

# Global Economic Outlook

— August 2022



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Czech National Bank — Global Economic Outlook — January 2022

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#### Cut-off date for data

12 August 2022

#### CF survey date

8 August 2022

#### GEO publication date

19 August 2022

#### Notes to charts

ECB, Fed, BoE and BoJ: midpoint of the range of forecasts.

The arrows in the GDP and inflation outlooks indicate the direction of revisions compared to the last GEO. If no arrow is shown, no new forecast is available. Asterisks indicate first published forecasts for given year. Historical data are taken from CF, with exception of MT and LU, for which they come from EIU.

Leading indicators are taken from Bloomberg and Refinitiv Datastream.

Forecasts for EURIBOR and LIBOR rates are based on implied rates from interbank market yield curve (FRA rates are used from 4M to 15M and adjusted IRS rates for longer horizons). Forecasts for German and US government bond yields (10Y Bund and 10Y Treasury) are taken from CF.

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## I. Introduction

**Europe has been exposed to war for six months, the fighting continues, lives are still being lost...** Ukraine is still bravely standing up to Russia's aggression with material assistance from the West, while Russia is becoming increasingly isolated politically and economically. The US Congress is to take an important vote on a law that would label Russia as a country supporting terrorism. A similar resolution has already been passed by the Latvian parliament, on the grounds that Russia's attacks are being aimed at civilians and civilian targets.

**The war in Ukraine is having global economic impacts.** Shutdowns in the service sector and the creation of forced savings in Covid-battered economies generated increased demand for products, amplified on the supply side by persisting problems in global value chains and by growing government budget deficits. Russia's mindless war in Ukraine not only further increased the global uncertainty (linked mainly with supplies and prices of energy and food commodities), but also led to further destabilisation of the global economy.

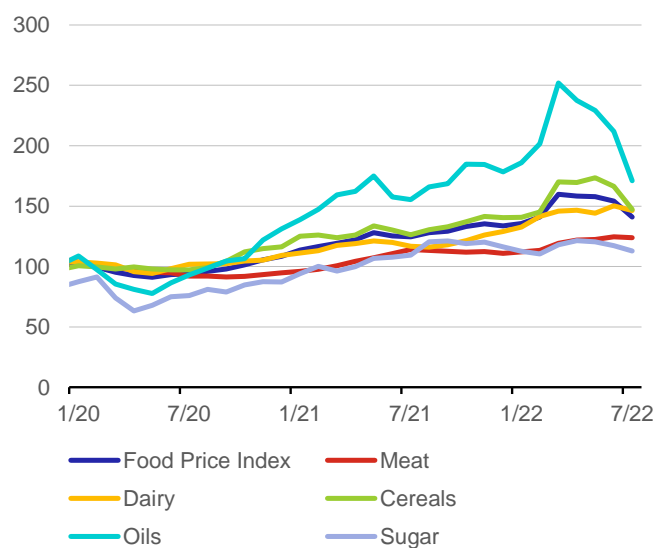
**The global economic situation has been clearly mirrored in the macro-figures for some time now.**

Signs of stagflation are a nightmare for many countries. Inflation is breaking records and financial markets are moving their assets into the dollar and precious metals. Central banks are trying to put out the inflation fire. Some of them have just begun raising interest rates (the ECB), while others are probably approaching an interest rate peak. There are signs that central banks' interventions are starting to bear fruit. However, inflation outlooks across countries are still showing inflation above targets not just this year, but also in 2023. As is generally known, Fed monetary policy has strong global impacts, so the world is watching with bated breath not just inflation in the USA, but also information about the FOMC members' expectations. Good news is scarce, but we are starting to see some positive reports about inflation.

**The chart in the current issue shows** how food commodity prices have started to fall recently. This is due not just to this year's highly above-average harvest, but also to some "stabilisation" in war-torn Ukraine, from which the first few grain-carrying ships have managed to depart. This is good news not only as regards inflation, but also for less advanced countries, where high prices and food shortages could lead to unrest and famine.

**The current issue also contains an analysis:** [FX markets in the age of fintech](#). The article describes how fintech is affecting financial markets, and especially the specific foreign exchange market. A whole range of changes, brought about mainly by digitalisation, have affected the functioning of the market and will have lasting and significant economic impacts.

**Global food commodity prices in the last two years, index 2014–2016 = 100**



Source: FAO United Nations

### Barometr of Global Economic Outlook for selected countries

		EA	DE	US	UK	JP	CN	RU
<b>GDP</b> (%)	<b>2022</b>	2.8 ↗	1.5 ↘	1.7 ↘	3.4 ↗	1.4 ↘	3.8 ↘	-7.7 ↗
	<b>2023</b>	0.9 ↘	0.7 ↘	0.7 ↘	0.1 ↘	1.6 ↘	5.4 ↗	-2.5 ↘
<b>Inflation</b> (%)	<b>2022</b>	7.8 ↗	7.5 ↗	8.1 ↗	9.1 ↗	2.0 ↗	2.4 ↗	16.1 ↘
	<b>2023</b>	4.1 ↗	4.2 ↗	3.8 ↗	6.7 ↗	1.4 ↗	2.5 ↗	6.5 ↘
<b>Unemployment</b> (%)	<b>2022</b>	6.8 ↗	5.2 ↗	3.7 ↗	3.9 ↗	2.6 ↗	3.5 ↗	4.4 ↘
	<b>2023</b>	6.9 ↗	5.2 ↗	4.2 ↗	3.9 ↗	2.5 ↗	3.3 ↗	5.3 ↘
<b>Exchange rate</b> (against USD)	<b>2022</b>	1.07 ↘	1.07 ↘		1.24 ↘	129.1 ↗	6.73 ↘	71.5 ↗
	<b>2023</b>	1.09 ↘	1.09 ↘		1.26 ↘	126.1 ↗	6.63 ↘	78.0 ↗

Source: Consensus Forecasts (CF)

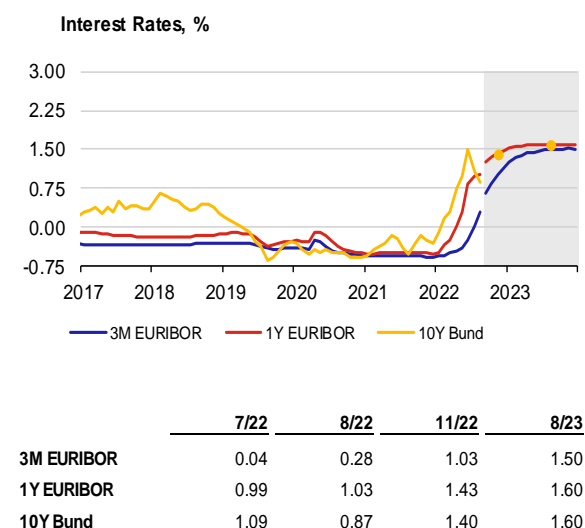
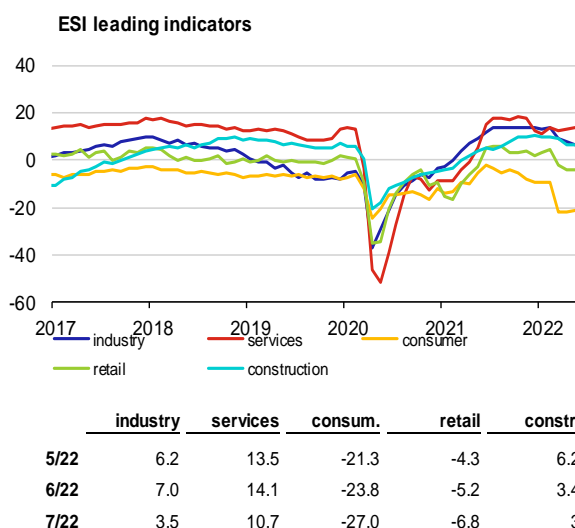
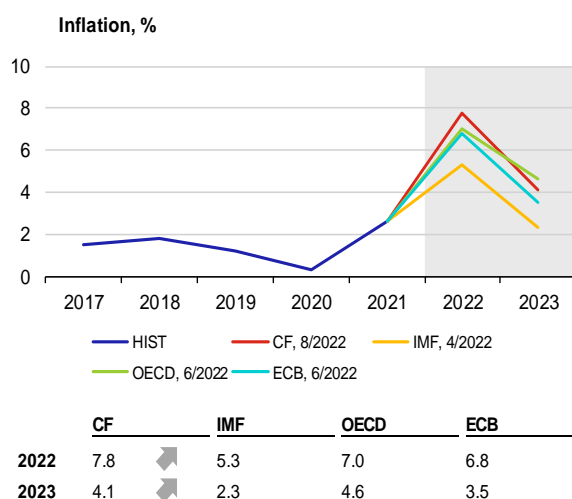
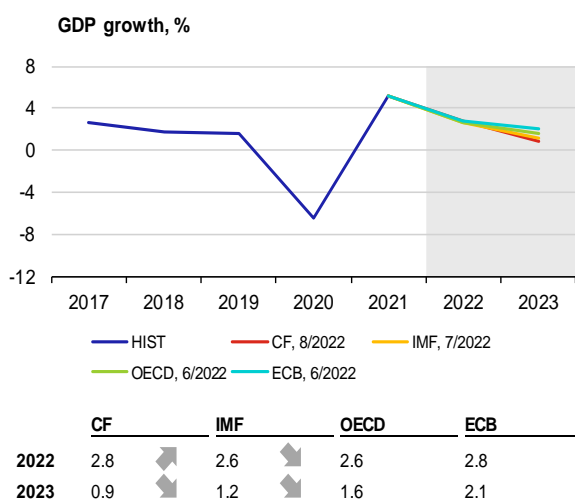
Note: The arrows indicate the direction of the revisions compared with the last GEO.

## II.1 Euro area

**According to Eurostat’s flash estimate, quarterly GDP growth in the euro area rose more than expected (+0.7%) in Q2.** In annual terms, the euro area economy grew by 4%. The growth was driven mainly by the lifting of Covid restrictions, which positively affected tourism. This was particularly apparent in France and southern euro area countries, where growth exceeded expectations. Some of the summer upswing in services probably occurred in Q2, before the traditional holiday season. By contrast, the German economy was flat quarter on quarter, while Austria surprised on the positive side (+0.5%). Industry grew slightly in April and May, although PMI surveys clearly indicate a loss of momentum and a drop in new orders. The services PMI remained in the expansion band, but a loss of momentum is evident after the total lifting of restrictions. Price pressures in services are strong, while in industry we have probably passed the price growth peak. Despite the current better-than-expected growth in economic activity, the risk of recession has risen in the outlook. Inflation pressures are stifling domestic demand. Consumer confidence indicators have fallen further. Retail sales dropped in both month-on-month and year-on-year terms in June. The outlook is not aided by the political situation in Italy, where early elections will be held in September. A recession at the year-end is thus now on the cards, even without a halt in Russian gas supplies.

**Inflation went up further to 8.9% in July according to Eurostat’s flash estimate.** Strong growth in prices of energy (40% y-o-y) and food (almost 10% y-o-y) in particular are feeding into inflation. However, industrial goods and services inflation also surged, pushing core inflation to 4%. Wage growth in the euro area also rose in Q1. At its July meeting, the ECB raised key interest rates by 0.50 pp, the first increase in 11 years. The inflation trend is increasing the likelihood of an equal rate hike at the next meeting in September.

**The new CF and IMF outlooks for GDP growth next year are markedly lower again, while the estimate for this year is virtually unchanged.** The inflation outlooks keep climbing. According to CF, inflation will not drop below 4% in 2023.

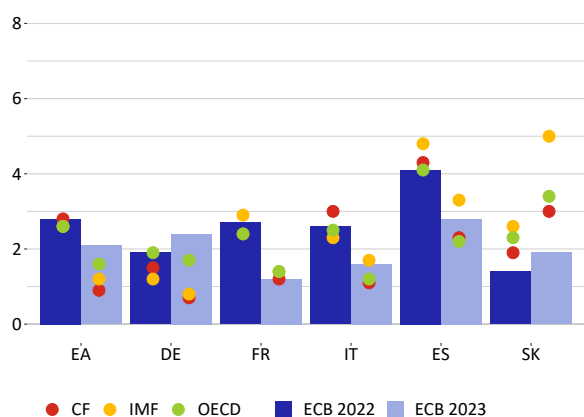


## II.2 Germany

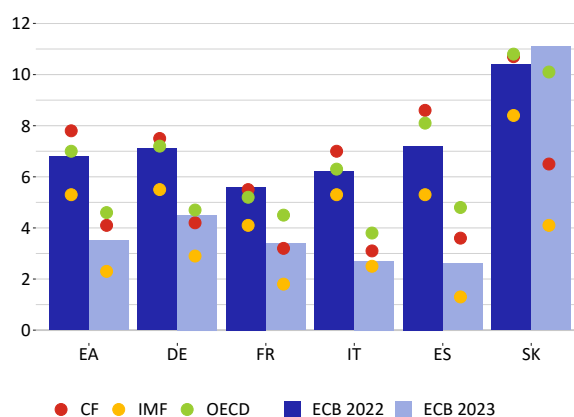
**The German economy returned to stagnation in Q2 after a recovery early this year.** Higher costs of oil and natural gas imports led to an enormous deterioration in the German trade balance, which slowed overall growth. Economic activity was thus supported mainly by household and government expenditure. The risk of a halt in gas supplies poses a serious threat to economic output in the coming months. Germany long benefited from functioning global supply chains and cheap energy, but the economic environment has worsened significantly after the coronavirus pandemic and Russia’s invasion of Ukraine. The German government is thus introducing many energy-saving measures. Concerns about the future are now being reflected in household caution, as evidenced by a month-on-month and year-on-year drop in retail sales in June. Industrial production was flat month on month in May and new orders have long been falling. Exports to China declined in June. The July PM indicates a further sharp drop in new orders, and the total index fell into the contraction band. The uncertain economic outlook coupled with the high-inflation environment has caused demand for goods to drop further from last year’s high levels. Inflation, which is being dampened by government support measures such as a significant cut in public transport fares and a reduction in fuel tax, was 8.5% in July. Core inflation was flat at 3.2%. Moreover, year-on-year growth in hourly labour costs rose markedly in Q1.

**The growth outlooks for the German economy are thus moving ever lower, while the inflation estimates are rising.** The CF analysts expect GDP to grow by 1.5% this year, while the new IMF forecast is slightly more pessimistic. For next year, both publications have significantly revised their previous outlooks and expect growth of only around 0.75%. According to the new CF outlooks, inflation will slow from 7.5% this year just to 4.2% next year.

