

Global Economic Outlook

— August 2021



I. Introduction	2
II. Economic outlook in selected territories	3
II.1 Euro area	3
II.2 The euro area in the spotlight – Italy	4
II.3 United States	5
II.4 United Kingdom	6
II.5 Japan	6
II.6 China	7
II.7 Russia	7
II.8 Poland	8
II.9 Hungary	8
II.10 South Korea	9
III. Leading indicators and outlook of exchange rates	10
IV. Commodity market developments	11
IV.1 Oil	11
IV.2 Other commodities	12
V. Focus...	13
The shortage of materials and components as a production-limiting and price-increasing factor	13
A. Annexes	21
A1. Change in predictions for 2021	21
A2. Change in predictions for 2022	21
A3. GDP growth and inflation outlooks in the euro area countries	22
A4. GDP growth and inflation in the individual euro area countries	22
A5. GDP growth and inflation in other selected countries	29
A6. List of abbreviations	30

Cut-off date for data

13 August 2021

CF survey date

9 August 2021

GEO publication date

20 August 2021

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

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

I. Introduction

The Delta variant has been spreading increasingly among the young, which reflects their low vaccination coverage and increased mobility compared to older persons. In Europe, this is especially true for Spain, France and Italy. However, the epidemic situation is worsening overall in the Asian-Pacific region. These pandemic risks are also taken into account in a [new International Monetary Fund forecast](#). Although it maintains its previous forecast of 6% global economic growth this year, it states newly that advanced economies will grow 0.5 pp faster, while emerging economies will slow their expected growth by the same amount. The IMF expects global growth at a solid 4.9% next year (0.5 pp more than in the spring forecast). This shift shows that advanced economies are confirming their increasing resilience and ability to operate in a pandemic environment. Problems in supply chains remain a topical issue; they are ultimately reducing economic

August GDP growth and inflation outlooks for monitored countries, in %

GDP	EA	DE	US	UK	JP	CN	RU
2021	4.8 ↗	3.3 ↘	6.2 ↘	6.8 ↗	2.4 ↘	8.6 ↗	3.5 ↗
2022	4.4 ↗	4.4 ↗	4.4 ↗	5.4 ↗	3.0 ↗	6.5 ↗	2.7 ↗
Inflation	EA	DE	US	UK	JP	CN	RU
2021	2.1 ↗	2.8 ↗	4.1 ↗	2.2 ↗	0.1 ↗	1.4 ↘	5.6 ↗
2022	1.5 ↗	1.9 ↗	2.9 ↗	2.7 ↗	0.5 ↗	2.3 ↗	4.1 ↗

Source: Consensus Forecasts (CF)

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

performance through worse results in industry, while contributing to price inflation, which is being amplified by the spending of forced savings created during recent lockdowns.

As regards central banking, both the Fed and the ECB confirmed their monetary policy settings. The Fed's FOMC left the US key interest rates and the QE parameters unchanged in line with market expectations. The ECB had done similarly a week before that,

adjusting its forward guidance in the communication based on the results stemming from the revision to its monetary policy. The ECB is now expecting the rates to remain at their present or lower levels until it sees inflation reaching 2% well ahead of the end of its projection horizon and durably for the rest of the projection horizon. It will also watch closely whether the path of core inflation is consistent with inflation stabilising at 2% in the medium term. This may also imply a transitory period in which inflation is moderately above the 2% inflation target.

The August outlooks for GDP growth show that none of the economies under review had their growth outlooks for 2022 lowered compared to July. CF analysts' outlooks are thus similar to the new IMF forecast.

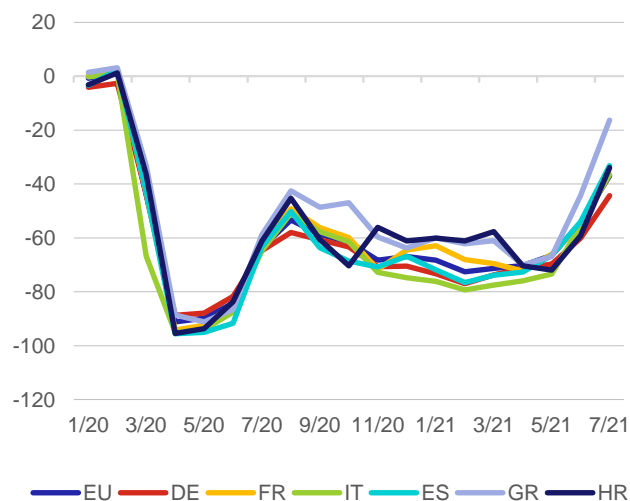
The **consumer price inflation outlooks** were generally revised upwards again compared to July for both this year and the next. Even the outlook for Japan moved into positive territory. The publication of inflation figures came as a shock in Germany where the July level of 3.8% is the highest in 25 years. Price developments in China, where the outlook was revised downwards, are an exception to the above-mentioned trend.

According to the August CF, **the dollar** will weaken against all currencies under review at both the one-year and two-year horizons. The CF forecast for the **Brent crude oil price** at the one-year horizon is again almost unchanged from last month at about USD 68/bbl (range: USD 55–81/bbl). **The outlook for market rates** is growing for both 3M USD LIBOR and 3M EURIBOR rates, but the 3M EURIBOR remains negative.

The chart in the current issue shows that travel is still lacking clients despite growing vaccination coverage in Europe. Although July is usually the month with the highest number of flights, most European countries still see half as many passengers on flights as in 2019. However, the situation is improving quickly both in leisure and business trips and the outlook is positive. More information about the impacts of the coronavirus on air transport is available in the [thematic article in GEO 11/2020](#).

The current issue contains an analysis "[The shortage of materials and components as a production-limiting and price-increasing factor](#)". The article focuses on a very important issue for production and consumption: the current shortage of inputs. The pandemic-battered supply chains are preventing not only a fast economic recovery but are also increasing the already high inflation pressures. Unfortunately the article brings not so good news that corporations and consumers will feel the impacts of the pandemic for many months to come.

The number of flights over the past two years compared to 2019, in %



Source: Eurostat

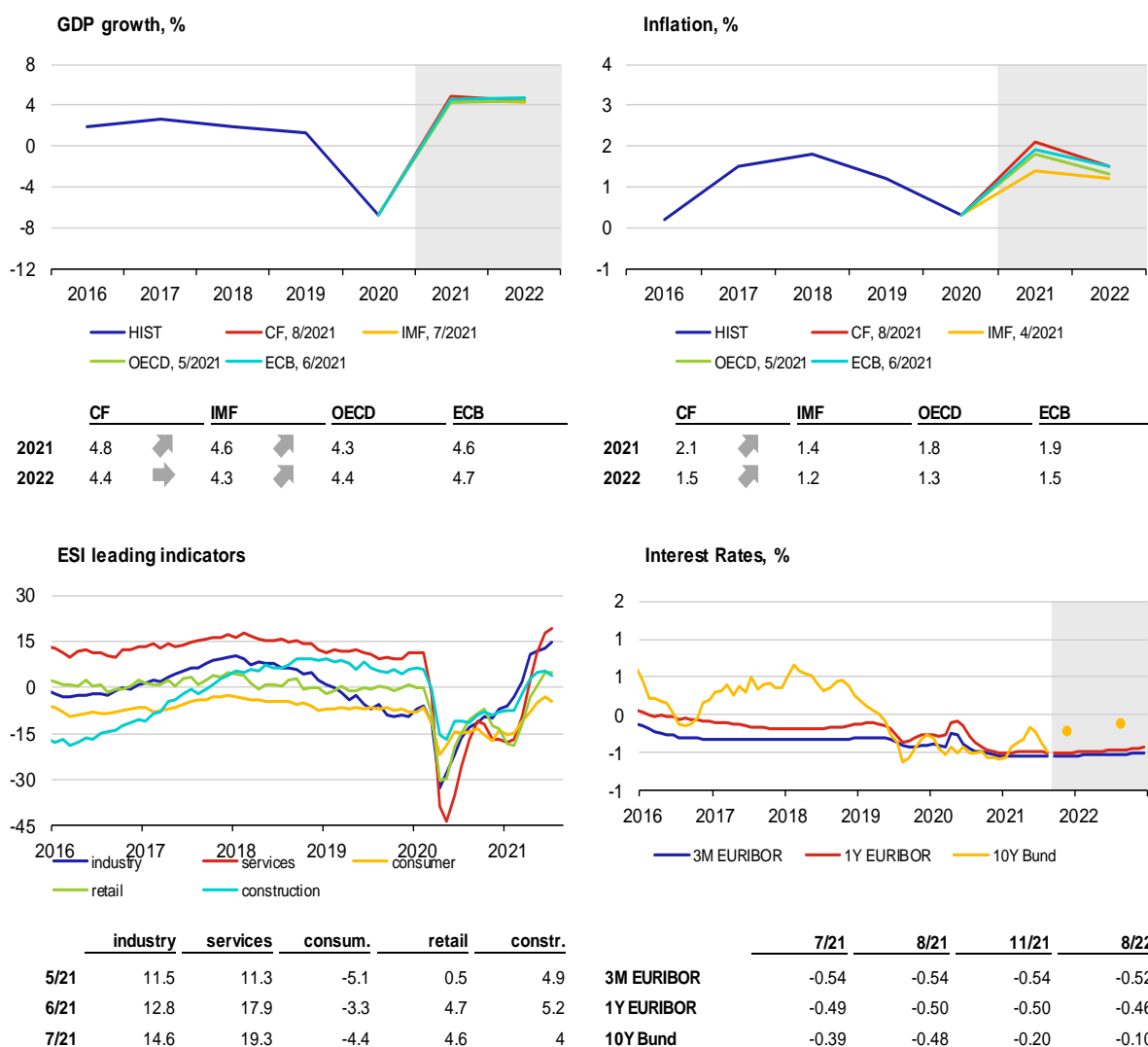
Note: Percentage change compared with the same month of 2019

II.1 Euro area

Despite weak results in industry, the euro area economy grew at a brisk pace in Q2. Annual GDP growth amounted to 2%, following slight declines in the previous two quarters. Economic activity recovered after the easing of the anti-Covid measures. The opening of the services sector was reflected in an improvement in the PMI leading indicator in June and July. On the other hand, industry recorded a decline in June for the second consecutive month due to issues in supply chains. Things did not go well mainly in Germany, whose unexpected decline in industrial production was at least partly offset by France and Italy. The largest monthly fall was recorded by the production of capital goods, while the production of non-durables increased. Retail continued to record a month-on-month increase in June for the second consecutive month. The labour market situation was positive too, with the unemployment rate declining further to 7.7% in June.

New data supported further the analysts' optimism in the August CF survey. They shifted the outlook for euro area GDP growth to 4.8% in 2021. The inflation outlook was also revised upwards to 2.1% for 2021 and also slightly upwards for 2022. The forecast for GDP growth for 2022 was unchanged. Spain and France are expected to record the fastest recovery (6.0% and 5.9% respectively) this year, while the growth outlook for Germany was revised slightly downwards to 3.3% compared to July. The French, Italian and German economies will grow by about 4% in 2022, while Spain will maintain a growth rate of 6%. Prices will grow the fastest in Germany (2.8%), while inflation in Italy and France will not reach 2% on average. It is expected to slow next year, despite the ECB's continued accommodative monetary policy.

Economic prospects remain uncertain. The number of coronavirus infections has been rising in many countries in recent weeks. According to a survey conducted by Sentix, investor confidence thus deteriorated in August, reaching its lowest level in three months. This was due to concerns about possible shutdowns which might occur in the autumn..



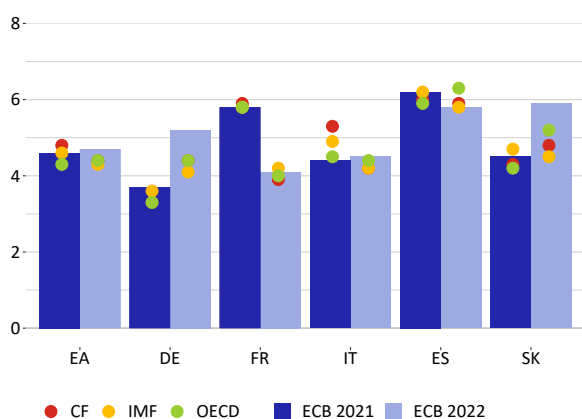
II.2 The euro area in the spotlight – Italy

Italy recorded sizeable economic growth in Q2, which surpassed expectations. The recovery was due mainly to domestic demand and net exports. Following a slight quarterly increase in Q1, GDP grew by 2.7% compared to the previous quarter. The economy benefited mainly from the easing of the restrictions in the services sector and the recovery in tourism. Retail sales continued to rise month on month for the third consecutive month in June. The unemployment rate declined further to 9.7% in the same month and month-on-month industrial production growth reached 1%. While most factors are positive, the Italian government imposed restrictions on some activities which can be undertaken upon presenting proof of vaccination, in early August due to the renewed spread of the Delta variant of the coronavirus. These measures can have a negative effect especially on recovering tourism.

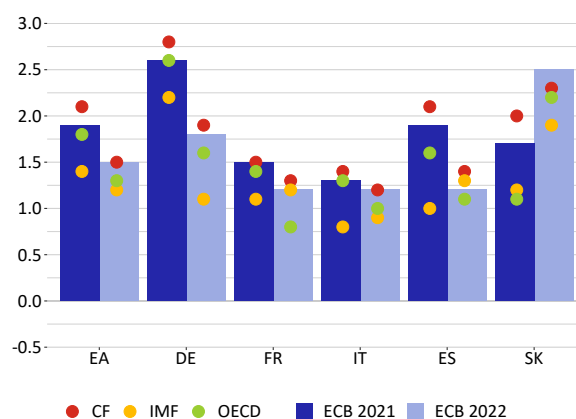
According to the CF analysts, growth of the Italian economy will reach 5.3% in 2021 and slow to 4.2% in 2022. The outlook for this year improved significantly compared to the previous month, while the outlook for 2022 remained unchanged. The Recovery Plan, which was approved in June and amounts to EUR 24.9 billion, is expected to provide an impulse for the economic recovery.

Inflation will be subdued in Italy this year, standing at 1.4% on average in 2021 as a whole and slowing to 1.2% in 2022. Unlike in many euro area countries, inflation in Italy slowed, from 1.3% in June to 0.9% in July.. As in other euro area countries, price inflation is due mainly to energy prices. After this factor subsides, inflation in Italy will diverge from the ECB's target again, despite faster growth in industrial producer prices which the CF analysts expect at 5.7%, i.e. 1 pp higher than expected in the previous month.

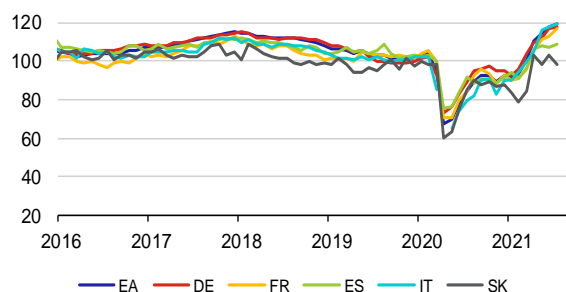
GDP growth in selected euro area countries in 2021 and 2022, %



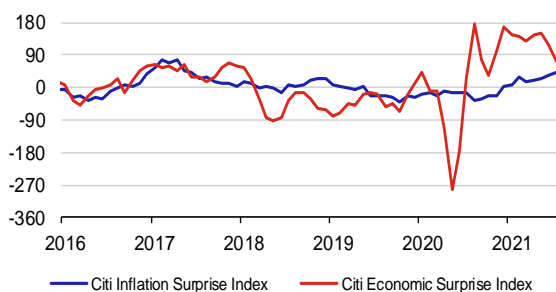
Inflation in selected euro area countries in 2021 and 2022, %



