Narodowy Bank Polski in times of the post-pandemic economic megashocks and the energy crisis – a success story

Prof. dr hab. Adam Glapiński

Including:

- Why the Zloty, not the Euro
- Gold and the reserves
- The importance of cash in circulation

Narodowy Bank Polski in times of the post-pandemic economic megashocks and the energy crisis – a success story

Prof. dr hab. Adam Glapiński

We protect the value of Polish money

All materials used for this publication were prepared by Narodowy Bank Polski.

Warsaw, September 2024

CONTENTS

Nicolaus Copernicus
(2023, collector coin)

Nicolaus Copernicus
(2023, collector banknote)

The 2023 “Nicolaus Copernicus” collector banknote was named Best New Commemorative Banknote at The Regional Banknote and ID Document of the Year Awards at the High Security Printing conference in Sofia. The award was given for a design that combines the country’s cultural heritage with advanced security features.

In Memory of the Ulma Family
(2024, collector coin)

100th Anniversary of Poland's Wedding to the Baltic Sea
(2020, collector coin)

1

MONETARY POLICY OF NARODOWY BANK POLSKI 2020–2024

Narodowy Bank Polski in the face of the global crises

In the throes of a polycrisis – involving the pandemic crisis, the post-pandemic crisis and the energy crisis resulting from the war in Ukraine – the monetary policy of Narodowy Bank Polski faced particularly tough challenges.

For a number of years NBP had been preparing – analytically, operationally and legally – for a potential financial and banking crisis on a global or European scale, similar to that of 2008-2009. Yet, to the complete surprise of the whole world, the crises that followed were of a totally different character and nature. Many countries and central banks faced the threat of a true economic and social catastrophe. The danger of a massive economic collapse, a wave of bankruptcies and mass unemployment followed by soaring inflation – first post-pandemic and then triggered by Russia's invasion of Ukraine – was a tremendous and unprecedented challenge for the economies of Western democracies, and the greatest since World War II.

With hindsight, I can note with great satisfaction that Narodowy Bank Polski along with all its bodies and staff rose to the occasion in these difficult times.

Institutional framework

Firstly, let me reiterate the legal foundations for the functioning of Narodowy Bank Polski. The Constitution of the Republic of Poland stipulates that "The central bank of the State shall be Narodowy Bank Polski. It shall have the exclusive right to issue money as well as to formulate and implement monetary policy." NBP is fulfilling the tasks set in the Constitution, the Act on NBP and the Banking Law. These legal acts guarantee NBP's independence from all other state institutions.

The monetary policy of NBP aims to fulfil the core tasks of the central bank as set forth in the legal acts.

- The Constitution provides that, "Narodowy Bank Polski shall be responsible for the value of the Polish currency."
- The Act on NBP, in turn, determines that, "The basic objective of the activity of NBP shall be to maintain price stability, while supporting the economic policy of the Government, insofar as this does not constrain the pursuit of the basic objective of NBP."

In implementing the basic obligations stipulated in the Constitution and the Act on NBP, the Monetary Policy Council (the Council) – which is the NBP body setting, among other things, the annual *Monetary Policy Guidelines* – strives to maintain price stability by employing the inflation targeting strategy. Under this strategy, since 2004 the monetary policy objective of NBP has been to keep inflation – understood as the annual percentage change in the consumer price index – at 2.5%, with a symmetric tolerance band of ±1 percentage point in the medium term.

Inflation targeting is very well established both in the theory and practice of monetary policy. It is used by many central banks around the world, including the Bank of England, the Bank of Japan, the Bank of Canada and the Bank of Sweden (Riksbank). I would like to add that inflation targeting is also applied by most central banks of Central and Eastern European (CEE) countries which have their own currency, including the Czech National Bank, the National Bank of Hungary, and the National Bank of Romania.

NBP conducts an autonomous monetary policy geared to meeting the inflation target. This is enabled by keeping our own currency – the zloty.

The Monetary Policy Council pursues the inflation targeting strategy under a flexible exchange rate regime, which does not preclude foreign exchange intervention when justified by market conditions or if it is conducive to the country's macroeconomic or financial stability.

An important element of the strategy used by NBP is the medium-term character of the inflation target. This means that due to macroeconomic or financial shocks, inflation may temporarily run above or below the target, including outside the set tolerance band. When inflation deviates from the target, the Council flexibly determines the desired pace at which inflation should return to the target, as a rapid reduction of inflation to the target may entail substantial costs to macroeconomic or financial stability.

Speaking of the shocks that NBP has had to face in recent decades, let me mention the most significant ones: the global financial crisis of 2008-2009, the euro area sovereign debt crisis, the COVID-19 pandemic, and the energy crisis related to the Russian aggression against Ukraine. Some of them have led to a rise in inflation and some have caused rather deflationary risks. Hence, the *Monetary Policy Guidelines* point out that the response of monetary policy to shocks is flexible and depends on their causes and the assessment of the persistence of their effects, including the impact on inflation processes.

Moreover, in the *Monetary Policy Guidelines*, the Council emphasises that monetary policy is conducted in a manner that is conducive to maintaining the country's sustainable economic growth and financial stability. They also contain a catalogue of monetary policy instruments, which has been unchanged for many years. At the same time, the Council has indicated for some time in the *Guidelines* that the implemented monetary policy strategy assumes flexibility with regard to the instruments used. The NBP instruments may therefore be adapted to the character of disturbances observed in the economy.

The flexible use of monetary policy instruments is conducive to the effective functioning of the transmission mechanism as well as macroeconomic and financial stability.

Monetary policy instruments include, primarily:

- the NBP interest rates (reference, lombard, deposit, and bill discount rate),
- open market operations (main, fine-tuning, structural operations),
- the required reserve system,
- standing facilities,
- currency interventions.

When price stability is at risk, e.g. as a result of a crisis, monetary policy is adjusted accordingly – mainly through a change in the level of interest rates, the primary instrument of NBP monetary policy. Yet circumstances may arise where the use of other instruments is also warranted, notably, secondary market purchases of debt securities under open market operations as envisaged in the Act on NBP. Since 2005, the possibility of such operations has also been explicitly reflected in the *Monetary Policy Guidelines* adopted by the Council.

COVID-19 pandemic and the response of central banks

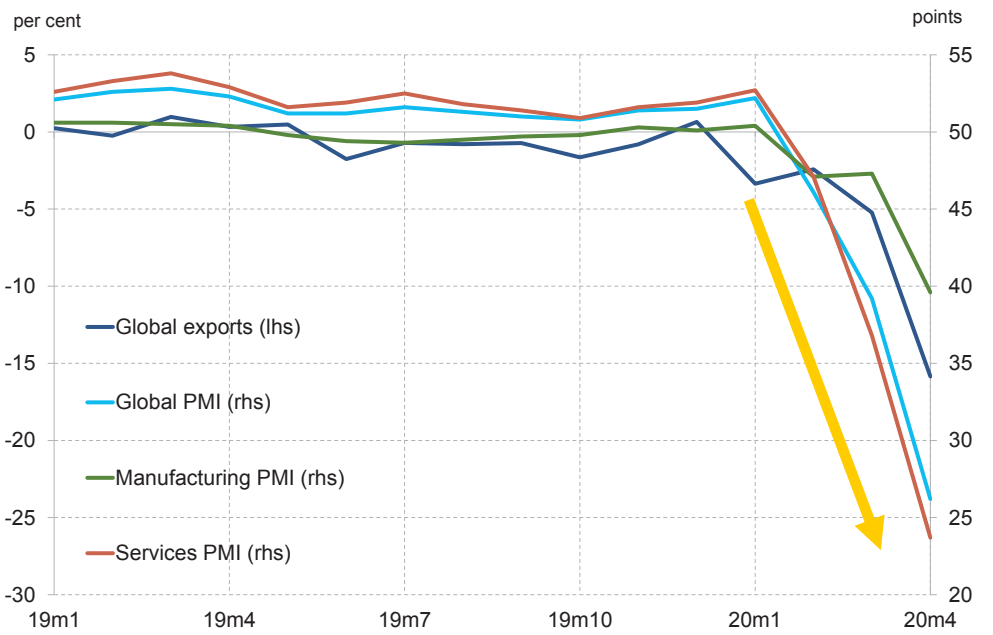
As I indicated earlier, the outbreak of the global COVID-19 pandemic in early 2020 and the related risk of a worldwide economic crisis posed one of the biggest challenges to macroeconomic policy in decades.

As the virus spread and a range of measures aimed at containing the number of infections were announced, economic activity collapsed suddenly and unexpectedly in many countries, accompanied by a slump in international trade (Figure 1). Business sentiment also deteriorated substantially (as indicated, among others, by a sharp decline in PMI indices), as did household sentiment.

Furthermore, in early 2020 uncertainty levels soared (Figure 2). In particular, at the initial stage of the pandemic, measures of volatility in the financial markets increased considerably, including the US equity market Volatility Index (VIX), which reached the highest daily value on record (i.e. since 1990) on 16 March 2020. The exceptionally high uncertainty was due to the particular

nature of the shock: the health and social effects of the pandemic were unknown, as was the extent and duration of the measures limiting infections.

Figure 1.
Global export growth and PMI



Source: Centraal Planbureau, Datastream data.

As a result, the economic effects of the pandemic were extremely hard to predict. The International Monetary Fund (IMF) pointed out in April 2020 that global GDP would shrink by 3% in 2020, i.e. by much more than during the global financial crisis of 2008-2009. The IMF pointed out that, "there is extreme uncertainty around the global growth forecast," warning that the risk of slower global GDP growth prevailed (IMF, 2020a).

Figure 2.

US equity market Volatility Index (VIX)

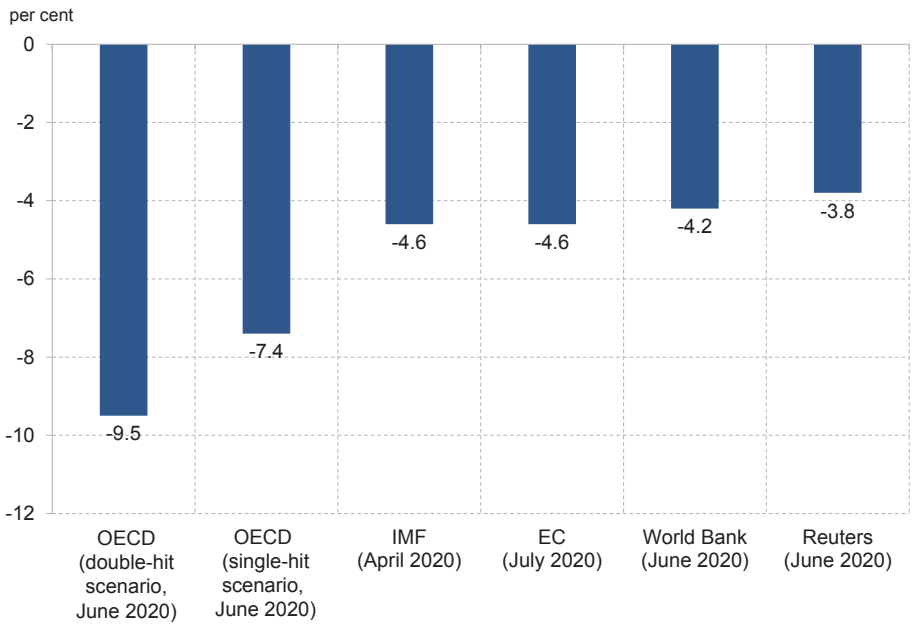
Source: Bloomberg data.

Against the background of the global economic collapse, forecasts available at the beginning of the pandemic pointed to a potential sharp decline in GDP also in Poland (Figure 3). The decline in 2020 – depending on the different assumptions of various institutions – was expected to range from 4% (according to the forecasts1 of the World Bank, the European Commission and the IMF) to nearly 10% (according the OECD's pessimistic scenario2). The NBP July 2020 projection also pointed to a sharp fall in GDP (of 5.4% in 2020)[1] of the World Bank, the European Commission and the IMF) to nearly 10% (according to the OECD's pessimistic scenario[2]). The NBP July 2020 projection also pointed to a sharp fall in GDP (of 5.4% in 2020).

1 World Bank (2020), European Commission (2020), IMF (2020b).
2 OECD (2020a).

Figure 3.

Forecasts of GDP growth in Poland in 2020



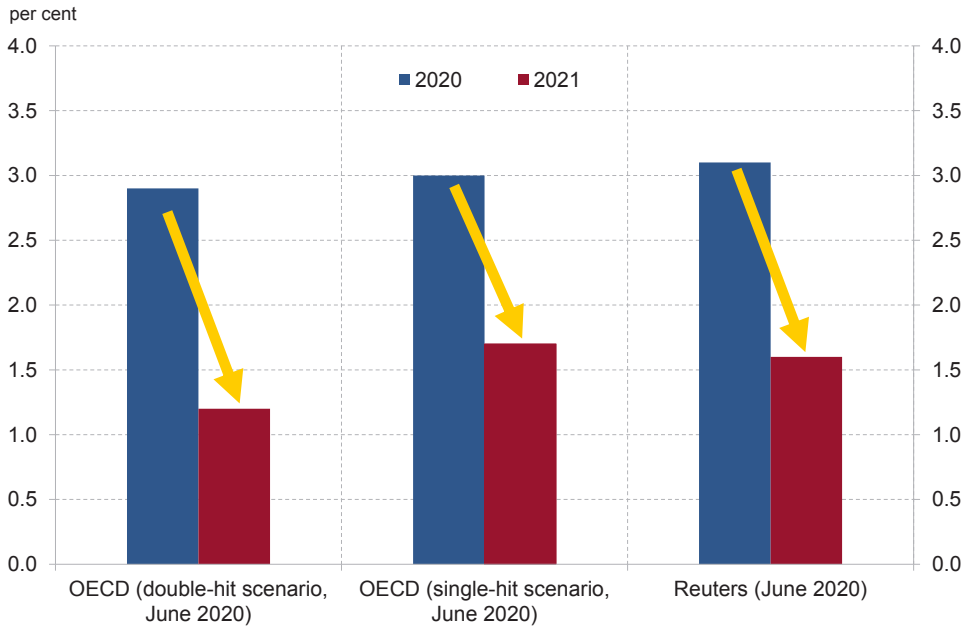
Source: Reuters, World Bank, European Commission, OECD, IMF forecasts.

Moreover, in light of the bleak economic outlook, many forecasts formulated in the first quarters of the pandemic by external entities, including the International Monetary Fund and the Organisation of Economic Cooperation and Development, indicated that inflation in Poland would fall markedly in 2021; some forecasts predicted that price growth would drop below 2.5% (Figure 4).

- In particular, both scenarios of the June 2020 OECD forecast (OECD, 2020a) showed that average annual inflation in Poland would fall below 2% in 2021; one of these scenarios indicated a fall in inflation to 1.2% in 2021, including near-zero price growth in 2021 Q1.
- The possibility that price growth would slow down noticeably was also indicated by the July 2020 NBP projection (predicting a drop in annual average inflation from 3.3% in 2020 to 1.5% in 2021).

Figure 4.

Forecasts of inflation in Poland as of first half of 2020



Source: Reuters, OECD forecasts.

Concerns about the disinflationary effect of the pandemic on consumer price growth are also present in the assessments made at that time by officials of major central banks. Indeed, at the beginning of the pandemic their governors warned about the threat of a sharp fall in inflation.

