NARODOWY BANK POLSKI

Monetary Policy Council

March 2022

Inflation Report

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Warsaw, 2022

The Inflation Report presents the Monetary Policy Council's assessment of macroeconomic developments influencing inflation. The projection of inflation and GDP presented in Chapter 4 has been prepared at the Economic Analysis and Research Department of Narodowy Bank Polski (NBP). In terms of the contents, works on the projection have been supervised by Piotr Szpunar, Director of the Economic Analysis and Research Department. The projection has been prepared with the use of the NECMOD macroeconomic model. The NBP Management Board has approved the submission of the projection to the Monetary Policy Council. The projection of inflation and GDP is one of the inputs to the Monetary Policy Council's decision-making process.

The time frame of the analysis presented in the *Report* is conditioned by the availability of macroeconomic data, while its periodisation (breakdown into sub-periods) is conditioned by the development of particular variables. Chapters 1 and 2 of the *Report* include data available until 2 March 2022, while the projection of inflation and GDP presented in Chapter 4 has been prepared taking into account data available until 7 March 2022.

This *Inflation Report* is a translation of NBP *Raport o inflacji* in Polish. In case of discrepancies, the original prevails.

Contents

Summary

The second half of 2021 saw marked growth in global economic activity, although its pace was slightly slower than in the earlier phase of the recovery. The continued growth in activity was supported by stronger consumption driven by the improving situation in the labour market. However, sustained disruptions to global supply chains and high prices of energy commodities as well as a resurgence of the pandemic have had a negative impact on economic conditions. While the advanced economies, including the United States and the euro area, as well as the Central and Eastern European countries experienced further recovery, economic activity in China deteriorated.

Global consumer price inflation has risen sharply in recent months, and in December 2021 it reached its highest level since 2008. Inflation in the world economy was boosted mainly by the growth in energy prices, resulting from the high global prices of energy commodities. It was also driven upwards by a significant increase in global agricultural commodity prices. Moreover, core inflation rose in many economies, supported by the favourable financial situation of households and the related strong demand, mainly for industrial goods, as well as continued global supply chain disruptions and a substantial rise in labour costs in some countries.

At the beginning of 2022, prices of energy and agricultural commodities were high, significantly exceeding their levels seen a year ago. The growth was boosted by reduced supply of the commodities combined with the recovery in global economic activity as well as the recent intensification of geopolitical tensions due to the Russia’s military aggression against Ukraine.

Amid a marked rise in global inflation, many central banks are tightening monetary policy. The main central banks are either ending or tapering net asset purchases, and the Federal Reserve of the United States has also signalled the start of interest rate increases. Alongside that, in recent months, the central banks of some of the remaining advanced economies and many emerging market economies have raised interest rates.

In recent months, government bond yields have increased in most economies, and the US dollar has appreciated against many currencies, including the euro. This was accompanied by a marked fall in equity prices on the major global stock exchanges. The significant rise in inflation in many economies, which was accompanied by monetary policy tightening by many central banks, has had a negative impact on sentiment in the world’s financial markets. Recently, the deterioration in sentiment was strongly fuelled by the intensification of geopolitical tensions due to the Russia’s military aggression against Ukraine.

Like in many other economies around the world, consumer price growth in Poland has risen significantly since mid-2021. According to Statistics Poland primary estimate, CPI inflation stood at 9.2% y/y in January 2022. The rise in inflation since the publication of the previous *Inflation Report* (i.e. compared to the September 2021 data) was largely caused by the direct impact of higher commodity prices – mainly prices of energy commodities, but also agricultural commodities – in the global markets as reflected in stronger energy and food price growth. In addition, the persisting disruptions to global supply chains have contributed to further growth in prices of non-food goods. These factors have led to a rise in costs of enterprises, which – amid favourable economic conditions and the realisation of pent-up demand after the easing of pandemic restrictions – have gradually fed into prices of many goods and services, resulting in a pick-up in core inflation. At the same time, since January 2022, the CPI inflation was curbed by the so-called Anti-inflationary Shield.

In the second half of 2021, economic activity in Poland continued to recover. GDP growth stood at 5.3% y/y in 2021 Q3 and 7.3% y/y in 2021 Q4. Consumption and investment growth as well as the increase in inventories made significant positive contributions to GDP growth in the second half of 2021, while the contribution of net exports was markedly negative. Increase in consumption was supported by favourable situation in the labour market as well as less stringent epidemic restrictions than in the previous quarters. Investment activity was backed by high capacity utilisation, favourable outlook for demand and the very good financial situation of enterprises. The negative contribution of net exports to GDP growth stemmed from a significantly higher rise in the value of imports than exports. This was accounted for by the strong domestic demand and elevated global prices of commodities which increased the value of imports of intermediate goods, as well as the decline in exports of passenger cars which had a dampening effect on export growth.

In 2021, the situation of the general government sector improved substantially, due to the tapering of the anti-crisis support for households and enterprises as well as due to the economic recovery, which led to a rise in tax revenues.

As the economic recovery continued, the second half of 2021 saw further growth in demand for labour. In effect, employment in the national economy and in the enterprise sector kept rising, while the seasonally adjusted unemployment rate continued to fall. The favourable labour market situation was also reflected in a significant increase of average nominal wages.

As in many other economies around the world, government bond yields in Poland have risen significantly in recent months. In the period from the end of November 2021 to the beginning of February 2022, this was accompanied by some strengthening of the zloty against the main currencies. The rise in bond yields and the zloty appreciation were mainly driven by favourable economic conditions in Poland and the tightening of NBP's monetary policy as well as expectations of further interest rate increases. However, at the turn of February and March 2022, the zloty depreciated significantly due to the Russia's military aggression against Ukraine. This was accompanied by a marked drop in equity prices on the Warsaw Stock Exchange.

In 2021 Q4, the growth rate of the broad money (M3) stabilised, running at a level similar to that observed prior to the pandemic. The growth rate of household loans– after a significant rise in previous quarters – slowed down. Meanwhile, the growth rate of corporate loans increased markedly and in 2021 Q4 it was positive for the first time since the pandemic outbreak.

In 2021 Q4, the current account balance declined, mainly due to a decrease in the surplus on the trade in goods account (related to, among others, an increase in the value of imports of fuel and supply goods amid the rise in global commodity prices) as well as – although to a lesser extent – due to a widening in the primary income deficit. This was accompanied by the continued high surplus in trade in services. The external imbalance indicators evidence that the Polish economy is well balanced.

The *Report* is structured as follows: Chapter 1 presents the analysis of economic conditions in the external environment of the Polish economy in terms of their impact on inflation developments in Poland. These developments and the domestic factors that might affect them are described in Chapter 2. Chapter 3 includes *Minutes of the Monetary Policy Council decision-making meetings* held between November 2021 and February 2022, together with the *Information from the meeting of the Monetary Policy Council* in March 2022. Chapter 5 presents the Monetary Policy Council voting records from the meetings held between September and December 2021.

Chapter 4 of the *Report* presents the projection for inflation and GDP based on the NECMOD model, which is one of the inputs into the Council's decision-making process on the NBP interest rates. In line with the projection prepared under the assumption of unchanged NBP interest rates and taking into account data available until 7 March 2022, there is a 50-percent probability that the annual price growth will be in the range of 9.3–12.2% in 2022 (against 5.1–6.5% in the November 2021 projection), 7.0-11.0% in 2023 (compared to 2.7-4.6%) and 2.8–5.7% in 2024. At the same time, the annual GDP growth – according to this projection – will be with a 50-percent probability in the range of 3.4–5.3% in 2022 (against 3.8–5.9% in the November 2021 projection), 1.9-4.1% in 2023 (compared to 3.8-6.1%) and 1.4–4.0% in 2024.

1. External developments

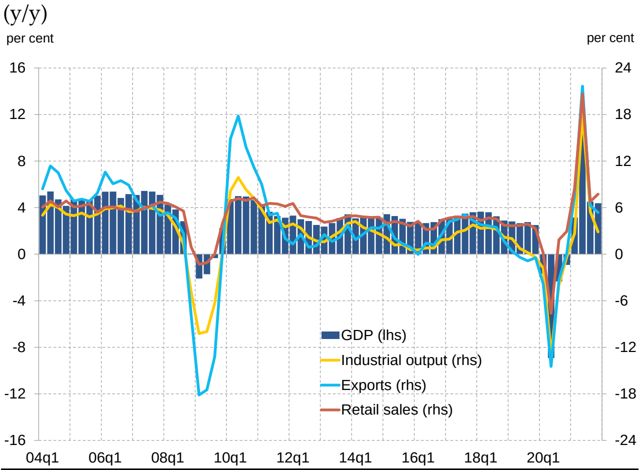
1.1 Economic activity abroad

The second half of 2021 saw marked growth in global economic activity, although its pace was slightly slower than in the earlier phase of the recovery (Figure 1.1). On one hand, the continued growth in activity was supported by stronger consumption driven by the improving labour market situation. On the other hand, sustained disruptions to global supply chains and high prices of energy commodities as well as a resurgence of the pandemic have had a negative impact on economic conditions (see Chapter 1.3 *Global commodity markets*).

At the turn of 2021 and 2022, the number of new COVID-19 infections around the world reached a record high due to the spread of the Omicron variant of the coronavirus (Figure 1.2). Nevertheless, in most countries hospitalization rates and daily death cases did not exceed their highest levels seen during the earlier waves of the pandemic. Therefore in many countries the scale of the pandemic restrictions impacting on economic activity was smaller than during the previous waves of infections. In February 2022, the number of new COVID-19 cases around the world began to fall significantly, and as a result some of the pandemic restrictions were lifted, especially in countries with high vaccination rates.

In 2021 Q4, further growth in economic activity was recorded in the euro area and the United States, despite a sharp increase in energy prices and continued disruptions to global supply chains (Figure 1.3). In the euro area, annual GDP growth was 4.6% y/y in 2021 Q4 (compared to 3.9% y/y in

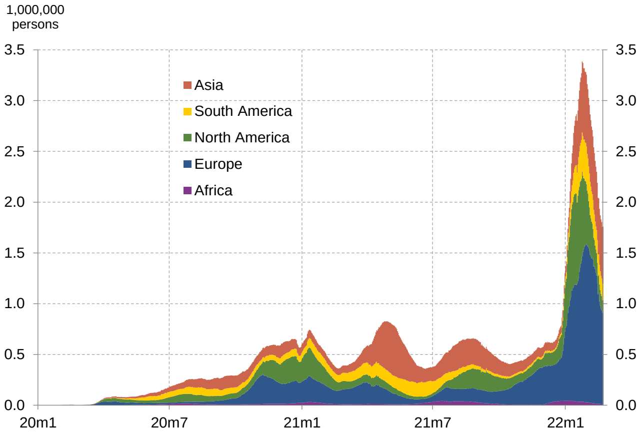
Figure 1.1 Global GDP growth and economic activity indicators (y/y)



Source: Bloomberg, Centraal Planbureau, Eurostat and IMF data, NBP calculations.

GDP, industrial output and retail sales – average annual growth in economies comprising 80% of global GDP in 2017, weighted by GDP. Exports – growth in global exports of goods estimated by Centraal Planbureau. Note: due to limited availablility of data from some countries during the pandemic, the economies used for calculating each time series differ slightly.

Figure 1.2 Daily number of new coronavirus infections by world regions



Source: data by Center for Systems Science and Engineering at Johns Hopkins University, Our World in Data.

2021 Q3 and 14.4% y/y in 2021 Q2; Figure 1.4).[1, 2] In effect, it reached its pre-pandemic level (i.e. from 2019 Q4). At the same time, in the United States GDP growth amounted to 5.6% y/y (compared to 4.9% y/y in 2021 Q3 and 12.2% y/y in 2021 Q2). In both economies, the recovery in activity was driven by private consumption growth supported by the high level of household savings and the improving labour market conditions. However, data on consumer sentiment and mobility of the population, incoming at the beginning of 2022, indicate some worsening of economic conditions in these economies amid the deterioration of pandemic situation.

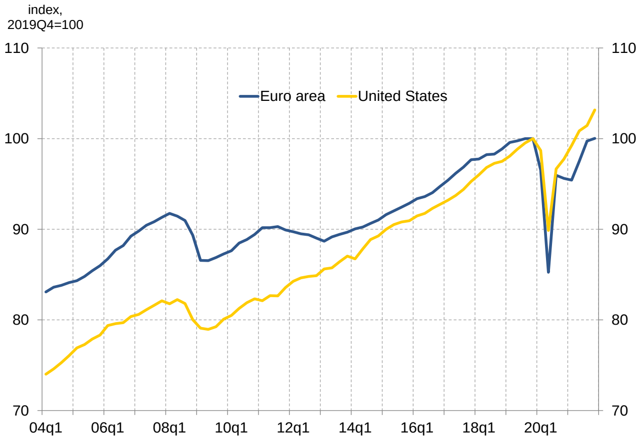
In the Central and Eastern European countries outside the euro area, the economic recovery continued in 2021 Q4, yet the GDP growth slowed down (to 4.7% y/y compared to 6.4% y/y in 2021 Q3 and 12.5% y/y in 2021 Q2).

In China, GDP growth declined again and stood at 4.0% y/y in 2021 Q4 (compared to 4.9% y/y in 2021 Q3 and 7.9% y/y in 2021 Q2). Growth in China's economic activity is constrained by the deteriorating situation in the real estate market and the stringent local pandemic restrictions, which distort the functioning of, among others, factories and ports, causing continued disruptions to global supply chains.

1.2 Inflation developments abroad

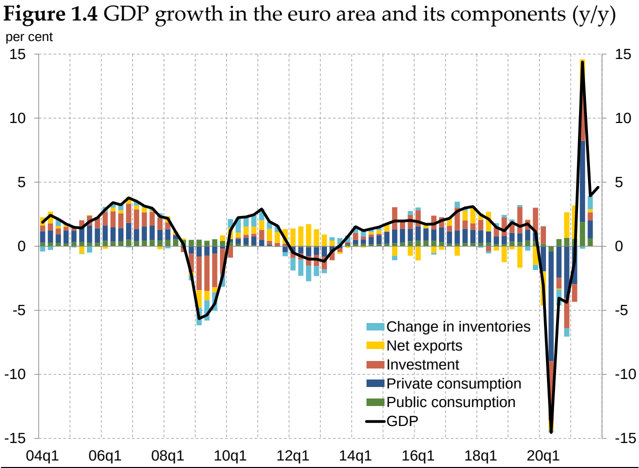
Global consumer price inflation has risen sharply in recent months, and in December 2021 it reached its highest level since 2008 (Figure 1.5). Global inflation was boosted, above all, by the growth in energy prices, resulting from the high global prices of energy commodities (see Chapter 1.3 *Global commodity markets*). In European Union countries, energy prices were additionally driven

Figure 1.3 GDP volume in selected advanced economies



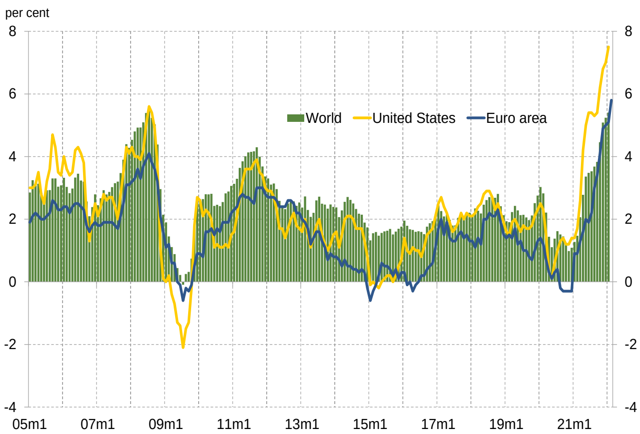
Source: Bureau of Economic Analysis and Eurostat data, NBP calculations.

Figure 1.4 GDP growth in the euro area and its components (y/y)



Source: Eurostat data, NBP calculations.

Figure 1.5 CPI inflation globally and in selected economies (y/y)



Source: Bloomberg and IMF data, NBP calculations.
World – average consumer price inflation in economies comprising over 80% of global GDP, weighted by 2017 GDP. The United States – annual CPI inflation. Euro area – annual HICP inflation (data for February 2022 according to the Eurostat flash estimate).

[1] In Germany, where the share of industry in the value added remains particularly high compared to the remaining euro area countries, annual GDP growth slowed down to 1.8% y/y in 2021 Q4 (compared to 2.9% y/y in 2021 Q3; in quarterly terms GDP growth in Germany fell to -0.3% q/q compared to growth of 1.7% q/q in 2021 Q3).
[2] In quarterly terms, GDP growth in the euro area slowed down to 0.3% q/q (compared to 2.3% q/q in 2021 Q3).

upwards by rising prices of CO_2 emission allowances (see Box 1: *The EU greenhouse gas emissions allowance system and its impact on energy prices*). Global prices were also lifted by a marked increase in global agricultural commodity prices, reflected in higher food price growth. Core inflation also rose in many economies (Figure 1.6). This was supported by the favourable financial situation of households and the related high demand, mainly for industrial goods. Core inflation was also pushed up by rising production and transport costs related to continued global supply chain disruptions and high commodity prices, together with a significant rise in labour costs in some countries. These factors were also reflected in high producer price inflation in many economies (Figure 1.7).

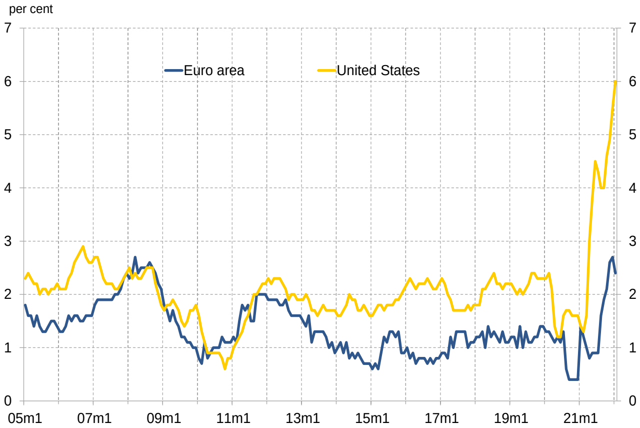
In these conditions, HICP inflation in the euro area rose to 5.1% y/y in January 2022[3], reaching its highest level since the beginning of publication of this index in 1997. In turn, in the United States, CPI inflation rose to 7.5% in January 2022, the highest level since 1982. Inflation was also high in the countries of Central and Eastern Europe, particularly in some of those belonging to the euro area (in January 2022 HICP inflation in Lithuania was running at 12.3% y/y, and in Estonia at 11.0% y/y[4]). At the same time, CPI inflation stood at 9.9% y/y in the Czech Republic, 7.9% y/y in Hungary and 8.4% y/y in Romania (Figure 1.8).

1.3 Global commodity markets

At the beginning of 2022, prices of energy and agricultural commodities were high, significantly exceeding their levels seen a year ago.

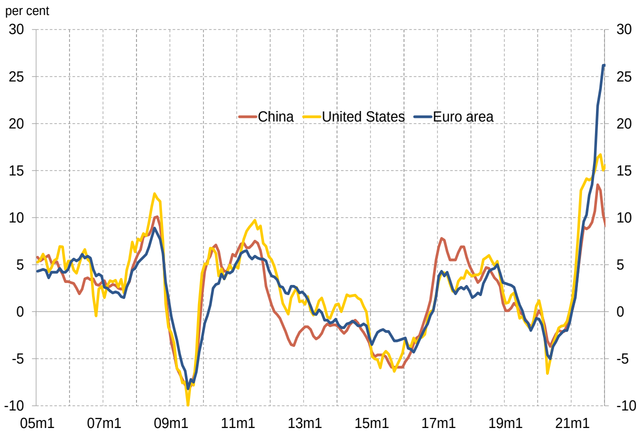
Crude oil prices have been rising gradually in recent months to reach the highest level since 2014 at the beginning of 2022 (Figure 1.9). In February 2022, the average oil price was about 50% higher

Figure 1.6 Core inflation rate in the United States and the euro area (y/y)



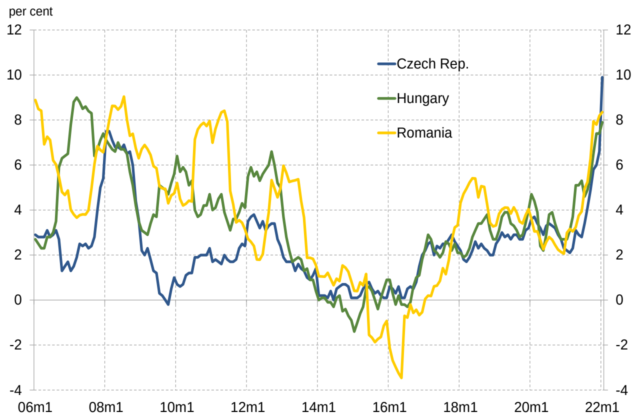
Source: Eurostat and Bureau of Labor Statistics data.
United States – CPI inflation excluding food and energy prices. Euro area – HICP inflation excluding unprocessed food and energy prices.

Figure 1.7 Producer price inflation index in selected economies (y/y)



Source: Bloomberg and Bureau of Labor Statistics data, NBP calculations.
United States – producer price growth in manufacturing industry, euro area and China – producer price growth in industry.

Figure 1.8 CPI inflation in the Czech Republic, Romania and Hungary (y/y)



Source: Bloomberg data.

[3] According to the Eurostat flash estimate HICP inflation in the euro area in February 2022 was running at 5.8% y/y.
[4] According to the Eurostat flash estimate HICP inflation in February 2022 in Lithuania was running at 13.9.% y/y, and in Estonia at 12.4% y/y.

than a year ago. Oil prices were growing on the back of increased demand for this commodity, driven by the recovery in global economic activity amid the persistently lower oil output by OPEC countries than before the pandemic. Over the recent past – especially at the turn of February and March – growth in oil prices was also markedly boosted by a rise in geopolitical tensions related to the Russia's military aggression against Ukraine.

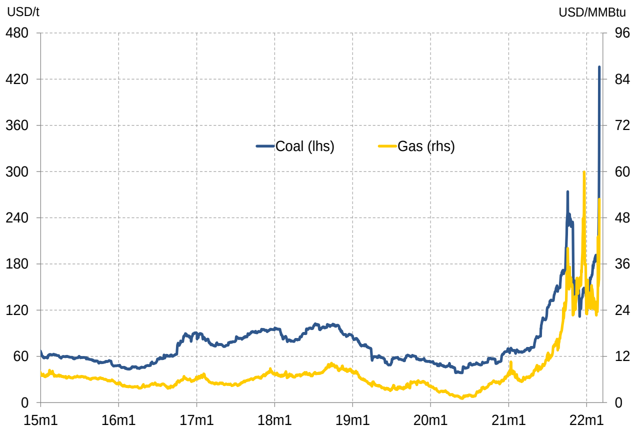
In February 2022, after a strong rise in 2021 and sizable fluctuations at the end of 2021, natural gas prices were 300% higher than a year ago (Figure 1.10). The elevated prices of this commodity continued to reflect limited supply along with low reserves in Europe. In recent months, Russia's natural gas supply policy additionally contributed to rising gas prices. The elevated natural gas prices were conducive to higher cost-effectiveness of power generation from coal. In these conditions, following strong fluctuations in the second half of 2021, coal prices continued on an upward trend at the beginning of 2022. In January 2022, they were on average nearly threefold as high as a year ago. Increased share of coal-based energy in the energy mix led, in turn, to a rise in the prices of CO2 emission allowances (see Box 1: *The EU greenhouse gas emission allowance system and its impact on energy prices*). At the turn of February and March 2022, growth in the prices of both natural gas and coal rebounded sharply triggered by the Russia's military aggression against Ukraine.

The agricultural commodity price index has increased markedly in recent months, hitting its historical high. In February 2022, it was 24.5% higher than a year ago (Figure 1.11). This was mainly accounted for by a rise in the prices of wheat, rapeseed and milk products. The rise in prices of these products reflected their limited supply and a marked recovery in global demand. At the turn of February and March 2022, wheat prices were additionally boosted by the Russia's military aggression against Ukraine, due to the high share of Russia and Ukraine in the world

Figure 1.9 Brent oil barrel price

Source: Bloomberg data.

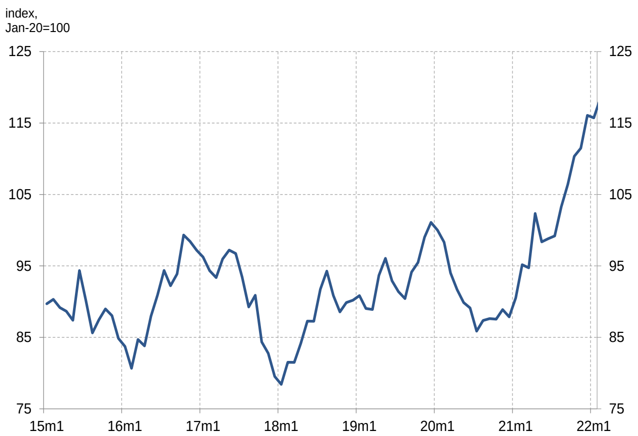
Figure 1.10 Hard coal and natural gas prices



Source: Bloomberg data, NBP calculations.

Natural gas prices express prices of ICE UK Natural Gas Futures Europe. USD/t – price expressed in US dollar per metric tonne. USD/MMBtu – price expressed in US dollar per million of British Thermal Unit, i.e. unit representing a quantity of energy required to raise the temperature of 1 pound (approx. 0.45 kg) of water by 1°F (slightly more than 0.5°C).

Figure 1.11 Index of agricultural commodity prices



Source: Bloomberg data, NBP calculations.

Index of agricultural prices includes prices of wheat, colza, pork, potatoes, sugar, cocoa, coffee, skimmed milk powder, butter and frozen concentrated orange juice. The weights reflect the consumption structure of Polish households.

supply of this grain. Amid rising energy prices also pork prices have increased in recent months. Yet, they remained low, which is attributable to the high supply of pork in Europe and the recovery of the pig population in China.

Box 1: The EU greenhouse gas emission allowance system and its impact on energy prices

The European Union (EU) conducts a climate policy aimed at achieving climate neutrality, i.e. limiting the impact of the economy on the climate by minimising net greenhouse gas emissions. An important element of this policy is the European Union Emissions Trading System (EU ETS), which aims at reducing emissions of these gases, in particular CO_2, inside the European Economic Area by mandating the inclusion of the environmental costs of producing goods and services into corporate decision-making (internalisation of negative external effects).[5]

Design of EU ETS system

The pool of emission allowances under the system is determined administratively at the EU level and distributed between countries based on historical emissions of their economies. An additional pool is allocated to EU dedicated funds (the Modernization Fund and Innovation Fund) which are aimed at supporting energy transformation of less advanced and more emission-intensive economies. Member countries sell allowances at auctions organised on a regular basis (the funds obtained in this way become their general government sector revenues). At the same time, a significant portion of allowances is allocated free of charge to selected enterprises. In turn, demand for allowances comes from enterprises with installations emitting greenhouse gases[6] (these enterprises are legally obliged to redeem the amount of allowances corresponding to their emission each year) as well as from the remaining market participants authorised to take part in the auctions (among others, financial institutions playing the role of intermediaries). Emission allowances are also traded in the secondary market – both at the stock exchange and in the unregulated over-the-counter market.

The pool of allowances is gradually reduced at a rate determined administratively. The aim of this mechanism is to increase their prices, which should reduce the profitability of using high-emission technologies, and thus enhance the incentives for enterprises to develop and use low-emission technologies. In practice, the system in its current form also leads to a significant increase in production costs in emission-intensive sectors and encourages carbon leakage, i.e. offshoring production to countries with less stringent emission standards.