ESI leading indicators



Economic and inflation surprises in the euro area, %



Note: Inflation expectations based on 5year inflation swap and SPF

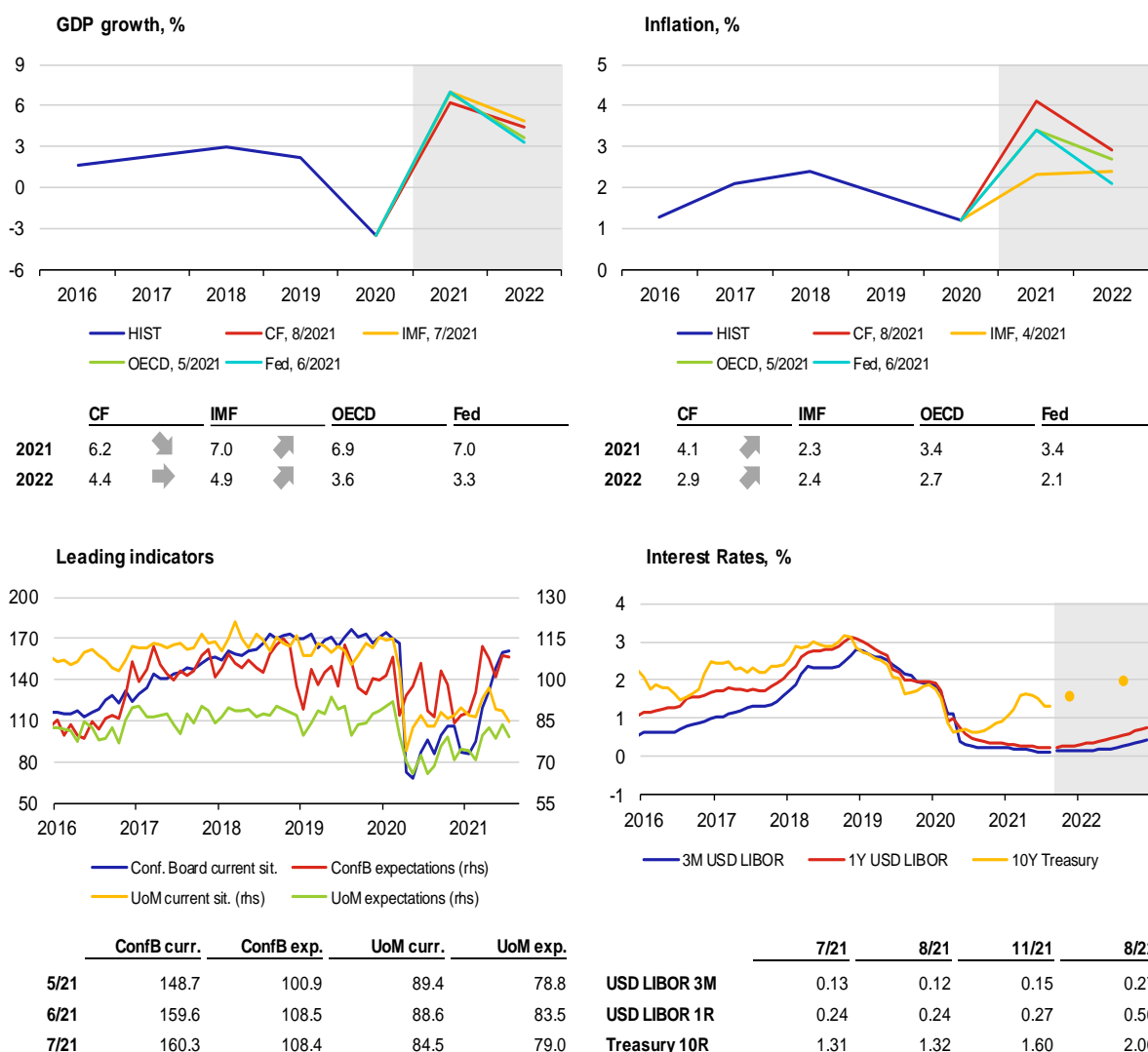
	EA	DE	FR	ES	IT	SK
5/21	114.5	112.2	110.9	108.3	115.8	98.4
6/21	117.9	117.2	112.7	107.2	117.9	103.4
7/21	119.0	117.5	116.7	108.9	119.6	97.9

	5y5y	SPF
6/21	1.57	1.68
7/21	1.60	1.82
8/21	1.67	1.82

II.3 United States

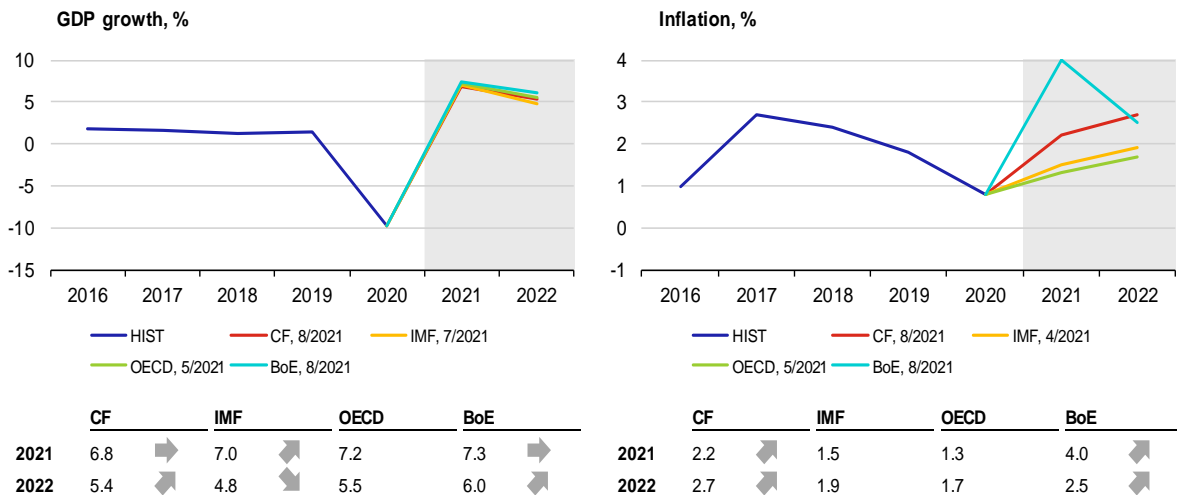
Outlooks for the US economy saw major changes. The new CF outlook expects real GDP to grow by 6.2% this year, 0.4 pp less than in July. This sharp reduction is due to lower-than-expected growth in Q2 (6.5% in quarter-on-quarter annualised terms) caused mainly by persisting problems in supply chains (more information is available in the Focus article), which resulted in a sharp decline in firms' inventories (down by USD 166 billion). By contrast, the latest IMF outlook was revised upwards, expecting US economic growth at a record-high 7%. Positive figures came from the labour market where non-farm payrolls rose by more than 940,000 (a very similar figure in June) and the unemployment rate decreased to 5.4%. Wages recorded an annual increase of almost 4% in July. Leading indicators are still suggesting great optimism, as the PMI in services remains high (59.9) and the PMI in industry rose again to a new high (63.4). The TIPP consumer sentiment index is suggesting optimism (53.6) and the consumer confidence index at 129.1 moved closer to the pre-coronavirus level. Consumers are expecting working and financial conditions and the business situation to improve, which suggests a strong basis for economic growth in Q3. Strong growth is also suggested by data on international trade where the volume of exported goods reached pre-crisis levels and the amount of imported goods keeps increasing and is at an all-time high.

Inflation in the USA remains high and the outlook was revised upwards again. Consumer price inflation grew by 5.3% year on year in July, being driven by growth in prices of food (3.4%), services (2.7%) and especially energy (23.9%). Industrial producer prices are also rising (7.7%), especially in the case of finished products (9.4%). The CF outlook for this year was revised upwards again compared to June (by 0.4 pp to 4.1%). The projection for 2022 was raised by 0.1 pp to just below 3%. However, the US Fed continues to expect inflation pressures to be only temporary and continues to purchase assets at an unchanged pace (USD 120 billion a month). But some analysts believe that the pace might slow as early as September.



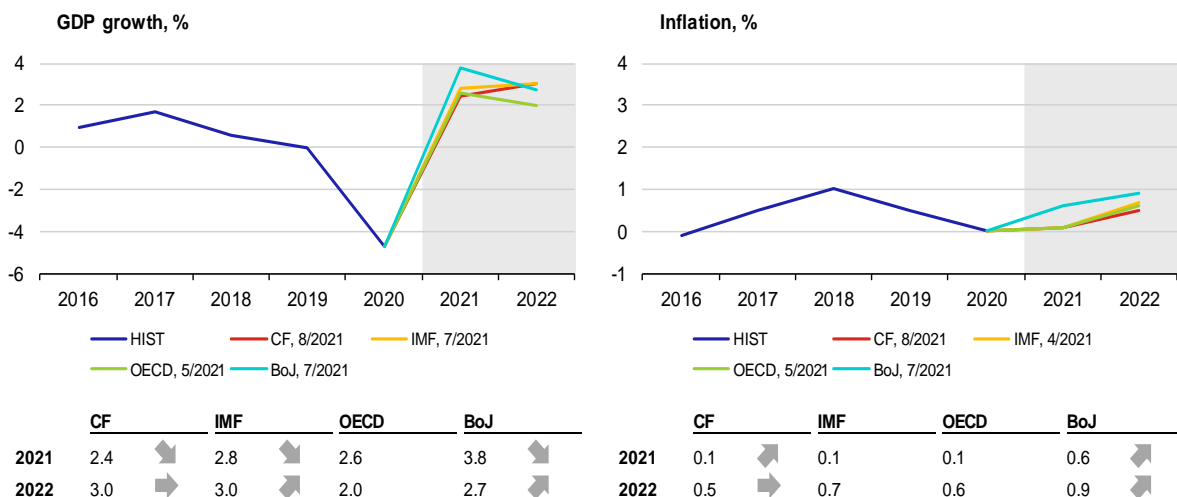
II.4 United Kingdom

According to the new BoE forecast, the size of the UK economy is close to the pre-pandemic level. GDP is expected to grow by around 3% in Q3 and should reach the pre-pandemic level in 2021 Q4. The BoE in August left the key interest rate (0.1%) and the volume of QE (GBP 895 billion) unchanged. But it signalled that some tightening might be necessary in the years ahead mainly due to control of inflation. Inflation grew to 2.5% year on year in June and is expected to surge temporarily further, mainly due to higher energy prices. It is expected to peak at 4% in late 2021 and early 2022. In 2023, it is expected to stabilise around the 2% target. The new NIESR forecast also provides a consistent inflation outlook. The UK economy has been seriously impacted by the “pingdemic” in recent weeks. The operation of numerous industries was disrupted by staff shortages as hundreds of thousands of Brits were advised to self-isolate after coming into contact with a positive case. The composite PMI indicator dropped to 59.2 in July due to weaker growth in the UK private sector.



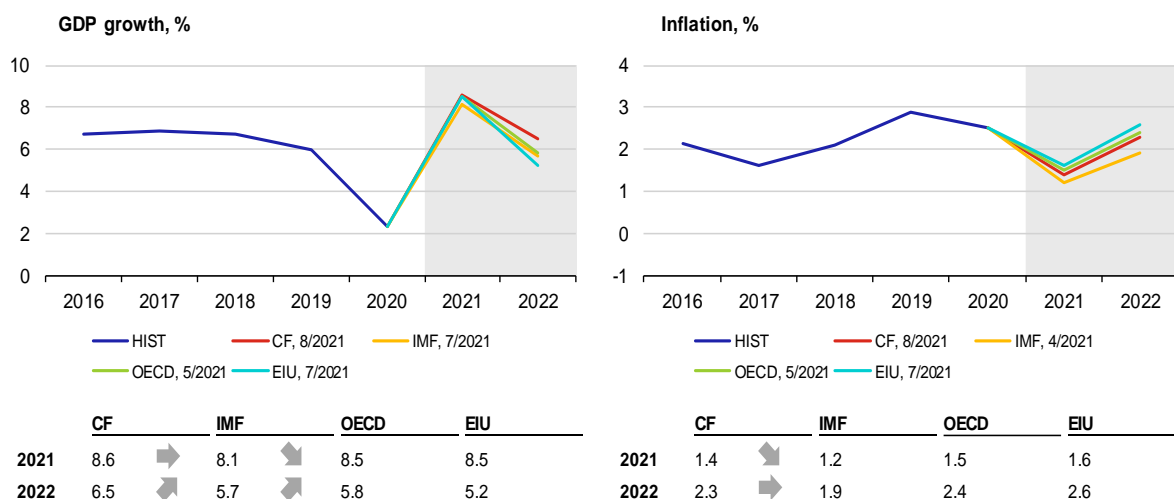
II.5 Japan

Shortly before parliamentary elections, Japan is facing the strongest COVID-19 wave so far. Daily numbers of new cases more than tripled during the Olympic Games and continue to surge. Only a tiny fraction of the cases can be related to isolated athletes – the rise is probably linked mainly with weaker public vigilance during the Games and a fast spread of the Delta variant. Coupled with a slow vaccination pace, this led to a further drop in the popularity of Prime Minister Yoshihide Suga, which may jeopardise his position before parliamentary elections set to take place by the end of November. The August update of consumer basket weights led to a lowering of both past and future CPI growth data. Consumer prices thus fell by 0.5% (instead of the initial growth figure of 0.2%) in June. Leading indicators of economic activity suggest a continuing gradual recovery of the Japanese economy.



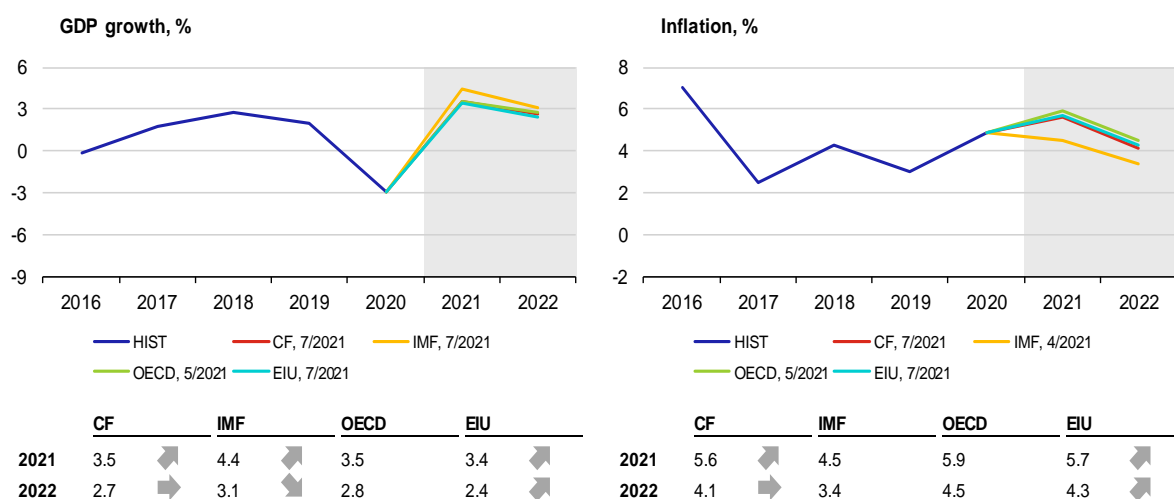
II.6 China

Consumption remained the main driver of the Chinese economic growth of 7.9% in Q2, to which it contributed 4.9 pp. Investment and net exports both made a 1.5 pp contribution to the growth. Retail sales grew by 12.1% year on year in June and their growth remains solid despite a slowdown since the start of the year. This also reflects an improving situation on the labour market, where the unemployment rate fell slightly further below 4% in Q2. However, consumer confidence still lags behind the pre-pandemic level despite the solid growth of the Chinese economy, reflecting persisting concerns about new coronavirus strains. This will continue to be negatively reflected in a continuing slowdown of GDP growth in the second half of this year. The CF analysts expect the economy to grow by 8.6% year on year in 2021 and 6.5% in 2022. Consumer prices maintained stable growth around 1% in July. According to the August CF outlook, they will rise by 1.4% on average this year and 2.3% in 2022.



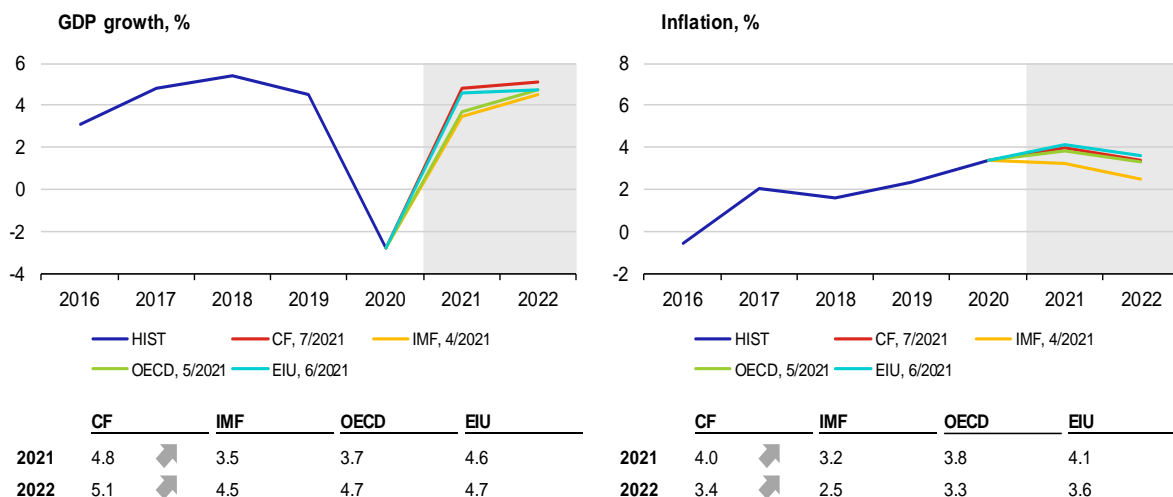
II.7 Russia

The Russian economy returned to growth in Q2 following a year of an annual decline. According to a preliminary estimate, GDP growth rose to 10.3% year on year. Despite a low base (GDP fell by 7.8% in the same quarter a year earlier), economic activity in real terms has already reached the pre-pandemic levels. Inflation pressures remain significant. Annual consumer price inflation stayed at the June level of 6.5% in July, which was the highest figure since August 2016. The Russian central bank raised its key rate by 1 pp to 6.5% at the end of July and will consider the necessity of a further increase at its upcoming meetings. According to its new forecast, inflation will stay well above the target (5.7%–6.2%) this year amid GDP growth of 4.0%–4.5%. Next year, it will slow to 4.0%–4.5% and approach the 4% target. GDP growth will also slow (to 2.0%–3.0%) next year.