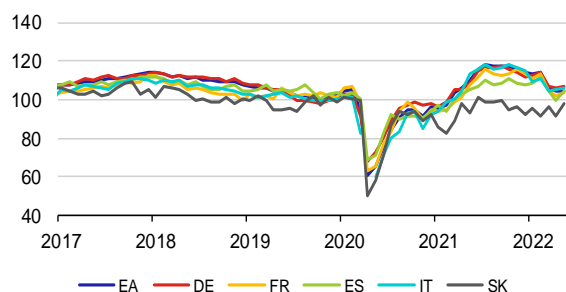
GDP growth in selected euro area countries in 2022 and 2023, %



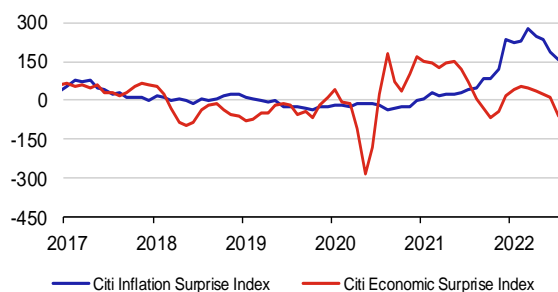
Inflation in selected euro area countries in 2022 and 2023, %



ESI leading indicators



Economic and inflation surprises in the euro area, %



	EA	DE	FR	ES	IT	SK
5/22	104.6	106.7	103.8	104.1	106.1	98.0
6/22	103.5	104.7	102.4	102.1	105.0	92.4
7/22	99.0	99.8	102.3	97.1	101.6	91.2

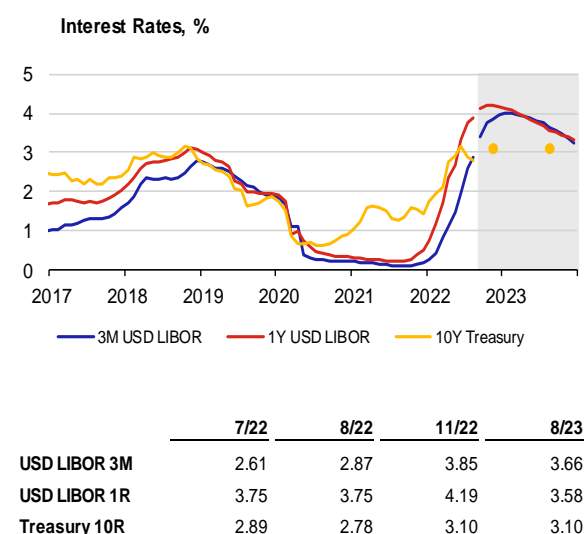
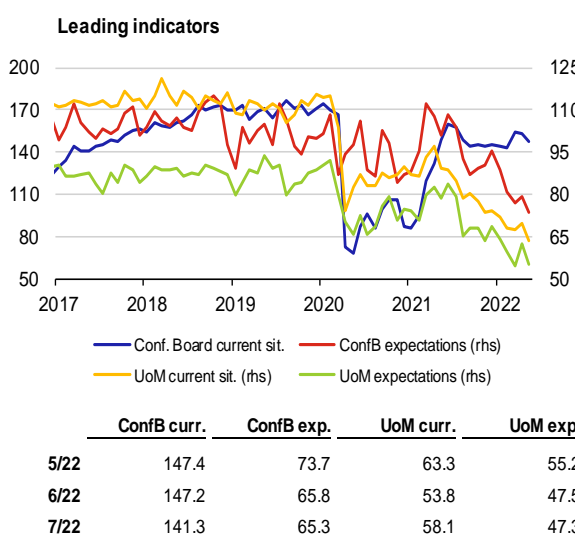
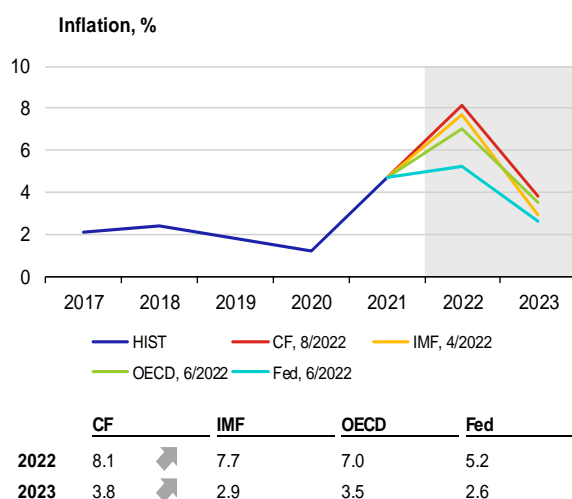
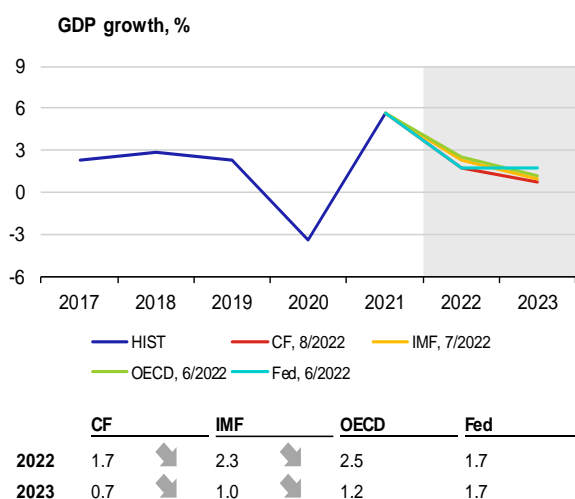
Inflation expectations based on 5year inflation swap and SPF

	5y5y	SPF
6/22	2.17	2.05
7/22	2.05	2.15
8/22	2.08	2.15

### II.3 United States

**The US economy contracted in quarterly terms for the second consecutive quarter and some analysts are forecasting a recession for next year.** The Q1 decline was described as temporary and attributed to limited international trade. The contraction in Q2 was due mainly to a drop in corporate and property investment. Consumption has not declined so far (it rose by 1% m-o-m in June) and the labour market is still very tight, so a recession is not yet being talked about in the USA. Non-farm payrolls rose by almost 530,000 in July, a sharp rise compared to previous months. The unemployment rate also fell (to 3.5%) after having been flat for four months. The new CF outlook expects real GDP to grow by 1.7% this year and 0.7% next year, so the growth outlook has worsened again. The new IMF outlook is a little more optimistic. However, it has also been lowered – to 2.3% for this year and 1% for next year. Leading indicators in the corporate sector have not fallen into the contraction band yet, but they are slightly lower. By contrast, consumer confidence has risen slightly from its all-time low in June and inflation expectations have also increased slightly.

**The Fed raised rates by 0.75 pp at its meeting in July, confirming its effort to tackle inflation. The second sharp rise brought interest rates into the range of 2.25% and 2.50%.** Inflation in the USA started to rise markedly in spring 2021 and its annual rate has been regularly breaking records since then. The August CF outlook expects inflation of 8.1% this year and 3.8% next year. Both figures have been revised upwards. Annual consumer price inflation slowed to 8.5% in July (from 9.1% in June) and may thus finally be peaking. The high inflation is due mainly to growth in prices of energy (33%) and food (10.9%), but also services (5.5%). At the same time, industrial producer price inflation also appears to have peaked (9.7% in July). Financial markets have stabilised, the dollar remains strong, especially against the euro, and stock markets started to rise slowly again in July.



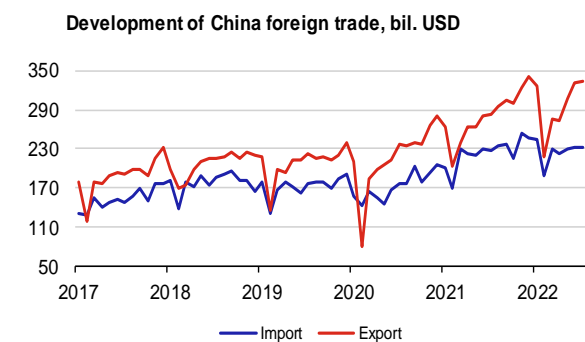
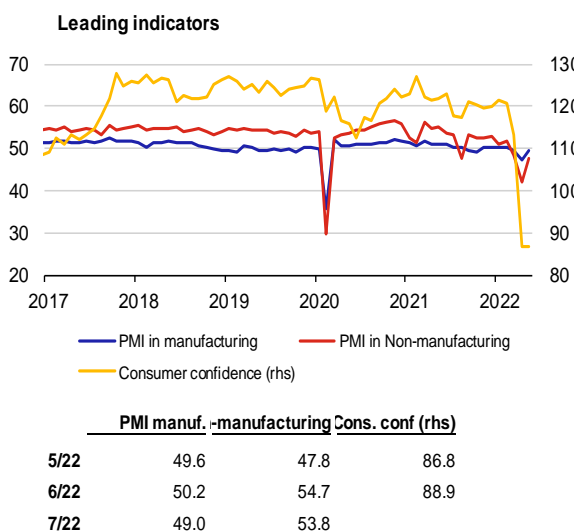
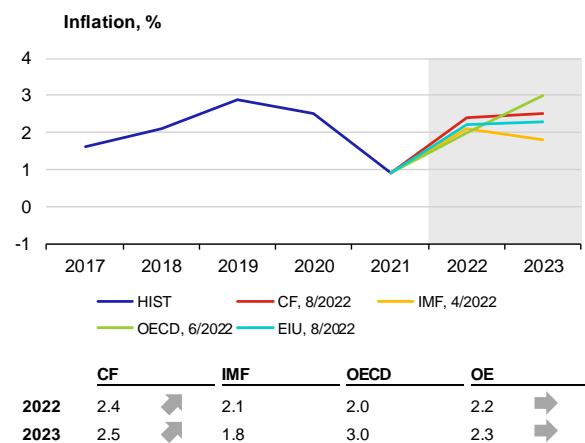
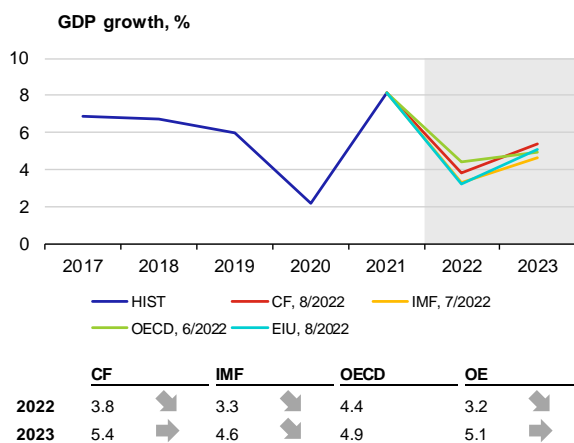


## II.4 China

**Following a GDP stagnation in Q2, the July data on real economic activity indicate no major improvement.** The manufacturing PMI fell to 49 points last month, indicating economic contraction again. Manufacturing firms have long been struggling with a lack of demand and now additionally face rising costs, as most of them operate in highly energy-intensive sectors. The indicator of activity in non-manufacturing sectors also worsened in July. The prevailing negative economic sentiment confirms fragile fundamentals, which will make it very hard to achieve a robust economic recovery in the near future. This reflects growing external risks, exacerbated by persisting unfavourable anti-Covid policy. According to the CF analysts' August outlook, the Chinese economy will grow by 3.8% year on year in 2022 and 5.4% in 2023.

**China's trade surplus reached a record USD 101 billion in July as exports surged after anti-epidemic shutdowns in large Chinese ports were ended.** China's massive trade surplus this year is thus more than making up for the capital outflow reflecting the US Fed's sharp rate hikes and is thus helping to keep the current account in surplus. On the other hand, the capital outflow pressure is this time lower than during previous monetary policy tightening cycles in the USA. This is due in part to stricter conditions and checks of cross-border capital flows by the Chinese authorities.

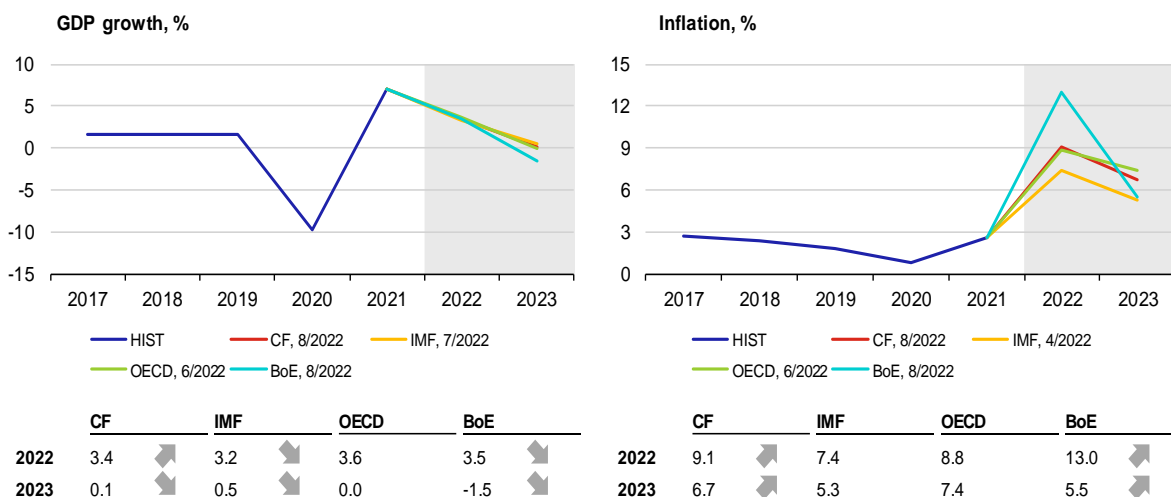
**Annual consumer price inflation rose further to 2.7% in July.** This reflected higher prices of food, especially pork, fruit and vegetables, and energy prices. The higher inflation is putting pressure on the monetary policy of the Chinese central bank, which should thus avoid further massive stimuli and excessive money-printing to support the economy. All this is happening in a context of rapid tightening internationally, which is being reflected in a weaker renminbi against the dollar. According to the April CF outlook, however, annual consumer inflation will be around 2.5% over the next two years.