Emission allowance prices and variable costs of energy generation

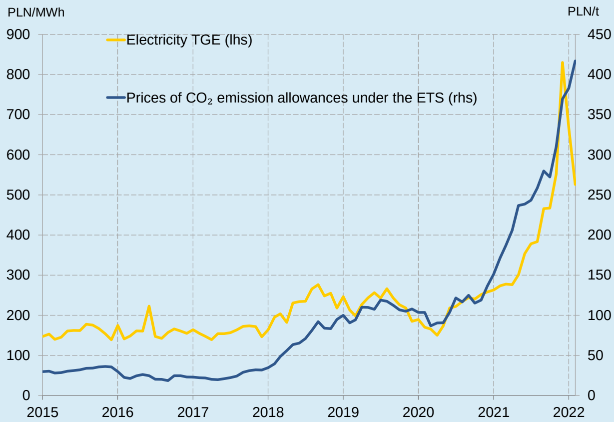
Until the end of 2017, amid a relatively high supply, the prices of emission allowances in the EU did not exceed 40 PLN/t (Figure B.1.1). However, in the subsequent years they rose significantly, supported by measures aimed at a greater reduction of greenhouse gas emissions under the EU's climate and energy policy. In particular, since 2019 the Market Stability Reserve has been in place, removing a portion of the CO_2 emission allowances from the market in order to speed up the reduction of the carbon footprint. Moreover, due to the launch of the fourth phase of the EU ETS in 2021 the pace at which the pool of available emission allowances is reduced has been increased

[5] The EU ETS system includes carbon dioxide emissions (CO_2), as well as nitrous oxide (N_2O) and perfluorocarbons (PFC) expressed in the equivalent of CO_2. In total, the EU ETS includes entities responsible for around 40% of greenhouse gas emissions in Europe, while small emitters (households, the agricultural sector and transport) account for approximately 60% of greenhouse gas emissions.
[6] These are mainly electricity and heat generation installations as well as installations used in energy-intensive industries.

from 1.74% to 2.2% annually. As a result, in February 2022 the prices of allowances stood at approximately 415 PLN/t, or 2.5 times higher than a year earlier and about fifteen times higher than in 2017[7].

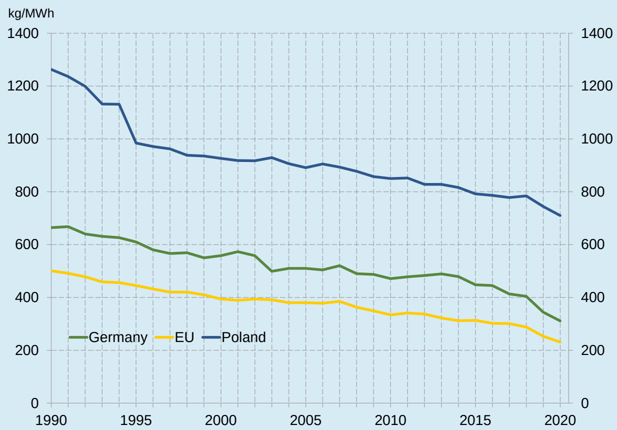
In recent years, due to the rise in their prices, the cost of purchase and surrender of allowances has become one of the important component of the variable cost of energy generation from conventional sources. In effect, a strong increase in the costs of producing electricity in the most emission-intensive power stations is observed. For example, in the power stations with emission exceeding 1000 kg of the equivalent of CO_2/MWh, the cost of CO_2 emission allowances currently makes up over 60% of the wholesale price of electricity.[8] Therefore, a marked increase in the prices of emission allowances in recent years, along with the high share of carbon energy sources in the energy mix of some economies, is conducive to faster growth in wholesale electricity prices, which consequently leads to a significant rise in production costs of enterprises and tariffs for households (Figure B.1.1).

Figure B.1.1 Wholesale electricity prices in Poland and prices of CO_2 emission allowances



Source: Refinitiv and Polish Power Exchange (TGE) data, NBP calculations.
The chart depicts monthly averages.

Figure B.1.2 Average emission intensity of energy generation



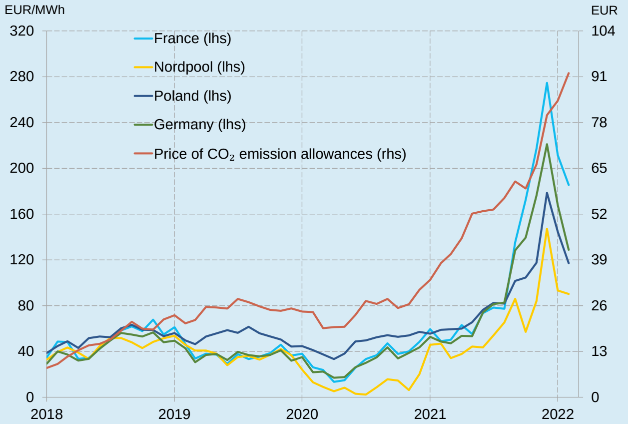
Source: European Environment Agency data.

Prior to 2021, the high share of coal-based energy in Poland led to higher wholesale electricity prices than in the majority of European countries. In the course of 2021, wholesale electricity prices rose very sharply in the majority of the EU countries (Figure B.1.3). In countries with high share of coal-based energy in the energy mix, including Poland, this was mainly the result of increasing market prices of emission allowances. In contrast, in countries with high role of gas-based energy in the mix, rising wholesale electricity prices were primarily driven by a very sharp growth of natural gas prices. Under these circumstances, electricity generation from coal has become relatively cheaper compared to gas sources, despite the prices of emission allowances persisting at the record-high level (Figure B.1.4). As a result, in recent months, the wholesale electricity prices in Poland – notwithstanding their sharp increase – stood among the lowest in the EU.

[7] Since the beginning of the Russia's aggression against Ukraine, the prices of allowances have declined substantially (to 324 PLN/t on 2 March 2022).

[8] This concerns some lignite power plants as well as low efficiency power plants which are started up during periods of high demand for electricity. The average emission intensity of coal power plants in Poland amounts to about 710 kg of the equivalent of CO_2/MWh and is significantly higher than in Germany and the EU (Figure B.1.2). However, according to the Merit Order, the market clearing price of electricity is determined by power plants with the highest marginal costs, which is why this type of analysis should consider the emissions of the least energy efficient installations.

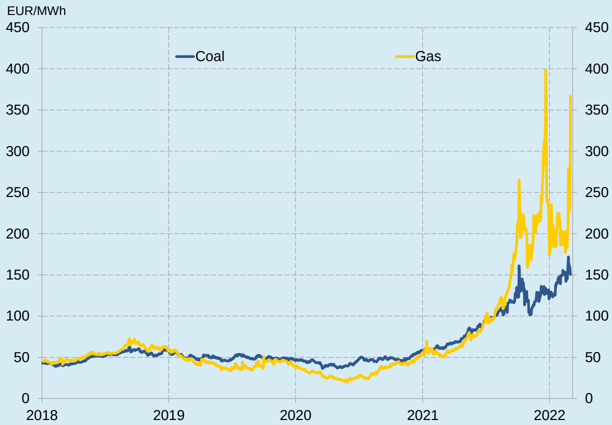
Figure B.1.3 Wholesale electricity prices in the EU and prices of CO_2 emission allowances



Source: Refinitiv data, NBP calculations.

The Nordpool approximates electricity prices in the Scandinavian countries. The chart depicts monthly averages.

Figure B.1.4 Cost of electricity production in the EU depending on the type of fuel



Source: Refinitiv data.

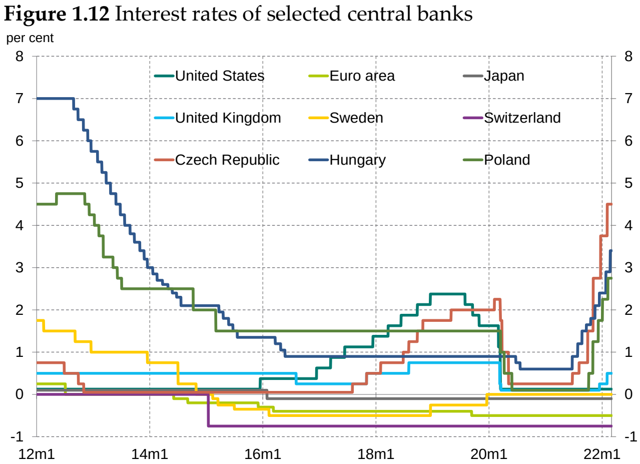
Selected proposed changes to EU ETS under the "Fit for 55" package and their impact on prices

The energy transformation can be expected to accelerate as a consequence of the changes proposed by the European Commission under the "Fit for 55" package, which is likely to result in a further increase in energy prices[9]. The European Commission proposes the emissions under the scheme to be reduced by at least 61% by 2030 (compared to the earlier goal of 43%) against 2005. According to the new assumptions, the pool of available emission allowances is to decrease by 4.2% each year, i.e. almost twice as fast as in 2021. Moreover, the package envisages a one-off reduction of the total pool of emission allowances, a gradual phasing out of the free allowances allocation and the implementation of additional market mechanisms counteracting carbon leakage. There are also plans for changes in the Market Stability Reserve to support faster absorption of surplus allowances. The realisation of the above scenario will likely lead to a further increase in prices of emission allowances and, consequently, in energy prices in the coming years.

1.4 Monetary policy abroad

Amid a marked rise in global inflation, many central banks are tightening monetary policy (see Chapter 1.2 *Inflation developments abroad*). The main central banks are either ending or tapering net asset purchases, and the Federal Reserve of the United States (the Fed) has also signalled the start of interest rate increases. At the same time, the central banks of some of the remaining advanced economies and many emerging market economies have raised interest rates in recent months (Figure 1.12). Financial market participants also expect interest rates in the major economies to rise

Figure 1.12 Interest rates of selected central banks



Source: Bloomberg data.

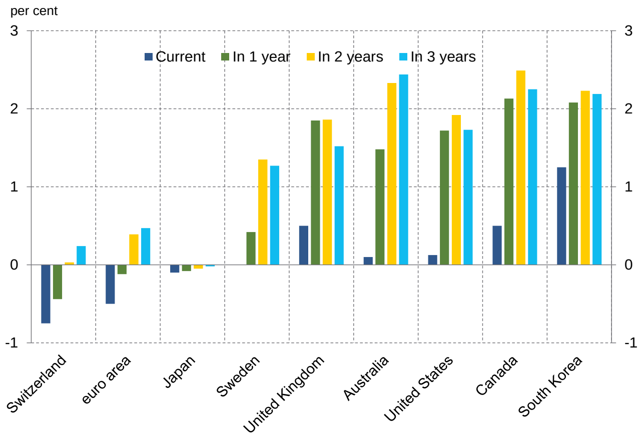
Central bank interest rate: for the United States – the midpoint of the fed funds range; for the euro area – the deposit facility; for the United Kingdom – the Bank Rate; for Japan – the Complementary Deposit Facility; for Sweden – the 1W repo rate; for Switzerland – the policy rate; for the Czech Republic – the 2W repo rate; for Hungary – the base rate; for Poland – the NBP reference rate.

[9] Due to the sharp increase in energy commodity prices after the beginning of Russia's aggression against Ukraine, the discussion about the relaxation of EU climate policy has been relaunched. In effect, the uncertainty about the implementation of "Fit for 55" package has increased.

significantly in the coming years, although this will take place later in the euro area than in the United States (Figure 1.13).

The European Central Bank (ECB) is maintaining a negative deposit rate at -0.50%.[10] However, at the end of 2021, the ECB decided to end its net purchases under the pandemic emergency purchase programme (PEPP) as of the end of March 2022. At the same time, the ECB announced that it would temporarily increase the scale of its asset purchase programme (APP) in order to partly mitigate the effects of the tapering of the PEPP.[11] The ECB is signalling that net purchases will end shortly before the beginning of interest rate increases.

Figure 1.13 Current and expected level of central banks' interest rates in selected advanced economies



Source: Bloomberg data.
Central bank interest rate: for Switzerland – the policy rate; for the euro area – the deposit facility; for Japan – the Complementary Deposit Facility; for Sweden – the 1W repo rate; for the United Kingdom – the Bank Rate; for Australia – the cash rate target; for the United States – the midpoint of the fed funds range; for Canada – the overnight rate target; for South Korea – Base Rate. Market expectatations according to Bloomberg based on OIS, as of 2 March 2022.

The Fed is maintaining the target range for the fed funds rate at 0.00%-0.25%. In December 2021, the Fed decided to end net asset purchases in March 2022. At the beginning of 2022, the Fed reported that the first interest rate increase could take place in March 2022. The median of expectations of the Fed representatives and the expectations of market participants suggest several interest rate hikes in the United States in 2022.

Some of the remaining central banks in the advanced economies, including in Japan, Switzerland, Sweden and Australia, are also keeping interest rates close to zero. However, in the majority of these economies – with the exception of Japan – the central banks have ended net asset purchases in recent months.

At the same time, the central banks of Norway, the United Kingdom, Canada, Korea and New Zealand, as well of the Central and Eastern Europe region and many non-European emerging market

[10] At the same time, in the press release following the Governing Council meeting of the ECB held on 03.02.2022, the following fragment relating to the expected level of future interest rates has been retained: "*In support of its symmetric two per cent inflation target and in line with its monetary policy strategy, the Governing Council expects the key ECB interest rates to remain at their present or lower levels until it sees inflation reaching two per cent well ahead of the end of its projection horizon and durably for the rest of the projection horizon, and it judges that realised progress in underlying inflation is sufficiently advanced to be consistent with inflation stabilising at two per cent over the medium term. This may also imply a transitory period in which inflation is moderately above target.*"
[11] According to the ECB's press release, the monthly scale of net asset purchases under the APP should amount to EUR 20 billion in 2022 Q1, EUR 40 billion in 2022 Q2, EUR 30 billion in 2022 Q3, and EUR 20 billion starting from 2022 Q4.

economies have raised interest rates in recent months.

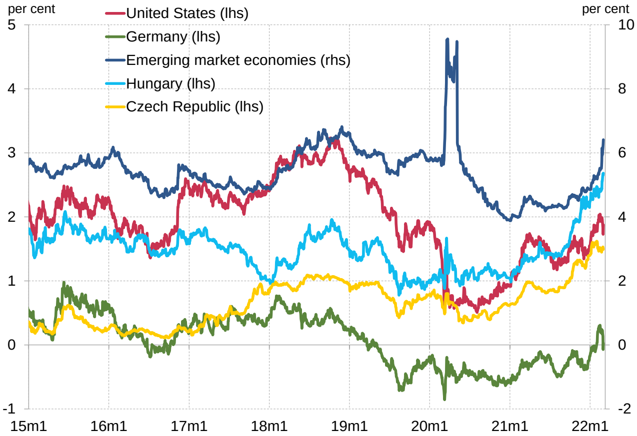
1.5 International financial markets

The significant rise in inflation in many economies, which was accompanied by monetary policy tightening by many central banks, has had a negative impact on sentiment in the world's financial markets in recent months (see Chapter 1.2 *Inflation developments abroad* and Chapter 1.4 *Monetary policy abroad*). The deterioration in sentiment was also markedly fuelled by geopolitical tensions, especially after their strong intensification at the end of February 2022 due to the Russia's military aggression against Ukraine, and – to a lesser extent – by continued supply disruptions in some markets as well as the ongoing pandemic. The negative impact of the above factors on market sentiment was mitigated by favourable global economic conditions at the turn of 2021 and 2022 (see Chapter 1.1 *Economic activity abroad*).

Against this background, government bond yields rose sharply, reaching levels close to those recorded before the outbreak of the pandemic in the major countries, and in some economies, including in Central and Eastern Europe, higher levels than their long-term averages (Figure 1.14). This was accompanied by a marked fall in share prices on the major global stock exchanges (Figure 1.15).

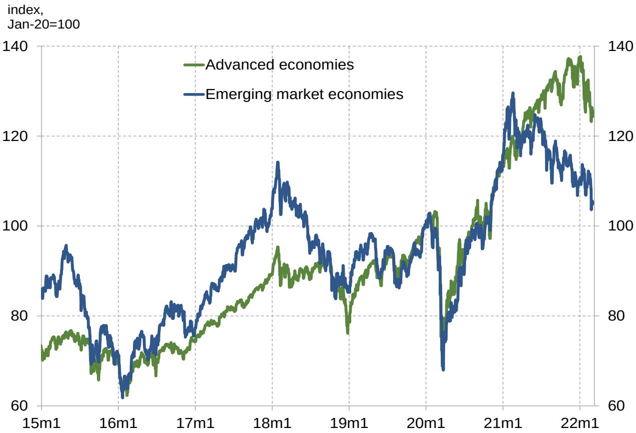
At the same time, the US dollar has appreciated against many currencies, including the euro, in recent months, supported – apart from intensification of geopolitical tensions – by expectations for earlier and stronger interest rates rise in the United States than in the euro area (Figure 1.16).

Figure 1.14 Yields on long-term government bonds



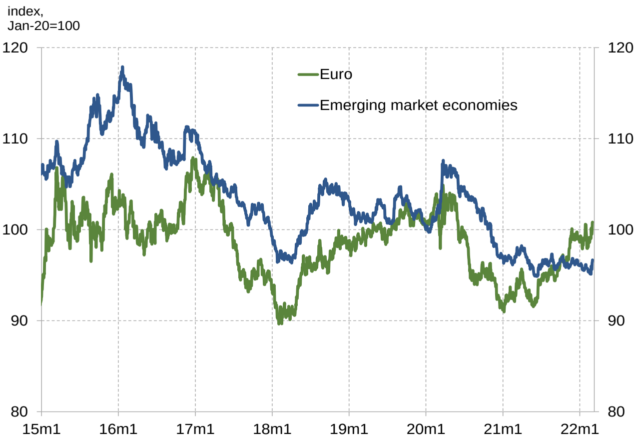
Source: Bloomberg data.
The United States, Germany, Czech Republic and Hungary – 10 year government bond yield; emerging market economies – *Bloomberg Barclays Emerging Markets Sovereigns*.

Figure 1.15 Equity prices



Source: Bloomberg data.
Advanced economies – *MSCI World Equity Index*; emerging market economies – *MSCI Emerging Markets Equity Index*.

Figure 1.16 US dollar exchange rates against the currencies of emerging market economies and the euro (rise indicates appreciation of the dollar)



Source: Bloomberg data, NBP calculations.
Emerging market economies – *MSCI Emerging Market Currency Index*.

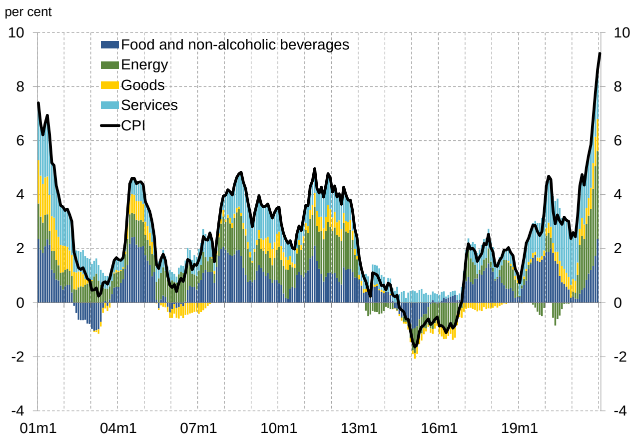
2. Domestic economy

2.1 Inflation developments

Like in many other economies around the world, consumer price growth in Poland has risen significantly since mid-2021 (see Chapter 1.2 *Inflation developments abroad*).

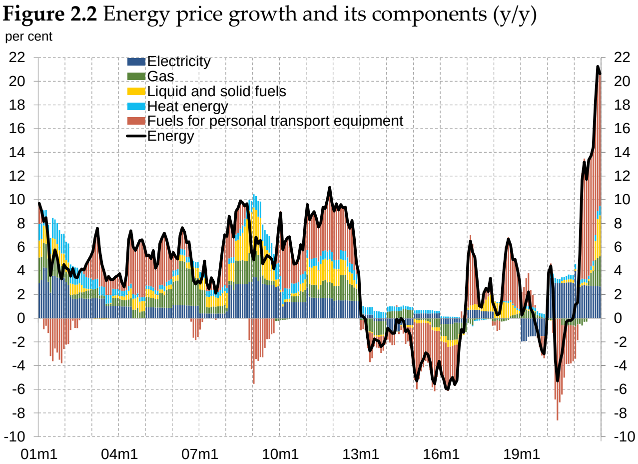
According to Statistics Poland primary estimate, CPI inflation stood at 9.2% y/y in January 2022 (compared to 5.9% y/y in September 2021; Figure 2.1). The rise in inflation since the publication of the previous *Inflation Report* (i.e. compared to the September 2021 data) was largely due to the direct impact of higher commodity prices – mainly prices of energy commodities, but also agricultural commodities – in the global market as reflected in stronger energy and food price growth (see Chapter 1.3 *Global commodity markets*). In addition, the persisting disruptions in global supply chains have contributed to further growth in prices of non-food goods (see Chapter 1.1 *Economic activity abroad*). These factors have led to a rise in costs of enterprises[12], which – amid favourable economic conditions and the realisation of pent-up demand after the easing of pandemic restrictions – have gradually fed into prices of many goods and services, resulting in a pick-up in core inflation. At the same time, since January 2022, the growth of CPI inflation was restrained by the so-called Anti-inflationary Shield.[13]

Figure 2.1 Composition of CPI inflation (y/y)



Source: Statistics Poland (GUS) data, NBP calculations.

Figure 2.2 Energy price growth and its components (y/y)



Source: Statistics Poland (GUS) data, NBP calculations.

[12] Amid a global rise in the prices of commodities and many intermediate goods, the growth in industrial producer prices in Poland – like in many other economies – have increased in recent months (to 14.8% y/y in January 2022 from 10.3% y/y in September 2021; Figure 2.4).

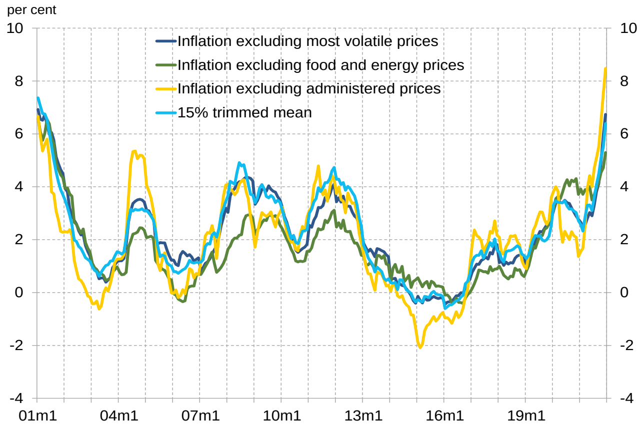
[13] The so-called Anti-inflationary Shield is a fiscal package aimed at limiting growth of CPI inflation and mitigating its fallout. It has envisaged, among others, temporary cuts in VAT rates on electricity, heat energy, natural gas and basic food products, abolition of excise tax on electricity sold to households, lowering excise tax on motor fuels to the EU-required minimum level and compensation for natural gas distributors because of capping price increases for tariff-protected recipients. Most of the enacted measures will apply

Food and non-alcoholic beverages inflation in Poland has risen sharply in recent months (to 9.4% y/y in January 2022 from 4.4% y/y in September 2021). This was driven by growth in both processed and unprocessed food prices amid strongly increasing costs of production and distribution of food as well as rising prices of agricultural commodities in the global markets.

Since the previous *Inflation Report*, energy price growth has also picked up (reaching 20.1% y/y in January 2022 from 14.4% y/y in September 2021; Figure 2.2). The sharp increase in natural gas prices in the world markets has translated into higher tariffs on the sale and distribution of this commodity to households and a rise in prices of liquid gas. Since January 2022, tariffs on the sale and distribution of electricity have also risen markedly on the back of a sharp rise in wholesale electricity prices and prices of CO_2 emission allowances in 2021 (see Box 1: *The EU greenhouse gas emission allowance system and its impact on energy prices*). In recent months, liquid and solid fuels price growth has also boosted significantly. Amid higher crude oil prices than a year ago, annual growth in prices of fuels for personal transport equipment was still high, although the statistical base effect contributed to its gradual decline. In January 2022, the rise in energy prices was constrained by the reduction in some of the tax rates on electricity and heat energy, natural gas and motor fuels under the Anti-inflationary Shield.

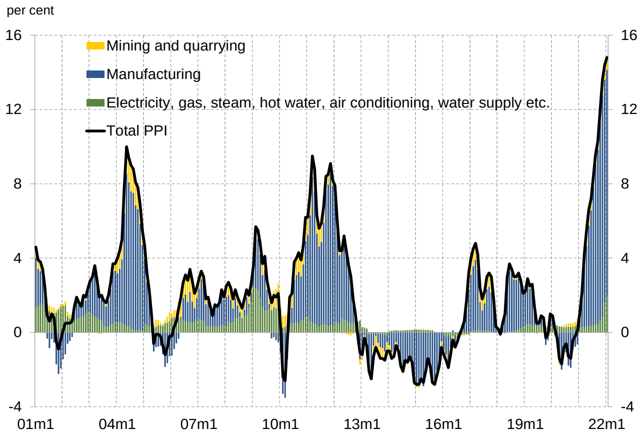
Inflation excluding food and energy prices rose to 5.3% y/y in December 2021 (compared to 4.2% y/y in September 2021; Figure 2.3) amid good economic conditions and high consumer demand (see Chapter 2.2 *Demand and output*). Stronger annual growth in prices of both non-food goods and services contributed to this rise. This was

Figure 2.3 Core inflation indices (y/y)



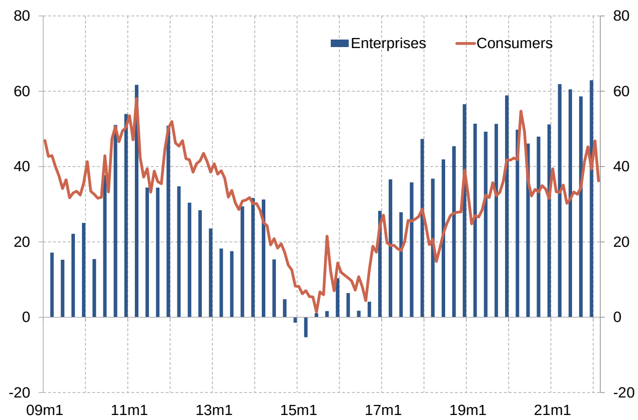
Source: Statistics Poland (GUS) data, NBP calculations.

Figure 2.4 Composition of PPI inflation (y/y)



Source: Statistics Poland (GUS) and Eurostat data.

Figure 2.5 Balance statistics of consumer and enterprise inflation expectations



Source: Statistics Poland (GUS) and NBP data, NBP calculations.
Balance statistic is defined as a difference between a fraction of respondents expecting rise in prices and a fractions of respondents expecting no change or fall in prices (with respective weights). A rise in balance statistic should be interpreted as a shift in opinions towards higher rise in prices.

until July 2022. Under the Anti-inflationary Shield, reduced excise tax rates on motor fuels have been in force since December 2021; however, due to the methodology for calculating the CPI index, their reduction did not have a significant impact on inflation in December 2021.

accompanied by an increase in the remaining measures of core inflation.

Since the previous *Inflation Report*, inflation expectations of financial sector analysts surveyed by Refinitiv and of participants to the NBP Macroeconomic Survey have risen significantly (Table 2.1). They continue to point to a gradual decline in inflation in 2022-2023. In 2021 Q4, opinions of the surveyed enterprises and consumers as measured by balance statistics have shifted towards higher inflation (Figure 2.5).[14]

2.2 Demand and output

In the second half of 2021, economic activity in Poland continued to recover. GDP growth stood at 5.3% y/y in 2021 Q3 and 7.3% y/y in 2021 Q4[15] (compared to 11.2% y/y in 2021 Q2[16]; Figure 2.6). Consumption and investment growth as well as the increase in inventories made significant positive contributions to GDP growth in the second half of 2021 (Table 2.2), while the contribution of net exports was markedly negative.

Growth in consumer demand continued in the second half of 2021 (at 4.7% y/y in 2021 Q3 and 7.9% y/y in 2021 Q4; Figure 2.7), driven by the very favourable situation in the labour market as reflected in a fall in unemployment and a marked rise in wages (see Chapter 2.4 *Labour market*). Consumption increased despite some deterioration in consumer sentiment in 2021 Q4 and a worsening of the epidemic situation at the end of the year, which was, however, accompanied by less stringent restrictions than during the previous waves of infections (Figure 2.8, Figure 2.9).

