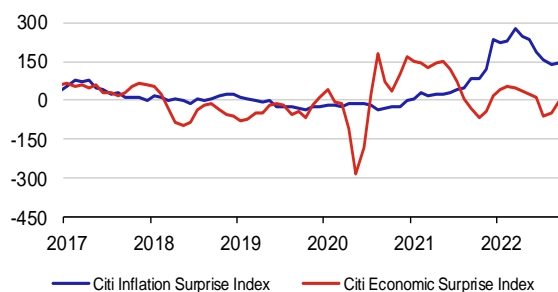
Inflation in selected euro area countries in 2022 and 2023, %



ESI leading indicators



Economic and inflation surprises in the euro area, %



	EA	DE	FR	ES	IT	SK
7/22	98.5	99.5	101.5	96.9	100.9	91.1
8/22	97.3	97.0	100.0	97.7	99.7	87.1
9/22	93.7	92.2	96.8	96.7	96.0	86.9

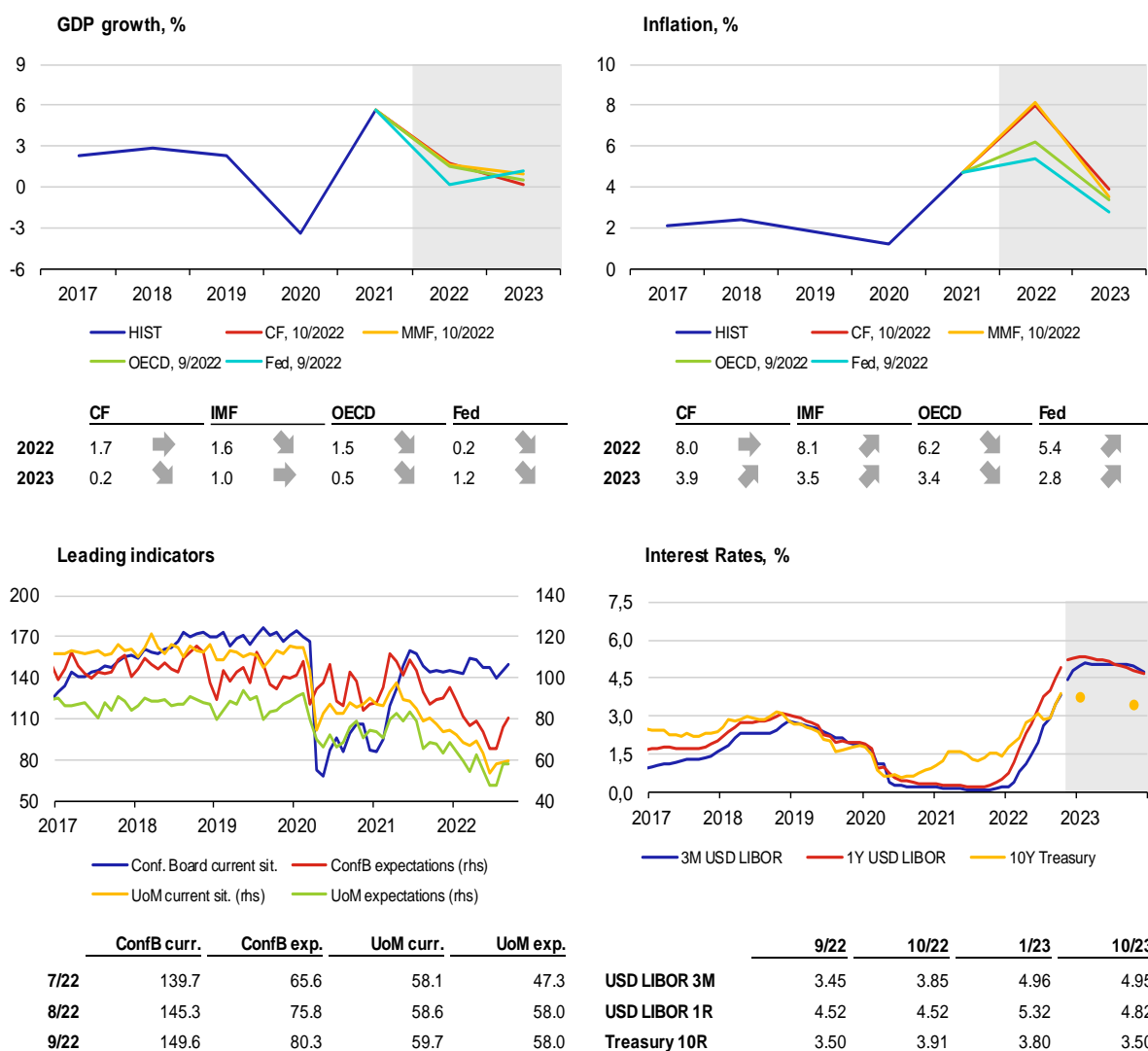
Inflation expectations based on 5year inflation swap and SPF

	5y5y	SPF
8/22	2.11	2.15
9/22	2.19	2.15
10/22	2.19	

II.3 United States

The new US economic growth outlooks for both this year and the next continue to decline. The Fed's September outlook is particularly pessimistic. It expects the economy to almost stagnate this year, with real GDP growth of only about 0.2%. Conversely, the Fed's outlook for 2023 is the highest at 1.2%. The IMF and OECD's new forecasts expect growth of around 1.5% this year and weaker growth next year (about 1%). The lower outlook for economic activity is due to continuing global difficulties and expectations of tighter monetary policy, which should cool economic activity.

Inflation negatively surprised the markets in September, as reflected in expectations of further forceful intervention by the Fed and concerns about the further course of inflation. Inflation reached 0.4% month on month in September, even though prices had been expected to rise by just 0.1%, and core inflation again rose significantly (6.6% yoy). The markets expected the Fed to raise rates again by 0.75 pp at the monetary policy meeting in early November, the same as at the last meeting in September. The labour market remains very tight. Unemployment fell to 3.5% in September and non-farm payrolls rose by 263,000, with similar growth expected in October. Labour shortages are causing steady wage growth, and concerns about a wage-price spiral are fuelling expectations of an increase in rates by the central bank. Month-on-month retail sales growth was flat in September, even though consumer confidence is growing and is at a five-month high. No significant decline in consumer confidence is on the horizon yet. The forward-looking services PMI is still in the contraction band but has risen considerably (to 49.3) compared to August. By contrast, the ISM services indicator is still in the expansion band and the situation has improved for new orders and activities. The manufacturing PMI is still in the expansion band. However, it has been close to the threshold level for four months in a row now.

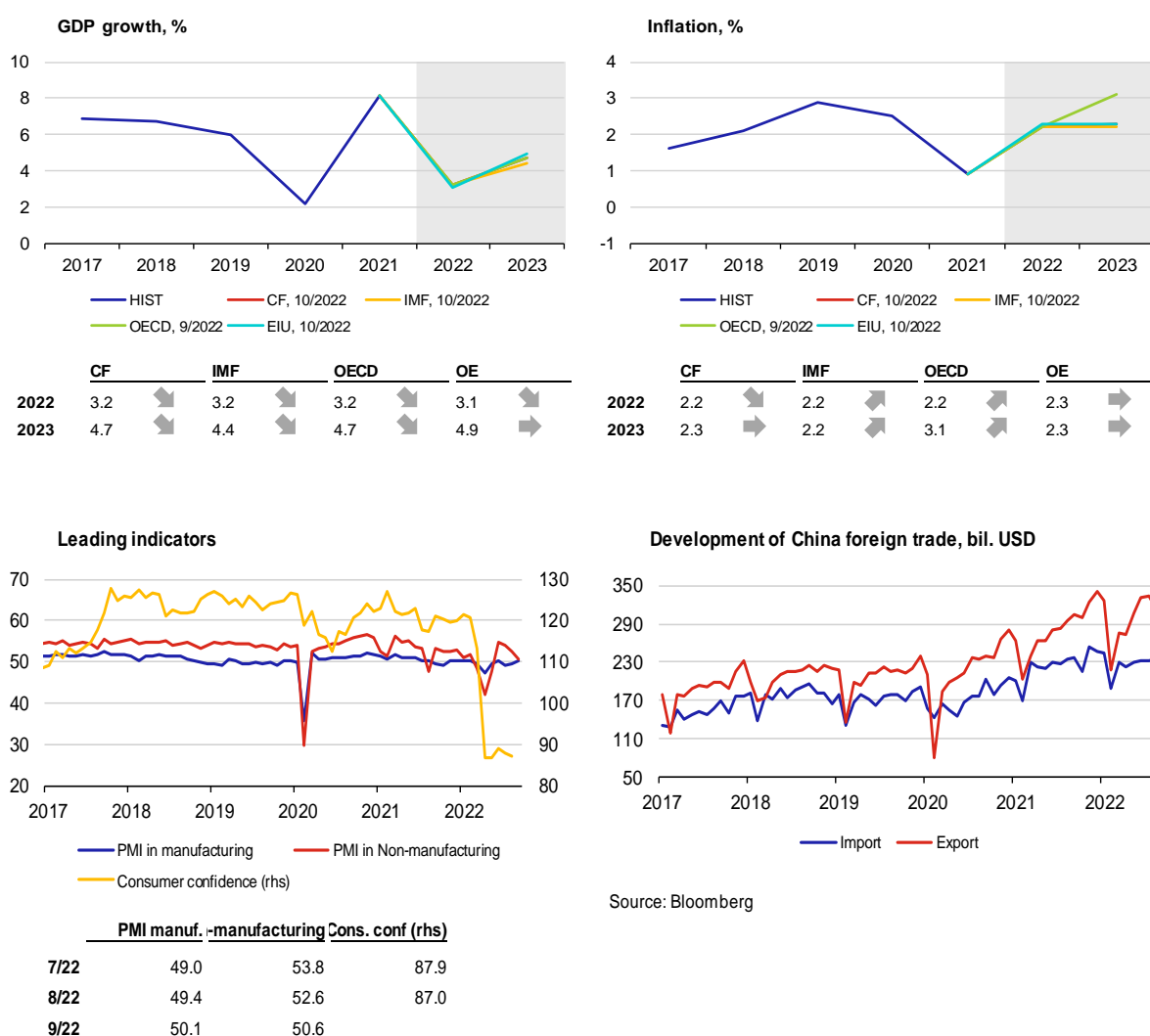


II.4 China

China's economic growth outlook for this year continues to deteriorate. The World Bank forecast (4.8% for 2022 and 4.5% for 2023) is the most optimistic so far (i.e. closest to the Chinese authorities' official target of 5.5%). Conversely, on this occasion, the OECD outlook, which is usually at the upper end of the projection range, is very pessimistic for the rest of the year (2.8%). This is similar to the outlook from the Asian Development Bank (3.3%). This is usually attributed to the Chinese authorities' strict adherence to the zero-Covid policy, which regularly places restrictions of varying degrees on at least tens – and often hundreds – of millions of economically active residents at the same time. Adjustments to the policy are not very likely until the ruling party's congress takes place later in October. On the other hand, the run-up to the congress may see the adoption of certain support measures and stimulus packages to dress up the unfavourable statistics. Consumer confidence indicators have remained in the contraction band since April and fell again slightly in August compared to July. Company indicators are close to the contraction threshold for the fourth consecutive month.

Annual consumer price inflation in China was 2.8% in September, representing an acceleration compared to late summer/early autumn. However, unlike in many advanced countries, inflation remains subdued. In August, it was even slightly negative month on month, despite expectations. Most analysts are expecting positive price growth for the rest of the year, with consumer inflation expected to remain above 2%, although probably below the PBC's 3% target. Producer price inflation slowed in the summer (to 2.3% in August and 0.9% in September in year-on-year terms), mostly due to favourable global commodity prices.

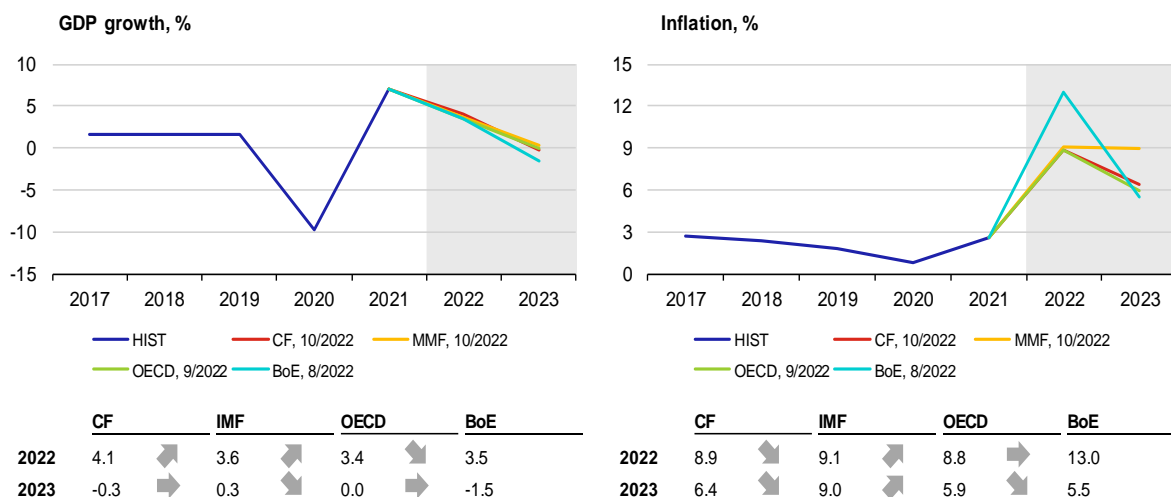
Following growth in June and July, China's foreign trade continued to decline in August and September. Positive growth in both exports and imports is expected for 2022 as a whole, although only in single figures, unlike last year. In addition, import growth is expected to outpace export growth, mainly because of weaker demand in the USA and Europe, but also due to logistical difficulties caused by random anti-pandemic restrictions.



