Global Economic Outlook

April 2022

Czech National Bank ——— Global Economic Outlook ——— April 2022

CZECH NATIONAL BANK

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22 April 2022

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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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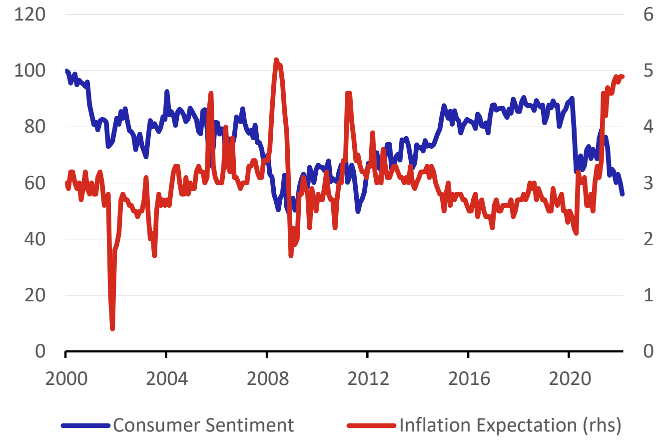
I. Introduction

The war in Europe has been going on for two months now!!! Russia's barbaric attack on Ukraine continues, the number of casualties is rising dramatically, and the tragic story, accompanied by huge material losses, is sadly still a reality. The escalation of the geopolitical situation has been reflected in a marked revision of the global economic growth estimate. In its spring forecast, the IMF lowered its outlook to 3.6% for both this year and the next. The growth prospects of advanced economies are even lower and falling (3.3% this year and 2.4% next year). By contrast, slightly higher and rising growth can be expected in emerging and developing economies (3.8% and 4.4% in 2022 and 2023 respectively). Growth in commodity prices and broadening price pressures due to the war have led to an increase in the inflation forecast to 5.7% in advanced countries and 8.7% in emerging and developing economies in 2022 (and 2.5% and 6.5% respectively next year). Given the record-high inflation levels and still strong upward pressure on consumer and producer prices, an increasingly hawkish tone is being adopted not only by the Fed, but also by the ECB. Voices supporting an early end (probably already in July) to net asset purchases (the APP programme) are being heard ever more often in Frankfurt. The ECB is also dropping its rhetoric that the inflation pressures are temporary and is considering hiking interest rates, which have been unchanged for more than seven years. The signals from Washington are clearer: interest rates will continue to rise noticeably.

US inflation expectations (%, right-hand scale) and consumer sentiment (index: 100 = January 2000)



Source: FRED
Note: University of Michigan survey data.

The chart in the current issue shows the empirical relationship between inflation expectations and consumer sentiment in the USA. Both indicators are under close scrutiny during the current period of high inflation, amid concerns of future stagflation. However, the declining household sentiment may not be a leading indicator of a decrease in consumption and, in turn, a fall in economic activity, but may merely reflect concerns due to the uncertainty regarding higher prices. This interpretation would be more favourable for the global economy going forward, as consumer sentiment is lower than before the crisis in some economies. The uncertainty regarding higher prices increases with increasing geographical proximity to the conflict in Ukraine and with increasing dependence on products and commodity supplies from Ukraine and Russia.

The current issue also contains an analysis: "In the rhythm of the music industry". The article gives an insight into the music industry, which has gradually been affected by new technology and in the last two years also by the coronavirus pandemic, and its development over the last two decades. It also describes the still large and untapped potential this sector has with consumers. We believe the importance of running this article during the present time of war is encapsulated by the words of US singer Joseph Tyler: "Music makes things hurt less". Let's hope so.

Barometr of Global Economic Outlook for selected countries

		EA	DE	US	UK	JP	CN	RU
GDP	**2022**	2.8 ↘	2.2 ↘	3.2 ↘	3.9 →	2.1 ↘	4.9 ↘	-9.9 ↘
(%)	**2023**	2.3 →	2.5 ↘	2.2 ↘	1.4 ↘	1.8 →	5.1 ↘	-0.2 ↘
Inflation								
(%)	**2022**	6.5 ↗	6.3 ↗	7.0 ↗	7.2 ↗	1.6 ↗	2.1 ↘	21.8 ↗
	2023	2.4 ↗	2.7 ↗	3.2 ↗	3.9 ↗	1.0 ↗	2.2 ↘	8.7 ↗
Unemployment								
(%)	**2022**	7.0 ↘	5.0 ↘	3.6 ↘	4.1 ↘	2.7 ↗	3.5 →	7.9 ↗
	2023	6.8 ↘	4.9 →	3.7 ↗	4.1 ↘	2.5 →	3.3 →	7.8 ↗
Exchange rate								
(against USD)	**2022**	1.13 ↘	1.13 ↘		1.33 ↘	118.3 ↗	6.45 ↗	98.8 ↘
	2023	1.16 ↗	1.16 ↗		1.36 ↘	115.7 ↗	6.40 ↗	94.7 ↘

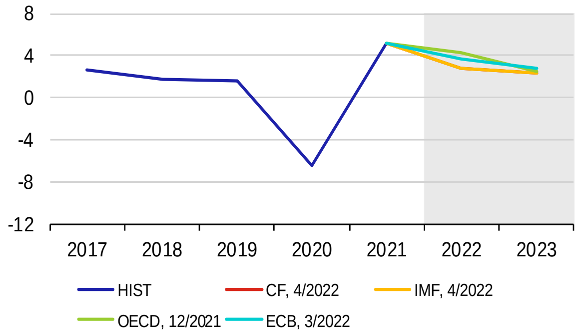
Source: Consensus Forecasts (CF)
Note: The arrows indicate the direction of the revisions compared with the last GEO.

II.1 Euro area

Following a marked quarter-on-quarter slowdown at the end of 2021 due to the coronavirus pandemic, the prospects of a rapid recovery of the euro area economy were thwarted by Russia's invasion of Ukraine. The more infectious Omicron variant of the coronavirus, which spread through Europe in late 2021 and early 2022, fortunately did not lead to a substantial rise in the number of hospitalisations and hence to restrictive government measures as extensive as during previous waves. However, firms were adversely affected in the short run by higher sickness rates and quarantines. Moreover, household sentiment was pushed down by high energy prices. However, the subsequent economic recovery was interrupted in February by Russia's military attack on Ukraine. The sanctions imposed on Russia caused a sharp rise in energy, industrial and food commodity prices. At the same time, the war exacerbated the already considerable shortage of materials and components. The supply chain disruptions, which are currently the most severe ever, will probably drag on until 2023. The sentiment of households and firms reflects the great economic uncertainty. According to a European Commission survey, production expectations in the business sector have worsened. This has been accompanied by expected further growth in selling prices owing to rising costs. Growth in living costs picked up in March as inflation jumped sharply, driven mainly by energy prices. In addition, higher food price inflation and core inflation is pushing headline inflation up, mainly as a result of supply chain disruptions and the pass-through of high energy prices to other price categories.

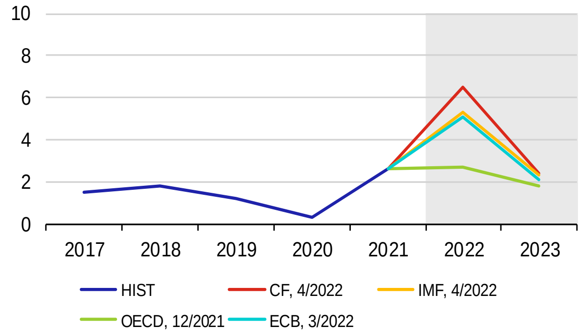
The war in Ukraine has slashed economic growth expectations for this year and fostered a sizeable upward revision of inflation. The CF analysts' current growth outlook for 2022 fell by 1.1 pp in February, while their inflation outlook rose by 2.6 pp. Inflation will peak in the middle of this year and then decline gradually. Next year, it should average 2.4%. The ECB's monetary policy is heading towards an end to asset purchases and an expected interest rate hike at the end of this year..

GDP growth, %



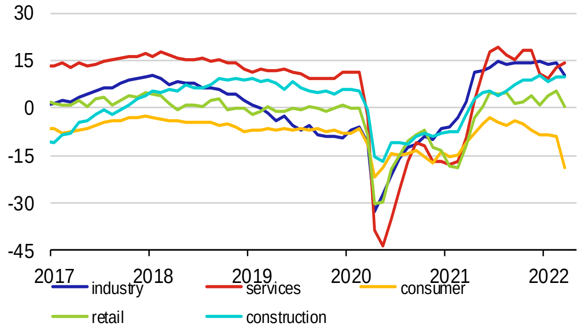
	CF	IMF	OECD	ECB
2022	2.8	2.8	4.3	3.7
2023	2.3	2.3	2.5	2.8

Inflation, %



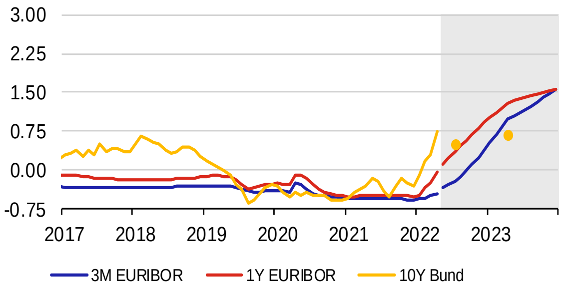
	CF	IMF	OECD	ECB
2022	6.5	5.3	2.7	5.1
2023	2.4	2.3	1.8	2.1

ESI leading indicators



	industry	services	consum.	retail	constr.
1/22	13.9	9.1	-8.5	3.7	8.1
2/22	14.1	12.9	-8.8	5.5	9.9
3/22	10.4	14.4	-18.7	0.2	9.8

Interest Rates, %



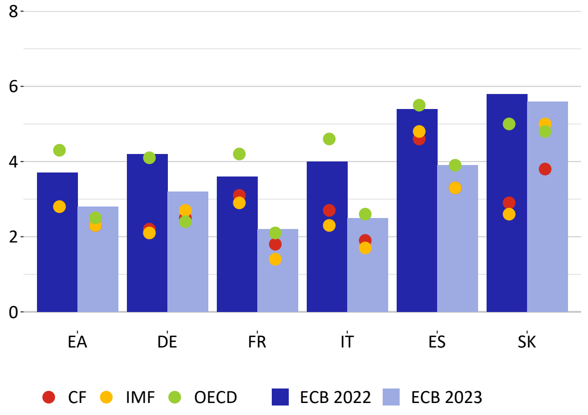
	3/22	4/22	7/22	4/23
3M EURIBOR	-0.50	-0.45	-0.21	0.97
1Y EURIBOR	-0.24	-0.04	0.35	1.28
10Y Bund	0.29	0.74	0.50	0.70

II.2 Germany

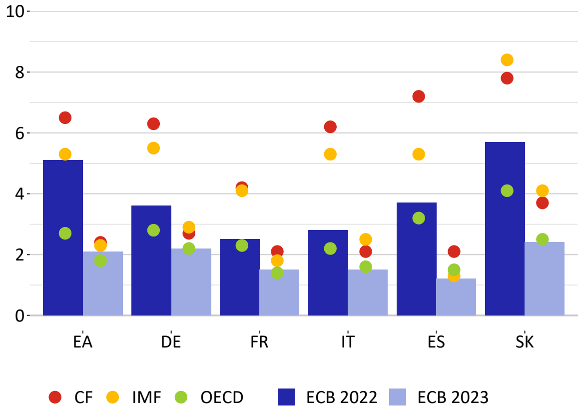
The German economy declined quarter on quarter at the close of last year, due to global supply chain disruptions and targeted anti-pandemic shutdowns in the services sector. In year-on-year terms, GDP growth slowed to 1.8% in 2021 Q4, a marked slowdown compared with other large euro area countries. This was due to the industrial nature of the German economy in an environment of peaking problems with material and component supplies. In addition, restrictive anti-epidemic measures at the close of the year pushed down household consumption. According to the March leading indicators in manufacturing, export demand will be hit by the war in Ukraine, so the prospects of an increase in economic output in the current quarter are not very high. This is despite the fact that in February industrial production still maintained roughly the same monthly growth rate as in the previous month. Inflation pressures strengthened significantly in March, owing to high energy prices. Consumer prices rose by 7.6% year on year, the highest figure since the 1970s. Inflation will probably remain above 5% until the end of this year. Annual producer price inflation also accelerated in March to a significant 30.7%, with growth in prices in the electricity and natural gas supply industry reaching 91.5%. Germany is one of the countries highly dependent on natural gas imports from Russia. The government reacted to the rise in living costs caused by the high energy prices by adopting a household assistance package.

The CF analysts have lowered their outlook for German economic growth and revised expected inflation upwards. GDP growth will thus reach 2.2% this year and accelerate slightly next year, while average inflation will be 6.3% this year and slow markedly in 2023. The expected Bund yield has been revised up compared with the previous month.

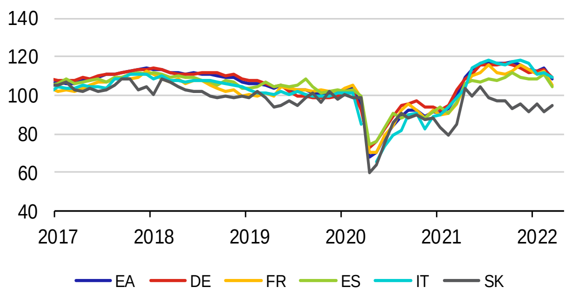
GDP growth in selected euro area countries in 2022 and 2023, %



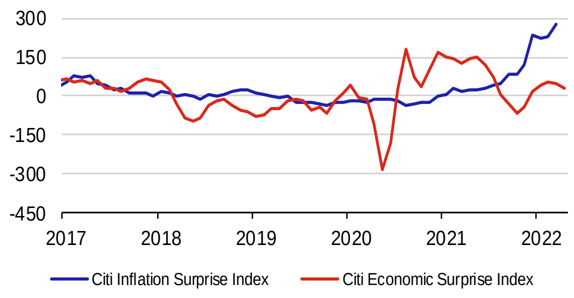
Inflation in selected euro area countries in 2022 and 2023, %



ESI leading indicators



Economic and inflation surprises in the euro area, %



	EA	DE	FR	ES	IT	SK
1/22	112.7	112.3	110.9	108.9	110.6	95.4
2/22	113.9	113.5	112.8	111.3	111.6	91.5
3/22	108.5	109.2	105.7	104.8	109.0	94.6

Inflation expectations based on 5year inflation swap and SPF

	5y5y	SPF
2/22	1.79	1.97
3/22	2.17	1.97
4/22	2.34	2.05

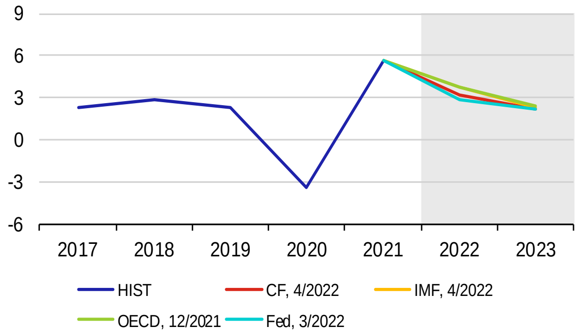
II.3 United States

The outlooks for US economic growth have been lowered for both this year and the next. The new CF outlook expects GDP to grow by 3.2% in 2022 and 2.2% in 2023. The IMF presented slightly higher growth prospects for the US economy in its spring report. By comparison with the autumn outlook, it lowered its GDP growth prediction to 3.7% this year and 2.3% in 2023. The growth prospects were reduced mainly because of persisting problems in supply chains and high prices of commodities and energy.