In the second half of 2021, investment growth picked up to 9.3% y/y in 2021 Q3 and 11.7% y/y in 2021 Q4 (compared to 5.6% y/y in 2021 Q2; Figure

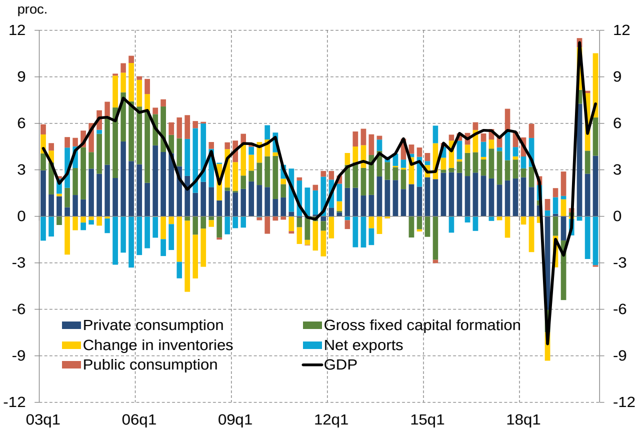
Table 2.1 Inflation expectations of financial sector analysts and participants to the NBP Survey of Professional Forecasters (per cent)

	Survey conducted in:				
	21q1	**21q2**	**21q3**	**21q4**	**22q1**
Refinitiv Survey, inflation expected in 4 quarters	2.7	3.4	3.5	5.9	7.4
NBP Survey, inflation expected in 4 quarters	3.1 (2.4-3.7)	3.4 (2.7-3.9)	4.1 (3.3-4.8)	5.9 (4.7-7.2)	-
NBP Survey, inflation expected in 8 quarters	3.0 (2.2-3.6)	3.1 (2.3-3.8)	3.4 (2.4-4.3)	3.8 (2.8-5.2)	-

Source: NBP and Refinitiv data.

Inflation expectations of the financial sector analysts are proxied by the median forecast of the analysts surveyed by Refinitiv in the last month of a given quarter, except 2022 Q1, where the forecast of February 2022 is presented.
Inflation expectations of the participants to the NBP Survey of Professional Forecasters reflect the median probability distribution obtained from the aggregation of probability forecasts of the experts surveyed by NBP. In the parentheses there are given 50% probability intervals (between the 1st and 3rd quartiles) of this distribution. In principle, the survey takes place within the last two weeks of a given quarter and overlaps with the first two working days of a following quarter.

Figure 2.6 GDP growth and its components (y/y)



Source: Statistics Poland (GUS) and NBP data.

Table 2.2 GDP growth (y/y, per cent) and its contributions (percentage points)

	2019				2020				2021			
	q1	q2	q3	q4	q1	q2	q3	q4	q1	q2	q3	q4
GDP	**5.5**	**5.4**	**4.6**	**3.7**	**2.2**	**-8.2**	**-1.5**	**-2.5**	**-0.8**	**11.2**	**5.3**	**7.3**
Private consumption	2.3	2.4	2.5	1.9	0.7	-6.0	0.2	-1.6	0.0	7.3	2.7	3.9
Public consumption	1.5	1.0	1.2	0.9	0.6	0.7	0.6	1.6	0.3	0.6	0.1	-0.1
Gross fixed capital formation	1.3	1.2	0.6	1.3	0.3	-1.4	-1.3	-3.8	0.2	0.9	1.5	2.5
Change in inventories	-1.4	0.2	-0.5	-2.3	-0.4	-1.8	-2.0	1.1	-0.2	2.8	3.7	4.1
Net exports	1.8	0.6	0.8	1.9	1.0	0.4	1.1	0.2	-1.1	-0.3	-2.8	-3.2

Source: Statistics Poland (GUS) and NBP data.

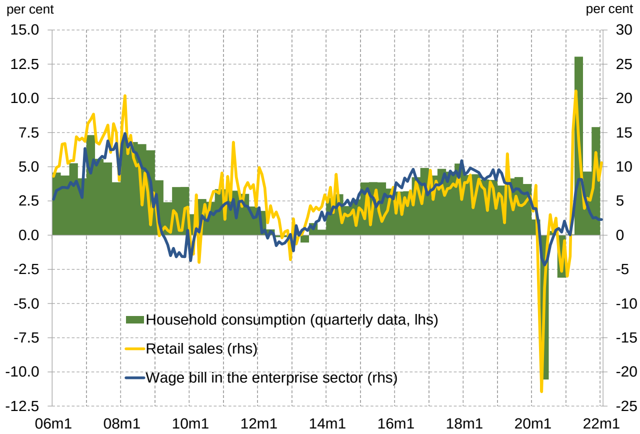
[14] January 2022 saw a further increase in consumer inflation expectations' balance statistic, while in February 2022 it declined to the lowest level since September 2021.
[15] In 2021 Q4, GDP growth in annual terms was picked up, among others, by the statistical low base effect due to the decrease in consumer demand in 2020 Q4 in the face of the rise in COVID-19 infections and tightening of pandemic restrictions.
[16] In 2021 Q2, GDP growth was significantly boosted by the statistical low base effect due to the sharp drop in GDP in 2020 Q2.

2.10). NBP estimates indicate that for the first time since the outbreak of the pandemic, investment outlays in all categories have increased, with corporate investment being the main contributor to annual growth. According to NBP survey data,[17] investment activity was driven by high capacity utilisation in most classes of enterprises (according to intended use of production and services). Investment growth was also supported by the favourable outlook for demand and the very good financial situation of enterprises. In 2021 Q3, aggregate gross profits of the corporate sector were significantly higher than a year earlier, and profitability of enterprises remained high.[18] At the beginning of 2022, the outlook for corporate investment was still relatively good.[19] However, the deteriorating financial situation reported by firms due to, among others, high growth in costs amid elevated prices of commodities and energy could dampen investment activity (see Chapter 1.3 *Global commodity markets*).[20]

The contribution of net exports to GDP growth was markedly negative in the second half of 2021 (in 2021 Q3 it stood at -2.8 percentage points and in 2021 Q4 it declined to -3.2 percentage points compared to -0.3 percentage points in 2021 Q2). The negative contribution of net exports to GDP growth was due to a stronger rise in the value of imports than exports. The value of imports rose significantly amid strong domestic demand and high global prices of commodities, which had an impact mainly on the rise in the value of imports of intermediate goods (Figure 2.11). At the same time, the decline in exports of passenger cars amid disruptions in supply chains had a dampening effect on export growth.

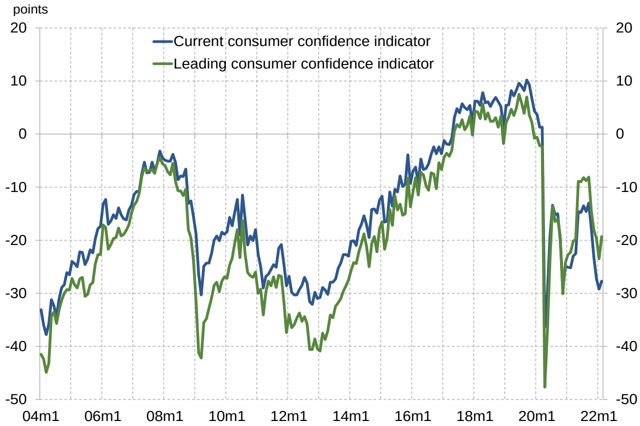
In the second half of 2021, economic activity rose in annual terms in all sectors of the economy (total

Figure 2.7 Real growth in household consumption, retail sales and wage bill in the enterprise sector



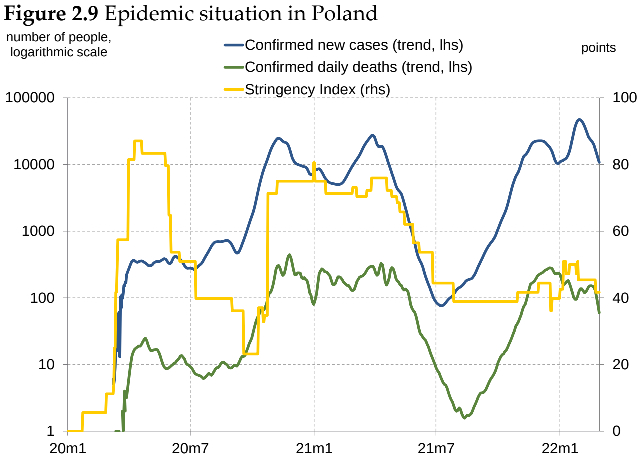
Source: Statistics Poland (GUS) data, NBP calculations.

Figure 2.8 Consumer confidence indicators



Source: Statistics Poland (GUS) data.

Figure 2.9 Epidemic situation in Poland



Source: Ministry of Health and University of Oxford Coronavirus Government Response Tracker data, NBP calculations.
Stringency index stands at 100 for a total lockdown.

[17] *NBP Quick Monitoring Survey. Economic climate in the enterprise sector*, NBP, January 2022.
[18] The gross financial result of enterprises in 2021 Q3 was PLN 68.23 billion compared to PLN 41.70 billion in 2020 Q3. The return-on-sales ratio was 5.6% (higher than the long-term average), while the percentage of profitable firms after seasonal adjustment rose to a record high of 79.1%.
[19] *NBP Quick Monitoring Survey. Economic climate in the enterprise sector*, NBP, January 2022.
[20] *NBP Quick Monitoring Survey. Economic climate in the enterprise sector*, NBP, January 2022.

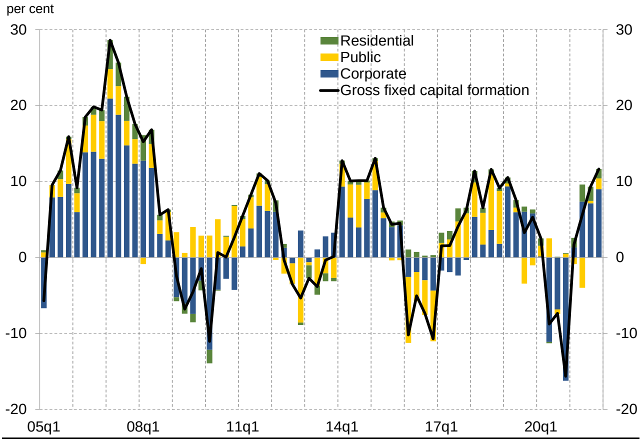
gross value added increased by 5.1% y/y in 2021 Q3 and 7.1% y/y in 2021 Q4; Figure 2.12). The strongest recovery in activity was recorded in industry.[21] Annual growth in construction and assembly output also rose gradually, although it remained below the pre-pandemic level.[22] The relatively low level of pandemic restrictions and the fact that consumers largely adapted to functioning in pandemic conditions had a favourable impact on activity in market services, which experienced accelerated growth at the end of 2021.

2.3 Public finance

In 2021, the financial situation of general government sector improved substantially. In the first three quarters of 2021, the general government deficit in ESA 2010 terms was 0.1% of GDP (PLN 3.2 billion), compared to 5.3% of GDP (PLN 122.6 billion) in the same period of 2020 (Figure 2.13).[23] The marked improvement in the sector's performance was mainly due to the tapering off the anti-crisis support for households and enterprises related to the COVID-19 pandemic. The cost of this support in the first three quarters of 2021 was 0.9% of GDP, compared to 3.9% of GDP in the same period a year earlier (NBP estimates). Moreover, an important factor adding to the improvement in the sector's performance in 2021 was the economic recovery, which led to a rise in tax revenues.

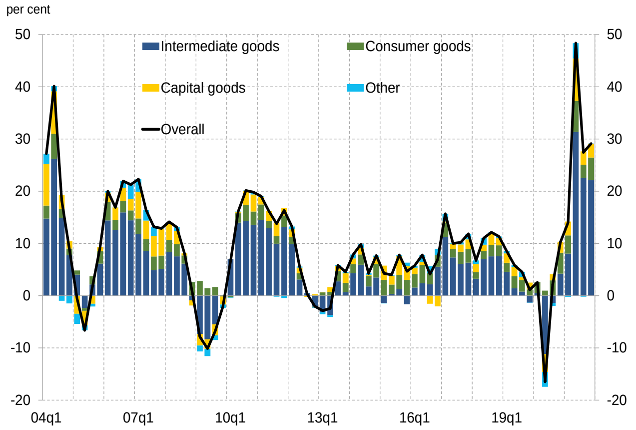
According to preliminary data from the Ministry of Finance, at the end of 2021 the state budget deficit stood at PLN 26.3 billion (1.1% of GDP), compared to PLN 85 billion (3.7% of GDP) in 2020. The improvement in the state budget was the result of, among others, the high growth rate of tax revenues (16.7% y/y, i.e. PLN 61.9 billion), which was backed by the economic recovery and the favourable labour market conditions, as well as the proceeds

Figure 2.10 Growth in investment and its main components (y/y)



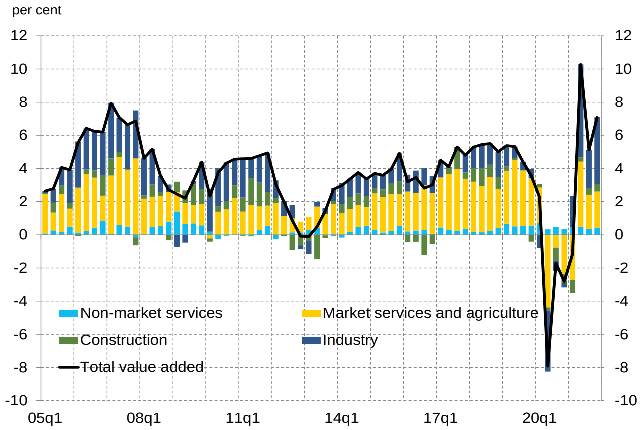
Source: Statistics Poland (GUS) data, NBP calculations.

Figure 2.11 Contribution to import growth by commodity (y/y)



Source: Statistics Poland (GUS) data, NBP calculations.
Data based on Statistics Poland (GUS) classification of the main product categories for the value of Polish exports and imports in zlotys. "Other" comprises passenger cars, motor gasoline and goods else not classified.

Figure 2.12 Growth of gross value added by sectors (y/y)



Source: Statistics Poland (GUS) data, NBP calculations.

[21] In 2021 Q3 and Q4, industrial output rose by 10.5% y/y and 13.2% y/y respectively, and in January 2022 by 19.2% y/y.
[22] In 2021 Q3 and Q4, construction and assembly output rose by 5.8% y/y and 6.1% y/y respectively. In January 2022, growth of 20.8% y/y was recorded, although it was partly due to the statistical low base effect (a fall of 10.1% y/y in 2021).
[23] Taking into account partial data for 2021 Q4, the sector's deficit in the whole of 2021 was most likely running at a much lower level than was indicated in the 2021 autumn fiscal notification (5.3% of GDP).

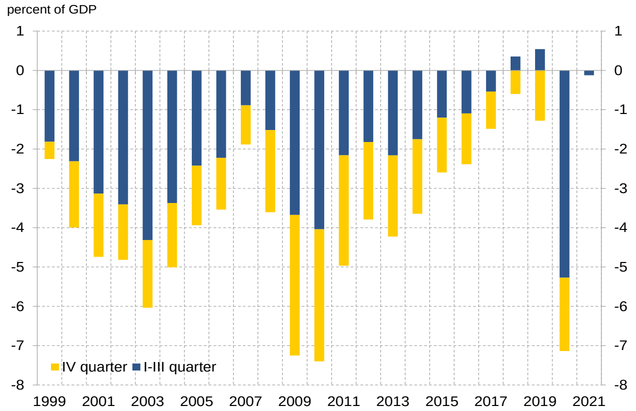
from the sale of CO_2 emission allowances higher than in 2020.[24] Moreover, the improvement in the state budget performance in 2021 was supported by the low growth in expenditure (3.3% y/y), which was largely the result of the pre-financing of some of the expenditure in December 2020.

In the first three quarters of 2021, the general government debt in ESA 2010 terms rose by PLN 82.2 billion, thus much higher than if it had only been driven by the deficit recorded in this period (PLN 3.2 billion; Figure 2.14). The difference between these values is mainly explained by a marked increase in deposits held by government units (of PLN 106.6 billion). Despite the significant growth in debt in nominal terms, the observed strong economic recovery should translate into a decline in the debt-to-GDP ratio at the end of 2021, compared to the level of 57.4% of GDP a year earlier.

2.4 Labour market

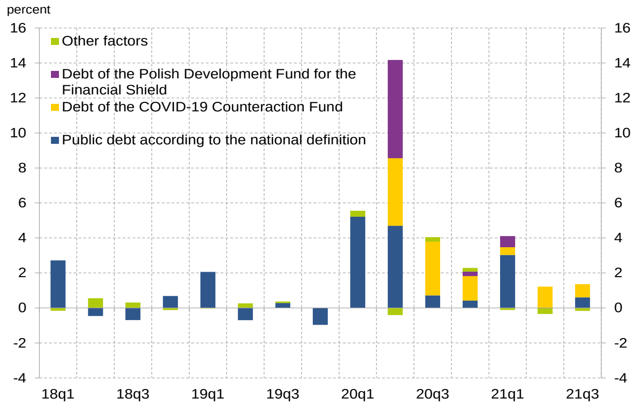
As the economic recovery continued, 2021 Q3 and Q4 saw further growth in demand for labour. In 2021 Q4, the number of employed persons once again increased[25], which – according to LFS data – was a result of higher employment in services and industry, amid a slight decline in the number of persons employed in agriculture (Figure 2.15, Figure 2.16). Data from the enterprise sector (ES) point to a further increase in demand for labour in January 2022. The strong labour demand is also evidenced by the robust growth in the number of job offers in labour offices: at the end of January 2022 this number was almost 1/4 higher than a year earlier and 1/4 higher than directly before the outbreak of the pandemic (i.e. at the end of February 2020).

Figure 2.13 General government balance (ESA2010)



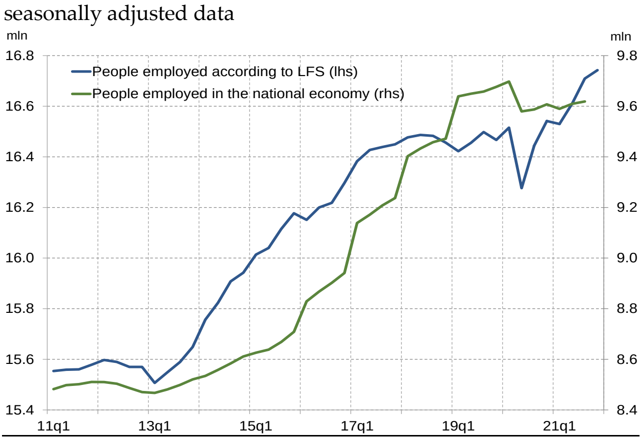
Source: Eurostat and Statistics Poland (GUS) data, NBP calculations.

Figure 2.14 Quaterly percentage change of general government debt in ESA 2010 terms



Source: Ministry of Finance data, NBP calculations.

Figure 2.15 Number of employed people according to the LFS and according to reporting data from the national economy (NE), seasonally adjusted data



Source: Statistics Poland (GUS) data, NBP calculations.

Unlike the LFS data, the number of employed persons in the NE concerns entities with more than 9 employees and does not include the following: (1) individual farming, (2) employment in the grey economy, (3) employment based on civil law contracts. The LFS data for 2021 Q1-Q4 are not comparable with data from earlier periods due to changes in the methodology of the surveys.

[24] In the first eleven months of 2021, revenues from the "51 Climate" budget item, which was predominantly income from the sale of CO_2 emission allowances, reached PLN 22.3 billion, compared to PLN 9.3 billion in the same period of 2020.

[25] An increase in the number of employed persons was recorded both in the LFS data and the data on the number of employed persons in the enterprise sector.

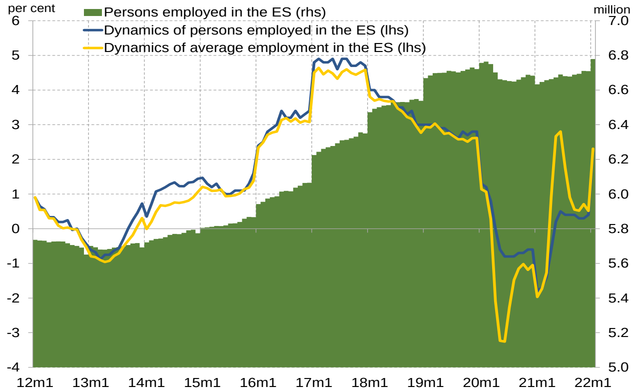
Growth in demand for labour was accompanied by a further fall in unemployment rate, which was running close to its record low. In 2021 Q4, the LFS unemployment rate declined to 3.0% from 3.2% in 2021 Q3 (seasonally adjusted data; Figure 2.17). In the second half of 2021, the registered unemployment rate also steadily declined, and in January 2022 it stood at 5.2% (compared to 6.2% in June, seasonally adjusted data).

The strong position of employees in the labour market was reflected in a marked rise in wages. In 2021 Q4, average nominal wage in the national economy (NE) rose by 9.8% y/y (compared to 9.4% y/y in the previous quarter; Figure 2.18). Monthly data from the ES also point to a further significant growth in wages in January 2022.

The results of the *NBP Quick Monitoring Survey* suggest that the fast wage growth may also continue in 2022 Q1. The percentage of companies planning to raise wages in this period remained close to that in the previous quarter (approx. 47% compared to 45%), with a higher average planned wage increase (6.9% compared to 5.5%).[26]

Despite the continued marked growth in wages, growth in unit labour costs in the NE decreased in 2021 Q4 to 3.6% y/y (from 5.6% y/y in 2021 Q3). In the industrial sector it remained negative, both in 2021 Q4 and in January 2022.

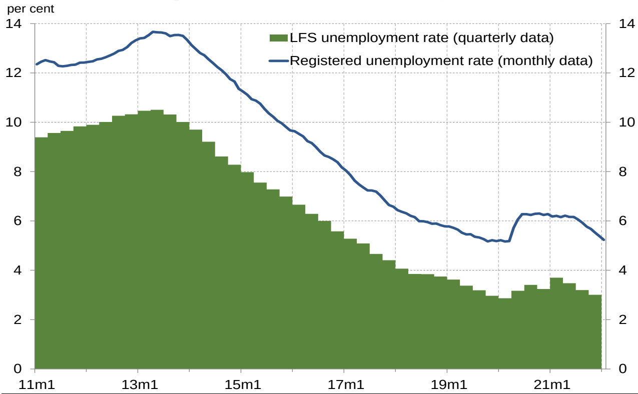
Figure 2.16 Annual growth rates in the number of people employed and average employment, and the number of people employed in the enterprise sector (ES)



Source: Statistics Poland (GUS) data.

Unlike the employment statistics, the number of people employed in the ES is not expressed in the number of full-time jobs and includes employees who are on sickness benefit or child care leave.

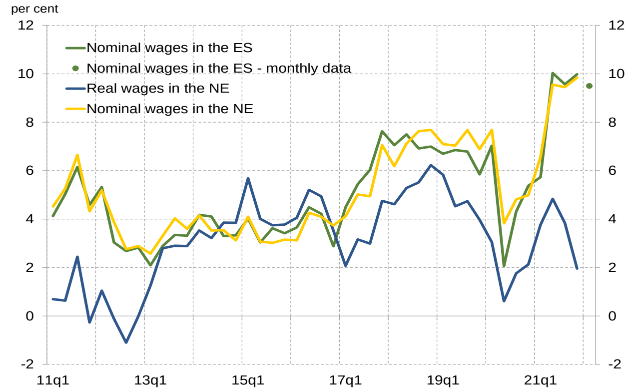
Figure 2.17 Unemployment rate, seasonally adjusted data



Source: Statistics Poland (GUS) data, NBP calculations.

There are three reasons for the difference between the unemployment rate according to labour offices and the LFS unemployment rate: (1) the definition of an unemployed person is different, (2) the definition of the population to which the number of the unemployed is referred is different, (3) registered unemployment rate is based on the number of unemployed people registered in labour offices, while LFS unemployment rate is based on survey results. The LFS data for 2021 Q1-Q4 are not comparable with data from earlier periods due to changes in the methodology of the surveys.

Figure 2.18 Annual nominal and real wage growth rates in the national economy (NE) and in the enterprise sector (ES)



Source: Statistics Poland (GUS) data.

Wages in the ES concern entities classified in selected PKD (NACE) sections that employ 10 or more people. Data on wages in the NE cover the whole statistical population, i.e. regardless of the number of people employed, and also cover all PKD (NACE) sections of the economy. The figure presents quarterly data (lines) and monthly data for January 2022 (a dot).

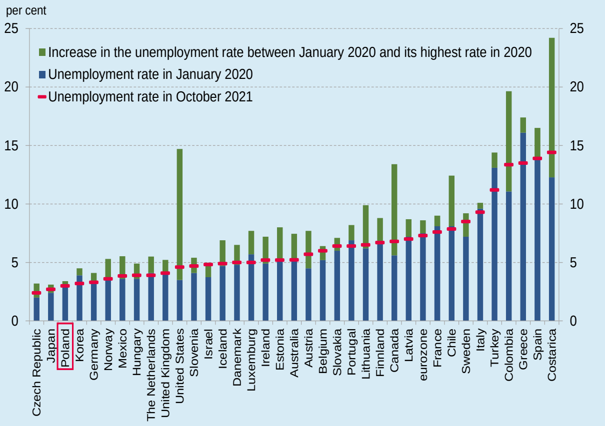
[26] *NBP Quick Monitoring Survey. Economic climate in the enterprise sector, NBP, January 2022*. Data on the percentage of firms planning wage increases are seasonally adjusted.

Box 2: The labour market in Poland during the COVID-19 pandemic

As a result of the outbreak of the COVID-19 pandemic, in the first months of 2020 there was a freeze in economic activity in some sectors with uncertainty rising sharply in many of the world's economies. This translated into a deterioration in labour market conditions, and a sharp rise in unemployment in some countries in the first months of the pandemic (Figure B.2.1). After almost two years, in many economies labour market conditions remain worse than before the pandemic, as evidenced by, among others, the persistence of lower employment than the pre-pandemic level. Poland, instead, is one of few OECD countries where unemployment rose only slightly and temporarily, and the number of persons employed at the end of 2020 already exceeded the pre-pandemic level.[27] At the same time, wages in Poland (in annual terms) grew steadily. This box analyses labour market conditions in Poland during the pandemic.

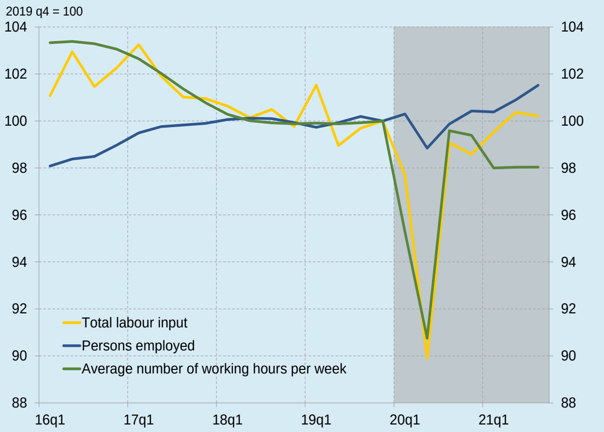
In Poland, following the outbreak of the pandemic, i.e. in 2020 Q1 and Q2, amid a sharp fall in economic activity and stringent pandemic restrictions, there was a marked decline in demand for labour as well as more frequent employee absenteeism.[28] As a result, total labour input or, in other words, the aggregate number of hours worked in the economy, declined. However, the decline in total labour input was mainly through a marked drop in the average number of hours worked (by 9.5% in the period from 2019 Q4 to 2020 Q2, in seasonally adjusted terms), while the scale of the decrease in the number of employed persons was much lower (1.4% in the same period, in seasonally adjusted terms; Figure B.2.2). The number of employees subsidised by the Guaranteed Employee Benefits Fund due to reduced working time during the initial phase of the pandemic reached almost 800,000.[29]

Figure B.2.1 Monthly unemployment rate in January 2020 and October 2021 as well as its increase between January 2020 and the highest value in 2020 in OECD countries (seasonally adjusted)



Source: OECD data, NBP calculations.

Figure B.2.2 Total weekly labour input in the economy, number of employed persons and the average number of hours worked per week according to the LFS (seasonally adjusted)



Source: Statistics Poland data, NBP calculations.