Source: Bloomberg

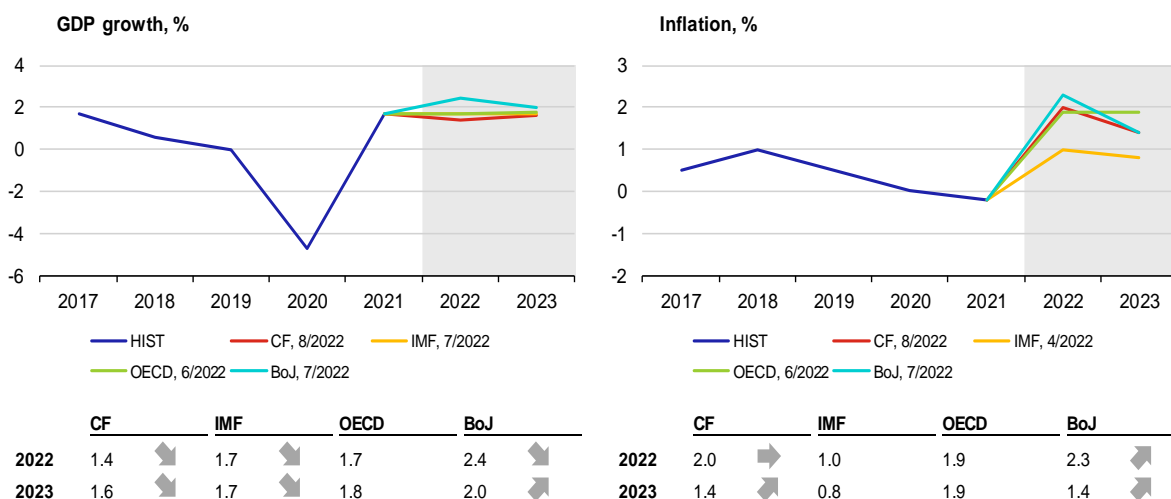
## II.5 United Kingdom

**Inflation is approaching double figures, increasing the pressure on the BoE.** The BoE responded vigorously at its August meeting by raising the base rate by 0.50 pp to 1.75%. Annual inflation reached 9.4% in June due to a surge in food and energy prices and is expected to climb to 13% by the year-end. The high inflation is affecting retail sales, business activity and consumer confidence, which is at an all-time low. The composite PMI fell to 52.1 in July (from 53.7 in June), the lowest level since February 2021. Sectorally, services are still faring better than manufacturing. The labour market remains tight and is grappling with labour shortages. The UK economy is slowing. According to the new BoE forecast, GDP will fall by 1.5% in 2023 (according to CF, it will grow by 0.1%). The situation will not thus be easy for the next Prime Minister, who will be elected in September. Former Chancellor Rishi Sunak and current Foreign Secretary Liz Truss are the two candidates.



## II.6 Japan

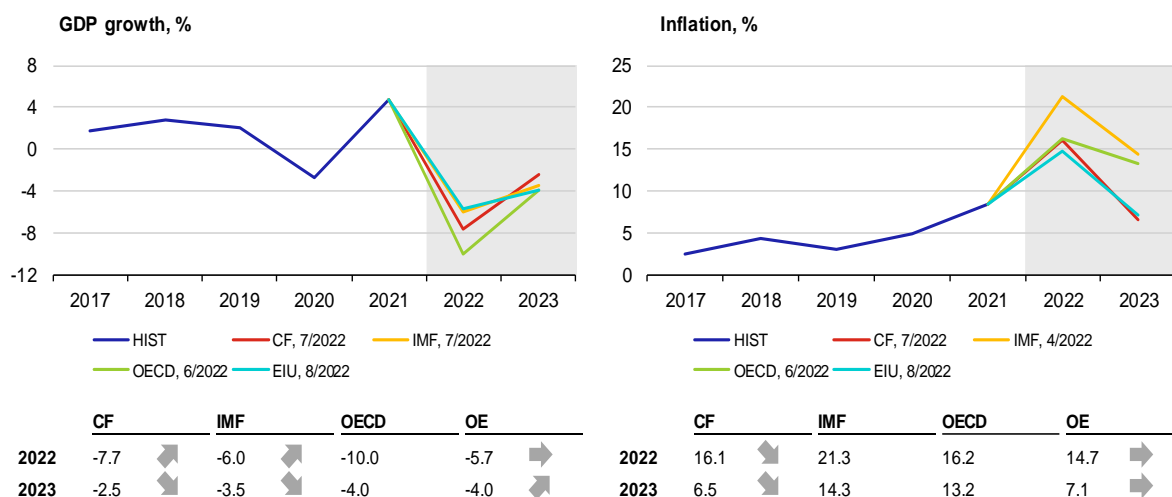
**Indicators of economic activity are pointing to cooling demand.** The August services PMI, consumer sentiment and retail sales in July are all suggesting weakening consumer demand, as in other advanced economies. At its July meeting, the BoJ left monetary policy unchanged and confirmed its stance that monetary policy will remain easy until inflation stays stably above the 2% target. Inflation has reached 2.5%, but the BoJ believes this is due only to temporary external cost pressures. Despite the yen having appreciated from its July trough, the combination of a weak currency and long-term low inflation has taken the yen to its weakest real exchange rate since measurements began. The country's current account surplus is falling quickly due to high prices of imported commodities and a drop in tourism income. By contrast, the fall is being mitigated by dividends from investments abroad, which have risen in yen terms due to the weakening currency.





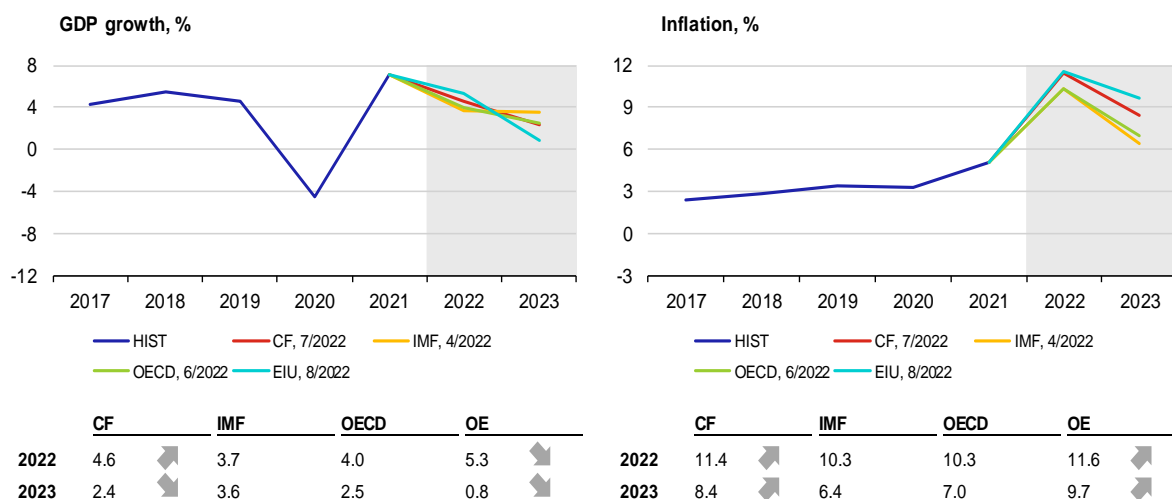
## II.7 Russia

**Data on economic activity in Q2 have indirectly revealed the first impacts of the extensive sanctions imposed on Russia.** According to the flash estimate, GDP dropped by 4% year on year. Annual industrial production growth remained negative for the third consecutive month, declining by 1.8% in June. While the mining industry saw renewed year-on-year growth (2.3%), the decline in manufacturing has been accelerating since March and deepened to 4.5% in June. Having dropped to 50.3, the July S&P Global Manufacturing PMI is pointing to a further deterioration in this segment. By contrast, the recovery in services continues thanks to domestic demand, with the services PMI rising to 54.7. Inflation fell by 0.8 pp compared to June, to 15.1% in July. The Russian central bank lowered its key interest rate to 8% in the second half of July. Russia's international reserves have dropped by more than 10% over the last six months relative to the peak reached on 18 February 2022.



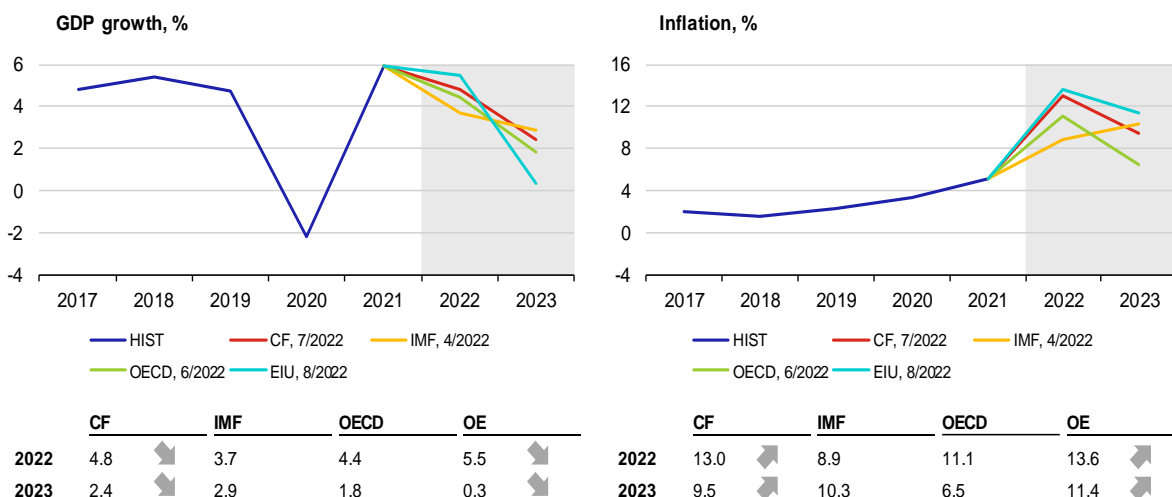
## II.8 Poland

**The Polish real economy is still resilient to all shocks, but significantly slower growth is expected for 2023.** The unemployment rate is falling steadily, having reached 4.9% in June compared to 5.1% in May. Industrial production growth is in double figures (10.4% y-o-y in June) but is now showing signs of slowing (14.9 y-o-y in May). Annual wage growth in the non-business sector saw similar developments in June (13.0%, as against 13.5% in May). These indicators probably reflect low confidence among firms in the Polish economy. At its meeting on 7 July, the Polish central bank decided to raise interest rates again (from 6.0% to 6.5%). It probably sees inflation as a cause for great concern, as annual growth in consumer prices reached 15.6% in July, slightly higher than in June (15.5%).



## II.9 Hungary

**The Monetary Council of the Hungarian central bank is trying to signal that it will not stop combating the high inflation and weak exchange rate.** At its meeting on 26 July, it therefore decided to increase the key interest rate again by 1 pp to a new record-high of 10.75%. Annual consumer price inflation picked up from 11.7% in June to 13.7% in July, while core inflation increased to 16.7%. Retail sales grew at a double-digit rate in May but slowed to 4.5% year on year in June. The Hungarian labour market reported a further fall in the unemployment rate in June (from 3.4% in May to 3.2%). Wage growth has been in double figures since the start of 2022 (14.9% y-o-y in May). On the other hand, annual industrial production growth slowed sharply in June (from 9.4% in May to 1.5%) and, according to GKI Economic Research, business confidence in the Hungarian economy decreased in July.

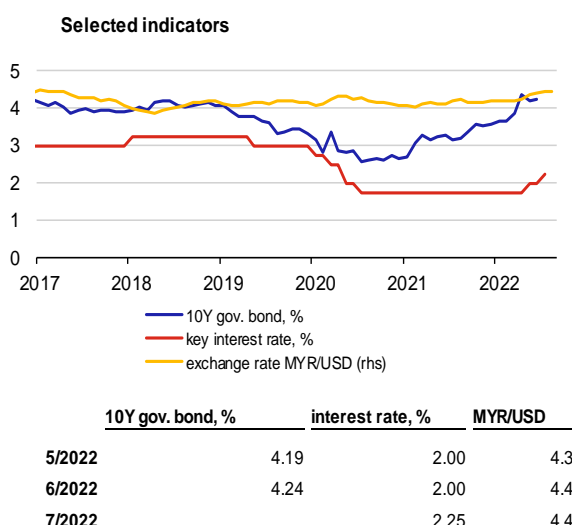
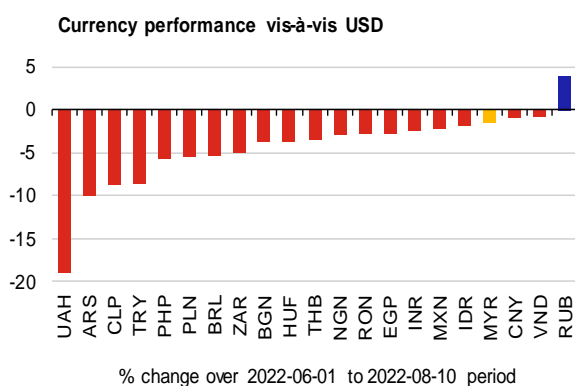
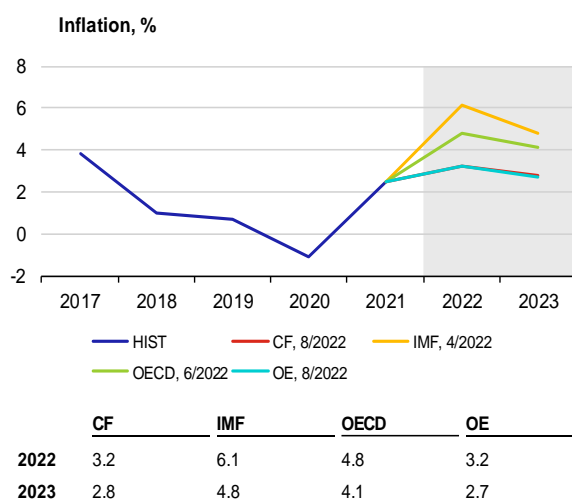
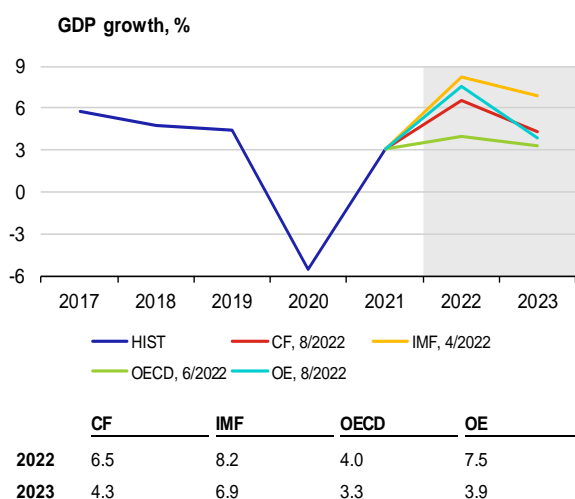


## II.10 Countries in the spotlight – Malaysia

The Malaysian economy delivered a pleasant surprise by growing at a brisk 3.5% quarter-on-quarter rate in Q2, confirming a recovery in services and manufacturing. Solid current account performance continuing to be fostered by external demand for electronics. The oil and gas-rich country is gaining momentum thanks to the pent-up demand that built up during lockdowns. Consumer inflation rose to 3.4% (the highest level in 12 months), driven mainly by increasing food and transport prices. The inflation is also due to a weaker exchange rate (along with other currencies in the region), reflecting the monetary policy tightening in the USA and greater risk aversion due to the worse global outlook for the global economy and to Russia’s invasion of Ukraine. However, thanks to the sound condition of its banking sector and the favourable external position of its economy, Malaysia is not at risk of major financial stress.