The US economy is facing a very tight labour market. Non-farm payrolls rose by 431,000 in March. However, revisions of the January and February data indicated an additional 95,000 new jobs. The participation rate is rising constantly (although has still to reach the pre-pandemic level) and the unemployment rate fell further to 3.6%. At 5.6%, wage growth was slightly higher than expected. Difficulties in hiring new employees are generating pressure for further wage growth, as is the falling real wage due to inflation.

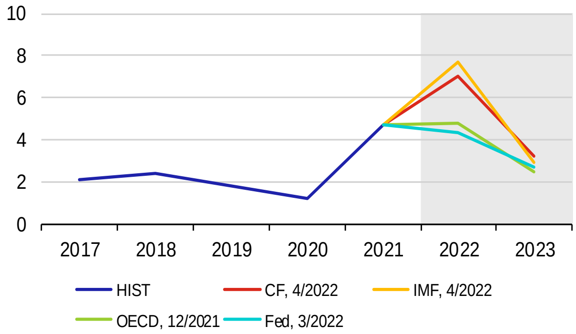
US consumer price inflation is not easing and consumers are shifting their demand from goods to services. Inflation stood at 8.5% year on year in March, due mainly to growth in prices of energy (32%), food (8.8%) and services (4.7%). The high inflation is providing an incentive for consumers to shift their demand from goods (especially durable ones) to services, primarily recreation and travel, where anti-pandemic measures are being lifted. Industrial producer prices, especially of finished products, continued to rise (by 11.2% and 15.2% respectively) on account of growth in energy prices and persisting supply chain disruptions. The CF outlook for consumer price inflation was increased to 7.0% this year and 3.2% next year. The new IMF outlook estimates CPI growth at 7.7% this year and 2.9% next year.

GDP growth, %



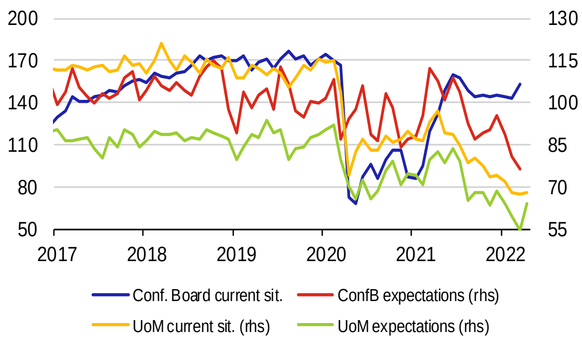
	CF	IMF	OECD	Fed
2022	3.2	3.7	3.7	2.8
2023	2.2	2.3	2.4	2.2

Inflation, %



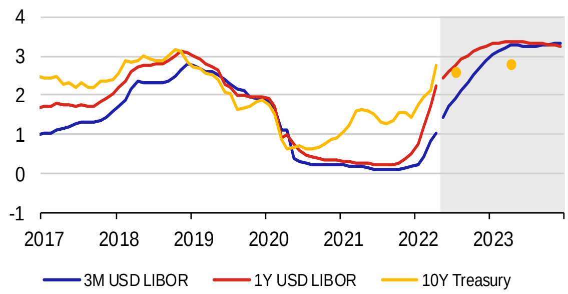
	CF	IMF	OECD	Fed
2022	7.0	7.7	4.8	4.3
2023	3.2	2.9	2.5	2.7

Leading indicators



	ConfB curr.	ConfB exp.	UoM curr.	UoM exp.
2/22	143.0	80.8	68.2	59.4
3/22	153.0	76.6	67.2	54.3
4/22			68.1	64.1

Interest Rates, %

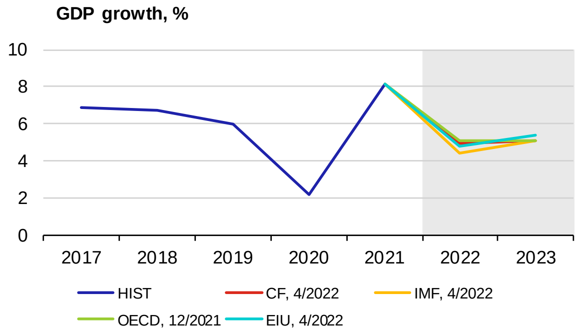


	3/22	4/22	7/22	4/23
USD LIBOR 3M	0.84	1.03	1.91	3.29
USD LIBOR 1R	1.73	1.73	2.77	3.38
Treasury 10R	2.13	2.76	2.60	2.80

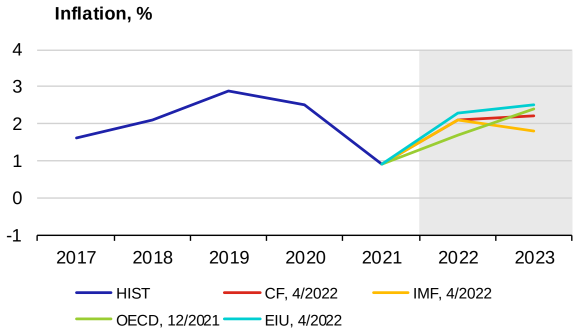
II.4 China

The Chinese economy exceeded expectations by growing by 4.8% year on year in 2022 Q1. The growth was driven mainly by consumption, which contributed 3.3 pp. Consumption growth accelerated compared with the previous two quarters, as did investment, which contributed 1.3 pp to the growth in economic activity. The contribution of net exports to growth was just 0.2 pp. The higher consumption mainly reflected positive developments in only January and February, a period also affected by the hosting of the Winter Olympics in Beijing. Retail sales rose by 6.7% year on year in the first two months of the year but saw a marked fall of 3.5% in March, the lowest outcome since April 2020. Consumer activity was adversely affected by the re-introduction of strict quarantine measures in reaction to the rapid spread of the coronavirus. The Chinese government thus confirmed its commitment to the policy of zero Covid-19 tolerance, with lockdowns being imposed even in the country's largest cities, such as the financial centre of Shanghai and the major industrial city of Shenzhen. In addition to the continuing anti-epidemic measures, the large private debt accumulated during the pandemic, especially by firms and low-income households, poses a risk of slower growth in economic activity. Continuing growth in the unemployment rate in the largest Chinese cities, which reached 6% in March, is also worrying. Growth concerns are also visible in the Chinese government, which set its economic growth target for this year at 5.5%, the lowest level in three decades. The Chinese central bank cut the reserve requirement for banks by 25 bp in April in order to inject liquidity into the financial system. The CF analysts expect the Chinese economy to grow by around 5% year on year in both 2022 and 2023.

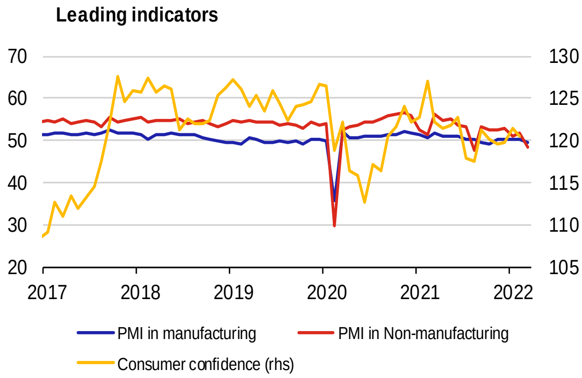
Consumer price inflation rose to 1.5% year on year in March. This primarily reflected higher prices of food and energy despite weaker domestic demand. According to the April CF outlook, inflation will be just above 2% over the next two years. Producer prices, which rose by 8.3% year on year in March, are also elevated, owing mainly to higher commodity prices.



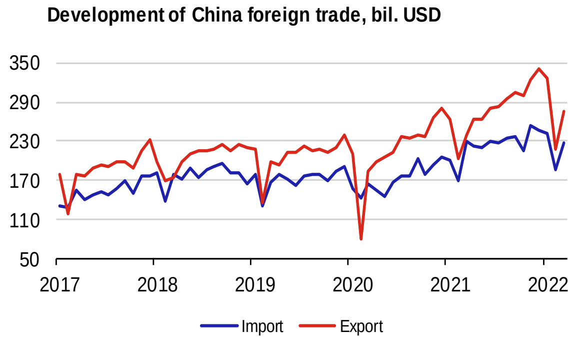
	CF	IMF	OECD	OE
2022	4.9	4.4	5.1	4.8
2023	5.1	5.1	5.1	5.4



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



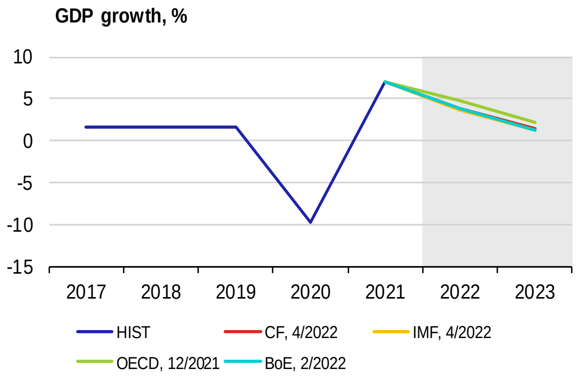
	PMI manuf.	-manufacturing	Cons. conf (rhs)
1/22	50.1	51.1	121.5
2/22	50.2	51.6	120.5
3/22	49.5	48.4	

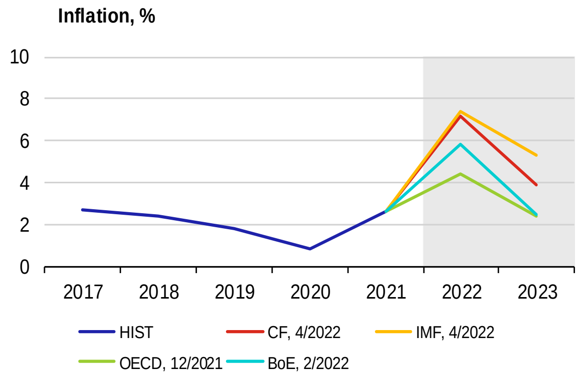


Source: Bloomberg

II.5 United Kingdom

UK Chancellor Rishi Sunak announced support for UK households affected by the cost of living crisis. Specifically, tax on fuels was lowered with immediate effect and a cut in the base income tax rate was announced for 2024. BoE Governor Andrew Bailey warned of a historic shock to Britons' incomes, caused primarily by growth in prices of energy and fuels. This will affect economic growth and consumer demand and is a key factor of the rising inflation, which reached a 30-year high of 7.0% in March. The UK economy is also facing a record number of infections, which is causing growth in employee absences in many sectors, increasing the risk of a sharper slowdown in activity. The CF and IMF predict lower GDP growth for next year, approximately above 1%. The composite PMI increased slightly to 60.9 in March, reaching a nine-month high. This mainly reflected rapid expansion in the services sector compared to manufacturing sector, where activity rose the slowest since October 2021 due to shortages of supplies and uncertainty among customers.



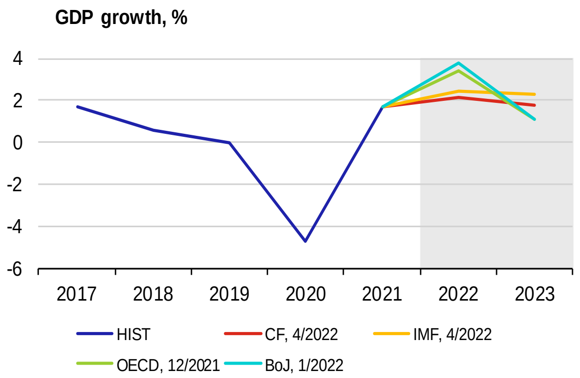


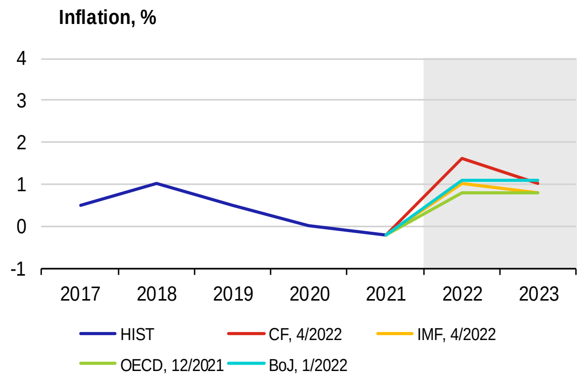
	CF	IMF	OECD	BoE
2022	3.9	3.7	4.7	3.8
2023	1.4	1.2	2.1	1.3

	CF	IMF	OECD	BoE
2022	7.2	7.4	4.4	5.8
2023	3.9	5.3	2.4	2.5

II.6 Japan

Widening interest rate differentials weakened the yen to its lowest level in 20 years. The fall of more than 11% against the dollar puts the yen, by a large margin, at the head of the worst-performing currencies since the start of the year. This is due mainly to the BoJ's policy of keeping even long-term rates close to zero while bond yields rise apace in other advanced economies. The weaker currency is amplifying the growth in prices of imported food and energy commodities, which had already risen on world markets in connection with the war in Ukraine. In March, consumer inflation climbed to its highest level since October 2018. However, at 1.2%, it remains much lower than in Europe or the USA. The Tankan business sentiment survey deteriorated in 2022 Q1 for the first time since the outbreak of the pandemic. Consumer sentiment has also been falling since the start of the year, with only the March PMI suggesting a continued economic recovery.



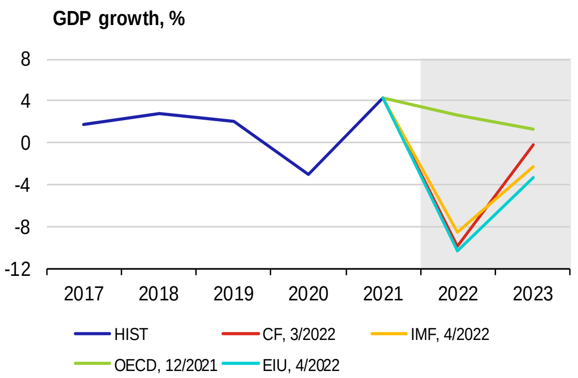


	CF	IMF	OECD	BoJ
2022	2.1	2.4	3.4	3.8
2023	1.8	2.3	1.1	1.1

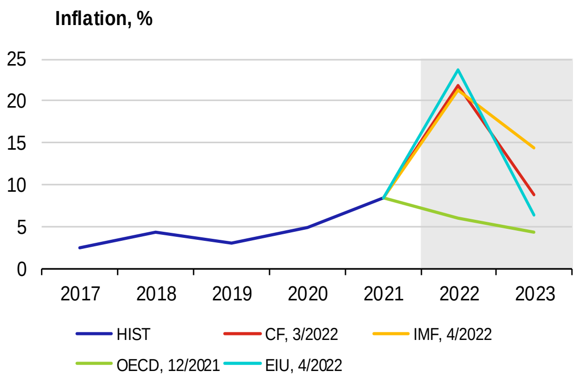
	CF	IMF	OECD	BoJ
2022	1.6	1.0	0.8	1.1
2023	1.0	0.8	0.8	1.1

II.7 Russia

Consumer demand and economic activity have been declining in Russia due to sanctions. According to an RCB survey, 35% of industrial firms are having difficulties finding alternative suppliers. 41–43% of respondents in the mining, pharmaceutical and engineering industries are facing difficulties. About one-third of industrial firms either do not depend on imports or are having no import problems. Russia's ability to fulfil its debt obligations remains in the spotlight. On 4 April, it made a payment of USD 649.2 billion in roubles. Although Russia has a 30-day grace period, S&P soon after cut the rating to "selective default" and then withdrew its rating after the EU banned the provision of credit ratings to entities in Russia. Inflation rose to 16.7% in March. The central bank eased monetary policy slightly by cutting the rate by 3 pp to 17% and relaxed the foreign exchange restrictions. The ruble has been fluctuating around its pre-war level of RUB 80/USD in April.