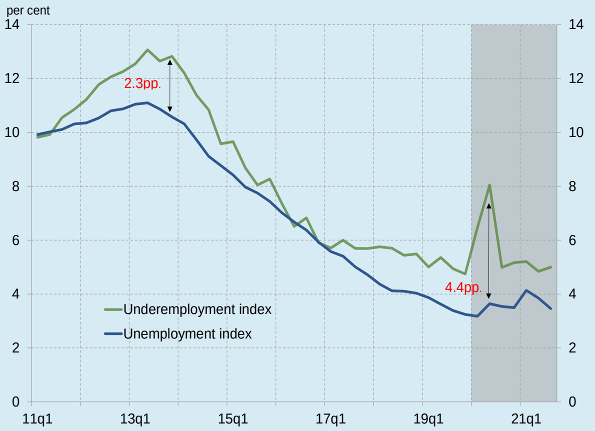
The average number of hours worked per week was calculated as the ratio of the number of total hours worked in the economy and the number of employed persons according to the Polish LFS. Therefore, it is different from the average number of hours worked according to the LFS that was published by Statistics Poland. Unlike the published indicator, it also takes into account people who did not work any hours in a given week but who continue to have the status of an employed person in the labour market. The shaded area represents the pandemic period.

[27] The number of employed persons (above 15 years old) in 2020 Q4 was higher than in 2019 Q4 in only 5 of the 38 OECD countries, i.e. in Poland, Luxembourg, New Zealand, Slovenia and Switzerland.
[28] During the first wave of the pandemic employee absenteeism was mainly a result of the rise in the number of people on additional care benefit. This was due to the closure of care and educational institutions for children up to 8 years old, and to a lesser extent, also as a result of a rise in the number of illnesses and in the number of persons put under quarantine.
[29] Number of people subsidised by the Guaranteed Employee Benefits Fund due to reduced working time in June 2020 as estimated by NBP. The reduction in the average working time includes both reduced intensity of the employee's working time without a formal job reduction and job reduction as part of the use of the Anti-Crisis Shield instruments.

Economic policy measures helped to keep jobs despite the pandemic crisis. The Anti-Crisis Shield measures were the main supporting instrument in fiscal policy. They had a direct impact on protecting jobs and wages of employees by providing wage subsidies to employees, furlough benefits to the self-employed and people employed on civil-law contracts. The aid under the Anti-Crisis shield also included exemptions from payment of social insurance contributions granted to firms. The second instrument indirectly supporting the labour market was the Financial Shield of the Polish Development Fund, which by providing liquidity to enterprises also helped to maintain employment levels in companies. At the same time, the significant monetary policy easing by NBP in response to the outbreak of the pandemic on the one hand supported the labour market situation by its positive impact on economic activity, and on the other hand, increased fiscal space for the implementation of anti-crisis measures. The propensity of enterprises to reduce employment was also limited by the fact that before the pandemic companies had experienced staff shortages.

Due to the limited propensity of companies to fire employees, unemployment rose only slightly as a result of the outbreak of the pandemic (the seasonally adjusted LFS unemployment rate in 2020 Q2 was 3.2% compared to 3.0% in 2019 Q4). Analysis using the so-called underemployment index[30] shows that if there had been a full labour market adjustment by a reduction in employment with no change in the number of hours worked, the LFS unemployment rate in Poland would have been 4.4 percentage points higher than the standard rate (Figure B.2.3). As the number of employees remained relatively stable at the beginning of the pandemic, the total labour input could rebound rapidly, along with the recovery of economic activity in the successive quarters. As early as 2020 Q3 the average number of hours worked rose sharply and approached the pre-pandemic level.[31] Amid a gradual recovery in economic activity, LFS employment also began to rise strongly as early as 2020 Q3, and in 2020 Q4 it had already reached the pre-pandemic level. In 2021 Q3, LFS employment was 1.5% higher than before the pandemic.[32] Consequently, the total labour input in Poland in 2021 Q3 was only 0.3% lower than its pre-pandemic level, while the average in the EU was 3.2% lower (Figure B.2.4).

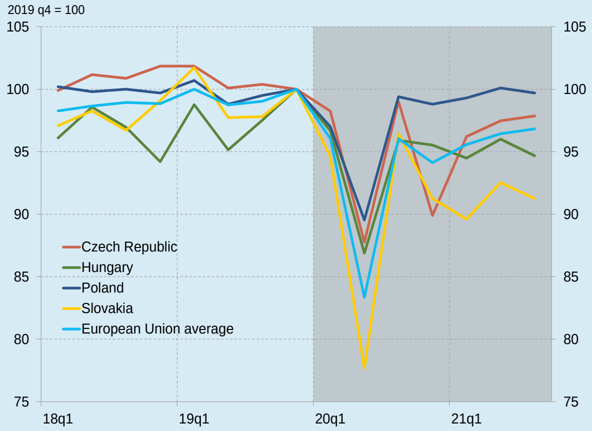
Figure B.2.3 Underemployment index versus unemployment index (seasonally adjusted data)



Source: Statistics Poland data, NBP calculations.

The unemployment index means here the unemployment rate calculated on an hourly basis (see Wyszyński 2016). The shaded area represents the pandemic period.

Figure B.2.4 Index of total actual hours worked in the main job (seasonally adjusted data)



Source: Eurostat data, NBP calculations.

The index refers to people aged 15-74. The shaded area represents the pandemic period.

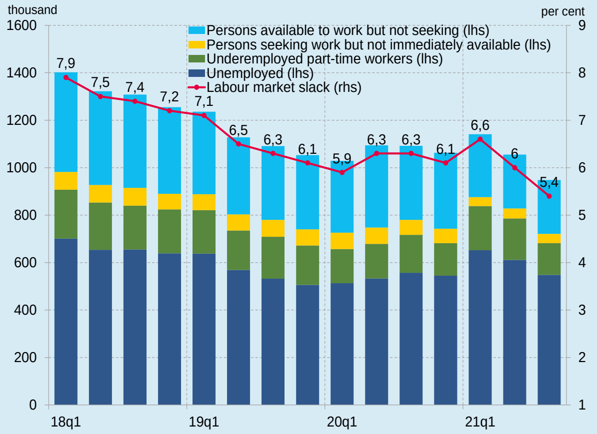
[30] Like the unemployment rate, this index measures the size of free labour resources in relation to the economically active population. However, it additionally adjusts it for the difference between workers' preferred and actual working time in a given period (the so-called work-hour gap). This index allows for a more complete assessment of the demand and supply mismatch in the labour market, taking into account both the number of people remaining without work and work intensity (see Bell & Blanchflower; 2011, 2013).

[31] Following a sharp rise in 2020 Q3, the average number of hours worked in successive quarters was somewhat lower than before the pandemic. This might have been influenced both by health factors, the fact that pandemic restrictions were still in place in selected sectors, and by changes in the organisation of work in companies compared to the situation before the pandemic (e.g. a greater number of employees working remotely).

[32] LFS data for Poland and the remaining EU countries for the period 2021 Q1-Q3 are not fully comparable with historical data due to changes in the research method (both in the case of the definition of basic variables and in the design of the survey questionnaire).

The rapid rebound in demand for labour is also indicated by an analysis of labour market slack.[33] In 2020 Q2 this indicator rose only slightly, and in 2021 Q3 it declined to its lowest recorded level (Figure B.2.5).[34] Both the level and the change in the labour market slack indicator in the pandemic period were therefore relatively low in Poland compared to other EU countries (Figure B.2.6). In these conditions, wages systematically grew in Poland during the pandemic, following the changes in labour productivity. Total wage growth in Poland from 2019 Q4 to 2021 Q3 was among the highest in the EU, running at 13.8% compared to the EU average of 5.2%.[35,36]

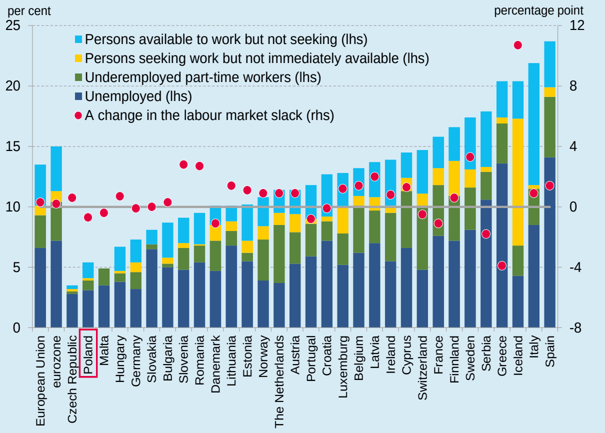
Figure B.2.5 Labour market slack in Poland (seasonally adjusted data)



Source: Eurostat data, NBP calculations.

Indices refer to people aged 15-74.

Figure B.2.6 Labour market slack in EU countries – level in 2021 Q3 and the change between 2019 Q4 and 2021 Q3 (seasonally adjusted data)



Source: Eurostat data, NBP calculations.

Labour market slack is measured as a percentage of the expanded workforce. The expanded workforce means the total number of people economically active, economically inactive looking for work, but not ready to take it, and economically inactive, not looking for work, but ready to take it. Indices refer to people aged 15-74..

Literature:

Bell D.N.F., Blanchflower D.G. (2011), *Youth Underemployment in the UK in the Great Recession*, National Institute Economic Review No. 215, January 2011.

Bell D.N.F., Blanchflower D.G. (2013), *Underemployment in the UK Revisited*, National Institute Economic Review No. 224, January 2013.

Wyszyński R. (2016), *Zjawisko niepełnego wykorzystania zasobu pracy – czym jest i co mówi o rynku pracy w Polsce*, Bank i Kredyt 47(3).

[33] Labour market slack is defined as the total number of people (aged 15-74): (i) unemployed, (ii) economically inactive looking for work, but not ready to take it, (iii) economically inactive, ready to take work, but not looking for it, and (iv) part-time workers who could and would like to work longer hours.

[34] In 2021 Q3, labour market slack in Poland reached a historic low despite the fact that the changes in the methodology of the LFS survey introduced at the beginning of 2021 (new design of the questionnaire, as well as changes in definitions of employed/unemployed) led to an increase (in statistical terms) in the number of unemployed persons and inactive not looking for work, but ready to take it, and therefore boosted the indicator level compared to the previous years' levels.

[35] In this period, wages grew faster than in Poland in only four EU countries: Lithuania, Bulgaria, Hungary and Malta. The data refer to the component concerning wages under the Labour Cost Index (LCI), which is calculated by Eurostat on the basis of the results of an international survey of labour costs and covers sections of the economy from B to N (in other words, it excludes agriculture, households employing employees, and extra-territorial organisations). Seasonally adjusted data.

[36] The significant wage growth in Poland was accompanied by an increase in labour productivity, which stood at 2.7% between 2019 Q4 and 2021 Q4 (NBP calculations based on Statistics Poland seasonally adjusted data).

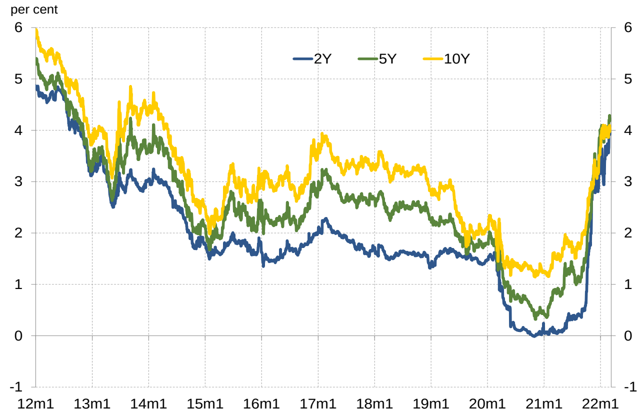
2.5 Financial market and asset prices

As in many other economies around the world, government bond yields in Poland have risen significantly in recent months (Figure 2.19; see Chapter 1.5 *International financial markets*). In the period from the end of November 2021 to the beginning of February 2022, this was accompanied by some strengthening of the zloty against the main currencies (Figure 2.20). The rise in bond yields and the zloty appreciation were mainly driven by favourable economic conditions in Poland and the tightening of NBP's monetary policy as well as expectations of further interest rate increases (Figure 2.21; see Chapter 2.2 *Demand and output*). The prices of domestic financial assets were additionally affected by the withdrawal of monetary accommodation by the central banks in major advanced economies (see Chapter 1.4 *Monetary policy abroad*).

However, at the turn of February and March 2022, the zloty depreciated significantly due to the Russia's military aggression against Ukraine. This was accompanied by a marked drop in share prices on the Warsaw Stock Exchange.

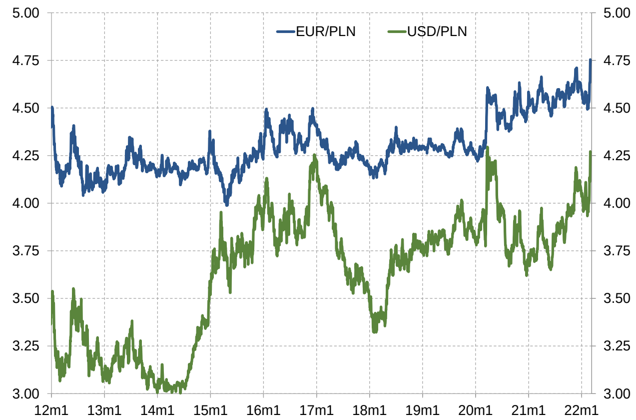
In 2021 Q4,[37] transaction prices in the housing market[38] continued to rise due to ongoing high demand and increasing construction costs (Figure 2.22). According to NBP data, growth in average housing transaction prices picked up to 13.5% y/y (against 9.8% in 2021 Q3).[39]

Figure 2.19 Yields on Polish government bonds



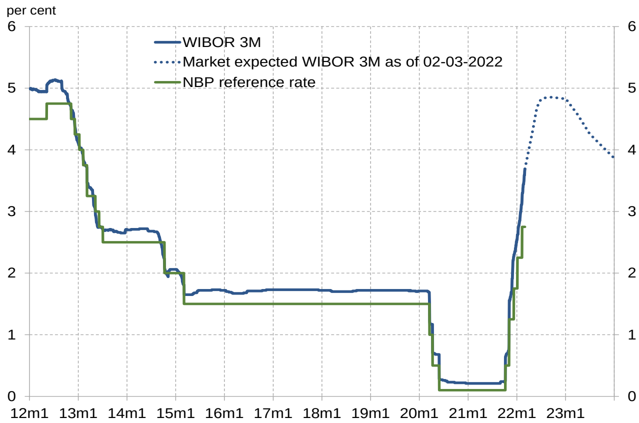
Source: Bloomberg data.

Figure 2.20 Exchange rates of the euro and the US dollar in zloty



Source: Bloomberg data.

Figure 2.21 NBP reference rate and WIBOR 3M with expectations based on FRA contracts



Source: NBP and Bloomberg data.

[37] The discussed data on home prices cover transactions concluded between September 2021 and November 2021.
[38] For more information on the situation in the Polish real estate market see the following NBP periodic publications: quarterly *Information on home prices and the situation in the residential and commercial real estate market in Poland* and annual *Reports on the situation in the Polish residential and commercial real estate market*.
[39] These data apply to average housing transaction prices (PLN/m²) in 17 cities (16 voivodeship capitals and Gdynia) in the primary and secondary markets weighted by the housing stock. In quarterly terms, this price growth was running at 4.9% in 2021 Q4 (against 2.4% in 2021 Q3).

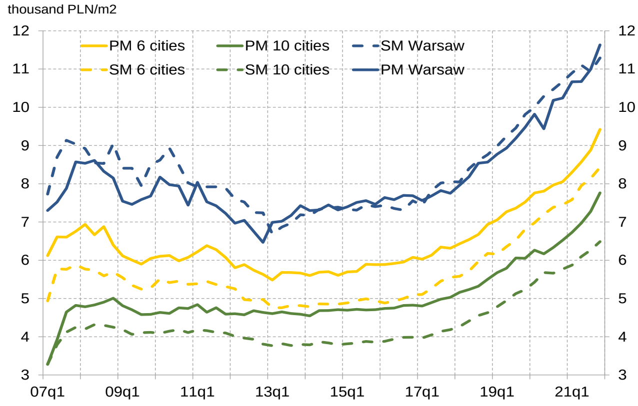
2.6 Money and credit[40]

In 2021 Q4, the growth rate of the broad money (M3) stabilised, running at a level similar to that observed prior to the outbreak of the pandemic (it amounted to 8.9% in 2021 Q4 compared to 8.5% in 2021 Q3 and 9.0% in 2019 Q4; Figure 2.23). The somewhat slower growth of money in circulation (11.8% in 2021 Q4 against 15.6% in 2021 Q3) was accompanied by a rise in the growth of corporate deposits (to 9.1% in 2021 Q4 from 6.8% in 2021 Q3), resulting primarily from the increase in term deposits. Alongside that, the growth rate of household deposits stabilised at a moderate level (it amounted to 6.9% in 2021 Q4 compared to 6.5% in 2021 Q3).[41]

Amidst the ongoing economic recovery, the growth rate of loans and other claims increased in 2021 Q4, contributing to higher M3 growth (Figure 2.24). At the same time, contributions of other M3 counterparts were declining. Most notably, as the situation of the public finance sector was favourable and its borrowing needs were largely met, the net debt of the central government sector decreased (see Chapter 2.3 *Public finance*).

The growth rate of household loans in 2021 Q4 – after a significant rise in previous quarters – stabilised at the level of 4.9% y/y amid a moderate increase in consumer loans (Figure 2.25). Although the annual growth rate of housing loans in 2021 Q4 remained relatively stable, available data[42] show that the demand weakened (both the number of submitted loan applications and the value of granted loans were lower in 2021 Q4 than in 2021 Q3) and lending standards were slightly

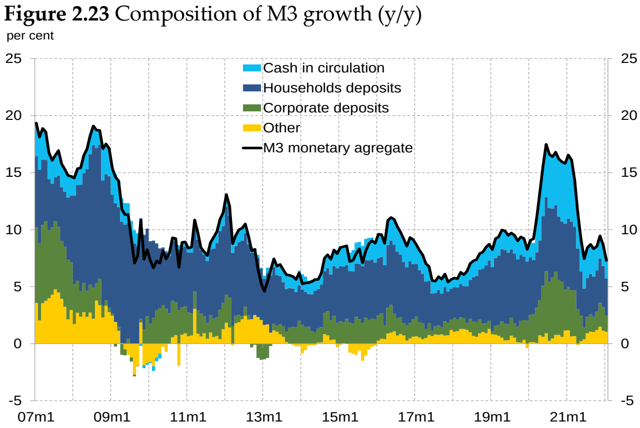
Figure 2.22 Nominal transaction prices of flats in major cities in Poland



Source: NBP data.

PM – primary market, SM – secondary market. Transaction prices – an average weighted with the share of the housing stock in a given city in the total housing stock. Aggregate of 6 cities consists of: Gdańsk, Gdynia, Kraków, Łódź, Poznań, Wrocław, whereas of 10 cities: Białystok, Bydgoszcz, Katowice, Kielce, Lublin, Olsztyn, Opole, Rzeszów, Szczecin and Zielona Góra.

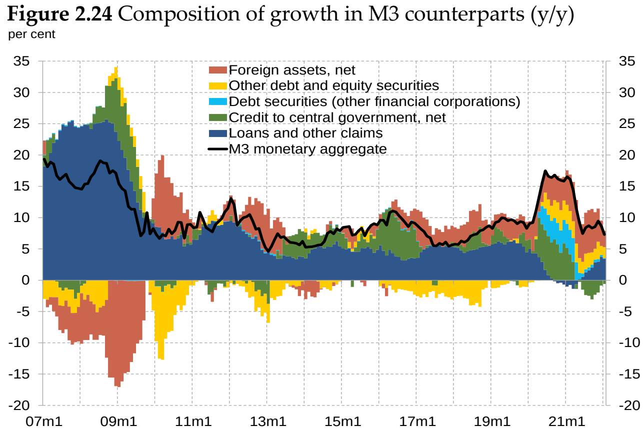
Figure 2.23 Composition of M3 growth (y/y)



Source: NBP data.

The category *Other* covers deposits of non-monetary financial institutions and local government units, repurchase agreements between banks and non-banking sector as well as debt securities with maturity up to 2 years issued by banks.

Figure 2.24 Composition of growth in M3 counterparts (y/y)



Source: NBP data.

Other financial corporations cover i.a. Polish Development Fund (PFR), pension funds, insurance corporations and investment funds.

[40] In this chapter, the growth in the broad money aggregate M3 and loans is defined as the annual growth resulting from transaction changes, on average in a given quarter. The data refer to monetary financial institutions.

[41] In turn, in January 2022 the growth in the M3 money aggregate amounted to 7.3% y/y. The growth in money in circulation was 9.4% y/y, in household deposits 6.1% y/y and in corporate deposits 6.9% y/y.

[42] *Senior loan officer opinion survey on bank lending practices and credit conditions. 1st quarter 2022*, NBP, February 2022; BIK press releases (https://media.bik.pl/).

tightened.[43] At the same time, the interest rates on housing loans were rising.

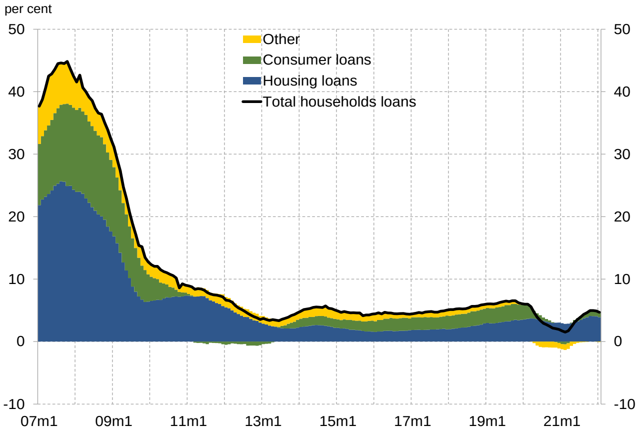
The annual growth of corporate loans, in turn, increased markedly in 2021 Q4 and – for the first time since the pandemic outbreak – it was positive (it stood at 2.2% y/y in 2021 Q4 compared to -1.7% y/y in 2021 Q3; Figure 2.26). The higher corporate loans growth was primarily driven by a strong acceleration in the growth of current loans (to 9.0% in 2021 Q4 from -0.2% in 2021 Q3) stemming from increased financing needs for, among others, inventories and other components of working capital from large enterprises towards the end of 2021. At the same time, the growth rate of investment loans was still negative, albeit higher than in the previous quarter (it stood at -2.3% y/y in 2021 Q4 compared to -3.0% y/y in 2021 Q3).[44]

2.7 Balance of payments[45]

In 2021 Q4, the current account balance declined (to -0.9% of GDP in 2021 Q4 from 0.7% of GDP in 2021 Q3), mainly due to the decrease in the balance of the trade in goods account (to -0.1% of GDP in 2021 Q4 from 1.4% of GDP in 2021 Q3; Figure 2.27). The deterioration of the balance in trade in goods resulted primarily from the rise in global commodity prices, which was reflected in an increase in the value of imports of fuel and supply goods (see Chapter 1.3 *Global commodity markets*). At the same time, the increase in the value of exports was limited by the disruptions in the supply chains, which in particular caused a slowdown in the automotive industry production (see Chapter 1.1 *Economic activity abroad*).

Another factor which contributed to the decline in the current account balance – although to a lesser extent – was an increase in the primary income

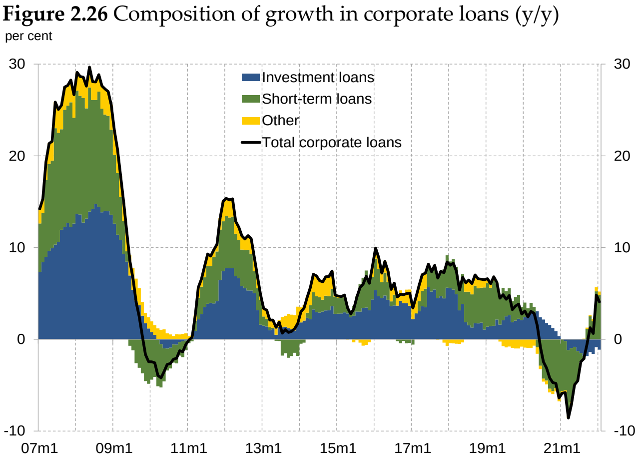
Figure 2.25 Composition of growth in household loans (y/y)



Source: NBP data.

The category *Other* covers credit card loans, loans to individual entreprenuers and individual farmers as well as other receivables.

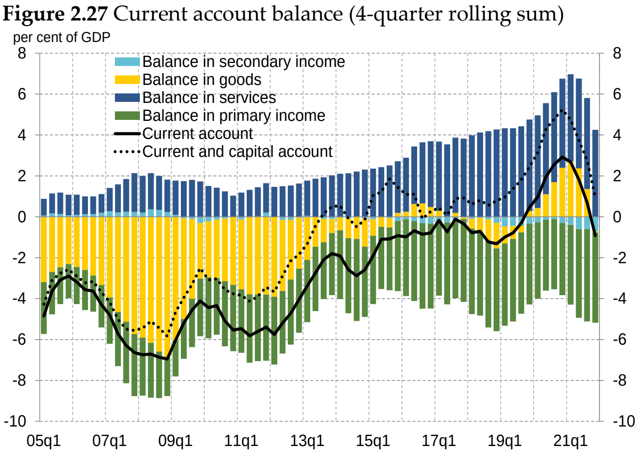
Figure 2.26 Composition of growth in corporate loans (y/y)



Source: NBP data.

The category *Investment loans* covers loans for investments and real estate purchases. The category *Other* covers i.a. car loans, loans for security purchases and other receivables.

Figure 2.27 Current account balance (4-quarter rolling sum)



Source: NBP data.

Data for 2021 Q4 are based on estimated monthly data for October, November, December 2021.

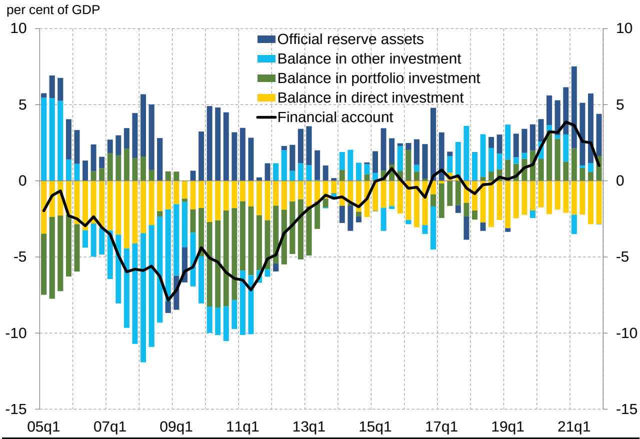
[43] In January 2022, the growth in household loans stood at 4.7% y/y. The growth in housing loans was somewhat slower (6.5% y/y in January 2022 compared to 6.8% y/y in 2021 Q4) amid a relatively stable growth in consumer loans.
[44] In January 2022, the growth of corporate loans was 4.1% y/y. The growth of current loans amounted to 13.3% y/y, and of investment loans to -2.0% y/y.
[45] In this chapter, data on the balance of payments in relation to GDP are presented in terms of a four-quarter rolling sum. For 2021 Q4, the presented data are estimates based on the monthly balance of payments data and the estimated level of nominal GDP.

deficit (in 2021 Q4 it stood at 4.4% of GDP) due to the high value of profits reinvested by foreign direct investors in Poland. Meanwhile, the persistently high surplus in trade in services (4.3% of GDP in 2021 Q4) had a stabilising effect on the current account balance.[46]

In the recent period, the financial account balance has declined (to 1.0% of GDP in 2021 Q4 from 2.5% of GDP in 2021 Q3, Figure 2.28). The lower financial account balance compared to 2021 Q3 mainly reflected the declines in the balance of official reserve assets and in the balance in other investment.

External imbalance indicators evidence that the Polish economy is well balanced (Table 2.3). In 2021 Q3, Poland's net international investment position (as measured in relation to GDP) improved again, and foreign debt to GDP ratio was running close to its lowest level since 2008.

Figure 2.28 Financial account balance (4-quarter rolling sum)



Source: NBP data.