II.5 United Kingdom

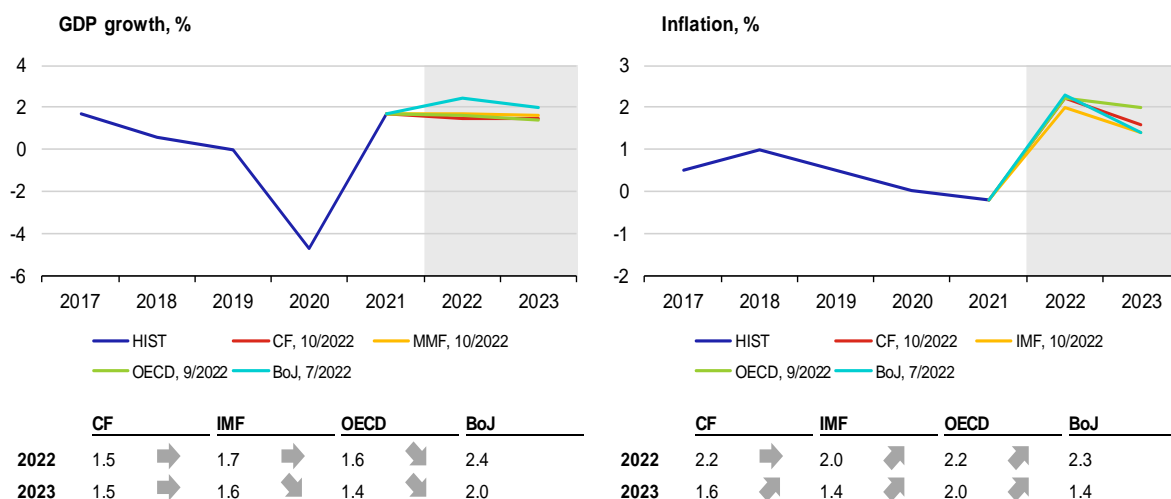
Planned government measures to support economic growth and households caused sterling to fall dramatically.

The plan included major tax cuts and subsidies totalling about GBP 60 billion. The BoE reacted to financial market nervousness regarding the funding of the plan with temporary interventions, buying long-term government bonds to stabilise the situation. It also postponed the launch of sales of government bonds held under its asset purchase programme, which it had decided on together with a key rate hike of 0.5 pp to 2.25% in September. The BoE also expects inflation of over 10% in the next few months, but the previously announced government energy price guarantee should reduce its short-term peak to less than 11% in October 2022. CF and the IMF now expect inflation of about 9% in 2022. The composite PMI stayed in the contraction band at 49.1 in September. It worsened for the third month in a row, suggesting a further drop in business activity.



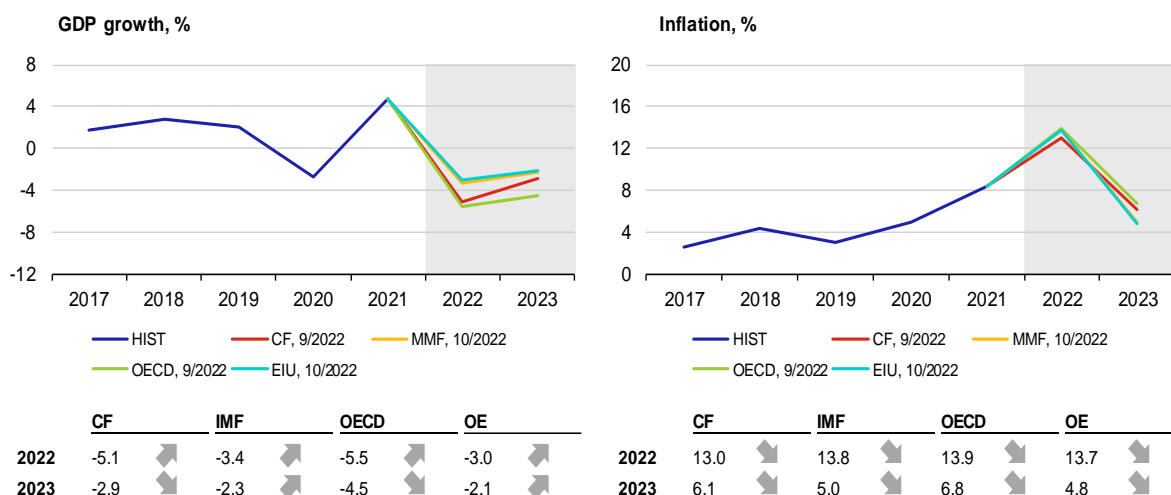
II.6 Japan

Even after large-scale interventions, the Japanese yen is falling to its weakest level in a quarter of a century. After the yen dropped to JPY 146 to the dollar, the government intervened in support of the yen for the first time since 1998 with large-scale sales of international reserves. However, as Japan remains the last country with negative rates, while rates are rising apace in other countries, the currency dropped below JPY 146 again in mid-October. The increasingly costly imports are causing the current account deficit to widen further. Receipts from travel could conversely foster an improvement after Japan opened its borders to tourists after more than two years. According to the BoJ Tankan survey, business sentiment in manufacturing fell but remained positive in 2022 Q3. This means more corporations still regard the business environment as “favourable” than as “unfavourable”. The October PMI also indicates falling but still positive sentiment in manufacturing.



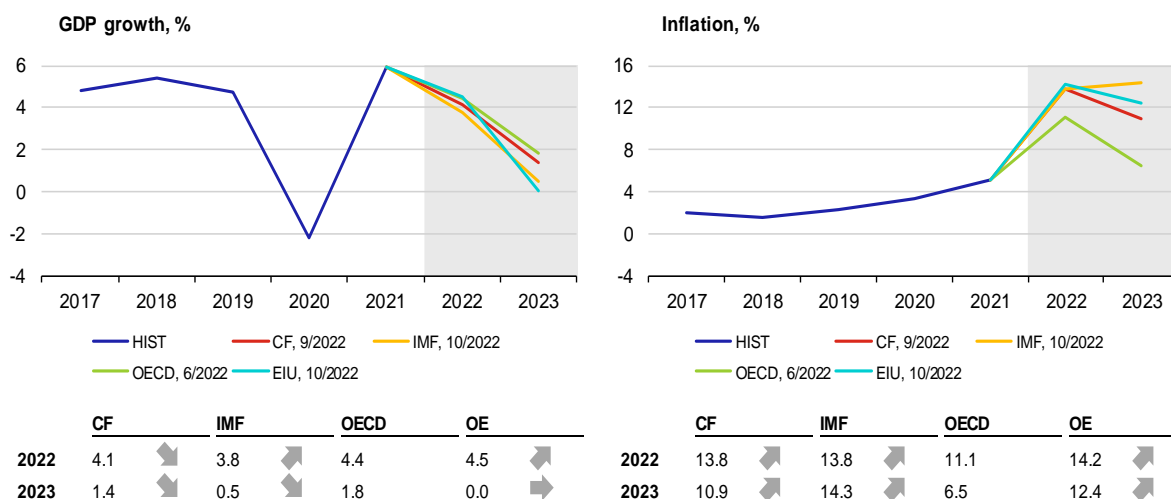
II.7 Russia

According to preliminary estimates, Russia's federal budget will end 2022 in a deficit. The draft budget originally envisaged a surplus of 1% of GDP. Expenditure will exceed revenue in the next three years as well. According to a draft budget sent to the State Duma, the state budget deficit will reach 2.0% of GDP in 2023 before falling to 1.4% of GDP in 2024. The draft budget takes into account the new economic forecast presented by the central bank. The baseline scenario of the forecast expects GDP to drop by 4–6% this year and 1–4% next year. Revenue growth resulting from high energy prices offsets a marked decline in export volumes. According to Bloomberg, energy revenue fell to the lowest level in more than a year in August. According to the central bank's preliminary estimate, nominal exports of goods and services in dollar terms rose by almost 5% year on year in 2022 Q3. For comparison, the year-on-year increase in Q1 exceeded 60%. According to the central bank's forecast, the goods and services surplus will decline by 80% by 2025 compared with 2022, due to a drop in exports in both value and volume terms and to a gradual recovery in imports.



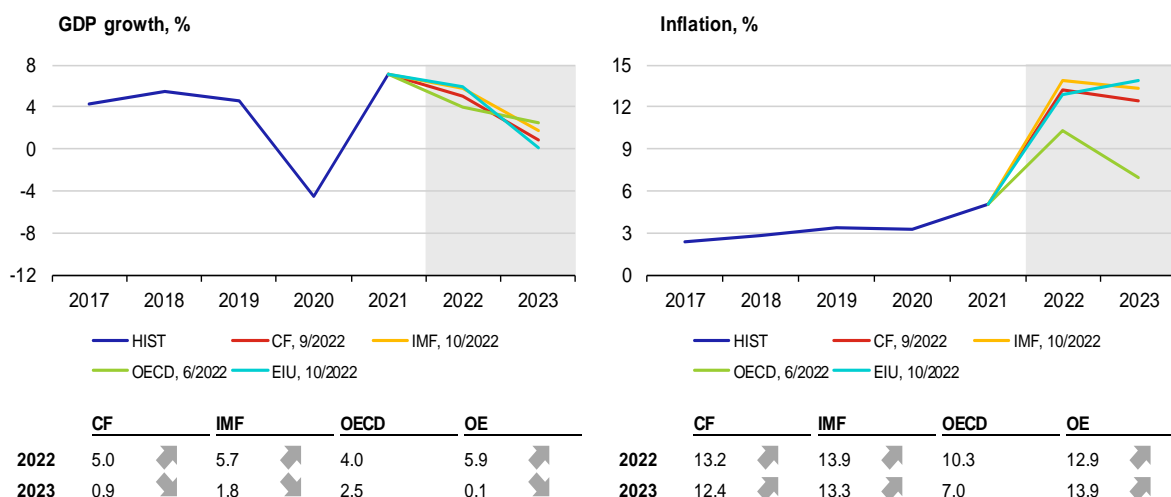
II.8 Poland

The Polish central bank surprised the markets by leaving interest rates unchanged at 6.75% on 5 October (a hike of 0.25 pp had been expected). The decision to leave rates unchanged is based mainly on concerns about economic growth and an uncertain economic outlook. The outlooks for Poland's economic growth in 2023 have been undergoing downward revisions for some time and are now between 0% and 1.8%. Business confidence in the Polish economy also continued to decline. Moreover, annual consumer price inflation went up again in September, reaching 17.2% (16.1% in August) and exceeding market expectations (16.5%). According to the latest outlooks, inflation will slow only slightly next year, remaining in double figures. Annual wage growth in the business sector was 12.7% in August (as against 15.8% in July) and industrial production grew by 10.9% year on year (7.6% in July). Unemployment declined slightly from July, reaching 4.8% in August.



II.9 Hungary

At its meeting on 27 September, the Monetary Council of the Hungarian National Bank decided to increase the key interest rate again by a record 1.25 pp to 13%. It also said it was not planning any further rate increases and introduced liquidity-absorbing measures. On 14 October it adopted a series of measures to support the weakening forint in an effort to protect it against further speculative attacks (for example, it raised the overnight collateralised lending rate from 15.5% to 25%, introduced one-day foreign exchange swaps remunerated at 17% and set the overnight deposit rate at 18%). The Hungarian labour market recorded a modest increase in unemployment of 0.1 pp to 3.4% in August. Annual consumer price inflation picked up significantly from 15.6% in August to 20.1% in September, with core inflation increasing to a record high of 20.7%. According to the latest estimates, inflation will remain high close to 13% in 2023. Annual industrial production growth rose considerably from 4.0% in July to 14.4% in August. On the other hand, growth in retail sales slowed from 4.3% year on year in July to 2.4% in August.

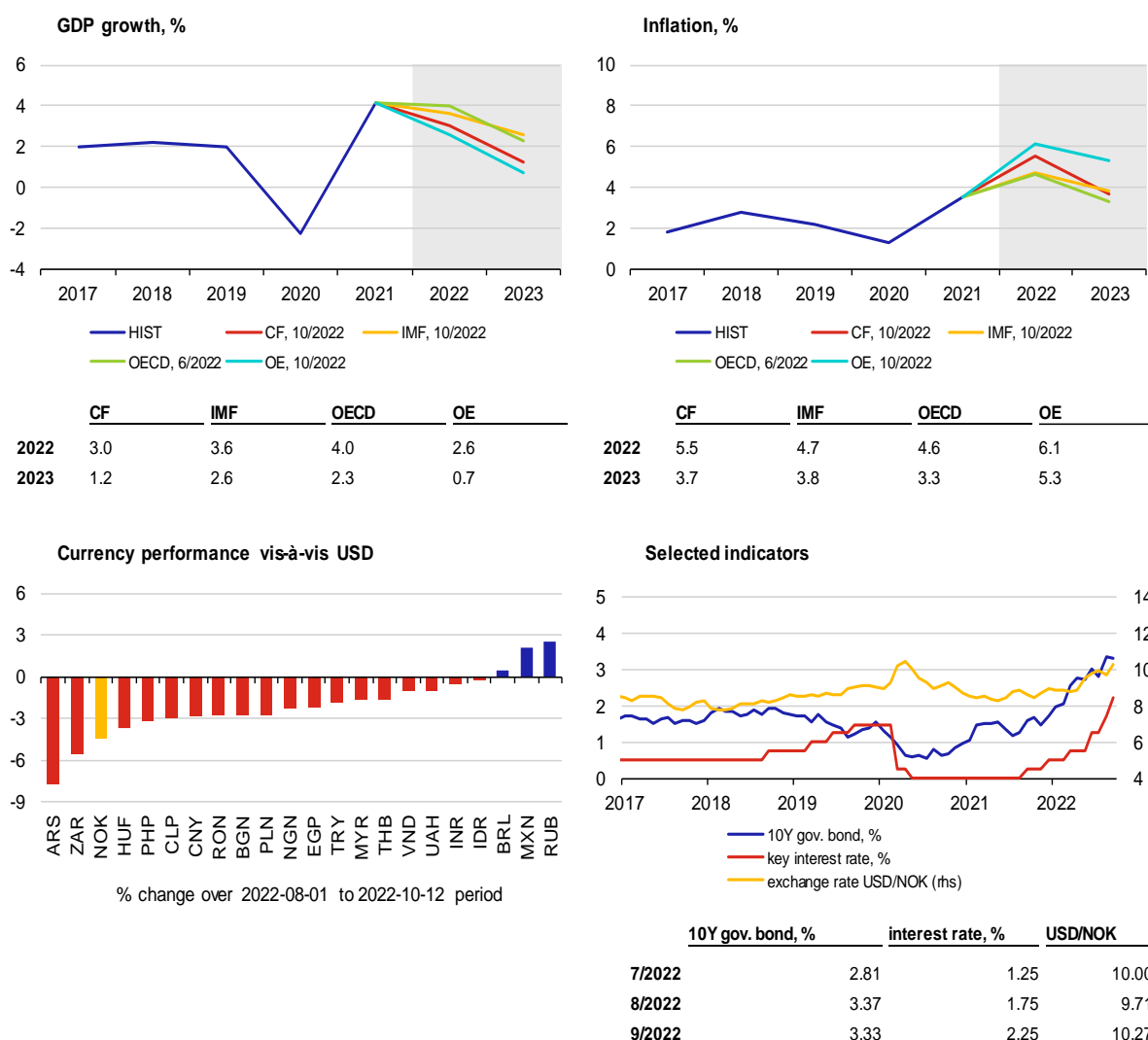


II.10 Countries in the spotlight – Norway

Like most countries, Norway is facing elevated inflation. Consumer price inflation is not expected to exceed 6% this year, which is very positive in the inflation-ridden world. However, this Nordic country is not completely immune to inflation pressures, as inflation jumped to 6.9% year on year in September. The price increase was driven mainly by food (12.1% yoy), transport (11.3%), restaurants and hotels (8.7%) and household equipment (7.6%). Housing costs – energy and water prices – rose by 5.8% year on year. Core inflation stood at 5.3% in September. The government levied a windfall tax on energy producers to fund higher expenditure on supporting households.