- In March 2020, the President of the ECB, Christine Lagarde, indicated that: "On the basis of the sharp decline in [...] prices for oil, headline inflation is likely to decline considerably over the coming months. [...] All we know for sure is that risks are definitely tilted to the downside; that's for sure." (ECB, 2020)

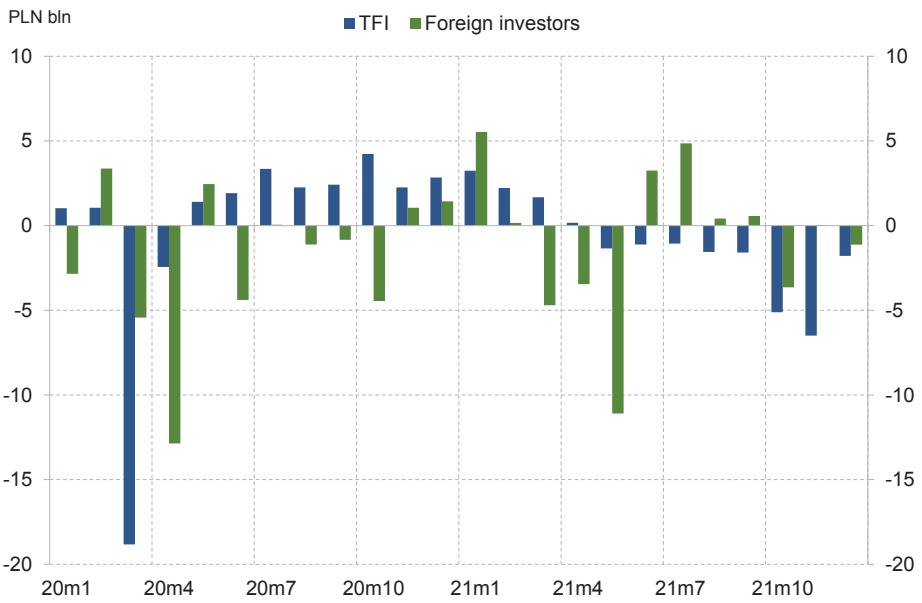
- In July 2020, the Fed Chairman, Jerome Powell, said: "I think, fundamentally, this [the outbreak of the pandemic] is a disinflationary shock. [...] And I do think for quite some time we're going to be struggling against disinflationary pressures rather than against inflationary pressures [...]." (Fed, 2020)

The pandemic crisis was associated with a significant increase in risk aversion in global financial markets. It was manifested in, among other things, a substantial rise in volatility in many segments of the financial market, to the highest level since the global financial crisis.

- A rapid outflow of capital from the debt market was observed at that time, in particular from debt investment funds (Figure 5). Amid the considerably limited market liquidity, this contributed to a significant increase in yields on Polish Treasury bonds (Figure 6).

Figure 5.

Holdings of domestic investors (TFI debt funds) and foreign investors – Polish bond market in 2020-2021

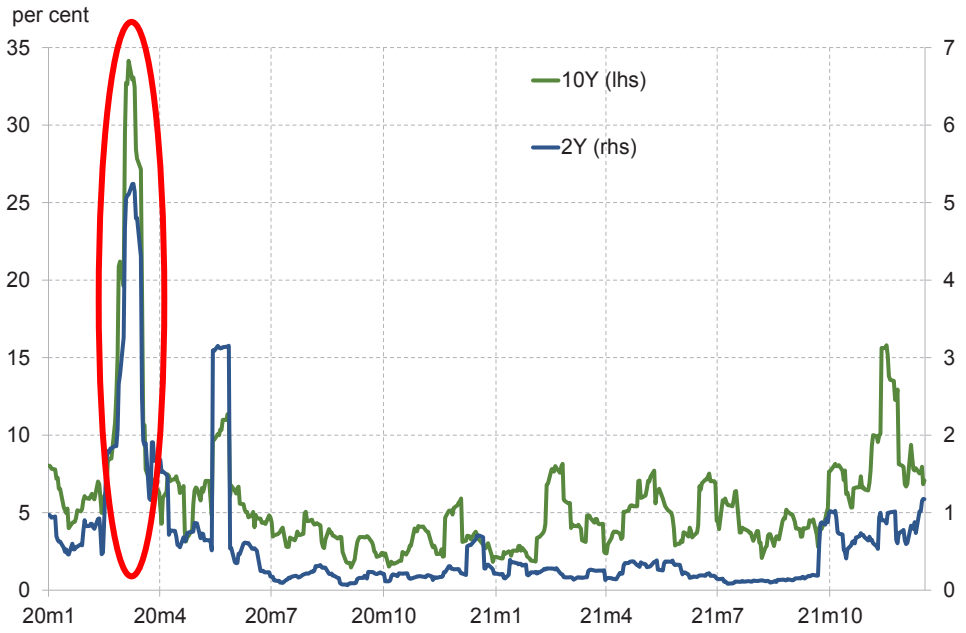


Source: Ministry of Finance, Analizy.pl data.

- Given the liquidity disruptions in the Treasury securities market, bond yields fluctuated markedly. More specifically, daily changes in sovereign bond yields reached tens of basis points (compared to just a few basis points in the period before the pandemic crisis).
- The valuations of medium- and long-term bonds were affected the most by the rise in volatility. For example, the price volatility of the 10-year bond increased several-fold in mid-March 2020 compared to the beginning of 2020.

Figure 6.

10-day price volatility of benchmark government bonds in Poland



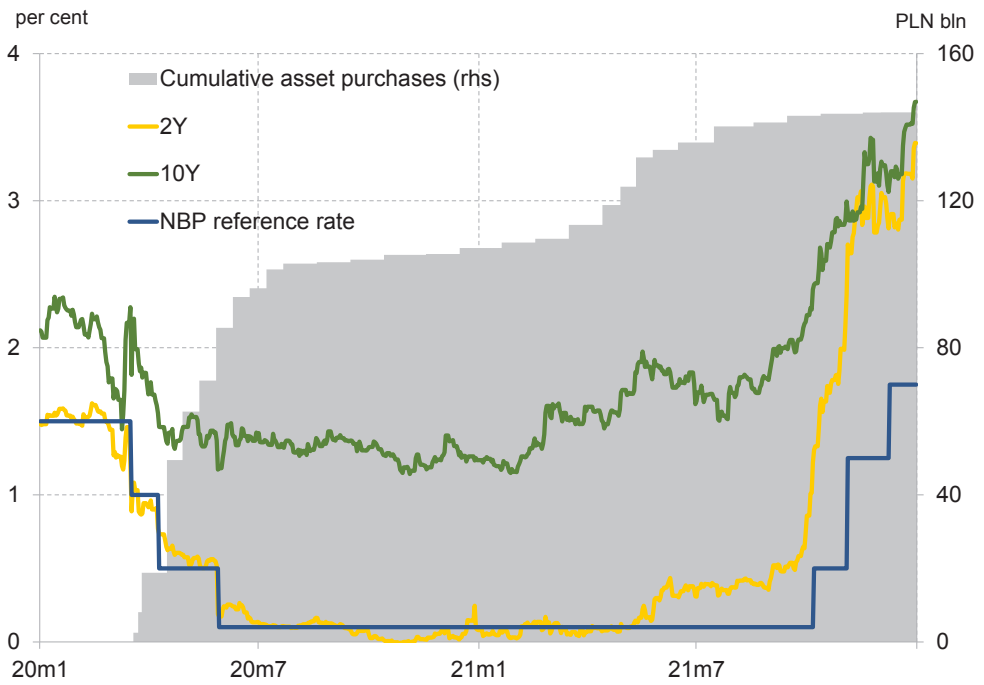
Source: Bloomberg data.

Faced with the above circumstances, NBP under my leadership reacted promptly and decisively. In response to the outbreak of the COVID-19

pandemic and the associated risk of a severe and protracted decline in GDP which could jeopardise medium-term price stability, NBP eased monetary policy significantly (Figure 7).

Figure 7.

NBP reference rate, Polish government bonds yields and NBP cumulative asset purchases



Source: NBP, Bloomberg data.
Note: Cumulative purchases by the nominal value of bonds purchased.

- In particular, the Monetary Policy Council cut interest rates, including the NBP reference rate by a total of 1.4 p.p. (from 1.5% to 0.1%). The Council also decided to lower the required reserve ratio from 3.5% to 0.5%.

- In March 2020, NBP launched structural open market operations consisting in the purchase of Treasury bonds in the secondary market. From April 2020, the purchases were expanded to include debt securities guaranteed by the State Treasury. Asset purchases were one of the instruments envisaged in the *Monetary Policy Guidelines for 2020* and aimed at:
  - changing the long-term liquidity structure in the banking sector,
  - ensuring the liquidity of the secondary market for purchased securities,
  - enhancing the impact of NBP interest rate cuts on the economy, i.e. strengthening the monetary transmission mechanism.

NBP's actions were fully aligned with the pursuit of the central bank's main tasks:

- Above all, they limited the risk of inflation falling below the NBP inflation target in the medium term.
- At the same time, the easing of NBP's monetary policy was designed to mitigate the adverse effects of the pandemic, curb the scale of the decline in economic activity and shore up the financial situation of households and enterprises.
- Moreover, through their positive impact on the financial standing of borrowers, NBP's decisions reduced credit risk, whose rise was the most important channel through which the pandemic affected the stability of the banking sector. Thus, the NBP monetary policy supported the stability of the financial system.

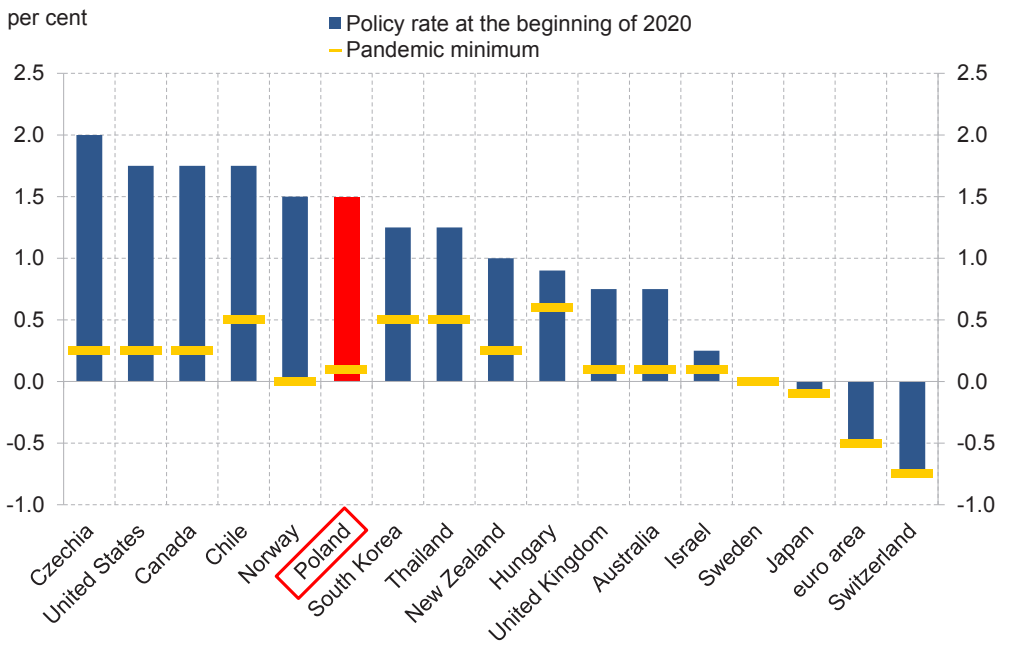
Let me remind you that in response to the outbreak of the pandemic crisis, all the central banks in the countries pursuing – according to the IMF – an inflation targeting strategy in 2020 (i.e. 43 central banks across the world) eased their monetary policy (Figure 8). In addition, many central banks launched or expanded asset purchase programmes.

- Purchases of public sector debt securities were conducted during the COVID-19 pandemic by all the major central banks in the world, including the US Federal Reserve, the Bank of England, the Bank of Japan, as well as by the European Central Bank together with all the other 19 national central banks of the Eurosystem at that time.
- During the pandemic crisis, asset purchase programmes were also announced by central banks in 35 other economies (currency areas) besides those mentioned above, including emerging ones, many of which had not used this instrument before.

• In particular, among the European Union countries with their own currencies back then, central bank purchases of sovereign debt securities were also in use in Sweden, Croatia, Romania and Hungary.

Figure 8.

Cuts in central banks' interest rates during the pandemic



Source: Bloomberg data.

With regard to continuing asset purchases in 2021, let me point out that in early 2021, the Polish economy was on the way to making up for the losses resulting from the pandemic crisis, but subsequent waves of infections continued to impair the economy, posing a significant risk to the sustainability of the recovery. GDP growth in 2021 Q1, stood at barely 0.3% y/y.

In February 2021, the International Monetary Fund emphasised the soundness of NBP maintaining an accommodative monetary policy (IMF, 2021).

- The IMF report assessed that given the considerable uncertainty about the recovery as well as the forecast decline in inflation, the accommodative policy of NBP was appropriate, and any incremental short-term supply-side inflation – should it materialise – should be tolerated in view of the negative output gap.
- The IMF also stated explicitly that in the event of an adverse scenario, NBP could step up the pace of the asset purchases.

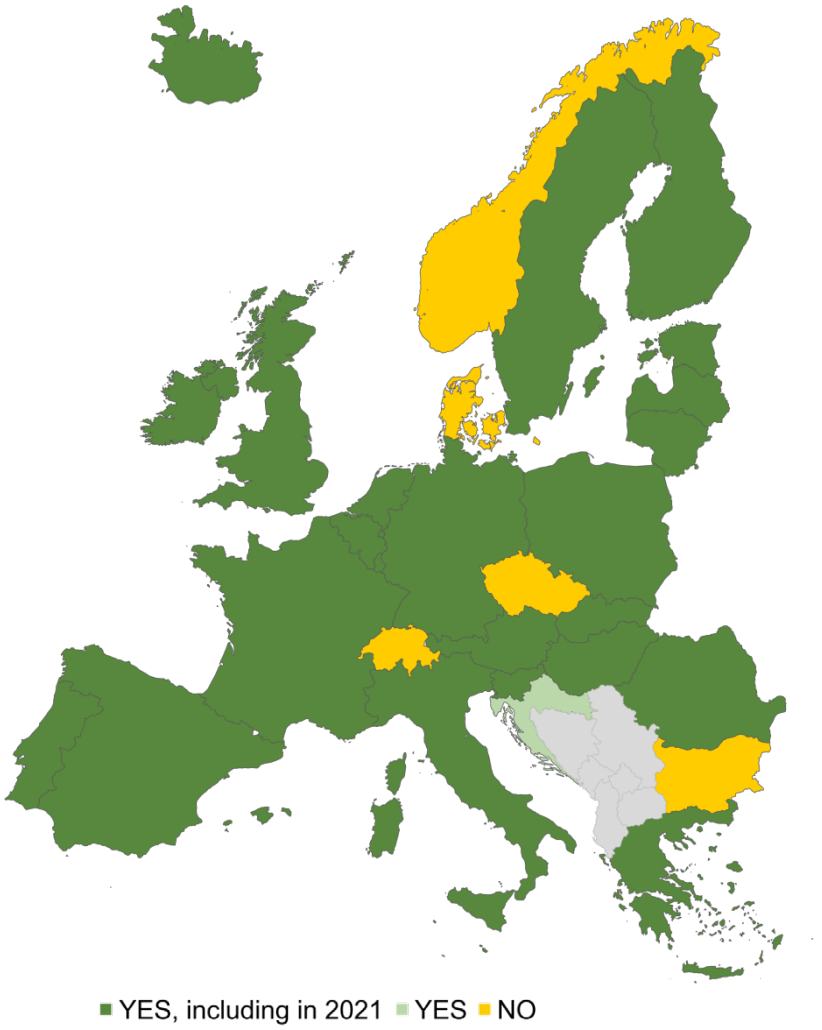
From early February 2021, sovereign bond yields were rising markedly around the world, including in Poland.

- Some major central banks – i.e. the European Central Bank and the US Federal Reserve – responded to the changed market conditions by expanding the scale of asset purchases at the turn of 2021 Q1 and Q2.
- In April and May 2021, NBP also purchased bonds with a higher face value than in previous months, yet markedly lower than at the initial stage of the pandemic. After the debt market situation stabilised, in June 2021 the monthly scale of the NBP purchases decreased substantially. The scale of purchases in 2021 Q3 was much smaller than in Q2. In December 2021, NBP did not conduct any structural operations. These actions were in line with NBP communications that the timing and scale of structural open market operations depended on market conditions.

I would like to emphasise that many of the central banks which conducted asset purchases in 2020 due to the pandemic crisis continued these operations in 2021 as well (including the US Federal Reserve, the Bank of England, the Bank of Japan and the central banks of Australia, Canada, New Zealand, Sweden, Israel, Romania, and the European Central Bank together with the national central banks of the Eurosystem, in particular the central banks of Germany, France, Italy, Spain and the Netherlands; Figure 9). Furthermore, some central banks, not least the US Federal Reserve and the European Central Bank along with other Eurosystem central banks continued net asset purchases also in 2022.