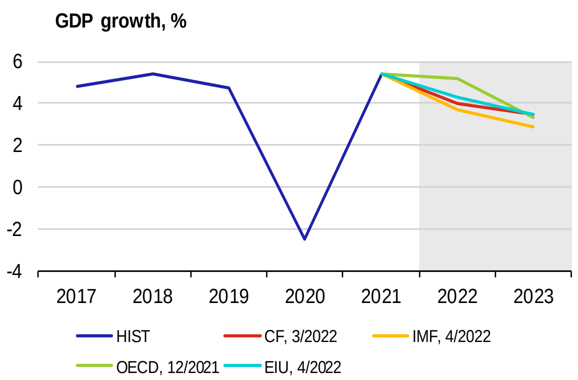
	CF	IMF	OECD	OE
2022	-9.9	-8.5	2.7	-10.3
2023	-0.2	-2.3	1.3	-3.4



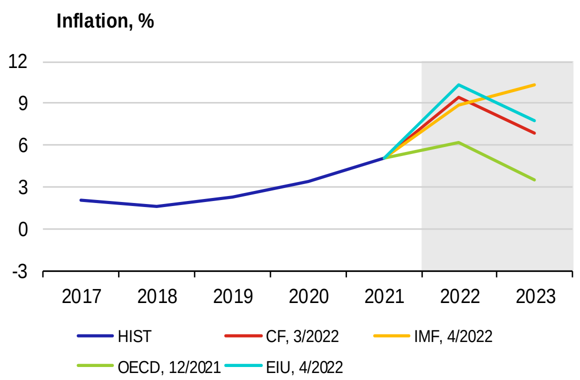
	CF	IMF	OECD	OE
2022	21.8	21.3	5.9	23.7
2023	8.7	14.3	4.4	6.4

II.8 Poland

Consumer confidence in the Polish economy has fallen to a historical low due to the war in Ukraine, exceeding the scepticism triggered by the onset of the pandemic in March 2020. Although the business confidence survey in the Polish economy is also strongly pessimistic, the Monetary Policy Council of the Polish central bank decided to increase interest rates from 3.5% to a record-high 4.5% at its meeting on 6 April. Annual consumer price inflation accelerated significantly in March (from 8.6% in February to 11%) on the back of rising energy prices and the war in Ukraine. The persistence of inflation pressures is also evident in nominal wage growth in the business sector, where wages continue to rise. Year-on-year growth in industrial production slowed slightly from 17.6% in February to 17.3% in March, but exceeded market expectations (11.8%). The slowdown is due mainly to a deceleration in manufacturing. Other industries conversely picked up slightly.



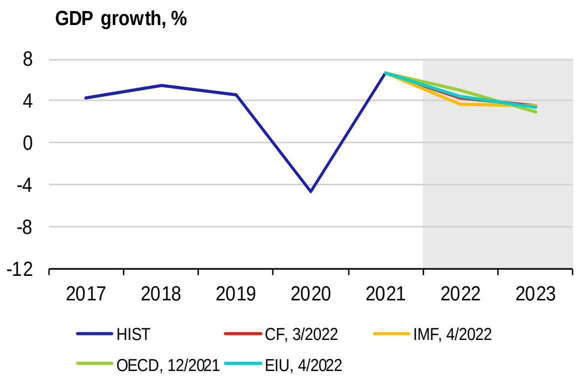
	CF	IMF	OECD	OE
2022	4.0	3.7	5.2	4.3
2023	3.5	2.9	3.3	3.5



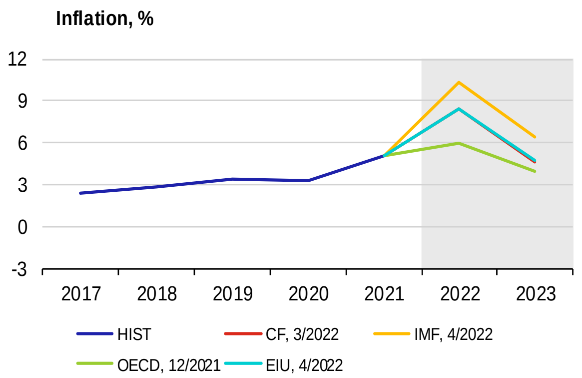
	CF	IMF	OECD	OE
2022	9.4	8.9	6.2	10.3
2023	6.8	10.3	3.5	7.8

II.9 Hungary

Following a sell-off of the forint due to the war in Ukraine, the Magyar Nemzeti Bank (MNB) is trying to contain the strong inflation pressures and support the weakening currency. At its meeting on 22 March, the MNB's Monetary Council therefore decided to increase the key interest rate for the tenth time in a row, this time by a record 1 pp from 3.4% to 4.4%. This was the largest increase since May 2013. The market had been expecting an increase of just 0.75 pp. Annual consumer price inflation went up from 8.3% in February to 8.5% in March, while core inflation surged to 9.1%, exceeding market expectations and reaching a 21-year high. Households' spending appetite was also visible in retail sales, which recorded a sharp year-on-year increase of 9.8% in February (as against 4.2% in January). By contrast, according to GKI Economic Research, business confidence in the Hungarian economy fell again from 5.3 in February to 2.4 in March. Industrial production also slowed year on year from 8.9% in January to 4.5% in February, across virtually all industries.



	CF	IMF	OECD	OE
2022	4.3	3.7	5.0	4.4
2023	3.6	3.6	3.0	3.4



	CF	IMF	OECD	OE
2022	8.4	10.3	6.0	8.4
2023	4.6	6.4	4.0	4.7

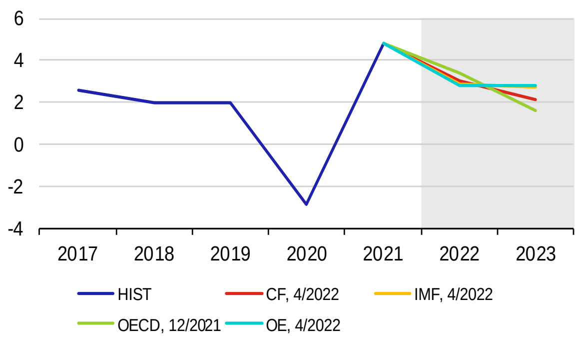
II.10 Countries in the spotlight – Sweden

Like other governments in Europe, the Swedish government had lifted most of its anti-epidemic measures by the start of this year due to high vaccination coverage. Since the start of pandemic, the country has been known for its minimal measures, and so life in Sweden has been affected relatively little by the pandemic, including in terms of the national economy. The Swedish economy did not perform badly in 2020 either, contracting by just 2.8%. It grew by 4.8% in full-year terms in 2021, and growth of around 3% is expected this year. The business confidence index is likewise positive. On the other hand, consumer confidence has been on a downward tendency since August 2021.

Consumer price inflation has long been around 2%. The year 2020 was the exception, seeing inflation of 0.5%. Inflation was back at the target in 2021 (2.2%). Inflation expectations can thus be assessed as well anchored. However, growth in costs has also been observed in the Swedish economy due to the impacts of the receding pandemic and the war in Ukraine, although the contribution of these factors is not very significant given the structure of the economy. At the start of this year, inflation of around 2.0% was still expected for this and following years. However, annual consumer price inflation picked up in January and February, reaching around 4% (3.7% in January and 4.3% in February), and accelerated even further to 6% in March. It thus seems that the inflation target will not be achieved in Sweden, either. Prices of housing, energy, food and transport, strongly affected by rising fuel prices, have been exerting the main upward pressure on inflation.

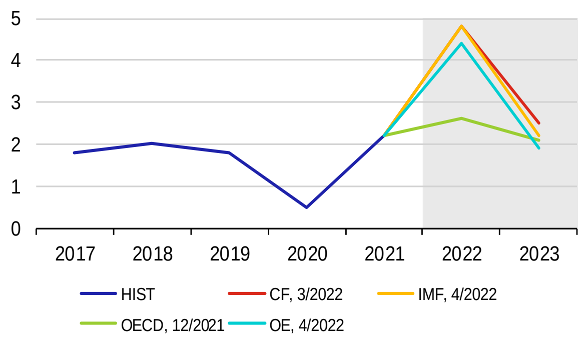
The Riksbank's monetary policy consists in maintaining price stability and can be assessed as highly successful overall. To keep inflation close to the target, the Riksbank introduced negative interest rates in 2015. The rates returned to zero only at the start of 2020. It has maintained this stance since then and is likely to do so for quite some time. The policy is keeping mortgage rates and government bond yields at record lows and is contributing significantly to high growth in house prices. They have been rising steadily for several years now and are currently at record levels.

GDP growth, %



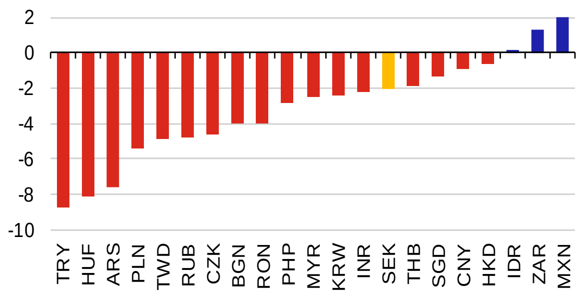
	CF	IMF	OECD	OE
2022	3.0	2.9	3.4	2.8
2023	2.1	2.7	1.6	2.8

Inflation, %



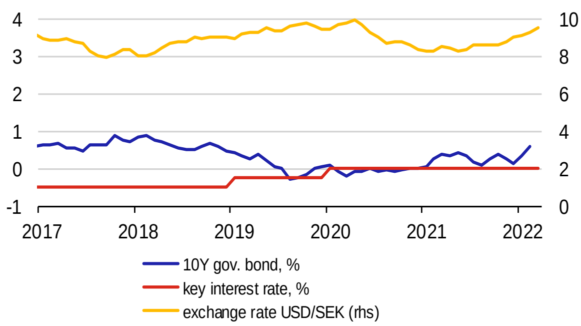
	CF	IMF	OECD	OE
2022	4.8	4.8	2.6	4.4
2023	2.5	2.2	2.1	1.9

Currency performance vis-à-vis USD



% change over 2022-02-01 to 2022-04-20 period

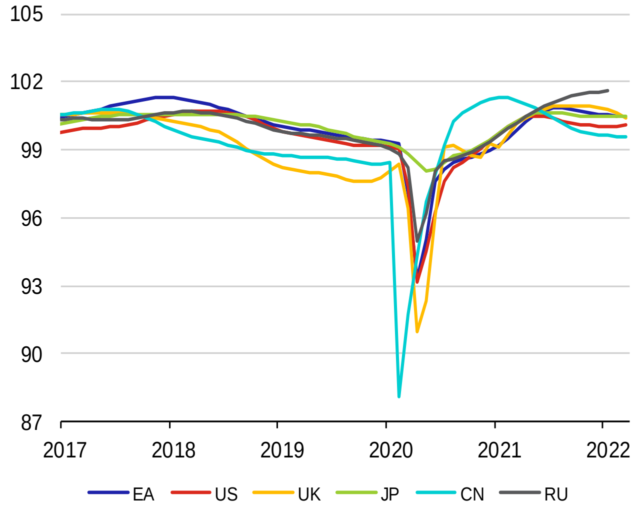
Selected indicators



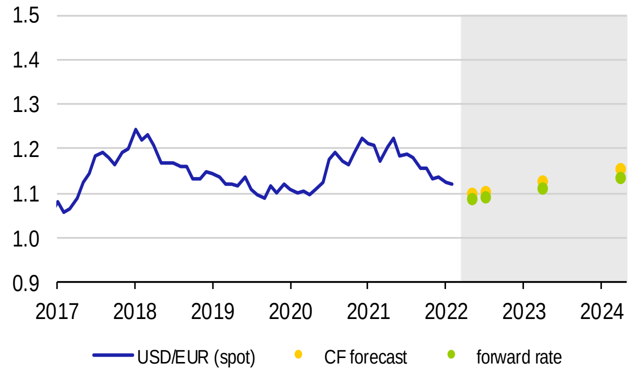
	10Y gov. bond, %	interest rate, %	USD/SEK
12/2021	0,14	0,00	9,09
1/2022	0,36	0,00	9,14
2/2022	0,61	0,00	9,29

III. Leading indicators and outlook of exchange rates

OECD Composite Leading Indicator

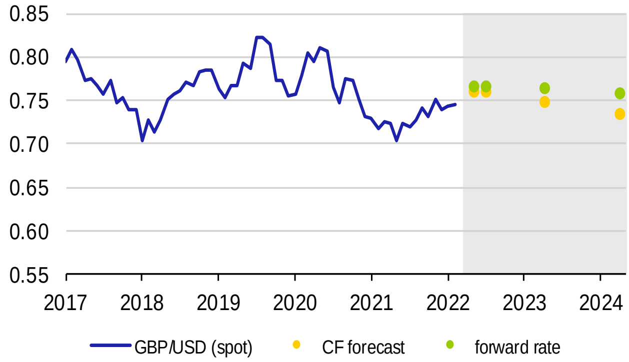


The US dollar (USD/EUR)



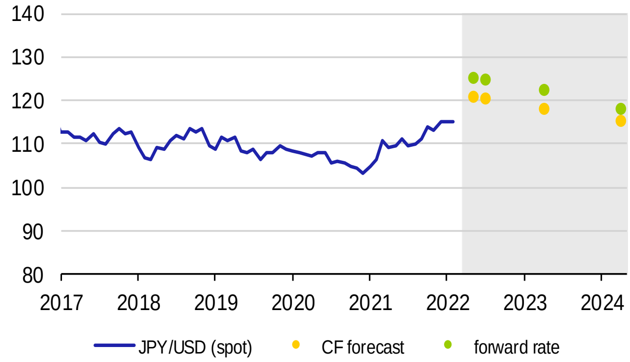
	11/4/22	5/22	7/22	4/23	4/24
spot rate	1.090				
CF forecast		1.100	1.104	1.128	1.158
forward rate		1.089	1.093	1.114	1.138

The British pound (GBP/USD)



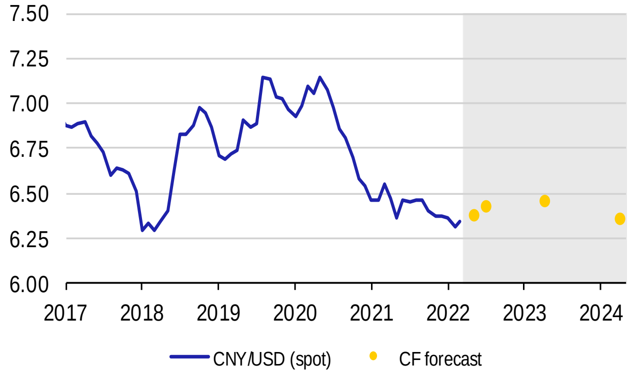
	11/4/22	5/22	7/22	4/23	4/24
spot rate	0.767				
CF forecast		0.761	0.760	0.750	0.736
forward rate		0.768	0.767	0.764	0.759

The Japanese yen (JPY/USD)



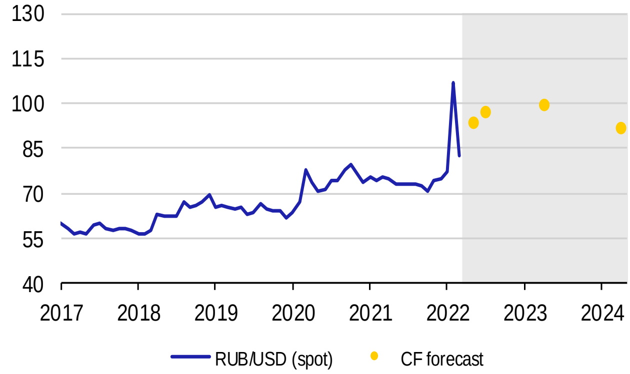
	11/4/22	5/22	7/22	4/23	4/24
spot rate	125.5				
CF forecast		121.0	120.6	118.3	115.7
forward rate		125.3	125.0	122.4	118.1

The Chinese renminbi (CNY/USD)



	11/4/22	5/22	7/22	4/23	4/24
spot rate	6.370				
CF forecast		6.384	6.431	6.463	6.361

The Russian rouble (RUB/USD)



	11/4/22	5/22	7/22	4/23	4/24
spot rate	81.88				
CF forecast		93.84	97.69	99.71	92.15

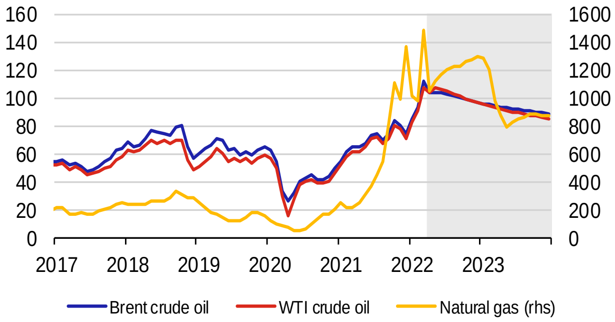
Note: Exchange rates as of last day of month. Forward rate does not represent outlook; it is based on covered interest parity, i.e. currency of country with higher interest rate is depreciating. Forward rate represents current (as of cut-off date) possibility of hedging future exchange rate.