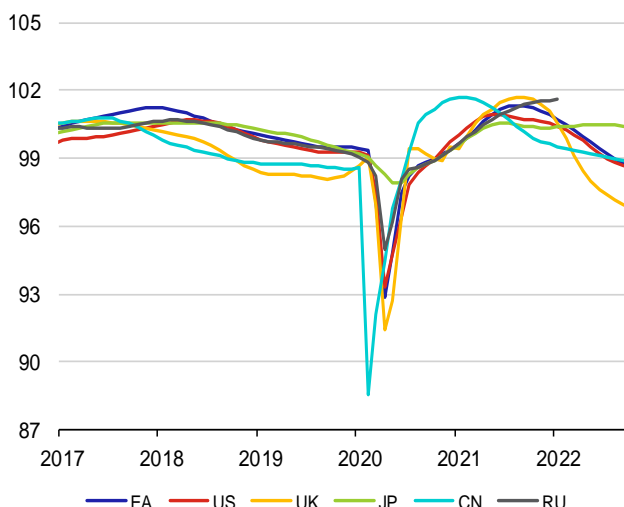
Economic activity is high, with low spare capacity, and unemployment is at record lows close to 3%. Annual wage growth stood at 2.7% in mid-2022, so wages declined in real terms. Retail declined by 4% year on year in August despite recording a slight month-on-month increase compared with July. The consumer confidence index fell markedly in Q3, hitting its lowest level in almost 30 years. The increase in inflation and interest rates is cited as the reason; it is adversely affecting households' perceptions of their future financial situation and their willingness to make large purchases. The economy grew by 3.9% year on year in Q2 and also recorded solid quarterly growth of 0.7%. In full-year terms, it grew by 3.9% last year, and growth of 2.6%–4.0% is expected this year. The forward-looking manufacturing PMI has been falling since spring and hit 50 – the boundary between expansion and contraction – in September. The new orders sub-index was in the contraction band for the second consecutive month and declined further. The delivery times sub-index indicates persisting supply chain problems.

The monetary policy of Norway's central bank (NB) consists in targeting inflation at 2%. The target was lowered from 2.5% to 2.0% in spring 2018 after 17 years of inflation targeting. The initially higher target was due to a willingness to accept higher growth in the price level caused by the country's sizeable income from the sale of raw materials, especially oil. Besides the inflation target, the central bank aims to keep a high rate of employment and maintains financial stability. At its last meeting on 22 September, the central bank raised rates by 0.5 pp to 2.25%.

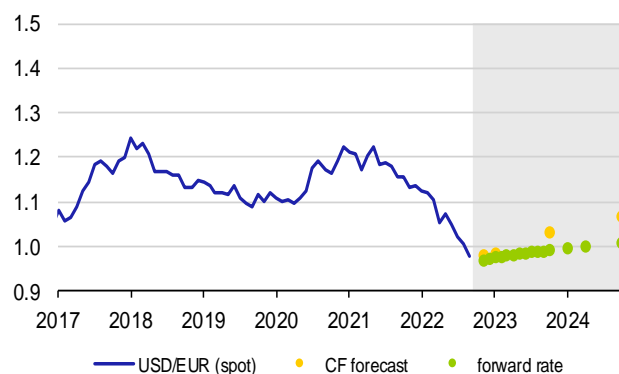


III. Leading indicators and outlook of exchange rates

OECD Composite Leading Indicator

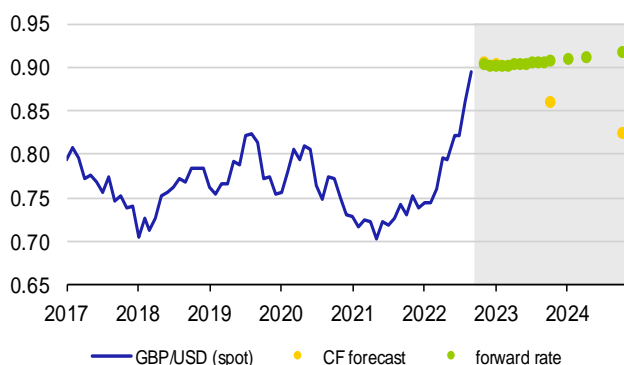


The US dollar (USD/EUR)



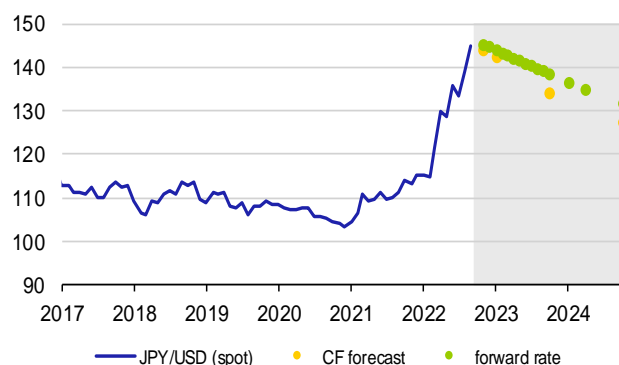
	10/10/22	11/22	1/23	10/23	10/24
spot rate	0.970				
CF forecast		0.984	0.987	1.034	1.069
forward rate		0.972	0.978	0.994	1.010

The British pound (GBP/USD)



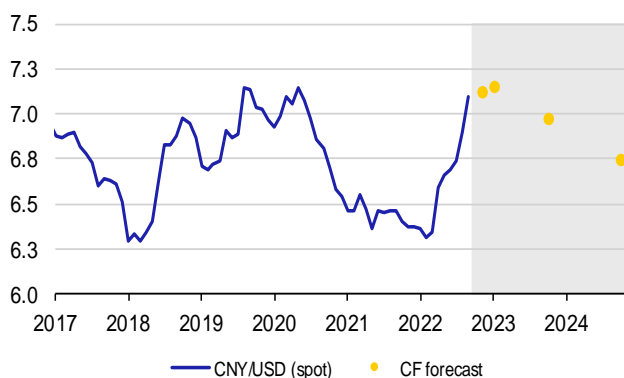
	10/10/22	11/22	1/23	10/23	10/24
spot rate	0.905				
CF forecast		0.907	0.905	0.862	0.825
forward rate		0.904	0.903	0.908	0.918

The Japanese yen (JPY/USD)



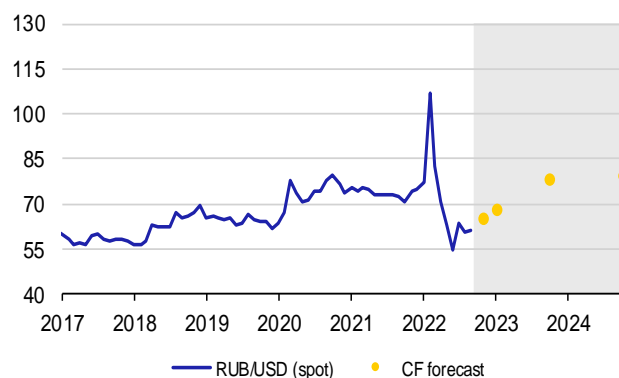
	10/10/22	11/22	1/23	10/23	10/24
spot rate	145.7				
CF forecast		144.2	142.5	134.4	127.5
forward rate		145.2	144.1	138.6	131.9

The Chinese renminbi (CNY/USD)



	10/10/22	11/22	1/23	10/23	10/24
spot rate	7.162				
CF forecast		7.122	7.150	6.979	6.746

The Russian rouble (RUB/USD)



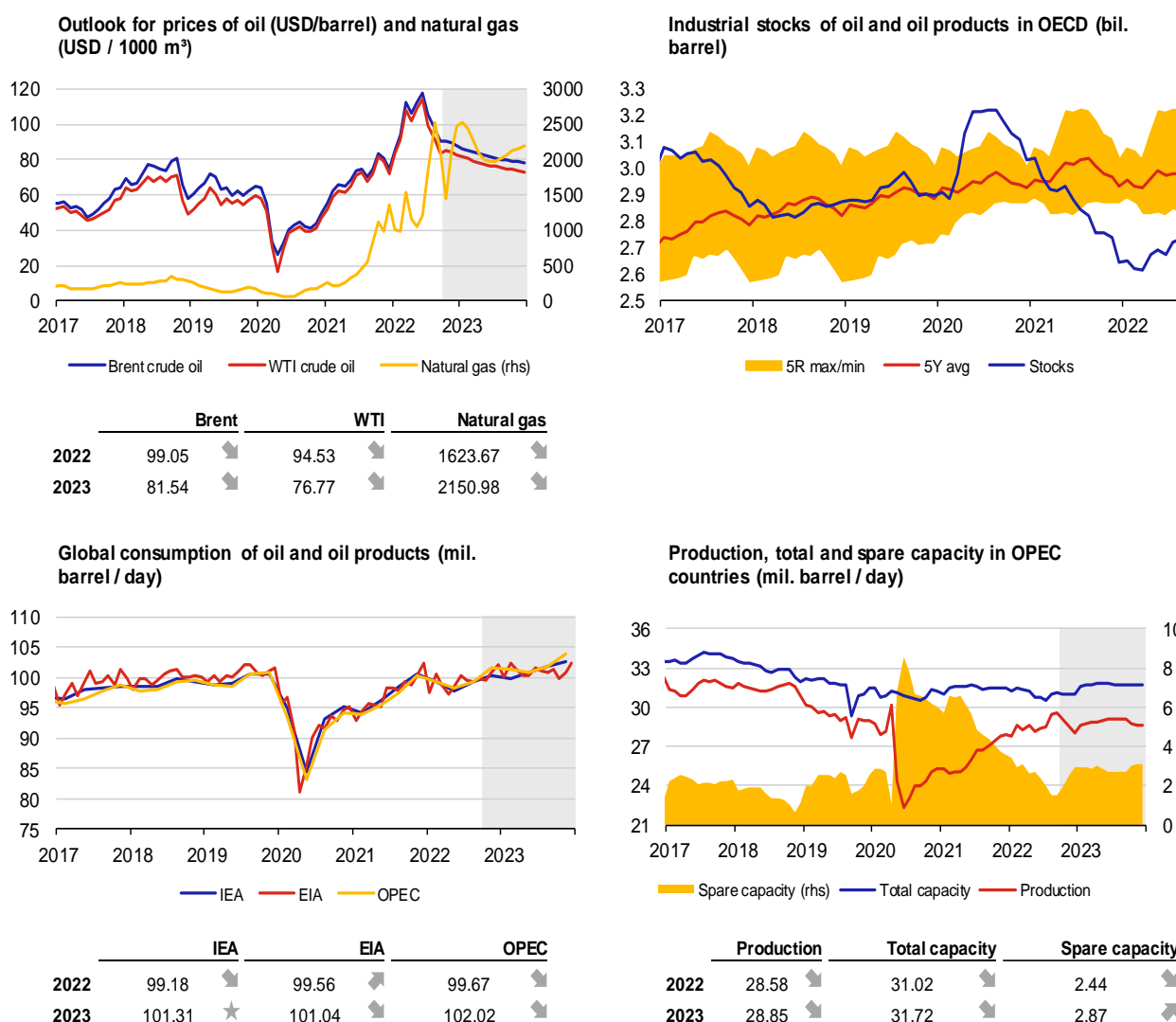
	10/10/22	11/22	1/23	10/23	10/24
spot rate	63.12				
CF forecast		65.34	68.11	78.20	79.59

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 crude oil price fell below USD 85 a barrel in late September but rose sharply in early October in reaction to the planned production cut by OPEC+. The average monthly Brent price fell for the third consecutive month in September (to USD 90.6/bbl on average). This was again due mainly to concerns about a slowdown of the global economy. The latter is facing worsening macroeconomic conditions owing to high inflation, monetary policy tightening by major central banks and persisting supply chain problems. This is accompanied by geopolitical risks due to the war in Ukraine and still lengthening lockdowns in China. The course of the pandemic in the northern hemisphere in the coming winter is also uncertain. A strong dollar and massive release of oil from the strategic reserves of OECD countries (above all the USA) are also fostering lower oil prices. The release totalled 185 million barrels from March to August and will continue in the months ahead. According to the IEA, however, commercial inventories of petroleum and petroleum products in OECD countries stood at 2,736 million barrels, 243 million barrels below the five-year average, at the end of August. Oil prices surged in early October in reaction to the OPEC+ decision to substantially cut production quotas in November (by 2 million barrels a day). However, given that even now most OPEC countries are unable to use the quotas in full, the actual decline in production will be roughly 1.0–1.2 million barrels a day. The Brent price was thus slightly below USD 95/bbl in mid-October.

The market curve in the first half of October shifted down again compared to the previous month. It still signals a further drop in the Brent price to USD 88/bbl at the close of 2022 and USD 78/bbl at the end of 2023. The October CF expects a much more moderate decrease – to USD 90.6/bbl at the one-year horizon. The EIA prediction is even slightly rising, expecting USD 93/bbl at the end of 2022 and USD 97/bbl at the end of 2023.



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

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

IV.2 Other commodities

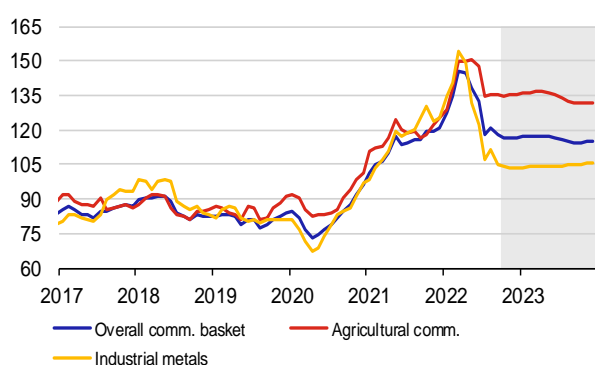
The average monthly natural gas price in Europe fell in September after three months of growth. This was a reaction to favourable news on gas tank filling in Europe. Tanks were filled to almost 90% of capacity on average at the end of September. The gas price growth expected this winter also fell. However, the risks are still skewed markedly towards higher prices. They consist mainly in unexpected supply shortfalls and abnormally low temperatures during the winter. By contrast, the coal price rose in September. European and Asian countries are maximising electricity generation in coal power plants. Demand for coal is thus rising apace, while the ban on Russian coal imports to the EU is affecting the supply side.