Figure 9.

European economies with central banks purchasing government debt securities following the outbreak of the COVID-19 pandemic

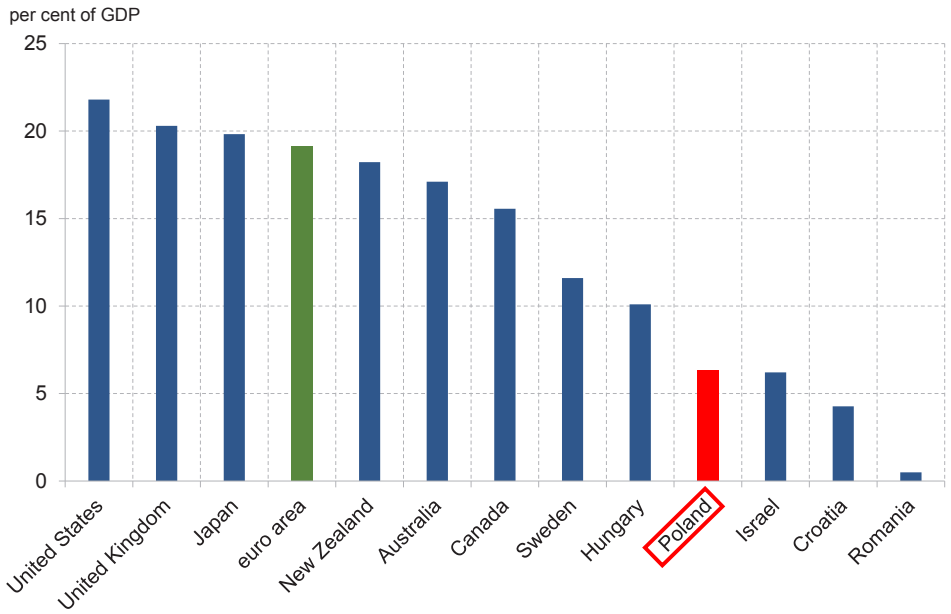


Source: information from central banks' websites.

Let me add that the total central bank asset purchases in relation to GDP were relatively small in Poland compared to other economies and were three times lower than in the euro area (they amounted to 6% of GDP in Poland and approx. 19% of GDP in the euro area, GDP as of 2019; Figure 10).

Figure 10.

Scale of central banks' asset purchases during the COVID-19 pandemic in selected economies



Source: central banks, OECD and national statistical offices data, NBP calculations.
Note: For Japan – securities purchased between March 2020 and the end of 2023.
GDP for 2019 used for calculations.

Numerous studies show that central banks' asset purchases are helpful in mitigating disruptions in the monetary policy transmission mechanism and in supporting the easing of monetary conditions. Many research papers highlight the effectiveness of asset purchases in affecting financial markets and/or the

real economy, particularly amid the effective lower bound for short-term nominal interest rates and financial market turmoil.

- Ben Bernanke, winner of the Riksbank's 2022 Alfred Nobel Prize in Economics and the Chairman of the Board of Governors of the US Federal Reserve System from 2006 to 2014, observes that asset purchases are one of the main measures to ease monetary policy where there is no more room for short-term interest rate cuts, and that it is an effective instrument which has become a permanent addition to the toolkit of the US Federal Reserve and other central banks around the world (Bernanke, 2020).
- ECB economists emphasise that asset purchase programmes are an effective tool to ease monetary and financial conditions which has helped stimulate economic growth and anchor inflation expectations, thus supporting the process of stabilising inflation (Hammermann et al., 2019).
- IMF economists indicate that, in 2020, asset purchases were an effective instrument during the financial market disturbances (Fratto et al., 2021, Arena et al., 2021). These findings were also validated for emerging European economies, where asset purchase programmes stabilised bond markets and stimulated stock markets with no material impact on the exchange rate.
- Also, the analysis of economists of the Bank for International Settlements shows that quantitative easing in emerging economies have contributed to lower yields and improved investor sentiment, without a significant impact on inflation expectations and exchange rates (Arslan et al., 2020).

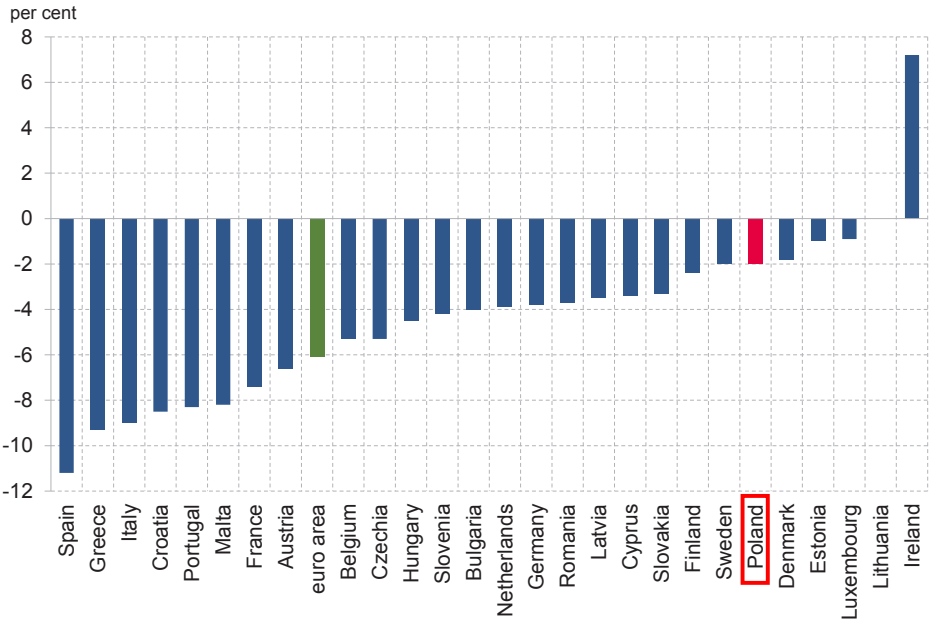
When assessing the effects of the stabilising measures taken in response to the COVID-19 pandemic, I believe that the Polish economy adapted to functioning under pandemic restrictions much better than other European economies. This was due to a range of factors.

- Poland – owing to an appropriate macroeconomic policy in the years preceding the pandemic – did not experience significant imbalances at the onset of the crisis.
- It was also important that compared to the euro area, the role of the sectors especially exposed to the impact of the pandemic, including tourism, gastronomy, culture and entertainment, is smaller in the Polish economy.
- Of key significance was also the prompt and decisive monetary and fiscal policy response.

As a result, the decline in GDP due to the pandemic was much smaller in Poland than the EU average (Figure 11, Figure 12). In Poland, it amounted to only 2.0%, compared to a decline of, for example, 5.3% in Czechia and 6.1% in the euro area.

Figure 11.

GDP growth in EU economies in 2020



Source: Eurostat data.

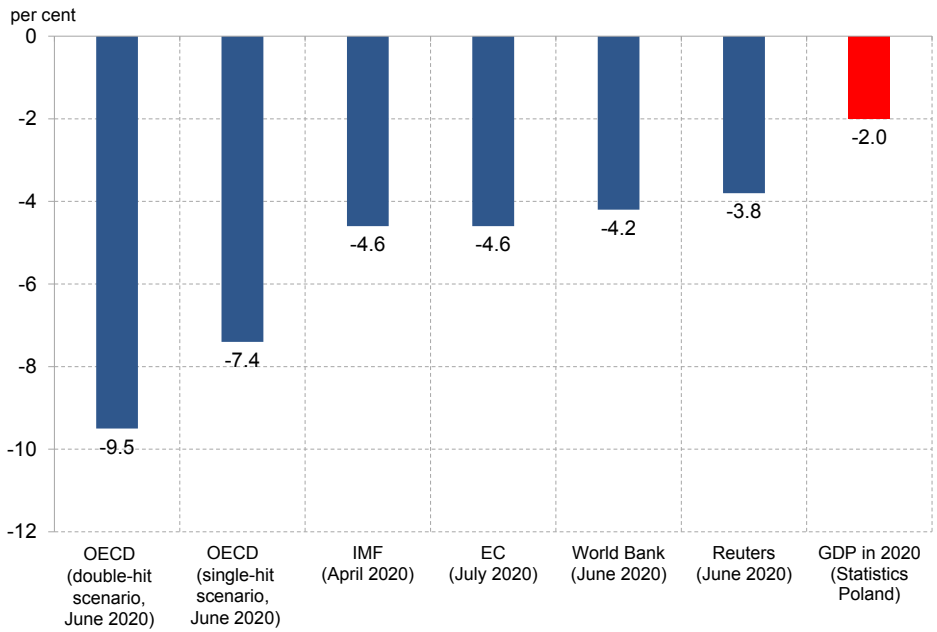
I would also like to point out that the actions taken by NBP in 2020 have been positively assessed.

- In its report on the review of Poland's economy under Article IV of the IMF Statute, the IMF indicated that upon the onset of the pandemic, monetary policy was eased promptly and adequately (IMF, 2021).

- At the same time, in its *Economic Surveys Poland 2020* report, the OECD underlined that monetary policy was appropriately loosened and its response to the unfolding pandemic crisis was firm and swift (OECD, 2020a).
- Also, World Bank economists observed that NBP's response to the pandemic shock was quick, firm and effective.[3]

Figure 12.

Forecasts of GDP growth in Poland for 2020 and the outcome



Source: Statistics Poland data, forecasts – Reuters, World Bank, European Commission, OECD, IMF.

3 Interview with Asli Demirgüç-Kunt, Chief Economist of the World Bank for the Europe and Central Asia Region, Obserwator Finansowy (Obserwator Finansowy, 2021).

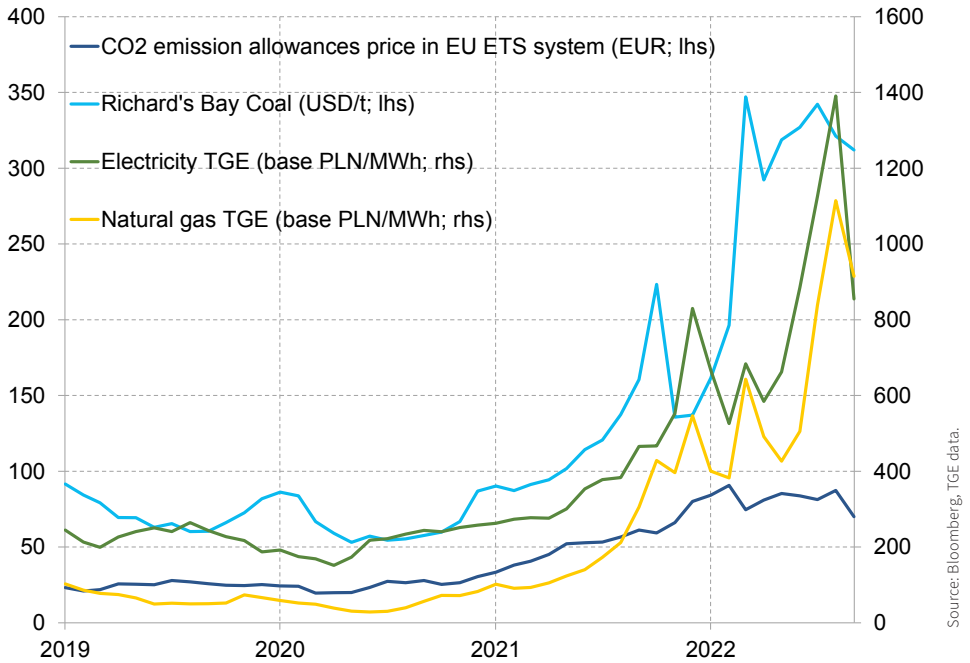
Inflation surge in 2021-2022

In 2021 the impact of supply-side factors on inflation was evident.

- From September 2021 global prices of energy commodities rose, particularly those of natural gas and coal (Figure 13).
- At the same time, the prices of greenhouse gas emission allowances continued to grow considerably.
- Prices of agricultural commodities also continued to grow sharply, pushing the index of these prices to the highest level in many years.

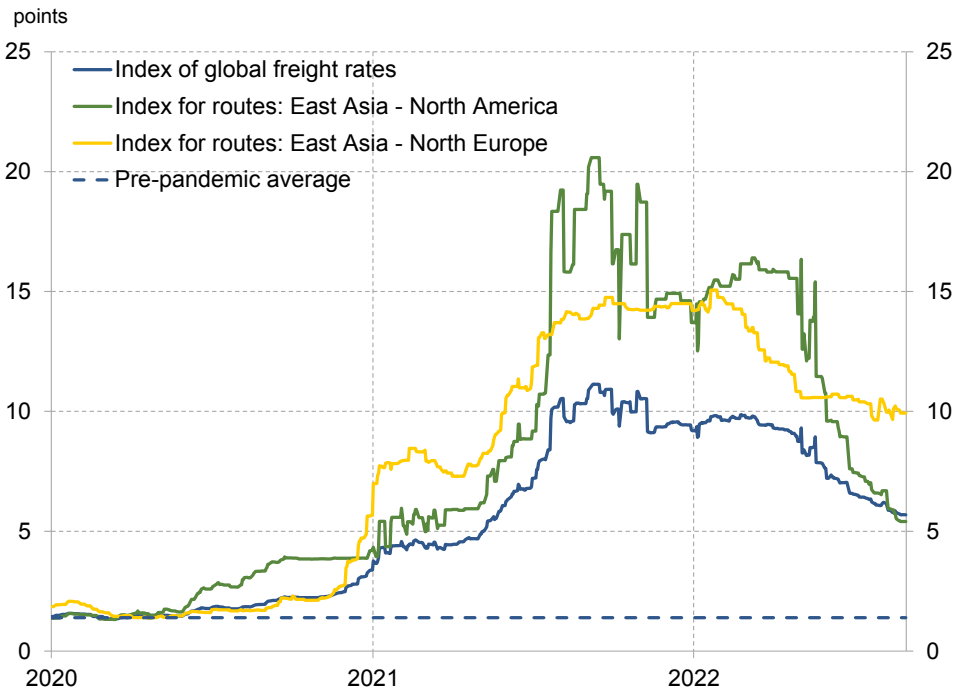
In addition, pandemic disruptions in global supply chains were continuing, which translated, among other things, into a sharp rise in freight prices (Figure 14).
In average annual terms the global freight price index in 2021 was nearly four times the 2020 figure.

Figure 13.
Energy commodity prices



Source: Bloomberg, TGE data.

Figure 14.
Global freight prices



Source: Datastream data.

The armed aggression of the Russian Federation against Ukraine in late February 2022 contributed to a surge in global commodity prices. This stemmed from concerns about continuity of deliveries amid the already existing supply constraints (primarily from Russia; Figure 13).

- The price of Brent oil (in USD/bbl) increased by approx. 40% in 2022 in average annual terms and was more than 70% higher than the average of 2015-2019.
- In 2022, historically high prices of natural gas were recorded, according to the TTF benchmark4 (in USD/MWh). In average annual terms, they rose by roughly 150%, and were seven times the average figure of the period 2015-2019.

- The decline in the gas supply in the European market translated into increased demand for coal for energy generation. Due to higher demand, Richards' Bay hard coal prices (in USD/t) more than doubled in 2022 on an annual average basis, and were 270% higher than the average of 2015-2019.
- The Russian military aggression against Ukraine also resulted in a further increase in prices of agricultural commodities. This was driven by the reduced supply of some of them and severe cost pressures (caused by higher energy and input prices, including fertilisers). In consequence, the index of agricultural commodities calculated by NBP increased in average annual terms by approx. 40% in 2022 and was almost 55% higher than the average of 2015-2019.