IV.1 Oil

The Brent oil price surged again in the second half of March and then fell gradually to USD 100/bbl within two weeks, but a further sharp increase of around 10% followed in mid-April. The surge in oil prices in the second half of March was caused by concerns of production and export disruptions in Russia due to Western countries' sanctions, attacks on oil infrastructure in Saudi Arabia, damage to the pipeline from Kazakhstan to the Black Sea coast and a further delay in the agreement between the Western powers and Iran regarding its nuclear programme. There followed a relative calming on the oil market and prices started to decrease. The disruptions to supplies from Russia were not large, as China and India upped their purchases of Russian oil, which was sold at a large discount to Brent. The market tensions were also eased by the EIA, which, in cooperation with the USA, released an additional large amount of oil from the strategic reserve. However, the oil price surged again in mid-April after anti-epidemic measures were partially eased in Shanghai and peace talks between Russia and Ukraine hit a brick wall. Concerns of an insufficient supply of oil increased after the IEA reported that OPEC+ had increased production just by a tenth of the planned amount in March, while the demand outlook improved due to the Chinese central bank's monetary stimulation plans. Oil prices were also driven up by the news that the EU was planning a gradual ban on imports of Russian oil. By contrast, hawkish comments by the Fed and a lowering of the global economic growth outlook by the IMF pushed against a further rise in oil prices.

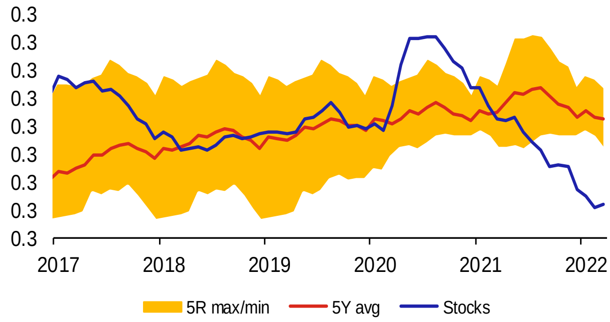
The mid-April market curve is signalling a gradual fall in the Brent price to USD 98/bbl at the close of 2022 and USD 89/bbl at the end of 2023. The EIA forecast is similar, at USD 100/bbl and USD 87/bbl. With a price of USD 91.4/bbl, the April CF is about USD 3 below the market curve. However, there is great uncertainty as to how the current and possible future sanctions and the behaviour of the corporate sector will limit the production and sale of Russian oil on global markets. The reaction of other oil producers and the demand side to the worse economic outlook is also unclear.

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

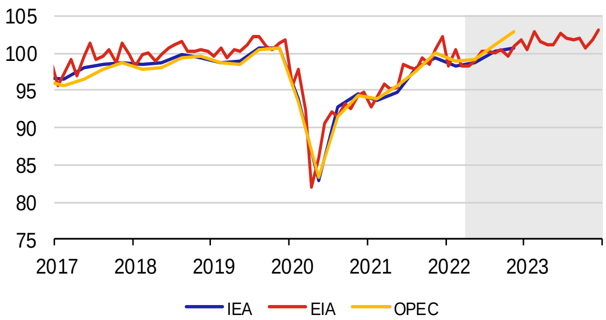


	Brent	WTI	Natural gas
2022	100.43	100.56	1193.87
2023	92.54	90.34	936.85

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

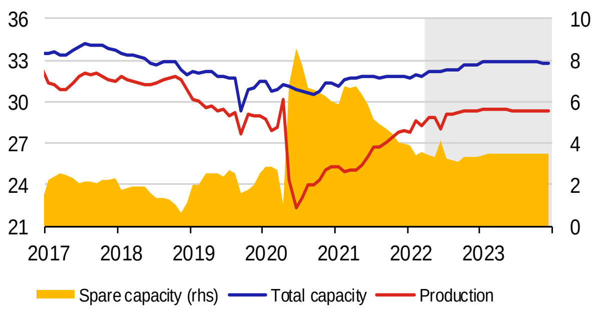


Global consumption of oil and oil products (mil. barrel / day)



	IEA	EIA	OPEC
2022	99.45	99.80	100.49
2023		101.74	

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



	Production	Total capacity	Spare capacity
2022	28.80	32.25	3.44
2023	29.37	32.86	3.49

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.

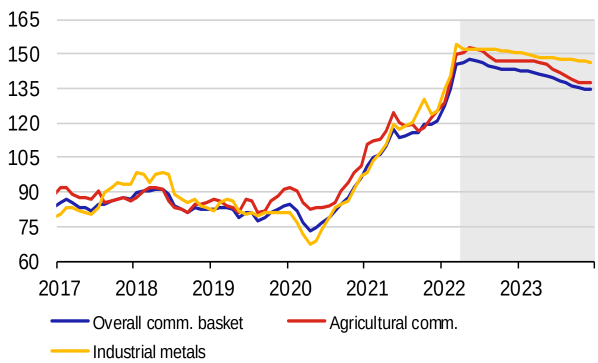
IV.2 Other commodities

The price of natural gas in Europe responded most dramatically to the Russian invasion of Ukraine. It rose by more than 150% in just a few days, even though supplies from Russia were not disrupted significantly, demand was weaker due to mild weather and record amounts of LNG were directed to Europe. The market situation calmed in early March. The gas price reversed most of its previous growth and kept falling, albeit much more slowly. According to market contracts, however, a larger decline can´t be expected until the start of 2023, and return to the usual levels of the last ten years is not probable over the next five years. The price of coal, which had already been at historical highs in February, surged by 125% in response to the Russian invasion, as Russia is the third-largest global producer of thermal coal. The price started to fall in the first half of March after China began to up coal production. However, this process was interrupted by lockdowns of large areas in China, and in mid-April the price of coal was more than double that observed at the start of the year.

The non-energy commodity price sub-indices continued their growth in March, both rising to new all-time highs, but outlooks expect them to fall gradually. As for food commodities, the price of wheat increased the most in response to the Russian invasion, rising by more than 60% in just a few days, as Russia and Ukraine account for almost 30% of global wheat exports. Despite correcting later, its price has been around 50% above the early 2022 level since mid-March. Corn, rice and sugar prices also responded to the Russian invasion by rising, and this growth continued into early April.

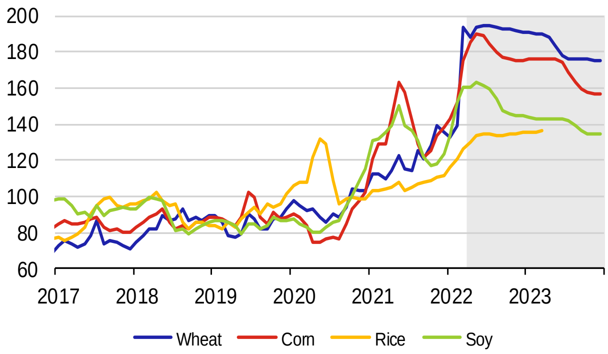
Prices of most industrial metals and iron ore had already been rising sharply before the crisis in Ukraine on the back of high energy prices and a drop in stocks at the LME. They mostly responded to the invasion with only a temporary increase. Only the price of nickel surged and stayed high until mid-March, as Russia accounts for around 13% of global nickel production.

Non-energy commodities price indicies



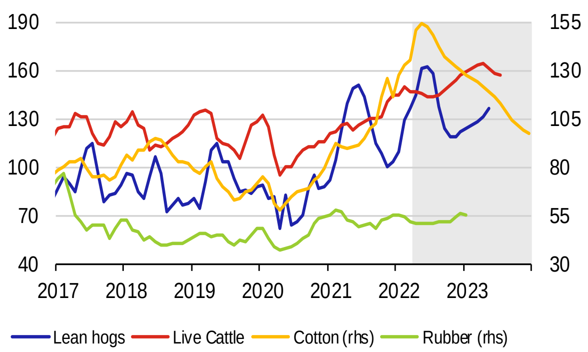
	Overall	Agricultural	Industrial
2022	142.8	146.7	149.6
2023	138.8	142.5	148.2

Food commodities



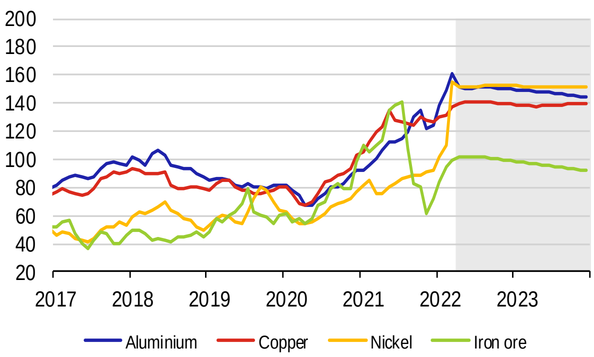
	Wheat	Corn	Rice	Soy
2022	183.1	175.2	130.8	152.2
2023	181.1	168.0	135.9	140.0

Meat, non-food agricultural commodities



	Lean hogs	Live Cattle	Cotton	Rubber
2022	135.1	147.9	139.6	52.4
2023	128.9	160.6	113.2	55.5

Basic metals and iron ore



	Aluminium	Copper	Nickel	Iron ore
2022	150.4	138.3	144.6	98.7
2023	147.1	138.7	151.7	94.9

Source: Bloomberg, CNB calculations.
Note: Structure of non-energy commodity price indices corresponds to composition of The Economist commodity indices. Prices of individual commodities are expressed as indices 2010 = 100.

In the rhythm of the music industry[1]

The music industry has undergone radical changes over the last two decades, due mainly to the technological advances which have put pressure on innovation and flexibility in all industry sectors, with a gradual shift from the physical to the digital format. The music industry is highly interconnected at the global level and contributes significantly to the economy. This is driven mainly by the rise in the popularity of streaming and in streaming revenue (especially from paid subscriptions), as well as revenue from live music. Although the music industry has experienced a long-term decline and its outlook has not been very optimistic, it has grown significantly over the last few years. The industry was particularly hard hit by the coronavirus pandemic, due mainly to the loss of live music revenue. That said, the pandemic has also accelerated some trends and structural changes. Forecasts point to a recovery in growth and great potential for the industry in the future. This is due, among other things, to collaboration with the gaming industry, and the development of live-streamed virtual concerts. However, the music industry may be becoming dependent on streaming as an overly dominant source of revenue.

Introduction

The music industry is one of the most dynamic business areas affecting individuals, communities and the global economy. It can be defined as a network of very closely interconnected industry sectors, which operate on the basis of countless licensing agreements. The recording industry sector, the music publishing industry sector and the live music industry sector are key players in the industry as a whole. This network thus includes the production, distribution, dissemination and consumption of music in its various forms, as well as the promotion of music performances (Tschmuck, 2017). Music publishers, producers and promoters are integral to the industry, as of course are the musicians themselves, be it as authors, composers of music or performers.

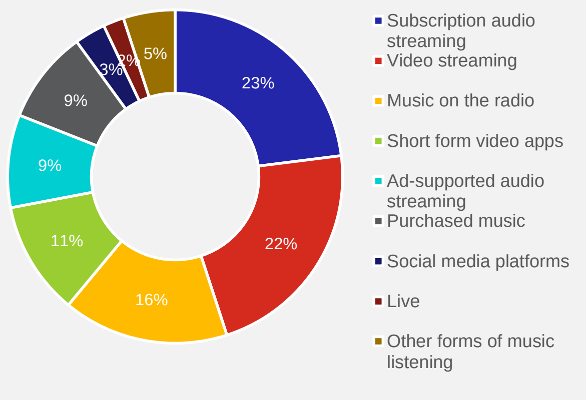
Owing mainly to dynamic changes in technology, the industry has to constantly transform and adapt to ensure a sufficient flow of revenue and generate profit. Transformations are taking place at all levels of the industry, and the revenue structure is thus changing. The past two decades has seen a radical change in behaviour, not only on the part of the musicians, but also of the listeners on whom the industry depends. This can be attributed to various incentives, factors and other market forces at play within the music industry. In addition, the industry continues to benefit from the robust foundations laid in recent years in the form of major investment in music, most notably in digital services. Revenue from this sector in particular has fostered growth in the music industry as a whole.

Importance of the music industry

Music, as economic property protected by copyright, is traded on many markets and listening to music is on the rise worldwide. Music is an integral part of society all over the world and has always played an inspiring role. In the largest global consumer survey on music (Engaging with Music 2021), conducted in October 2021, the International Federation of the Phonographic Industry (IFPI) found that time spent listening to music had risen on average from 18 hours per week in 2019 to 18.4 hours in 2021 (the survey was not conducted in 2020 due to pandemic challenges). The largest increase was recorded in subscription audio streaming, dominating with a share of 23% (see Chart 1). This is because users appreciate having easy access to music and the autonomy to choose to listen to the artists and music they love. In general, the study explored the ways in which consumers listen, discover and engage with music. The research showed that people were not only listening to more music, but were also seizing opportunities to engage in new dynamic musical experiences. Thanks to innovation, music can be consumed in multiple ways and the competitive music landscape is growing. It also turns out that music contributes positively to the emotional wellbeing of individuals. This was confirmed in particular during the coronavirus pandemic.

Chart 1 – Weekly music engagement

(in % for 2021)



Source: IFPI

The increasingly innovative and exciting opportunities for music consumers to engage with music are expanding the ways in which music is shared, as well as the revenue generated from music. In an environment in which licenses are granted freely to use music in the industry, innovative forms are thus emerging such as the live streaming of virtual

[1] Written by Michaela Ryšavá, CNB analyst and PhD student at the Department of Economics, the Faculty of Economics of the University of Economics in Prague. The views expressed in this article are those of the author and do not necessarily reflect the official position of the Czech National Bank.