Following a temporary rise in August, the industrial metals price index returned to a downward path in September.

All its components except nickel declined. This is due to weak data from manufacturing in Europe and China. Energy-intensive production sectors (glassmaking and manufacture of metals) have been hit particularly hard in Europe. In China, industry has so far failed to respond to the latest fiscal and monetary stimulus measures. Metal production has increased, but demand in China is subdued due to persisting problems on the property market and in construction. Higher exports of metals from China led to a rise in stocks of most of them at the LME. The rise in nickel prices is linked with stronger demand from the car industry due to electric car production. Steel and iron ore prices also fell owing to weak demand.

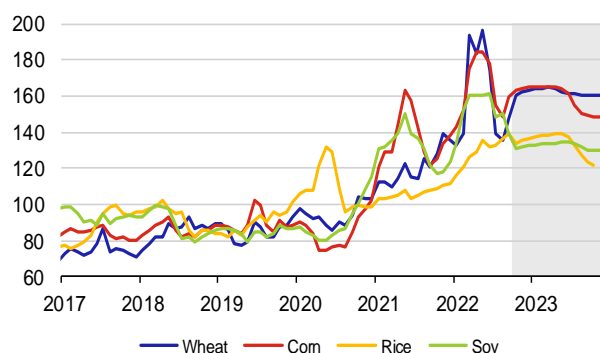
The food commodity price index was flat for the third consecutive month in the first half of October. A strong harvest in Asia is offsetting concerns about possible supply shortfalls from Ukraine's Black Sea ports. In addition, concerns about the impacts of the drought in US agricultural regions have eased and good weather is making a normal harvest there possible. Only prices of wheat, corn and slightly also beef rose over the past month, while soy prices fell sharply.

Non-energy commodities price indices



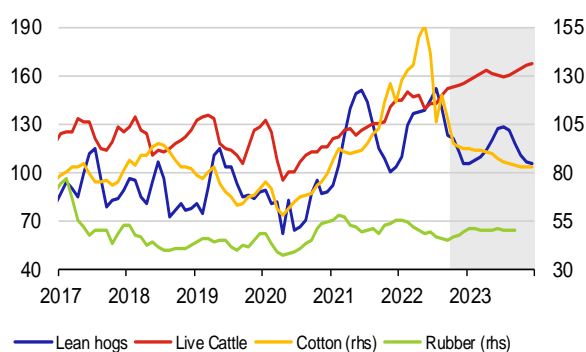
	Overall	Agricultural	Industrial
2022	127.4	139.6	122.4
2023	116.0	134.1	104.6

Food commodities



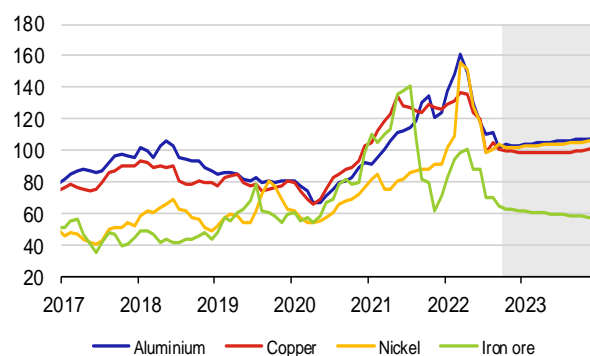
	Wheat	Corn	Rice	Soy
2022	160.6	164.2	131.2	146.7
2023	162.1	157.2	133.5	132.3

Meat, non-food agricultural commodities



	Lean hogs	Live Cattle	Cotton	Rubber
2022	129.0	148.0	121.3	49.0
2023	114.6	161.7	86.9	50.3

Basic metals and iron ore



	Aluminium	Copper	Nickel	Iron ore
2022	123.4	115.1	114.7	79.2
2023	106.0	99.4	104.5	59.7

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.

Hyperinflation is a different beast¹

*“The new 100,000 note was issued just two weeks ago, and now the million note is about to be issued. When will we count to billions?” asks gravestone seller Georg Kroll in Erich Maria Remarque’s *The Black Obelisk*. The novel is set in the hyperinflation of 1920s Germany, which gave birth to the nation’s well-known aversion to unstable prices. As most advanced economies today are witnessing inflation highs not seen in decades, this memory has resurfaced and the spectre of uncontrollable price growth has been conjured even beyond the German media. This article considers how real the danger is. Reviewing the causes of historical hyperinflations, it argues that the current cost-of-living crisis in advanced economies should not be seen as a harbinger of such a disastrous collapse of money. Hyperinflations have their own causes that are distinct from those of “ordinary” inflation and in 2022 are relevant to only a handful of emerging economies. Nevertheless – after briefly introducing some heretical thoughts on the benefits of inflation – the article emphasises the costs of entrenched price growth and cautions against irresponsible monetary and fiscal adventures.*

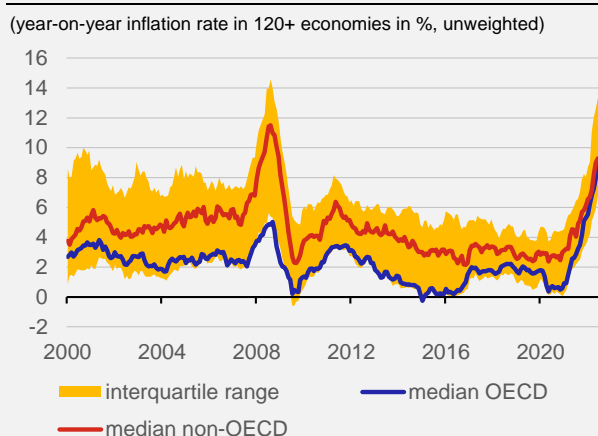
Intro

“Fear of hyperinflation”, reads the headline of a May 2021 article by the German public broadcaster on the latest price developments.² A more recent opinion piece in the business weekly *WirtschaftsWoche* goes further, recalling the German hyperinflationary episode of the 1920s with an ominous “It’s here again!”.³ More pragmatically, under the subheading “how to prepare for hyperinflation,” the August 2022 edition of the German *Forbes* provides its readers with investment tips for an era where money is worthless.⁴ With the latest inflation reading in Germany showing a 10% annual increase in prices – the highest since the early 1950s and well above the ECB’s 2% target, but also orders of magnitude below the 29,500% monthly inflation recorded in October 1923 – is this a legitimate concern?

Germany is far from alone in entering inflation highs not seen in decades (Figure 1), and the German media is in reputable company in conjuring the spectre of uncontrollable price growth.⁵ The worry is fuelled by the re-emergence of actual hyperinflation in Zimbabwe – the most well-known case in recent memory – as well as inflation readings nearing or hitting triple digits in countries including Turkey, Argentina, Sri Lanka and Lebanon.

In this article, we ask whether there is indeed a danger of the current global cost-of-living crisis escalating to the scale immortalised in Remarque’s *The Black Obelisk*, set in 1920s Germany. In the novel, the protagonist Ludwig lights his cigars with bank notes and is forced to ask for a pay rise several times a day to afford to buy a tie in the evening. We argue that the recent inflation spike in advanced economies should not be seen as a harbinger of such a disastrous collapse of money. Nevertheless, we recall the costs of entrenched inflation and caution against complacency.

Figure 1 – Inflation rate in advanced economies stands at multi-decade high



Note: Depending on data availability, the sample size varies along the observation period from 120 to 139 economies.
Source: Author’s analysis of national data, accessed via Datastream.

¹ Written by Martin Kábrt. The views expressed in this article are those of the author and do not necessarily reflect the official position of the Czech National Bank.

² The headline was later toned down to “Fear of high inflation”, but the caution about hyperinflation stayed in. Available at <https://www.zdf.de/nachrichten/wirtschaft/steigende-rohstoffpreise-baumaterialien-100.html#xtor=CS5-62>, accessed 25/9/2022.

³ Available at <https://www.wiwo.de/finanzen/geldanlage/die-geschichte-der-inflation-sie-ist-wieder-da/28079086.html>, accessed 25/9/2022.

⁴ Available at <https://www.forbes.com/advisor/de/geldanlage/hyperinflation/>, accessed 25/9/2022.

⁵ Those who have publicly expressed their worries include the CEO of the world’s largest asset manager BlackRock Larry Fink and Twitter founder Jack Dorsey, whose simple tweet “Hyperinflation is going to change everything. It’s happening” inspired many media articles and led to the highest-ever Google search volume for “hyperinflation”. The phenomenon topped the list of concerns among the clients of the investment bank UBS (as reported by Bloomberg, 2021) and has not dodged the Czech public sphere either. For example, a July 2022 opinion piece in *Seznam Zpravy* argued (rather daringly) that the “economic story of Germany 1923 shares several common features with that of Czechia 2022”. Available at <https://www.bloomberg.com/news/articles/2021-09-22/hyperinflation-concerns-top-the-worry-list-for-ubs-clients#xj4y7vzkg> and <https://www.seznamzpravy.cz/clanek/zahranicni-23-000-procent-mesicne-pribeh-inflace-ktery-varuje-dodnes-208206>.

Lessons from the history of hyperinflation

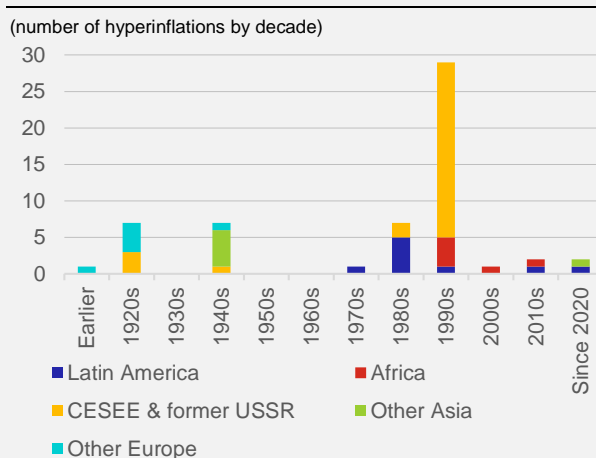
Hyperinflation is largely a 20th century phenomenon, although there is an ample pre-history of calamitous monetary experiments with coin debasement and paper money printing, with the earliest episodes recorded – perhaps unsurprisingly – shortly after coins and paper money were invented.⁶ The most common definition of hyperinflation, arbitrarily chosen in Cagan's (1956) seminal article on the subject, is a 50% or higher increase in the general price level from one month to the next. Another is that the price level climbs 500% year on year.⁷ Using the monthly definition, Hanke and Krus (2012) compiled the most authoritative record of modern hyperinflation (Figure 2). Their initial count of 56 episodes – of which only those in 1795 France and 2008 Zimbabwe occurred outside of the 20th century – has since been extended to include the 2016 hyperinflation in Venezuela and a 2020 episode in Lebanon (Hanke, 2020).

It could be argued that such historical rarity of hyperinflation is a mirage, resulting from the rather demanding requirement of 50% price growth from one month to the next. Surely, runaway inflation must inflict immense damage even if it never crosses this boundary, especially when it's persistent. Some literature proposes a less arduous definition of “very high”, “runaway” or “galloping” inflation at a 100% increase in prices (i.e. a doubling) relative to the same month in the previous year. Perhaps most usefully, He (2018)⁸ uses a qualitative definition of hyperinflation as a situation in which money stops performing one or more of its functions as a medium of exchange, store of value and unit of account. Such collapse of money could conceivably happen well before inflation crosses an arbitrary quantitative threshold, but even using this more permissive definition, hyperinflation is rare.

Hyperinflation usually follows a major upheaval such as a war, a coup, the breakup of an empire or the establishment of new states. Most countries have never experienced hyperinflation, while nearly all the recorded instances occurred in one of three narrow historical windows – the aftermath of the two world wars and the collapse of the socialist bloc in the 1990s. Interestingly, the Czech experience in all three episodes stands as a regional outlier. Czechoslovakia in the early 1920s was a unique island of monetary stability with hyperinflationary neighbours in virtually all directions. A similar situation arose after the Second World War, when unlike Hungary, which in 1946 set the still-standing inflation record of prices doubling every 15 hours, Czechoslovakia contained its price growth. The Czech Republic also avoided hyperinflation in its transition to a market economy in the 1990s, even as this misfortune hit all 15 USSR successor republics, Yugoslavia (and its successor states), Bulgaria and Poland. Scholars typically attribute the Czech price stability success in the turbulent 20th century to its fiscal and monetary restraint (e.g. Sargent, 2013, and Dornbusch, 1992).

The world's first peacetime hyperinflation followed the “inflation decade” of the 1970s. Most hyperinflation occurring outside of the three historical windows, including those in Chile, Nicaragua, Peru, Zaire and Angola in the latter part of the 20th century, were still linked to turmoil, such as civil wars, coups or failing states. Unable in such circumstances to fund public spending by taxes or debt, governments turned to borrowing from their central bank. The first true peacetime hyperinflation started in 1984 Bolivia and resulted from a dramatic drop in fiscal revenues (due largely to external causes) and the government's monetary financing of the gaping deficit (He, 2018). The government's attempt to obtain foreign currency for servicing FX debt by administratively converting FX deposits to local currency set off a rapid capital flight that sank the local currency, triggering uncontrollable price growth. Inflationary public finance, though mostly related to domestic factors, was also at the centre of the hyperinflation in Argentina and Brazil in the late 1980s. In both countries, the inflationary spiral was not sudden, but rather preceded by a long period of high and entrenched price growth. In the mid-1990s, against the backdrop of rapidly advancing globalisation, a worldwide disinflationary environment set in and

Figure 2 – Most hyperinflation occurred after world wars and the collapse of the Soviet bloc in 1989



Source: Hanke-Krus (2012) hyperinflation table, updated to 2022.

⁶ The state monopoly on money allowed the government to raise revenue through seigniorage or an “inflation tax”. Coins were debased by increasing their face value, reducing their weight or cutting their gold/silver content (a technique famously used by Roman emperors). In the absence of price changes, the ruler would have been able to buy more goods and services with the same amount of gold and silver. Paper money greatly enhanced this capability – issuing notes with high denominations was an easy way to raise revenue. He (2018) documents several examples of rapid inflation associated with paper money printing as early as 11th century China.

⁷ The two definitions are not directly comparable. Depending on how long the rapid monthly price growth continues, either can represent a higher threshold in year-on-year terms.