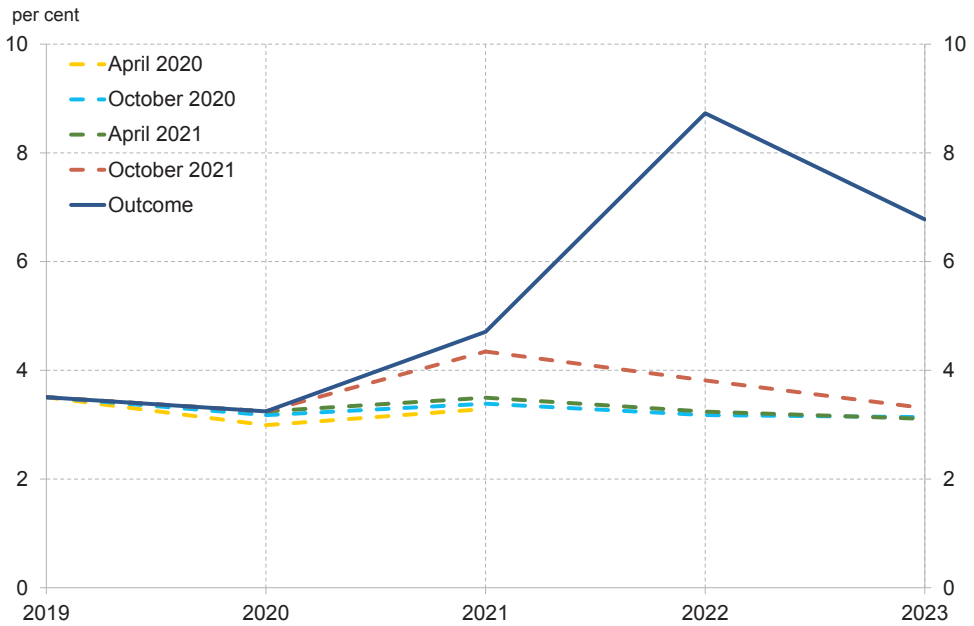
At the same time, the recovery after the pandemic crisis, which had started in 2021, proceeded. It was associated with pent-up demand. Combined with the increase in commodity prices and supply disruptions, this was a factor contributing to higher inflation in this period.

The improved business conditions were accompanied by forecasts pointing to a further recovery in global GDP growth, but with a short-lived and temporary pick-up in inflation – in particular, the IMF's 2020 and 2021 forecasts, although gradually revised upwards, failed to predict the actual scale of the inflation surge (Figure 15). Indeed, initially it was widely assessed that the rise in inflation would be moderate and temporary and would not require a monetary policy response, as evidenced by statements from officials of major central banks:

- In March 2021, the Fed Chairman, Jerome Powell, said: "Over the next few months, 12-month measures of inflation will move up [...], these one-time increases in prices are likely to have only transient effects on inflation." (Fed, 2021)
- In September 2021, the President of the ECB, Christine Lagarde, indicated that: "The key challenge is to ensure that we do not overreact to transitory supply shocks that have no bearing on the medium term [...]" (ECB, 2021).

Figure 15.

IMF global inflation forecasts and the outcome



Source: NBP compilation based on IMF data and forecasts.

The persistence of the shocks, including external negative supply shocks – and hence also the inflation surge – proved to be more entrenched than expected. Under these circumstances, inflation rose sharply in many countries, reaching the highest levels in decades and significantly exceeding central banks' targets (Table 1). The global character of the shocks faced by many economies at that time drove global inflation in 2022 to 8.7% y/y according to IMF data, i.e. the highest level since 1996.

- Also, in many developed economies, inflation in 2022 was the highest in decades: in the United States since 1981, in Germany since 1974, and in the euro area since its formation.

- In many economies of Central and Eastern Europe, in turn, inflation in 2022 was the highest since the times of systemic transformation, including in Czechia since 1993, in Slovakia since 1994, and in Poland and Hungary since 1997.

Table 1.

Inflation in the number of countries in 2022 reached the highest levels in decades

	Germany	United States	Czechia	world	Poland
highest inflation since	1974	1981	1993	1996	1997

Source: NBP compilation based on Statistics Poland, IMF, national statistical offices data.

In all the countries of Central and Eastern Europe inflation hit double-digit levels, exceeding 20% in some of them (Figure 16). The higher inflation than in Western Europe was driven by:

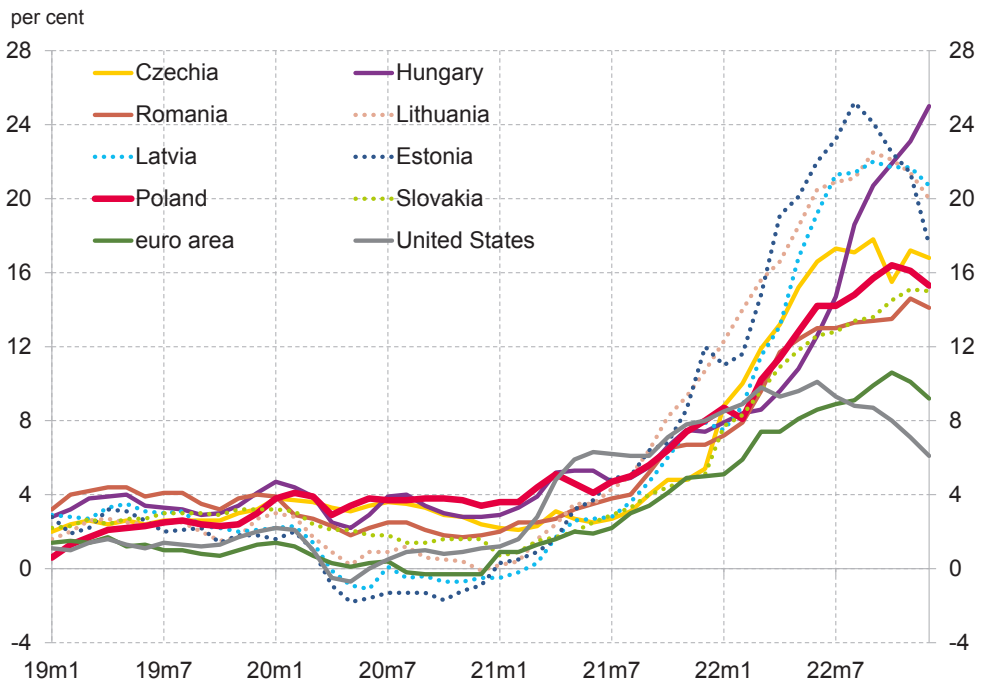
- a higher share of spending on energy and food (i.e. the categories which had experienced the sharpest price rise) in the countries of Central and Eastern Europe,
- a faster recovery in demand in the region – except for Czechia – than in the economies of Western Europe,
- the fact that producers were able to pass on increases in production costs to consumer prices more easily, enabled by the improved economic conditions.

Inflation also increased considerably in Poland in 2022, mainly on the back of the sharp rise in global commodity prices. Inflation was moreover boosted by the disruptions in global supply chains and high transportation costs in international trade. This was accompanied by a recovery in domestic economic activity, including in demand.

Compared to other countries, the inflation rise in Poland did not stray from that observed in other Central and Eastern European countries. Some states experienced slightly slower price growth, others – faster, and in some cases even considerably faster (in Hungary and the Baltic states inflation exceeded 20%).

Figure 16.

Inflation in selected economies



Source: Eurostat data.

A study by economists from the International Monetary Fund (Dao et al., 2024) points out that the marked rise in inflation in Poland after the pandemic resulted primarily from external sources, notwithstanding the fact that core inflation also rose to high levels. The increase in core inflation, however, largely reflected previous rises in commodity prices and tensions in supply chains. The authors pointed out three main factors which bolstered inflation in Poland. These included:

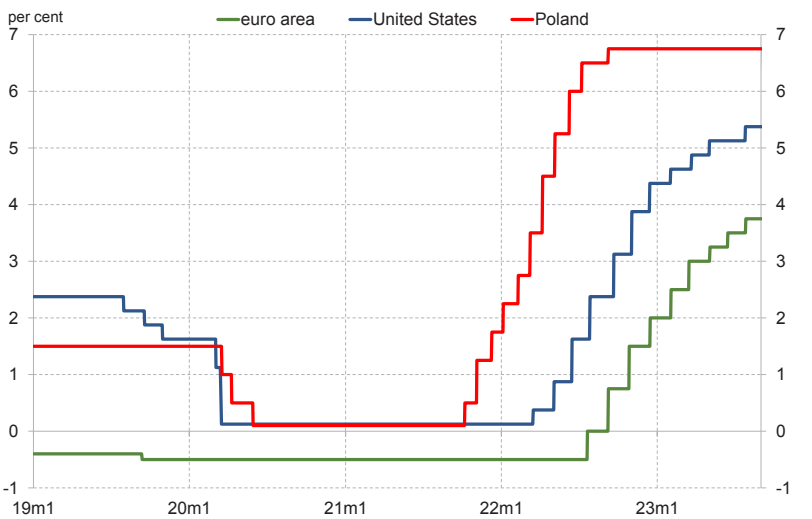
- the spike in energy prices,
- disruptions in global supply chains,
- the rise in food prices.

In line with its constitutional and statutory objectives, NBP acted swiftly and decisively to prevent elevated inflation from becoming entrenched.

- Between October 2021 and September 2022, the reference rate was increased from 0.1% to 6.75% at 11 consecutive Council meetings.
- NBP also ceased to offer bill discount credit and discontinued bond purchases under structural operations at the end of 2021.
- Moreover, NBP raised the required reserve ratio to the pre-pandemic level of 3.5%.

Figure 17.

Central bank interest rates in Poland, the euro area and the United States



Source: Bloomberg data.
Note: Central bank interest rate: for the United States – the midpoint of the fed funds range; for the euro area – the deposit facility; for Poland – NBP reference rate.

The tightening of monetary policy was therefore very strong (Figure 17). The total scale of increases in the NBP reference rate was 6.65 p.p., the largest in the history of the Monetary Policy Council (i.e. since 1998). As a result, from September 2022, the NBP reference rate was at its highest since the NBP inflation target was set at its current level (i.e. since 2004).

Importantly, interest rate rises during the rise in inflation following the pandemic crisis were launched in Poland earlier and on a larger scale than in most OECD countries, including major economies such as the euro area (nine months earlier), the United States (almost six months earlier), the United Kingdom, Sweden and Switzerland. For example, in mid-July 2022, when the ECB deposit rate stood at -0.50%, the NBP reference rate was already 6.50%.

At this point I would like to remind you that NBP's response to heightened inflation has been assessed positively by international institutions.

- In February 2022, the International Monetary Fund (IMF, 2022a) emphasised the appropriateness of the monetary policy tightening by NBP, including the termination of asset purchases.
- In February 2023, the OECD assessed that NBP had embarked on monetary policy tightening earlier than many other central banks (OECD, 2023)
- In June 2023, the International Monetary Fund stressed that the NBP interest rate rises were adequate and effective (IMF, 2022b)

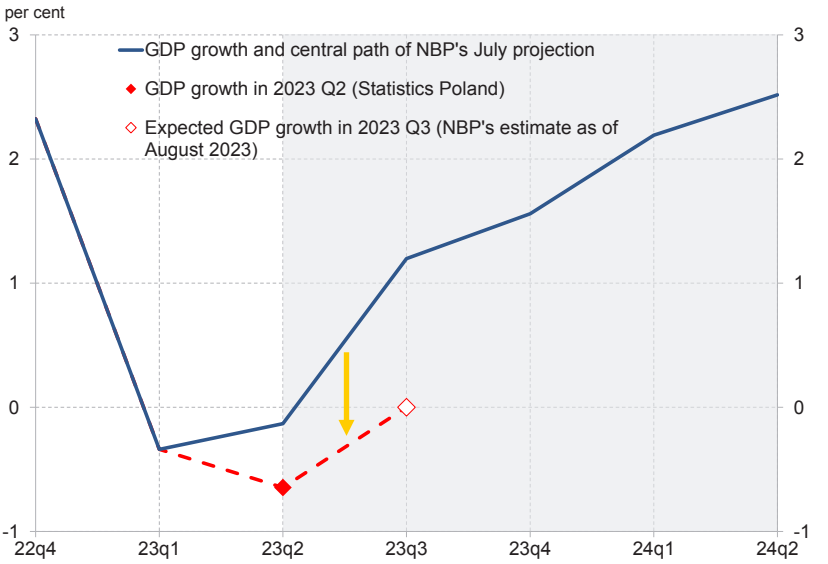
Interest rate adjustment in 2023

Before the Council meeting in September 2023, incoming data on economic activity in Poland and its external environment showed that economic activity had slowed down and was considerably weaker than previously expected, which was conducive to a faster easing of inflation pressure.

- With the economic conditions worsening abroad, economic activity growth in Poland weakened markedly in 2023. Notably, in 2023 Q2, household consumption declined for another consecutive quarter (the fall being the deepest since at least 1996, i.e. the period for which comparable data are available). This indicated a very sharp decline in demand pressure (Figure 18).

Figure 18.

GDP growth – outcome for 2023 Q2 and NBP's estimates for 2023 Q3 against NBP's July 2023 projection

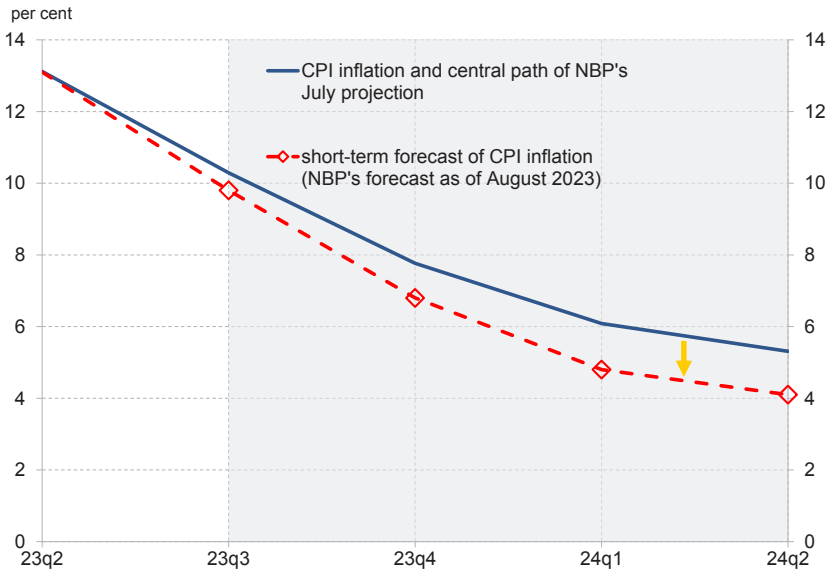


Source: Statistics Poland data, NBP calculations.

- Weaker activity combined with a faster than expected fall in inflation suggested that the medium-term outlook for inflation may also be lower than foreseen (Figure 19).
  - Incoming data indicated that annual GDP growth in 2023 Q3 might be close to zero, i.e. significantly slower than forecast.
  - Also, the structure of growth pointed to weaker demand pressure due to the persistently negative domestic demand growth, including a deeper decline in household consumption.
  - Moreover, lower than previously expected data on inflation in Poland available in September and October 2023 indicated that the medium-term path of price growth may run below forecasts, and inflation may return to the target level more quickly.

Figure 19.

Inflation – NBP's short-term forecast as of August 2023 against NBP's July 2023 projection



Source: Statistics Poland data, NBP calculations.

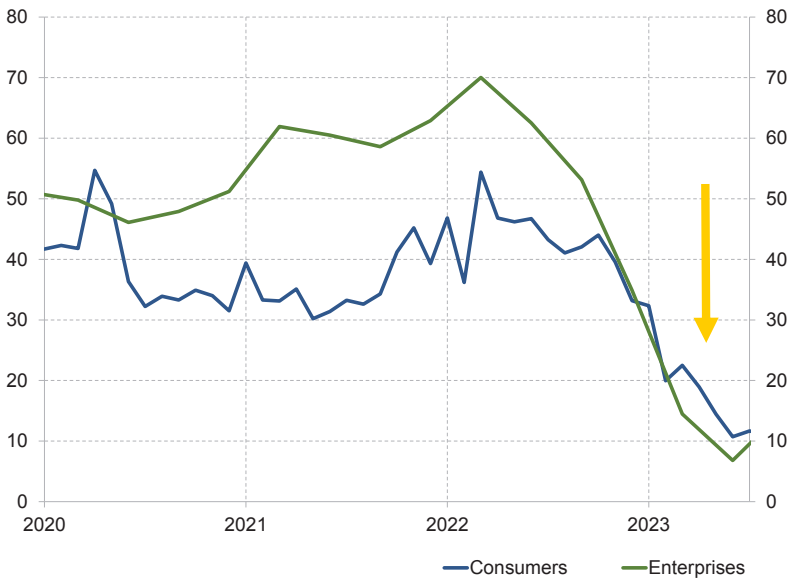
- According to NBP forecasts available at the Council meeting in September 2023, in the subsequent quarters the disinflation process was to be faster than expected in the July 2023 NBP projection.