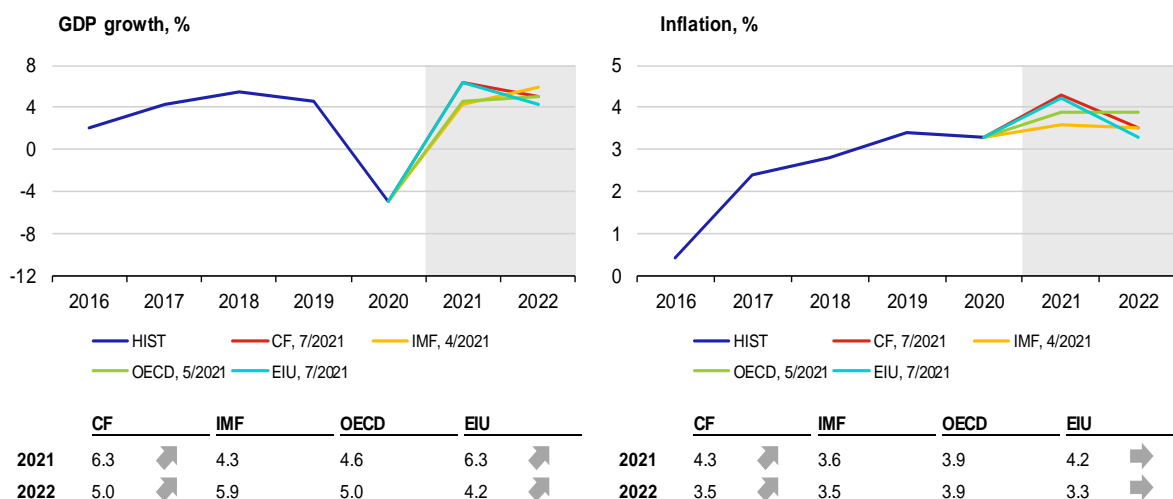
II.8 Poland

Business confidence in the Polish economy dropped in July compared to June. The drop reflected firms' worse expectations regarding the future economic situation and was also a response to slower industrial production growth in June (18.4% compared to 29.7% in May). On the other hand, the July PMI in manufacturing (57.6) confirms a continuing improvement in business conditions. Annual consumer price inflation rose to 5.0% in July from 4.4% in June, reaching the highest level since May 2011. In month-on-month terms, consumer prices grew by 0.4% in July (compared to 0.1% in June), mainly reflecting an increase in fuel prices. The July forecast by the Polish central bank (NBP) that rising costs will continue to increase inflation is thus being fulfilled. The NBP's Monetary Policy Council will meet on 24 August. However, no monetary policy decisions are normally made at the August meetings.



II.9 Hungary

According to GKI Economic Research, business confidence in the Hungarian economy has grown to the highest level since November 2019 (to 4.4 from 2.1 in June). The growth mainly reflected an increase in positive sentiment in industry, services and trade despite a slowdown in industrial production in June (18.6% compared to 39.9% in May). Annual consumer price inflation fell to 4.6% in July from 5.3% in June. Even so, it remained well above the upper boundary of the inflation target (3% ±1 pp) set by the Hungarian central bank (MNB). The MNB's Monetary Council decided to raise the key interest rate again – to 1.20% from 0.90% – at its meeting on 27 July, which was the second consecutive increase. The MNB's decision is aimed at containing persisting inflation pressures, anchoring inflation expectations and reducing inflation risks amid a strong economic recovery and fast growth in wages and core inflation (of 3.5% year on year in July).

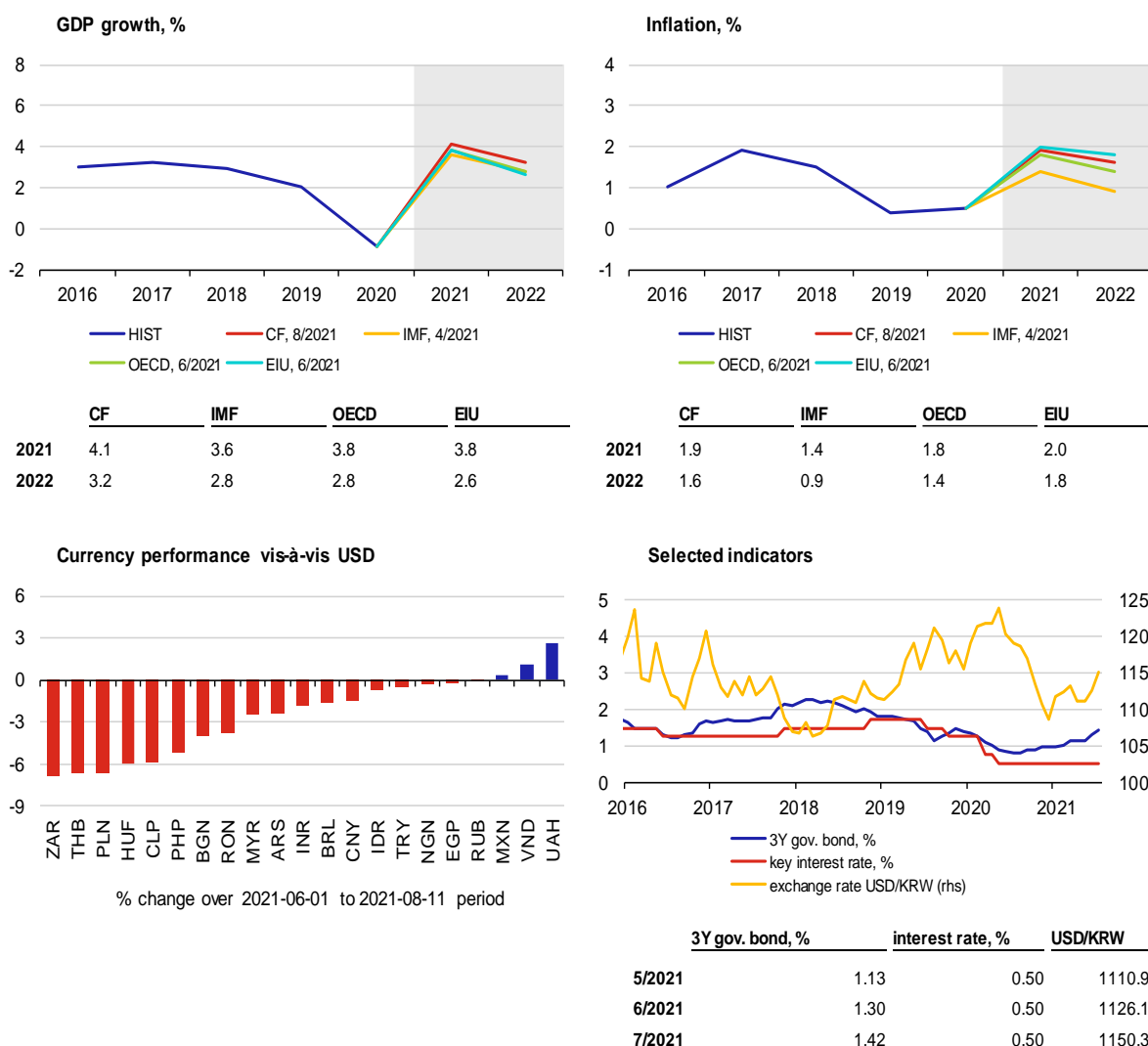


II.10 South Korea

South Korea has coped exceptionally well with the pandemic challenge by international comparison. Despite being among the first countries experiencing coronavirus outbreaks, it kept case numbers low throughout the pandemic thanks to extensive testing, tracking and local lockdowns. The country's total death rate in March 2020–May 2021 was even lower than the average for the past five years. The current Delta variant spread among the relatively poorly vaccinated population has led to the highest rise in cases as yet, but their number (relative to population) is still less than a fifth of those in, for example, the EU. Nonetheless, the Korean government reacted in August with the toughest measures so far.

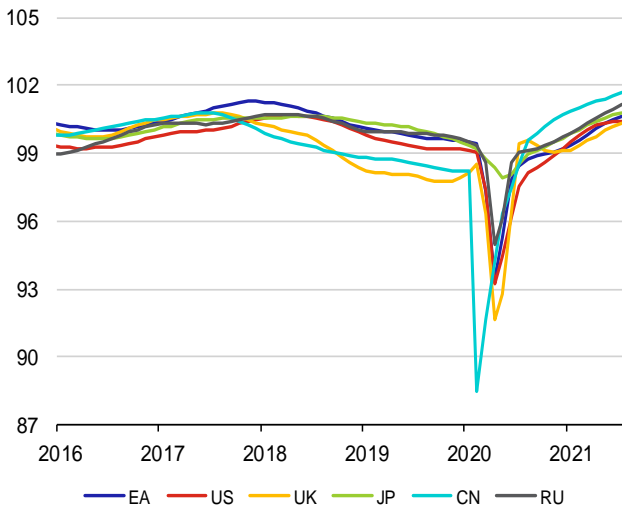
A contained pandemic, together with the economy's export structure, had a positive effect on the economic situation. Real GDP exceeded the pre-pandemic levels in 2021 Q1 and continued to show robust growth in Q2. The recovery was driven by investment and exports mainly by producers of durable goods, as global demand for them surged during lockdowns. Consumer electronics producers, including the world's biggest smartphone and chip maker (Samsung), achieved record-high sales. Similar export success was also recorded by the automotive industry, which was supported by growing demand for electric and hybrid cars. At the same time, the relatively mild impacts of the pandemic on economy reduced the costs of fiscal support of households and firms. According to the IMF, Korea's COVID-19-related fiscal expenditure accounted for about 5% of GDP, while the average in advanced countries exceeded 11%. The state thus maintains a relatively low debt even after the pandemic shock.

Monetary policy responded to the start of the pandemic by cutting rates to 0.5%, where they have been kept by the Bank of Korea (BoK) despite inflation being above the 2% target since April 2021. According to the Governor, the BoK will discuss a rate hike at the August meeting. If the bank raises the rates, it will become only the fourth advanced economy (and the first in Asia) to start to normalise interest rates after Iceland, the Czech Republic and Hungary. The central bank is also planning to start to develop and test its own digital currency (CBDC) in 2021 H2.

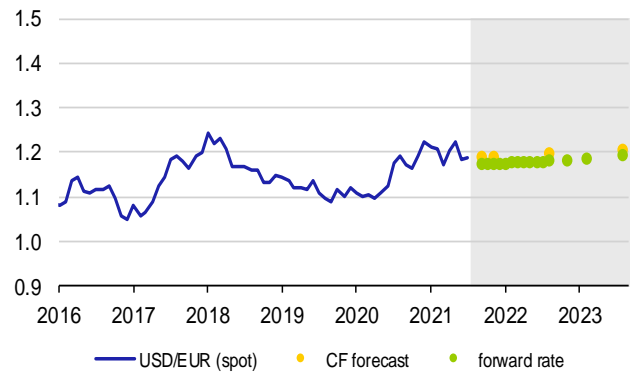


III. Leading indicators and outlook of exchange rates

OECD Composite Leading Indicator

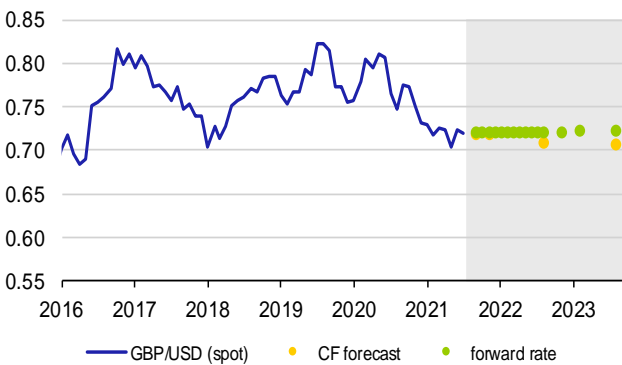


The US dollar (USD/EUR)



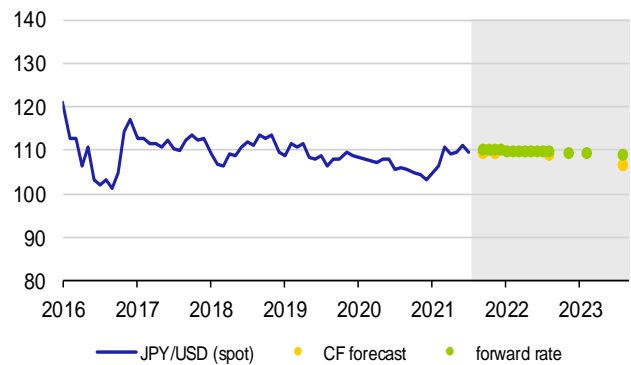
	9/8/21	9/21	11/21	8/22	8/23
spot rate	1.175				
CF forecast		1.190	1.192	1.200	1.209
forward rate		1.174	1.176	1.183	1.195

The British pound (GBP/USD)



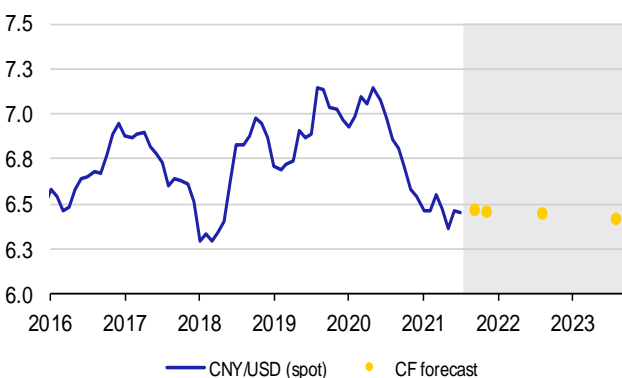
	9/8/21	9/21	11/21	8/22	8/23
spot rate	0.722				
CF forecast		0.719	0.719	0.710	0.709
forward rate		0.722	0.722	0.722	0.723

The Japanese yen (JPY/USD)



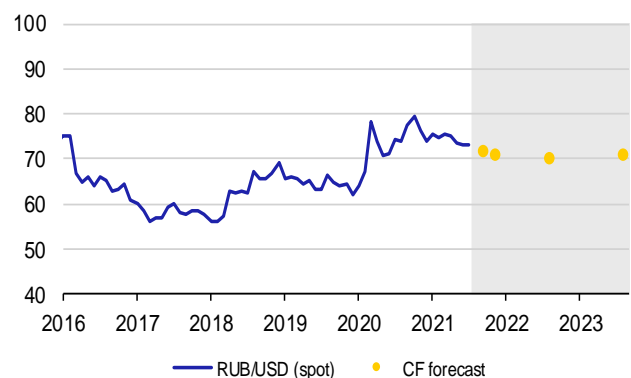
	9/8/21	9/21	11/21	8/22	8/23
spot rate	110.3				
CF forecast		109.6	109.5	109.2	106.9
forward rate		110.3	110.2	109.9	109.0

The Chinese renminbi (CNY/USD)



	9/8/21	9/21	11/21	8/22	8/23
spot rate	6.478				
CF forecast		6.472	6.464	6.453	6.420

The Russian rouble (RUB/USD)

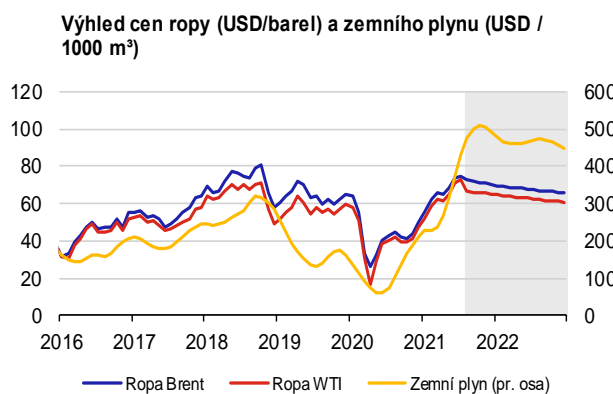


	9/8/21	9/21	11/21	8/22	8/23
spot rate	73.68				
CF forecast		72.12	71.25	70.57	71.08

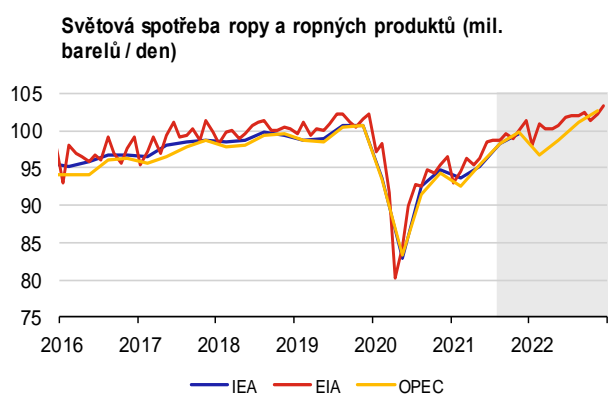
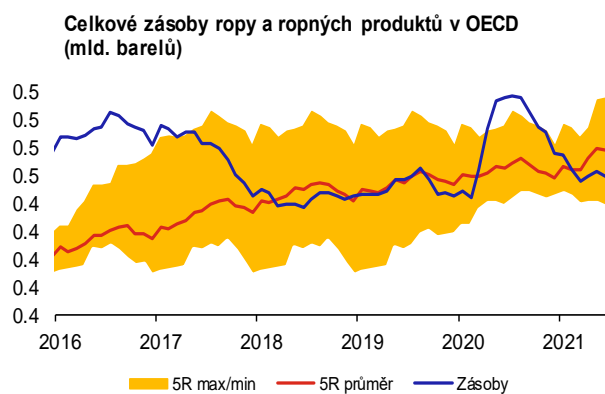
Note: Exchange rates as of last day of month. Forward rate does not represent outlook; it is based on covered interest parity, i.e. currency of country with higher interest rate is depreciating. Forward rate represents current (as of cut-off date) possibility of hedging future exchange rate.