⁸ For the avoidance of doubt, the citation refers to the academic Liping He (*1958), not the Almighty.

hyperinflations largely disappeared in the 21st century. The only exceptions appeared in countries that defied the new international economic order by restricting capital flows – Zimbabwe and Venezuela – and the internationally isolated North Korea.

The history of hyperinflations provides at least two lessons for the current inflationary bout:

In 2022, no developed country is even close to hyperinflation. Increases in the general price level from one month to the next are in the range of 1–3%, nowhere near the 50% required for the most common definition of hyperinflation. Moreover, a considerable part of the inflation is attributable to the direct effects of exogenous shocks to energy and food prices. The evidence of price growth becoming entrenched (for instance in wage contracts) is minimal so far, with medium-term inflation expectations still anchored close to central bank targets. Importantly, no developed country is experiencing profound internal turmoil that threatens to undermine trust in the state or its currency.

Some emerging economies may be at risk of runaway price growth, especially those experiencing extreme upheaval or those engaging in risky monetary or fiscal experiments. For example, Becker et al. (2022) warns of the risks of hyperinflation in war-torn Ukraine if the country does not contain its reliance on seigniorage to fund its military expenditures. Other economies at risk include Turkey, where monetary policy remains stubbornly loose despite inflation topping 80% in August 2022, and Argentina, where annual price growth has exceeded 10% each year for more than a decade and in August 2022 reached 71%. Argentina's long period of entrenched inflation bears an uncomfortable resemblance to the 1980s, when persistently high inflation culminated in hyperinflation in 1989 (Figure 3).

Not always, not everywhere a monetary phenomenon

Hyperinflations are usually linked with monetary financing of fiscal deficits, but the causes of a currency collapse stretch beyond money printing. While the typical culprit is indeed ill-advised policy and/or institutional weakness, the simplistic money printer narrative overstates the role and influence of the money supply. The purchasing power of a currency depends not just on the quantity supplied, but also crucially on more elusive, demand-side influences, such as public trust in the currency and confidence in the government's ability to protect its value.

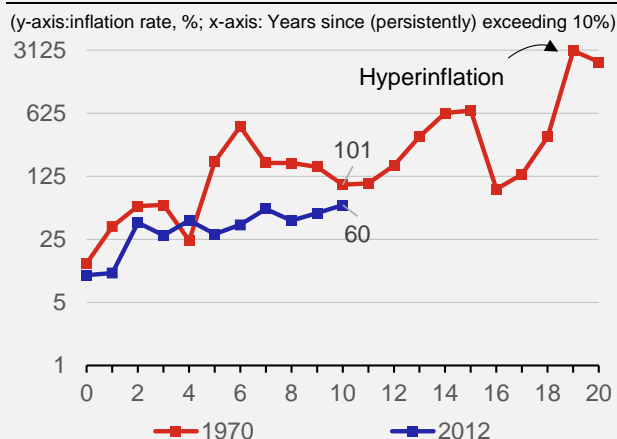
Monetary financing of deficits is the last resort for failing or crisis-stricken states. Regarding seigniorage – or money printing – Keynes (1923) observed that “a government can live by this means when it can live by no other”. States typically turn to borrowing directly from their central bank when they are unable to finance themselves by collecting sufficient tax revenue or borrowing in domestic or international capital markets. This can happen to states that are weak, failing or corrupt or experiencing a deep crisis, war, a severe balance of payments shock or sometimes a natural catastrophe.

However, as inflation surges, money growth sooner or later starts lagging behind rather than leading price growth. No policymaker would intentionally create hyperinflation. The critical ingredient in inflation escalating into hyperinflation is the response of households and businesses to the government's inflationary policy. Rising inflation expectations trigger price and wage hikes, speculation, hoarding or capital flight that rapidly outpaces money printing. Seigniorage no longer increases the state's revenue in real terms, with money printers playing catch-up to price setters rather than the other way around. Historical evidence indeed shows *real* money balances declining in hyperinflations (He, 2018). There is no simple causal relationship between money and inflation. The crucial factor for price stability is policy expectations and institutional credibility.

The fragility of trust explains why so many inflation stabilisation programmes fail. When price growth becomes uncontrollable, it becomes exactly that. A successful stabilisation programme does not involve switching off money printers, but rather establishing trust in a new currency that is able to maintain its value without price controls or restrictions on capital flows.

The link between the money supply and price growth is tenuous even in today's inflation episode. In the years following the 2008 global financial crisis (GFC) and again in response to the Covid shock in 2020, many central banks launched large-scale asset purchase programmes (QE) to provide further monetary stimulus when the space for interest rate cuts was exhausted. Since the asset purchases largely targeted government bonds – and coincided with an upsurge in their issuance – the policy was seen by some as similar to the monetary financing of deficits that started most hyperinflations. However, despite the money-creating aspects of QE, it did not lead to concerning levels of inflation. The countries whose central banks expanded their balance sheets the most – Japan and Switzerland – currently face the lowest levels of inflation in the developed world. Admittedly, a broader monetary aggregate is a better measure of money growth

Figure 3 – Persistently high inflation in Argentina increases the risk of runaway price growth



than central bank balance sheets. But even the link between M3 growth and current inflation is tenuous at best (Figure 4). To gauge whether the current inflation spike is likely to spiral further, the best indicator to watch is not M3, but rather inflation expectations, which best reflect the public's trust in the state, its institutions and their capability in taming price growth.

Does the inflation cloud have a silver lining?

Hyperinflations are almost universally thought to be a misfortune. The only advocates of a currency collapse have been those who believe in some form of moneyless society – whether it be Lenin's (1919) vision of a communist state “where the necessities of life shall be paid for by work alone”⁹ or more modern libertarian rejection of fiat money in favour of some private or crypto currency. But beyond arming the critics of the modern monetary system, are there any upsides to periods of unstable prices?

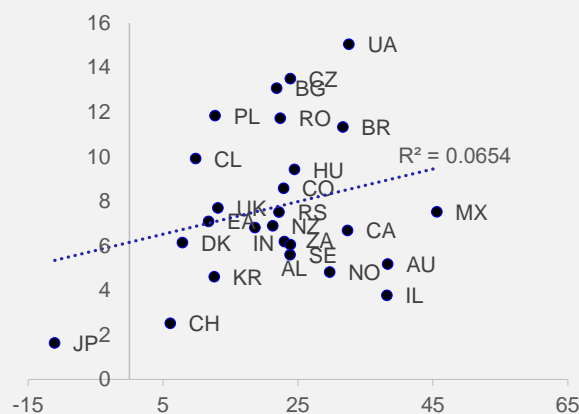
The literature identifies instances where even high levels of inflation can have some positive consequences.¹⁰ For example, price growth is an important adjustment tool in open-economy macroeconomics. If a country's real exchange rate lags behind fundamentals and a correction through nominal exchange rate revaluation is thought to be too costly (for example because the country is heavily reliant on exports), increases in the price level can deliver the required adjustment with a broader sharing of the burden. Persistently higher inflation may thus be a natural phenomenon in converging economies. Similarly, in monetary unions where exchange rates are fixed (such as the Eurozone), the price level is an important adjustment tool in cushioning asymmetric shocks.

Inflation has also historically been a key contributor to the reduction of sovereign debt. The UK's post-WWII decline in the debt-to-GDP ratio from 283% in 1946 to 29% in 1990 is a case in point. Wickens (2022) estimates that by reducing the real value of the debt (i.e. increasing nominal GDP), inflation contributed most significantly to the decline. The second major influence was growth (also raising nominal GDP), while primary surpluses played a less important role. Importantly, for inflation to play this role, it has to be at least to some degree unexpected. Fully anticipated inflation gets built into higher interest payments, which increase the debt accordingly and offset the effect. In this sense, the unanticipated inflation spike in the post-pandemic world will to some extent temper the immense increase in public indebtedness created during the pandemic. Darvas (2022) shows how the inflation shock led to downward revisions of expected debt-to-GDP ratios in both the IMF's and the European Commission's spring 2022 forecasts for most advanced economies. The inflation effect apparently outweighed the considerable reductions in expected GDP growth and the faster trajectory of monetary tightening.

Finally, the destructive nature of inflation can have a Schumpeterian bright side. This was in fact recognised by the “creative destruction” advocate himself when he argued in 1942 that inflation is “an excellent means of smoothing certain transitional difficulties and of effecting partial expropriation”. Unfortunately, early evidence suggests that the 2022 surprise inflation redistributes in rather regressive ways. Using data from Spain, Cardoso et al. (2022) show that the least affected group tends to be middle-aged households, whose decrease in real income is largely compensated by the reduction in the real value of their mortgage debt. Meanwhile, young people (with neither large wealth nor debt) are harmed by the loss of real income, while older people are hurt the most by the double whammy of declining real income and real value of their net assets.¹¹

Figure 4 – Money growth since the onset of the pandemic cannot explain the different inflation rates across countries

(horizontal axis: growth of M3 since March 2020; vertical axis: average CPI inflation rate in January to June 2022)



Source: Refinitiv harmonised M3, national CPI data.

⁹ The full quote from an interview with the *New York Times*, in which Lenin defended the inflationary spiral in 1919 Russia, reads: “Hundreds of thousands of rouble notes are being issued daily by our treasury. This is done, not in order to fill the coffers of the State with practically worthless paper, but with the deliberate intention of destroying the value of money as a means of payment. There is no justification for the existence of money in the Bolshevik state, where the necessities of life shall be paid by work alone.”

¹⁰ We do not discuss here the benefits of low and stable inflation over zero price growth. They are relatively uncontroversial, which is why major central banks target 2% inflation.

¹¹ The authors also consider the “relative consumption channel”, whereby the differential impact of inflation is caused by the differences in consumption baskets between groups. However, their estimates suggest that this channel is a full order of magnitude less important than the redistributive impact through the real value of income and wealth.

Inflation bites even if we don't carry banknotes in wheelbarrows

Hyperinflations are disastrous, but chronically high inflation is harmful even if it never escalates to a currency collapse. Despite their relatively low importance, no account of the costs of inflation is complete without mentioning the “menu” and “shoe-leather” costs that reflect the frequent need to rewrite price lists and convert assets into currency to make payments (because holding money is costly). But high inflation creates more serious problems than inconvenience. Starting with the microeconomic evidence, inflation distorts tax systems, which can lead to adverse effects on incentives for investment and saving. In addition, since individual prices are not adjusted continuously, even steady inflation causes variations in relative prices that can misinform investment decisions and erode competitiveness. Individuals and firms, accustomed to accounting in nominal terms, may have trouble with financial planning and make errors in saving for their retirement, assessing the real burden of mortgages, or making long-term investments.

At the macroeconomic level, high-inflation environments are less stable. The higher inflation is, the

more it is variable and difficult to predict (see, for example, Benati, 2008, and Kim and Lin, 2012). Empirical work by BIS (2022) shows that in a low-inflation regime, relative price changes tend to fade away without leaving a mark on aggregate inflation. The regime is thus to an extent self-equilibrating. By contrast, in a high-inflation regime, sectoral price changes tend to spill over and overall inflation becomes more likely to increase further. An alternative explanation of the volatility of high inflation is suggested by Ball and Cecchetti (1990), who focus on the policy reaction to inflation. When inflation is low, there is a consensus that it should be kept low, and so inflation is steady and predictable. When inflation is high, however, there is a disagreement about the importance of reducing it because of the economic damage that the required monetary or fiscal tightening entails. As a result, inflation is variable and difficult to predict, which magnifies the problems for household financial planning and can make firms reluctant to undertake investment projects, especially long-term ones.

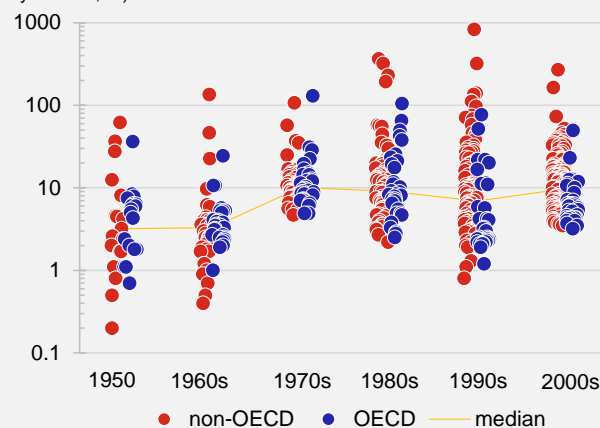
Hyperinflation is a different beast. It arises out of policy and institutional failure, which tends to occur only after extreme political upheaval or in failing or internationally isolated states. Given that, the current inflationary episode in advanced economies does not signal a potential risk of uncontrollable price growth. Nevertheless, high inflation is costly when it becomes entrenched in an economy. Policymakers should therefore not treat elevated levels of inflation with complacency, even when most of the price growth is related to external influences. Insufficient tightening of fiscal and monetary policy runs the risk of de-anchoring inflation expectations, with much greater costs in reducing inflation down the road.

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Figure 4 – Entrenched inflation is more common than hyperinflation, but still costly to the economy

(annualised inflation rate in OECD (blue) and non-OECD (red) countries by decade, %)



Source: Hanke-Krus (2012) inflation database.