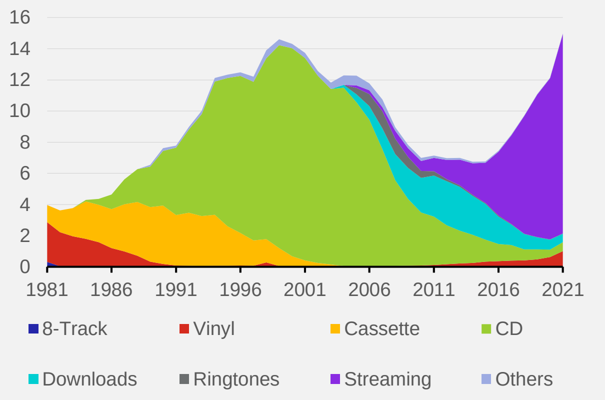
concerts, as well as short-form videos and game experiences, the rapid emergence of which was pointed out in the aforementioned IFPI study. The study also states that one in three people admit to using unlicensed or illegal ways of listening to music which, to an extent, still affects the music industry and may divert some of the revenue away from it.

Digital revolution

The structural shift within the music industry has overshadowed the purchase of physical products in favour of streaming services (see Chart 2). It turns out that this shift has even led to a substantial drop in price per song; specifically, it has resulted in the price per song falling by 85% (Edquist, Goodridge and Haskel, 2021). With the increased availability of smart devices, physical products are becoming less attractive (the vinyl resurgence being the exception), while the share of streamed music in global music market revenue has risen sharply in recent years. While streamed music accounted for less than 3% of the recording industry's total revenue in 2010, it was more than 65% in 2021. This trend is clearly visible, for example, in the data for the USA, the largest music market in the world.

Chart 2 – Recorded music revenues in the USA by format

(USD billions)



Source: RIAA

The last two decades have been characterised by big changes in the music industry, due mainly to developments in technology. This has seen a gradual change in the behaviour of both musicians and listeners. The digital revolution started in early 2000, and the demand for music provided using digital technology remains on the rise. This radical change was caused mainly by the expansion and availability of the internet, which has become a modern source of entertainment. Digital music is considered a prime example of digital innovation, which has provided the music industry with new products and services for music consumers. There may be further advances in digital music in the future, for example through innovations such as artificial intelligence, machine learning and virtual reality.

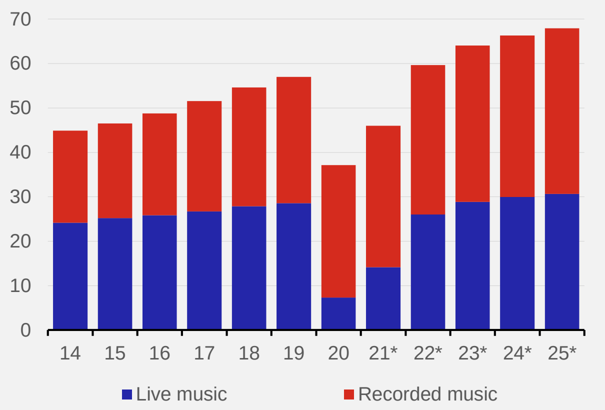
The development of technology and digitalisation saw the gradual emergence of music piracy, as people essentially stopped paying for music content. Due to the convenience and availability of piracy, it became increasingly popular and artists and recording companies feared what this would mean for the industry. However, it did not destroy the music industry and despite the initial shock and concerns, the industry has adapted and continues to prosper. Paradoxically, piracy music has ultimately helped the music industry to flourish, for example, by supporting the careers of mid-tier artists whose sales have increased as a result (Lee, 2018). Therefore, while the illegal downloading of music may reduce sales to some extent, it may even increase them, as consumers may "try out" music before buying it legally. So the jury is still out on the effect of piracy on sales. However, music piracy has generally shown a downward trend, but it is not dead and its impact is difficult to quantify.

Main sources of revenue behind the growth of the music industry

The global music industry was worth more than USD 50 billion in 2019. It has two main sources of revenue (see Chart 3). The first is live music, where the revenue comes from the sale of tickets for tours, festivals and concerts. The second is recorded music, where the main sources of revenue include streaming, digital downloading, physical sales and synchronisation, i.e. the use of music in films, games, TV or advertising (Hall, 2020).

Chart 3 – Music industry revenues

(globally; in USD billions)



Source: PwC, Statista
Note: * denotes an outlook.

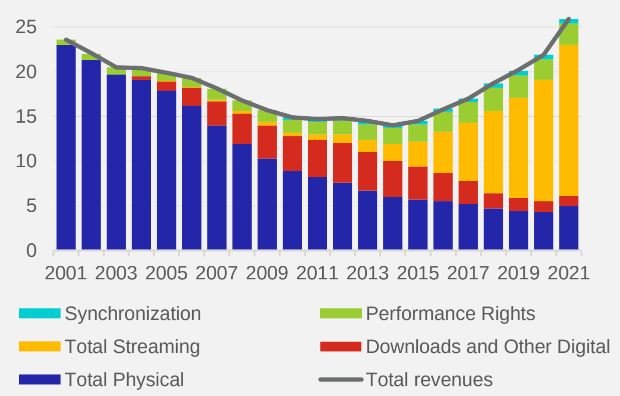
The live music industry has long been very strong. Its revenue was increasing before the pandemic and this is expected to continue. According to PwC, live music industry revenues amounted to almost USD 30 billion in 2019. Consumers are hungry for the intense music experience they get when they see their favourite artists performing live. Concerts and music festivals are therefore driving the growth of the industry. To some extent, the growth of streaming often encourages listeners to go to live performances, which are the main source of income, especially for the artists themselves.

After almost two decades of decline, the recording industry is also returning to growth (see Chart 4). According to the IFPI, revenues returned to growth in 2015 after a 15-year decline, which bottomed out in 2014 at USD 14 billion. Although the decline was also affected by digital music piracy, the co-movement of the two variables does not necessarily imply a causal link. In general, the decline in sales was largely due to the global change in the way music is consumed due to digitalisation. Consumers are much more focused on buying individual songs rather than whole albums, and this may have resulted in a decline in revenues. In addition, with the advent of YouTube and other platforms, music can be consumed free of charge, as it is paid from advertising revenue. It is also important to emphasise that besides listening to music itself, the internet has brought new forms of entertainment, such as social networks, which has again had an impact on music sales (McKenzie, 2013). However, the current situation looks very promising and, according the IFPI's Global Music Report 2022, music recording revenues amounted to USD 25.9 billion in 2021. This is the seventh consecutive year of growth, representing an increase of 18.5% compared to 2020. This increase was due mainly to streaming, which has made it possible for people to engage with music in ways that were inconceivable until now.

Music streaming has become the norm, outperforming other formats and is one of the main sources of revenue for the recording industry. Leaving aside the situation in the pandemic years, this is comparable to the strength of the live music industry. In 2021, streaming accounted for 65% of global revenues and its popularity is continuing to grow (see Chart 5). According to the IFPI, streaming revenues rose by 24.3% to USD 16.9 billion in 2021, with paid subscription streaming being a key factor, with revenues up by 21.9%. The advantage of this way of consuming music is that it enables listeners to select their favourite artists and songs, and even create their own playlists, i.e. they can listen uninterruptedly to a wide variety of licensed music at a fixed fee. Another option is music streaming with advertisements. Companies such as Spotify are thus becoming the new face of the industry, buying music from artists so that they can stream it to end users on their platforms. However, the royalties paid to artists by music streaming platforms are problematic and often said to be unfair, as artists' income has been reduced at the expense of recording companies and the streaming platforms themselves. Live streaming, often in the form of virtual concerts, is also becoming a trend.

Chart 4 – Recorded music revenues

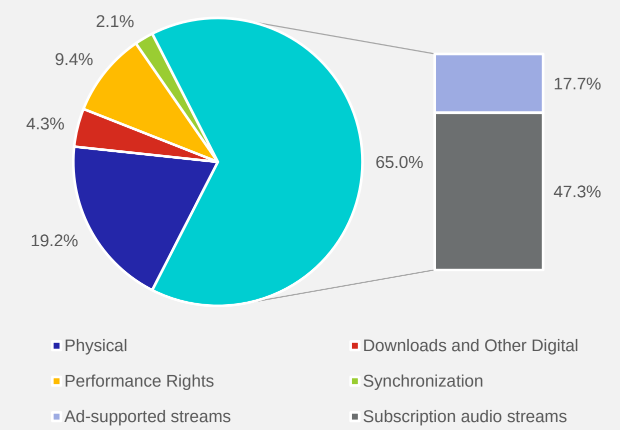
(globally; in USD billions)



Source: IFPI

Chart 5 – Recorded music revenues by segment

(globally; in % for 2021)



Source: IFPI

Revenue on physical sales, performance rights and synchronisation also plays an important role in the recording industry. If music content (or recordings) is used in any way, for example, on TV or radio, or in public places, royalties must be paid. As regards synchronisation, creators of music may provide licenses for its further use, most frequently in films, games, on TV or in advertising. According to the IFPI, revenues increased in the area of performance rights (accounting for 9.4% of the industry's revenues) and synchronisation (accounting for 2.1% of the industry's revenue) by 4% and 22% respectively compared to 2020. This was followed by a sharp decline in revenue in both areas of around 10% in 2020 compared to 2019, which was understandable due to the pandemic lockdowns. Physical sales revenues (accounting for 19.2% of the industry's revenues) also rose in 2021 compared to previous year, by more than 16%, partly due to strong vinyl sales. However, this double-digit growth was also preceded by a decline in revenue of almost 5% in 2020.

Music videos are also in many ways becoming an integral part of the industry's revenue. Music producers are increasingly using product placement because they know very well that video is just as important for success as the music itself. Therefore, they often collaborate with various brands whose products they promote in videos, and in turn get paid for doing so. YouTube, for example, has also enabled the monetisation of music video content. In June 2021, it reported that it had paid more than USD 4 billion to the music industry in the previous 12 months, specifically to artists, songwriters and music rights holders (Olson, 2021).

Coronavirus pandemic

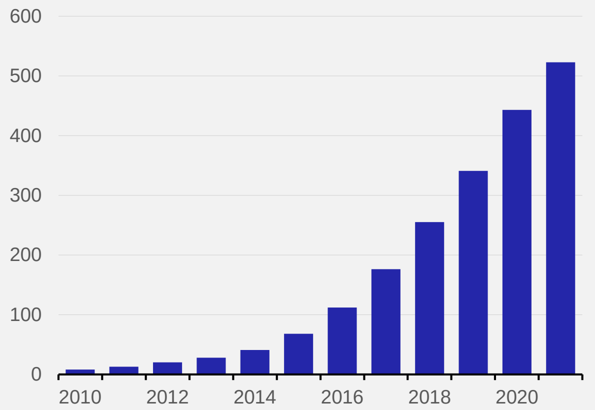
The pandemic has greatly impacted many people in the music industry and has changed the habits of music consumers. Live music took the biggest hit and was largely restricted or completely suspended. Many artists postponed releasing new work, as it was impossible to promote new albums through concerts, especially while on tour and at festivals. The pandemic plunged the live music industry into a situation in which global revenue dropped by around 75% in 2020 compared to 2019. Specifically, revenue from live performances fell from almost USD 30 billion in 2019 to just over USD 7 billion in 2020. Therefore, total revenue fell rapidly within the music industry, which was forced once again to be creative and innovative. Given the uncertainty around live performances and the associated drop in revenue, new ways were sought to monetise music consumption and hold on to the audience.

Although there were initially large fluctuations in music consumption after the outbreak of the pandemic, many turned to music during this difficult time. The measures introduced to curb the pandemic did not allow music events or music-related activities to take place. Therefore, a major decrease in music consumption was initially observed, especially in the markets hit the most by the pandemic (Italy and Spain). Despite this initial negative shock, people did not stop consuming music and gradually started to use streaming platforms on TV and smart devices to a greater extent (Hall, 2020). Despite the loss of daily users, there was a surge in the number of streaming subscribers, which is a meaningful indicator (see Chart 6).

Streaming platforms, which were on the rise before the pandemic, saved the music industry at least to some extent. The relatively stable streaming revenue helped to offset stagnating revenue mainly from live music events, but also in other areas of the industry. Fans were mainly drawn to live streaming on many of the platforms (Twitch, Instagram, YouTube) on which they were able to make direct contact with the artists. There was also greater collaboration among artists, an example being the virtual concert of pop stars worldwide “One World: Together At Home”, held in April 2020. The organisers, Global Citizen and the World Health Organization, were able to raise USD 12.7 billion to help fight COVID-19. Major advances were also made in terms of the collaboration between the music and gaming industries. This had started before the pandemic but its scope and reach became broader. For example, the popular games Minecraft and Fortnite hosted virtual live concerts during the pandemic, attracting tens of millions of viewers. Although games and TV integrate music, synchronisation revenue has been relatively low so far. It accounts for a mere 2% of global revenue from music recordings (Grant, 2020).

Chart 6 – Users of paid music streaming subscriptions

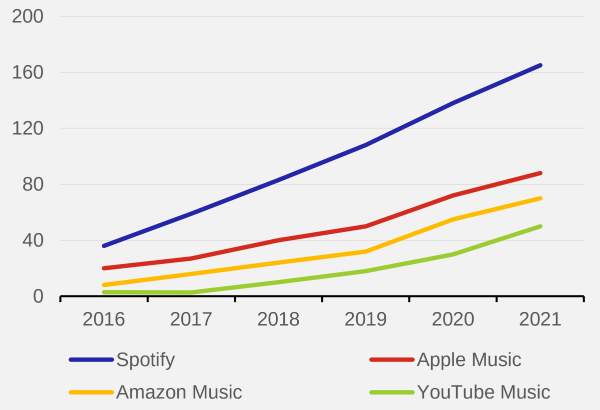
(globally; in millions)



Source: IFPI

Chart 7 – Users of the biggest music streaming platforms

(in millions)



Source: BusinessofApps

Mechanisms to mitigate the immediate impacts of the pandemic have also begun to emerge. It is worth mentioning the numerous gifts to artists from several music companies (Universal Music) and streaming moguls (Spotify and YouTube Music). Consumers were also able to support artists directly, for example through the non-profit organisation Equal Sounds, which received tax-deductible donations to help artists. In many countries, support was provided to the industry by both the private and the public sectors. This notwithstanding, the music industry suffered major losses in terms of labour and talent during the pandemic. For example, the UK music industry, which has long been one of the largest in the world and has huge economic benefits for the UK economy saw its contribution almost halved. Also, according to a report by UK Music, one in three jobs was wiped out in the UK music industry during the pandemic, with unemployment levels rising significantly.