The effects of the earlier sharp tightening of the NBP monetary policy and of interest rates being kept high for a year were evident in, among other things, the development of inflation expectations and the situation in the credit market.

- Most measures of inflation expectations pointed to a decline in CPI inflation both in the short and in the medium term (Figure 20). In August 2023 the measures of consumer inflation expectations fell, and in 2023 Q2 there was a further decline in inflation expectations of enterprises.
- Interest rates on new and renegotiated housing loans, consumer loans and business loans were markedly higher in July 2023 than in September 2021, largely reflecting the monetary tightening that had taken place. As a result, bank credit in the economy was declining in annual terms (Figure 21). Lower lending acted to weaken demand pressure and to curb inflation

Figure 20.

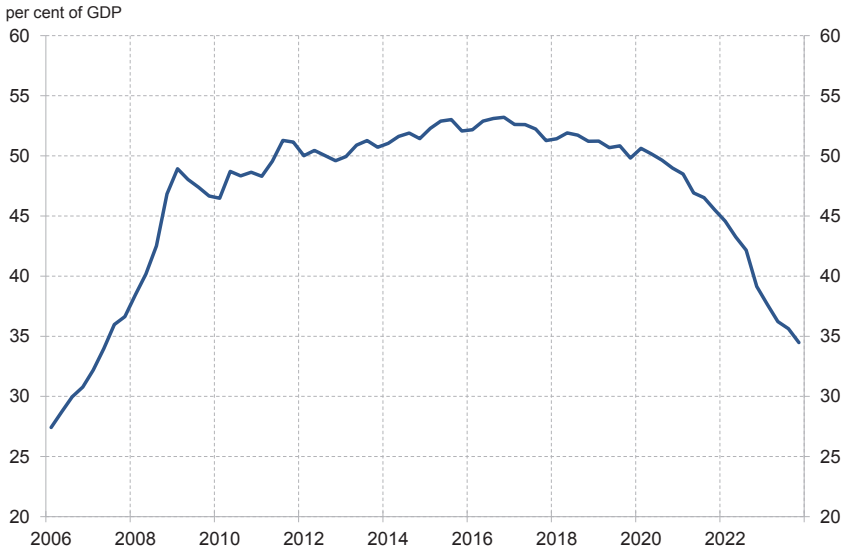
Balance statistics on consumers' and enterprises' inflation expectations



Source: Statistics Poland data, NBP calculations.
Note: Inflation expectations of enterprises on quarterly frequency and inflation expectations of consumers on monthly frequency.

Figure 21.

Household and non-financial corporate bank debt relative to GDP



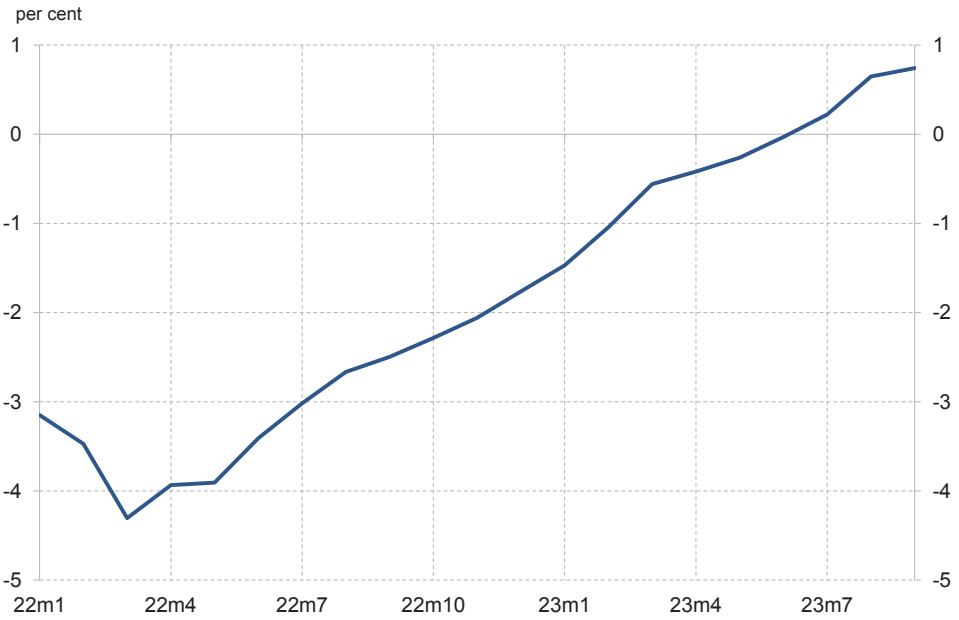
Source: Statistics Poland, NBP data.

The rapid fall in inflation and the marked softening of inflation expectations meant that amid unchanged NBP interest rates, the restrictiveness of monetary policy, measured by the level of *ex post* and *ex ante* real interest rates, increased (Figure 22).

- In August 2023, the restrictiveness of monetary policy measured by the level of *ex ante* real interest rates (deflated by inflation expectations of financial sector analysts for the 4 subsequent quarters), was the highest since January 2013.
- In turn, the real interest rate measured *ex post,* i.e. including the current inflation readings, was in August 2023 the highest since March 2021, and was soon to rise sharply along with the expected decline in inflation.

Figure 22.

Ex-ante real interest rate (3-month average)

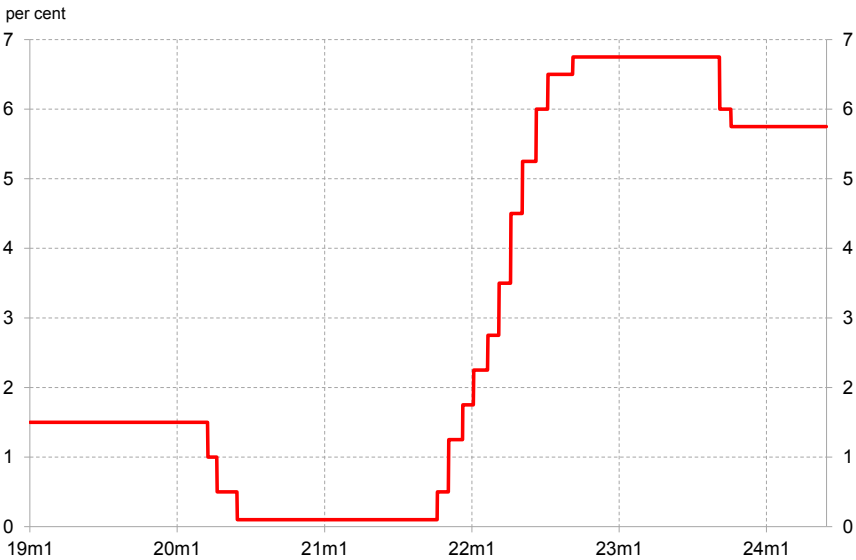


Source: Statistics Poland, Bloomberg data, NBP calculations.
Note: *Ex-ante* real interest rate based on forecasted inflation at four quarters horizon according to the median of expectations of analysts polled by Bloomberg.

- Given this background – and the lags with which monetary policy decisions affect the economy – at its meetings in September and October 2023 the Council adjusted NBP interest rates, including cutting the NBP reference rate in total from 6.75% to 5.75% (Figure 23).
- The decisions were consistent with the aim of bringing inflation back to the NBP target in the medium term, while supporting sustainable economic growth and financial stability.
- The decrease in inflation in late 2023 and early 2024 indeed proved stronger than predicted. Inflation returned to the level consistent with the NBP inflation target at the beginning of 2024, i.e. earlier than most forecasts formulated in 2023 had envisaged.
- It is worth noting that in the second half of 2023, other central banks from Central and Eastern Europe also eased monetary policy. The National Bank of Hungary has steadily loosened monetary policy since April 2023, including by introducing interest rate reductions. The Czech National Bank, in turn, started lowering interest rates in December 2023.

Figure 23.

NBP reference rate



Source: NBP data.

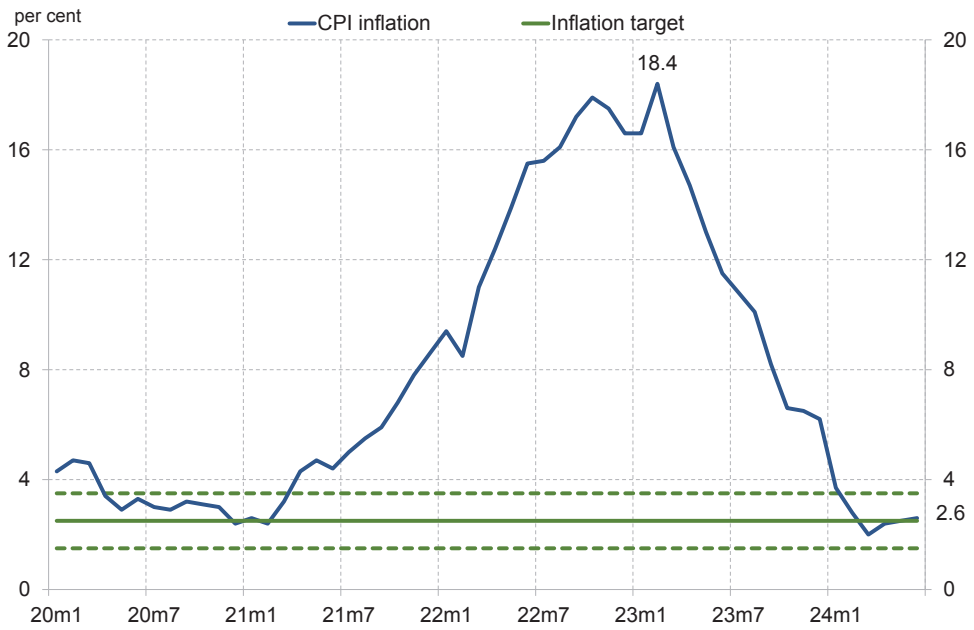
Macroeconomic stability of the Polish economy

I would like to make it clear that NBP's appropriate monetary policy of 2020-2024 has enabled the return of inflation to the target despite the very severe shocks affecting the Polish economy in that period (Figure 24), with the economic costs of disinflation being limited. In 2024 Q2, real GDP growth was 13% higher than 2019 Q4 (Figure 25). In the same period, real GDP in the euro area grew by 4%.

- In particular, due to the decisive easing of monetary policy by NBP in 2020, among other things, the pandemic recession in Poland was relatively short and shallow and followed by a robust recovery.
- The later fast and substantial tightening of the NBP monetary policy in response to the surge in inflation was, in turn, conducive to a rapid disinflation in Poland, which was accompanied by only a temporary weakening of economic activity, while the situation in the labour market remained good.

Figure 24.

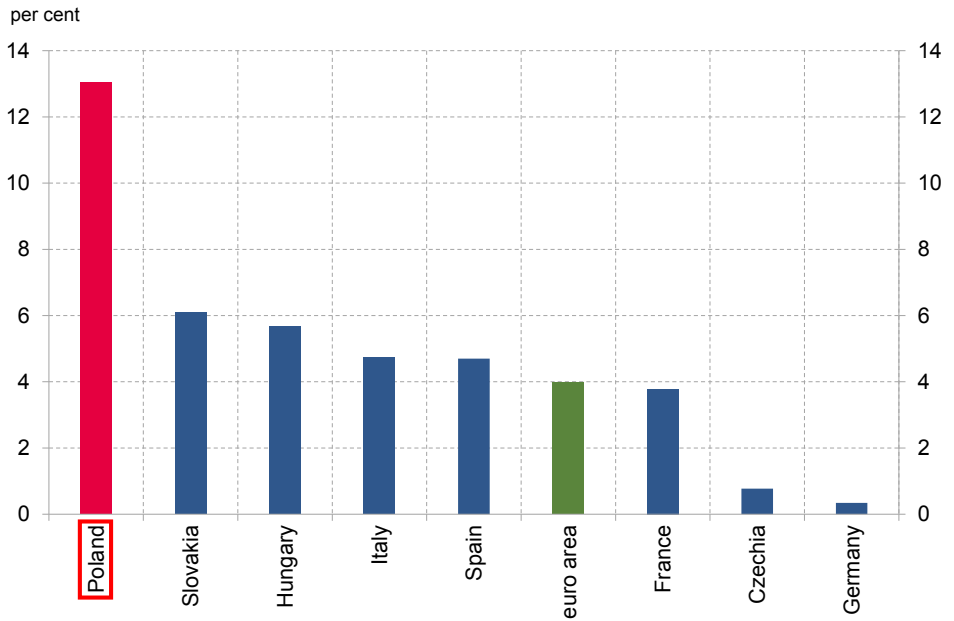
CPI inflation against the NBP inflation target between January 2020 and June 2024



Source: Statistics Poland, NBP data.

Figure 25.

Real GDP growth between 2019 Q4 and 2024 Q2 in selected economies



Source: Eurostat data, NBP calculations.

To sum up, I would like to emphasise that in recent years Poland has faced a series of severe shocks, including the pandemic and the outbreak of the war in Ukraine. During the pandemic crisis, the decisive NBP response – in the form of significant monetary policy easing – helped to mitigate the economic consequences of the crisis, which was reflected in a relatively small decline in GDP in 2020. In turn, the later measures taken by NBP have contributed to a sharp fall in inflation while minimising the disinflation costs to the economy. Despite the unprecedented scale of the shocks and the tightening of monetary policy, the unemployment rate in Poland continued to be among the lowest in the European Union and is currently close to its historical lows, whereas in the past, periods of disinflation in Poland were accompanied by a steep rise in

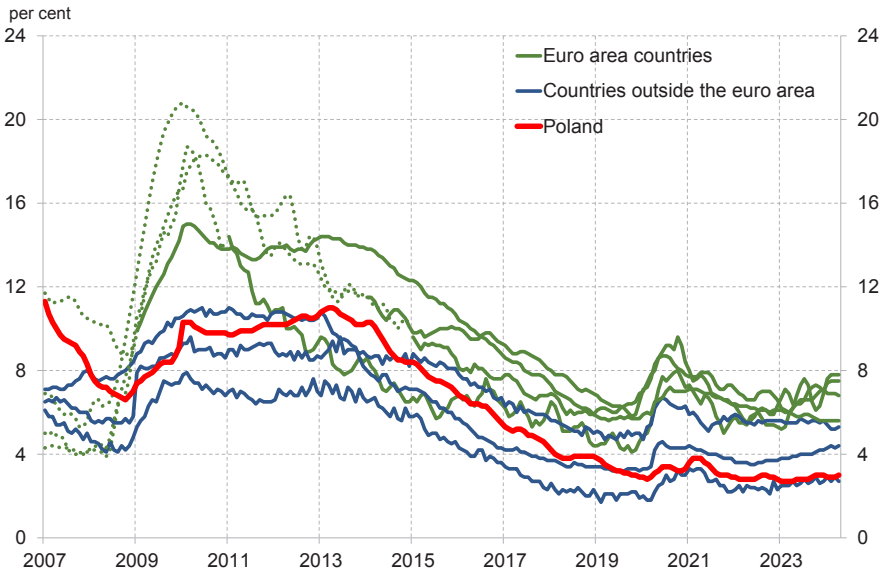
unemployment (Figure 26). The rapid decline of inflation to a level consistent with the NBP target, while keeping unemployment low, is evidence of the effectiveness of NBP's monetary policy in recent years.

It is worth adding that the convergence process has continued.