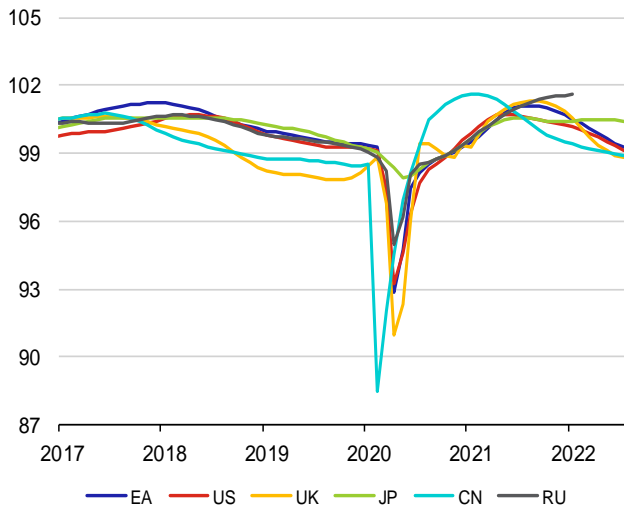
Malaysia is expected to show continued solid economic growth supported by robust domestic demand, an improved labour market situation, tourism and, in the longer term, by the implementation of planned investment projects. However, there might be disappointment due to unexpectedly weaker external demand and further geopolitical tensions, which would exacerbate the situation in global value chains. The monitored institutions expect growth to exceed 6% in 2022 as a whole and slow to around 4% in 2023.

Robust economic growth, increased inflation and a weaker MYR/USD exchange rate will force the central bank to increase rates further (2.25% at the moment). Most analysts are forecasting a rate increase of 0.25 pp at each of the two remaining meetings this year. CF analysts expect only one more standard rate increase next year. Inflation is expected to peak this year (partly due to base effects caused by an electricity discount in 2021 Q3) but will remain at above-average levels next year. The Malaysian ringgit is expected to appreciate gradually from its current level of MYR 4.44 to MYR 4.25 to the dollar in the second half of 2024.

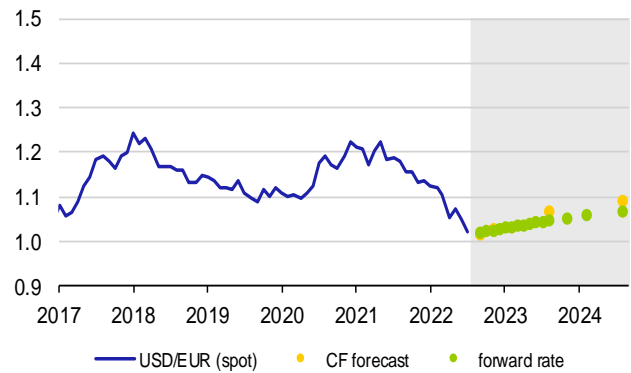


### III. Leading indicators and outlook of exchange rates

OECD Composite Leading Indicator

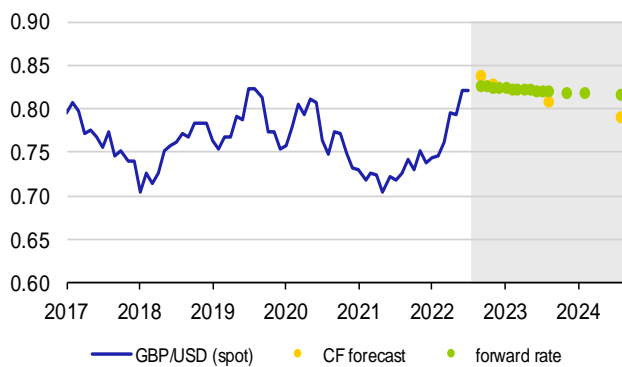


The US dollar (USD/EUR)



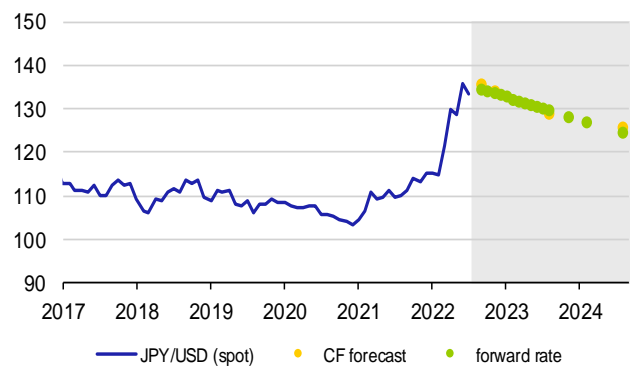
	8/8/22	9/22	11/22	8/23	8/24
spot rate	1.022				
CF forecast		1.019	1.029	1.068	1.094
forward rate		1.022	1.027	1.048	1.071

The British pound (GBP/USD)



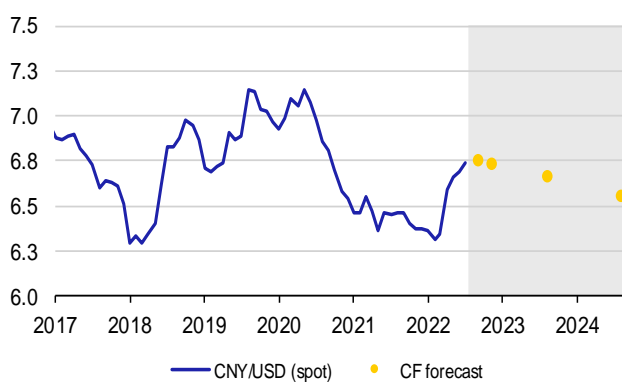
	8/8/22	9/22	11/22	8/23	8/24
spot rate	0.825				
CF forecast		0.839	0.829	0.809	0.792
forward rate		0.827	0.826	0.821	0.817

The Japanese yen (JPY/USD)



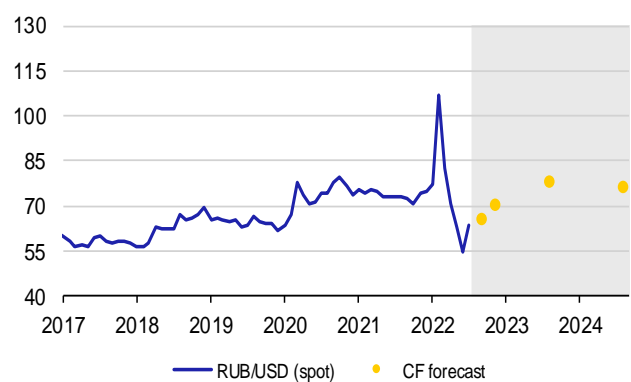
	8/8/22	9/22	11/22	8/23	8/24
spot rate	134.7				
CF forecast		135.6	134.4	129.1	126.1
forward rate		134.6	133.9	129.7	124.9

The Chinese renminbi (CNY/USD)



	8/8/22	9/22	11/22	8/23	8/24
spot rate	6.759				
CF forecast		6.757	6.743	6.666	6.559

The Russian rouble (RUB/USD)



	8/8/22	9/22	11/22	8/23	8/24
spot rate	61.55				
CF forecast		66.04	70.56	78.67	76.68

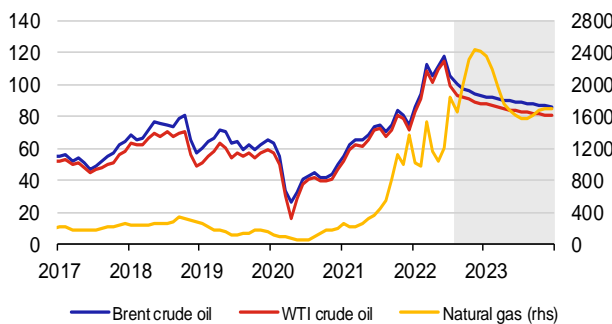
Note: Exchange rates as of last day of month. Forward rate does not represent outlook; it is based on covered interest parity, i.e. currency of country with higher interest rate is depreciating. Forward rate represents current (as of cut-off date) possibility of hedging future exchange rate.

### IV.1 Oil

**The Brent crude oil price fluctuated between USD 100 and USD 108/bbl in July but fell below USD 95/bbl in early August.** The lower oil prices are being fostered by concerns that tighter monetary policy of large central banks will result in weaker global economic growth and hence weaker demand for oil. Petrol consumption during the driving season in the USA and imports of oil to China so far this year are significantly weaker year on year. (Demand for fuels in China is weaker due to anti-epidemic lockdowns; on top of that, China has restricted exports of fuels in an effort to reduce air pollution.) Lower oil prices are also being fostered by a stronger dollar, the release of oil from strategic reserves in the USA and the fact that Russia has so far managed to export larger amounts of oil to Asia. Hedge funds continued to sell strongly in July. However, the situation on the physical market remains tight. At its August meeting, OPEC+ decided to increase production only slightly in September and warned that the availability of excess capacity (the ability to raise production further) was severely limited. However, the tightness on the physical market decreased in early August as exports of oil from Libya were renewed. A counter-seasonal decline in demand for petrol in the USA and higher refinery production in Asia and Europe resulted in an increase in fuel inventories, which reduced the months-long tightness in this market. Refinery margins thus changed trend in all regions in July, falling from their record-high June levels.

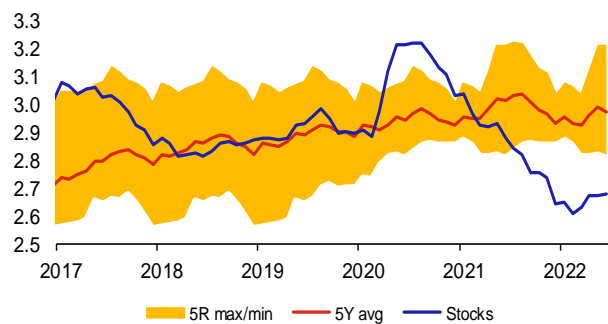
**The market curve in the first half of August shifted again downwards significantly compared to the previous month.** However, it still signals a further drop in prices to USD 93.5/bbl at the close of 2022 and USD 86/bbl at the end of 2023. The EIA also expects a stronger decline in the Brent price for the rest of this year – to USD 90.5/bbl in December. Next year, however, the EIA expects prices to decrease only gradually to USD 88/bbl at the end of the year. The August CF forecast is again the highest, expecting a Brent price of USD 94.8/bbl one year ahead.

**Outlook for prices of oil (USD/barrel) and natural gas (USD / 1000 m<sup>3</sup>)**

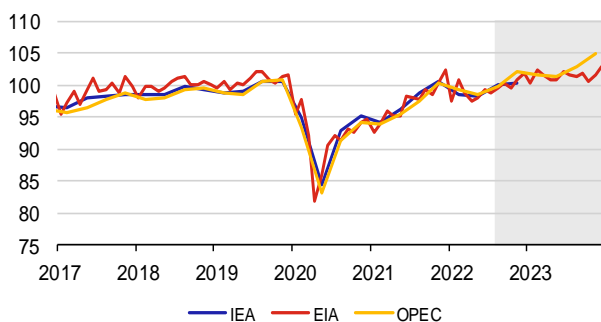


	Brent	WTI	Natural gas
2022	101.16	96.75	1635.47
2023	89.09	83.76	1784.30

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

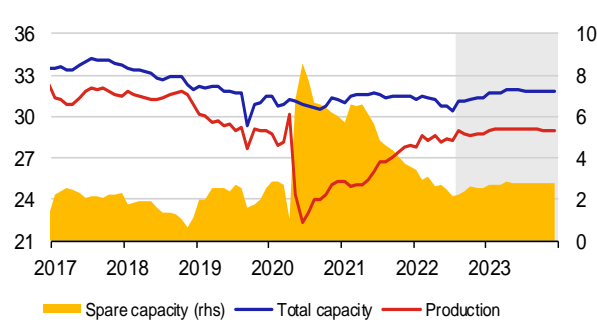


**Global consumption of oil and oil products (mil. barrel / day)**



	IEA	EIA	OPEC
2022	99.36	99.44	100.02
2023		101.50	102.72

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



	Production	Total capacity	Spare capacity
2022	28.47	31.10	2.63
2023	29.04	31.80	2.76

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

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

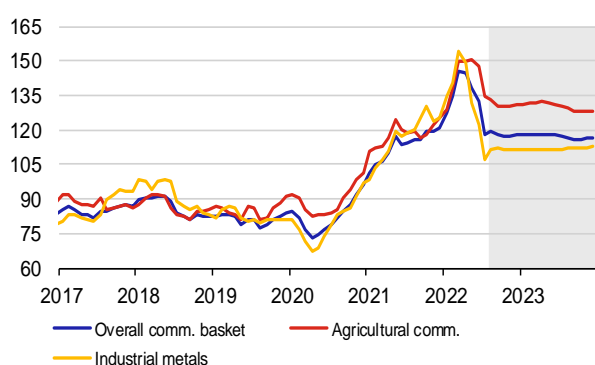
## IV.2 Other commodities

**The average natural gas price in Europe rose by more than 60% in July due to a drop in LNG exports from the USA and a further fall in Nord Stream capacity.** Although storages in Europe were filled to around 70% of capacity at the end of July, lower LNG exports from the USA and a reduced flow of gas from Russia are jeopardising the goal to fill them to at least 80% in November. The TTF gas price was up more than 300% year on year in early August. The Australian coal price rose for the third consecutive month, as the high gas prices are increasing coal demand from the energy sector. The IEA called on European countries to temporarily raise coal generation to prevent possible reductions in supplies of electricity to firms in the coming months, when the option of importing gas will remain limited. The high coal prices are also due to the ban on Russian coal imports to Europe and high demand for electricity for air-conditioning due to hot weather in Europe.

**The average basic metals price index decreased for the fourth consecutive month due to weak industrial activity in China and Europe but returned to growth in the first half of August due to low stocks at the LME.** Production of basic metals in China is increasing in response to fiscal and monetary stimuli and the easing of anti-pandemic measures, while local demand from the construction industry remains weak. In other countries, manufacturing demand for basic metals remains low due to high energy prices. Prices of aluminium, nickel and tin have been flat since the start of July, while prices of copper, zinc and iron ore have been rising slightly since mid-July.

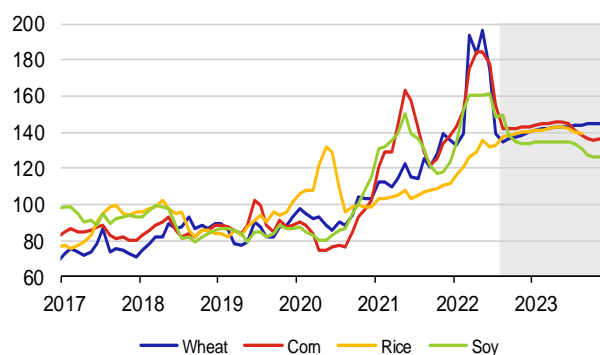
**The food commodity price index continued to decline in July due to renewed exports from Ukraine's Black Sea ports and higher exports from Indonesia.** The price of wheat has been broadly flat since mid-July after a previous correction. Prices of maize and sugar dropped sharply in July, while prices of rice and pork increased.