IV.1 Oil

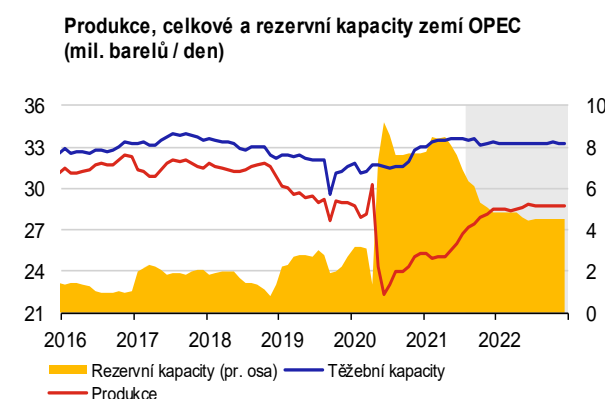
The Brent crude oil price peaked in early July and has been highly volatile since then in response to news about the spread of the coronavirus Delta variant in the world. It fluctuated close to USD 70/bbl in mid-August. Oil prices fell sharply in the second half of July, which was at first associated with OPEC+ countries reaching a deal. However, the prices dropped well below the level seen before the unsuccessful meeting in early July, so other factors also played a role. These included growth in risk aversion and the related sell-offs on commodity markets due to a resurgence of the coronavirus pandemic mainly in South-East Asia, the USA and the UK. The flight of investors to less risky assets made the dollar stronger, which put further downward pressure on oil prices. There are concerns that the economic recovery in the second half of this year will not be as strong as initially expected. At the same time OPEC+ countries made an agreement on regular output increases of 400,000 barrels a day each month until 5.8 million barrels a day of the current output cuts under quotas are fully phased out. Moreover, the production baselines for quotas will be increased for some countries from May 2022. By contrast, the return of Iranian oil on world markets is unlikely in the months ahead. In early August, the oil price started to fall sharply again on the back of news about the coronavirus spread in China and weaker data from the Chinese economy. The Chinese government is trying to dampen strong growth in commodity prices by reducing their imports. The oil price forecasts by commercial institutions differ widely due to considerable uncertainty regarding demand for oil in 2021 H2. However, the EIA expects the Brent price to be close to USD 72/bbl for the rest of the year and a fall to the average USD 66/bbl next year as growth in oil demand weakens and growth in output in non-OPEC+ countries rises. The August CF likewise expects the Brent price to fall one year ahead, to around USD 68/bbl, and the market futures curve also has a downward slope, suggesting a Brent price of USD 70/bbl and USD 66/bbl at the end of 2021 and 2022 respectively.



	Brent		WTI		Plyn
2021	68,46	↘	64,49	↘	380,70 ↗
2022	67,67	↘	62,68	↘	464,60 ↗



	IEA	EIA	OPEC
2021	96,68 ↗	97,61 ↗	96,54 ↘
2022		101,25 ↘	99,83 ↘



	Produkce	Těžební kapacity	Rezervní kapacity
2021	26,46 ↘	33,40 ↘	6,94 ↗
2022	28,65 ↗	33,29 ↘	4,64 ↘

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

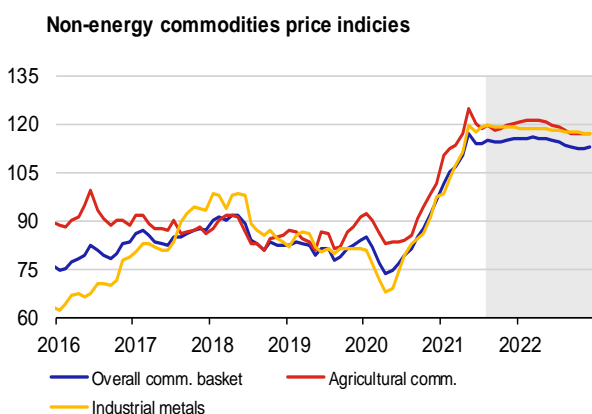
Note: Oil price at ICE, average gas price in Europe – World Bank data, smoothed by the HP filter. Future oil prices (grey area) are derived from futures and future gas prices are derived from oil prices using model. Total oil stocks (commercial and strategic) in OECD countries – IEA estimate. Production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

IV.2 Other commodities

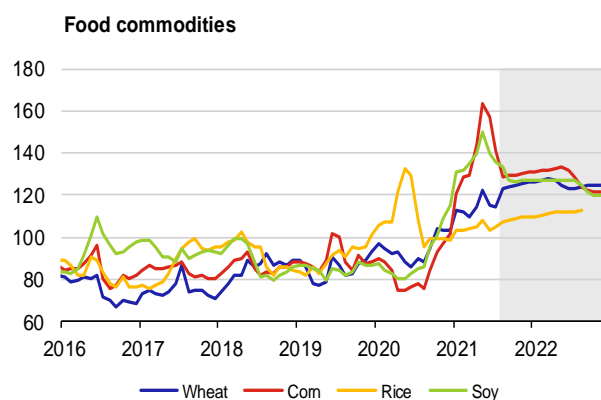
The average price of natural gas in Europe continued to grow strongly in July. It increased by more than 20% to USD 12.5/MMBtu compared to June. This was due to still low inventories, concerns about limited supplies from Russia and continued high prices of emission allowances. LNG imports remain weak due to high demand and prices in Asia. The price of coal grew by 17% month on month in July to the highest level since mid-2008. The coal price was supported by above-average temperatures in North-East Asia, growth in industrial activity and supply shortfalls due to bad weather in China.

The strong growth in the average monthly base metals price index halted in June but the index remains close to its all-time high. Base metals prices were under pressure in the first half of July as growth in global manufacturing slowed for the second consecutive months and the dollar strengthened. However, metals prices recovered in the rest of the month owing to concerns about shortfalls in supplies from China due to bad weather, and a slight weakening of the dollar. In the first half of August, prices of most base metals started to fall again. The price of iron ore was broadly flat at record-high levels between mid-June and the end of July but fell sharply in early August.

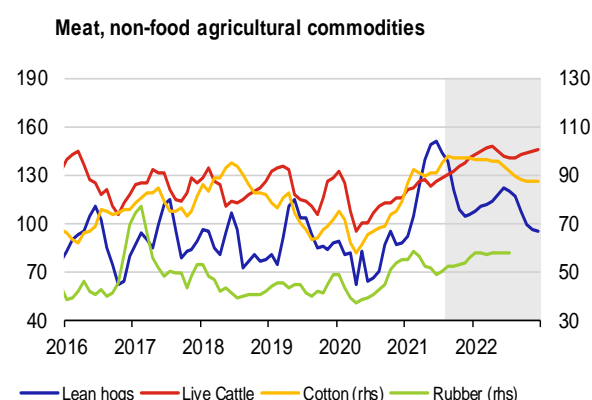
Prices in the category of food commodities showed very mixed developments. Wheat and rice prices have been growing since the start of July, while the soy price partly reversed its previous growth recorded in the first half of June and the corn price fell sharply in mid-July. Even so, prices of these two commodities remain significantly elevated from the historical perspective. The price of sugar edged higher again in the second half of July and the price of coffee grew strongly in mid-July, although it subsequently corrected partly. Pork and beef prices were broadly flat in July.



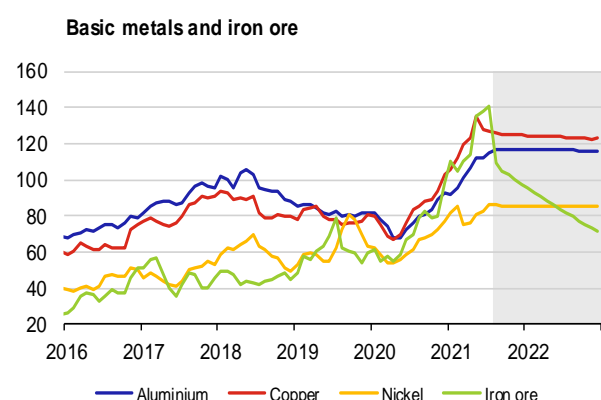
	Overall	Agricultural	Industrial
2021	111.8 ↗	117.6 ↗	114.2 ↗
2022	114.2 ↗	119.1 ↗	117.9 ↗



	Wheat	Corn	Rice	Soy
2021	118.7 ↗	136.1 ↗	106.4 ↗	133.8 ↗
2022	125.4 ↗	127.9 ↗	111.6 ↗	124.5 ↗



	Lean hogs	Live Cattle	Cotton	Rubber
2021	123.1 ↗	128.9 ↗	93.3 ↗	53.1 ↗
2022	109.6 ↗	143.8 ↗	92.1 ↗	57.5 ↗



	Aluminium	Copper	Nickel	Iron ore
2021	109.9 ↗	122.9 ↗	82.9 ↗	114.0 ↗
2022	116.4 ↗	123.6 ↗	85.5 ↗	83.0 ↗

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.

The shortage of materials and components as a production-limiting and price-increasing factor¹

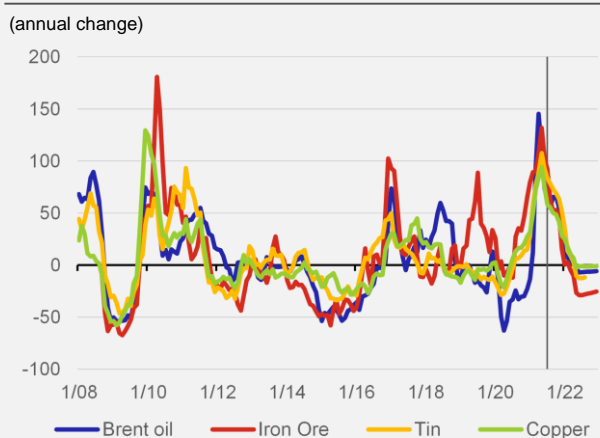
The global coronavirus pandemic has caused large cracks in international trade, logistics and production chains, which have now started to be felt fully in industrial producer prices. The European Commission's survey data confirm that the main motive for higher selling price expectations are barriers to production, mainly a shortage of materials and components. But historical experience shows that price expectations are corrected relatively quickly after the issues with the shortage of materials and inputs abate, and temporary supply shortfalls thus have a small effect on the long-term evolution of prices in industrial sectors. Nevertheless, corporations and consumers will feel the impacts of the pandemic on inflation for many months to come. The article follows up on the analysis in Box 1 of the Monetary Policy Report – Summer 2021.

Introduction

The “perfect storm” of a shortage of materials and components in an environment of a strongly recovering global economy after the pandemic raises concerns among many CEOs. The disruption of supply chains amid robust demand for tradeables is reflected in higher upward pressure on industrial producer prices, while activity in industry is dampened by this. Orders from firms are currently high but production is not smooth due to delays in supplies of inputs, which is propagated further in production chains. Higher demand for inputs is accompanied by price growth, which is immediately reflected in producer prices in price-flexible sectors. But is it the only factor which limits firms' production? And at what horizon is it reflected in producer prices? The article presents the situation using a selected sample of European countries – Germany, France, Italy, Spain, Slovakia and the Czech Republic.

Strong demand and overloaded supply chains have already been reflected in prices of commodities and components, so firms are dealing not only with a shortage of materials and components but also higher costs of other inputs. In addition to oil prices, increases were also recorded by prices of metals and wood. According to the market outlook, the current increase in prices of oil and metals might correct soon (see Chart 1) but the shortage of semiconductors and computer chips will persist at least until 2023 and their prices will not thus drop quickly. Prices of computer chips and semiconductors have recently responded sensitively to one-off production disruptions (a fire in a Japanese computer chip factory and a power outage in Texas where many computer chip factories are located), amid very robust demand. But it will be necessary to adjust the entire production chain in South-East Asia and expand production in the USA and Europe in future because the dominant role in the production of advanced computer chips is played by Taiwan, which is facing the risk of water shortage due to global climate change. According to market estimates, a serious shortage of computer chips will be apparent throughout 2021, which benefits the share index for firms in the sector (see Chart 2).

Chart 1 – Changes in prices of selected commodities



Source: Bloomberg, CNB
Note: The grey area indicates the market outlook.

Chart 2 – Philadelphia Semiconductor Index



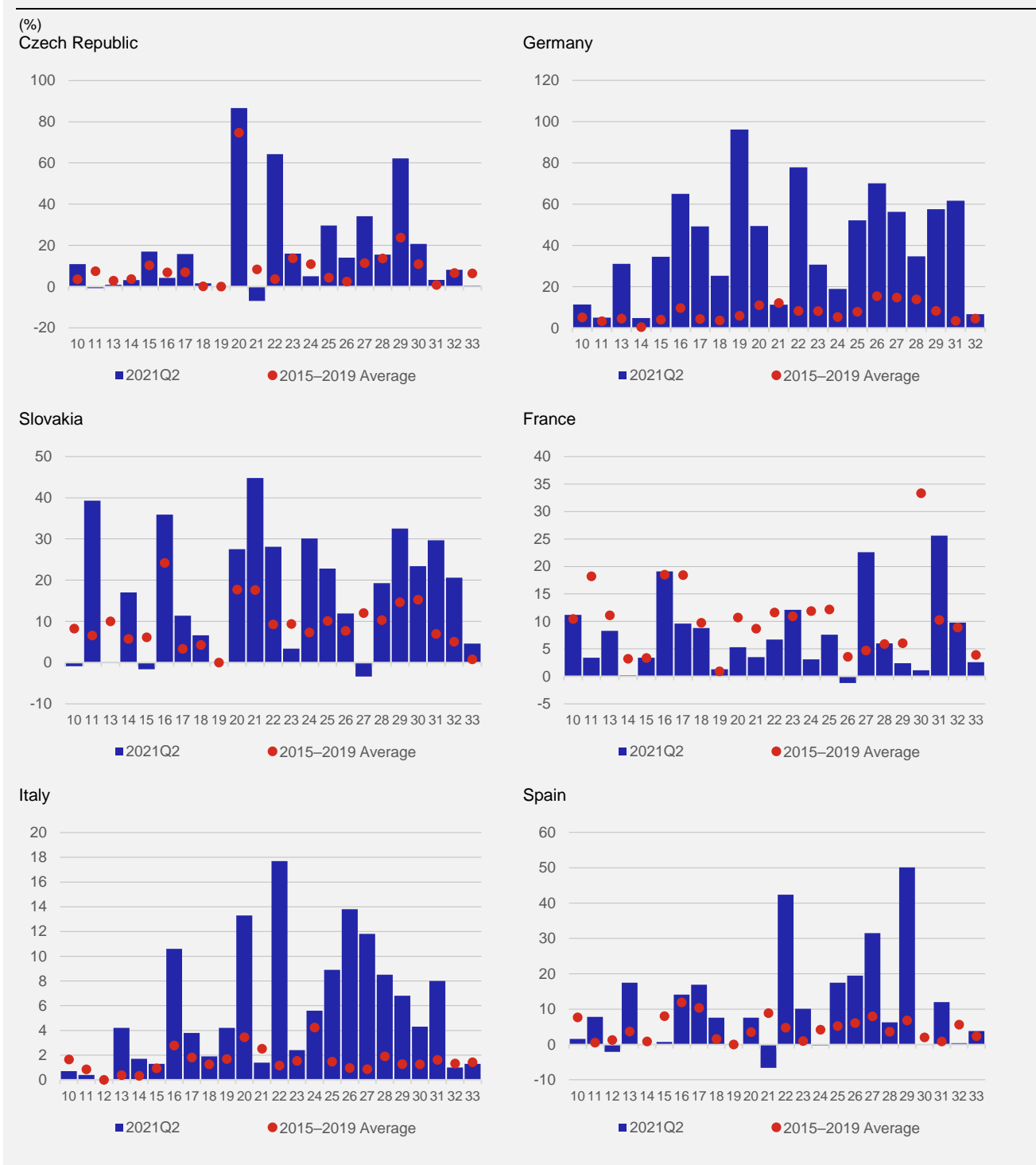
Source: Bloomberg
Note: weighted index in the semiconductor sector.

¹ Author: Soňa Benecká. The views expressed in this article are those of the author and do not necessarily reflect the official position of the Czech National Bank.

What factors are currently limiting firms' production?

Information on what production issues firms are dealing with is provided by business surveys. The best-known source is the Purchasing Managers' Index (PMI), whose sub-indices (e.g. delivery dates) are not freely available, yet similar information can be obtained from the freely accessible May survey of the European Commission². Its results show that firms

Chart 3 – Share of firms reporting problems with the supplies of equipment



Source: European Commission
 Note: 11 – Beverages, 12 – Tobacco, 13 – Textiles, 14 – Wearing apparel, 15 – Leather, 16 – Wood, 17 – Paper, 18 – Printing and reproduction, 19 – Refined petroleum products, 20 – Chemicals, 21 – Pharmaceutical products, 22 – Plastic products, 23 – Other products, 24 – Metals, 25 – Metal products, 26 – Computers and electronic products, 27 – Electrical equipment, 28 – Machinery and equipment, 29 – Motor vehicles, 30 – Other transport equipment, 31 – Furniture, 32 – Other, 33 – Repair and installation

² The survey regarding barriers to production is published quarterly and complements the standard monthly Economic Sentiment Index (ESI). Question 8 identifies what barriers (labour, equipment, demand, finance, other, none) businesses are facing. See https://ec.europa.eu/info/business-economy-euro/indicators-statistics/economic-databases/business-and-consumer-surveys_en

all over Europe are currently facing record-high barriers to production due to the shortage of materials and components (“equipment”). Chart 3 shows a comparison of the last available figure for 2021 Q2 and the 2015–2019 average.