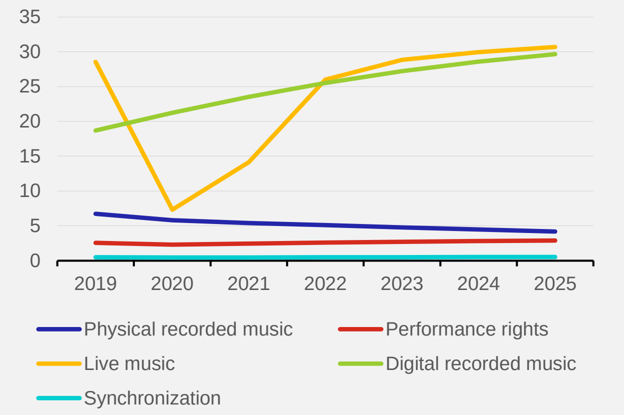
Outlook

Although the main value chain of the music industry is unlikely to change in the long run, the pandemic has accelerated and fostered the long-term trends in the industry, as well as other aspects. Artists and music publishers will most probably continue to maintain close ties with music streaming platforms. That said, the recovering live music industry will remain a major pillar of the industry too. Over the last few years, streaming has become more important in terms of the industry's total revenue. Access to faster 5G networks may also have an impact in the future, enabling more seamless streaming and potentially supporting it further. Moreover, the greater number of consumers of paid subscription streaming has increased the value of recording companies, and some have even gone public on the stock exchange with relative success. Of particular note is the recent listings of the world's largest recording companies on the stock exchange, specifically Universal Music and Warner Music[2]. In general, the role of platforms, most notably streaming platforms, has become increasingly important, especially because music is consumed more and more in digital format and due to their ability to appeal to a large number of consumers. However, it should be noted that the music industry is becoming relatively dependant on these platforms. This already has consequences for the music content itself and may continue to do so. For example, songs are being shortened, as there is pressure on having them replayed as many times as possible (Hall, 2020). Streaming platforms pay the same amount to play each song, regardless of its length. The average length of a song in the Billboard Hot 100 chart thus decreased by around 20 seconds from 2013 to 2018 (Kopf, 2019).

Collaboration and live streaming are among the innovative trends which present great potential for the music industry. Although there has been gaming and TV collaborations in the past, albeit to a lesser extent, the live streaming of virtual concerts is an entirely new phenomenon. They present a great opportunity for the industry but still have large shortcomings and cannot be perceived as the future of live concerts or a substitute for them. Quite the opposite, the live music industry, combined with the complex legal environment, has long hindered the evolution of virtual concerts, although technology was not the issue at all. Live virtual concerts were thus not fully prepared for their premiere during the pandemic. Although they were initially mostly free of charge, there was quite a rapid shift to paid access in the second half of 2020. Overall, tickets to live-streamed virtual concerts generated around USD 0.6 billion in 2020 (Mulligan, 2021).

Chart 8 – Music industry revenue outlook

(globally; in USD billions)



Source: PwC

The past few years have seen high demand for investment in the music industry. As a result, the valuation of music assets (both publishing and recording) should be relatively resilient, despite fluctuations in revenue in the short term. However, the growth rate of valuations may be limited to some extent. Following a challenging year in 2020, which saw a massive fall in revenues from live music (of almost 75%), the music industry has seen a return to growth. In its Global Entertainment & Media Outlook 2021–2025, PwC predicts that total music revenues will grow at a rate of 12.8%, due mainly to an increase in digital streaming revenues, but also thanks to the return of live music (see Chart 8).

Conclusion

High profits can be generated in the music industry even nowadays when music is relatively readily available thanks to technology. Revenues from the sale of physical media has been replaced by a number of new sources. Consumer preferences have shifted from listening to physical albums to live music. Higher demand for concerts has increased ticket prices and hence the income of musicians and the entire music industry. Moreover, the internet itself has significantly expanded the potential audience given the ease at which it enables music to be distributed around the world. Music has also found its driver in the form of streaming.

Only a few years ago, the music industry was in crisis but it is now on the rise again due to the combination of streaming and live music. Based on the US experience, the co-evolution between the increasingly popular streaming and the return to live music is leading to sustainable growth in music industry. The two areas are evolving together and adapting to each other, with streaming, for example, often motivating many listeners attend live concerts (Naveed, Watanabe & Neittaanäki, 2017).

[2] Warner Music and Universal Music were listed on the stock exchange in June 2020 and September 2021 respectively.

Rapidly responding monetisation strategies are making new collaborations possible, like virtual concerts, which have enormous potential for the future. For instance, games and TV are increasingly integrating music into their content. The long-term outlook for the industry is thus not based solely on the standard form of streaming or live music. Indeed, the industry is moving towards a broader use of live streaming and cooperation with the gaming world. But there is still a long journey ahead because, for example, live-streamed virtual concerts have so far only attracted younger male audiences.

The pandemic has in many respects fostered existing ways of communicating with fans but has also revealed some shortcomings in the industry. The increased use of streaming platforms has enabled new ways of monetisation, be it paid memberships allowing exclusive access to artists' content and various forms of paid commenting features (Hall, 2020). From the long-term perspective, these new ways may be what can potentially expand audiences and keep the music industry strong. However, the pitfalls of digital transformation and streaming have also come to light, for example, the fact that artists receive only a negligible part of the revenue generated from streaming, which is only offset by the potential of the global audience.

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Keywords

music industry, digitalisation, music streaming, live music

JEL Classification

D45, L82, O14, O33

A1. Change in predictions for 2022

GDP growth, %

	CF		IMF		OECD		CB / EIU	
EA	+1.9	2022/4 2022/3	+1.1	2022/4 2022/1	+0.6	2021/12 2021/9	+0.9	2022/3 2021/12
US	+2.3	2022/4 2022/3	+2.0	2022/4 2022/1	+1.7	2021/12 2021/9	+1.5	2022/3 2021/12
UK	+3.1	2022/4 2022/3	+2.1	2022/4 2022/1	+1.7	2021/12 2021/9	+2.0	2022/2 2021/11
JP	-0.5	2022/4 2022/3	-0.9	2022/4 2022/1	-0.3	2021/12 2021/9	+0.5	2022/1 2021/10
CN	+3.0	2022/4 2022/3	+3.2	2022/4 2022/1	+2.3	2021/12 2021/9	+3.0	2022/4 2022/3
RU	+13.6	2022/3 2022/3	+1.9	2022/4 2022/1	+0.9	2021/12 2021/9	+4.9	2022/4 2022/3

Inflation, %

	CF		IMF		OECD		CB / EIU	
EA	-3.2	2022/4 2022/3	+0.5	2022/4 2021/10	+0.5	2021/12 2021/9	-0.6	2022/3 2021/12
US	-2.0	2022/4 2022/3	+0.8	2022/4 2021/10	+1.5	2021/12 2021/9	+2.7	2022/3 2021/12
UK	-4.2	2022/4 2022/3	-0.4	2022/4 2021/10	-0.7	2021/12 2021/9	+0.8	2022/2 2021/11
JP	-1.6	2022/4 2022/3	-0.7	2022/4 2021/10	-0.7	2021/12 2021/9	-0.9	2022/1 2021/10
CN	-1.3	2022/4 2022/3	-0.7	2022/4 2021/10	-1.4	2021/12 2021/9	-1.4	2022/4 2022/3
RU	+2.8	2022/3 2022/2	+1.1	2022/4 2021/10	+0.8	2021/12 2021/9	-8.5	2022/4 2022/3

A2. Change in predictions for 2023

GDP growth, %

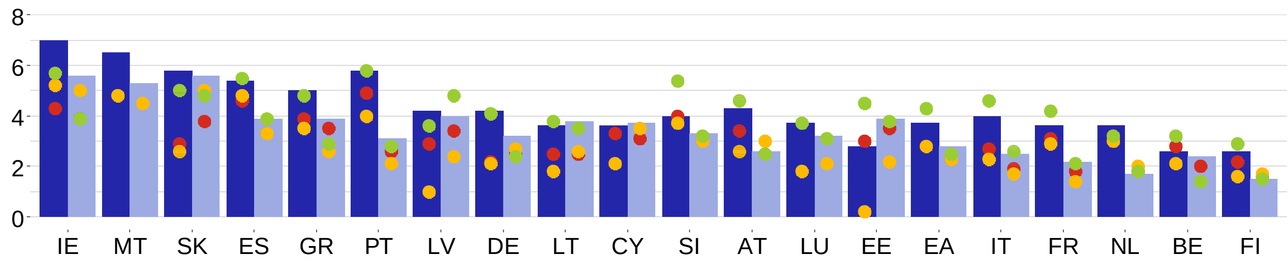
	CF		IMF		OECD		CB / EIU	
EA	+0.5	2022/4 2022/3	+0.3	2022/4 2022/1	---	2021/12 ---	+0.8	2022/3 2021/12
US	+0.8	2022/4 2022/3	+1.1	2022/4 2022/1	---	2021/12 ---	+0.6	2022/3 2021/12
UK	+2.3	2022/4 2022/3	+1.4	2022/4 2022/1	---	2021/12 ---	+2.3	2022/2 2021/11
JP	+0.3	2022/4 2022/3	+0.6	2022/4 2022/1	---	2021/12 ---	+2.5	2022/1 2021/10
CN	-0.3	2022/4 2022/3	-0.8	2022/4 2022/1	---	2021/12 ---	-0.6	2022/4 2022/3
RU	-11.2	2022/3 2022/3	-10.6	2022/4 2022/1	---	2021/12 ---	-10.3	2022/4 2022/3

Inflation, %

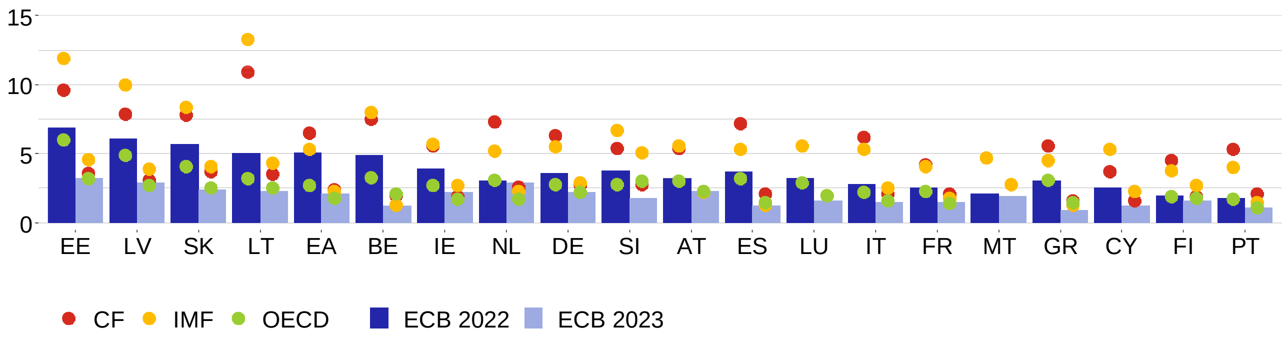
	CF		IMF		OECD		CB / EIU	
EA	+4.4	2022/4 2022/3	+3.9	2022/4 2021/10	---	2021/12 ---	+3.3	2022/3 2021/12
US	+4.0	2022/4 2022/3	+5.0	2022/4 2021/10	---	2021/12 ---	+2.0	2022/3 2021/12
UK	+3.6	2022/4 2022/3	+5.4	2022/4 2021/10	---	2021/12 ---	+3.6	2022/2 2021/11
JP	+0.7	2022/4 2022/3	+0.3	2022/4 2021/10	---	2021/12 ---	+0.1	2022/1 2021/10
CN	-0.2	2022/4 2022/3	+0.2	2022/4 2021/10	---	2021/12 ---	-0.2	2022/4 2022/3
RU	+17.5	2022/3 2022/2	+16.8	2022/4 2021/10	---	2021/12 ---	+19.3	2022/4 2022/3

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

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



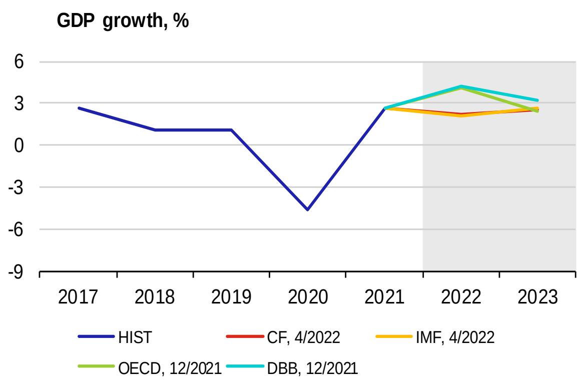
Inflation in the euro area countries in 2022 and 2023, %



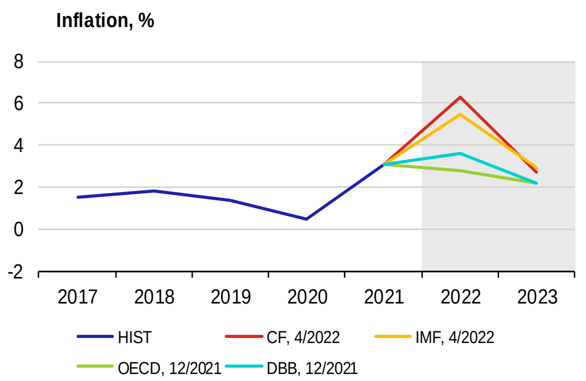
Note: Charts show institutions' latest available outlooks of for the given country.