Non-energy commodities price indices



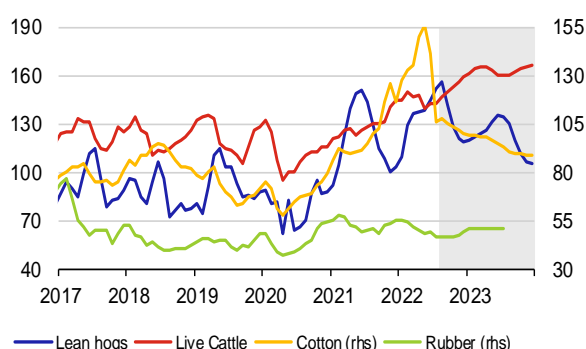
	Overall	Agricultural	Industrial
2022	127.6 ↗	137.8 ↘	124.8 ↗
2023	117.2 ↗	130.3 ↘	111.7 ↗

Food commodities



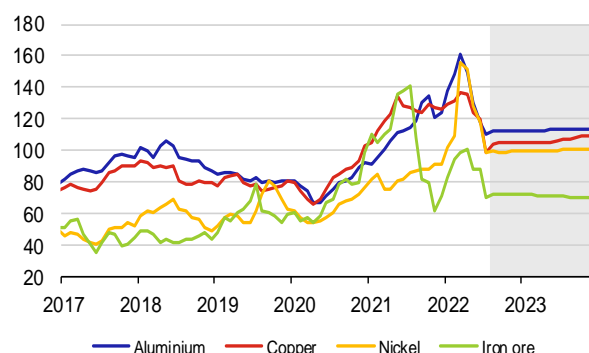
	Wheat	Corn	Rice	Soy
2022	153.7 ↘	156.9 ↘	132.4 ↗	147.2 ↗
2023	143.2 ↘	141.0 ↘	141.4 ↗	131.5 ↗

Meat, non-food agricultural commodities



	Lean hogs	Live Cattle	Cotton	Rubber
2022	134.4 ↗	148.2 ↗	122.1 ↗	49.2 ↘
2023	122.0 ↘	163.3 ↗	93.9 ↗	50.7 ↘

Basic metals and iron ore



	Aluminium	Copper	Nickel	Iron ore
2022	126.5 ↗	116.8 ↗	113.4 ↘	82.5 ↗
2023	113.4 ↗	107.1 ↗	100.4 ↘	71.1 ↗

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.

## FX markets in the age of fintech<sup>1</sup>

*Digitalisation has gradually changed all financial markets to a greater or lesser degree, and FX trade is no exception. However, the forex market is quite specific, being decentralised, fragmented, partially opaque and largely unregulated, so determining the exact impact of technological change on it is not as straightforward as it is for stocks, bonds, exchange-traded derivatives or even crypto assets. This article tries to take stock of the fintech-induced changes in FX trade that are likely to be of lasting economic significance..*

### Introduction: fintech for intermediaries (initially) vs fintech for customers (recently)

**For decades, FX was an easy profit centre for major banks, with barely any competition along the retail-wholesale axis.** In the unregulated, fragmented and opaque OTC (over-the-counter) FX market, retail customers were fully dependent on their dealer banks. Mass digitalisation gradually created a different market environment in which fierce competition for customers from non-bank fintech **start-ups challenged the seasoned hierarchy.**

**The major structural changes which forex started to undergo with the advent of fintech were not smooth over time and in scope across either market segments or participants.** Even ten years ago, people mostly associated fintech's inroads into the forex market with high-frequency trading (HFT). Now, fintech in FX is also heavily present at the client end (Schrimpf and Sushko, 2019), as electronic FX brokerage has been made accessible online to numerous retail clients over the last decade. Less visible, but equally important, is back office digitalisation. Checking that traders have sufficient liquidity, setting and executing liquidation thresholds and position closure triggers, issuing margin calls – all this can be and is routinely performed by bots. Many back-end processes are now 100% automated.

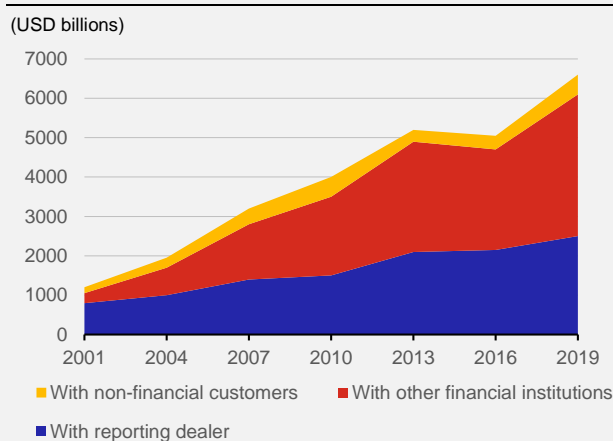
**The most profound change in market structure concerned end-users' access to liquidity.** As the comprehensive data periodically collected by the Bank for International Settlements (BIS, 2019) suggest, after a hiatus in the mid-2010s the share of FX trades conducted by entities other than major dealer banks started growing again (see Chart 1). Simultaneously, over the last 20 years, the once sharp distinction between the inter-dealer and customer-dealer segments has gradually become more blurred. A key driver has been the proliferation of prime brokerage, allowing smaller banks, hedge funds and HFT firms to participate more actively in the risk-sharing process. None of this would have been possible without advanced market.

### Professional traders: algo, HFT and gradually decreasing returns to scale

**In the aftermath of the GFC, more and more algorithmic firms tried their luck in the market.** Since algo trading is based on technical analysis, the results of which tend to be short-lived, its implementation in the forex market needs not just smart software, but also powerful hardware to enable execution of a large number of orders in the shortest possible time. In addition to high-speed orders, algo trading is characterised by high turnover rates and order-to-trade ratios. Not all algos are HFT (the original algo solutions were designed for stocks and meant to be deployed as long-term endeavours), but in the FX case, they have gradually become synonyms. HFT either introduced or cemented in the context of everyday FX trading reality many general attributes of fast-paced markets that had previously been spreading only unevenly across sub-segments of the forex market. Those features include extremely high trade volumes, quick cancellation of a great number of orders, very short duration positions, a very thin profit margin on a typical trade, execution fuelled by data feeds and proximity services, and a high share of proprietary trading by major players.

**Most of the time, high-frequency forex trading works using algorithms that seek to predict market fluctuations before they even happen.** So, it does not necessarily look at how economic and financial fundamentals might shift the market. Instead, regardless of fundamentals, it looks out for tiny shifts in currency pair relations to try to make a million tiny profits. One effect of the proliferation of HFT during the 2010s was increased volatility (Breckenfelder, 2020). Another was a gradual exhaustion of available rents.

**Chart 1 – Average daily FX trading volume by counterparty**



Source: BIS Triennial Survey, 2019

<sup>1</sup> Author: Jaromír Tonner. The views expressed in this article are those of the author and do not necessarily reflect the official position of the Czech National Bank. All errors and omissions are the author's responsibility.



**HFT was the major highway along which technology spread in the forex market before mobile apps and other retail assistants became available on the buy side.** However, it is still possible that risk-prediction SW, machine learning, algos and the like are waiting in the wings for a chance to break through again. In the meantime, though, ease of access and flexibility for traders is the main area of current fintech development.

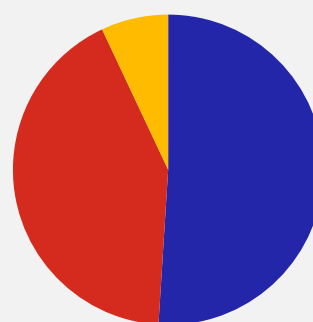
### Retail fintech: electronic brokerage and the new middlemen

**For decades, the usual order-generating path used by non-financial corporates was: company treasury – FX demand – dealer/broker.** That meant a safe and solid routine, albeit at the expense of low transparency and of intermediaries reigning over customers. There was an objective reason for this state of affairs: despite the huge volumes that go through the interbank market, most forex users do not have direct access to it. The interbank forex market requires long-term credit relationships between participants that few can afford. Furthermore, deals in the interbank market are typically very large, which does not suit most other players. That is why, for a long time, the FX market as a whole was the sole preserve of banks, official institutions and the very wealthy. That all changed with the rise of fintech.

**After the HFT segment became saturated during the mid-2010s, technological innovations responded mainly to retail demand for intermediation and settlement risk reduction.** These improvements were seen by the majority as more important than creating further algorithmic trading capacities and opportunities. In addition, as public awareness of clients' unequal standing vis-à-vis dealer banks increased, calls for increased transparency – above all regarding order execution – and better order customisation could no longer be ignored. Service providers began to respond with new specialised solutions for specific customer cohorts, and better order customisation became a reality. Some of the innovations in this category are known under the collective name of execution algorithms, or EAs (BIS, 2020). Specialised solutions also include specialised FX execution firms, such as PTFs (principal trading firms), and “currency overlay” (outsourcing of FX trading desk tasks).

**Improvements in technology have led to a variety of electronic trading platforms becoming accessible to retail clients.** These platforms host brokers that directly or indirectly tap into the prices made by large banks. In this way, the gap between the trading experience of institutional investors and that of retail clients has narrowed over the years. Retail clients now have access to very competitive forex spreads, and trading has become extremely convenient. On the outside, this development showed up at one point as a decline in inter-dealer trade volumes (Moore et al., 2016), but the overall growth in volume resumed after a short pause, reflecting the attractiveness of the new structure to the buy side and the corresponding uptick in demand for dealer bank services provided to the expanding community of non-bank liquidity providers. The latter gradually overtook the major dealer banks in terms of the volume of orders processed (see Chart 2). An increasing share of the orders hidden behind these growth figures originated in algorithmic execution – another feature of the fintech boom era.

Chart 2 – Participation in FX trades as of 15 January 2019



■ Other financial institutions (51) ■ Reporting dealers (42)  
■ Non-financial customers (7)

Source: <https://www.dailyfx.com/education/beginner/forex-market-size.html>

**At present, even though FX trading activity remains as fragmented as ever, “aggregator platforms” and expert advisers (such as MetaTrader) allow end-users and dealers to connect to a variety of trading venues and counterparties of their choice.** With more counterparties connected to each other, search costs (the major downside of OTC markets) have decreased and the velocity of trading has increased. The traditional market structure based on dealer-customer relationships has given way to a trading network topology where both banks and non-banks act as liquidity providers. This is effectively a form of the well-known FX trade phenomenon previously often described as the “hot potato”, but one in which dealers are in many cases replaced by a trading platform. The role of the latter is to establish a connection to a broker that provides real-time market information and executes the client's buy/sell orders. Additional functionalities allow the client to perform prompt technical analysis of price data and manage trading activities in a more sophisticated way. Accordingly, if retail users so wish, they can delegate the entire routine work of technical analysis and trading to expert apps. Other programs analyse market data based on several custom indicators and manage trading activities on behalf of brokers. Aside from being able to trade at all hours of the day, expert advisers are also capable of more precise analysis and quicker execution than humans. In addition, retail traders have access to ECNs (electronic communication networks) that integrate available quotes across many markets and offer other auxiliary functions beyond being pure trader chatrooms.

**What the outlined three-tier forex participant structure replacing the previously prevalent two-tier one means for market stability and integrity as a whole is not yet clear.** Forex remains an opaque OTC market, and the ongoing structural change means even more fragmentation than before. On the other hand, a better position of market users should, in theory, imply more efficient pricing and a welfare gain. Whether this hope is premature or not depends on the best available trading technologies becoming spread sufficiently evenly among participants and on competent oversight of non-bank intermediaries by the authorities.

## FX and crypto exchanges

**Once the first cryptocurrencies appeared in the market, there emerged a need to trade them both against each other and against fiat currencies.** The online facilities offered to crypto holders for this purpose are traditionally called crypto exchanges. This is a minor paradox and a misnomer, since, as we know, traditional forex trading, as opposed to trading in stocks and bonds, does not make use of organised exchanges. It would be more appropriate to call venues such as Binance, Coinbase, Gemini and Kraken crypto brokers. This holds for centralised exchanges (CEX), which are very similar to traditional electronic books that collect and execute limit and market orders for a fee. By contrast, decentralised exchanges (DEX) employ “liquidity pools” instead of order books. They function as dApps (decentralised applications) on a blockchain, and, depending on the momentary state of the market, offer very volatile execution terms and latency. Besides, by definition, dApps are inherently unable to trade fiat currencies and just facilitate exchange of crypto assets. Therefore, fiat-to-crypto conversions (and vice versa) cannot be done without recourse to a CEX.

**Misleading terminology notwithstanding, the main difference between fiat and crypto forex trade is the composition of the participants.** Crypto exchanges are dominated by private individuals (or entities represented by wallet addresses with a hidden identity that makes them legally indistinguishable from physical persons). On the other hand, forex for fiat currencies is used by both individual investors and major governmental and institutional participants under a fully revealed identity. Conversely, governments are minor players in the crypto market at present. At most, some of them are toying with the idea of introducing state-controlled cryptocurrencies.

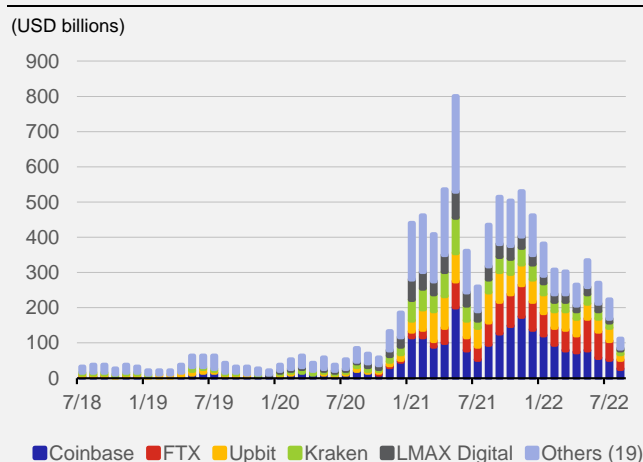
**Another formal difference is that crypto exchanges remain open 24/7/365, fulfilling the original broadly advertised promise of this unregulated OTC market.** The actual distribution of market depth is particularly insensitive to geographical and time zone factors in the DEX segment.

**Given the relatively modest degree of crypto penetration into mainstream finance so far, the registered volume of crypto trade is actually quite noteworthy.** For instance, in September 2021 the total combined daily crypto market volume was about \$1.3 trillion. This figure is slightly over one-fifth of the fiat forex traded, which, according to the Bank for International Settlements’ most recent triennial central bank survey (BIS, 2019), is more than \$6 trillion each day, making it the biggest market in the world.

## FX and CBDC: friends or foes?

**The currently available data (see Chart 3) does not suggest that crypto-fiat conversions are headed for uncontrolled expansion or otherwise being a major factor in the forex ecosystem.** Setting up an account with an online FX brokerage is one thing (made increasingly easy by ongoing competition for customers, as already mentioned), but creating a digital wallet with the intention of being permanently present on one or more crypto exchanges is another. The latter is a much more far-reaching decision, and only a minority of retail forex users have deemed it useful so far. However, there is an actor on the stage who is increasingly prepared to make this decision easy and even compulsory: the community of central bankers introducing CBDC. It is clear what those central bankers don’t want: they don’t want to let private stablecoin initiatives such as the Libra/Diem project steal their powers. What is probably not yet clear to most people is what they risk triggering: forced mass adoption of digital wallets by the private sector. However, once adopted, digital wallets will become a household technology, and it will only be a matter of time before everyone understands how to use them to exploit the advantages of the crypto universe at large. Then, the same – or maybe a different, but similarly operated – wallet will be used as a gateway to crypto-for-fiat or crypto-for-crypto trades irrespective of what the CBDC policy was intended to achieve. The consequences of this for monetary sovereignty are a separate matter, but for forex, it may mean further decentralisation of liquidity provision, decentralisation even more far-reaching than the previously described disruption of

**Chart 3 – Trade volumes on selected crypto exchanges**



Source: Cryptocompare  
Note: Data as of August 16, 2022.

retail fintech by online liquidity providers. In short, the CBDC fad among central bankers might very well explode in their faces, but the forex market itself could undergo another wave of democratisation (buy-side strengthening) at the very same time.