Although the lowest satisfaction with equipment supplies has been reported by firms in Germany, the same issue has also been largely reported by Czech industry. Affected are a number of industries, most notably chemical and petrochemical ones. Major difficulties have been recorded in machinery (including cars) and wood processing, electronics and computers. These firms have been hit the hardest by disruptions to the supplies of plastics, computer chips and wood. On the other hand, there are categories with minimum issues – food and clothing. Fewer difficulties have been reported overall by France, which has a lower share of industry in value added than the Czech Republic’s other trading partners.

Businesses do not yet feel major difficulties as regards a shortage of labour but the situation differs widely by sector and country (see Chart 4). According to German corporations, it is currently more difficult for most sectors to find suitable employees compared with the 2015–2019 average. The largest labour market difficulties have been reported on average by the Czech Republic and Slovakia, while the situation is the best in Italy and Spain. Czech firms have long reported problems with hiring labour to a much larger extent than other countries in the comparison.

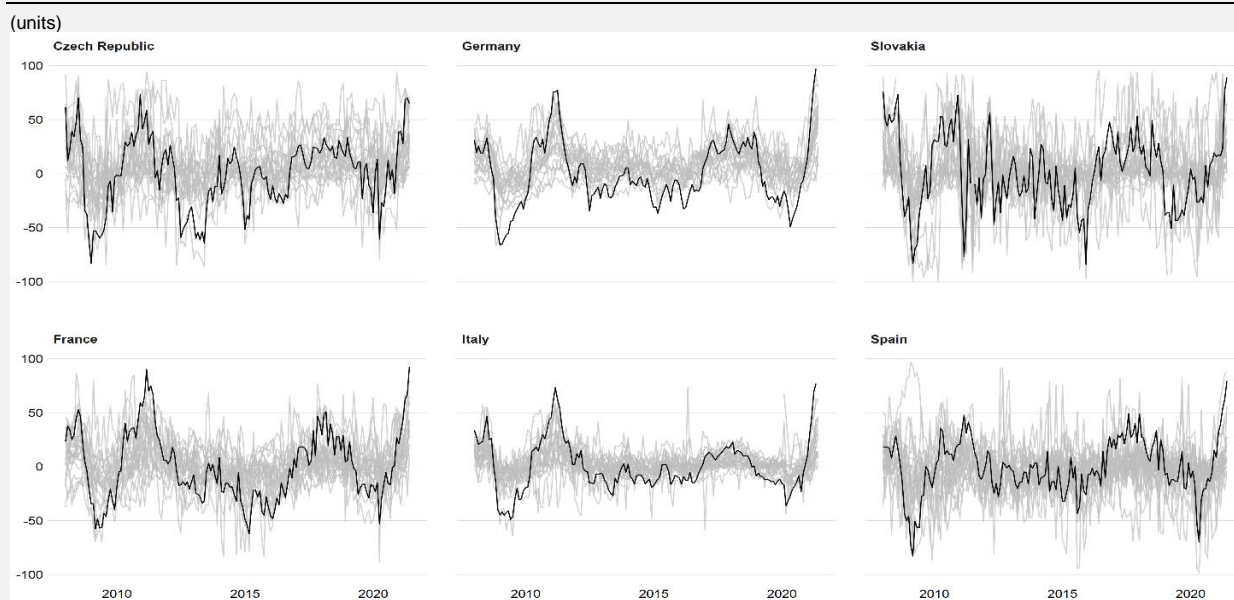
By contrast, problems with demand are lower than in the previous five years (see Chart 5). In Germany and the Czech Republic, robust growth in demand has been recorded mainly in machinery and electrical machinery, while textiles and clothing are still experiencing difficulties. This item is much more important than the previous categories. While only 7.4 % of firms in Germany and 10% of firms in the Czech Republic on average reported problems with equipment supplies in 2015–2019, 22% of firms in Germany and 47% of firms in the Czech Republic reported problems with demand.

Some firms have also more financing difficulties, as suggested by the survey. For example, the share of firms reporting financing difficulties is two times higher than the five-year average in Germany. In the Czech Republic, this holds true mainly for firms in sectors hit the hardest by supply issues (paper, metals); to a smaller extent, this also applies to Slovakia. On the other hand, firms in Italy or Spain have not announced financing difficulties.

The shortage of materials and components is pushing up selling price expectations

The problems in supply chains and higher commodity prices were reflected in expectations regarding selling prices, which have been growing for several months now. The European Commission survey confirms a surge in these expectations simultaneously in a number of sectors since the start of 2021 (see Chart 7).³ Although the most pronounced surge can be seen in Germany and Italy, expectations also corrected in other countries after a fall in 2020.

Chart 7 – Firms’ expectations regarding selling prices in the next three months



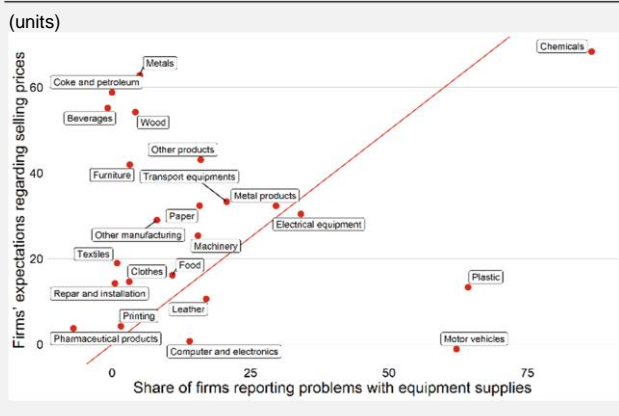
Source: European Commission, CNB

Note: black – the effect of the co-movement of expectations (the first component across individual indices for sectors; scaled); grey – data for individual sectors (proportions of firms reporting price increases/decreases in the total number of firms in the survey).

³ Given the sizeable volatility of data at the sector level, we extracted a co-movement across sectors using the principal component analysis (PCA), but the current sharp price movement across sectors can also be observed in disaggregated data.

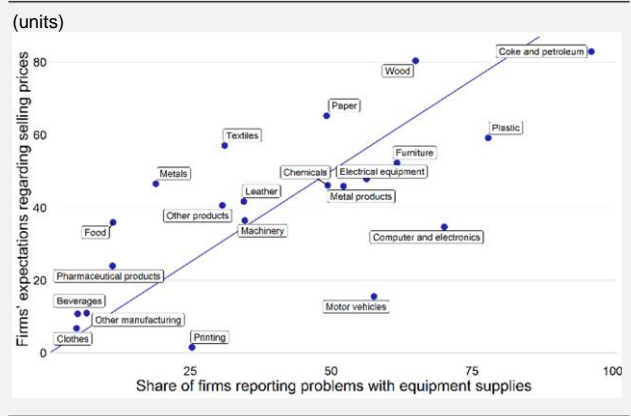
Firms' expectations regarding selling prices rose the most in sectors which are facing problems with equipment or are strongly linked to commodity prices. We compared the shares of corporations which are reporting problems with equipment and their expected movements in selling prices by sector (see Chart 8 for the Czech Republic and Germany). Sectors which have reported the largest issues with supplies also have the highest share of corporations with expected price growth. While this effect is largely linear in Germany, additional factors enter the firms' pricing decisions in the Czech Republic, for example the exchange rate of the koruna. Although Czech firms have not reported problems with the supplies of wood, refined products or metals, their expectations of price growth are large due to global commodity price growth. However, the situation in the other sectors of the two countries is similar. For example, more than 60% of firms in both countries have reported problems with equipment supplies in the category of motor vehicles but less than 10% of them are planning a change in prices. Data for the other trading partners give a similar picture. Interestingly, Slovak producers in the automotive industry have reported smaller problems with supplies than the German ones (while the opposite is true of the Spanish ones) but firms' expectations regarding selling prices in the sector are low in all the countries.

Chart 8a – Comparison of limited factor availability and expected selling price – the Czech Republic



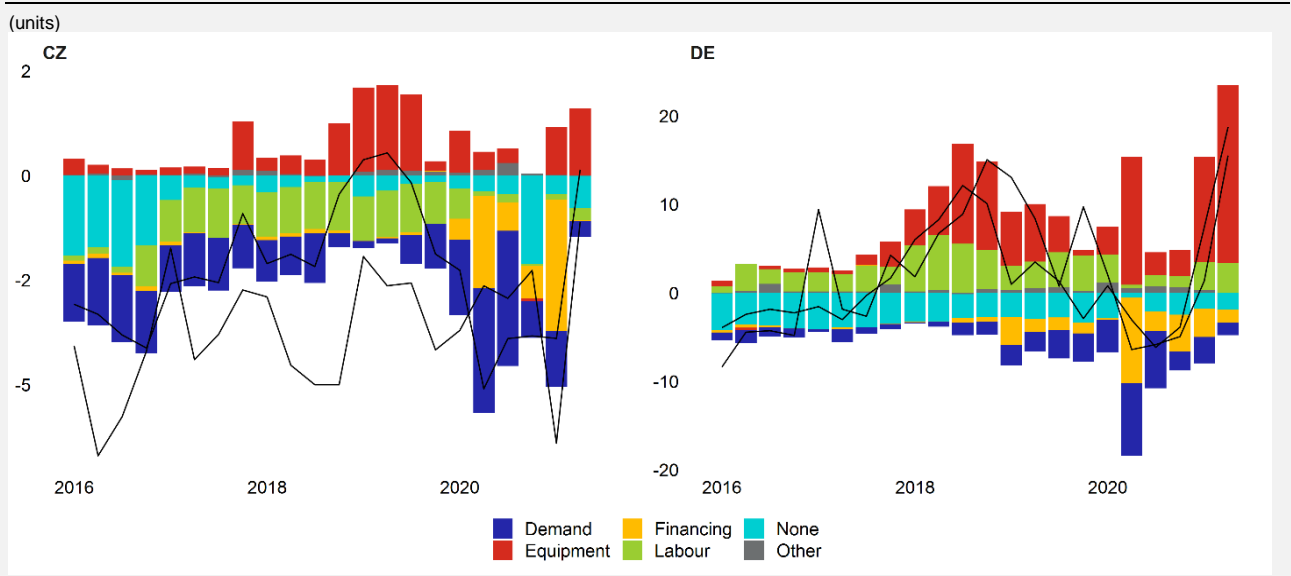
Source: European Commission

Chart 8b – Comparison of limited factor availability and expected selling price growth – Germany



Source: European Commission

Chart 9 – Model estimate of the effect of various barriers to production on firms' expectations regarding selling prices in the motor vehicles sector – the Czech Republic and Germany



Source: European Commission, CNB

Firms in the automotive industry have also reported the fading of problems with demand and financing, which would otherwise dampen the upward pressure on prices. We attempted to estimate the effect of production-limiting factors on firms' expectations regarding selling prices in simple regression models. Using data for Germany and the Czech Republic, Chart 9 shows that insufficient selling demand and financing problems slowed firms' price expectations at the end of 2019 and during the pandemic. By contrast, the problems with equipment were small in this period. The situation started to reverse in 2021 when a shortage of equipment pushed up price expectations amid the unwinding of the dampening effects.

A similar picture is provided in a number of other sectors – from machinery to computers and electronics. The situation is more mixed in sectors linked to commodity prices, while the effect of low demand is dominant in other categories (e.g. textiles).

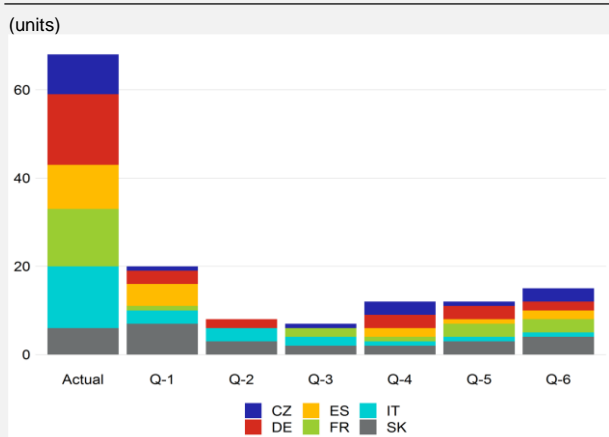
However, the shortage of labour increases selling price expectations only in some countries. While the shortage of labour cannot be reflected in higher selling prices in the Czech Republic, Germany sees a pronounced positive contribution of this factor to price expectations. A similar effect as in the Czech Republic can also be found in Slovakia and to a lesser extent in Italy. There is not visible significant effect in Spain, which is probably due to the country's labour market situation and the highest unemployment rate among the selected economies.

How long will the shortage of materials and components be reflected in prices?

The effect of the shortage of materials and components on price expectations will fade out relatively quickly once the barriers disappear. Simple regressions by sector and country (see Chart 10) show clearly that the shortage of equipment is having a dominant effect on price expectations in the current quarter and then quickly fades. To a small extent, it continues in some countries and sectors in the longer term. The Chart sums up the numbers of significant regression coefficients for barriers according to time. For example, the Q-1 category is thus the number of models across countries which find the barrier factor lagged by one quarter as statistically significant. As regards the individual sectors, the temporary unavailability of equipment will disappear the fastest in plastics and metals, where great price flexibility can be expected. The effect is not quantitatively big in the other sectors at the one-year horizon, either.

The current outlook expects the problems with the supplies of materials and components and expected inflation to peak during the summer. Price pressures may persist longer to a small extent, especially in sectors with lower price flexibility or sectors where supplies of certain components (e.g. computer chips) play a significant role, where the problems may disappear more gradually.

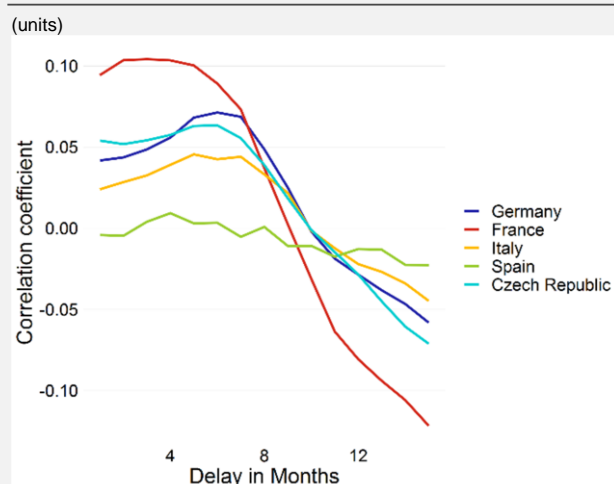
Chart 10 – Short-term effect of the shortage of materials and components on price expectations by country



Source: European Commission, CNB

Note: Columns show aggregate numbers of statistically significant coefficients in simple regression models by country

Chart 11 – Price change correlation over time



Source: European Commission, CNB

Note: The correlation between the change in expected growth in selling prices for three months and annual growth in industrial producer prices depending on the lag; the average for all sectors.

Conclusion

Although firms will correct quickly the price expectations after the problems abate, industrial producer prices will be affected for at least six months. The effect will peak after six months and then gradually fade out in the Czech Republic and other countries. The correlation is averaged across sectors, which however show very mixed developments, so the resulting level is generally lower. The pass-through of prices to the PPI is stronger and faster in sectors where commodities have a dominant effect, while it lagged by three months in the motor vehicles sector. The effects of the shortage of equipment on industrial producer prices will thus fade gradually once expectations are corrected.