- In 2023, Poland's GDP per capita (adjusted for differences in price levels) stood at 80% of the EU average, while before the pandemic this was 73% of the EU average.
- The latest forecasts by the International Monetary Fund indicate that as early as 2026 Poland is set to overtake the current level of Spain's GDP per capita, adjusted for differences in price levels.
- If the current trends continue, Poland will catch up with the current level of income per inhabitant of Italy, the United Kingdom and France in 5-7 years (Figure 27). In turn, in approximately a decade Poland should reach the current level of per capita GDP in Germany.

Figure 26.

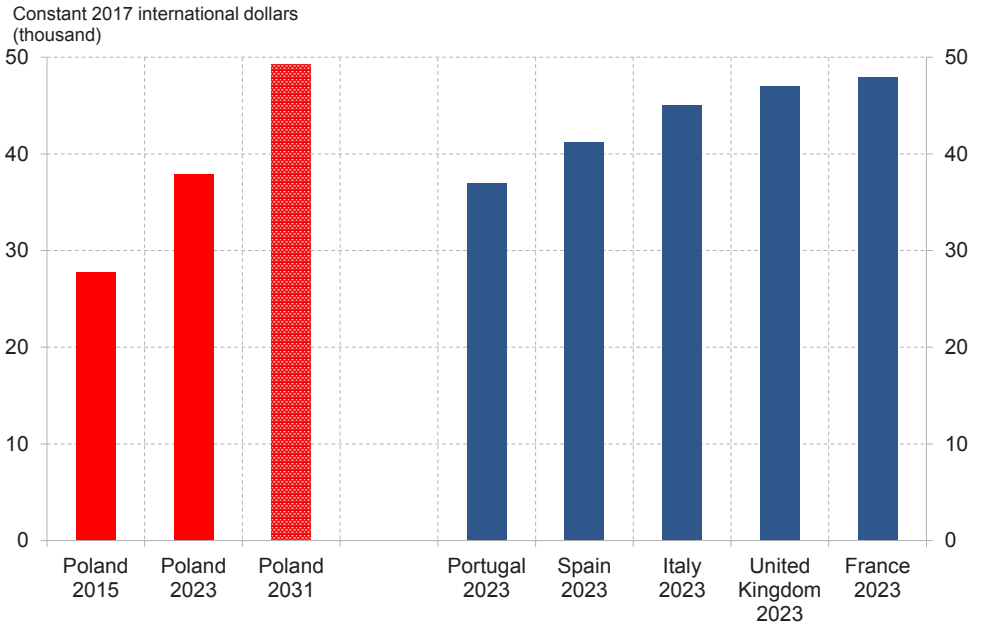
Unemployment rate in Central and Eastern European countries



Source: Eurostat data.
Note: Slovakia joined the euro area in 2009, Estonia in 2011, Latvia in 2014 and Lithuania in 2015. These countries were included in the European exchange rate mechanism (ERM II) in the period preceding accession to the euro area (marked with a dotted line).

Figure 27.

GDP per capita (purchasing power parity)



Source: IMF data, NBP calculations.

Note: Forecast for 2031 based on IMF forecast until 2029 and later on based on the assumption that GDP per capita growth in Poland in 2030-2031 will be the same as on average in 2025-2029.

NBP under my leadership will continue to fulfil its constitutional and statutory obligations, ensuring low inflation and macroeconomic stability. In this manner, NBP, as before, will continue to contribute to the Polish economic miracle.

Bibliography

1. Arena M., Bems R., Ilahi N., Lee J., Lindquist W., Lybek T. (2021), *Asset Purchase Programs in European Emerging Markets*, IMF Departmental Paper Series, DP/2021/021.
2. Arslan Y., Drehmann M., Hofmann B. (2020), "Central bank bond purchases in emerging market economies", *BIS Bulletin*, No. 20, June 2020, Basel.
3. Bernanke B. S. (2020), "The new tools of monetary policy", *American Economic Review*, vol. 110, No. 4.
4. Dao, M. C., Gourinchas, P.- O., Leigh, D., Mishra, P. (2024), *Understanding the international rise and fall of inflation since 2020*, NBER Conference: "Inflation in the COVID Era and Beyond, Spring 2024".
5. ECB (2020), *Introductory Statement – Christine Lagarde, Luis de Guindos*, Frankfurt am Main, 12 March 2020.
6. ECB (2021), *Beyond the pandemic: the future of monetary policy*, speech by Christine Lagarde at the ECB Forum on Central Banking, Frankfurt am Main, 28 September 2021.
7. European Commission (2020), *European Economic Forecast: Summer 2020 (Interim)*, Institutional Paper 132.
8. Fed (2020), *Transcript of Chair Powell's Press Conference*, 29 July 2020.
9. Fed (2021), *Transcript of Chair Powell's Press Conference*, 17 March 2021.
10. Fratto C., Vannier H. B., Mircheva B., de Padua D., Poirson H. (2021), *Unconventional Monetary Policies in Emerging Markets and Frontier Countries*, IMF Working Paper WP/21/14.
11. Hammermann F., Leonard K., Nardelli S., von Landesberger J. (2019), "Taking stock of the Eurosystem's asset purchase programme after the end of net asset purchases", *Economic Bulletin Articles*, European Central Bank, vol. 2.
12. IMF (2020a), *World Economic Outlook, April 2020*, Executive Summary.
13. IMF (2020b), *World Economic Outlook: The Great Lockdown*.

14. IMF (2021), *Republic of Poland: 2020 Article IV Consultation-Press Release; Staff Report; and Statement by the Executive Director for the Republic of Poland*, IMF Country Report, 21/35.
15. IMF (2022a), *Republic of Poland: 2021 Article IV Consultation-Press Release; Staff Report; and Statement by the Executive Director for the Republic of Poland*, IMF Country Report, 22/58.
16. IMF (2023b), *Republic of Poland: 2023 Article IV Consultation-Press Release; and Staff Report, IMF Country Report*, 23/189.
17. Obserwator Finansowy (2021), "World Bank: NBP's response – swift, large and effective in limiting the economic scarring effects of the pandemic", interview of Maciej Danielewicz with Asli Demirgüç-Kunt, *Obserwator Finansowy*, [online], [accessed on: 20.08.2024]. Available at: https://www.obserwatorfinansowy.pl/bez-kategorii/rotator/bank-swiatowy-reakcja-nbp-na-szok-pandemii-szybka-stanowcza-i-skuteczna/
18. OECD (2020a), *OECD Economic Outlook*, Volume 2020, Issue 1.
19. OECD (2020b), *OECD Economic Surveys: Poland 2020*.
20. OECD (2023), *OECD Economic Surveys: Poland 2023*, OECD Publishing, Paris.
21. World Bank (2020), *Global Economic Prospects*, June 2020, Washington DC.

100th Anniversary of the Establishment of Bank Polski SA
(2024, collector coin)

100th Anniversary of Putting the Złoty into Circulation
(2024, collector coin)

100th Anniversary of Regaining Independence by Poland
(2018, spherical silver collector coin)

100th Anniversary of Regaining Independence by Poland
(2018, spherical gold collector coin)

2

WHY IS IT WORTH HAVING A NATIONAL CURRENCY? RISKS ASSOCIATED WITH THE ADOPTION OF THE EURO

The zloty: a driver of Poland's fast and sustainable development

"Having a currency of one's own, the Polish zloty, is as important as having one's own territory, one's own national symbols, one's own government, parliament, or president. These are the basic elements of independence." – this is a fragment of my reply to questions asked by the children invited to Narodowy Bank Polski on Children's Day in 2019.

Such a critical issue as preserving a national currency must be the subject of a nationwide discussion and decision. Irrespective of this fact, from a purely economic point of view any discussion on a potential accession to the euro area may make sense only in about a decade or so, when – assuming that the current long-term trends will continue and a good economic policy is still pursued – Poland's GDP per capita, adjusted for purchasing power, more or less equals the current corresponding index in affluent Western European countries. Only at this point would the adoption of the euro no longer be a blow to Poland's sustainable development and the wellbeing of Poles. A blow to the Poles' aspirations to achieve as soon as possible the living standards of Western Europeans. Below, I present to you a purely economic analysis of the topic. At the same time it is worth remembering that economic issues are just one of the aspects relevant to the choice of the legal tender. The issues of national identity, cultural heritage and independence are equally relevant.

The euro area: one currency and different economies

The euro area unifies countries with different levels of prosperity and different structural characteristics with a single currency. It is not possible to make the monetary policy of the European Central Bank optimal for all economies at the same time. Meanwhile, the ECB sets interest rates that are the same for all economies. This is the "original sin" of the euro area, causing that the assumed benefits of currency integration have not been achieved while the risks of the common currency have materialised. Below, I will list the main differences between euro area economies:

- The rate of GDP per capita in 2023 according to purchasing power parity ranged from 67% of the EU average in Greece to nearly 240% in Luxembourg (in Poland it reached 80%).[1] Growth is generally faster in less affluent economies. Therefore, these economies generally need higher interest rates to maintain stable and sustainable growth.
- The public debt to GDP ratio in the Baltic States and in Slovakia is below 60%. On the other hand, it is higher than 100% for France, Italy, Spain, Belgium, Portugal or Greece. A change in interest rates has a more significant impact on public finance of highly indebted countries. This is one of the reasons why countries with higher indebtedness usually opt for a more accommodative monetary policy.
- Even a more considerable difference can be seen in the case of non-financial private sector debt (households and non-financial corporations). In France and the Netherlands it exceeds 200% of GDP, while in Lithuania and Latvia it slightly exceeds 60% of GDP (in Poland, 63% of GDP). Consequently, interest rate changes introduced by the ECB affect individual economies to a various extent.
- Moreover, euro area economies also differ in terms of their net position in assets held and liabilities to other economies. For example, the international investment position in the southern countries of the euro area is strongly negative (in 2024 Q1, in Greece it amounted to -139% of GDP, in Portugal, to -68% of GDP, in Spain, to -52% of GDP). On the other hand, in Germany and in the Netherlands, the net international position was clearly positive (+74% of GDP and +47% of GDP, respectively). As a consequence,

1 Excluding Luxembourg and Ireland, the Netherlands had the highest rate of GDP per capita, i.e. 130% of the EU average.

countries that are net creditors usually opt for higher interest rates while countries that are net debtors most often opt for lower interest rates.

- The euro area economies also demonstrate a diverse sectoral structure of the economies. The role of industry in the creation of value added ranges from approx. 13% in France to approx. 24-25% in Germany and Slovenia (in Poland, also approx. 25%). Accordingly, the response of economies to shocks differs. For example, disruptions in global trade or energy shocks have strongly negatively affected economies with a high share of industry (including Germany). On the other hand, countries of southern Europe feature a greater role of tourist services. The pandemic shock resulted in almost double decline in GDP in tourism-reliant Spain (by more than 11% in 2020) than in the euro area on average.
- Euro area economies demonstrate a considerable diversification of labour market indicators, such as the unemployment rate, labour force participation rate, average working time. Unemployment rates in Spain and Greece now exceed 10%, whereas in Germany the rate slightly exceeds 3%. This differentiation is of a permanent nature. It mainly results from structural differences, among others, relating to unemployment benefit levels, legal protection against redundancy, forms of employment, wage indexation mechanisms, rate of trade union membership. This diversification in the structural characteristics of labour markets is one of the sources of different response of individual euro area economies to economic shocks common to the entire monetary union (including to changes in the monetary policy). For example, the Global Financial Crisis has caused a visible decline in employment in the Baltic States (augmented by mass emigration from these countries) and Spain. On the other hand, in Italy or Germany a significant reduction in average working hours allowed to avoid marked declines in employment.[2]
- The diversification of euro area economies in terms of labour market flexibility (including, for example, wage rigidity or flows between employment and unemployment) is also an important factor determining the adaptation of economies to shocks (including so-called asymmetric shocks, i.e. those affecting a particular economy rather than the entire euro area) in

2 The outbreak of the COVID-19 pandemic contributed to changes in labour market adjustment mechanisms in EU countries. In order to protect employment, all EU member states introduced state aid schemes. Under these conditions, the decline in demand resulted in a marked reduction in the average number of hours worked and a moderate reduction in employment.

the absence of an independent monetary and currency exchange rate policy. This is due to the fact that interest rates in the euro area are set taking into account the macroeconomic situation in the euro area as a whole (which is determined by the situation in the largest economies, including, in particular, Germany and France), which may be different in the economy affected by an asymmetric shock. Consequently, economic adjustments in a country affected by an asymmetric shock depend on structural features in the labour market, including its flexibility.

- Due to differences between euro area economies, inflation processes sometimes develop in a different way or vary in terms of intensity. This was particularly evident during the last global inflation shock. For example, in August 2022, HICP inflation in Estonia reached 25.2% and in France – 6.6%. Nevertheless, the ECB interest rate had to be determined at the same level for all euro area economies. The diversity of inflation processes in the environment of uniform interest rates can result in the diversification of the magnitude of expansiveness/restrictiveness of monetary policy, exerting a destabilising effect on economies (Walters, 1990).

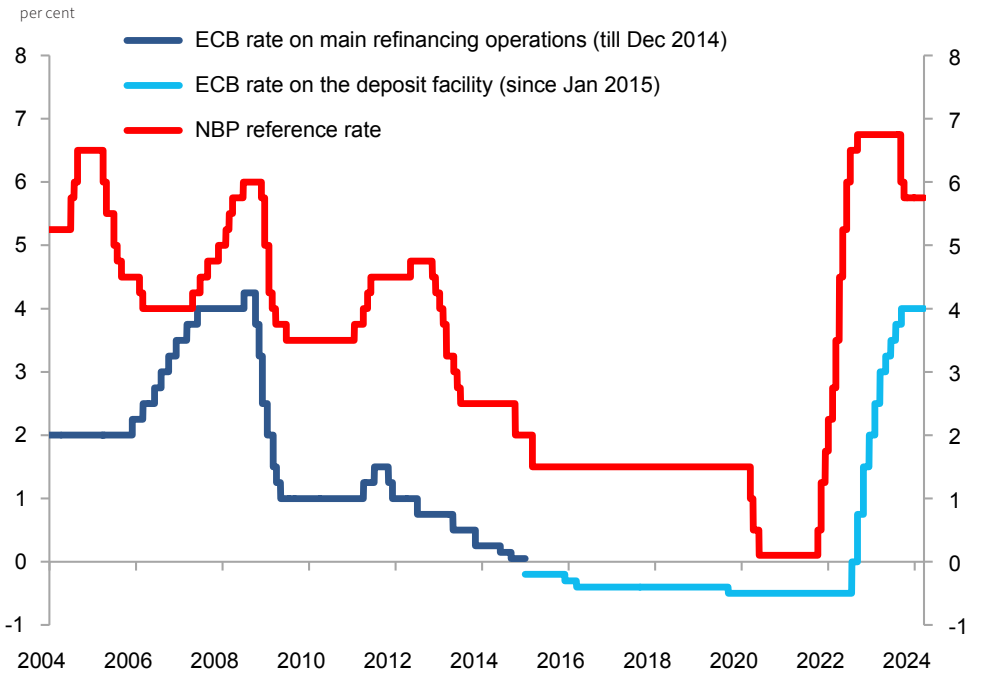
National currency enables the adjustment of interest rates to domestic economy needs

In the euro area, the monetary policy and interest rates are determined taking into account primarily the economic situation in the largest economies, thus, in fact, Germany and France. Meanwhile, the economic situation and inflation processes in Poland often continue differently than in those economies (growth is generally faster and inflation higher). This means that a monetary policy different than the policy pursued by the ECB may be optimal for stabilising the economic situation and the economy in Poland.

As the experience of the last twenty years shows, the NBP interest rate was determined at a level significantly higher than the ECB interest rate. From January 2004 to March 2024, the average NBP reference rate amounted to 3.4%, i.e. 2.3 p.p. above the average level of the key ECB rate (Figure 1, Figure 2).

Figure 1.