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Keywords

Hyperinflation, inflation, recession

JEL Classification

E31, E59, E66

A1. Change in predictions for 2022

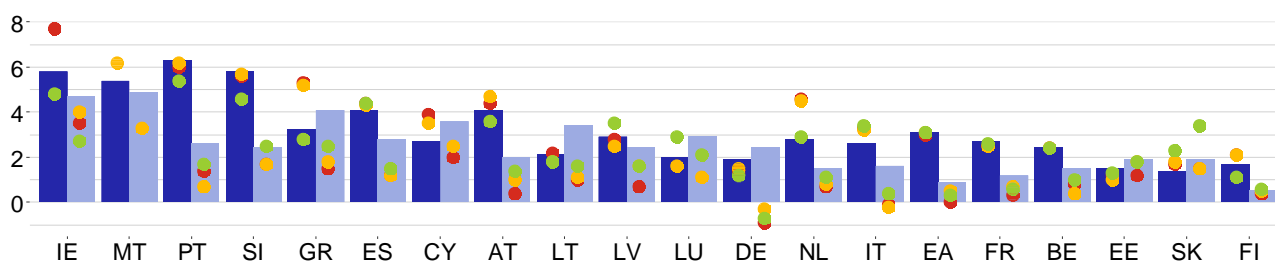
	GDP growth, %				Inflation, %			
	CF	IMF	OECD	CB / EIU	CF	IMF	OECD	CB / EIU
EA	+0.1 2022/10 2022/9	+0.5 2022/10 2022/7	+0.5 2022/9 2022/6	+0.3 2022/9 2022/6	+0.1 2022/10 2022/9	+3.0 2022/10 2022/4	+1.1 2022/9 2022/6	+1.3 2022/9 2022/6
US	0 2022/10 2022/9	-0.7 2022/10 2022/7	-1.0 2022/9 2022/6	-1.5 2022/9 2022/6	0 2022/10 2022/9	+0.4 2022/10 2022/4	-0.8 2022/9 2022/6	+0.2 2022/9 2022/6
UK	+0.7 2022/10 2022/9	+0.4 2022/10 2022/7	-0.2 2022/9 2022/6	-0.3 2022/8 2022/5	-0.3 2022/10 2022/9	+1.7 2022/10 2022/4	0 2022/9 2022/6	+2.7 2022/8 2022/5
JP	0 2022/10 2022/9	0 2022/10 2022/7	-0.1 2022/9 2022/6	-0.5 2022/7 2022/4	0 2022/10 2022/9	+1.0 2022/10 2022/4	+0.3 2022/9 2022/6	+0.4 2022/7 2022/4
CN	-0.1 2022/10 2022/9	-0.1 2022/10 2022/7	-1.2 2022/9 2022/6	-0.1 2022/10 2022/9	-0.1 2022/10 2022/9	+0.1 2022/10 2022/4	+0.2 2022/9 2022/6	0 2022/10 2022/9
RU	+1.8 2022/9 2022/8	+2.6 2022/10 2022/7	+4.5 2022/9 2022/6	+1.0 2022/10 2022/9	-1.2 2022/9 2022/8	-7.5 2022/10 2022/4	-2.3 2022/9 2022/6	-0.2 2022/10 2022/9

A2. Change in predictions for 2023

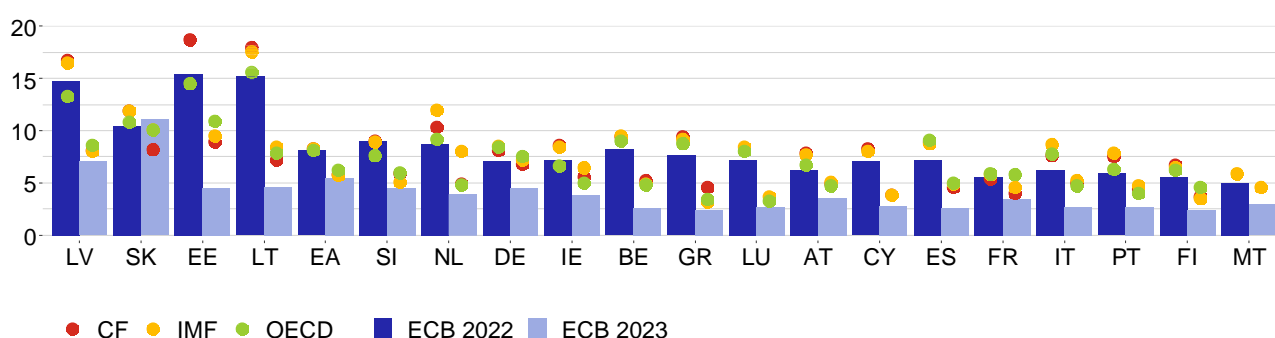
	GDP growth, %				Inflation, %			
	CF	IMF	OECD	CB / EIU	CF	IMF	OECD	CB / EIU
EA	-0.2 2022/10 2022/9	-0.7 2022/10 2022/7	-1.3 2022/9 2022/6	-1.2 2022/9 2022/6	+0.4 2022/10 2022/9	+3.4 2022/10 2022/4	+1.6 2022/9 2022/6	+2.0 2022/9 2022/6
US	-0.3 2022/10 2022/9	0 2022/10 2022/7	-0.7 2022/9 2022/6	-0.5 2022/9 2022/6	+0.1 2022/10 2022/9	+0.6 2022/10 2022/4	-0.1 2022/9 2022/6	+0.2 2022/9 2022/6
UK	0 2022/10 2022/9	-0.2 2022/10 2022/7	0 2022/9 2022/6	-1.2 2022/8 2022/5	-0.6 2022/10 2022/9	+3.7 2022/10 2022/4	-1.5 2022/9 2022/6	+2.0 2022/8 2022/5
JP	0 2022/10 2022/9	-0.1 2022/10 2022/7	-0.4 2022/9 2022/6	+0.1 2022/7 2022/4	+0.2 2022/10 2022/9	+0.6 2022/10 2022/4	+0.1 2022/9 2022/6	+0.3 2022/7 2022/4
CN	-0.3 2022/10 2022/9	-0.2 2022/10 2022/7	-0.2 2022/9 2022/6	0 2022/10 2022/9	0 2022/10 2022/9	+0.4 2022/10 2022/4	+0.1 2022/9 2022/6	0 2022/10 2022/9
RU	-0.3 2022/9 2022/8	+1.2 2022/10 2022/7	-0.5 2022/9 2022/6	+1.5 2022/10 2022/9	-0.2 2022/9 2022/8	-9.3 2022/10 2022/4	-6.4 2022/9 2022/6	-0.3 2022/10 2022/9

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, %

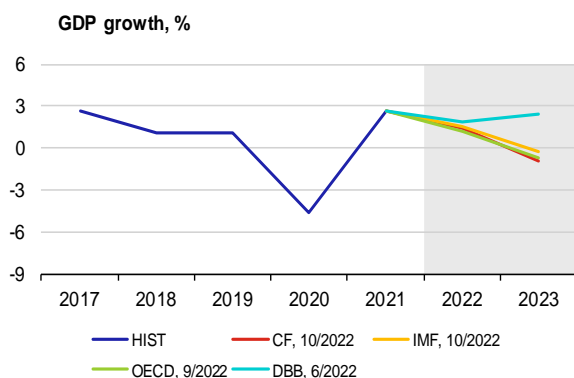


● CF ● IMF ● OECD ■ ECB 2022 ■ ECB 2023

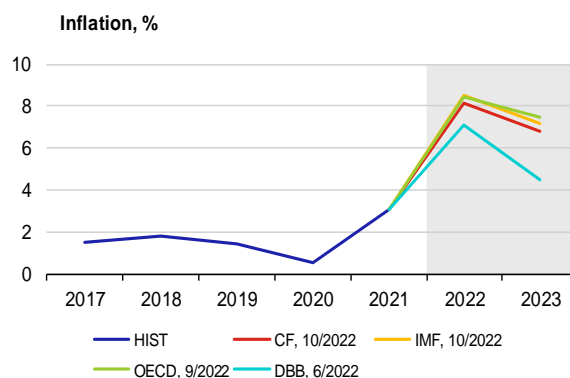
Note: Charts show institutions' latest available outlooks of for the given country.