### Conclusion: challenges ahead

**Fintech does not mean the same to all participants and currencies.** The major currency pairs are mainly experiencing shifts in volatility patterns (longer spells of stability than before), while minor currencies may be benefiting from more dispersed market power on the intermediary side. CBDC might become a new source of disruption linked with sudden swings in confidence.

**At present, forex trading is expected to grow primarily in emerging markets.** This trend has already started to appear, a spectacular example being Singapore becoming the third-largest forex market globally, behind the UK and the US. Because of this, more platforms are expected to set up offices in different regions and introduce localised features such as integration of local languages.

**During the first 15 years of this century, the prime source of operational risk in the forex market resided in the fragility of HFT algorithms (cf. the “flash crash” of 6 May 2010).** As fintech penetrates into the retail segment, and as the non-bank FX liquidity provider industry continues to thrive, the potential for incidents such as data breaches and fraud is rising in importance.

**It is not yet clear what exact effects the penetration of fintech into the forex market is having on exchange rate volatility, but it doesn't seem to be increasing it palpably.** The continued rise in trade volumes, especially in EMEs and across a wide range of users, may bode ill for resilience to speculative bubbles (a nightmare for any central bank issuing a freely floating currency). At the same time, more liquidity providers are now being forced to internalise/warehouse FX risk and act as principal (instead of pure agency) traders, thus going beyond convenient straight-through client order processing (STP). This means that more participants will bear the costs of bursting speculative bubbles, contributing to overall market stability and resilience. The expanding crypto-fiat trading is complicating policymakers' deliberations about CBDC. Nonetheless, the feared disruption of established FX procedures by CBDC is not an inevitability. Innovating central banks will either gain a proper understanding of the interplay between new technologies and the preferences of market users and then be able to weave themselves naturally into the market fabric, or fail to gain such an understanding, in which case their role in the fiat-for-crypto forex market will be marginal.

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### Keywords

CBDC, fintech, FX market

### JEL Classification

E58, F31, F41

## A1. Change in predictions for 2022

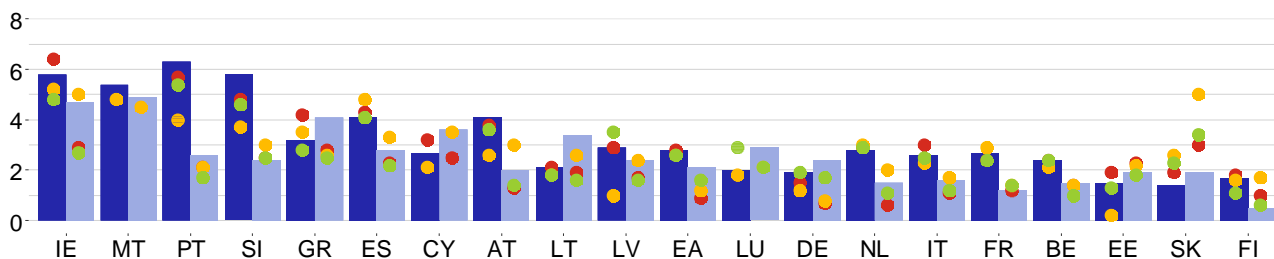
	GDP growth, %				Inflation, %			
	CF	IMF	OECD	CB / EIU	CF	IMF	OECD	CB / EIU
EA	+0.1	-0.2	-1.7	-0.9	+0.3	+3.6	+4.3	+1.7
US	-0.4	-1.4	-1.2	-1.1	+0.2	+4.2	+2.2	+0.9
UK	+0.1	-0.5	-1.1	-0.3	+0.5	+4.8	+4.4	+2.7
JP	-0.2	-0.7	-1.7	-0.5	0	+0.5	+1.1	+0.4
CN	-0.4	-1.1	-0.7	-0.8	+0.2	+0.3	+0.3	0
RU	+0.7	+2.5	-12.7	0	-1.8	+16.5	+10.3	0

## A2. Change in predictions for 2023

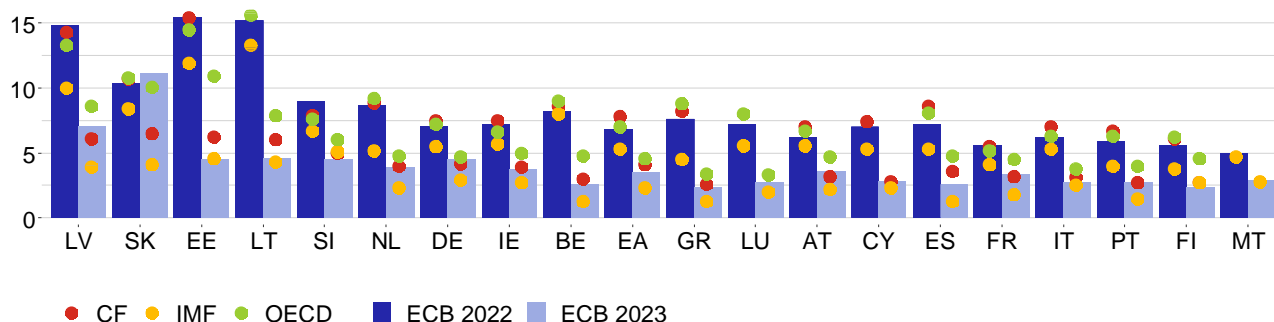
	GDP growth, %				Inflation, %			
	CF	IMF	OECD	CB / EIU	CF	IMF	OECD	CB / EIU
EA	-0.5	-1.1	-0.9	-0.7	+0.4	+0.9	+2.8	+1.4
US	-0.3	-1.3	-1.2	-0.5	+0.1	+0.2	+1.0	-0.1
UK	-0.4	-0.7	-2.1	-1.2	+1.1	+3.3	+5.0	+2.0
JP	-0.1	-0.6	+0.7	+0.1	+0.1	+0.1	+1.1	+0.3
CN	0	-0.5	-0.2	0	+0.2	-0.1	+0.6	0
RU	-0.3	-1.2	-5.3	+0.6	-0.6	+9.8	+8.8	0

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

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



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

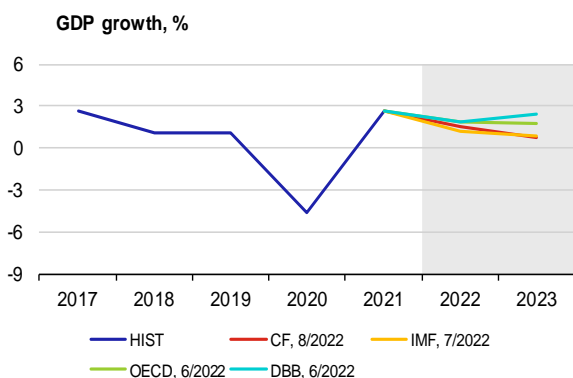


● CF ● IMF ● OECD ■ ECB 2022 ■ ECB 2023

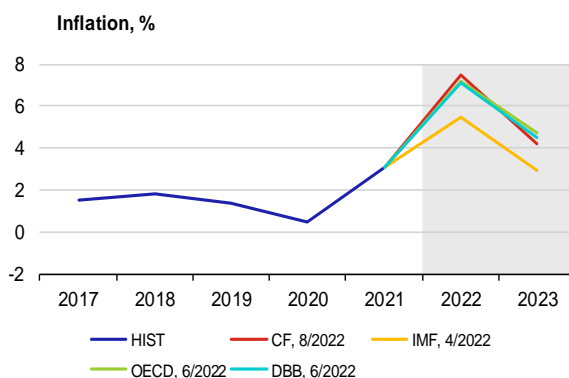
Note: Charts show institutions' latest available outlooks of for the given country.

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

#### Germany

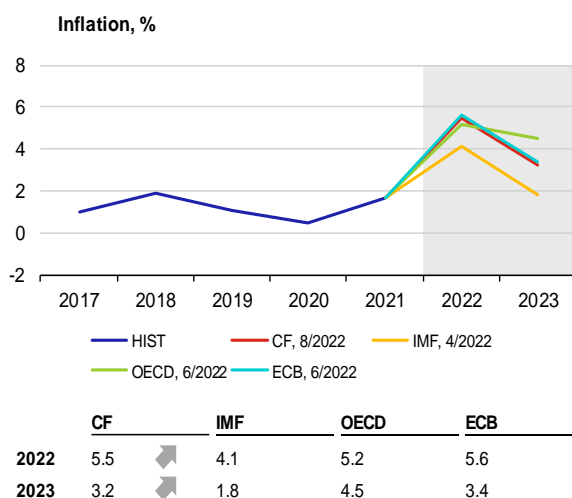
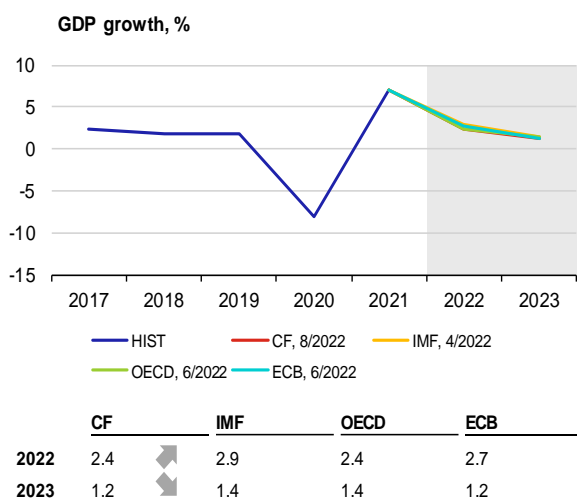


	CF	IMF	OECD	DBB
2022	1.5	1.2	1.9	1.9
2023	0.7	0.8	1.7	2.4

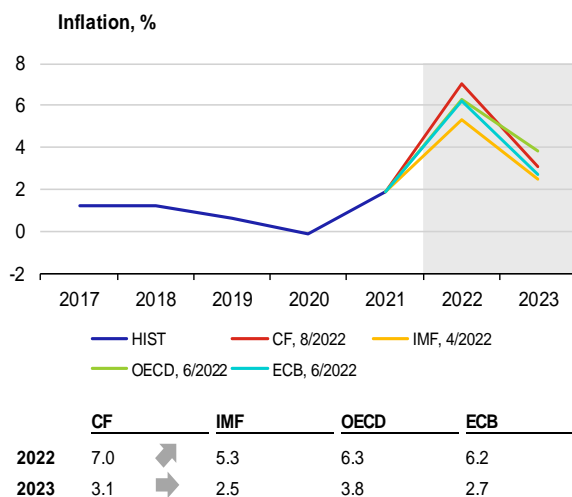
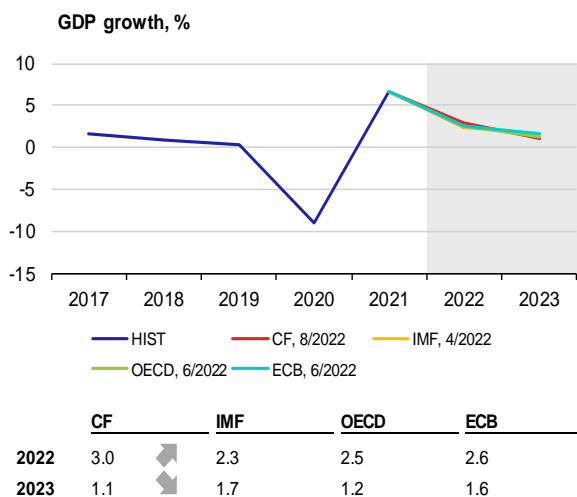


	CF	IMF	OECD	DBB
2022	7.5	5.5	7.2	7.1
2023	4.2	2.9	4.7	4.5

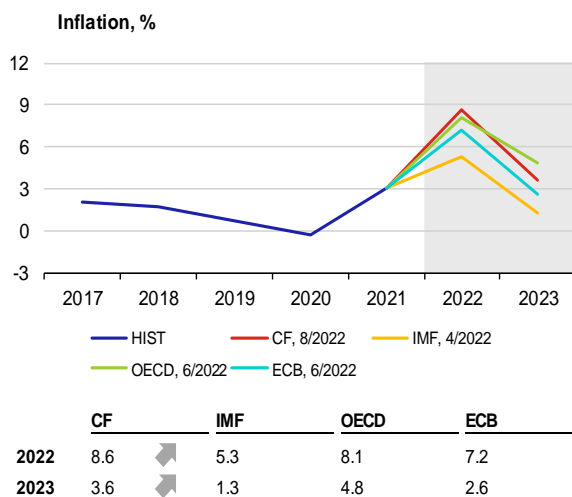
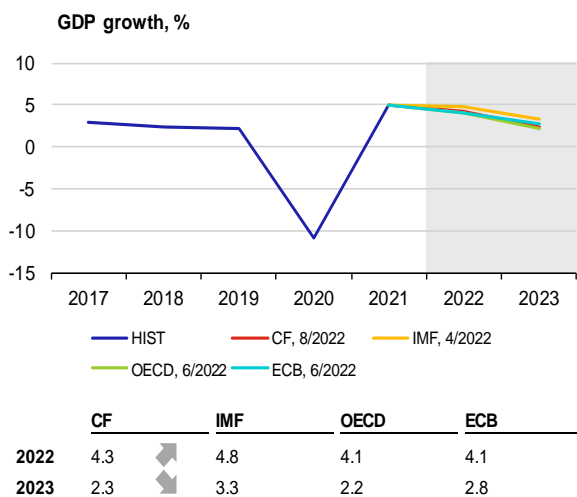
## France