NBP reference rate against the key ECB rate

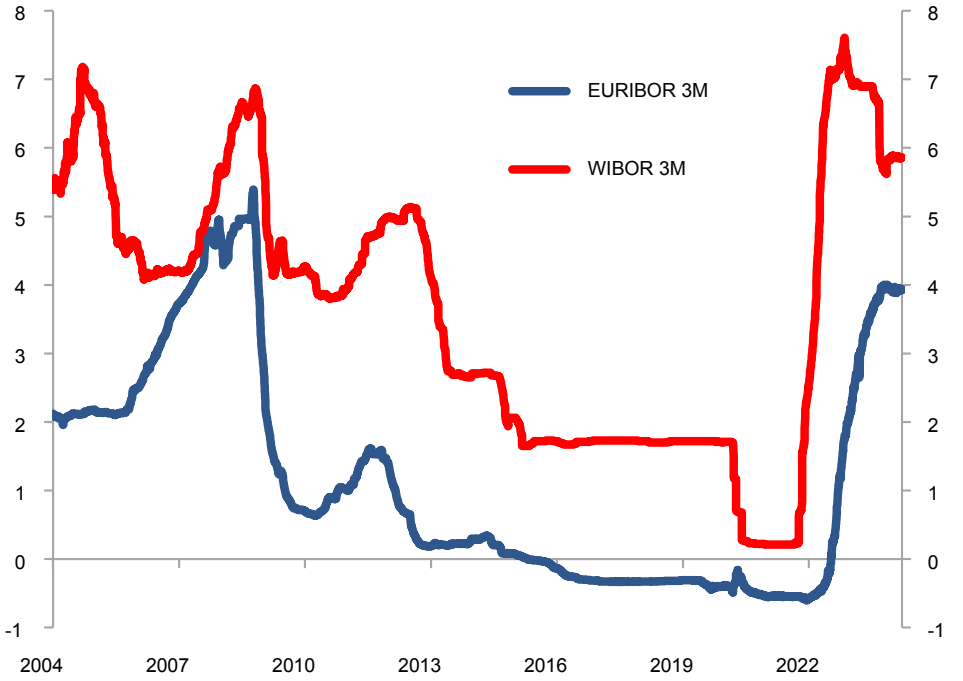


Source: Bloomberg data.

The deviations between the NBP interest rate and the ECB rate are sometimes very significant. The largest difference reached 7 p.p. (in July 2022) due to the commencement of interest rate rises in Poland after the COVID-19 pandemic more than nine months earlier than in the euro area. The NBP reference rate was always positive (minimum level of +0.1%), while the ECB deposit rate was negative (minimum level of -0.50%) from June 2014 to July 2022.

Figure 2.

WIBOR 3M and EURIBOR 3M rates (%)

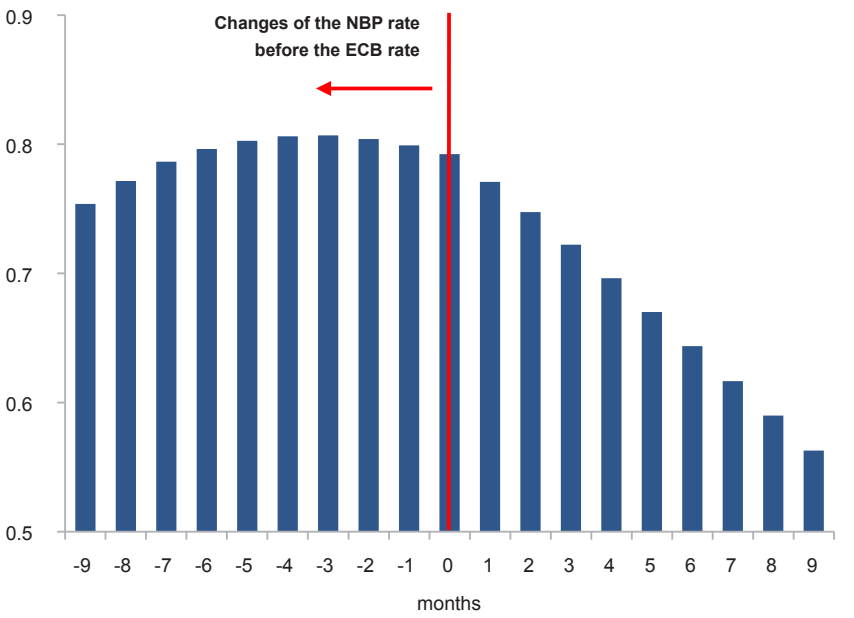


Source: Bloomberg data.

As Poland remains outside the euro area, Narodowy Bank Polski can conduct its monetary policy flexibly. Over the twenty years analysed (January 2004 to March 2024), the level of the NBP reference rate was changed more frequently (55 times) than the level of the key ECB rate (35 times). The correlation analysis shows that changes in the NBP reference rate occurred approximately 3-4 months earlier than changes in the key ECB rate, on average (Figure 3).

Figure 3.

Cross-correlation of the NBP reference rate against the key ECB rate (i.e. the correlation of the current ECB rate with the NBP interest rate in the previous and consecutive months) from January 2004 to March 2024



Source: Bloomberg data, NBP calculations.

I would point out that if Poland were in the euro area, interest rates would be lower (and even sometimes negative), which would pose a risk of destabilising the economy, leading to excessive credit growth and high inflation. The economic growth would probably accelerate on a temporary basis, followed by an economic downturn and perhaps many years of stagnation. At the same time, interest rates would be changed with a time lag in relation to the needs of the economy, additionally hampering keeping inflation at a low and stable level.

Poland's economy needs higher interest rates than euro area countries

Poland's accession to the euro area would involve interest rates decline below their long-run equilibrium level, creating a risk of generating economic imbalance.

Studies show that in Poland the level of of the long-run equlibrium rate, the so-called natural interest rate, is by up to approx. 2 p.p. higher than in the euro area. This can be associated primarily with the faster productivity growth in Poland resulting from the convergence process.

A higher natural interest rate in Poland compared to the euro area means that, in principle, the Polish economy needs higher interest rates than in the euro area to stabilise inflation at a low level. Studies suggest that such a difference could continue for many more years. On the other hand, after the accession to the euro area interest rates in Poland would fall – most likely in a long term – to levels below the natural interest rate for Poland. This would create a risk for keeping inflation at a low and stable level and the emergence of unsustainable credit booms: a temporary acceleration of economic growth resulting from excessive expansion of lending, followed by its collapse.

Consequences of the accession of less wealthy countries to the euro area

The accession of less prosperous economies to the euro area can result in volatile credit booms and strong volatility of activity.

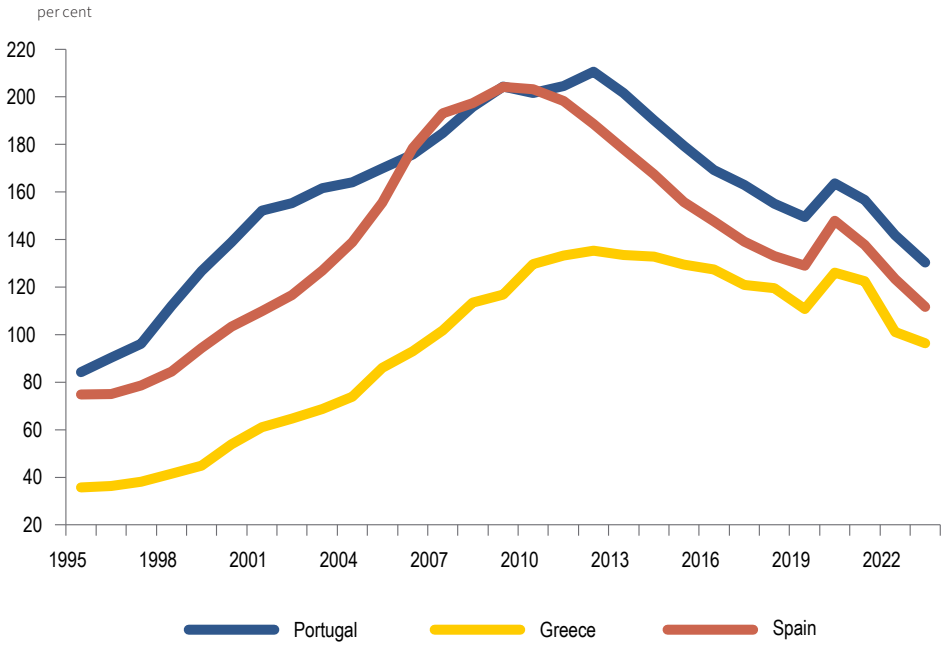
From the perspective of the less wealthy countries, joining the euro area entails a marked reduction in financing costs. Although the fall in interest rates after the accession to the euro area is often presented as a potential benefit of adopting the euro, in practice, lower interest rates have led to serious economic problems in many of less prosperous countries that have adopted the euro.

In the countries of southern Europe, enhanced capital inflows after the adoption of the euro accompanied by lower interest rates resulted in excessive credit growth and the build-up of bubbles in the real estate sector instead of

the desired growth of productive potential and a sustained acceleration of the convergence process. The increase in debt can apply to both the public and private sectors. For example, private sector debt in Spain rose from approx. 100% of GDP in 2000 to over 200% of GDP in 2010 (Figure 4). In Greece, it increased from 54% of GDP to almost 130% of GDP in the corresponding period, while public debt rose from 105% of GDP to 148% of GDP. The boom phase was associated with a relatively rapid growth in labour costs, the loss of competitiveness and the emergence of external imbalances (including large current account deficits reaching nearly 10% of GDP in Spain and over 14% of GDP in Greece) and internal imbalances (including in the real estate market).

Figure 4.

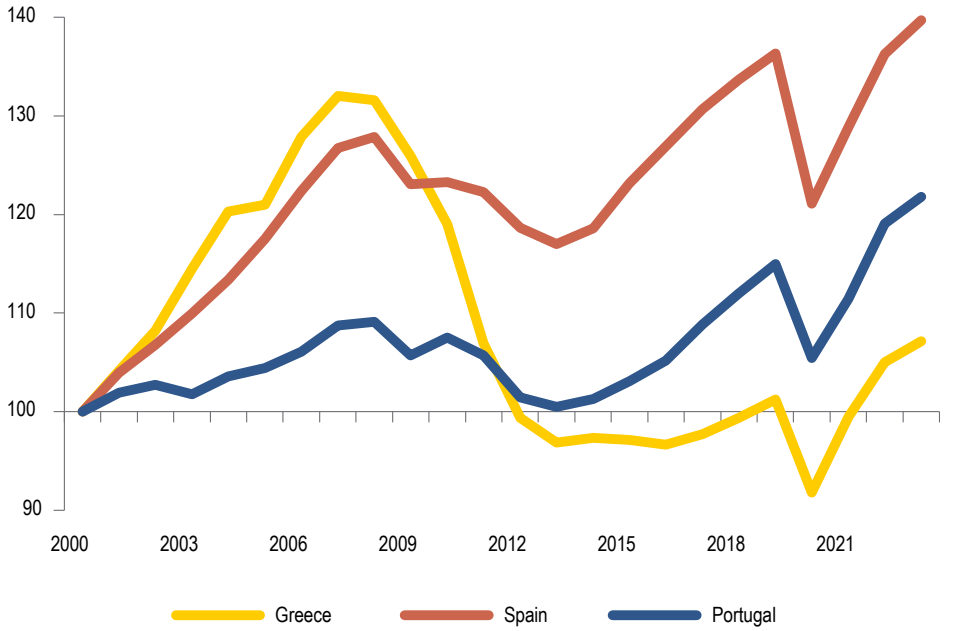
Private sector debt (in relation to GDP) in Portugal, Spain and Greece



Source: Eurostat data.

Figure 5.

GDP levels in Portugal, Spain and Greece (index 2000=100)



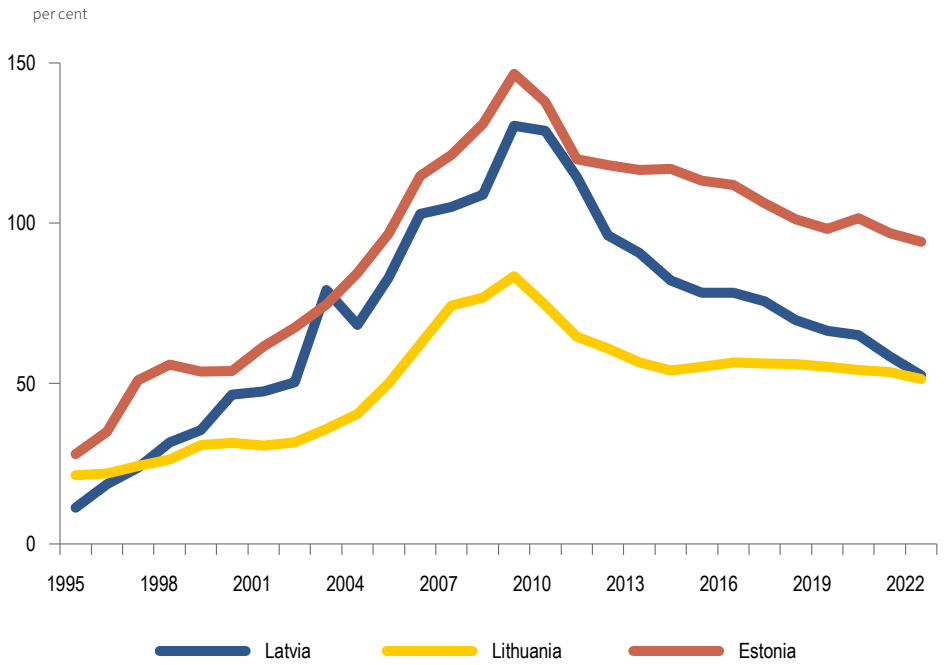
Source: Eurostat data.

Consequently, after a period of relatively fast (credit-driven) GDP growth, during the global financial crisis the countries of southern Europe experienced a downturn in economic activity, intensified by the consequences of the euro area debt crisis of 2010-2013 (Figure 5). GDP in Spain did not recover to the 2008 levels until 9 years later, in Portugal – 10 years later. In Greece, GDP continues to remain clearly lower than in 2008 (by 19% in 2023).

The phenomenon of economic slump following a period of faster growth of GDP and prices as a result of excessive credit growth is referred to as a boom-bust cycle. It has an impact on increasing the amplitude of fluctuations in the

Figure 6.

Private sector debt (in relation to GDP) in the Baltic States



Source: Eurostat data.

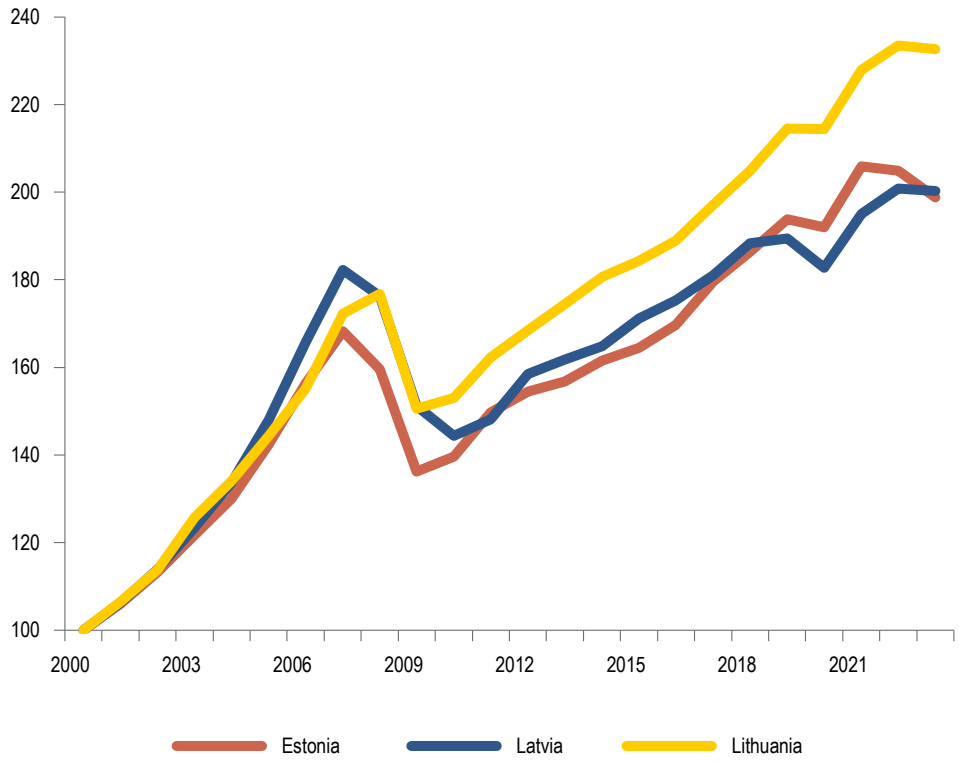
economic activity, enhancing changes in output and employment, including driving of a strong increase in the unemployment rate. The collapse of credit booms can pose threat to the sustainability of public finance, both directly due to a strong increase in public debt (cf. the Greek example) and the need to recapitalise the banking sector with public funds to overcome the effects of the banking crisis (cf. the Spanish example).