A positive value of the balance means an increase in Polish net assets (net outflow of capital from Poland). Data for 2021 Q4 are based on estimated monthly data for October, November, December 2021.

Table 2.3 Selected external imbalance indicators (4-quarter rolling sum in per cent, unless indicated otherwise)

	2019	2020				2021			
		q1	q2	q3	q4	q1	q2	q3	q4
Current account balance/GDP	0.5	1.0	2.0	2.6	2.9	2.7	1.8	0.7	-0.9
Current and capital account balance/GDP	2.4	3.1	4.3	4.8	5.2	4.7	3.7	2.8	1.0
Trade balance/GDP	4.8	5.0	5.6	6.1	6.8	7.0	6.8	5.8	4.2
Official reserve assets (in monthly imports of goods and services)	5.0	5.1	5.5	5.8	6.1	6.4	5.6	5.8	5.5
Foreign debt/GDP	59	59	58	59	61	61	57	58	-
Net international investment position/GDP	-50	-47	-46	-45	-45	-43	-42	-41	-
Official reserve assets/short-term foreign debt minus forecast current account balance	140	138	135	124	119	112	105	111	-
Official reserve assets/short-term foreign debt	117	117	121	119	125	125	123	131	-

Source: NBP data.

The last two indicators include foreign debt and the level of official reserves at the end of the period. Data for 2021 Q4 are based on estimated monthly data for October, November, December 2021.

[46] At the same time, the surplus on the capital account persisted as a result of the inflow of EU funds (in 2021 Q4 it stood at 1.9% of GDP).

3. Monetary policy in November 2021 – March 2022

This chapter includes the previously published *Minutes of the Monetary Policy Council decision-making meetings* held between November 2021 and February 2022 as well as the *Information from the meeting of the Monetary Policy Council* in March 2022.

Minutes of the Monetary Policy Council decision making meeting held on 3 November 2021

At the Council meeting, it was observed that the recovery in global economic activity was continuing. It was emphasised that owing to further activity growth, many economies had already made up for the pandemic-induced losses. It was observed that preliminary GDP data for 2021 Q3 pointed to continued favourable economic conditions in the United States as well as the euro area, where economic growth was markedly above the forecasts. It was stressed that the economic situation in the euro area remained good despite the adverse effect of supply-side disruptions on the economic climate in industry, and was supported by the substantial activity rebound in the service sector. It was underlined that current forecasts pointed to further global activity growth in 2022. At the same time, the risk of global GDP growth below the current forecasts was deemed to prevail. In this context, it was pointed out that the difficult epidemiological situation persisting in many countries, along with the supply constraints in some markets and a sharp rise in commodity prices, were having a downward effect on activity in some economies. The slowdown in GDP growth in China in 2021 Q3, driven by pandemic disruptions and the economic policy pursued by Chinese authorities, was also highlighted.

It was observed that commodity prices in the global markets continued to be substantially higher than a year ago. It was indicated that gas prices, despite a recent correction, were still several times higher than in the autumn of 2020. Oil and coal also continued to be more expensive. Certain Council members were of the opinion that the rise in energy commodity prices was driven by both demand factors – such as the ongoing recovery in the global economy after the pandemic crisis – and supply constraints due to the oil production policy of OPEC+ and Russia's gas export policy. It was observed that another factor boosting energy prices in Europe was the sharp rise in the prices of CO_2 emission allowances. Food price growth, driven up by rising global prices of some agricultural commodities, was also highlighted.

It was emphasised that these factors, together with disruptions in global supply chains and a steep rise in international transport costs, were contributing to a substantial rise in inflation in many countries. It was pointed out that price growth in many countries, including the United States and the euro area, was well above the central banks' inflation targets, running at highest levels in decades. It was also observed that according to forecasts, global price growth would also remain elevated in 2022, a development which in the summer 2021 had not yet been anticipated.

It was emphasised that despite rising inflation, major central banks were keeping interest rates low and were conducting asset purchases. At the same time, given the growing risk of higher inflation lasting longer than previously forecast, some of those banks were signalling a reduction in the scale of monetary accommodation. In particular, the Federal Reserve was hinting at embarking on a gradual reduction in the scale of net asset purchases later this year. At the same time, it was underscored that central banks in Central and Eastern Europe, as well as in some advanced economies, were already raising interest rates.

While analysing the situation in the Polish economy, Council members drew attention to the ongoing economic recovery. Incoming data and estimates suggest that the relatively rapid economic growth, exceeding 5%, had continued in 2021 Q3. GDP growth was supported by robust consumer demand, benefiting from a favourable situation in the labour market, which was reflected in a decline in unemployment and a substantial rise in average wages. Favourable situation also continued in the industry, despite the negative impact of limited supply of some intermediate goods on activity in some branches.

It was judged that the favourable economic situation would probably continue also in the coming quarters. It was observed that the findings of the November NBP projection also suggested such a scenario. At the same time, it was indicated that the main factors of uncertainty about the economic outlook were factors likely to have a negative impact on economic activity, including the effects of the pandemic, as well as the impact of supply constraints and high prices of energy commodities on the global economic climate.

At the meeting it was pointed out that according to the Statistics Poland flash estimate, inflation in Poland had risen to 6.8% y/y in October 2021, and stood at 1.0% in monthly terms. The majority of Council members underlined that heightened inflation was still mainly the result of the impact of external factors beyond the influence of domestic monetary policy, including much higher global prices of energy and agricultural commodities than a year earlier, previous hikes in electricity prices and waste disposal charges, as well as global transport and supply chain disruptions. At the same time, these Council members judged that the ongoing economic recovery, including demand stimulated by rising household income, had also added to the price growth. Certain Council members pointed out that this was reflected in an elevated level of core inflation. These Council members also drew attention to the higher level of inflation expectations than in previous years, in particular, the expectations of enterprises. They also underlined the importance of the exchange rate channel in the monetary transmission mechanism.

When analysing the inflation outlook, the Council members pointed out that the significant increase in global commodity prices observed in 2021 and the prolonged global supply disruptions had caused a significant increase in inflation forecasts for the coming quarters both globally and in Poland. The Council members judged that with the expected further recovery in domestic economic activity and the favourable labour market situation, this would create a risk of elevated inflation becoming entrenched over the monetary policy horizon. Such a risk was also indicated by the results of NBP's November projection, according to which, without a further adjustment of monetary policy, price growth could run above the NBP inflation target even after the fading of the impact of current pandemic-commodity shock. Certain Council members expressed the opinion that the risk of elevated price growth becoming entrenched might also be increased by the weakening of structural factors, such as globalisation and changes in retail market structure, which in previous years had reduced price growth in Poland.

When referring to the situation in the credit market, certain Council members underlined that the rise in the value of corporate and consumer loans remained limited. However, other Council members pointed to the high growth in mortgage loans.

The Council members recognised that, in order to lower inflation to the NBP target in the medium term, NBP interest rates should be raised. Therefore, the Council decided to raise the reference rate by 0.75 percentage points, i.e. to 1.25% and to set the remaining NBP interest rates at the following levels: the lombard rate at 1.75%, the deposit rate at 0.75%, the rediscount rate at 1.30%, and the discount rate at 1.35%.

The Council members pointed out that, due to the external causes of the elevated inflation, including growth in fuel prices, and the further forecasted increases in electricity prices– in the near future inflation would continue to significantly exceed the inflation target. At the same time, they emphasised that the interest rate increases in October and November would reduce the risk of elevated inflation becoming entrenched in the medium term and would have a limiting impact on inflation expectations. The Council members stated that further monetary policy decisions would depend on the assessment of incoming information on the economic situation, including the outlook for inflation and for economic activity.

Minutes of the Monetary Policy Council decision making meeting held on 8 December 2021

At the Council meeting, it was observed that the global economy was continuing to recover. In Q3 2021 GDP growth in the euro area had accelerated in quarterly terms, while latest data showed a decrease in unemployment to the levels observed before the pandemic. In the United States quarterly GDP growth in Q3 had slowed down, whereas in October growth in employment had accelerated which amidst a further improvement in the labour market situation led to increased wage dynamics. It was judged that while rising demand constituted a factor supporting global GDP growth, economic activity was under the negative impact of persisting supply-side constraints in some markets as well as high commodity prices. At the same time, in certain economies, including the euro area, re-escalation of the pandemic and tightening of pandemic restrictions were important risk factors, yet it was not obvious how dangerous the new variant of the coronavirus – Omicron – would be. The Council members observed, however, that recent experience pointed to diminishing impact of consecutive pandemic waves on economic conditions, and that according to current forecasts global GDP growth in 2022 would remain relatively robust, though lower than in 2021.

It was noted that commodity prices in the global markets continued to be substantially higher than a year ago, which applied especially to natural gas, oil and coal, as well as to some agricultural commodities. It was highlighted that despite some decrease in oil prices amid deterioration of sentiment in the financial markets and a rise in risk aversion after the first news on Omicron, average oil price in November was over 80 per cent higher than a year ago, coal was over two-and-a-half times more expensive, and natural gas over five times more expensive. Some Council members emphasised that an increase in energy commodity prices was caused, on the one hand, by demand factors, and, on the other hand, by the OPEC+ policy concerning the volume of oil production and by the Russia’s policy concerning gas exports. At the same time, in Europe, apart from the rapid and very strong increase in gas prices, another factor boosting energy prices was a very sharp rise in prices of CO_2 emission allowances related to the climate policy of the EU.

The Council members underlined that high commodity prices together with prolonged disruptions in the functioning of global supply chains and still high international shipping costs, contributed to a marked rise in inflation globally, which was supported also by further recovery in demand. As a result, in many economies, including the euro area and the United States, inflation was reaching highest levels in decades. It was also stressed that core inflation was increasing as well, while inflation forecasts for the coming quarters were revised up, which pointed to the risk of longer than previously judged impact of the pandemic shock on inflationary processes, which in Europe was additionally exacerbated by strong negative effects of Russia's supply policy in the gas market. It was underscored that also very high PPI indicators were a sign of the global nature of the current inflation increase. In this regard, it was highlighted that, in particular, PPI inflation in the euro area in October stood at close to 22%. Moreover, it was pointed out that in 20 EU countries PPI inflation was higher than in Poland, including in Ireland where it was nearly 90%, in Denmark where it was close to 40% and in Belgium and Spain where it was above 30%.

It was indicated that globally rising inflation made some central banks withdraw monetary accommodation, although, it was stressed that monetary policy decisions of monetary authorities were being adjusted to conditions prevailing in particular economies, which meant that certain central banks were continuing to conduct expansive monetary policy. With this regard, it was underlined that the ECB was keeping negative interest rates and was still conducting big scale asset purchases, whereas the US Federal Reserve was keeping interest rates close to zero while signalling the possibility of announcing in December a more rapid deceleration of asset purchases, which together with an increase in the risk aversion had led to an appreciation pressure on the US dollar in global markets. In turn, the central banks of Central-Eastern Europe as well as in certain advanced economies have been increasing interest rates.

While analysing the situation in the Polish economy, the Council members drew attention to the fact that despite the next wave of infections, economic conditions remained very robust. This was reflected in the preliminary estimates of GDP, according to which annual GDP growth in 2021 Q3 stood at 5.3%, therefore had turned out to be higher than expected. It was emphasized that in Q3 investment had accelerated significantly and its growth had increased to 9.3%. Moreover, it was indicated that both data on industrial production, retail sales and construction and assembly output for October 2021, as well as high frequency data and business sentiment indicators for November pointed to a solid increase in economic activity also in 2021 Q4. It was stressed that the situation in the labour market likewise continued to improve, as indicated by rising employment, decreasing unemployment and a marked increase in average wages. This, in turn, supported consumption. It was judged that in the coming quarters economic situation was to remain favourable, however, subject to uncertainty stemming from the course of the pandemic and its impact on economic conditions, as well as the persistence of supply-side constraints and high energy commodity prices, which constituted a negative supply shock for the economy.

At the meeting, it was pointed out that according to the Statistics Poland flash estimate, inflation in Poland had risen to 7.7% y/y in November 2021, and increased by 1.0% in monthly terms. It was underlined that growth of energy prices, including fuels, but also of food prices accelerated further. Growth in prices of other goods had most likely also increased, especially of those, whose production and distribution process was subject to strains in the global supply chains and disruptions in shipping. At the same time, it was noted that the price growth of services had most likely decreased slightly.

The Council members highlighted that heightened inflation was still mainly the result of the impact of external factors beyond the control of domestic monetary policy, such as higher than a year ago prices of energy and agricultural commodities in global markets, earlier increases in electricity prices and in waste disposal charges, as well as rising prices of goods, which were subject to global pandemic disruptions. At the same time, the Council members judged that the ongoing economic recovery, including robust demand stimulated by rising household income, was also adding to the price growth. In this regard, certain Council members pointed to an increase in core inflation indices. These Council members also drew attention to the rise in inflation expectations of households in the recent period. At the same time, the Council members pointed out that the increase of the NBP interest rates had been acting towards curbing inflation expectations. Certain Council members stressed that available data indicated a pass-through of the recent NBP interest rate increases into a rise of interest rates on loans, whereas the impact on interest rates on deposits was weaker so far. Certain Council members also underlined the importance of the exchange rate channel in the monetary transmission mechanism.

When analysing the inflation outlook, the Council members pointed out that in 2022 the annual price growth of consumption goods and services would remain at an elevated level, mainly as a result of a further rise in prices of gas, electricity, heat energy and solid fuels, therefore as a result of negative supply shocks, which were independent from the domestic monetary policy. It was underlined that uncertainty regarding the impact of regulatory factors on inflation persisted, including regarding the decision of the President of the ERO on tariffs on electric energy, natural gas and heat energy in 2022. It was emphasised that in current circumstances a rise in energy prices and other costs would gradually translate into prices of other goods and services in the CPI basket. At the same time, it was pointed out that the government had decided to introduce the so-called Anti-inflationary Shield that would include a reduction in some tax rates, which would curb inflation during the time when the lowered rates would apply. It was judged that in a longer perspective, price growth would decrease, which would be supported by expected fading of some global shocks currently boosting inflation, as well as by the increase in the NBP interest rates. The Council members concluded, however, that amidst expected continuation of economic recovery and favourable labour market conditions – despite the previous NBP interest rates increases – there persisted a risk of inflation running above the NBP inflation target in the monetary policy transmission horizon.

The Council members recognised that, in order to lower inflation to the NBP target in the medium term, the NBP interest rates should be raised again. The increase of the NBP interest rates would also curb inflation expectations. The Council decided to raise the NBP reference rate by 0.50 percentage points, i.e. to 1.75% and to set the remaining NBP interest rates at the following levels: the lombard rate at 2.25%, the deposit rate at 1.25%, the rediscount rate at 1.80%, and the discount rate at 1.85%.

The Council members pointed out that decisions of the Council in the coming months would continue to be aimed at reducing inflation to a level consistent with the NBP inflation target in the medium term, while taking into account economic conditions, so as to ensure medium-term price stability and at the same time support sustainable economic growth after the global pandemic shock. The Council's assessment regarding the total scale of monetary tightening necessary for achieving these goals would consider incoming information on perspectives for inflation and economic growth, including situation in the labour market. Certain Council members expressed an opinion that ongoing significant uncertainty remained an important factors to be accounted for in monetary policy decisions.

Minutes of the Monetary Policy Council decision-making meeting held on 4 January 2022

At the Council meeting, it was observed that the activity in global economy continued to recover, yet the economic conditions were under a negative impact of supply-side constraints in some markets, high commodity prices and re-escalation of the pandemic in certain countries. It was pointed out that the rise in infections adversely affected activity in the service sector of the euro area, including Germany. However, economic conditions in the euro area manufacturing sector remained relatively favourable. When referring to the global economic outlook, it was stated that current forecasts pointed to further relatively fast global GDP growth in 2022, although slower than in 2021. At the same time, it was observed that the pandemic situation, in particular the impact of the spread of the Omicron coronavirus variant, remained a factor of uncertainty for global economic growth. It was emphasized, however, that according to current assessments, its impact on economic activity might be limited.

It was indicated that the prices of energy commodities and some agricultural commodities were markedly higher than a year before. It was noted that in December 2021 large fluctuations in natural gas prices occurred in Europe, mainly related to Russia's policy on the supply of this commodity, while at the end of December natural gas prices were 5 times higher than a year before. It was emphasized that the very high prices of CO2 emissions allowances related to the tightening of the EU climate policy had been an additional factor increasing the prices of energy carriers in Europe. At the same time, disruptions in global supply chains persisted, and prices of international transport remained elevated. In the opinion of the Council, the above factors, along with the strong demand recovery, were contributing to the marked increase in global inflation. In particular, it was noted that in November HICP inflation in the euro area reached 4.9%, the highest level in the history of this currency area, and in the United States CPI inflation in November stood at 6.8%, the highest level in about 40 years. Inflation forecasts for the coming quarters had been also revised upwards, which, in the Council's opinion, indicated the risk that the impact of the pandemic shock on inflationary processes would be more persistent than previously assessed.

The Council members pointed out that given the considerable growth in both current and expected inflation, many central banks were withdrawing monetary accommodation, although the monetary authorities' decisions were not homogenous and reflected the country-specific conditions for the conduct of monetary policy. It was observed that central banks in Central and Eastern Europe were raising their interest rates. The US Federal Reserve has increased the pace of reduction in monthly asset purchases and market expectations indicate that the first interest rate rise in this economy could occur already in the first half of 2022. At the same time, the ECB is keeping negative interest rates, although it announced a reduction in the scale of its net asset purchases in 2022.

When analysing the situation in the Polish economy, Council members emphasized that the recovery continued despite the autumn wave of increase in infections. This was indicated by the monthly data for November 2021, according to which industrial output rose by 15.2% y/y, and this increase comprised almost all the branches, including the automotive industry. Attention was also drawn to the marked rise in construction and assembly production as well as retail sales. It was emphasized that high demand in the labour market persisted, which was reflected in declining unemployment and rising employment levels. It was also noted that this was accompanied by a substantial increase in job offers, which might point to firms increasingly struggling to fill vacancies due to the labour shortages. Under these circumstances the wage growth in the corporate sector continues to be relatively high. The majority of the Council members judged that a further increase in labour demand might translate more into higher wages rather than higher employment. At the same time, the majority of Council members pointed to the risk of a potential intensification of wage pressure due to the elevated inflation.

Referring to the economic outlook, it was assessed that the economic situation would remain favourable in the coming quarters. However, it was pointed out that the impact of the pandemic on the global and domestic economy as well as the impact of supply constraints and the high prices of energy commodities, which constituted negative supply shocks for the economy, were factors of uncertainty for the pace of activity growth.

During the meeting, it was observed that inflation in Poland had risen to 7.8% in year-on-year terms in November 2021, and stood at 1.0% in monthly terms. In the Council's assessment, inflation growth had been mostly driven by external factors, including the surge in the global prices of energy and agricultural commodities in the second half of 2021, the record-high increase in the prices of CO2 emissions allowances, rising prices of goods, whose supply was constrained by the global pandemic disruptions, as well as the earlier increases in electricity prices and in waste disposal charges. It was judged that the ongoing economic recovery, including the growth in demand stimulated by rising household income, also contributes to the upward pressure on inflation. In this context, rising core inflation indices were highlighted, along with the increasing share of products and services, whose prices were rising at an accelerated pace. It was judged that this could contribute to higher inflation expectations.

While analysing the outlook for inflation, the Council members emphasised that according to forecasts, price growth in 2022 would remain considerably elevated. Along with the continued impact of the higher energy and agricultural commodity prices and CO2 emissions allowances, as well as the prices of goods whose supply is constrained by the global pandemic disruptions, a substantial rise in regulated tariffs on energy carriers, including electricity and natural gas for households, will contribute to inflation remaining elevated in 2022. It was also stressed that amid the favourable economic conditions, the rising prices of energy and the remaining costs would be gradually passed on to the prices of other goods and services in the CPI basket. In the opinion of the majority of the Council members the main factors contributing to higher inflation in 2022 constituted negative supply shocks. However, certain Council members emphasised the increasing significance of domestic factors. At the same time, it was observed that a reduction in some tax rates as part of the so-called Anti-inflationary Shield would have a curbing impact on inflation. The significance of the exchange rate channel in the monetary transmission mechanism was also highlighted.

It was noted that inflation would decrease in a longer perspective, supported by the expected fading of some global shocks currently boosting price growth, and by the hitherto NBP interest rate increase. However, the majority of the Council members were of the opinion that amidst further recovery in domestic economic activity and expected continuation of the favourable labour market conditions, as well as probably more lasting impact of the external shocks on price growth, a risk of inflation running above the NBP inflation target in the monetary policy transmission horizon persisted.

The majority of the Council members assessed that in order to bring inflation down to the NBP target in the medium term the NBP interest rates should be raised again. In the opinion of the Council members, the NBP interest rate rise would also curb inflation expectations. Certain Council members expressed the opinion that another interest rate hike generated the risk of a negative impact of this factor on economic conditions, as it would translate into a further increase in the debt-servicing costs of bank loans for household and enterprises.

The Council decided to raise the NBP reference rate by 0.50 percentage points, i.e. to 2.25% and to set the remaining NBP rates at the following levels: the lombard rate at 2.75%, the deposit rate at 1.75%, the rediscount rate at 2.30% and the discount rate at 2.35%.

The Council rejected the motion to raise the basic required reserve ratio from 2.0% to 3.5% and the motion to change the remuneration of the required reserves, from the level of the NBP reference rate to the level of the NBP deposit rate.

The Council members pointed out that the Council's decisions in the coming months would continue to be aimed at reducing inflation to a level consistent with the NBP inflation target in the medium term, while taking into account economic conditions, so as to ensure medium-term price stability and at the same time support sustainable economic growth after the pandemic shock. The Council's assessment regarding the total scale of monetary tightening necessary for achieving these goals would consider incoming information on perspectives for inflation and economic growth, including the situation in the labour market. Certain Council members expressed an opinion that ongoing significant uncertainty remained an important factor to be accounted for in monetary policy decisions.

Minutes of the Monetary Policy Council decision-making meeting held on 8 February 2022

At the Council meeting, it was observed that after a strong growth in global economic activity in 2021, economic conditions in some countries deteriorated somewhat, mainly due to re-escalation of the pandemic at the turn of the year. At the same time, it was pointed out that the pandemic situation should stabilise over the coming months as evidenced by the experience of the countries first hit by the Omicron variant of the coronavirus. It was assessed that this would translate into a renewed acceleration in global GDP growth, supported by further recovery in consumption. However, the Council members noted that – apart from the re-escalation of the pandemic – economic activity was still negatively affected by supply-side constraints in some markets and high commodity prices, while future course of the pandemic, geopolitical tensions related to the Russia's aggression against Ukraine and developments in economic policy of the major countries remained important uncertainty factors. It was emphasised that, according to the latest forecasts, global GDP growth in 2022 would be lower than in 2021, yet it would remain relatively robust.

It was highlighted that energy commodity prices as well as prices of some agricultural commodities remained markedly higher than a year ago, which contributed to a rise in inflation worldwide. Persisting disruptions in global supply chains and still elevated international shipping costs act in the same direction. In the European Union, climate policy is an important factor additionally increasing prices. The Council members noted that inflation in many countries stood at its highest level in decades: in the euro area HICP inflation rose to 5.1% in January 2022 and in the United States CPI inflation reached 7.0% in December 2021. Moreover, also core inflation measures have been rising globally, supported by favourable economic situation and improvement in labour market conditions. In effect, inflation forecasts have been revised upwards and indicate that in many economies inflation in 2022 will remain above central banks' targets.

The Council members observed that against the above background, i.e. favourable economic conditions and elevated inflation, many central banks were withdrawing monetary accommodation. In particular, it was indicated that central banks in the Central-Eastern Europe had been raising interest rates. The ECB keeps negative interest rates, although it has been reducing the scale of asset purchases. The US Federal Reserve signals a termination of asset purchases in March and a readiness to start increasing interest rates. It was noted that at least four interest rate increases in the United States in 2022 was a likely scenario. The Council members pointed out that this was a factor which, together with continued geopolitical tensions, had been weakening the exchange rates of emerging market countries, including the zloty. Certain Council members indicated, however, that some central banks – both in advanced and emerging market countries – approached monetary policy tightening with caution.

When analysing the situation in the Polish economy, the Council members emphasised that according to Statistics Poland preliminary estimate, GDP growth in 2021 amounted to 5.7%, which was an evidence of a significant acceleration in annual GDP growth in 2021 Q4, despite the autumn wave of increase in Covid cases. The monthly data on industrial output, retail sales and construction and assembly output for December 2021 also indicate that economic conditions remain very good. It was observed that situation in the labour market continued to improve as well, which was reflected in a fall in unemployment rate (seasonally adjusted), a rise in employment and a marked increase in average wages in corporate sector in December. Some Council members noted that although the acceleration in the growth of wages could result from a shift in their variable components, wage growth had been high for a long time and firms were planning significant wage increases also in 2022. At the same time, the majority of the Council members highlighted the risk of a likely rise in wage pressure due to elevated inflation. In this context, certain Council members pointed to the surveys' results indicating a considerable surge in the percentage of firms declaring an increase in wage pressure. Other Council members emphasised that the percentage of enterprises with wage growth exceeding labour productivity growth was still lower than before the pandemic.

Referring to the economic outlook, it was assessed that the economic situation would remain favourable in the coming quarters. However, the impact of the pandemic on global and domestic economy was indicated as an uncertainty factor, together with supply-side constraints and high energy commodity prices, which constituted negative supply shocks to the economy. Moreover, certain Council members observed some deterioration in consumer sentiment and business confidence indicators over the recent past. According to these Council members, GDP growth will slow down, yet rather gradually.

Certain Council members emphasised a relatively high growth of loans in the economy. In the opinion of these Council members, the tightening of monetary policy would reduce growth in indebtedness, which seems warranted, especially with regard to households' loans.

At the meeting, it was noted that inflation in Poland had risen to 8.6% in December 2021. It was stressed that the increase in inflation in 2021 had been mainly driven by external factors that were beyond the impact of domestic monetary policy. These factors included the rise in global commodity prices, the record-high increase in the prices of CO_2 emission allowances, rising prices of goods, whose supply was constrained by the global pandemic-related disruptions, as well as the increases in electricity and natural gas prices introduced in 2021, which largely reflected the situation in global commodity markets and the climate policy of the European Union. The Council members indicated that ongoing economic recovery had also added to the increase in inflation, as seen in rising core inflation measures. Some Council members noted that favourable economic conditions facilitated the passing through of higher costs, evidenced by rising producer prices and wages, to consumer prices. In this context, a very high PPI growth abroad was pointed to, which – due to trade links – contributed to the strong PPI growth also in Poland.

It was assessed that these factors, together with a rise in regulated tariffs on electricity, natural gas and thermal energy, would act towards inflation remaining at an elevated level also in 2022, and – taking into account available forecasts – in 2023. In the opinion of the majority of the Council members, the main factors contributing to higher inflation constituted negative supply shocks. Yet certain Council members emphasised the role of domestic factors, as evidenced – in their judgement – i.a. by high growth in services prices. At the same time, it was pointed out that a reduction in some tax rates as part of the so-called Anti-inflationary Shield would have a curbing effect on inflation, although it would be difficult to define its horizon at present. Certain Council members, however, indicated that the launching of the Shield, accompanied by other fiscal measures, entailed a relative easing of fiscal policy, and thus meant that monetary policy needs to bear bigger burden of tightening macroeconomic policy. The significance of the exchange rate channel in the monetary transmission mechanism was also highlighted.

It was noted that the expected fading of some global shocks currently boosting price growth and the increase in the NBP interest rates would support the decrease in inflation in a longer-term perspective. However, the majority of the Council members were of the opinion that amidst further domestic economic recovery and expected continuation of favourable labour market conditions, as well as probably more lasting impact of external shocks on price dynamics, a risk of inflation running above the NBP inflation target in the monetary policy transmission horizon persisted.

The majority of the Council members assessed that in order to bring inflation down to the NBP target in the medium term the NBP interest rates should be raised again. In the opinion of the Council members, the NBP interest rate rise would also curb inflation expectations. At the same time, it was emphasised that zloty appreciation would be consistent with the direction of monetary policy conducted by NBP. Yet certain Council members expressed the opinion that another interest rate hike generated the risk of a negative impact of this factor on economic conditions, as it would translate into a further increase in the debt-servicing costs of bank loans for households and enterprises.