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

Germany

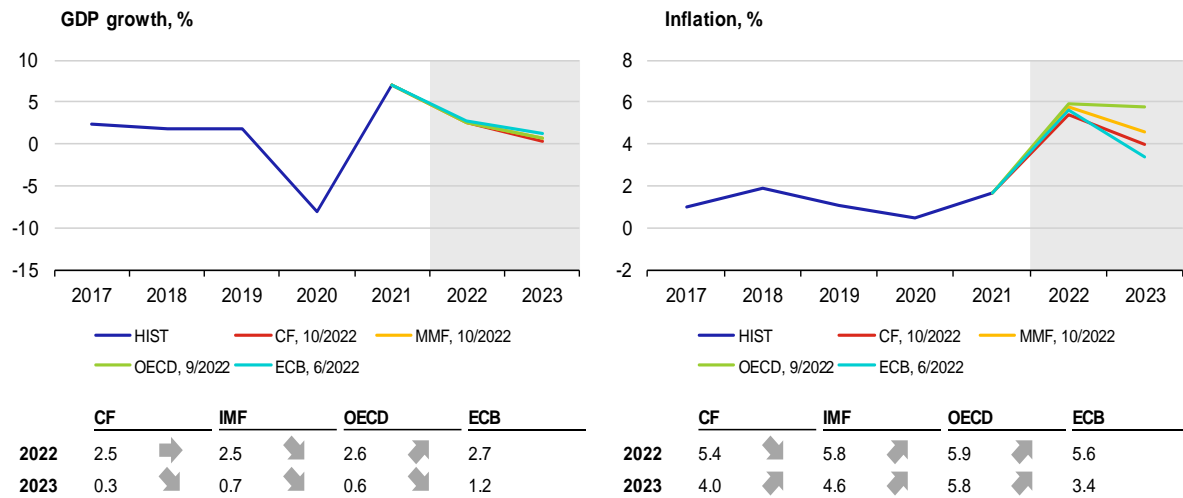


	CF	IMF	OECD	DBB
2022	1.4	1.5	1.2	1.9
2023	-0.9	-0.3	-0.7	2.4

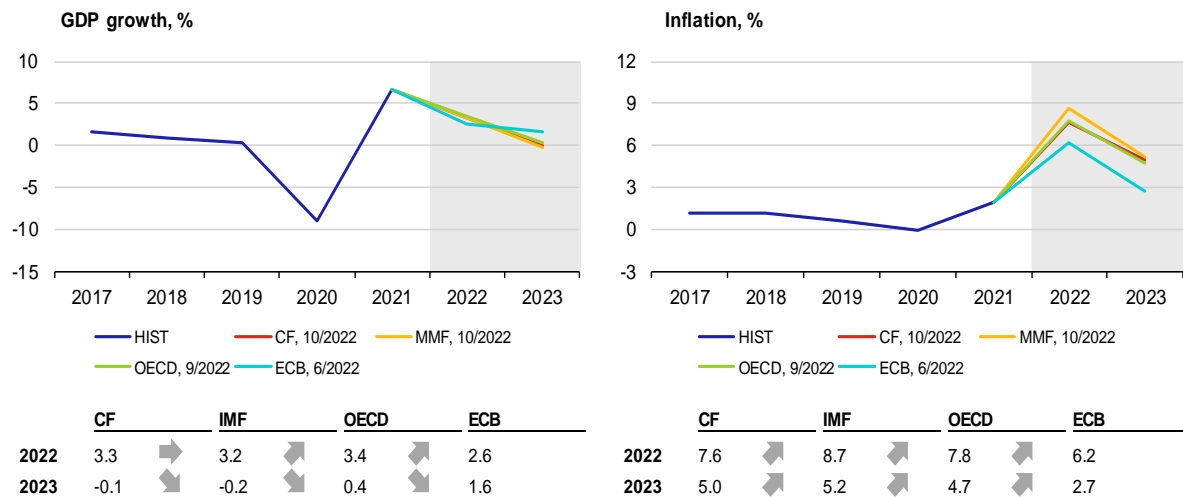


	CF	IMF	OECD	DBB
2022	8.1	8.5	8.4	7.1
2023	6.8	7.2	7.5	4.5

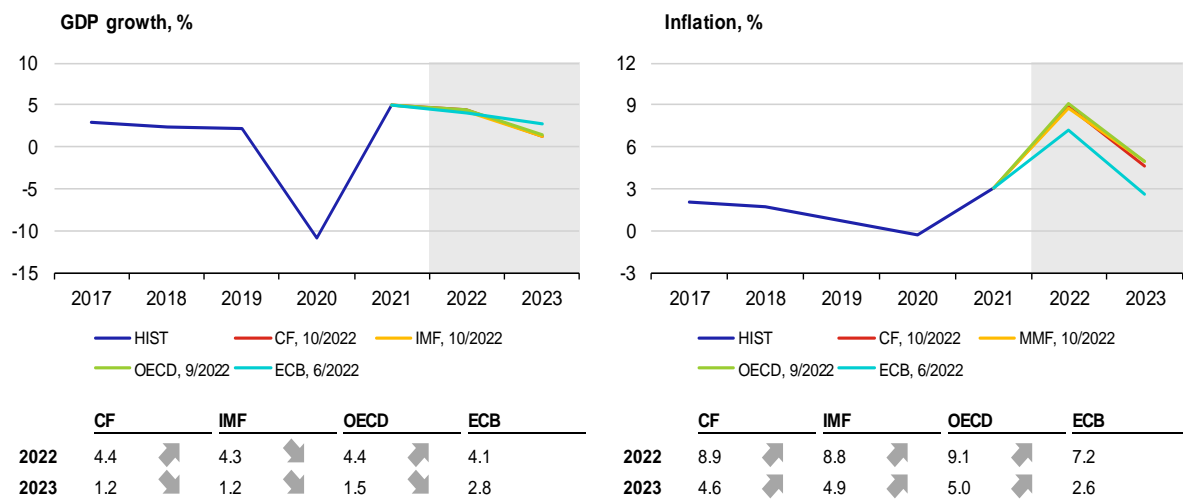
France



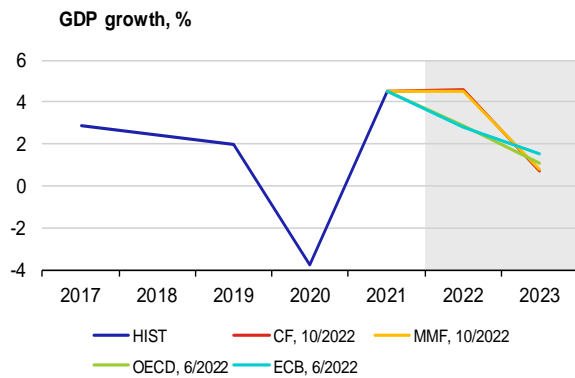
Italy



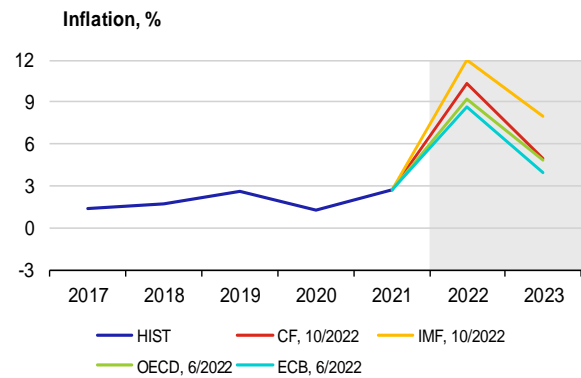
Spain



Netherlands

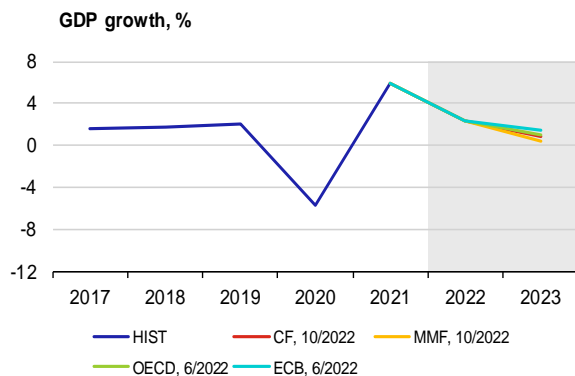


	CF	IMF	OECD	ECB
2022	4.6	4.5	2.9	2.8
2023	0.7	0.8	1.1	1.5

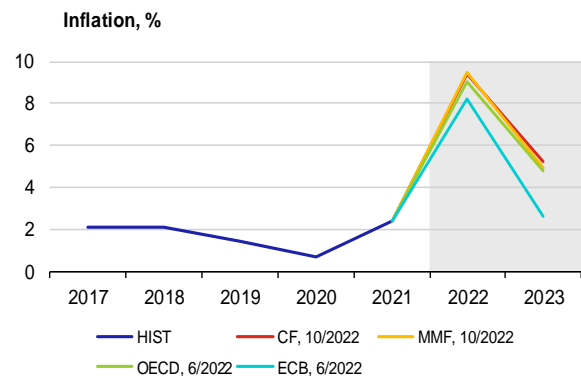


	CF	IMF	OECD	ECB
2022	10.3	12.0	9.2	8.7
2023	4.9	8.0	4.8	3.9

Belgium

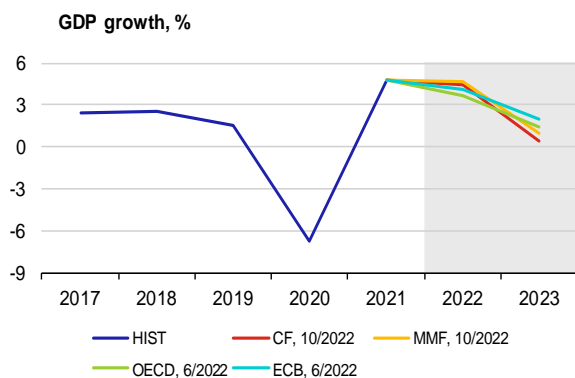


	CF	IMF	OECD	ECB
2022	2.4	2.4	2.4	2.4
2023	0.8	0.4	1.0	1.5

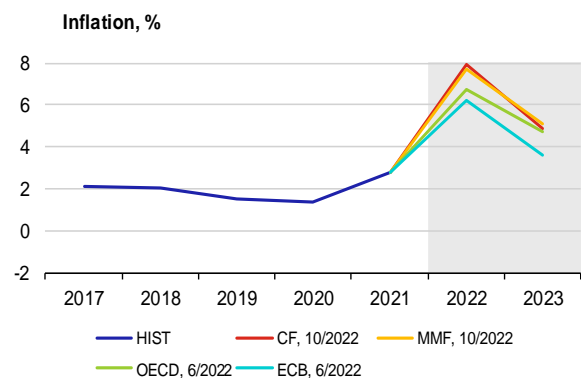


	CF	IMF	OECD	ECB
2022	9.4	9.5	9.0	8.2
2023	5.2	4.9	4.8	2.6

Austria

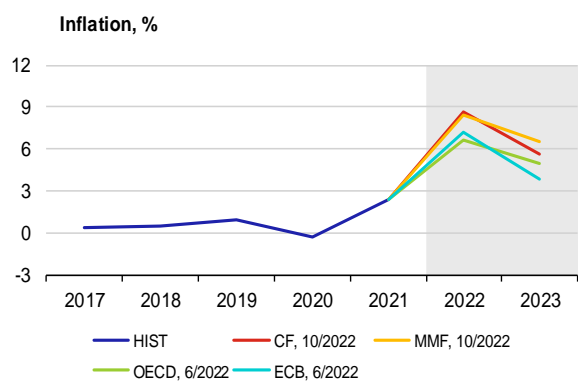
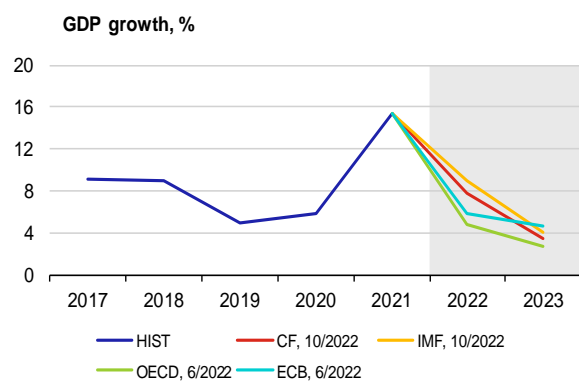


	CF	IMF	OECD	ECB
2022	4.4	4.7	3.6	4.1
2023	0.4	1.0	1.4	2.0

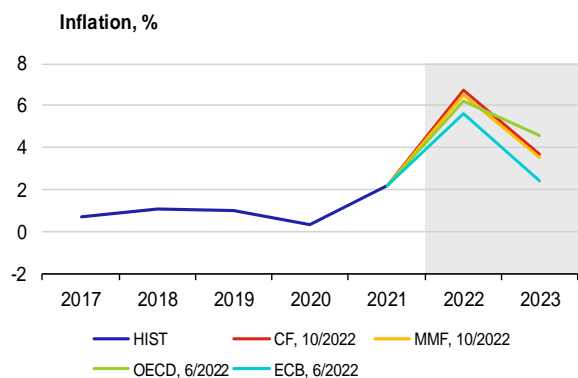
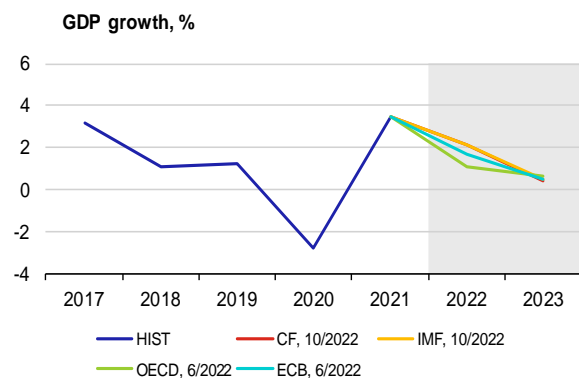


	CF	IMF	OECD	ECB
2022	7.9	7.7	6.7	6.2
2023	4.9	5.1	4.7	3.6

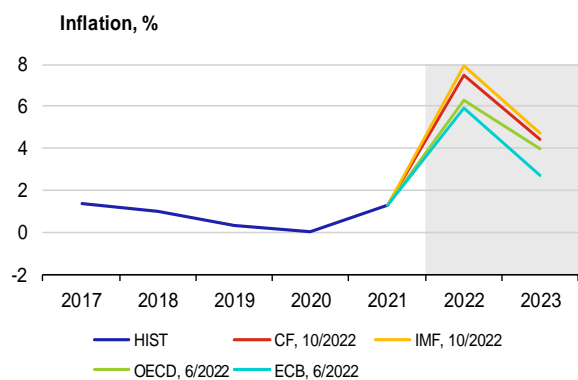
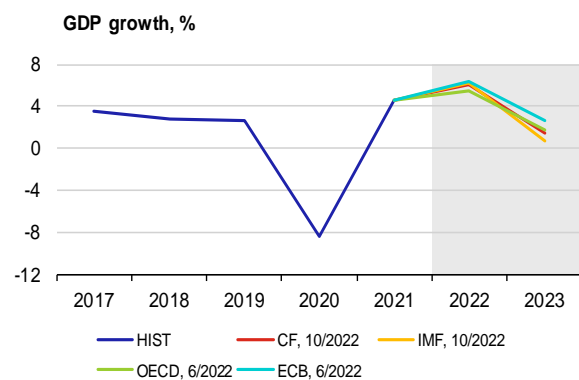
Ireland



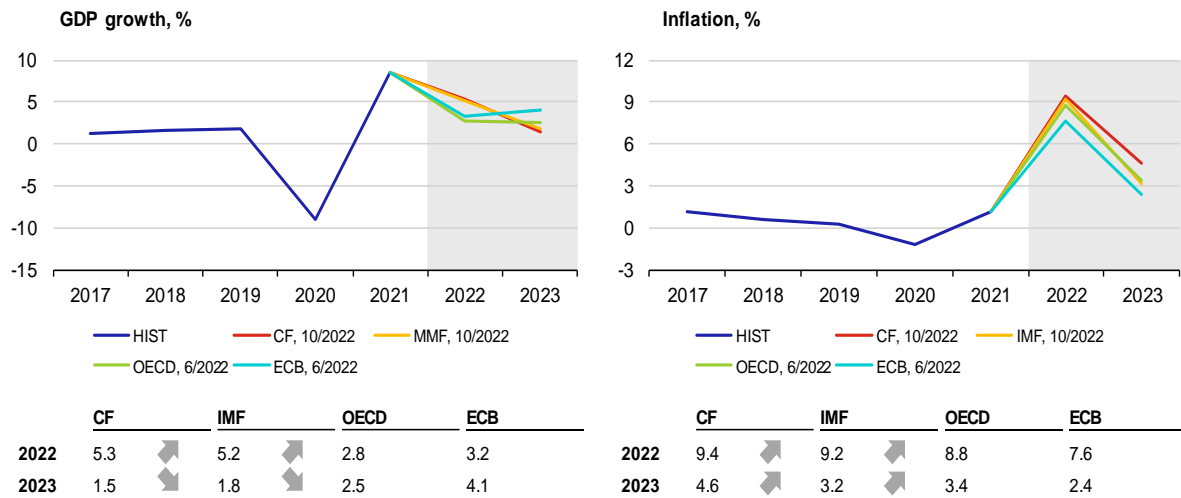
Finland



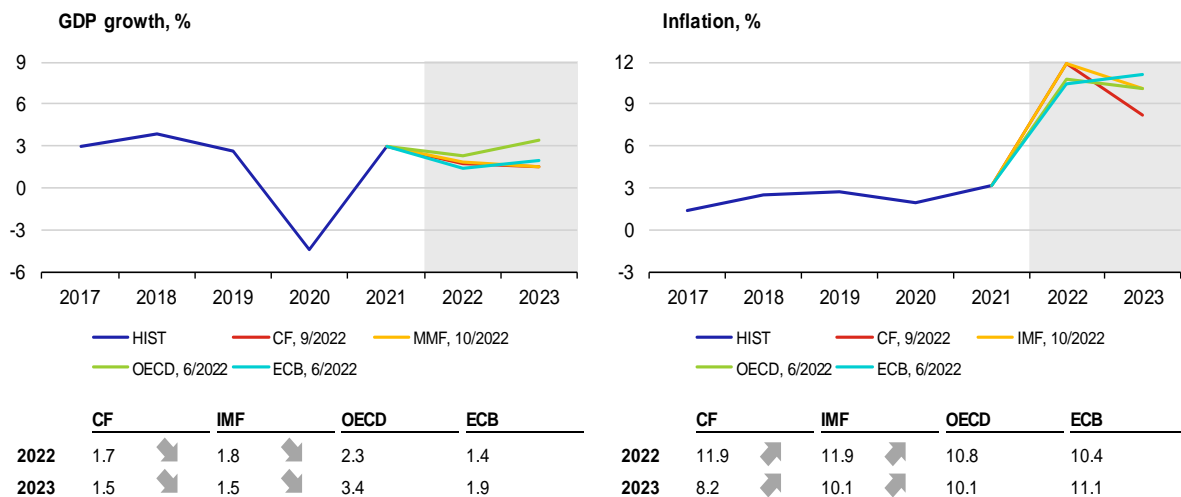
Portugal



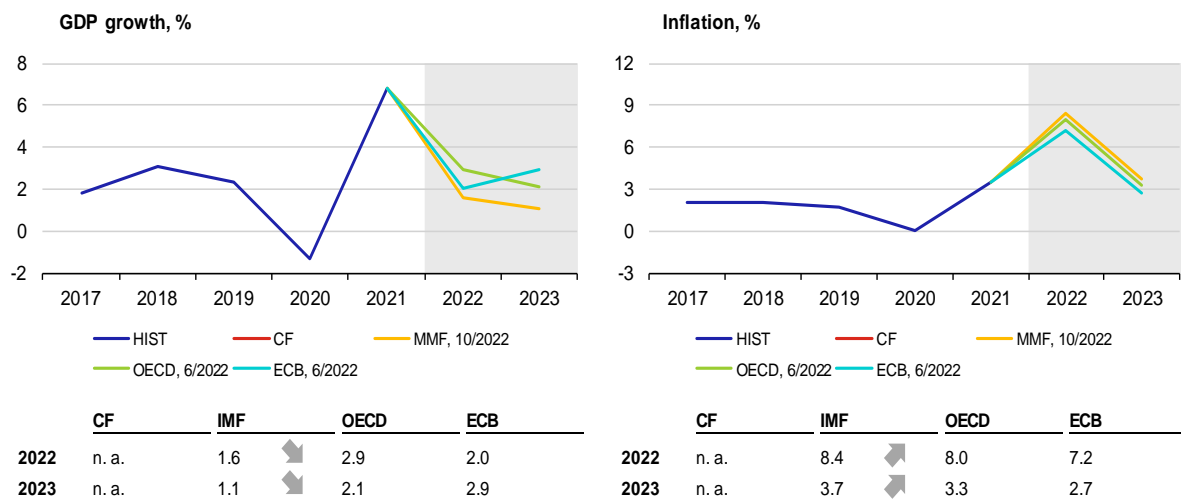
Greece



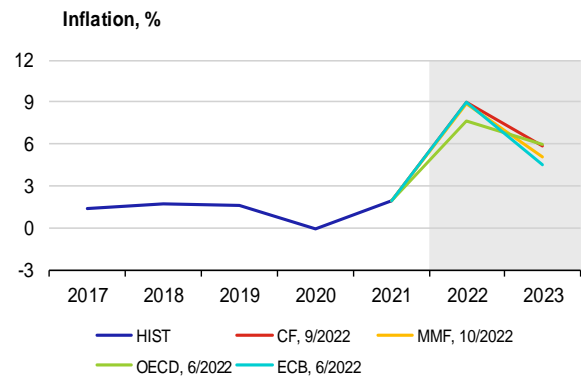
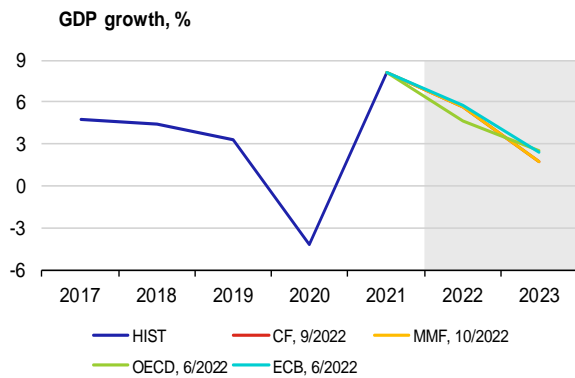
Slovakia