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

Germany

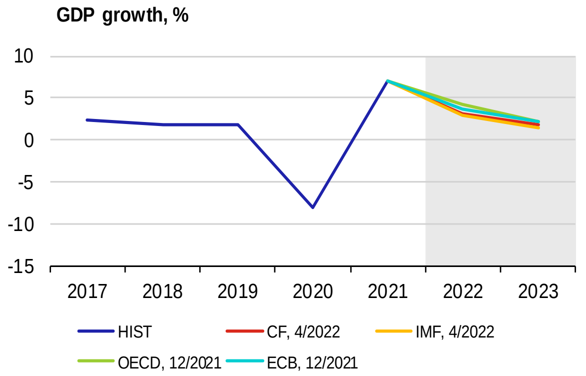


	CF	IMF	OECD	DBB
2022	2.2	2.1	4.1	4.2
2023	2.5	2.7	2.4	3.2

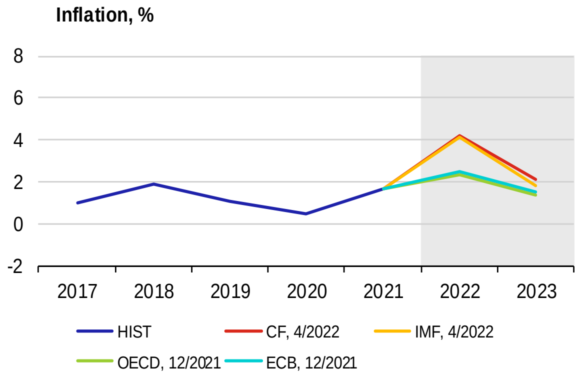


	CF	IMF	OECD	DBB
2022	6.3	5.5	2.8	3.6
2023	2.7	2.9	2.2	2.2

France

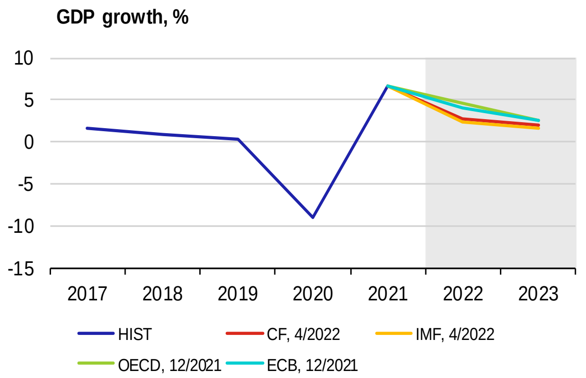


	CF	IMF	OECD	ECB
2022	3.1	2.9	4.2	3.6
2023	1.8	1.4	2.1	2.2

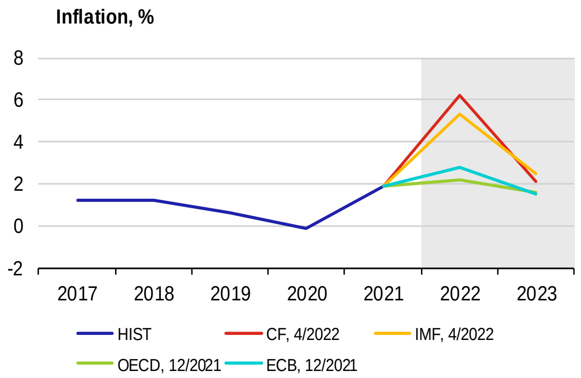


	CF	IMF	OECD	ECB
2022	4.2	4.1	2.3	2.5
2023	2.1	1.8	1.4	1.5

Italy

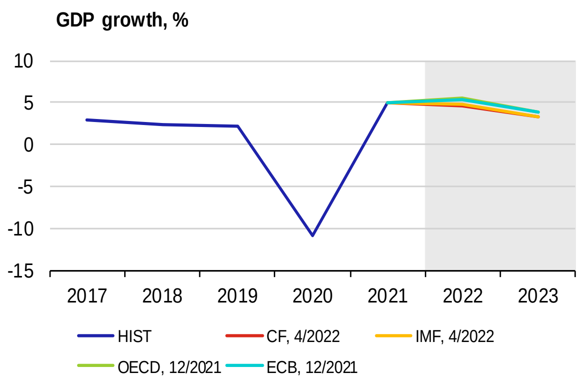


	CF	IMF	OECD	ECB
2022	2.7	2.3	4.6	4.0
2023	1.9	1.7	2.6	2.5

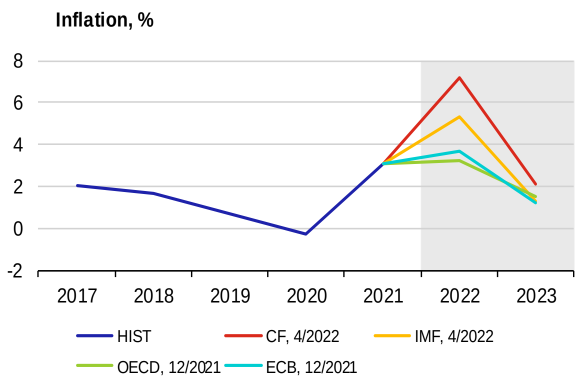


	CF	IMF	OECD	ECB
2022	6.2	5.3	2.2	2.8
2023	2.1	2.5	1.6	1.5

Spain



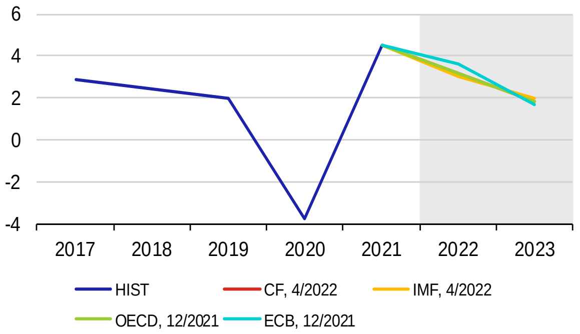
	CF	IMF	OECD	ECB
2022	4.6	4.8	5.5	5.4
2023	3.3	3.3	3.9	3.9



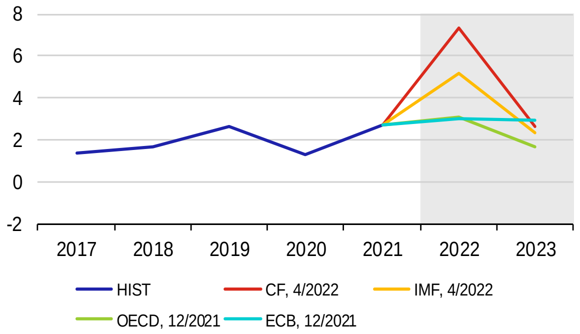
	CF	IMF	OECD	ECB
2022	7.2	5.3	3.2	3.7
2023	2.1	1.3	1.5	1.2

Netherlands

GDP growth, %



Inflation, %

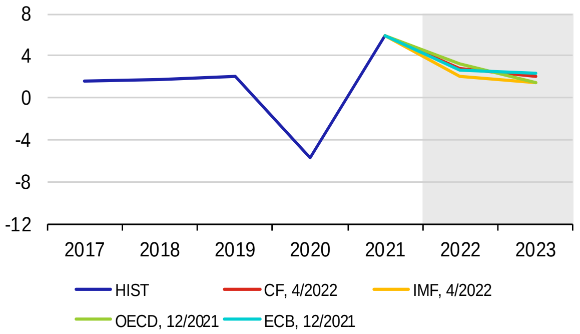


	CF	IMF	OECD	ECB
2022	3.2	3.0	3.2	3.6
2023	1.8	2.0	1.8	1.7

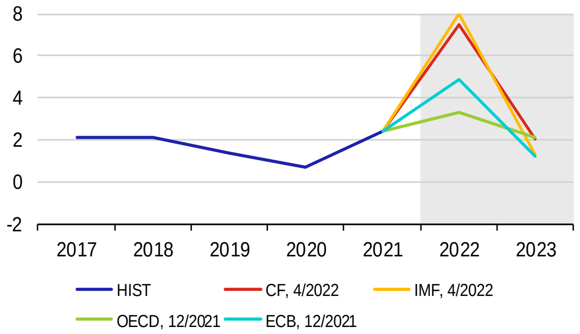
	CF	IMF	OECD	ECB
2022	7.3	5.2	3.1	3.0
2023	2.6	2.3	1.7	2.9

Belgium

GDP growth, %



Inflation, %

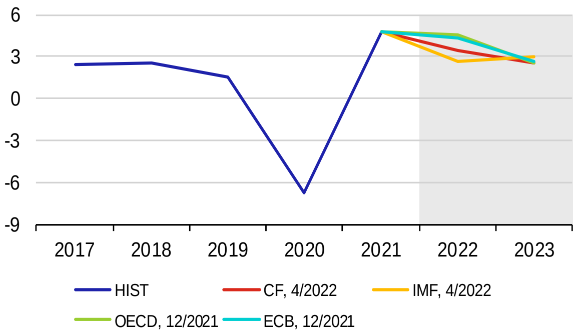


	CF	IMF	OECD	ECB
2022	2.8	2.1	3.2	2.6
2023	2.0	1.4	1.4	2.4

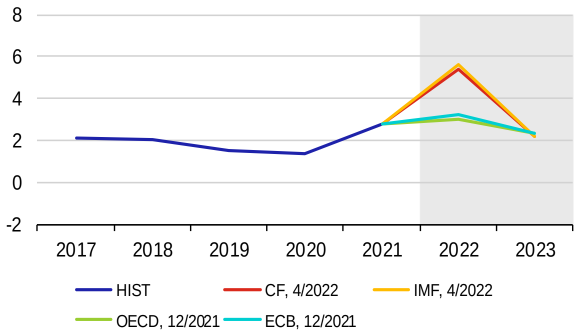
	CF	IMF	OECD	ECB
2022	7.5	8.0	3.3	4.9
2023	2.0	1.3	2.1	1.2