The Council decided to raise the NBP reference rate by 0.50 percentage points, i.e. to 2.75% and to set the remaining NBP interest rates at the following levels: the lombard rate at 3.25%, the deposit rate at 2.25%, the rediscount rate at 2.80% and the discount rate at 2.85%. At the same time, the Council decided to increase the required reserve ratio from 2.0% to 3.5%.

The Council members pointed out that the Council's decisions in the coming months would continue to be aimed at reducing inflation to a level consistent with the NBP inflation target in the medium term, while taking into account economic conditions, so as to ensure medium-term price stability and, at the same time, support sustainable economic growth after the global pandemic shock. The Council's assessment regarding the total scale of monetary tightening necessary for achieving these goals would consider incoming information on perspectives for inflation and economic growth, including situation in the labour market. Certain Council members expressed an opinion that ongoing significant uncertainty remained an important factor to be accounted for in monetary policy decisions.

Information from the meeting of the Monetary Policy Council held on 8 March 2022

The Council decided to increase the NBP reference rate by 0.75 percentage points, i.e. to 3.50%. At the same time, the Council set the remaining NBP interest rates at the following levels: lombard rate at 4.00%; deposit rate at 3.00%; rediscount rate at 3.55%; discount rate at 3.60%.

After a strong growth of global economy in 2021, at the turn of the year economic activity has softened somewhat in some economies. At the same time, amidst improving epidemic situation in the United States and the euro area in recent period, economic condition indicators have improved in these economies.

After the outbreak of the Russian military aggression against Ukraine, uncertainty regarding further course of global macroeconomic situation has increased significantly, including in Europe. This has been reflected in a marked deterioration of sentiment in financial markets and a depreciation of some currencies. Prices of natural gas, oil and coal, as well as prices of some agricultural commodities have increased again. At the same time, global supply chain disruptions continue and international shipping costs are still elevated. This will probably contribute to a further rise in inflation worldwide, which in many countries had reached high levels even before the Russian military aggression against Ukraine.

Amidst a marked increase in inflation many central banks are withdrawing monetary accommodation. Central banks in the Central-Eastern Europe region have been increasing interest rates. The ECB keeps negative interest rates, although it has been reducing the scale of asset purchases. The US Federal Reserve signals a termination of asset purchases in March and a start of interest rate increases.

Available data indicate that economic conditions in Poland remain favourable. GDP growth in Q4 2021 stood at 7.3% according to preliminary estimate by Statistics Poland. Data on retail sales, industrial production and construction and assembly output in January point to economic conditions remaining favourable also at the beginning of 2022. Meanwhile, employment continues to increase accompanied by a marked rise in wages. The Russian military aggression against Ukraine and related economic sanctions constitute a significant uncertainty factor for future economic activity in the world and in Poland. Nevertheless, due to, among other factors, modest share of exports to Russia and Ukraine in Polish foreign sales, a continuation of favourable domestic economic conditions may be expected in the coming quarters.

Inflation in Poland – according to Statistics Poland flash estimate – increased in January 2022 to 9.2%. Significant rise in energy and agricultural commodity prices and increases in regulated tariffs on electricity, natural gas and thermal energy have been the main factors behind markedly elevated inflation. At the same time, the ongoing economic recovery, including an increase in demand driven by rising household incomes, has had also a positive contribution to inflation. In turn, a curbing impact on inflation has been exerted by a reduction in some tax rates as part of the so-called Anti-inflationary Shield. In 2022, inflation will remain markedly elevated, which – apart from factors amplifying inflation so far – will be due to the economic consequences of the Russian invasion of Ukraine. In the coming years, together with fading of the impact of shocks currently boosting prices, inflation will decrease. The decrease in inflation should also be supported by appreciation of zloty exchange rate, since, in the Council's assessment, the recently observed market pressure on zloty depreciation is not in line with the fundamentals of the Polish economy.

The Council became acquainted with the results of the March projection of inflation and GDP based on the NECMOD model. In line with the projection prepared under the assumption of unchanged NBP interest rates and taking into account data available until 7 March 2022, there is a 50-percent probability that the annual price growth will be in the range of 9.3–12.2% in 2022 (against 5.1–6.5% in the November 2021 projection), 7.0-11.0% in 2023 (compared to 2.7-4.6%) and 2.8–5.7% in 2024. At the same time, the annual GDP growth – according to this projection – will be with a 50-percent probability in the range of 3.4–5.3% in 2022 (against 3.8–5.9% in the November 2021 projection), 1.9-4.1% in 2023 (compared to 3.8-6.1%) and 1.4–4.0% in 2024.

The Council assessed, that there persists a risk of inflation running above the NBP inflation target in the monetary policy transmission horizon. In order to reduce this risk, i.e. striving to decrease inflation to the NBP target in the medium term, the Council decided to increase NBP interest rates again. The increase of the NBP interest rates will also curb inflation expectations.

Further decisions of the Council will depend on incoming information regarding perspectives for inflation and economic activity, including the impact of the Russian military aggression against Ukraine on the Polish economy.

NBP will take all necessary actions in order to ensure macroeconomic and financial stability, including above all to reduce the risk of inflation remaining elevated. NBP may intervene in the foreign exchange market, in particular to limit fluctuations of the zloty exchange rate that are inconsistent with the direction of monetary policy.

The Council adopted the *Inflation Report – March 2022*.

4. Projection of inflation and GDP

This inflation and GDP projection was prepared by the Economic Analysis and Research Department of Narodowy Bank Polski and presents a forecast of economic developments under the assumption of the unchanged NBP interest rates. In terms of the contents, works on this projection were supervised by Piotr Szpunar, Director of the Economic Analysis and Research Department. The process was coordinated by the Macroeconomic Forecasts Division of the Economic Analysis and Research Department. Using the macroeconomic model NECMOD, the projection was prepared as the outcome of an iterative process, in the course of which the paths of some variables were adjusted if they diverged from NBP experts' economic intuition based on their knowledge of economic processes. The Management Board of NBP approved the projection to be submitted to the Monetary Policy Council. The projection constitutes one of the inputs to the Monetary Policy Council's decision-making process concerning the NBP interest rates.

The March projection based on the NECMOD model covers the period from 2022 Q1 to 2024 Q4. The starting point for the projection is 2021 Q4.

The projection was prepared under the assumption of the unchanged NBP interest rates. The cut-off date for the data used in this projection is 7 March 2022.

4.1 Summary

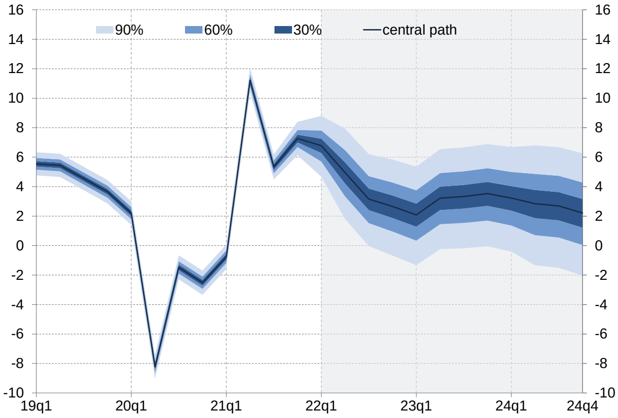
The central scenario of the current projection is largely affected by the macroeconomic effects of Russia's armed aggression against Ukraine and the related sanctions imposed on Russia. It was assumed that over the projection horizon at least some of the sanctions imposed by western states on Russia will remain in effect, and therefore there will be no return to the *status quo* which was in place before the aggression.

A direct effect of the Russian aggression against Ukraine is the significantly higher global prices of energy commodities and some agricultural commodities, whose prices were already growing rapidly before the aggression. Domestic price-formation processes in 2022 continue to be affected by the high costs of CO_2 emission allowances and prolonged tensions in global supply chains. Amid a strong rebound in demand in the economy following a period of stringent restrictions introduced in relation to the outbreak of the pandemic, the above-mentioned circumstances result in imbalances in many markets, leading to mounting price pressure and a marked rise in CPI inflation in 2022. In the first half of 2022 the scale of the increase in energy and food price inflation will be temporarily mitigated by the impact of the Anti-inflationary Shield.

In 2023-2024 CPI inflation will lower along with the fading impact of the factors boosting it in 2022, although it will exceed 3.5% y/y till the end of the projection horizon. The factors leading to the gradual decline in inflation include the slowing growth of aggregate demand in the economy, the assumed downward path of global commodity prices and fading price effects of supply chain tensions.

Following a strong rebound in economic activity in 2021, over the projection horizon the impact of factors hampering economic growth will augment.

Figure 4.1 GDP (y/y, %)

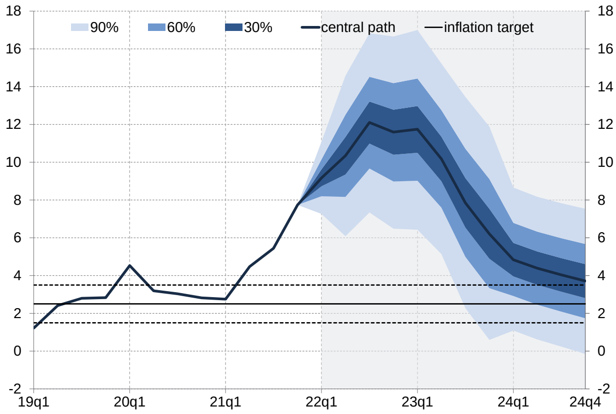


Source: Statistics Poland (GUS) data, NBP calculations.

Fan charts depict the probability distribution of possible outcomes of GDP growth (Figure 4.1) and inflation rate (Figure 4.2). The part of the chart in the grey background illustrates forecast uncertainty of these variables over the projection horizon. It was assumed that the probability distribution of the possible outcomes of a variable at each forecast horizon belongs to the family of two-piece normal (TPN) distributions. This distribution is determined by three parameters: mode, variance and a measure of skewness. The mode of the distribution is the central path of the projection, while the variance is determined based on historical forecast errors for each of the horizons adjusted for the impact of the current uncertainty of exogenous variables. The skewness of the distribution is obtained on the basis of an analysis of several alternative scenarios together with the assigned probabilities of their realisation. On the chart, the distribution of the realisation of a given variable is illustrated by 30%, 60% and 90% probability intervals around the central projection path, which were constructed in such a way as to minimize the width of the bands (for more information see: Pońsko P., Rybaczyk B., 2016, Fan Chart – A Tool for NBP's Monetary Policy Making, Narodowy Bank Polski Working Paper, No 241.).

GDP growth will therefore slow down. In the coming quarters the domestic economic conditions will be affected by a strong negative supply shock reflected in a significant increase in CPI inflation. In the longer projection horizon the negative impact on economic growth outlook will be driven to a greater extent by the expected slowdown in activity abroad and the marked decline in inflow of European funds due to the end phase of disbursements under the EU financial framework for 2014-2020. The scale of the decline in domestic GDP growth will be mitigated by the changes in fiscal policy introduced under the Anti-inflationary Shield and the Polish Deal as well as the heightened inflow of migrants to Poland from Ukraine.

Figure 4.2 CPI inflation (y/y, %)



Source: Statistics Poland (GUS) data, NBP calculations.
The methodology of construction of fan charts is discussed in the note under Figure 4.1.

The future economic situation and CPI inflation path in Poland depend to the greatest extent on the scale of disruptions in the global economy triggered by Russia’s military aggression against Ukraine and the COVID-19 pandemic. Due to the extremely elevated uncertainty, the projection assumptions which are of a non-economic nature, should be treated as a kind of boundary conditions for the projection. Should these conditions not be met, it may lead to different macroeconomic scenarios than the ones presented in the projection. An additional significant source of risk for inflation is the possibility that the Anti-inflationary Shield will be in force for a longer period. The balance of uncertainty factors indicates a higher probability of economic activity running below the central path over the projection horizon and a close to symmetric distribution of risks for CPI inflation (Figure 4.1, Figure 4.2).

4.2 External environment

Economic growth

The deteriorating pandemic situation, amid continued supply restrictions and high commodity prices, slowed down the recovery in the major developed economies at the end of 2021 and beginning of 2022. In the coming quarters the number of infections is expected to decline, but the scale of the recovery of European economies will be still limited by the very high energy commodity prices and additional trade disruptions, caused by the Russian military aggression against Ukraine. Over the whole of 2022 growth in the major developed economies will be significantly lower than in 2021, and it will decline further in successive years.

The rebound of activity following the pandemic crisis in some of the emerging economies will be slower than in the developed economies due to the less advanced vaccination programmes, smaller scale of support on the part of economic policy, and stronger tightening of monetary policy amid heightened inflation. In addition, the policy of stringent local pandemic restrictions in China (so-called "zero-COVID") may prolong the disruptions in the supply chains in the coming quarters.

The uncertainty about the impact of the pandemic on global economic activity is assessed to have declined, although it still remains high. However, geopolitical risk in Europe and around the world related to Russia's aggression against Ukraine has risen significantly. The rise in political tensions caused by Russia's aggression is causing disturbances in the global economy and increasing uncertainty about price developments, the supply of energy commodities and economic policies, including monetary policy in the largest economies (see Chapter 4.5 *Forecast uncertainty sources*).

Inflation and commodity markets

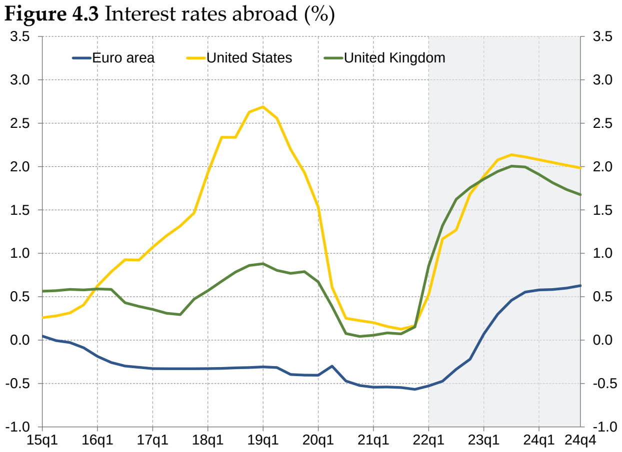
Russia's military aggression against Ukraine has triggered a sharp rise in the global prices of oil, natural gas and hard coal (Figure 4.4). The prices of energy commodities were also boosted by their limited supply, along with a simultaneous rapid rebound in demand for energy following the recovery of the global economy. Natural gas prices were additionally affected by low inventories of this commodity in Europe and the current climate

Table 4.1 GDP abroad – March projection versus November projection

	2021	2022	2023
GDP in Euro Area (y/y, %)			
March 2022	5.2	3.2	2.4
November 2021	4.9	4.0	2.4
GDP in United States (y/y, %)			
March 2022	5.7	3.6	2.3
November 2021	5.7	4.2	1.9
GDP in United Kingdom (y/y, %)			
March 2022	7.5	3.9	2.0
November 2021	7.0	4.8	1.9

Source: NBP calculations.

Figure 4.3 Interest rates abroad (%)

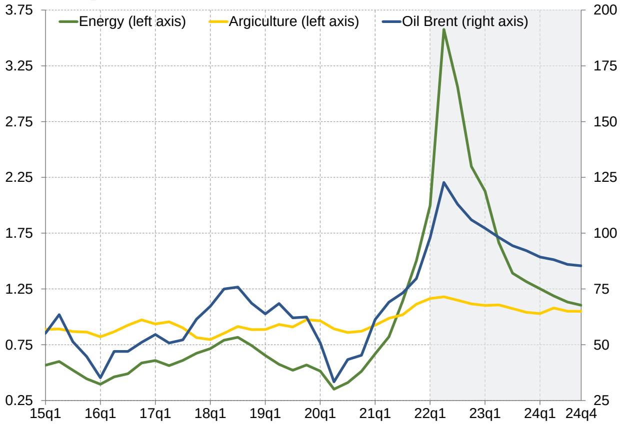


Source: Bloomberg data, NBP calculations.

policy of the European Union aimed at limiting CO_2 emissions, resulting in increased demand for natural gas. It can be expected that over the coming months the prices of energy commodities will begin to decline; however, over the whole projection horizon they will run above the pre-pandemic level[47] (Figure 4.4). The scenario of lower oil prices in the long-term projection horizon is supported by the expected increase in oil production in OPEC countries and the United States, which should be conducive in restoring the balance between supply and demand. Futures quotes suggest that prices of natural gas and hard coal will also decline in 2023-2024, but will remain significantly higher than before 2021. An increase in the usage of renewable energy, in order to reduce the dependence on energy import from Russia, will support a decrease in the prices of hydrocarbons. However, forecasts of energy commodity prices are subject to high uncertainty related to the future course of Russia's aggression against Ukraine, the resulting sanctions imposed on Russia and the geopolitical consequences. There is also uncertainty about the development of demand for energy commodities in the coming years, the future decisions of OPEC and other producers about production levels as well as changes in climate policy regulations.

In recent months prices of most agricultural commodities have also risen sharply on the back of increased demand and limited supply amid rising production costs (Figure 4.4). The price of wheat was additionally boosted by Russia's military aggression against Ukraine and concerns about the supply of this commodity from these key wheat exporters. In the long-term projection horizon, along with declining prices of oil and natural gas, which affect the costs of transport, electricity and prices of artificial fertilizers, global prices of agricultural commodities will gradually decline (Figure 4.4). Besides the uncertainty about the

Figure 4.4 Energy commodities price index (USD, 2011=1) and index of agricultural prices (EUR, 2011=1) in global markets and Brent oil prices (USD/b)



Source: Bloomberg data, NBP calculations.

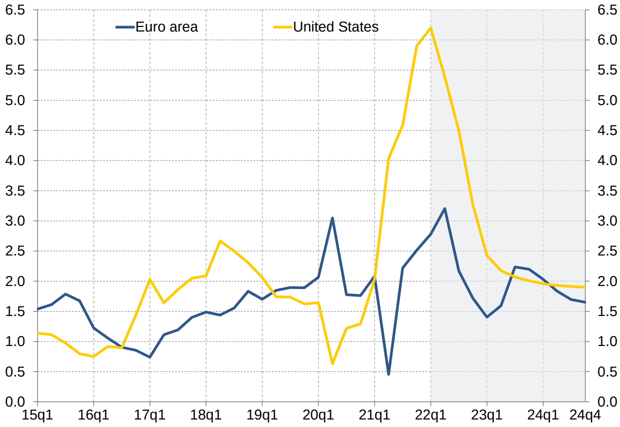
The index of the prices of energy commodities includes prices of crude oil, coal and natural gas, taking into account of the consumption structure of these commodities in Poland. The agricultural commodity price index includes prices of wheat, pork, skimmed milk powder, butter, sugar, cocoa, coffee, frozen concentrated orange juice, potatoes, oilseed, allowing for weights reflecting the consumption structure of Polish households.

[47] The forecast of global prices of crude oil, natural gas and hard coal is based on futures prices of these commodities on the ICE Futures Europe.

development of demand, costs and the geopolitical situation, the main risk for the forecast is the emergence of new outbreaks of animal diseases and future weather conditions.

A marked acceleration of consumer and producer price growth in the global economy was observed in 2021 Q4. Rising prices of energy commodities and shortages of goods due to disturbances in the global supply chains coupled with persistently high demand for durable goods contributed to this (see Chapter 1.2 *Inflation developments abroad*). However, the increase in the value added deflator in the euro area in 2021 was limited due to its elevated level in 2020 during the implementation of anti-crisis shields (Figure 4.5). Over the longer projection horizon, the impact of the factors boosting inflation will gradually fade, and will be accompanied by the tightening of global monetary conditions (Figure 4.3).

Figure 4.5 Change in gross value added deflator (y/y, %)



Source: Bloomberg, Eurostat data, NBP calculations.

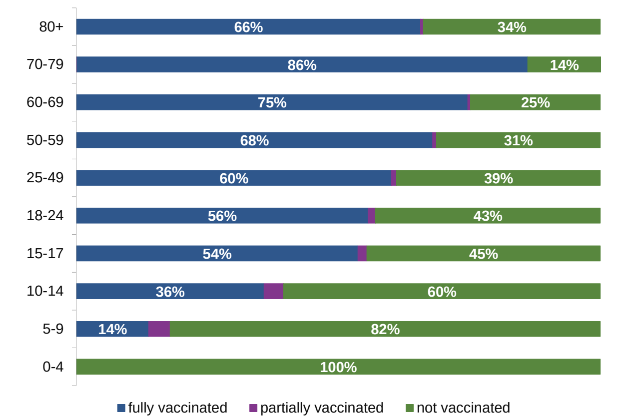
4.3 Polish economy in 2022-2024

Assumptions regarding the development of the pandemic and scope of government restrictions

The scope of the restrictions imposed during the fourth and fifth wave of the pandemic was relatively small in comparison with the previous periods of increased infections. They were primarily aimed at adapting cultural and entertainment activities to the conditions of a strict sanitary regime. The scale of the restrictions was smaller thanks to the positive effect of vaccinations and lower pathogenicity of the Omicron variant – now the dominant COVID-19 strain. This allows to maintain the assumption made in the previous projection that future restrictions would not significantly affect demand as well as the possibility of its realisation in the domestic economy.

At the same time, the pandemic may continue to limit economic potential to a relatively greater extent as a result of the isolation and quarantine of employees as well as due to the possibility of

Figure 4.6 Percentage of people who are vaccinated (by age group)



Source: Ministry of Health, European Centre for Disease Prevention and Control data, NBP calculations.

disruptions in global supply chains. It may also make it difficult to reallocate resources – labour and capital – between sectors, which over the projection horizon is reflected in a higher equilibrium unemployment rate (NAWRU) than before the pandemic and a limited rebound of the investment rate.

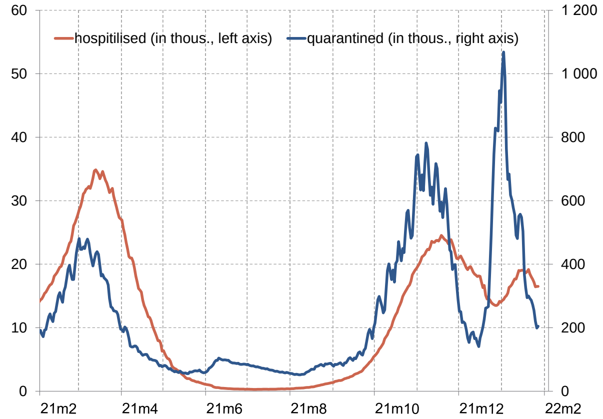
New fiscal policy instruments

Changes in fiscal policy including the adoption of the Anti-inflationary Shield and the Polish Deal bear a significant impact on the projection path of domestic economic growth and CPI inflation.

At the turn of 2021/2022, a package of laws was passed aimed at limiting the rise in inflation and counteracting its negative effects. In particular, the Anti-inflationary Shield 1.0 and 2.0 abolished excise duty on electricity for households, reduced excise duty on engine fuels to the minimum required by EU provisions, and reduced VAT on electricity, heating, gas and fuel. The government package also exempted fuel sales from retail sales tax and reduced VAT on basic food products which up to now were taxed at a preferential rate of 5%. Additional shielding measures are also planned to support the poorest households as well as compensate retailers of natural gas due to the limited scale of price increases of this commodity for some tariff's customers. Most solutions adopted will remain in force since January till July 2022. The possibility that the government will extend the period that the enacted laws will be in force represents a significant source of uncertainty for the projection.

It is estimated that as a result of the Anti-inflationary Shield, consumer price growth will slow down in annual average terms by 2.1 p.p. in 2022 as compared to the scenario which does not take into account this package. A decline will also be seen in electricity prices inflation (by 9.7 p.p.) and food prices inflation (by 1.6 p.p., under the assumption that the changes introduced will be transmitted immediately but not fully to the prices

Figure 4.7 Number of people quarantined and hospitilised due to COVID-19 (in thous.)

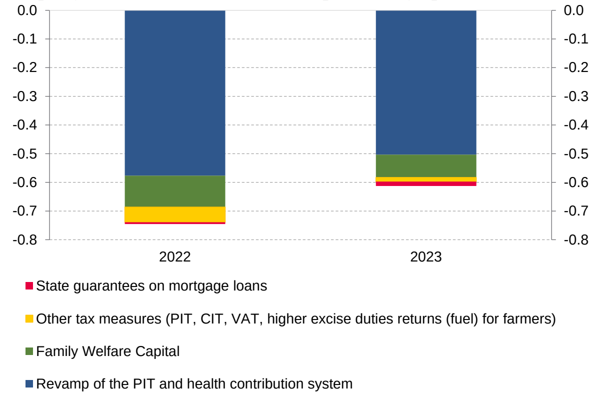


Source: Ministry of Health, European Centre for Disease Prevention and Control data, NBP calculations.

of these goods). The cost of the enacted package of laws for the public finances is estimated at approx. PLN 30 billion, i.e. 1.1% of GDP.

The March projection takes into account also the effects of the Polish Deal which comes into force in 2022, and which introduces fundamental changes in the Polish tax system (Figure 4.8). These include an increase in the personal income tax-free amount and the tax brackets, yet exclude the possibility of deducting a significant part of the health insurance contribution from tax. An important element of the programme is the increase in the amount of transfers to families under the Family Welfare Capital scheme, as well as support for home buyers in the form of a guarantee of their own contribution and repayment of part of the loan. For low-income people with a higher propensity to consume, the tax burden will be reduced, while it will increase for people in a more favourable financial situation with larger savings. As a result, the tax changes will lead to a shift in demand towards lower-income groups, leading to a relatively strong response of total household consumption. It is estimated that the Polish Deal will reduce the general government balance in 2022 by PLN 21 billion, i.e. approx. 0.7% of GDP (Figure 4.8).

Figure 4.8 Impact of the main measures included in the "Polish Deal" programme on fiscal outturn (percentage points of GDP)



Source: NBP calculations based on government estimates.

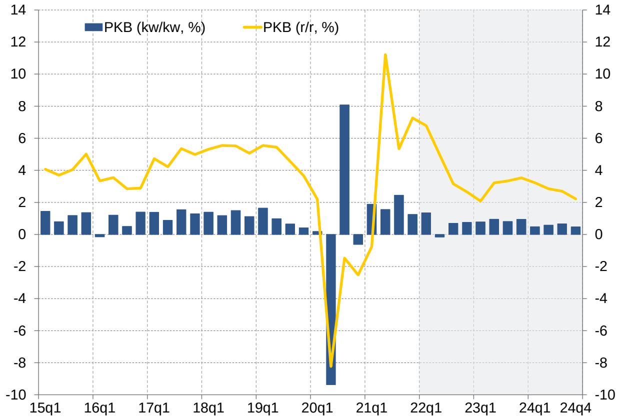
Economic activity

The central scenario of the projection assumed that over the projection horizon at least some of the sanctions imposed on Russia will remain in place, and therefore economic relations will not return to the status quo from before the aggression. Therefore, due to disruptions in foreign trade and heightened volatility of global commodity prices, the conflict will continue to have a negative impact on the Polish economy (see Chapter 1.2 *External environment*). At the same time, in the immediate period ahead, the influx of refugees from Ukraine to Poland will grow significantly. A consequence of the inflow of refugees will be an increase in demand, which depending on the form of expenditure may be classified as consumption (private and public), net exports, or investment.

However, taking into account the impact of the remaining factors that curb GDP growth, over the projection horizon economic growth will slow down following a period of robust recovery in 2021 (see Figure 4.9, Figure 4.10). In the coming quarters the domestic economic conditions will be affected by the negative supply shock, resulting from the impact of Russia's military aggression against Ukraine that acts toward intensifying the earlier increases in global prices of energy commodities and CO_2 emission allowances, and disruptions in supply chains. In the long-term horizon, the economic growth outlook will to a greater extent be negatively affected by the expected slowdown in activity abroad and the marked decline in inflow of European funds as spending the funds under the EU financial framework for 2014-2020 will come to an end. The scale of the decline in domestic GDP growth will be mitigated by the changes in fiscal policy introduced under the Anti-inflationary Shield and the Polish Deal (see the section *New fiscal policy instruments*) as well as the increased inflow of migrants to Poland from Ukraine.