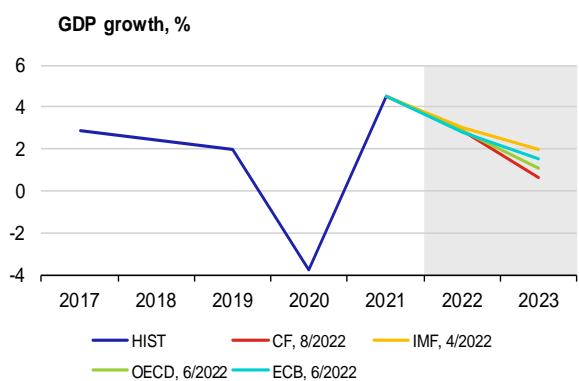
## Italy



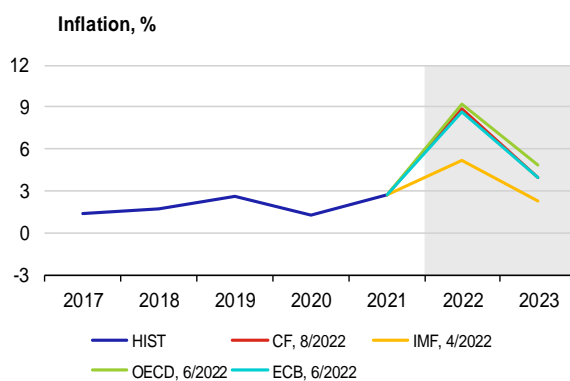
## Spain



## Netherlands

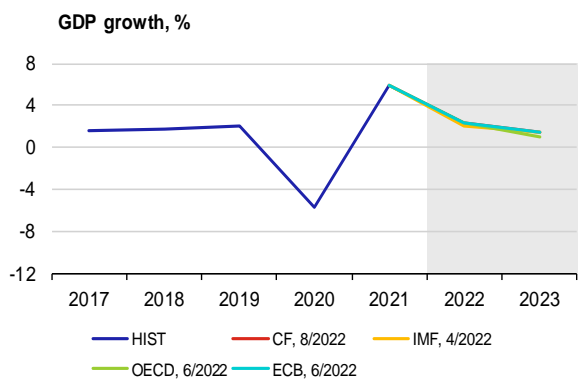


	CF	IMF	OECD	ECB
2022	2.9	3.0	2.9	2.8
2023	0.6	2.0	1.1	1.5

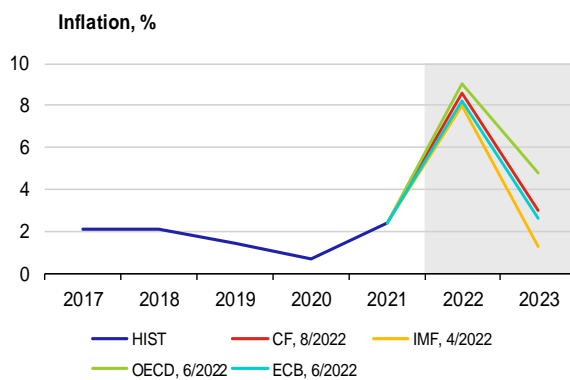


	CF	IMF	OECD	ECB
2022	8.9	5.2	9.2	8.7
2023	4.0	2.3	4.8	3.9

## Belgium

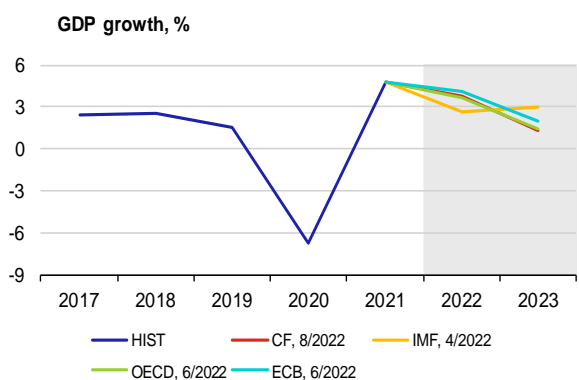


	CF	IMF	OECD	ECB
2022	2.4	2.1	2.4	2.4
2023	1.4	1.4	1.0	1.5

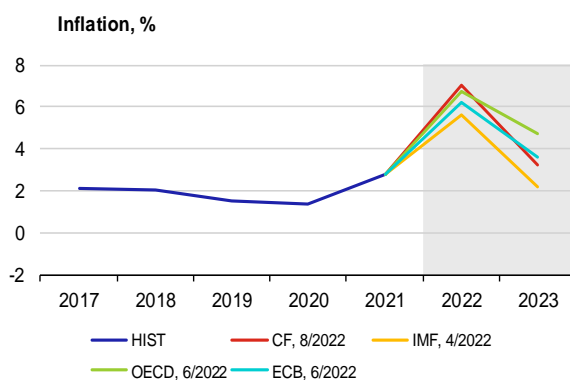


	CF	IMF	OECD	ECB
2022	8.6	8.0	9.0	8.2
2023	3.0	1.3	4.8	2.6

## Austria



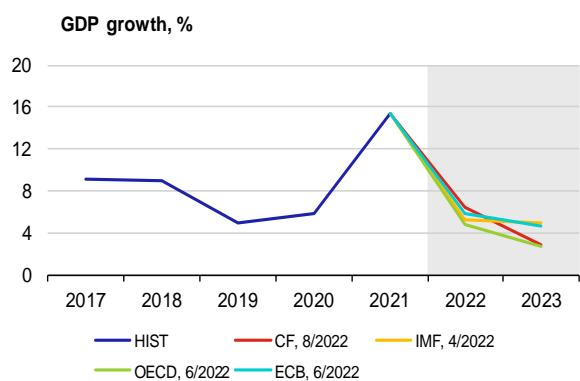
	CF	IMF	OECD	ECB
2022	3.8	2.6	3.6	4.1
2023	1.3	3.0	1.4	2.0



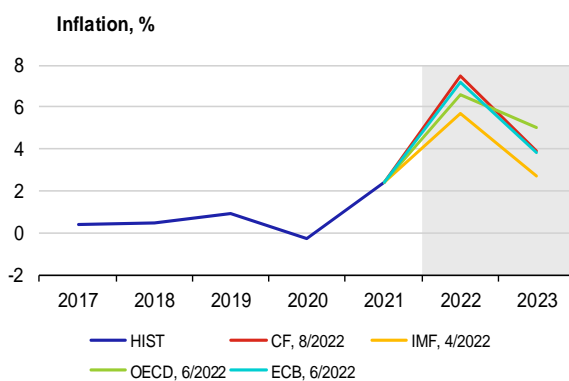
	CF	IMF	OECD	ECB
2022	7.0	5.6	6.7	6.2
2023	3.2	2.2	4.7	3.6