Keywords

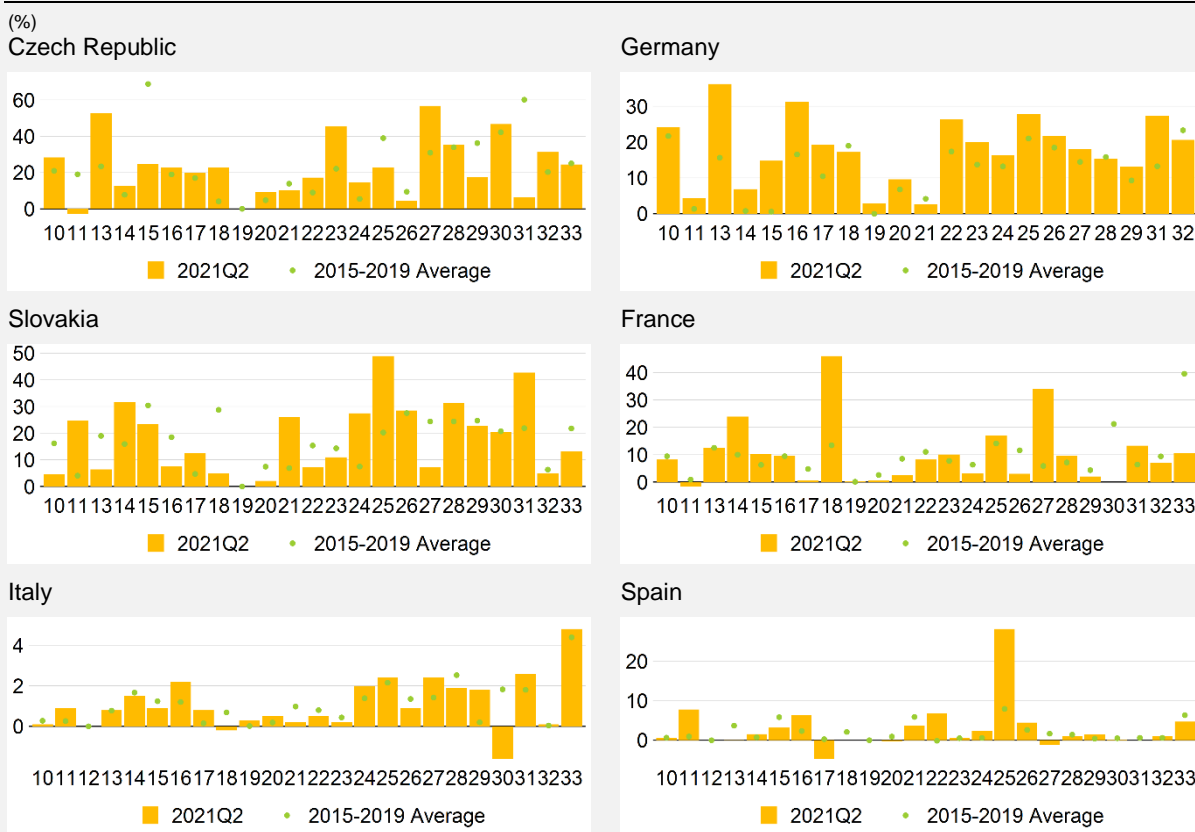
Supply chain, shortage of materials, producer prices

JEL Classification

E23, E32, F44

Annex

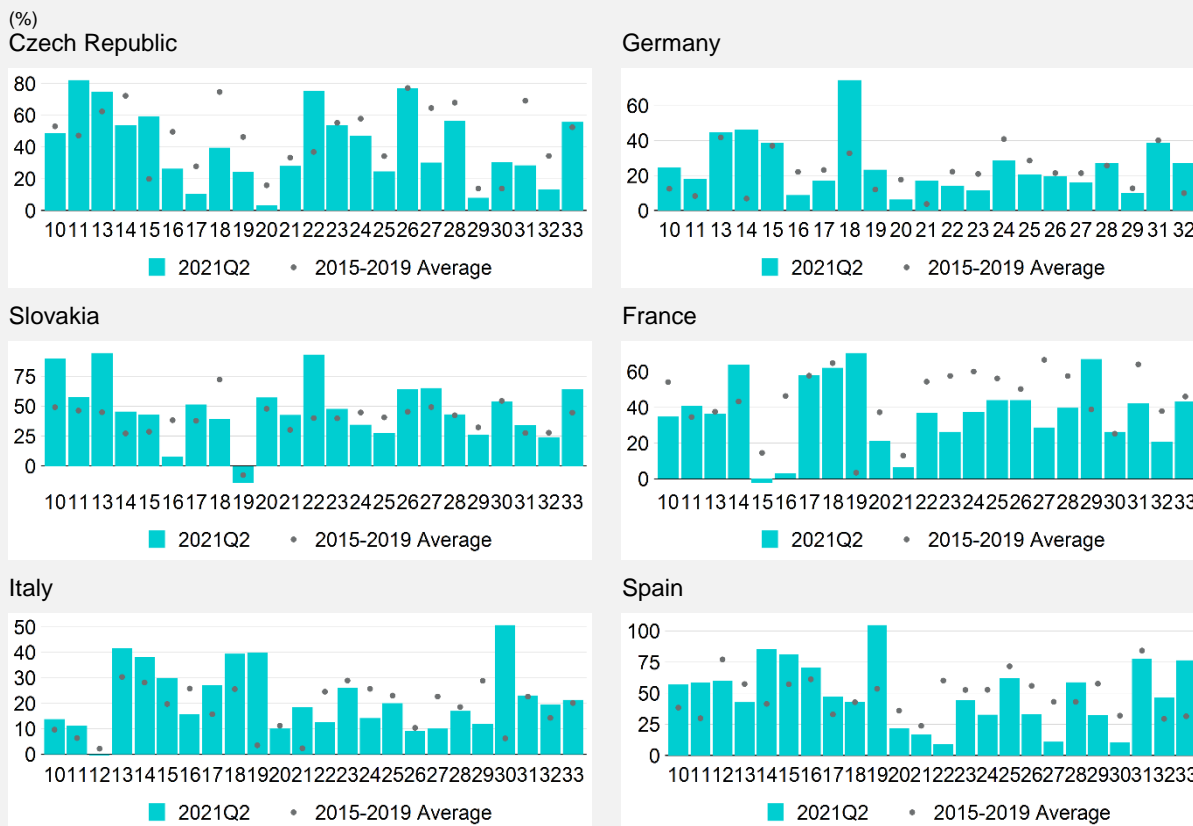
Chart 4 – Share of firms reporting problems with hiring labour



Source:

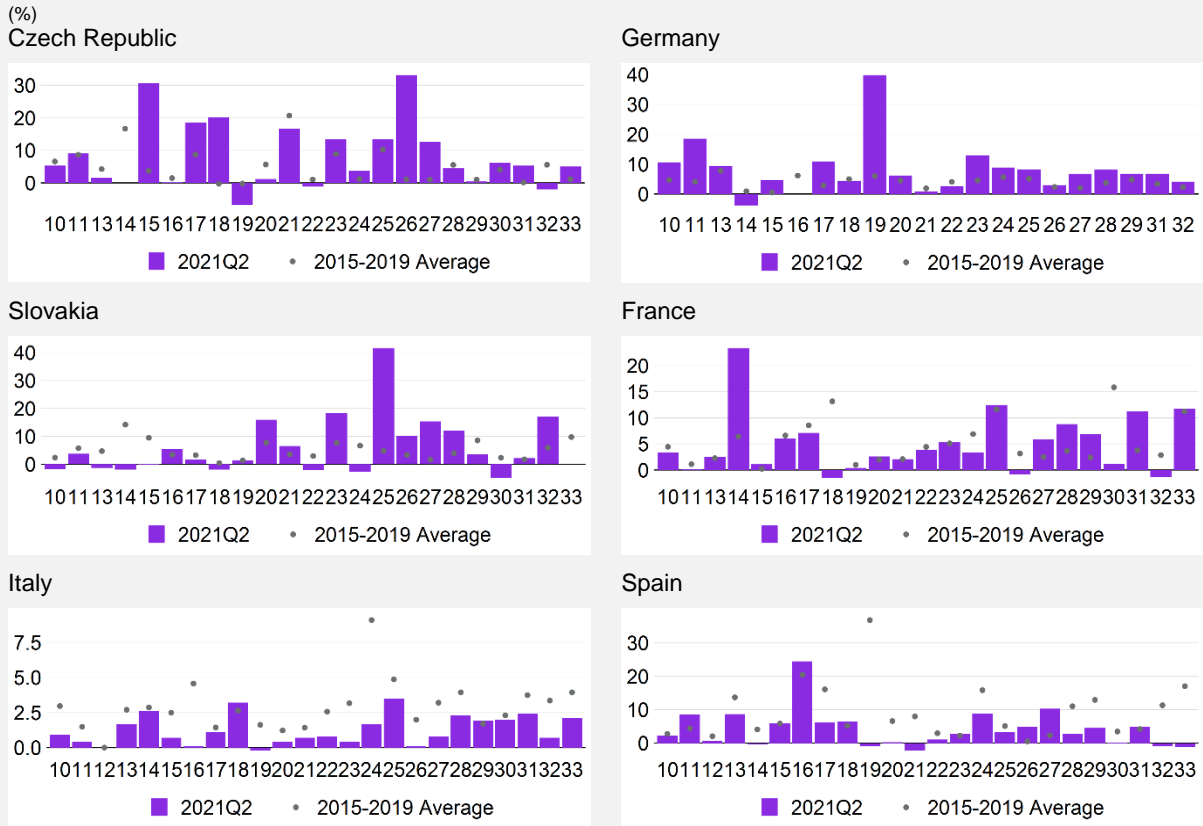
Note: 11 – Beverages, 12 – Tobacco, 13 – Textiles, 14 – Wearing apparel, 15 – Leather, 16 – Wood, 17 – Paper, 18 – Printing and reproduction, 19 – Refined petroleum products, 20 – Chemicals, 21 – Pharmaceutical products, 22 – Plastic products, 23 – Other products, 24 – Metals, 25 – Metal products, 26 – Computers and electronic products, 27 – Electrical equipment, 28 – Machinery and equipment, 29 – Motor vehicles, 30 – Other transport equipment, 31 – Furniture, 32 – Other, 33 – Repair and installation

Chart 5 – Share of firms reporting problems with demand



Source:
 Note: 11 – Beverages, 12 – Tobacco, 13 – Textiles, 14 – Wearing apparel, 15 – Leather, 16 – Wood, 17 – Paper, 18 – Printing and reproduction, 19 – Refined petroleum products, 20 – Chemicals, 21 – Pharmaceutical products, 22 – Plastic products, 23 – Other products, 24 – Metals, 25 – Metal products, 26 – Computers and electronic products, 27 – Electrical equipment, 28 – Machinery and equipment, 29 – Motor vehicles, 30 – Other transport equipment, 31 – Furniture, 32 – Other, 33 – Repair and installation

Chart 6 – Share of firms reporting financing problems



Source:

Note: 11 – Beverages, 12 – Tobacco, 13 – Textiles, 14 – Wearing apparel, 15 – Leather, 16 – Wood, 17 – Paper, 18 – Printing and reproduction, 19 – Refined petroleum products, 20 – Chemicals, 21 – Pharmaceutical products, 22 – Plastic products, 23 – Other products, 24 – Metals, 25 – Metal products, 26 – Computers and electronic products, 27 – Electrical equipment, 28 – Machinery and equipment, 29 – Motor vehicles, 30 – Other transport equipment, 31 – Furniture, 32 – Other, 33 – Repair and installation

A1. Change in predictions for 2021

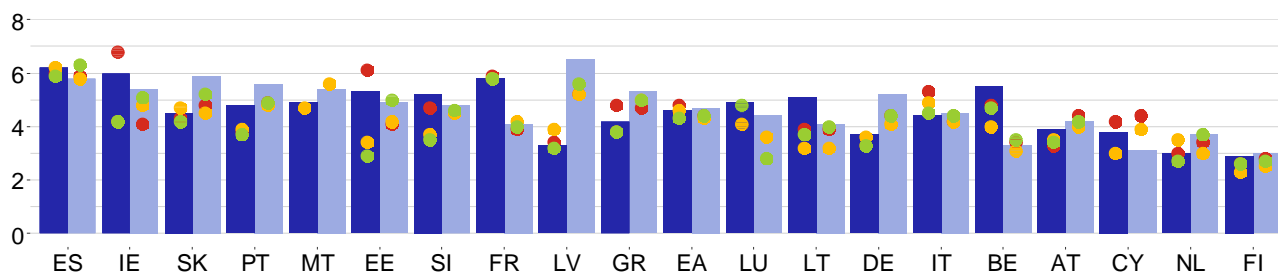
	GDP growth, %				Inflation, %			
	CF	IMF	OECD	CB / EIU	CF	IMF	OECD	CB / EIU
EA	+0.2	+0.2	+0.4	+0.6	+0.2	+0.5	+1.1	+0.4
US	-0.4	+0.6	+0.4	+0.5	+0.4	-0.5	+1.5	+1.0
UK	0	+1.7	+2.1	0	+0.3	+0.3	+0.6	+1.5
JP	-0.1	-0.5	-0.1	-0.2	+0.1	-0.2	-0.1	+0.5
CN	0	-0.3	+0.7	0	-0.1	-1.5	-0.8	0
RU	+0.2	+0.6	+0.8	+0.2	+0.4	+1.3	+1.8	+0.2

A2. Change in predictions for 2022

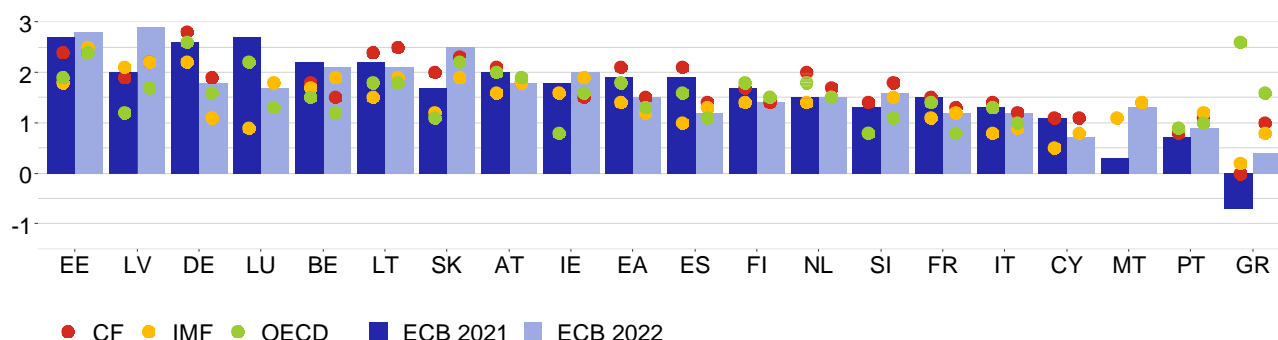
	GDP growth, %				Inflation, %			
	CF	IMF	OECD	CB / EIU	CF	IMF	OECD	CB / EIU
EA	0	+0.5	+0.6	+0.6	+0.1	0	+0.3	+0.3
US	0	+1.4	-0.4	0	+0.1	+0.3	+1.0	+0.1
UK	+0.1	-0.3	+0.8	+0.2	+0.3	+0.2	+0.2	+0.5
JP	0	+0.5	+0.2	+0.3	0	0	+0.2	+0.1
CN	+0.9	+0.1	+0.9	0	0	-0.7	+0.3	0
RU	0	-0.7	+0.2	+0.1	0	+0.2	+0.4	+0.1

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

GDP growth in the euro area countries in 2021 and 2022, %



Inflation in the euro area countries in 2021 and 2022, %

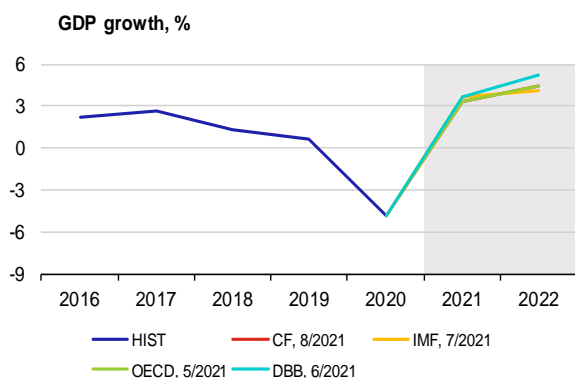


● CF ● IMF ● OECD ■ ECB 2021 ■ ECB 2022

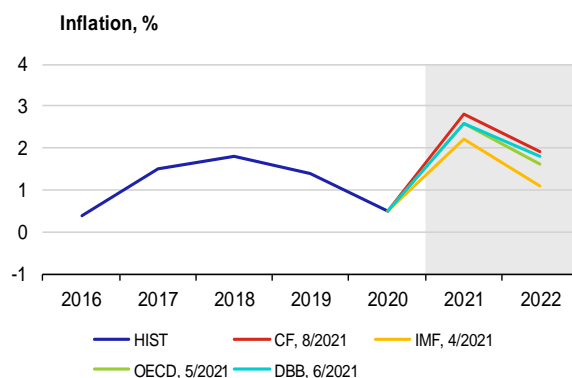
Note: Charts show institutions' latest available outlooks of for the given country.