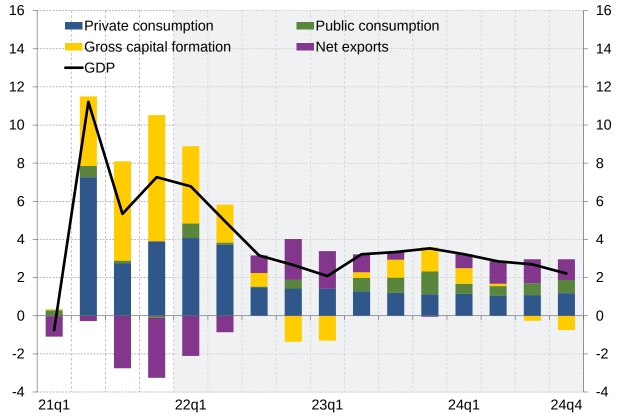
The coming years are expected to see a gradual decline in household consumption growth compared to the high values observed in 2021 (Figure 4.11). The pent-up demand has largely been released amid the loosening of coronavirus restrictions, thus limiting household savings built up during the pandemic. At the same time, the expected significant rise in CPI inflation and previous NBP interest rate hikes will increasingly curb consumer spending by reducing household purchasing power and increasing their propensity to save. The deterioration in household sentiment as a result of Russia's military aggression against Ukraine may also contribute to reducing private consumption. On the other hand, consumer spending of new migrants from Ukraine will have a positive effect on the path of this category over the projection horizon (while, due to the

Figure 4.9 Economic growth



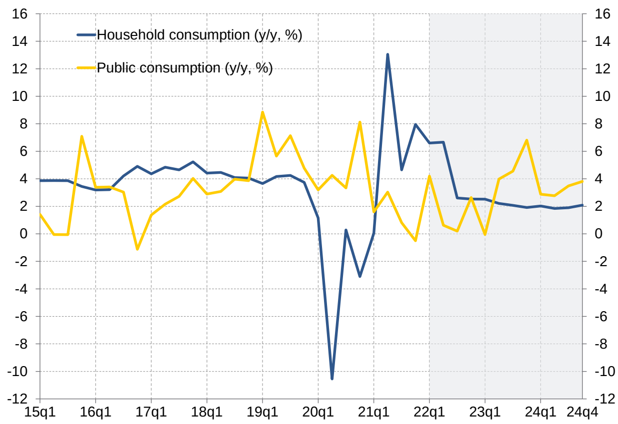
Source: Statistics Poland (GUS) data, NBP calculations.

Figure 4.10 GDP growth (y/y,%) – breakdown



Source: Statistics Poland (GUS) data, NBP calculations.

Figure 4.11 Household and public consumption



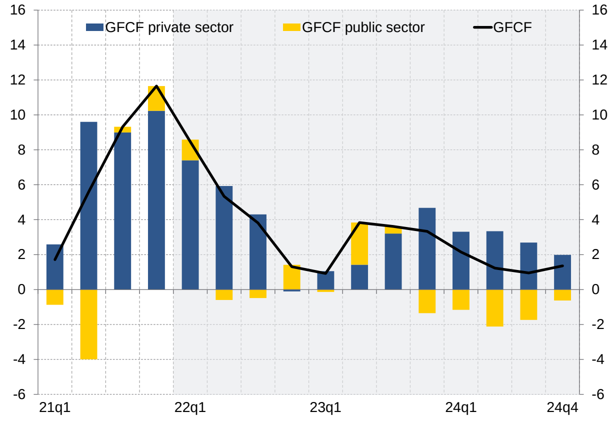
Source: Statistics Poland (GUS) data, NBP calculations.

methodology of the national accounts, this expenditure will also be classified as other components of GDP). The tax changes resulting from the Polish Deal, and in the coming quarters also the temporary reduction in indirect taxes and additional shielding measures under the Anti-inflationary Shield, will as well have a favourable impact on private consumption growth (see section *New fiscal policy instruments*).

In the years 2022-2024, further growth in gross fixed capital formation of enterprises is expected, although slower than in 2021 (Figure 4.12). The results of the questionnaire surveys (conducted before Russia's military aggression against Ukraine), according to which the sentiment of investment firms – despite a slight deterioration – was better than a year ago, are evidence of the expected continuation of the recovery of investment demand of enterprises. In particular, the index showing investment growth plans for the current year is still high.[48] At the same time, in 2021 Q4 in most groups of enterprises capacity utilisation was running close to its pre-pandemic levels.[49] The increase in capital outlays of enterprises should be supported by the low degree of automation and robotisation of Polish industry and rising labour costs. On the other hand, the implications of Russia's military aggression against Ukraine, resulting in heightened uncertainty and an increase in commodities prices, will have a negative impact on the domestic investment outlook. Higher volatility of the exchange rate and prolonged disruptions in global supply chains will also act in the same direction.

The previously high demand for housing is expected to weaken over the projection horizon. This will be a result of the recent NBP interest rate hikes, which will have an impact on the availability and cost of credit. On the other hand, the launch in 2022 of support dedicated for families for the

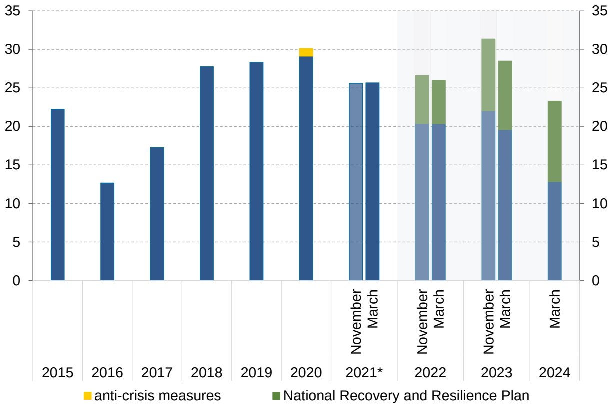
Figure 4.12 Gross fixed capital formation (y/y, %) – breakdown



Source: Statistics Poland (GUS) data, NBP calculations.

Private sector investment is defined as gross fixed capital formation according to the national accounts except for the general government sector. It covers gross fixed capital formation of non-financial enterprises, financial and insurance companies, households (both housing and non-housing investment) and non-profit institutions serving households.

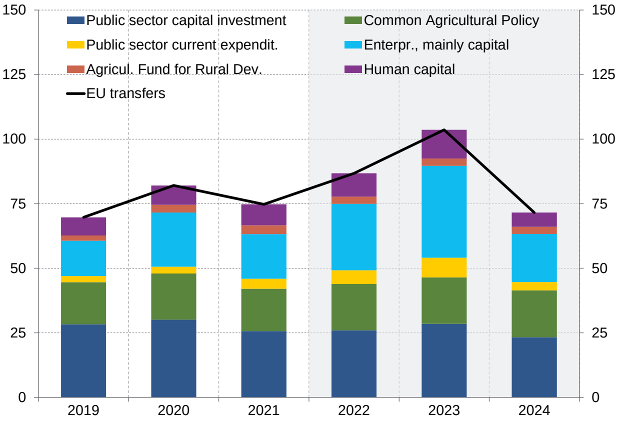
Figure 4.13 Use of EU funds for public investment (PLN billion)



Source: MFiPR, Statistics Poland (GUS) data, NBP calculations.

* NBP estimates.

Figure 4.14 Expenditure financed by EU funds (in PLN billion) – breakdown



Source: NBP calculations.

[48] NBP Quick Monitoring Survey. Economic climate in the enterprise sector, NBP, January 2022.
[49] NBP Quick Monitoring Survey. Economic climate in the enterprise sector, NBP, January 2022.

housing purchase under the new Polish Deal programme will have a positive impact on the investment path, mitigating the negative effect of the above-mentioned factors (see section *New fiscal policy instruments*).

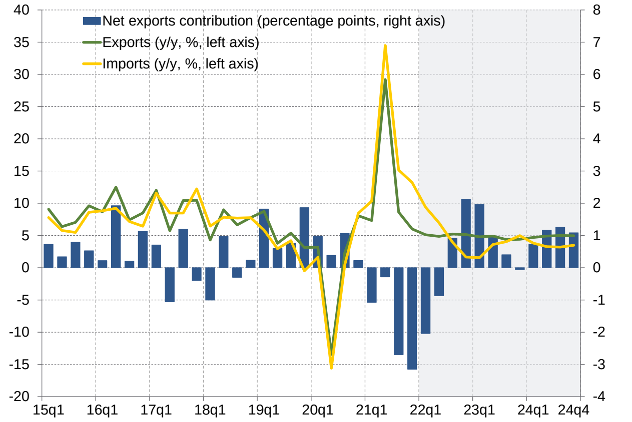
The expected decline in economic activity abroad will slow down export growth over the projection horizon (Figure 4.15). In particular, the sanctions imposed on Russia will cause a sharp fall in Polish exports to this country in 2022; however, over the longer term the impact of the slowdown in demand growth in the euro area will be more significant. However, at the same time, due to a marked slowdown in domestic demand and stronger cyclical response of imports than exports, the contribution of net exports to GDP growth will pick up in the years 2022-2024, achieving positive values on average.

Potential output and the output gap

Growth of potential GDP in 2022 will pick up on the back of processes related to the decline in the negative impact of the pandemic on the productivity of the Polish economy. In the coming years the impact of this effect will fade and the growth rate of potential output will decline (Figure 4.17).

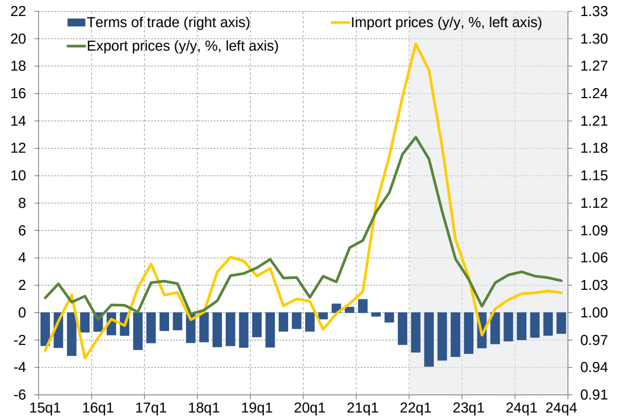
In particular, it is assumed that in 2022-2023 total factor productivity (TFP) growth will return to near pre-pandemic level. At the same time, the gradual decline in the equilibrium unemployment rate (NAWRU) will continue, although it will remain higher than before the outbreak of the pandemic. A significant increase in remote work in certain sectors, the ongoing adaptation to this form of work and accelerated digitisation will all boost labour productivity. At the same time, subsequent stages of lifting the economic restrictions will translate into a further increase in the utilisation of fixed assets and labour and lower operating costs of enterprises, which were higher due to the need to maintain the sanitary regime.

Figure 4.15 Foreign trade



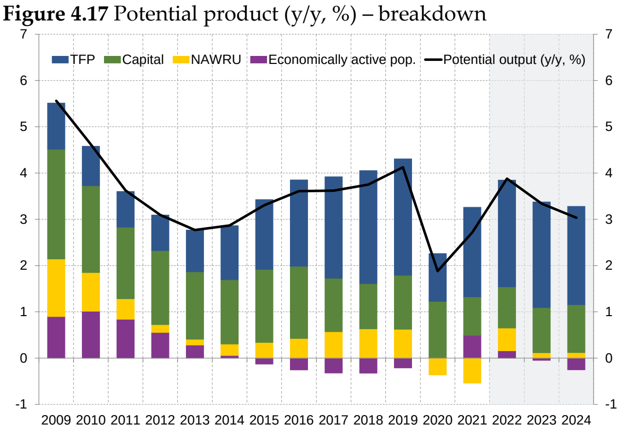
Source: Statistics Poland (GUS) data, NBP calculations.

Figure 4.16 Export and import prices



Source: Statistics Poland (GUS) data, NBP calculations.

Figure 4.17 Potential product (y/y, %) – breakdown



Source: NBP calculations.

Potential output growth is defined as the economic growth rate that does not cause the accumulation of inflationary pressure. It may originate from the growth of labour supply, productive capital or total factor productivity. In the NECMOD model it is estimated on the following Cobb-Douglas production function:

$PKB_t^{pot} = TFP_t^{trend} \cdot [LF_t^{trend} \cdot (1 - NAWRU_t)]^{0.67} \cdot K_t^{1-0.67}$,

where PKB_t^{pot} is the level of potential output, TFP_t^{trend} – total factor productivity, smoothed by the Hodrick-Prescott (HP) filter extended with an index of capacity utilisation, LF_t^{trend} – the number of economically active people smoothed by a HP filter, $NAWRU_t$ – non-accelerating wage rate of unemployment in the equilibrium, K_t – productive capital. The output elasticity with respect to labour was set at the level of 0.67.

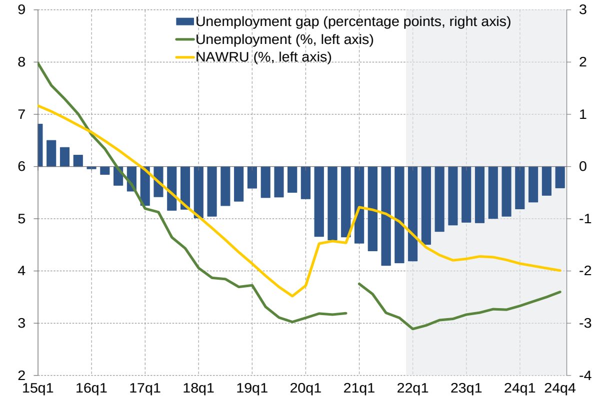
However, the scale of the slowdown in potential growth of the Polish economy in the years 2023-2024 will be limited by the rebound in investment activity and growth in productive capital. Due to the gradual transformation of investment in fixed assets, this process will be spread over time, resulting in gradually rising capital resources over the projection horizon. The influx of immigrants from Ukraine, which will translate into an increase in available labour resources, will act in the same direction.

Along with the rebound in economic activity in the second half of 2021, the output gap returned to positive levels, just over 1% of potential product, and will continue to grow in 2022 (Figure 4.19). In the coming years the slowdown in current economic activity will translate into a renewed narrowing of the output gap, almost leading to its closing at the end of the projection horizon. Such a development of the output gap means that demand factors will boost CPI inflation in 2022 and lower it in the following two years.

Labour market

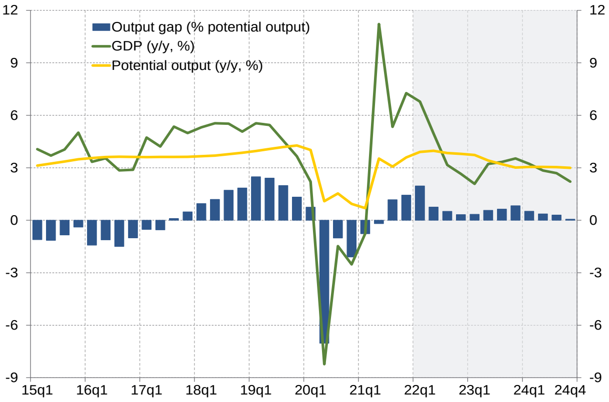
According to the LFS methodology, labour force participation and the number of working people in 2021 Q4 were higher than the pre-pandemic levels **(**Figure 4.20**,** Figure 4.21)[50]. At the same time, labour intensity measured by hours worked, remained lower than in 2019 Q4 (see Box: *The labour market in Poland during the COVID-19 pandemic*). The projection assumes that labour demand growth in the economy will continue in 2022. This is evidenced, among others, by the high percentage of companies declaring vacancies and the optimistic employment forecasts of firms operating in the enterprise sector. In particular, the difference between the percentage of firms forecasting an

Figure 4.18 Unemployment



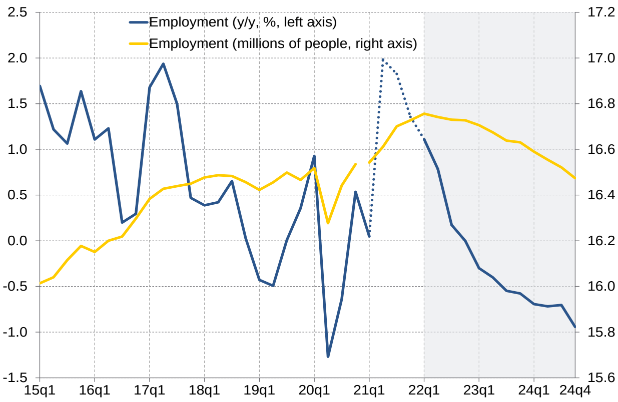
Source: Statistics Poland (GUS) data, NBP calculations.
$NAWRU_t$ – non-accelerating wage rate of unemployment in the equilibrium.
Due to the change in the LFS methodology, the data up to 2020 and from 2021 are not fully comparable –see footnote 50.

Figure 4.19 Output gap



Source: Statistics Poland (GUS) data, NBP calculations.
The output gap is a synthetic measure of demand pressure in the economy. It is expressed as a percentage of the deviation of the actual real level of GDP from the level of potential output.

Figure 4.20 Employment



Source: Statistics Poland (GUS) data, NBP calculations.
Due to the change in the LFS methodology, the data up to 2020 and from 2021 are not fully comparable –see footnote 50.

[50] Changes in the LFS methodology introduced by Statistics Poland (GUS) have an impact on labour market statistics, and as a result, data for 2021, as well as NECMOD forecasts of the number of economically active population as well as working and unemployed people cannot be compared with the results of previous editions of this survey. At the same time, the LFS data before adjustment has been used in the projection due to the limited scope of the adjusted historical data published by Statistics Poland (GUS) for the years 2010-2020 which was prepared with the application of the changed definitions of the main categories of people in the labour market.

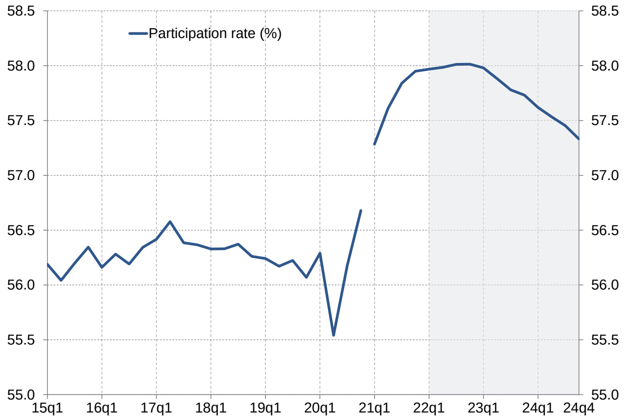
increase and decrease in employment in NBP's surveys reached a record high in 2022 Q1[51]. Over the further projection horizon – along with a decline in GDP growth – a gradual decrease in the growth rate of demand for labour is expected. The limited pool of economically active people will also be a factor slowing down the projected growth in employment. On the other hand, a significant influx of immigrants from Ukraine is expected over the projection horizon. This influx may mitigate the decline in domestic labour resources, although – due to the methodology of the survey – it will be reflected in the LFS statistics only to a limited extent.

In 2021 Q4 the average wage in the national economy rose by 9.8% y/y. Amid high demand for labour and considerable staff shortages, wage growth in 2022 can be expected to remain high (Figure 4.22). Fast growth of the consumer price index will also act in the same direction. Confirmation of this trend can be found in the results of business surveys indicating mounting wage pressures reflected, among others, in a rise in the average wage increase planned for 2022 Q1. At the same time, a relatively high percentage of firms declare that employees' wage demands are motivated by inflation[52]. On the other hand, wage pressure is curbed by the high number of economic immigrants. Following a decline in the initial period of the pandemic, in 2021 Q4 their number exceeded the pre-2020 level and in the coming quarters will most likely grow significantly due to Russia's military aggression against Ukraine. Wage growth will gradually decline in the years 2023-2024, along with a rise in the unemployment rate and a fall in the inflation rate.

CPI inflation

Amid rapid growth of global prices of energy commodities due to the sanctions imposed on Russia, the high inflation currently observed will

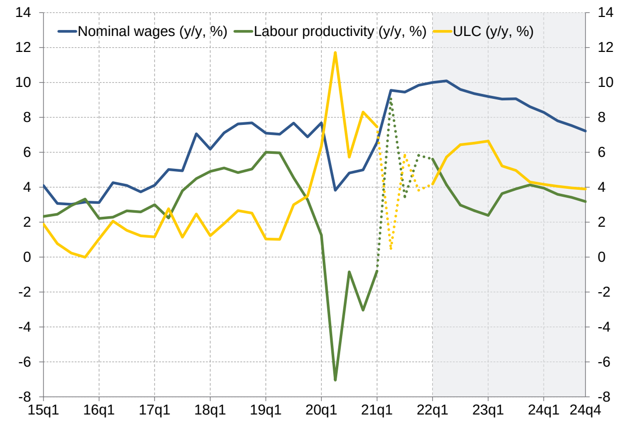
Figure 4.21 Labour force participation



Source: Statistics Poland (GUS) data, NBP calculations.

Due to the change in the LFS methodology, the data up to 2020 and from 2021 are not fully comparable –see footnote 50.

Figure 4.22 Unit labour cost



Source: Statistics Poland (GUS) data, NBP calculations.

Unit labour cost is defined as the average cost of labour per unit of output produced. They are calculated by dividing the product of average wages and the number of employed persons in the economy by the total GDP. Alternatively, they can be expressed as the quotient of the average wage and labour productivity, in other words, the relation of GDP to the number of the employed persons. Unit labor cost (ULC) presented in the chart include employers' social security contributions.

Due to the change in the LFS methodology, growth rates in the y/y terms for unit labour cost (ULC) and labour productivity in 2021 should be treated with caution - see footnote 50.

[51] NBP Quick Monitoring Survey. Economic climate in the enterprise sector, NBP, January 2022.

[52] NBP Quick Monitoring Survey. Economic climate in the enterprise sector, NBP, January 2022.

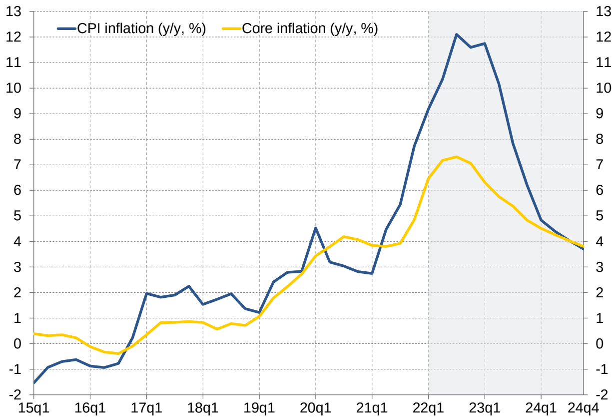
rise in the coming quarters to 12.1% y/y in 2022 Q3. Over the further projection horizon – along with a slowdown in GDP growth – the rate of growth in the CPI index will decline. However, under the assumption of unchanged NBP interest rates (including the reference rate at 2.75%), it will not return to the band of deviations from the NBP inflation target defined as 2.5% +/-1 p.p. (Figure 4.23, Figure 4.24, Figure 4.25).

The inflation processes are currently influenced by a strong negative supply shock connected with the high global prices of energy and agricultural commodities, sharp rise prices of CO_2 emission allowances, and prolonged tensions in global supply chains. As demand in the economy recovers from the significant restrictions introduced following the outbreak of the pandemic, the above-mentioned circumstances result in an imbalance in many markets, leading to intensified price pressures.

In 2022, high global prices of energy commodities – which have risen further as a result of the military aggression against Ukraine and the sanctions imposed on Russia – translate into both domestic fuel prices for private transport as well as higher gas and electricity bills for households. The increase in the capacity and cogeneration charge as of January 2022 and higher prices of CO_2 emission allowances will act in the same direction. However, the increase in regulated prices of energy (i.e. charges for natural gas, electricity and heating) is temporary – i.e. it will take place in the first half of 2022 – limited by the impact of the Anti-inflationary Shield (see section *New fiscal policy instruments*).

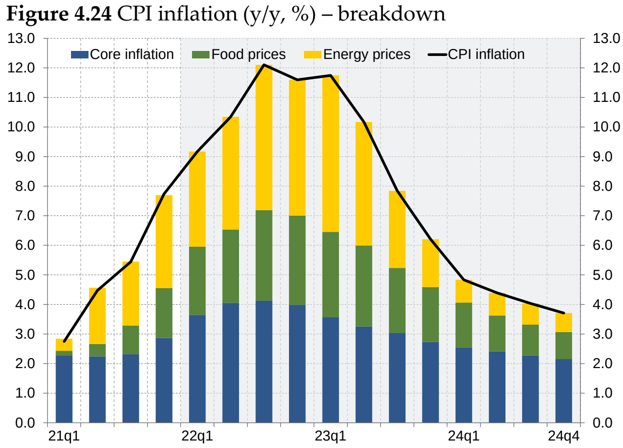
The rapid growth in food prices in 2022 is also a result of the elevated costs of its production and distribution as well as the limited supply of certain commodities and agricultural products, including wheat, of which Ukraine and Russia are the key exporters (see Chapter 1.1 *Inflation developments abroad*). Processed food prices are growing rapidly due to, among others, rising energy and labour

Figure 4.23 CPI and core inflation



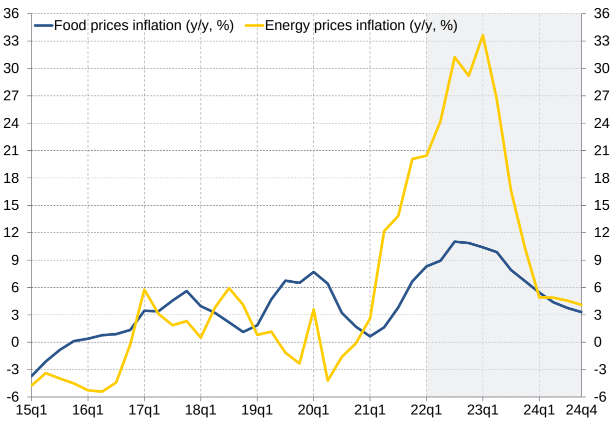
Source: Statistics Poland (GUS) data, NBP calculations.

Figure 4.24 CPI inflation (y/y, %) – breakdown



Source: Statistics Poland (GUS) data, NBP calculations.

Figure 4.25 Food and energy price inflation



Source: Statistics Poland (GUS) data, NBP calculations.

costs in food processing sector and higher prices of agricultural commodities on global markets. Cost pressure and insufficient supply also drive up unprocessed food price growth. However, the impact of the above-mentioned factors on food price inflation is also temporarily mitigated by the reduction in the VAT rate on food products under the Anti-inflationary Shield.

As demand in the economy recovers from the significant restrictions introduced following the outbreak of the pandemic, increased operating costs of enterprises are passed on to the final prices of goods and services, which is reflected in rising core inflation dynamics. The acceleration in core price growth in 2022 is also caused by higher inflation in Poland's main trading partners, resulting in high import price growth. The rise in non-food commodity prices is also influenced by supply barriers in some sectors caused by disruptions in global supply chains, which may be further escalated by Russia's military aggression against Ukraine, due to these countries' significant share of exports of metals used, among others, in the automotive industry. In turn, prices of services – particularly those related to leisure, restaurant and hotel – are boosted by the realisation of pent-up demand following the easing of the restrictions imposed earlier in the pandemic.

CPI inflation will decline in the years 2023-2024, along with the fading impact of factors boosting its level in 2022. However, by the end of the projection horizon it will exceed 3.5% y/y.

A gradual decline in inflation is supported – apart from a slowdown in the growth in aggregate demand in the economy, which is reflected in a decrease in the output gap – by the development of global prices of energy and agricultural commodities, which according to the projection assumptions will decline in the years 2023-2024, yet continue to be above the pre-pandemic level. Due to the so-called tariffication process and adjustment to the earlier increases in commodity prices and CO_2 emission allowances, the slowdown in the growth in electricity and natural gas prices for households will be spread over time. In 2023 annual growth in energy and food prices will be boosted by the base effect of these categories since the Anti-inflationary Shield will only have a temporary impact on price levels in 2022.