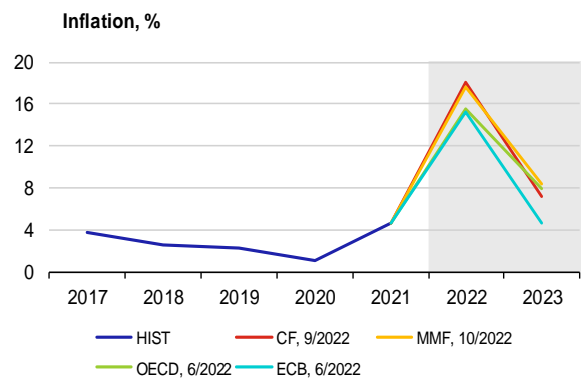
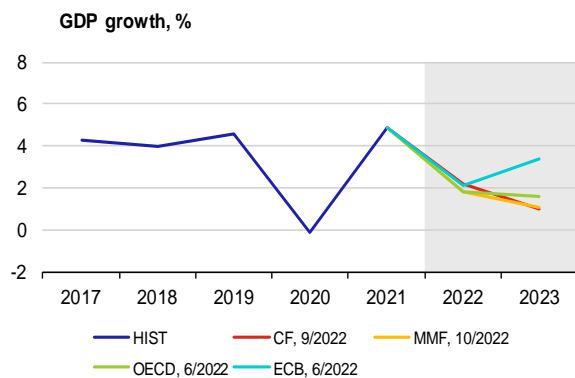
Luxembourg



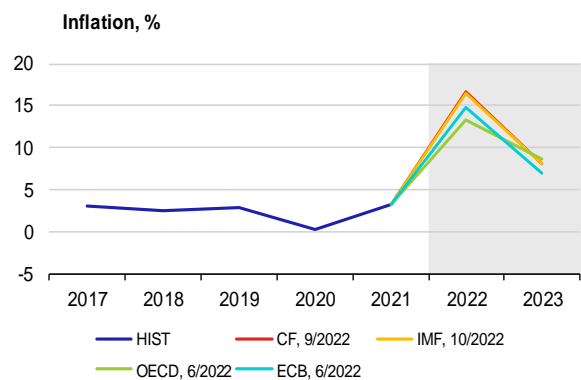
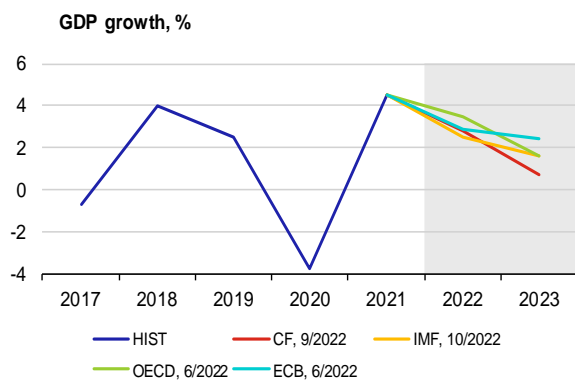
Slovenia



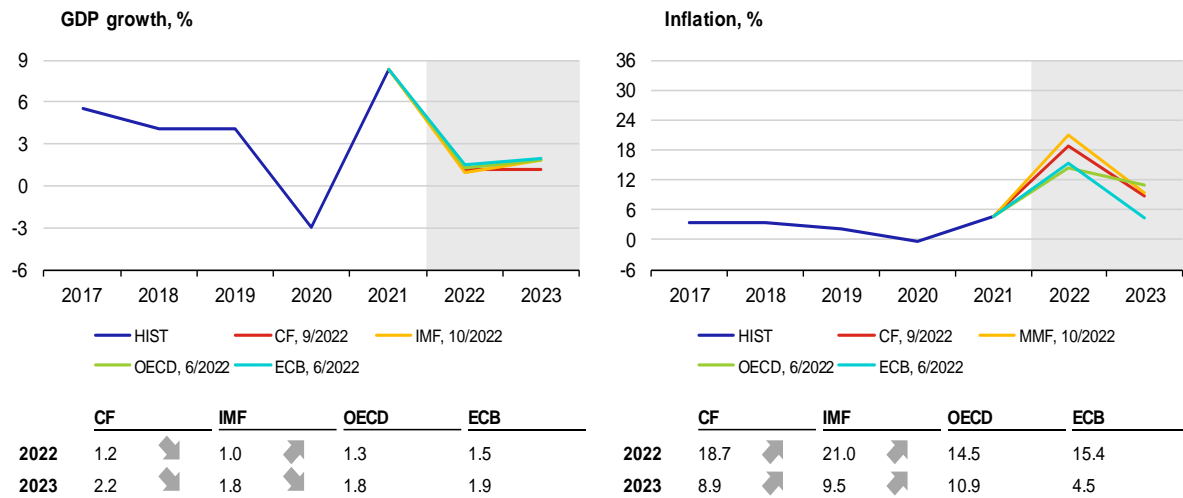
Lithuania



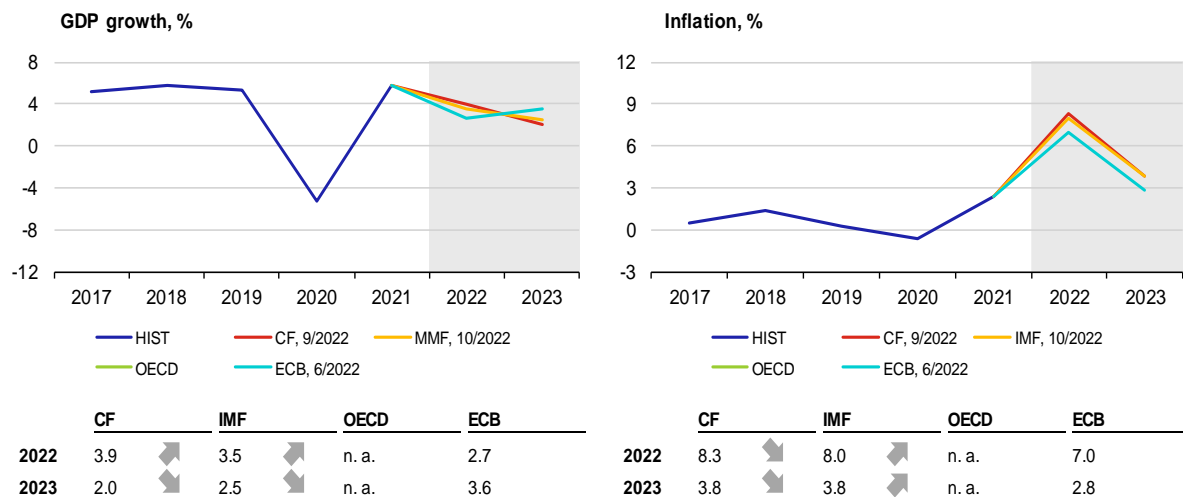
Latvia



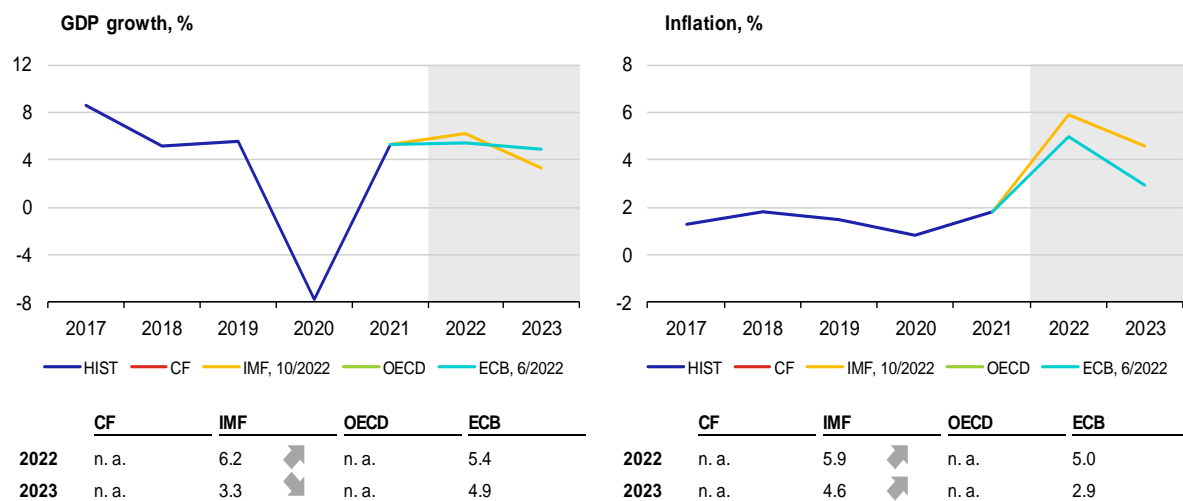
Estonia



Cyprus



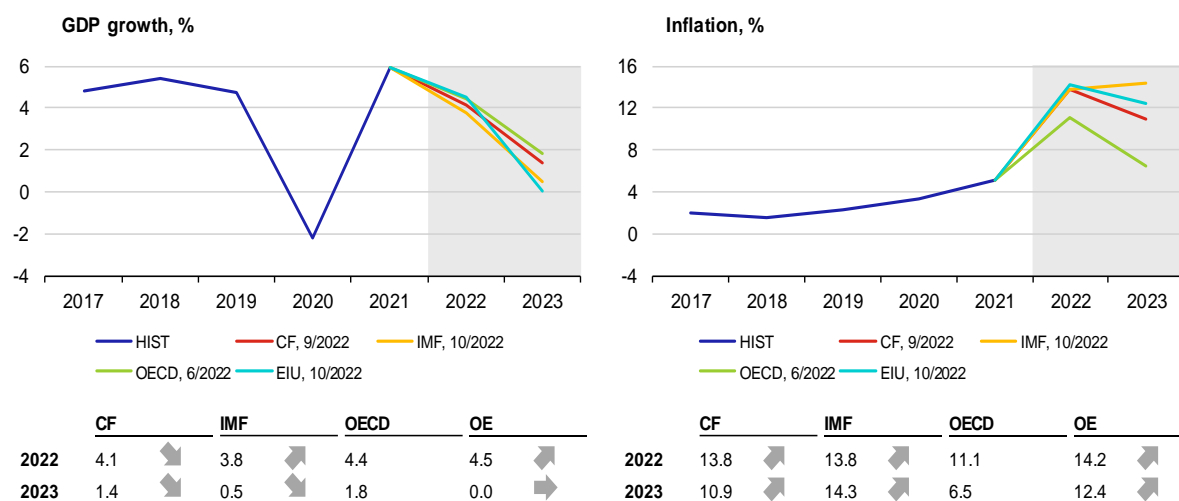
Malta



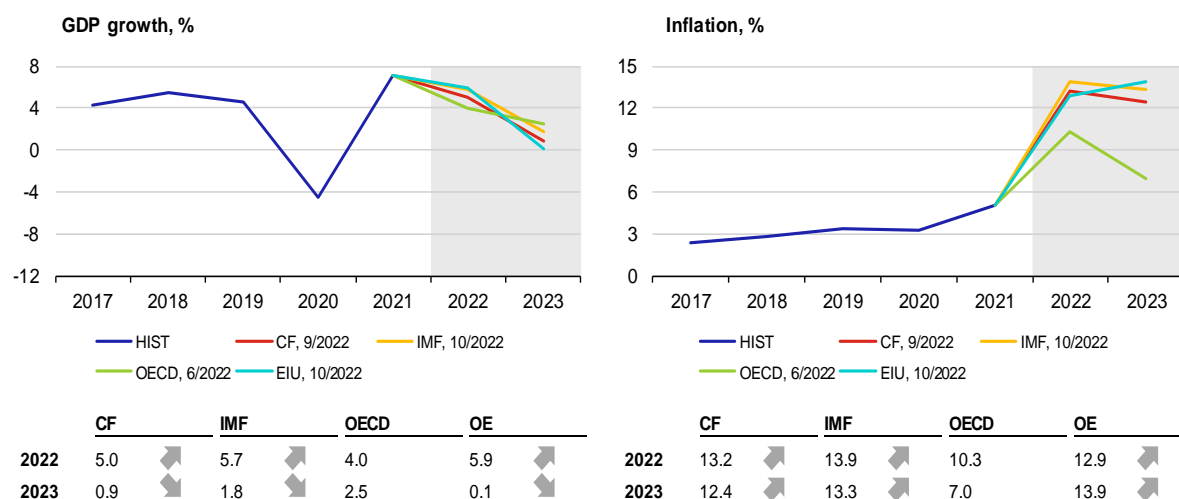
Ddd

A5. GDP growth and inflation in other selected countries

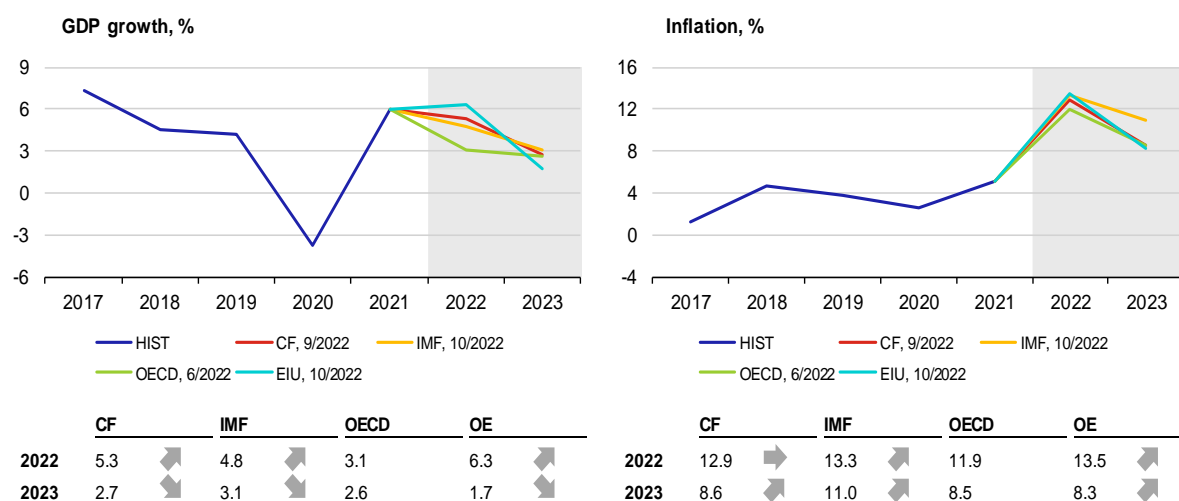
Poland



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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