Austria

GDP growth, %



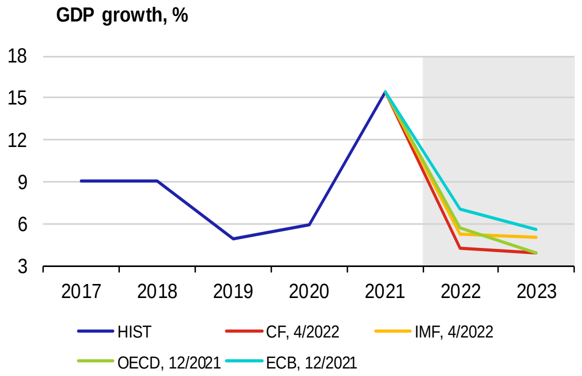
Inflation, %

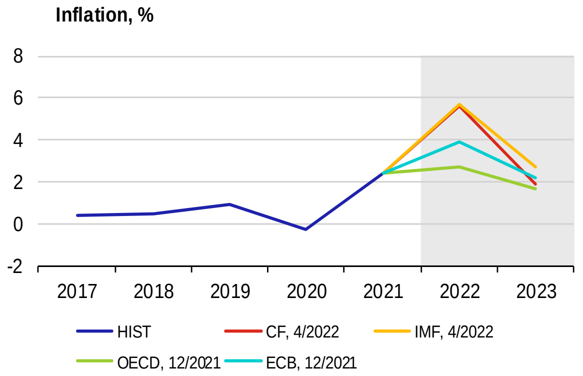


	CF	IMF	OECD	ECB
2022	3.4	2.6	4.6	4.3
2023	2.5	3.0	2.5	2.6

	CF	IMF	OECD	ECB
2022	5.4	5.6	3.0	3.2
2023	2.2	2.2	2.3	2.3

Ireland

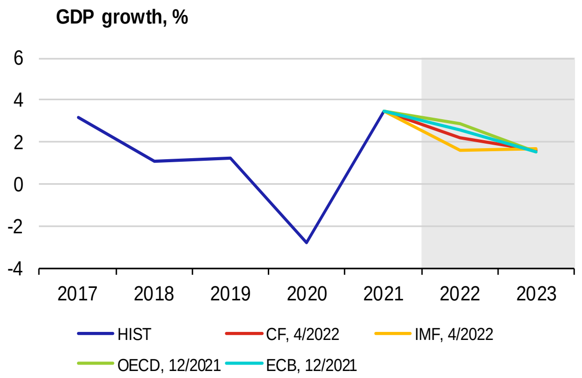


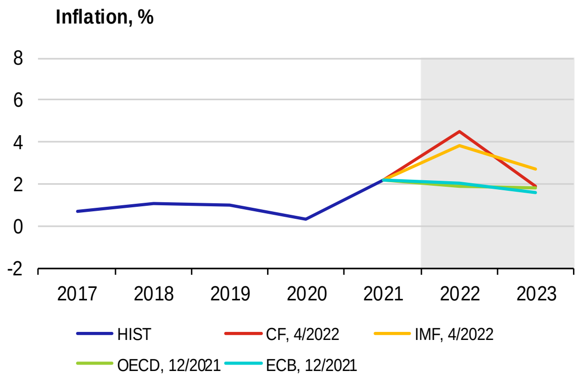


	CF		IMF		OECD	ECB
2022	4.3	→	5.2	↗	5.7	7.0
2023	3.9	→	5.0	↗	3.9	5.6

	CF		IMF		OECD	ECB
2022	5.6	↗	5.7	↗	2.7	3.9
2023	1.9	↘	2.7	↗	1.7	2.2

Finland

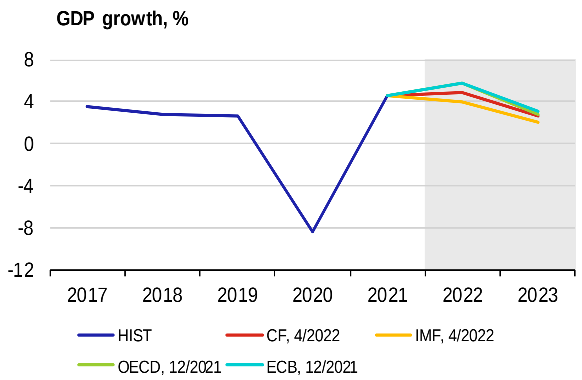


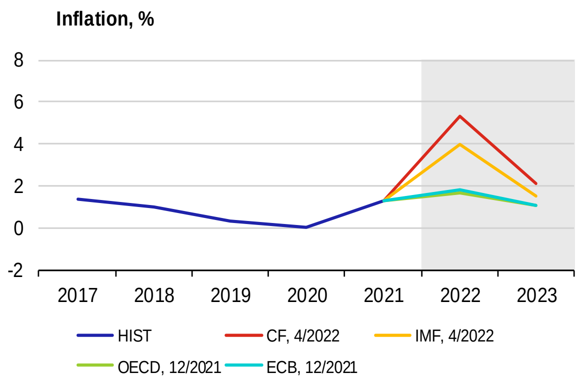


	CF		IMF		OECD	ECB
2022	2.2	↘	1.6	↘	2.9	2.6
2023	1.6	↘	1.7	↗	1.5	1.5

	CF		IMF		OECD	ECB
2022	4.5	↗	3.8	↗	1.9	2.0
2023	1.9	→	2.7	↗	1.8	1.6

Portugal



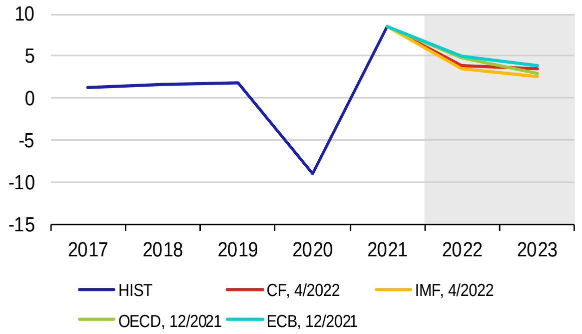


	CF		IMF		OECD	ECB
2022	4.9	↗	4.0	↘	5.8	5.8
2023	2.6	→	2.1	↘	2.8	3.1

	CF		IMF		OECD	ECB
2022	5.3	↗	4.0	↗	1.7	1.8
2023	2.1	↗	1.5	↗	1.1	1.1

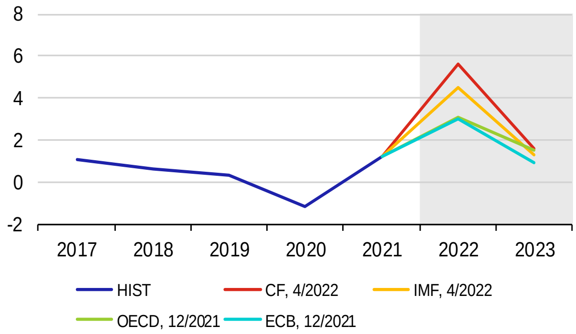
Greece

GDP growth, %



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

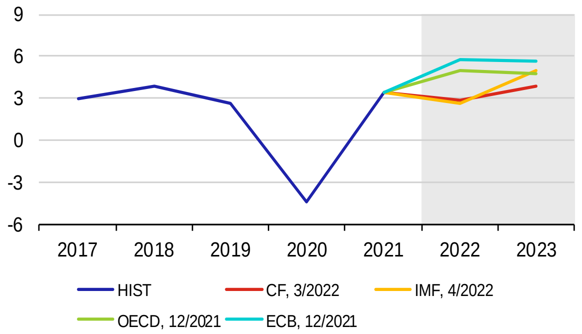
Inflation, %



	CF	IMF	OECD	ECB
2022	5.6	4.5	3.1	3.0
2023	1.6	1.3	1.5	0.9

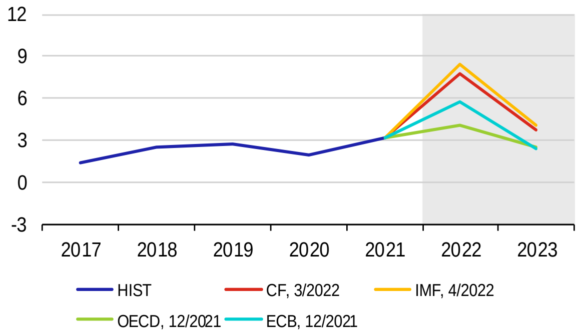
Slovakia

GDP growth, %



	CF	IMF	OECD	ECB
2022	2.9	2.6	5.0	5.8
2023	n.a.	5.0	4.8	5.6

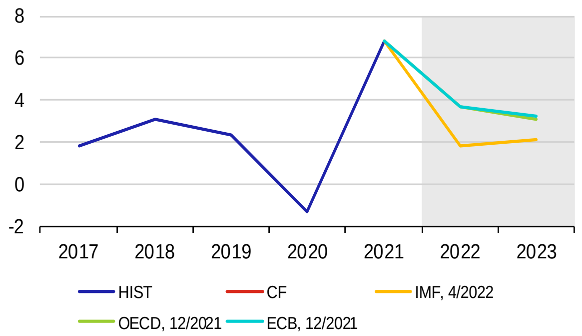
Inflation, %



	CF	IMF	OECD	ECB
2022	7.8	8.4	4.1	5.7
2023	n.a.	4.1	2.5	2.4

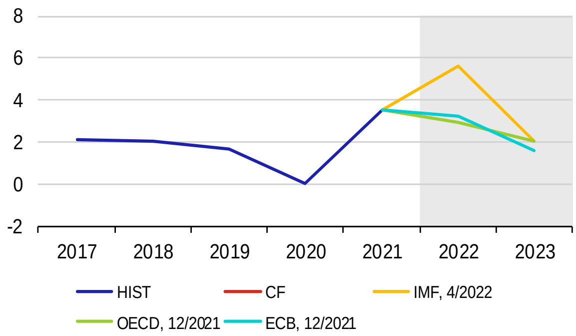
Luxembourg

GDP growth, %



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

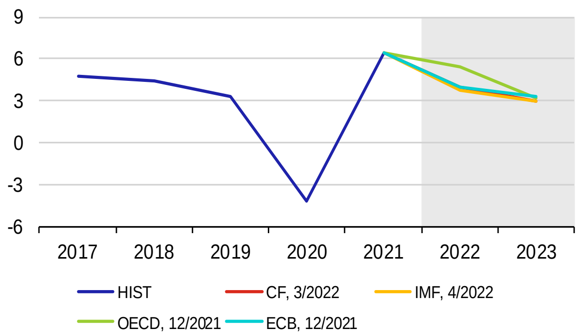
Inflation, %



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

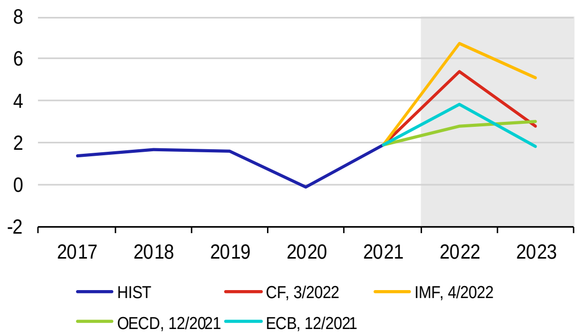
Slovenia

GDP growth, %



	CF	IMF	OECD	ECB
2022	4.0	3.7	5.4	4.0
2023	n.a.	3.0	3.2	3.3

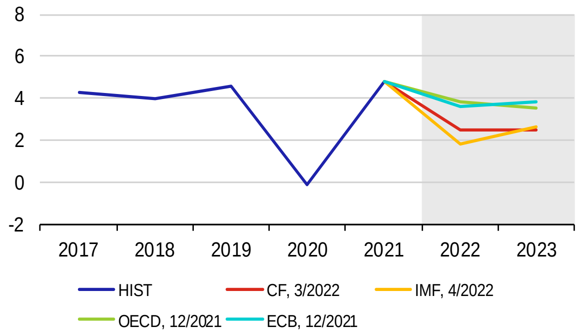
Inflation, %



	CF	IMF	OECD	ECB
2022	5.4	6.7	2.8	3.8
2023	n.a.	5.1	3.0	1.8

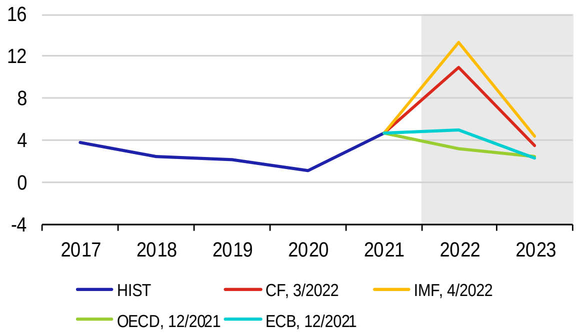
Lithuania

GDP growth, %



	CF	IMF	OECD	ECB
2022	2.5	1.8	3.8	3.6
2023	n.a.	2.6	3.5	3.8

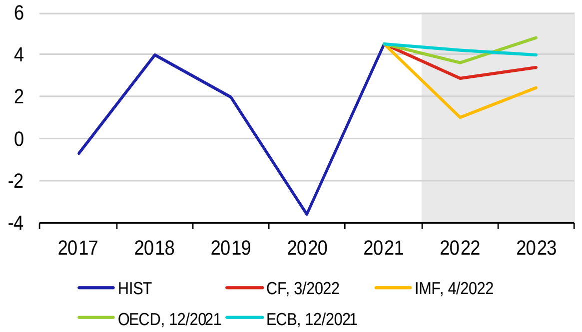
Inflation, %



	CF	IMF	OECD	ECB
2022	10.9	13.3	3.2	5.0
2023	n.a.	4.3	2.5	2.3

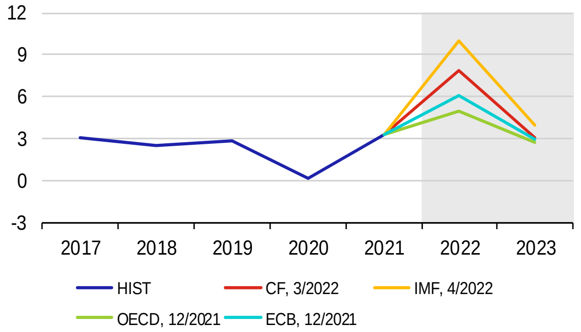
Latvia

GDP growth, %



	CF	IMF	OECD	ECB
2022	2.9	1.0	3.6	4.2
2023	n.a.	2.4	4.8	4.0

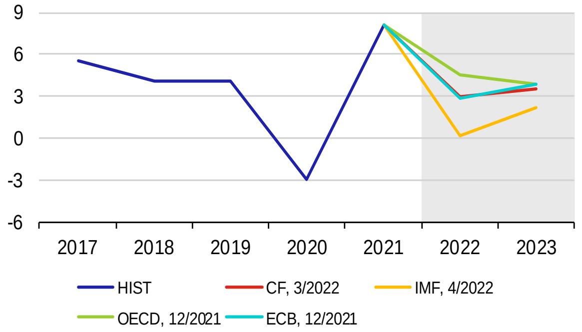
Inflation, %



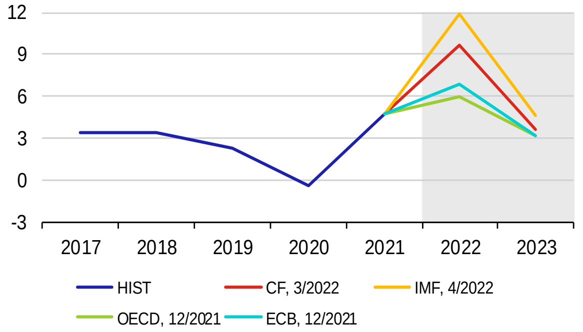
	CF	IMF	OECD	ECB
2022	7.9	10.0	4.9	6.1
2023	n.a.	3.9	2.7	2.9

Estonia

GDP growth, %



Inflation, %

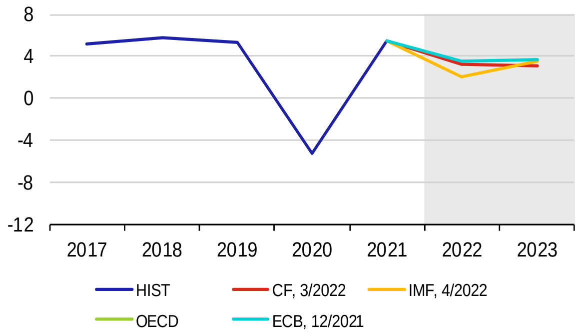


	CF	IMF	OECD	ECB
2022	3.0	0.2	4.5	2.8
2023	n.a.	2.2	3.8	3.9

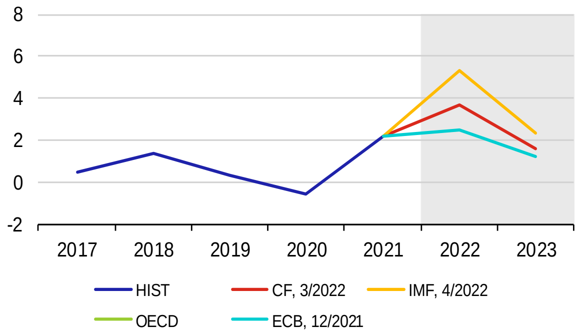
	CF	IMF	OECD	ECB
2022	9.6	11.9	6.0	6.9
2023	n.a.	4.6	3.2	3.2

Cyprus

GDP growth, %



Inflation, %

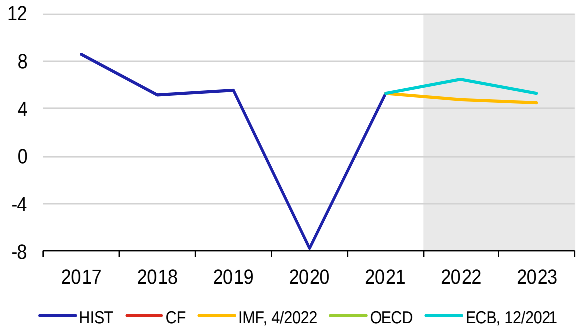


	CF	IMF	OECD	ECB
2022	3.3	2.1	n. a.	3.6
2023	n.a.	3.5	n. a.	3.7

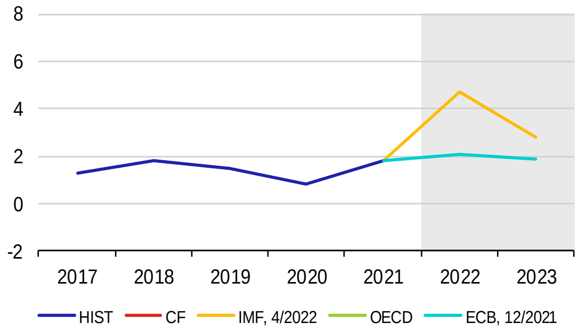
	CF	IMF	OECD	ECB
2022	3.7	5.3	n. a.	2.5
2023	n.a	2.3	n. a.	1.2

Malta

GDP growth, %



Inflation, %



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

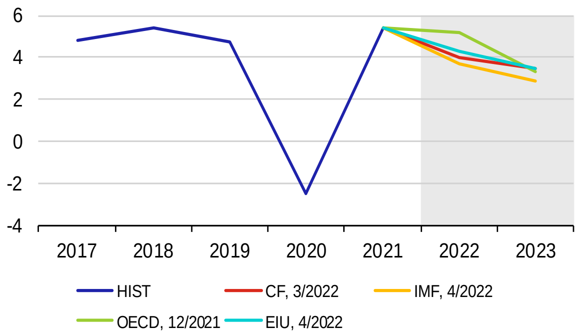
	CF	IMF	OECD	ECB
2022	n. a.	4.7	n. a.	2.1
2023	n. a.	2.8	n. a.	1.9

Ddd

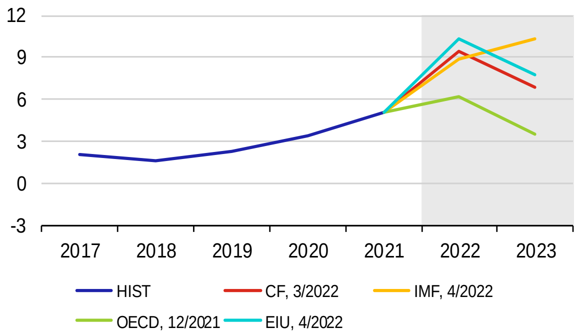
A5. GDP growth and inflation in other selected countries

Poland

GDP growth, %



Inflation, %

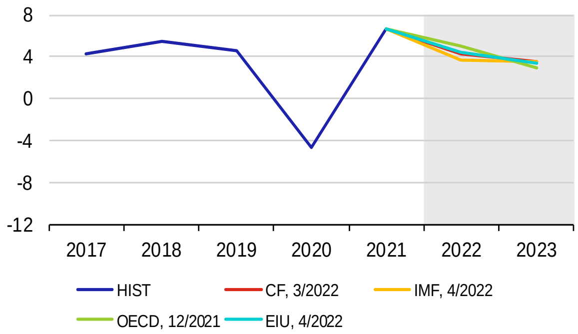


	CF		IMF		OECD	OE	
2022	4.0	↘	3.7	↘	5.2	4.3	↗
2023	3.5	↘	2.9	↘	3.3	3.5	↘

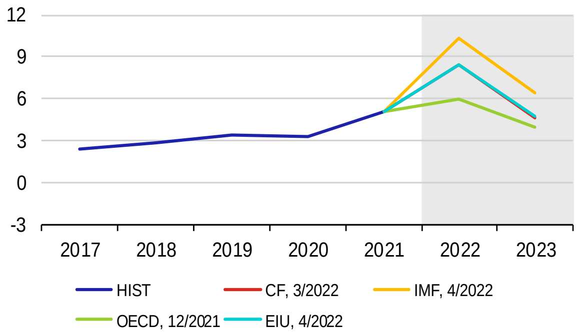
	CF		IMF		OECD	OE	
2022	9.4	↗	8.9	↗	6.2	10.3	↗
2023	6.8	↗	10.3	↗	3.5	7.8	↗

Hungary

GDP growth, %



Inflation, %

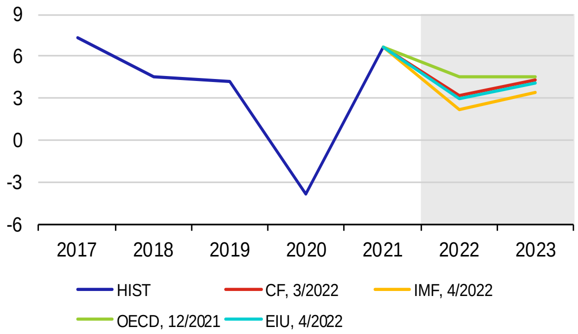


	CF		IMF		OECD	OE	
2022	4.3	↘	3.7	↘	5.0	4.4	↘
2023	3.6	↘	3.6	↘	3.0	3.4	→

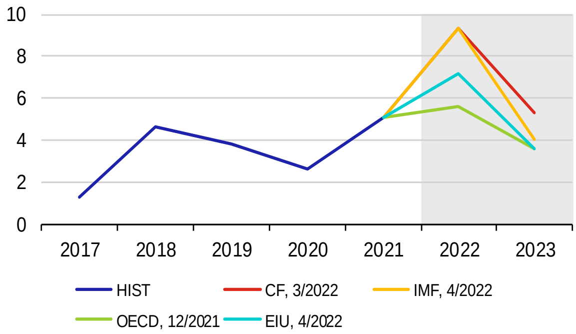
	CF		IMF		OECD	OE	
2022	8.4	↗	10.3	↗	6.0	8.4	↗
2023	4.6	↗	6.4	↗	4.0	4.7	↗

Romania

GDP growth, %



Inflation, %



	CF		IMF		OECD	OE	
2022	3.2	↘	2.2	↘	4.5	3.0	↘
2023	4.3	↘	3.4	↘	4.5	4.1	↗

	CF		IMF		OECD	OE	
2022	9.3	↗	9.3	↗	5.6	7.2	↗
2023	5.3	↗	4.0	↗	3.6	3.6	↗

A6. List of abbreviations

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

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