## Ireland

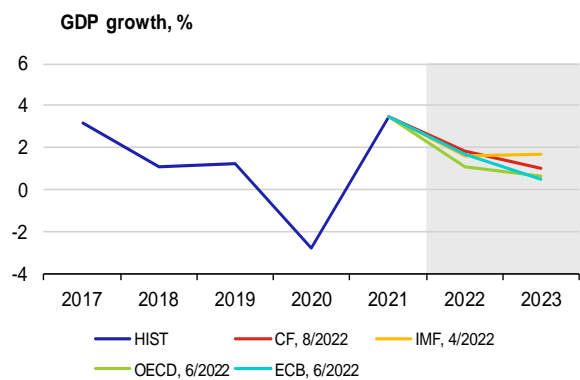


	CF	IMF	OECD	ECB
2022	6.4	5.2	4.8	5.8
2023	2.9	5.0	2.7	4.7

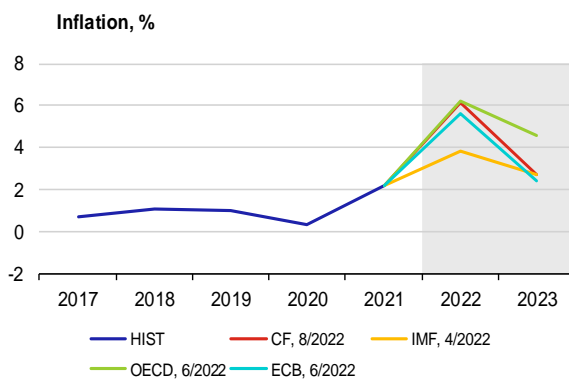


	CF	IMF	OECD	ECB
2022	7.5	5.7	6.6	7.2
2023	3.9	2.7	5.0	3.8

## Finland

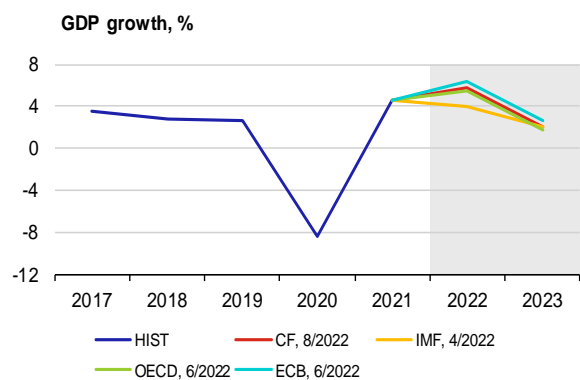


	CF	IMF	OECD	ECB
2022	1.8	1.6	1.1	1.7
2023	1.0	1.7	0.6	0.5

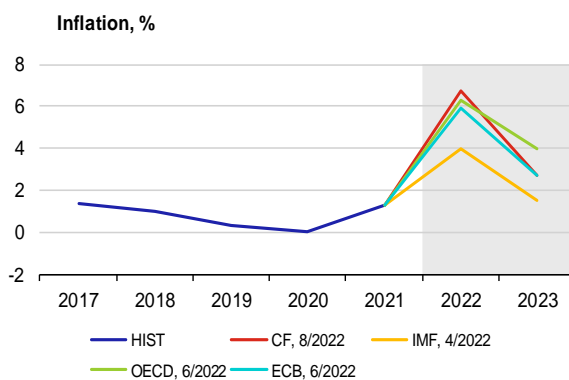


	CF	IMF	OECD	ECB
2022	6.1	3.8	6.2	5.6
2023	2.7	2.7	4.6	2.4

## Portugal

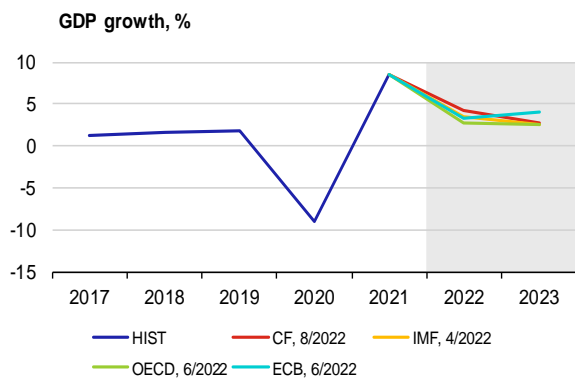


	CF	IMF	OECD	ECB
2022	5.7	4.0	5.4	6.3
2023	2.1	2.1	1.7	2.6

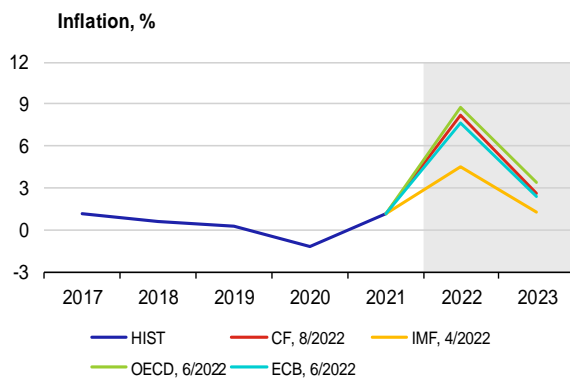


	CF	IMF	OECD	ECB
2022	6.7	4.0	6.3	5.9
2023	2.7	1.5	4.0	2.7

### Greece

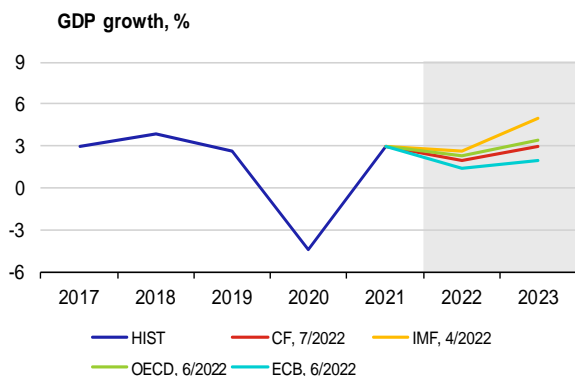


	CF	IMF	OECD	ECB
2022	4.2	3.5	2.8	3.2
2023	2.8	2.6	2.5	4.1

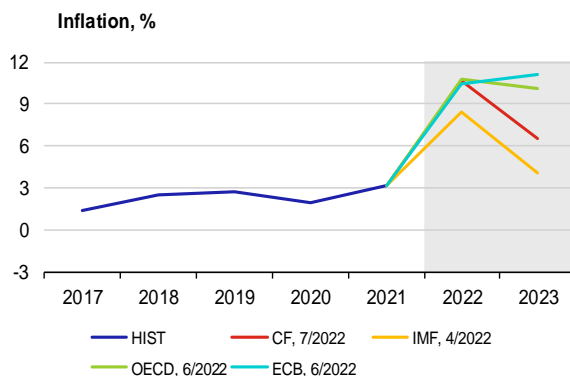


	CF	IMF	OECD	ECB
2022	8.2	4.5	8.8	7.6
2023	2.6	1.3	3.4	2.4

### Slovakia

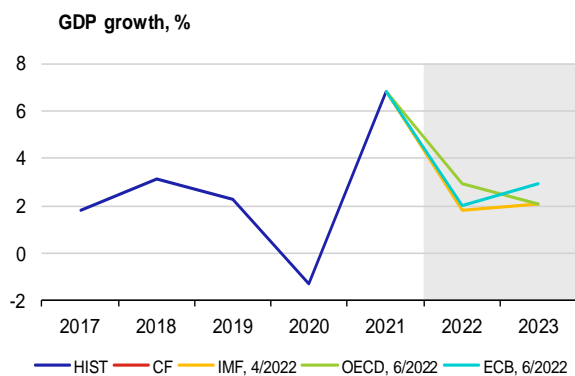


	CF	IMF	OECD	ECB
2022	1.9	2.6	2.3	1.4
2023	3.0	5.0	3.4	1.9

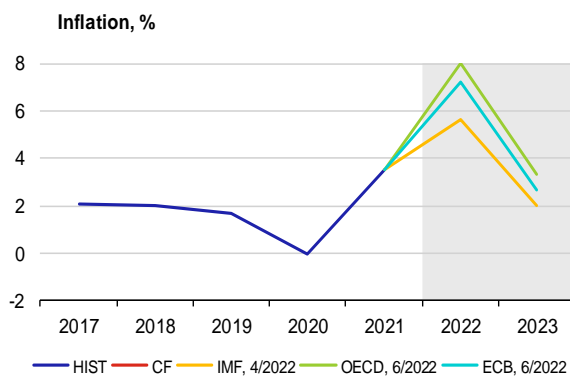


	CF	IMF	OECD	ECB
2022	10.7	8.4	10.8	10.4
2023	6.5	4.1	10.1	11.1

### Luxembourg

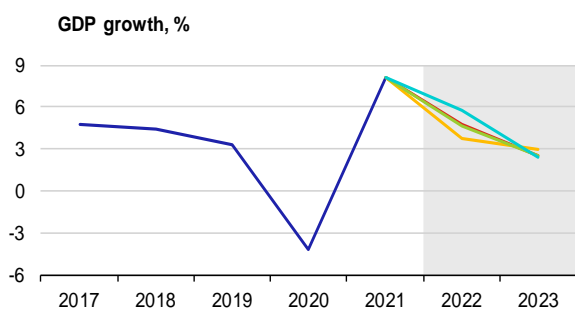


	CF	IMF	OECD	ECB
2022	n. a.	1.8	2.9	2.0
2023	n. a.	2.1	2.1	2.9

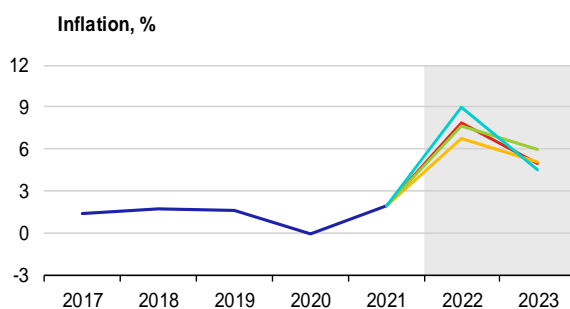


	CF	IMF	OECD	ECB
2022	n. a.	5.6	8.0	7.2
2023	n. a.	2.0	3.3	2.7

## Slovenia

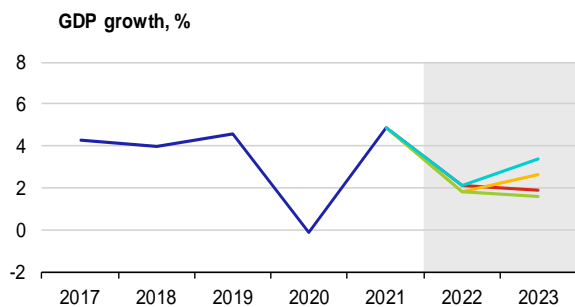


	CF	IMF	OECD	ECB
2022	4.8	3.7	4.6	5.8
2023	2.5	3.0	2.5	2.4

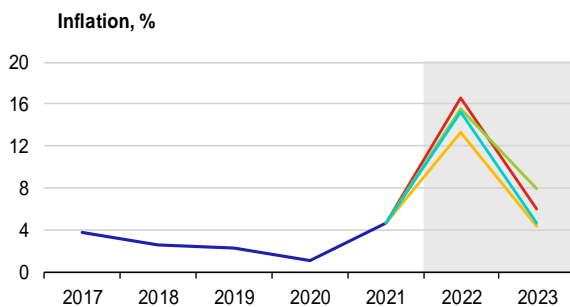


	CF	IMF	OECD	ECB
2022	7.9	6.7	7.6	9.0
2023	5.0	5.1	6.0	4.5

## Lithuania

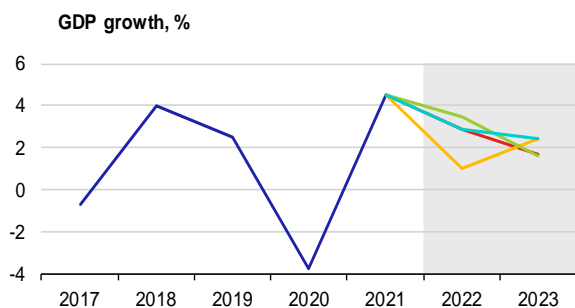


	CF	IMF	OECD	ECB
2022	2.1	1.8	1.8	2.1
2023	1.9	2.6	1.6	3.4

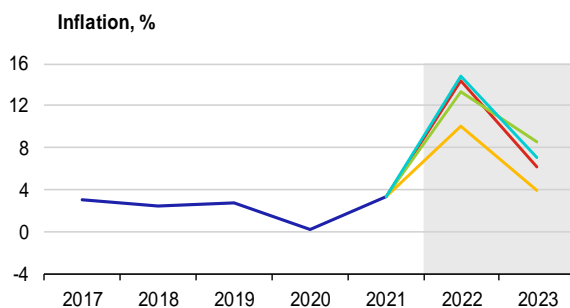


	CF	IMF	OECD	ECB
2022	16.5	13.3	15.6	15.2
2023	6.0	4.3	7.9	4.6

## Latvia

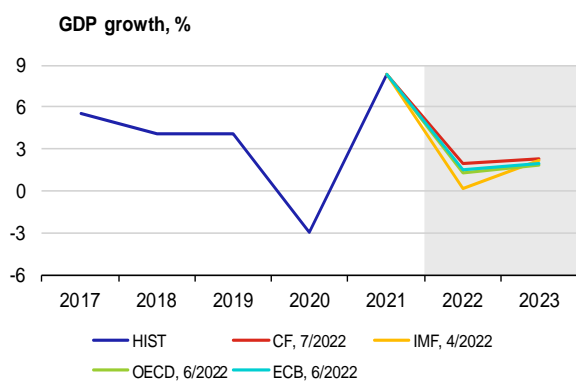


	CF	IMF	OECD	ECB
2022	2.9	1.0	3.5	2.9
2023	1.7	2.4	1.6	2.4

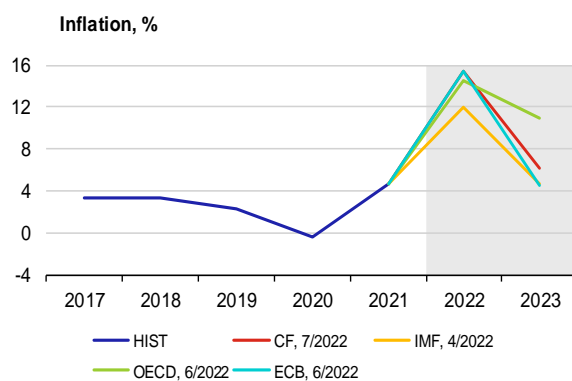


	CF	IMF	OECD	ECB
2022	14.3	10.0	13.3	14.8
2023	6.1	3.9	8.6	7.0

## Estonia

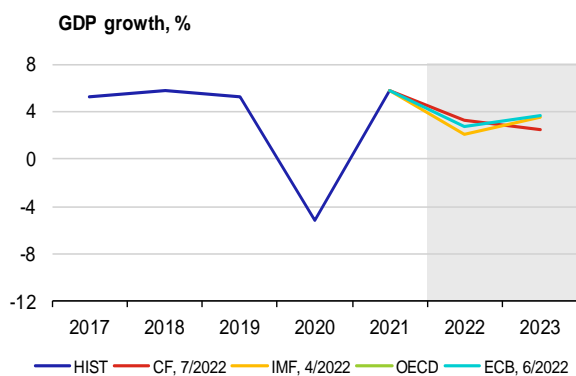


	CF	IMF	OECD	ECB
2022	1.9	0.2	1.3	1.5
2023	2.2	2.2	1.8	1.9

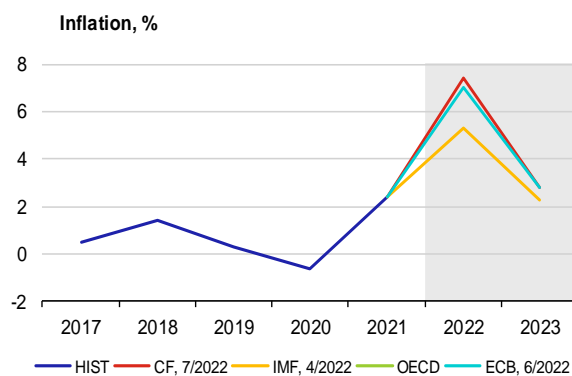


	CF	IMF	OECD	ECB
2022	15.4	11.9	14.5	15.4
2023	6.2	4.6	10.9	4.5

## Cyprus

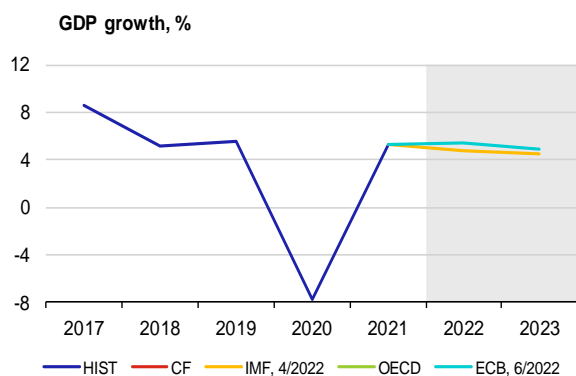


	CF	IMF	OECD	ECB
2022	3.2	2.1	n. a.	2.7
2023	2.5	3.5	n. a.	3.6

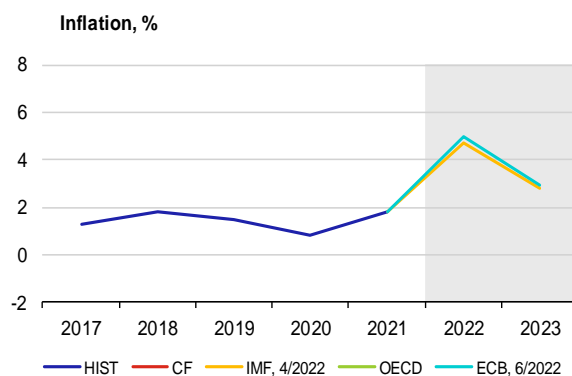


	CF	IMF	OECD	ECB
2022	7.4	5.3	n. a.	7.0
2023	2.8	2.3	n. a.	2.8

## Malta



	CF	IMF	OECD	ECB
2022	n. a.	4.8	n. a.	5.4
2023	n. a.	4.5	n. a.	4.9

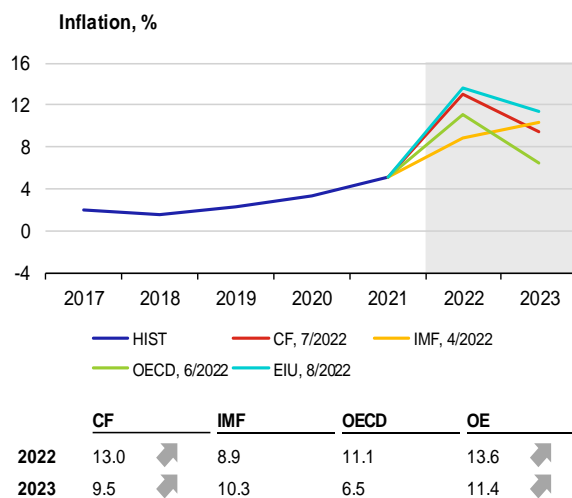
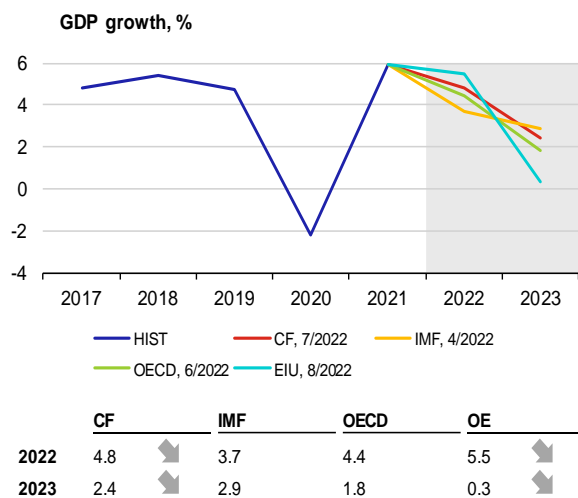


	CF	IMF	OECD	ECB
2022	n. a.	4.7	n. a.	5.0
2023	n. a.	2.8	n. a.	2.9

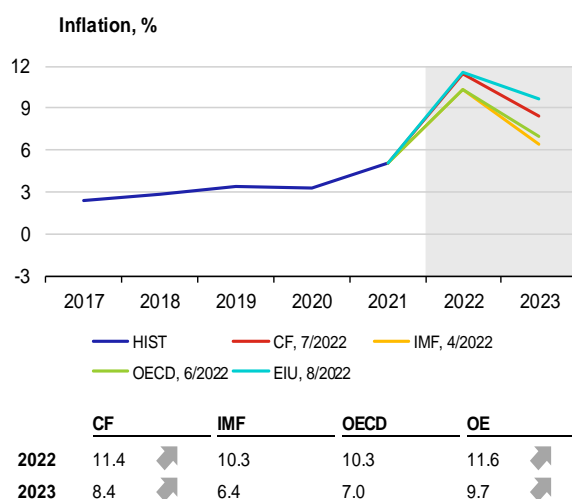
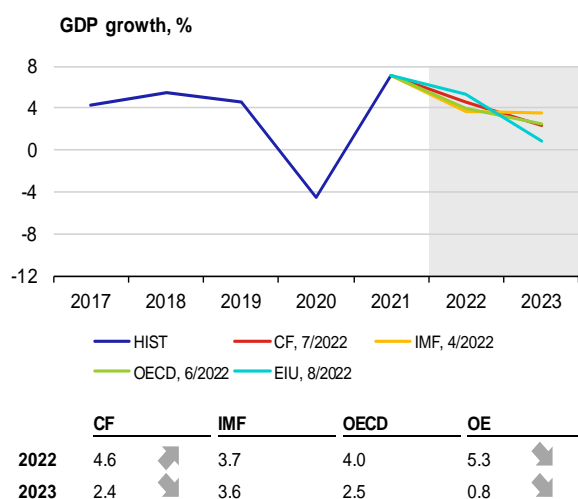
Ddd

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

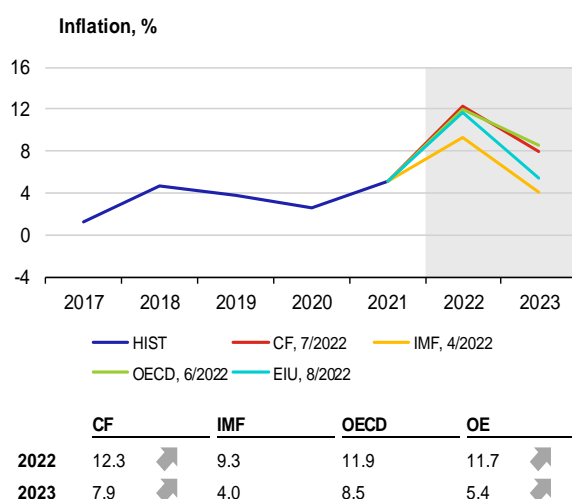
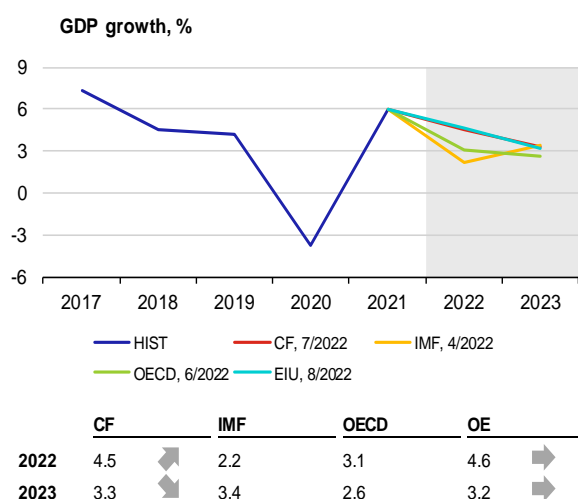
### Poland



### Hungary



### Romania



## A6. List of abbreviations

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

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