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

Germany

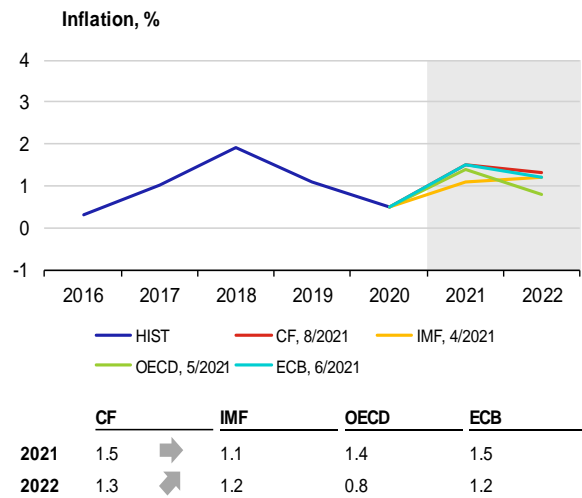
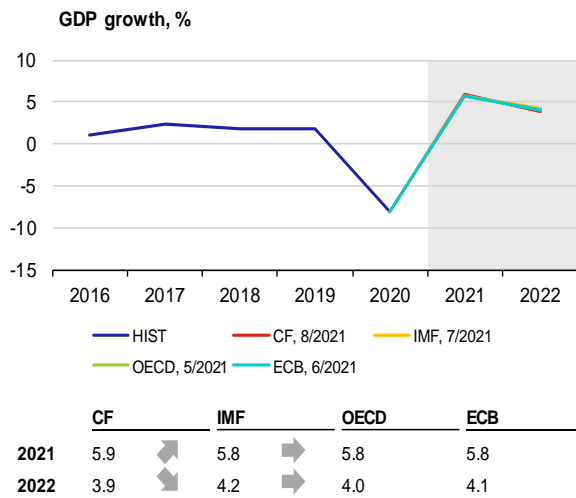


	CF	IMF	OECD	DBB
2021	3.3	3.6	3.3	3.7
2022	4.4	4.1	4.4	5.2

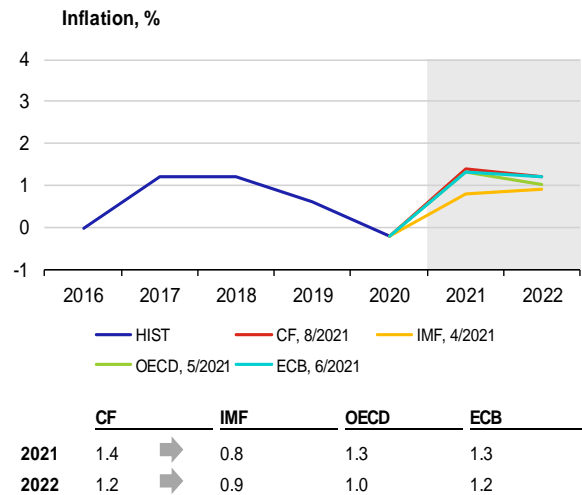
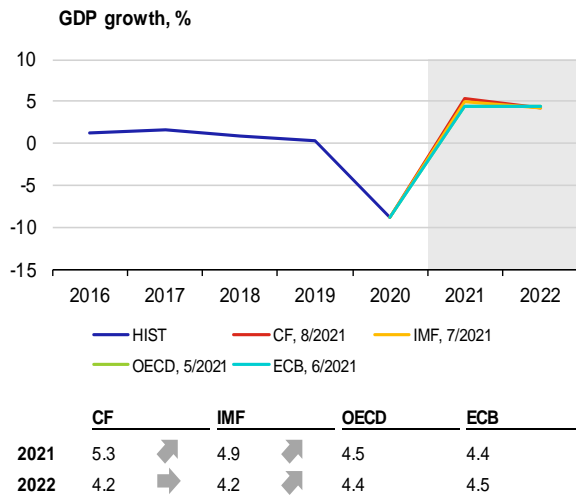


	CF	IMF	OECD	DBB
2021	2.8	2.2	2.6	2.6
2022	1.9	1.1	1.6	1.8

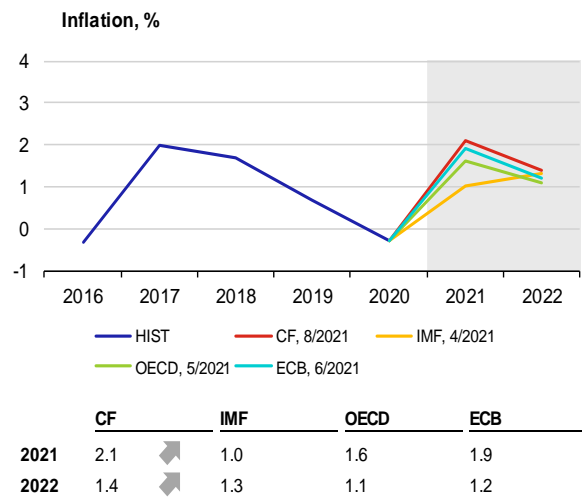
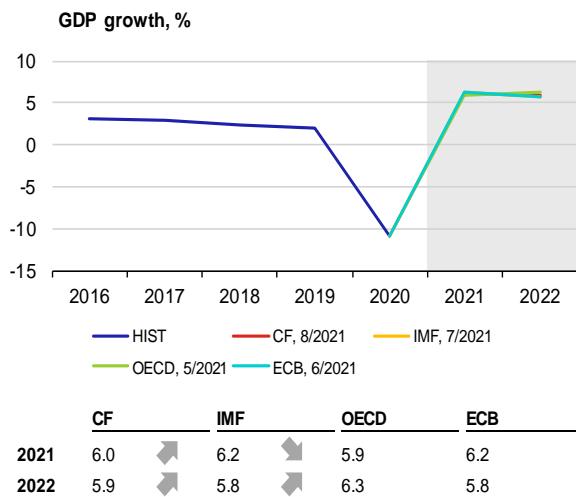
France