The downward trend of CPI inflation in the years 2023-2024 will also result from the disappearance of the price effects of reopening successive sectors of the economy as part of the easing of social and economic restrictions and the fading of disruptions in supply chains. The gradually declining labour cost growth and the expected slowdown in inflation abroad will also limit the pace of price increases.

4.4 Current versus previous projection

Data and information released after the cut-off date of the November projection have contributed to a significant upward revision of the CPI inflation forecast for 2022-2023. On the other hand, the GDP growth forecast for 2022-2023 has been revised downwards (Table 4.2, Figure 4.26, Figure 4.27, Figure 4.28, Figure 4.29).

In the case of CPI inflation, the largest upward revision was seen in energy and food prices, a smaller one in core inflation. In the first half of 2022, growth in these first two components will be limited by the entry into force of the government's Anti-inflationary Shield (see section *New fiscal policy instruments*). However, since it is to be phased out in 2022 Q3, the Anti-inflationary Shield will boost energy and food price growth in 2023, increasing the scale of the upward revision of CPI inflation in this period compared to the November projection.

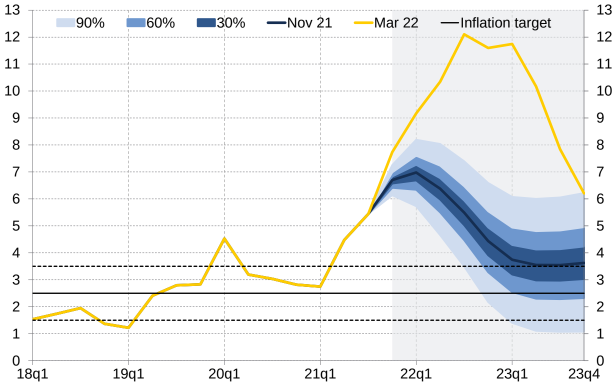
The path of energy prices in the March projection takes into account that the transmission of global commodity prices' increases to gas, electricity and heating tariffs for households, which came into force at the beginning of 2022, will be stronger than assumed in the previous forecasting round. The

Table 4.2 March projection versus November projection

	2021	2022	2023
GDP (y/y, %)			
March 2022	5.7	4.4	3.0
November 2021	5.3	4.9	4.9
CPI inflation (y/y, %)			
March 2022	5.1	10.8	9.0
November 2021	4.9	5.8	3.6

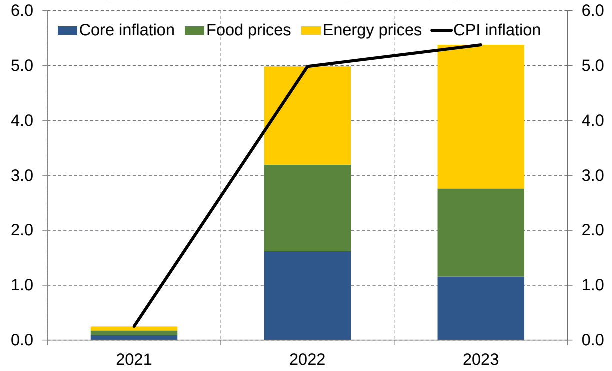
Source: NBP calculations.

Figure 4.26 March projection versus November projection: CPI inflation (y/y, %)



Source: Statistics Poland (GUS) data, NBP calculations.

Figure 4.27 Decomposition of deviations between March and November projection: CPI inflation (percentage points)



Source: NBP calculations.

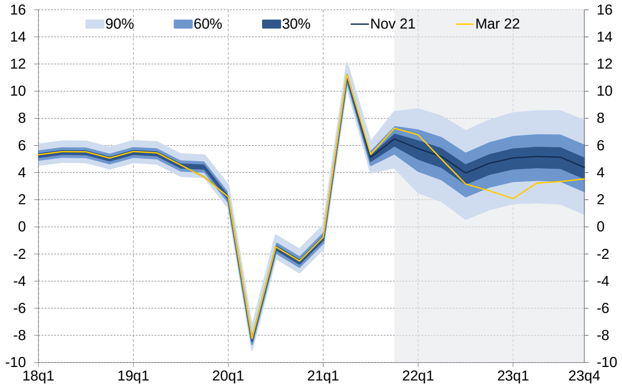
The data presented in the chart may vary slightly from those in Table 4.2, due to rounding of numbers to one decimal place.

increase in heat and electricity tariffs is also driven by the further growth in prices of CO2 emission allowances after the closure of the November projection. The current projection assumes that following further growth in the first months of 2022, global prices of energy commodities will run at higher levels than in the previous forecasting round, which will be largely due to Russia's military aggression against Ukraine (see Chapter 1.2 *External environment*). This change will boost fuel prices in 2022 and, due to the delay resulting from the tariffication process, will cause higher growth in administered energy prices of in Poland in 2023.

In turn, higher operating costs of enterprises contributed to the upward revision of the path of food prices and core inflation in the years 2022-2023. These costs include both energy and labour costs, and in the case of agricultural products, also the growing prices of artificial fertilizers. Elevated production costs stemming from the impact of the above-mentioned factors will influence the prices of both domestic products and many imported goods. The consequences of Russia's military aggression against Ukraine and the sanctions imposed on Russia, resulting in a sharp reduction in the supply of many agricultural and industrial goods, will act in the same direction. Due to the extended period of high price growth and its increasingly widespread nature, the March projection also takes into account to a larger extent the increasing persistence of inflation processes. Therefore, despite the lower path of economic activity than in the previous forecasting round, and, hence, a smaller output gap, the decline in the CPI inflation rate from its currently elevated level will be extended in time.

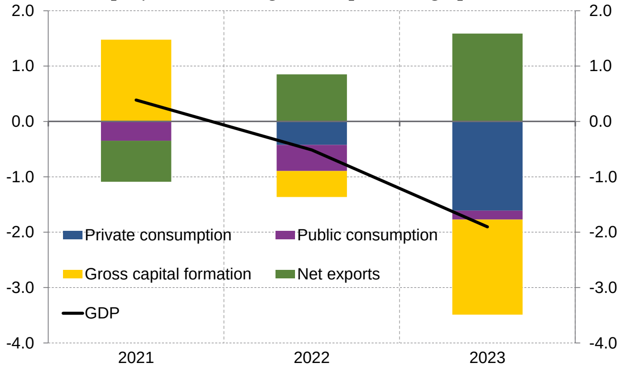
Faster price growth in the Polish economy than in the previous forecasting round contributed to the downward revision of the GDP path in the current projection. Higher inflation significantly curbs growth in real disposable household income, translating into lower private consumption

Figure 4.28 March projection versus November projection: GDP growth (y/y, %)



Source: Statistics Poland (GUS) data, NBP calculations.

Figure 4.29 Decomposition of deviations between March and November projection: GDP growth (percentage points)



Source: NBP calculations.

The data presented in the chart may vary slightly from those in Table 4.2, due to rounding of numbers to one decimal place.

growth. The increased operating costs of enterprises also reduce their margins, curbing their propensity to undertake new investments. In 2022, the negative impact of inflation on activity will be mitigated by the measures under the Anti-inflationary Shield.

The NBP interest rate hike, which took place after the closure of the previous projection, also lowers the GDP path. This hike is curbing private consumption growth by increasing relative prices of current versus future consumption. A similar mechanism can be observed in the case of investment and inventories due to the increased costs of raising capital. However, at the same time, the much higher inflation path, which brings down real interest rates, mitigates their negative impact on growth in domestic demand. The further delay in the approval of the National Recovery and Resilience Plan by the European Commission also curbs growth in gross fixed capital formation in 2022.

Russia’s military aggression against Ukraine and the sanctions imposed on Russia will impact the path of economic growth in various ways. The positive impact on GDP growth of higher expenditure driven by the increased influx of immigrants from Ukraine may prevail in the short-term horizon. In the long-term horizon, disruptions in foreign trade and heightened volatility of global commodity prices will have a much more significant impact, leading to a downward revision of the forecast of economic activity (see section *Economic activity*).

4.5 Forecast uncertainty sources

The central scenario of the projection, presenting the most likely macroeconomic developments in Poland, is subject to uncertainty reflected in the fancharts (Figure 4.1; Figure 4.2). The future economic situation and CPI inflation path in Poland is to the greatest extent dependent on the scale of disruptions in the global economy triggered by Russia’s military aggression against

Ukraine and the COVID-19 pandemic. Due to the very high uncertainty assumed in the projection assumptions, which are of a non-economic nature, they should be treated as kind of boundary conditions for the projection. Should these conditions not be met, it may lead to different macroeconomic scenarios than the ones presented in the projection. An additional significant source of risk for inflation is the possible prolongation of the period that the Anti-inflationary Shield will be in force. The balance of uncertainty factors indicates a higher probability of economic activity running below the central projection scenario and a close to symmetric distribution of risks for CPI inflation over the projection horizon (Table 4.3).

Table 4.3 Probability of inflation running:

	Below 1.50%	Below 2.50%	Below 3.50%	Below the central projection	In the range (1.5-3.5%)
22q1	0.00	0.00	0.00	0.50	0.00
22q2	0.00	0.00	0.00	0.50	0.00
22q3	0.00	0.00	0.00	0.50	0.00
22q4	0.00	0.00	0.00	0.50	0.00
23q1	0.00	0.00	0.01	0.50	0.00
23q2	0.00	0.01	0.01	0.50	0.01
23q3	0.03	0.06	0.10	0.50	0.07
23q4	0.08	0.14	0.21	0.50	0.13
24q1	0.07	0.15	0.28	0.50	0.21
24q2	0.10	0.20	0.35	0.50	0.24
24q3	0.14	0.25	0.41	0.50	0.27
24q4	0.17	0.30	0.47	0.50	0.29

Source: NBP calculations.

Deepening turmoil in the global economy

The potential escalation of geopolitical tensions or sanctions related to Russia's military aggression against Ukraine represent a significant risk for global and domestic economic activity. The materialisation of this risk could lead to a further rise in commodity prices and a fall in inflow of foreign direct investment to Poland and the whole region. High volatility of the exchange rate, deteriorating availability of external funding and disruptions in supply chains would all simultaneously lead to a reduction in domestic investment. In turn, elevated inflation would reduce private consumption. Changes in the conditions of foreign trade could cause exports to fall and import prices to rise, thus lowering the current account.

A more severe course of the pandemic continues to be a source of risk for the path of economic growth, although its significance is declining, and the direct impact is largely limited to China. In view of the strict epidemic prevention policies in force in the country, the emergence of further mutations of the virus would lead to the closure of factories and ports, and thus to longer delays in production and logistical problems in international trade. As a result, the disruptions in the global supply chains would intensify, leading to lower global economic growth and growth in prices of goods as a result of supply restrictions in Asia.

The materialisation of the above risks would lead to an extended period of deteriorated economic activity in the global economy and in Poland. Amid heightened uncertainty and higher prices, corporate investment and household consumption would be curbed. The economic slowdown might be exacerbated by the possible further postponement of payment of funds under the EU's financial assistance instrument Next Generation EU, due to a deferred approval of the Polish National Recovery and Resilience Plan by the European Commission.

Faster rebound in global economic activity

On the other hand, the end of Russia's military aggression against Ukraine, which would allow the easing of sanctions against Russia, could lead to a faster rebound in global economic activity. This would reduce disruptions in supply chains, lower risk aversion in Central and Eastern Europe and lower import prices of energy commodities. An improvement in corporate and consumer sentiment would lead to an increase in their expenditure and contribute to a higher path of economic growth.

It is also possible that the negative impact of the pandemic on global economic growth will be further limited. Such a scenario would also be supported by the easing of the pandemic policy in China should the SARS-CoV-2 virus mutate into less virulent strains. In addition, a faster pace of vaccination in emerging economies or the market launch of an effective drug against COVID would help to permanently defeat the pandemic. Such a scenario would also lead to an improvement in the functioning of global supply chains, particularly if it is coupled with an increase in the availability of materials and intermediate goods and a decline in their prices.

Increased support from economic policy, such as the launch of successive fiscal packages in the United States (the Build Back Better Plan), would also contribute to a rebound in global economic activity. In the euro area a higher path of GDP growth could materialise, should the pro-growth impact of the funds from the Next Generation EU instrument prove to be stronger than assumed. A more durable acceleration in productivity growth thanks to investments in digitisation and automation as well as changes in the organisation of work implemented as a result of the pandemic could also bring faster growth in global economic activity than assumed in the baseline scenario.

Factors impacting on inflation processes in Poland

Changes in global prices of energy, agricultural and industrial commodities will continue to be the most important source of uncertainty for the inflation path. The supply limitations caused by Russia's military aggression against Ukraine are a new significant risk impacting on commodity prices in the current forecasting round. As European economies are heavily reliant on energy commodities extracted in Russia, their reduced purchases from this country in the absence of the possibility of a rapid increase in supplies from the United States and OPEC would lead to sharp increases in prices in their domestic markets. In the case of natural gas, a sharp fall in inventories could lead to limiting its consumption inside the EU. In such a case, one of the solutions that would balance the energy market at the EU level could be for the European Commission to trigger Article 29a of the EU ETS Directive. This Directive enables a dedicated pool of allowances from the Market Stability Reserve to be made available in the event of a very sharp increase in prices of greenhouse gas emission allowances. This would help stabilise wholesale electricity prices and make it possible to rely to a larger extent on conventional fossil fuels for electricity generation.

At the same time, prolonged military aggression could lead to a reduction in imports from Russia and Ukraine of many other commodities, including wheat, corn and metals used, among others, in the car industry, such as platinum, palladium and nickel. This could lead to sustained disruptions in global supply chains and, consequently, a prolonged period of high inflation.

Due to prolonged period of heightened inflation in Poland, the government might extend the period that the Anti-inflationary Shield would be in force, thus bringing down consumer price growth. At the same time, the higher inflation expected in the central scenario of the projection in the first half of 2023 as a result of the base effect would be postponed.

Table 4.4 Central path of inflation and GDP projection

	2021				2022				2023				2024				2021	2022	2023	2024
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4				
Consumer Price Index CPI (%, y/y)	2.7	4.5	5.4	7.7	9.2	10.3	12.1	11.6	11.7	10.2	7.8	6.2	4.8	4.4	4.0	3.7	5.1	10.8	9.0	4.2
Core inflation (net of food and energy prices, %, y/y)	3.8	3.8	3.9	4.9	6.5	7.2	7.3	7.1	6.3	5.8	5.4	4.8	4.5	4.3	4.0	3.8	4.1	7.0	5.6	4.2
Food prices (%, y/y)	0.6	1.6	3.8	6.7	8.3	8.9	11.0	10.9	10.4	9.9	7.9	6.7	5.4	4.4	3.8	3.3	3.2	9.8	8.7	4.2
Energy prices (%, y/y)	2.6	12.2	13.8	20.1	20.4	24.2	31.2	29.2	33.6	26.6	16.6	10.3	4.9	4.9	4.5	4.1	12.1	26.2	21.4	4.6
GDP (%, y/y)	-0.8	11.2	5.3	7.3	6.8	5.0	3.2	2.7	2.1	3.2	3.3	3.5	3.2	2.8	2.7	2.2	5.7	4.4	3.0	2.7
Domestic demand (%, y/y)	0.3	12.4	8.6	11.2	9.5	6.2	2.3	0.5	0.1	2.4	3.1	3.8	2.6	1.8	1.5	1.2	8.2	4.5	2.3	1.8
Household consumption (%, y/y)	0.1	13.1	4.7	7.9	6.6	6.7	2.6	2.5	2.5	2.2	2.1	1.9	2.0	1.8	1.9	2.1	6.2	4.6	2.2	2.0
Public consumption (%, y/y)	1.6	3.0	0.8	-0.5	4.2	0.6	0.2	2.6	-0.1	4.0	4.6	6.8	2.9	2.8	3.5	3.8	1.1	1.9	3.8	3.2
Gross fixed capital formation (%, y/y)	1.7	5.6	9.3	11.7	8.5	5.3	3.8	1.3	0.9	3.8	3.6	3.3	2.1	1.2	1.0	1.4	8.0	4.7	2.9	1.4
Contribution of net exports (percentage points, y/y)	-1.1	-0.3	-2.7	-3.2	-2.0	-0.9	0.9	2.1	2.0	0.9	0.4	-0.1	0.7	1.2	1.3	1.1	-2.0	0.1	0.8	1.1
Exports (%, y/y)	7.3	29.2	8.6	6.0	5.1	4.9	5.2	5.1	4.8	4.9	4.4	4.4	4.7	4.9	5.0	5.0	12.0	5.0	4.6	4.9
Imports (%, y/y)	10.3	34.5	15.2	13.2	9.4	7.0	4.0	1.7	1.6	3.6	4.0	5.0	3.8	3.3	3.2	3.5	17.6	5.3	3.5	3.4
Gross wages (%, y/y)	6.6	9.6	9.4	9.8	10.0	10.1	9.6	9.4	9.2	9.0	9.1	8.6	8.3	7.8	7.5	7.2	8.9	9.7	9.0	7.7
Total employment* (%, y/y)	0.0	2.0	1.8	1.4	1.1	0.8	0.2	0.0	-0.3	-0.4	-0.5	-0.6	-0.7	-0.7	-0.7	-0.9	1.3	0.6	-0.5	-0.8
Unemployment rate* (%)	3.8	3.6	3.2	3.1	2.9	3.0	3.1	3.1	3.2	3.2	3.3	3.3	3.3	3.4	3.5	3.6	3.4	3.0	3.2	3.5
NAWRU (%)	5.2	5.2	5.1	4.9	4.7	4.5	4.3	4.2	4.2	4.3	4.3	4.2	4.1	4.1	4.1	4.0	5.1	4.4	4.2	4.1
Labour force participation rate* (%, y/y)	57.3	57.6	57.8	58.0	58.0	58.0	58.0	58.0	58.0	57.9	57.8	57.7	57.6	57.5	57.5	57.3	57.7	58.0	57.8	57.5
Labour productivity* (%, y/y)	-0.8	9.1	3.5	5.8	5.6	4.1	3.0	2.7	2.4	3.6	3.9	4.1	3.9	3.6	3.4	3.2	4.4	3.8	3.5	3.5
Unit labour cost* (%, y/y)	7.5	0.5	5.8	3.8	4.2	5.7	6.4	6.5	6.6	5.2	5.0	4.3	4.2	4.1	4.0	3.9	4.3	5.8	5.3	4.0
Potential output (%, y/y)	0.7	3.5	3.1	3.6	3.9	4.0	3.8	3.8	3.7	3.4	3.2	3.0	3.0	3.1	3.0	3.0	2.7	3.9	3.3	3.0
Output gap (% potential GDP)	-0.8	-0.2	1.2	1.4	2.0	0.8	0.5	0.3	0.3	0.6	0.6	0.8	0.5	0.4	0.3	0.1	0.4	0.9	0.6	0.3
Index of agricultural commodity prices (EUR; 2011=1.0)	0.92	0.99	1.02	1.11	1.16	1.18	1.15	1.12	1.10	1.11	1.07	1.04	1.03	1.08	1.05	1.05	1.01	1.15	1.08	1.05
Index of energy commodity prices (USD; 2011=1.0)	0.67	0.82	1.14	1.50	2.00	3.58	3.06	2.35	2.13	1.67	1.39	1.32	1.25	1.19	1.13	1.10	1.03	2.75	1.62	1.17
Gross value added deflator abroad (%, y/y)	2.2	0.4	2.1	2.6	2.7	3.1	2.4	1.9	1.6	1.7	2.1	2.1	2.0	1.9	1.8	1.7	1.8	2.5	1.9	1.8
GDP abroad (%, y/y)	-1.7	14.7	4.2	4.5	4.9	3.1	2.3	2.6	3.1	2.8	2.1	1.7	1.5	1.4	1.4	1.3	5.1	3.2	2.4	1.4
Current account balance (% GDP)	2.7	1.8	0.7	-0.9	-2.2	-3.1	-3.2	-2.8	-2.2	-1.8	-1.6	-1.6	-1.3	-1.0	-0.7	-0.3	-0.9	-2.8	-1.6	-0.3
WIBOR 3M (%)	0.21	0.21	0.22	1.53	3.05	2.95	2.95	2.95	2.95	2.95	2.95	2.95	2.95	2.95	2.95	2.95	0.54	2.98	2.95	2.95

Source: Bloomberg, Eurostat, Statistics Poland (GUS), NBP calculations.

For the majority of variables, the values up to 2021Q4 are determined on the basis of raw quantities, while in the projection horizon are presented seasonally adjusted data. In the case of the unemployment rate, the NAWRU rate, the labour force participation rate, potential output growth, the output gap, the agricultural commodity price index, the energy commodity price index, inflation abroad and GDP growth abroad only seasonally adjusted data are presented, while the WIBOR 3M rate and import price growth are not seasonally adjusted series. LFS data on total employment, labour force participation rate and unemployment rate. *Due to the change in the LFS methodology, the data up to 2020 and from 2021 on total employment, unit labour cost, labour productivity, unemployment rate and labour force participation rate are not fully comparable - see footnote 50.

The agricultural commodity price index includes prices of wheat, pork, skimmed milk powder, butter, sugar, cocoa, coffee, frozen concentrated orange juice, potatoes, oilseed, allowing for weights reflecting the consumption structure of Polish households. The energy commodity price index covers prices of crude oil, coal and natural gas, taking into account the structures of consumption of these commodities in Poland.

5. The voting of the Monetary Policy Council members in September – December 2021[53]

■ Date: 8 September 2021

Subject matter of motion or resolution:
Motion to change the NBP inflation target of 2.5% with a symmetrical tolerance band of +/- 1 percentage point to 2.0% with a symmetric tolerance band of +/- 1 percentage point.

MPC decision:
Motion did not pass.

Voting of the MPC members:

For: K. Zubelewicz

Against: A.Glapiński
G. M. Ancyparowicz
E. Gatnar
Ł. J. Hardt
C. Kochalski
J. J. Kropiwnicki
E. M. Łon
R. Sura
J. Żyżyński

■ Date: 8 September 2021

Subject matter of motion or resolution:
Motion to widen the symmetric tolerance band for the inflation target of 2.5% from +/- 1 percentage point to +/- 2 percentage points.

MPC decision:
Motion did not pass.

Voting of the MPC members:

For: J. J. Kropiwnicki
E. M. Łon

Against: A. Glapiński
G. M. Ancyparowicz
E. Gatnar
Ł. J. Hardt
C. Kochalski
R. Sura
K. Zubelewicz
J. Żyżyński

[53] This chapter does not include voting on motions regarding NBP interest rates of 8 September 2021, which have already been published in the previous *Inflation Report*.

■ Date: 8 September 2021

Subject matter of motion or resolution:

Resolution No. 8/2021 on adopting monetary policy guidelines for 2022.

Voting of the MPC members:

For: A. Glapiński
G. M. Ancyparowicz
C. Kochalski
J. J. Kropiwnicki
E. M. Łon
R. Sura
J. Żyżyński

Against: E. Gatnar
Ł. J. Hardt
K. Zubelewicz

■ Date: 6 October 2021

Subject matter of motion or resolution:

Motion to raise the NBP reference rate by 0.40 percentage points, i.e. to 0.50% and to set the remaining NBP interest rates at the following levels:

- lombard rate at 1.00%,
- deposit rate at 0.00%,
- rediscount rate at 0.51%,
- discount rate at 0.52%

MPC decision:

Motion passed.

Voting of the MPC members:

For: A. Glapiński
G. M. Ancyparowicz
E. Gatnar
Ł. J. Hardt
C. Kochalski
J. J. Kropiwnicki
E. M. Łon
R. Sura
K. Zubelewicz
J. Żyżyński

Against: No-one

■ Date: 6 October 2021

Subject matter of motion or resolution:
Resolution No. 9/2021 on reference rate, refinancing credit rate, deposit rate as well as the rediscount and discount rates at the NBP.

Voting of the MPC members:

For:	A. Glapiński G. M. Ancyparowicz E. Gatnar Ł. J. Hardt C. Kochalski J. J. Kropiwnicki E. M. Łon R. Sura K. Zubelewicz J. Żyżyński	**Against:**	No-one

■ Date: 6 October 2021

Subject matter of motion or resolution:
Motion to raise the required reserve ratio from 0.50% to 2.00%.

MPC decision:
Motion passed.

Voting of the MPC members:

For:	A. Glapiński G. M. Ancyparowicz E. Gatnar Ł. J. Hardt C. Kochalski J. J. Kropiwnicki E. M. Łon R. Sura K. Zubelewicz J. Żyżyński	**Against:**	No-one

■ Date: 6 October 2021

Subject matter of motion or resolution:
Resolution No. 10/2021 amending the resolution on the required reserve ratios for banks, cooperative savings and credit unions and the National Association of Cooperative Savings and Credit Unions and the remuneration of required reserves.

MPC decision:
MPC raised the required reserve ratio from 0.50% to 2.00%.

Voting of the MPC members:

For:	A. Glapiński	**Against:**	No-one
	G. M. Ancyparowicz		
	E. Gatnar		
	Ł. J. Hardt		
	C. Kochalski		
	J. J. Kropiwnicki		
	E. M. Łon		
	R. Sura		
	K. Zubelewicz		
	J. Żyżyński		

■ Date: 3 November 2021

Subject matter of motion or resolution:
Motion to raise the NBP reference rate by 0.75 percentage points, i.e. to 1.25% and to set the remaining NBP interest rates at the following levels:

- lombard rate at 1.75%,
- deposit rate at 0.75%,
- rediscount rate at 1.30%,
- discount rate at 1.35%

MPC decision:
Motion passed.

Voting of the MPC members:

For:	A. Glapiński	**Against:**	No-one
	G. M. Ancyparowicz		
	E. Gatnar		
	Ł. J. Hardt		
	C. Kochalski		
	J. J. Kropiwnicki		
	E. M. Łon		
	R. Sura		
	K. Zubelewicz		
	J. Żyżyński		

■ Date: 3 November 2021

Subject matter of motion or resolution:
Resolution No. 11/2021 on reference rate, refinancing credit rate, deposit rate as well as the rediscount and discount rates at the NBP.

Voting of the MPC members:

For:	A. Glapiński	**Against:**	No-one
	G. M. Ancyparowicz		
	E. Gatnar		
	Ł. J. Hardt		
	C. Kochalski		
	J. J. Kropiwnicki		
	E. M. Łon		
	R. Sura		
	K. Zubelewicz		
	J. Żyżyński		

■ Date: 3 November 2021

Subject matter of motion or resolution:
Resolution No. 12/2021 amending the resolution on the regulations of the Monetary Policy Council.

Voting of the MPC members:

For:	A. Glapiński	**Against:**	No-one
	G. M. Ancyparowicz		
	E. Gatnar		
	Ł. J. Hardt		
	C. Kochalski		
	J. J. Kropiwnicki		
	E. M. Łon		
	R. Sura		
	K. Zubelewicz		
	J. Żyżyński		

■ Date: 8 December 2021

Subject matter of motion or resolution:

Resolution No. 13/2021 on approving the financial plan of NBP for 2022.

Voting of the MPC members:

For:	A. Glapiński G. M. Ancyparowicz E. Gatnar Ł. J. Hardt C. Kochalski J. J. Kropiwnicki E. M. Łon R. Sura K. Zubelewicz J. Żyżyński	**Against:**	No-one

■ Date: 8 December 2021

Subject matter of motion or resolution:

Motion to raise the NBP reference rate by 0.50 percentage points, i.e. to 1.75% and to set the remaining NBP interest rates at the following levels:

- lombard rate at 2.25%,
- deposit rate at 1.25%,
- rediscount rate at 1.80%,
- discount rate at 1.85%

MPC decision:

Motion passed.

Voting of the MPC members:

For:	A. Glapiński G. M. Ancyparowicz E. Gatnar Ł. J. Hardt C. Kochalski J. J. Kropiwnicki E. M. Łon R. Sura K. Zubelewicz J. Żyżyński	**Against:**	No-one

Date: 8 December 2021

Subject matter of motion or resolution:

Resolution No. 14/2021 on reference rate, refinancing credit rate, deposit rate as well as the rediscount and discount rates at the NBP.

Voting of the MPC members:

For:	A. Glapiński G. M. Ancyparowicz E. Gatnar Ł. J. Hardt C. Kochalski J. J. Kropiwnicki E. M. Łon R. Sura K. Zubelewicz J. Żyżyński	**Against:**	No-one

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