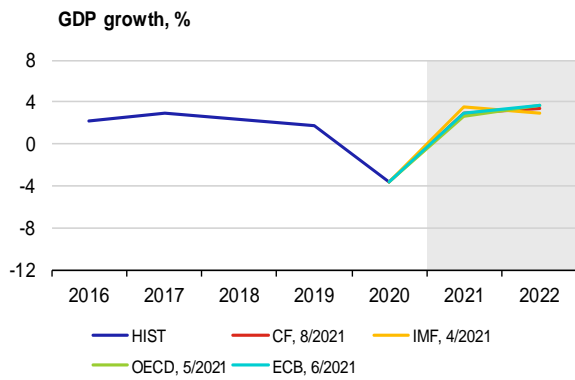
Italy



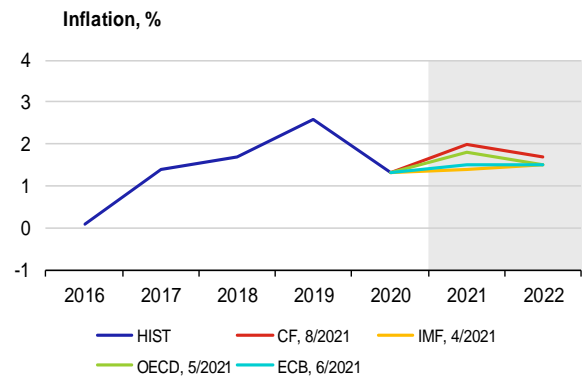
Spain



Netherlands

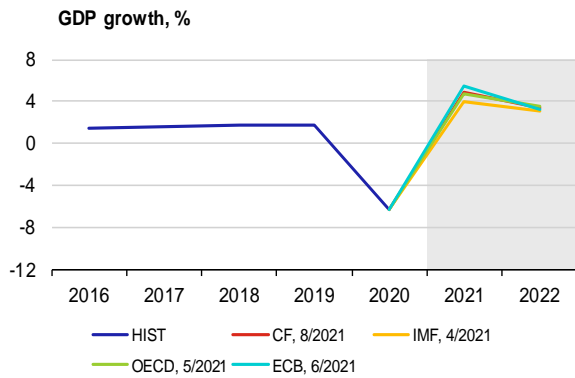


	CF	IMF	OECD	ECB
2021	3.0	3.5	2.7	3.0
2022	3.4	3.0	3.7	3.7

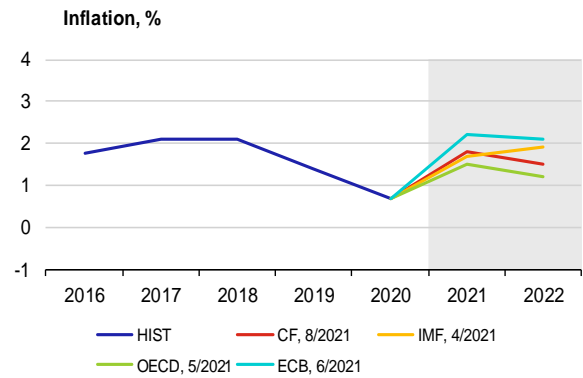


	CF	IMF	OECD	ECB
2021	2.0	1.4	1.8	1.5
2022	1.7	1.5	1.5	1.5

Belgium

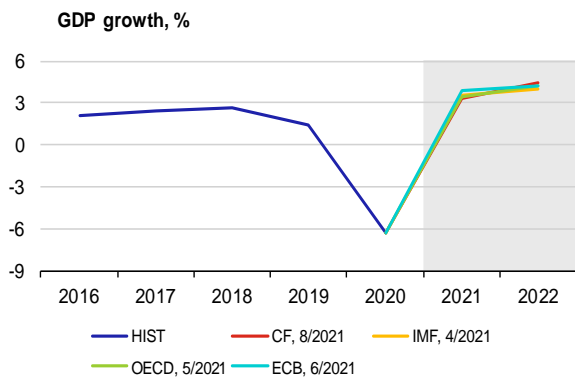


	CF	IMF	OECD	ECB
2021	4.8	4.0	4.7	5.5
2022	3.4	3.1	3.5	3.3

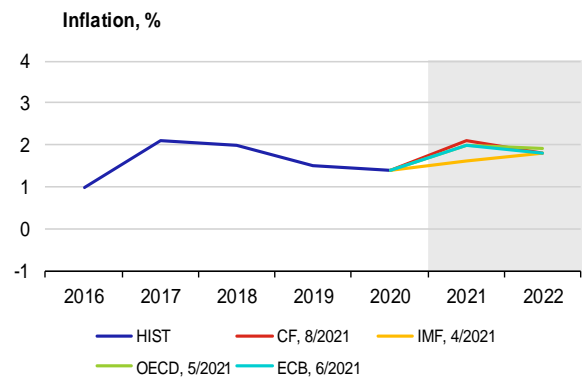


	CF	IMF	OECD	ECB
2021	1.8	1.7	1.5	2.2
2022	1.5	1.9	1.2	2.1

Austria

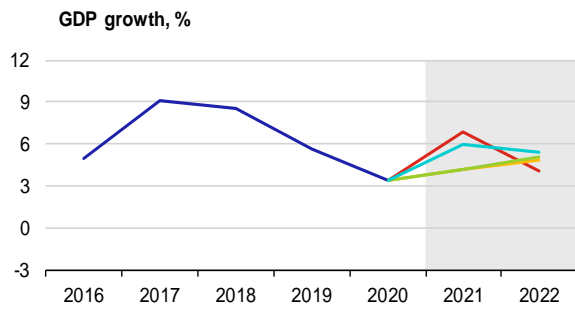


	CF	IMF	OECD	ECB
2021	3.3	3.5	3.4	3.9
2022	4.4	4.0	4.2	4.2

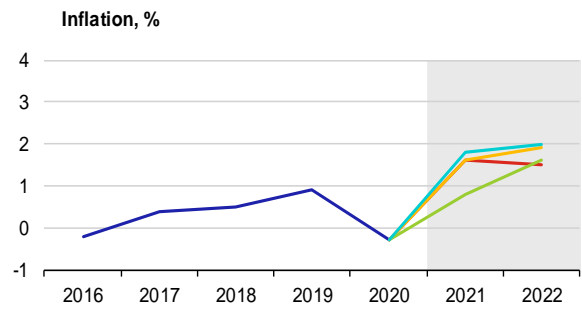


	CF	IMF	OECD	ECB
2021	2.1	1.6	2.0	2.0
2022	1.8	1.8	1.9	1.8

Ireland

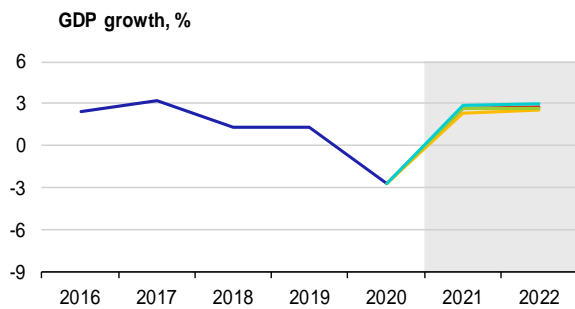


	CF	IMF	OECD	ECB
2021	6.8	4.2	4.2	6.0
2022	4.1	4.8	5.1	5.4

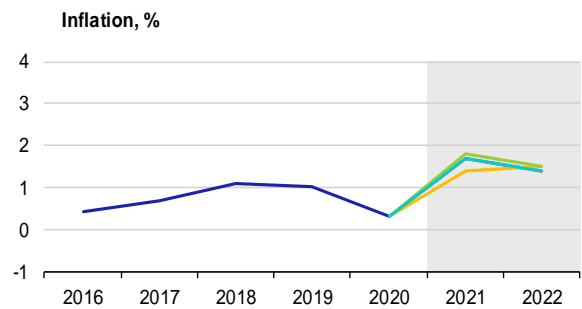


	CF	IMF	OECD	ECB
2021	1.6	1.6	0.8	1.8
2022	1.5	1.9	1.6	2.0

Finland

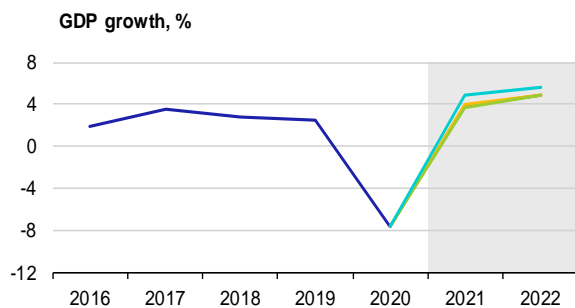


	CF	IMF	OECD	ECB
2021	2.6	2.3	2.6	2.9
2022	2.8	2.5	2.7	3.0

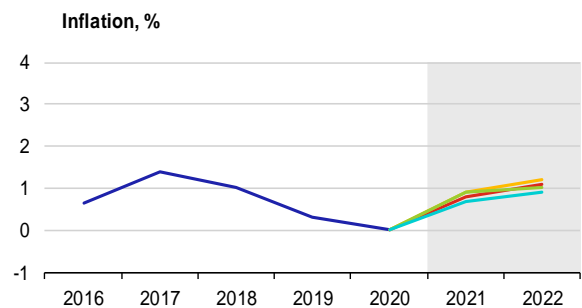


	CF	IMF	OECD	ECB
2021	1.7	1.4	1.8	1.7
2022	1.4	1.5	1.5	1.4

Portugal

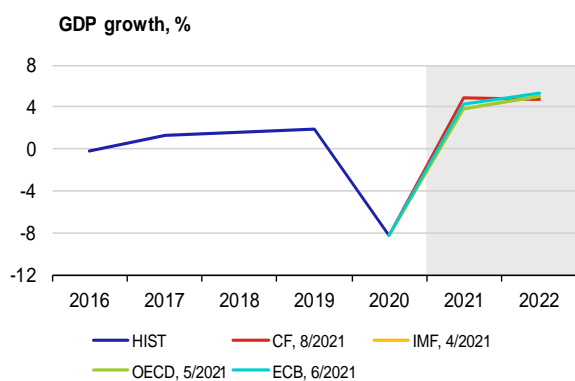


	CF	IMF	OECD	ECB
2021	3.8	3.9	3.7	4.8
2022	4.9	4.8	4.9	5.6

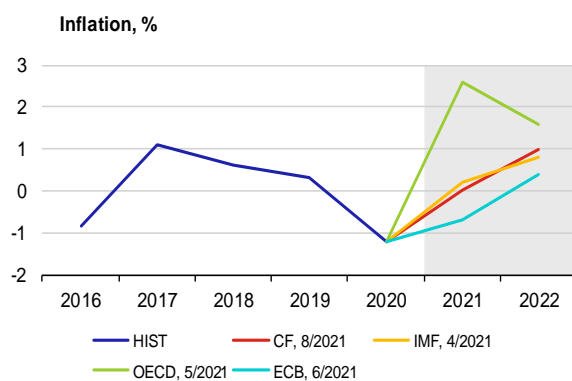


	CF	IMF	OECD	ECB
2021	0.8	0.9	0.9	0.7
2022	1.1	1.2	1.0	0.9

Greece

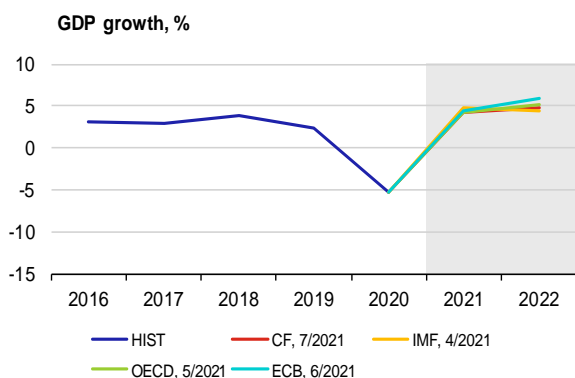


	CF	IMF	OECD	ECB
2021	4.8	3.8	3.8	4.2
2022	4.7	5.0	5.0	5.3

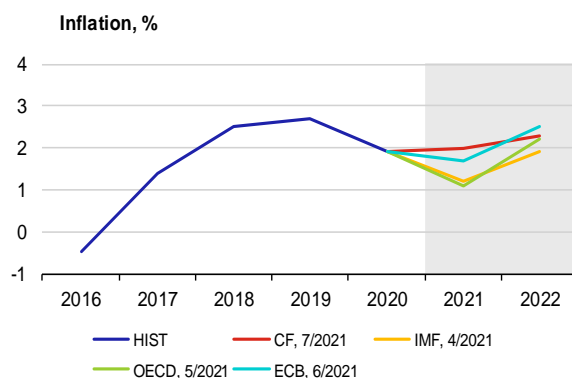


	CF	IMF	OECD	ECB
2021	0.0	0.2	2.6	-0.7
2022	1.0	0.8	1.6	0.4

Slovakia

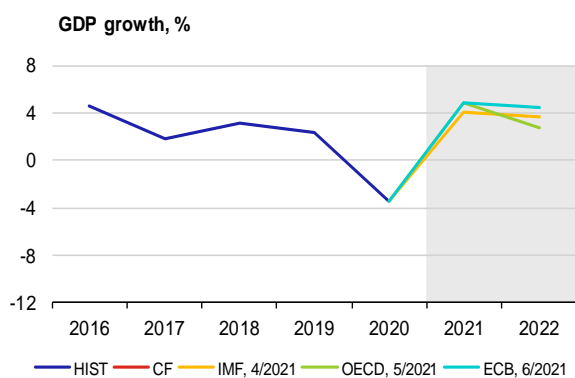


	CF	IMF	OECD	ECB
2021	4.3	4.7	4.2	4.5
2022	4.8	4.5	5.2	5.9

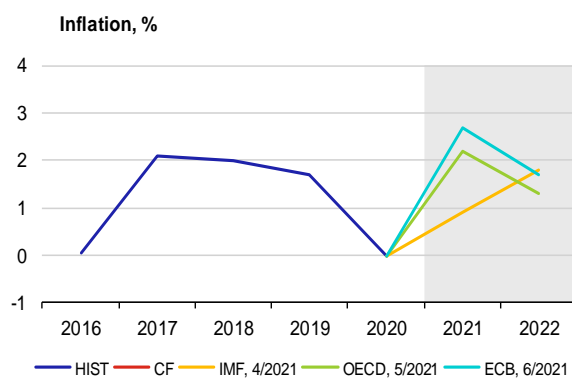


	CF	IMF	OECD	ECB
2021	2.0	1.2	1.1	1.7
2022	2.3	1.9	2.2	2.5

Luxembourg

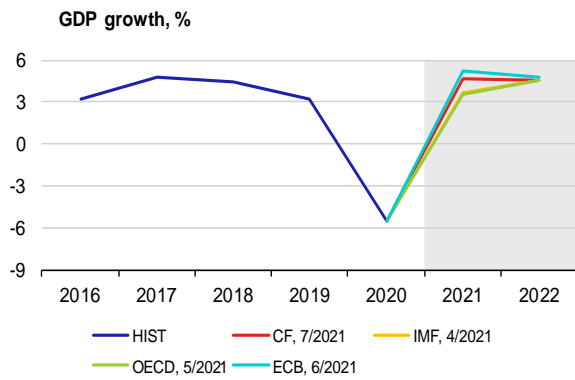


	CF	IMF	OECD	ECB
2021	n. a.	4.1	4.8	4.9
2022	n. a.	3.6	2.8	4.4

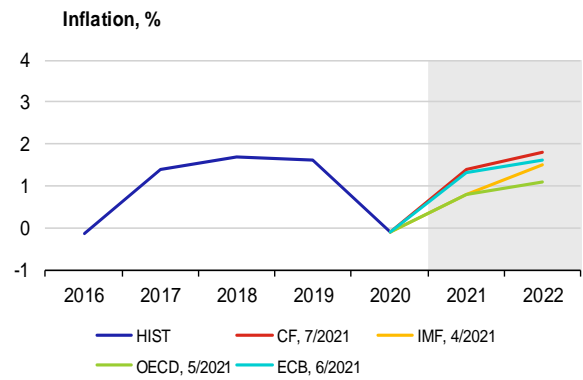


	CF	IMF	OECD	ECB
2021	n. a.	0.9	2.2	2.7
2022	n. a.	1.8	1.3	1.7

Slovenia

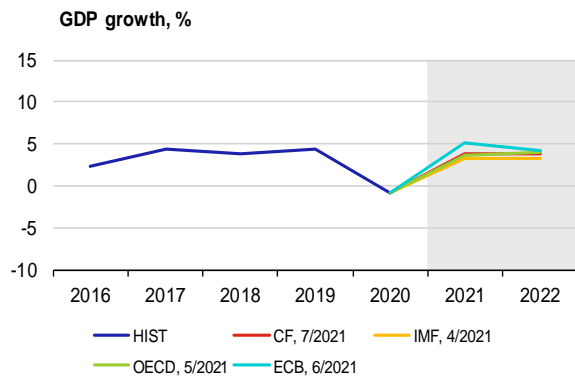


	CF	IMF	OECD	ECB
2021	4.7	3.7	3.5	5.2
2022	4.5	4.5	4.6	4.8

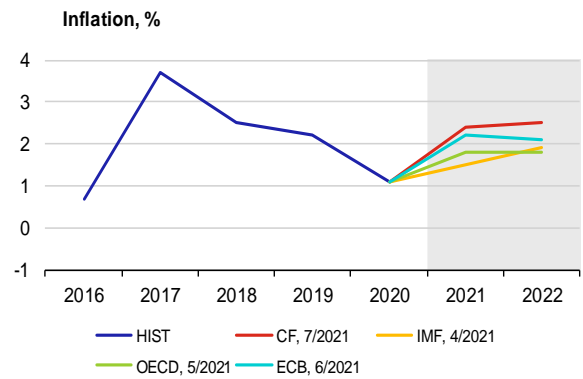


	CF	IMF	OECD	ECB
2021	1.4	0.8	0.8	1.3
2022	1.8	1.5	1.1	1.6

Lithuania

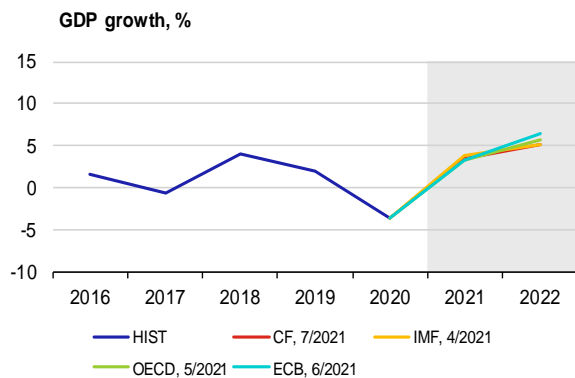


	CF	IMF	OECD	ECB
2021	3.9	3.2	3.7	5.1
2022	3.9	3.2	4.0	4.1

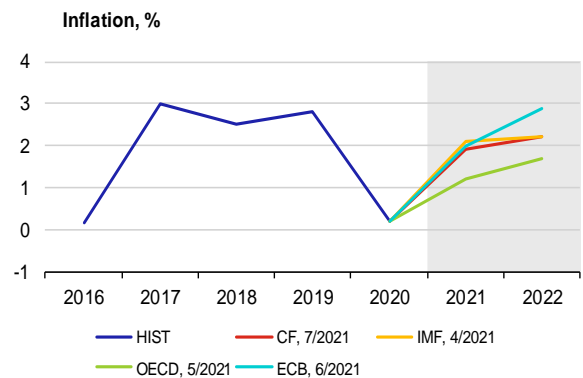


	CF	IMF	OECD	ECB
2021	2.4	1.5	1.8	2.2
2022	2.5	1.9	1.8	2.1

Latvia

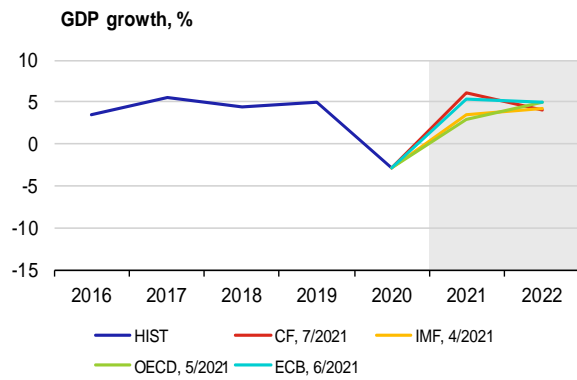


	CF	IMF	OECD	ECB
2021	3.4	3.9	3.2	3.3
2022	5.2	5.2	5.6	6.5

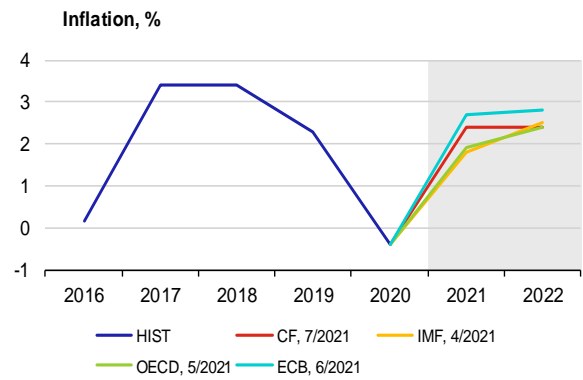


	CF	IMF	OECD	ECB
2021	1.9	2.1	1.2	2.0
2022	2.2	2.2	1.7	2.9

Estonia

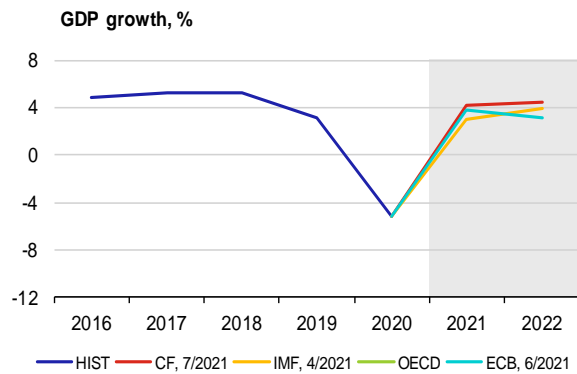


	CF	IMF	OECD	ECB
2021	6.1	3.4	2.9	5.3
2022	4.1	4.2	5.0	4.9

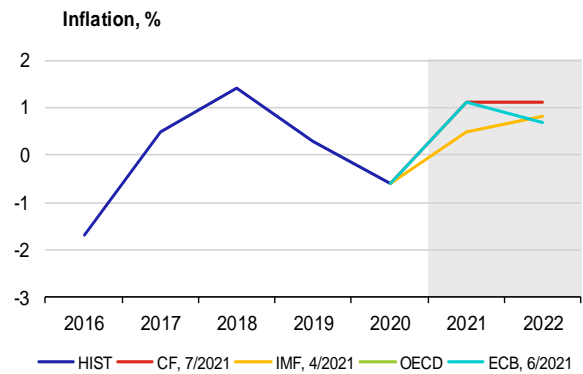


	CF	IMF	OECD	ECB
2021	2.4	1.8	1.9	2.7
2022	2.4	2.5	2.4	2.8

Cyprus

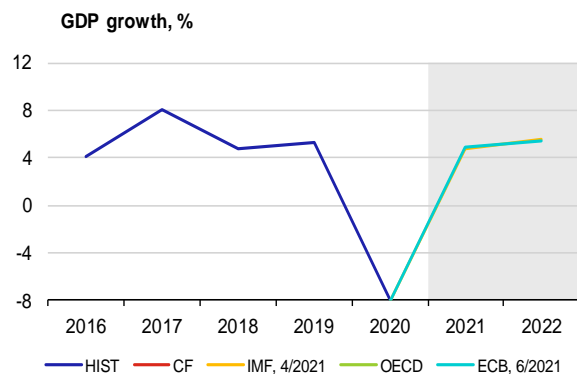


	CF	IMF	OECD	ECB
2021	4.2	3.0	n. a.	3.8
2022	4.4	3.9	n. a.	3.1

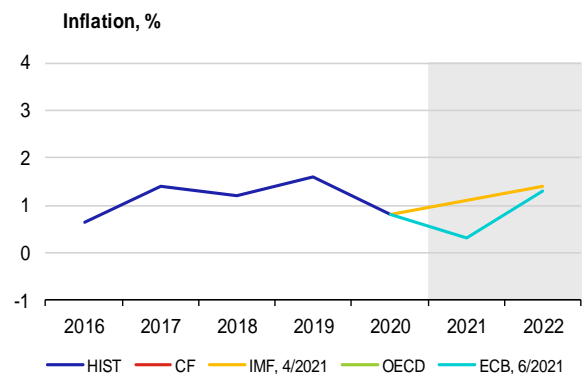


	CF	IMF	OECD	ECB
2021	1.1	0.5	n. a.	1.1
2022	1.1	0.8	n. a.	0.7

Malta



	CF	IMF	OECD	ECB
2021	n. a.	4.7	n. a.	4.9
2022	n. a.	5.6	n. a.	5.4

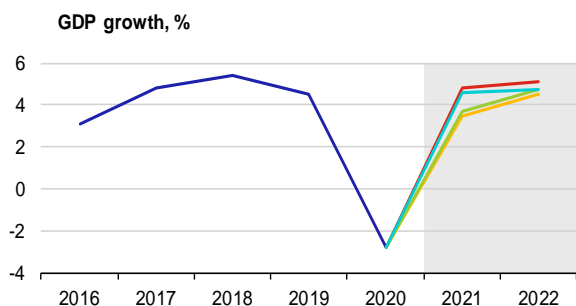


	CF	IMF	OECD	ECB
2021	n. a.	1.1	n. a.	0.3
2022	n. a.	1.4	n. a.	1.3

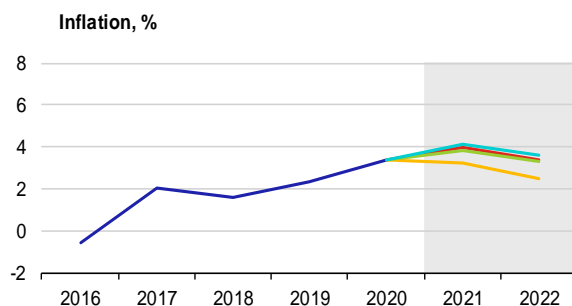
Ddd

A5. GDP growth and inflation in other selected countries

Poland

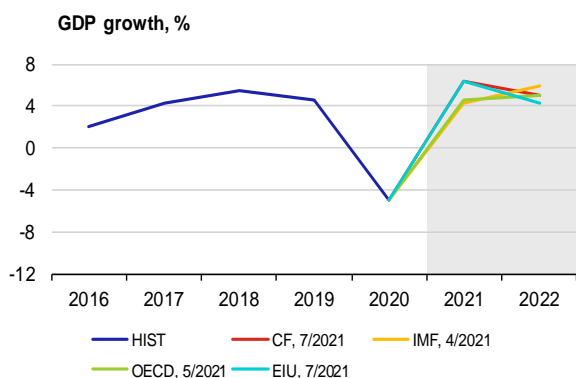


	CF	IMF	OECD	EIU
2021	4.8	3.5	3.7	4.6
2022	5.1	4.5	4.7	4.7

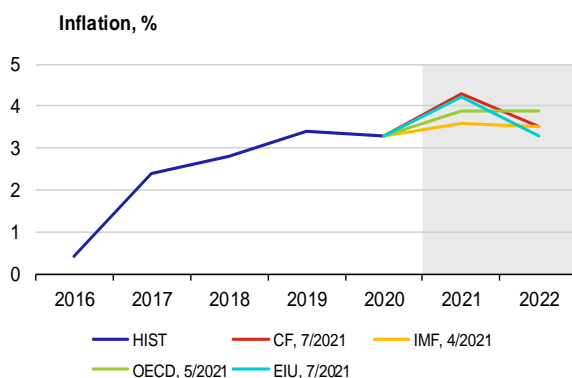


	CF	IMF	OECD	EIU
2021	4.0	3.2	3.8	4.1
2022	3.4	2.5	3.3	3.6

Hungary

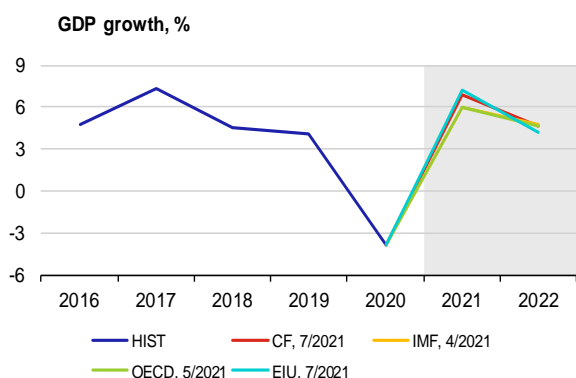


	CF	IMF	OECD	EIU
2021	6.3	4.3	4.6	6.3
2022	5.0	5.9	5.0	4.2

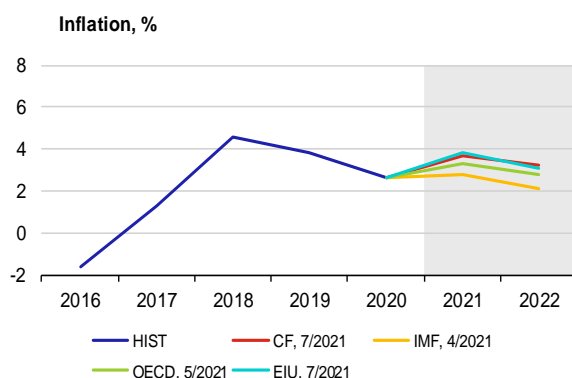


	CF	IMF	OECD	EIU
2021	4.3	3.6	3.9	4.2
2022	3.5	3.5	3.9	3.3

Romania



	CF	IMF	OECD	EIU
2021	6.9	6.0	6.0	7.2
2022	4.6	4.8	4.6	4.2



	CF	IMF	OECD	EIU
2021	3.7	2.8	3.3	3.8
2022	3.2	2.1	2.8	3.1

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		

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