The boom-bust cycle was also evident in the Baltic States, where a period of exceptionally strong post-EU accession expansion supported by credit growth (Figure 6) was followed by a world record economic downturn. On average,

countries of the region experienced a 14% drop in GDP in 2009 (Figure 7). Although the Baltic States were not euro area member countries at that time (Estonia joined in 2011, Latvia in 2014 and Lithuania in 2015), they bore all the costs of abandoning their own currency due to their fixed exchange rates and significant foreign capital flows.

Figure 7.

GDP level in the Baltic States (index 2000=100)



Source: Eurostat data.

A floating exchange rate fosters the stabilisation of the economy

I would make it quite clear that in addition to abandoning an independent interest rate policy, the accession to the euro area and the preceding participation in ERM2 implies the resignation from the floating exchange rate. While the literature confirms that in the case of Poland and countries of Central and Eastern Europe (CEE), the effectively floating exchange rate may be an important factor absorbing shocks and stabilising the business cycle (studies for Poland, see Cieślik and Teresiński, 2020; Dąbrowski and Wróblewska, 2016; Brzoza-Brzezina et al., 2013; Konopczak and Torój, 2012).

The events of the Global Financial Crisis of 2008-2009 provide a good example demonstrating the advantages of having a floating exchange rate. In response to the crisis, the zloty depreciated strongly, which weakened against the euro by 23% y/y in 2009. As a consequence, in 2009, Polish net exports significantly supported GDP growth, thus protecting the economy from recession (Figure 8, Figure 9). Poland was the only country in the EU which had maintained a positive economic growth during this period. The findings of

Figure 8.

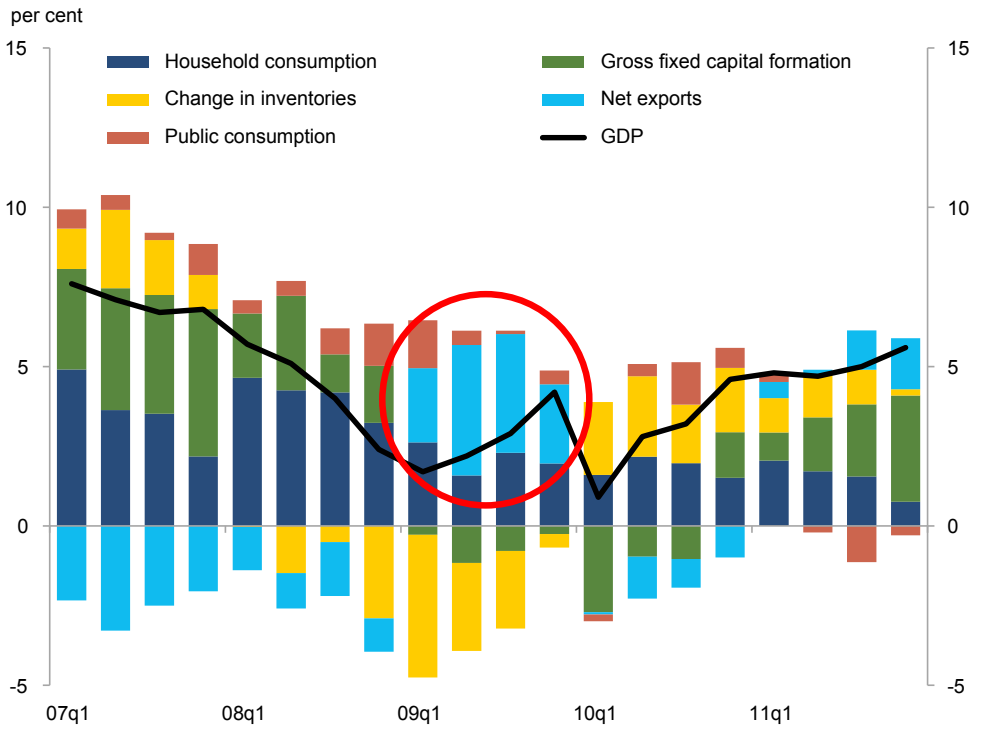
EUR/PLN exchange rate in 2007-2010

Source: Refinitiv data.

the studies suggest that our economy could have experienced a deep recession if Poland had been a member of the euro area during that period (Brzoza-Brzezina et al., 2013). The counter-cyclical nature of the exchange rate shock during the Global Financial Crisis resulted from the simultaneous occurrence of turbulences in global financial markets (leading to the depreciation of the zloty) and the economic downturn in the country. This combination of shocks does not have to always occur. For example, during the most recent episode of deteriorating sentiment in the financial markets, i.e. after the outbreak of the COVID-19 pandemic and particularly after Russia's aggression against

Figure 9.

Poland's GDP growth, including its decomposition (y/y) in 2007-2011



Source: Statistics Poland data.

Ukraine, the depreciation of the zloty exchange rate supported industrial output growth and the output remained above the trend over most of the period. Nevertheless, it is worth bearing in mind that industry at that time faced high production costs as a result of the pandemic and the commodity shock, while the economy was still recovering from the pandemic.

At the same time, the exchange rate channel plays an important role in the monetary policy transmission mechanism in Poland. Modelling estimates indicate that currently exchange rate channel effects are responsible for almost a half of the CPI y/y response to the NBP monetary policy impulse (Ciżkowicz-Pękała et al., 2023). A factor strengthening the role of the exchange rate in the transmission mechanism in the Polish economy is the relatively high openness of the Polish economy to foreign trade (the share of imports to GDP in Poland reaches 51.5%, compared to the median of 30.4% for euro area economies).[3] In the event of adoption of the euro (or entry into the ERM2 system), due to fixing of the zloty exchange rate against the euro, the exchange rate channel would cease to play an important role in this mechanism.[4]

3 At the same time, however, a major part of Polish trade takes place within so-called global production chains, which may consequently limit the sensitivity of production and prices to exchange rate changes (Ahmed et al., 2015).

4 At the same time, the monetary policy transmission mechanism after Poland's potential accession to the euro area could be strengthened to some extent due to the fact that the ECB monetary policy – unlike the NBP current monetary policy – would not only have an impact directly on the Polish economy, but also on economic conditions in the environment of the Polish economy (including GDP and prices in euro area countries), which are relevant for the domestic economic situation and prices. However, this effect could be limited, as even now the NBP and ECB interest rates are already correlated to some extent (although not fully).

The impact of euro adoption on the labour market

In the absence of a possible devaluation of the exchange rate, economic adjustments in euro area countries are often associated with a significant increase in unemployment. On the other hand, the adoption of the euro may benefit more well-off households travelling abroad or holding assets or liabilities denominated in foreign currencies.

Introducing of the euro may affect the financial situation of affluent and poorer households in different ways. I would in particular point out several mechanisms through which the significant costs and risks of adopting the euro may be borne by poorer households and the benefits by more well-off households.

Firstly, the main source of income for less wealthy households is the income from work or government transfers. At the same time, the adoption of the euro may result in higher volatility in the unemployment rate due to the inability to accommodate economic shocks through exchange rate changes. Moreover, the experience of many economies, especially in southern Europe, shows that the process of recovery from crises to which the euro had contributed was lengthy and involved keeping unemployment rates high for many years. At the same time, some economists indicate that the decline in interest rates after euro adoption may increase the fiscal space for more extensive fiscal redistribution, which poorer households may benefit from (Bouvet, 2021). However, I would like to remind you that the economic crises experienced by the countries entering the euro area necessitated fiscal tightening in the longer term, including through a significant reduction in social benefits, with less well-off households losing. For example:

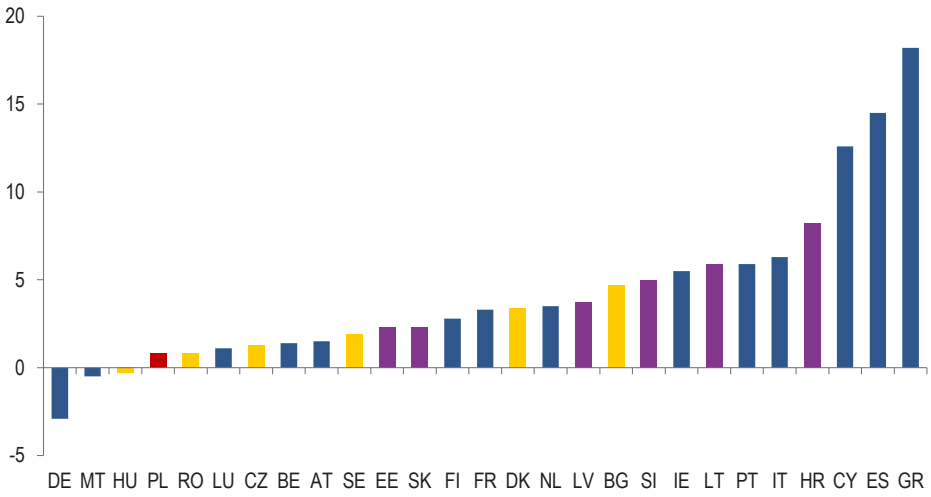
- during the Global Financial Crisis, in the euro area countries that lost their competitiveness, rebalancing of the economy required fiscal tightening, a reduction of wage dynamics and a rise in unemployment. The consequences of this process were particularly acute in the countries of southern Europe. In Greece, the unemployment rate between 2008 Q1 and 2014 Q4 increased from less than 8% to 26%, i.e. by 18 p.p. In the same period, the unemployment rate in Spain rose from approx. 9% to approx. 24%, i.e. by almost 15 p.p. (Figure 10). In particular, youth

unemployment grew strongly, temporarily exceeding even 60% in Greece and 55% in Spain. The strong rise in unemployment and the recession allowed these economies to rebalance their current accounts, although this process took several years;

- according to Bakker et al. (2012), the magnitude of fiscal tightening in the Baltic States after the financial crisis was estimated at 8.8% of GDP in Estonia, 13.9% of GDP in Latvia and 8.0% of GDP in Lithuania. The measures taken included permanent reductions in pensions (Estonia, Latvia and Lithuania) and sickness benefits (Estonia and Lithuania), reductions in spending on other social programmes such as school lunches, maternity and child benefits (Lithuania), and on the revenue side, increases in VAT and excise duties. Internal devaluation in the Baltic States has been particularly acute socially, not only leading to increased poverty and unemployment, but also contributing to emigration.

Figure 10.

Change in the unemployment rate in the countries of the European Union between 2008 Q1 and 2014 Q4 (p.p.)

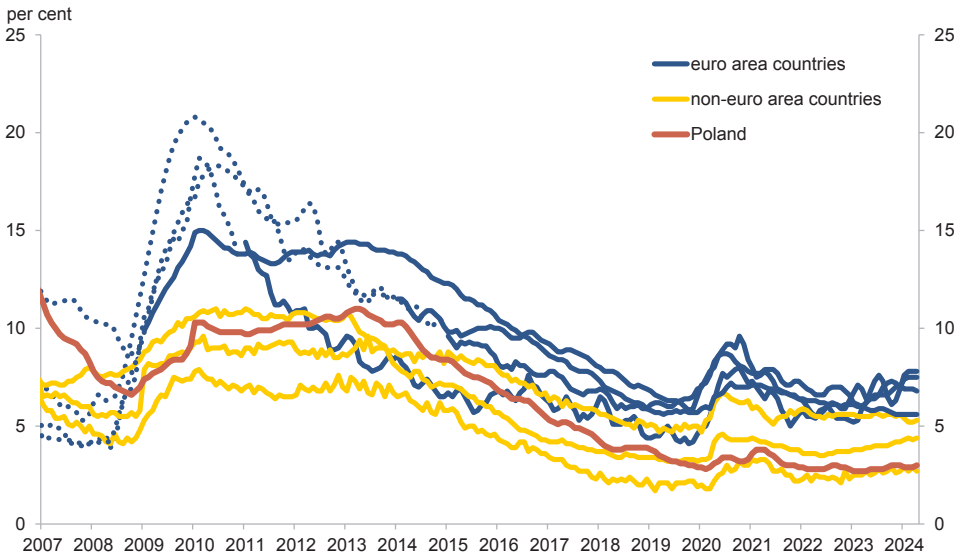


Source: Eurostat data.
Note: Blue – euro area countries, yellow – EU countries outside the euro area, purple – CEE countries with euro.

At the same time, I would point out that in the countries of Central and Eastern Europe with their own currencies, unemployment rose less markedly during the crises than in the countries of the region that adopted the euro and remains lower in these countries in the long term. This signals that nominal exchange rate adjustment and autonomous interest rate policy can, to a large extent, protect economies from rising unemployment in the presence of strong negative shocks (Figure 11).

Figure 11.

Unemployment rate in countries of Central and Eastern Europe



Source: Eurostat data.
Note: Slovakia joined the euro area in 2009, Estonia in 2011, Latvia in 2014 and Lithuania in 2015. In the period preceding joining the euro area, these countries participated in the ERM2 exchange rate mechanism (marked with a dotted line).

Secondly, even in "non-crisis" periods, participation in a monetary union (and consequently, abandoning of the exchange rate policy) may force an economic policy aimed at maintaining low wage growth in order to maintain

competitiveness. Analysing the period before the Global Financial Crisis, Kerschbaumer and Maschke (2021) point out that Germany experienced an increase in the Gini coefficient of approx. 4 p.p. due to the adoption of the euro. Supported by participation in the monetary union, Germany's growth model based on exports and institutions that encourage real wage growth limitation contributed to the rise in inequality. From 1995 to 2008, Germany's relative unit labour costs in relation to its trading partners decreased by 20%, driven by a reduction in real wage growth, including a decline in wages of the lowest paid workers (Dustmann et al., 2018).

Thirdly, the adoption of the euro can affect the financial standing of poor and affluent households in different ways through its impact on foreign trade (although it should be borne in mind that for CEE countries, the adoption of the euro does not seem to be a key determinant of trade). On the one hand, foreign trade can contribute to the converging country's specialisation in the production of relatively less technologically advanced goods and, consequently, an increase in the demand for lower-skilled workers (IMF, 2007). At the same time, the expansion of trade could increase aggregate demand, contributing to a decline in unemployment. On the other hand, commercial specialisation may result in an increased demand for specialised workers at the expense of others (technological channel), which would augment the increase in inequality. Results of empirical studies on euro area economies (Cesaroni et al., 2019) indicate that an increase in trade exchange has reduced income inequality in the core countries of the euro area and increased it in the peripheral (less wealthy) countries.

Fourth, the monetary integration – along with the elimination of exchange rate risk and a decline in transaction costs – can foster financial flows and the development of financial markets. Theoretically, greater "financial openness" may foster access to credit and financial markets by broader segments of the population, increasing the possibility of smoothing their consumption over time (Kose et al., 2009). In practice, however, with financial markets primarily used by the wealthier, the development of financial markets may favour wealthier households (Furceri and Loungani, 2015). Studies directly analysing the effects of euro adoption indicate that greater openness to financial flows was accompanied by an increase in income inequality in the peripheral

countries of the euro area. Arestis and Phelps (2018) estimate that a double increase of the openness ratio of capital flows (i.e. from the level of Poland to that of CEE euro area member countries) could increase the Gini coefficient by several or even between ten and twenty per cent.

Therefore, I am of the view that in the case of Poland, the elimination of exchange rate risk and transaction costs of currency exchange would primarily benefit wealthy households, especially those travelling frequently or holding liabilities or assets denominated in foreign currencies. In this context, I would like to highlight the data given below:

- in May 2024, foreign currency deposits of households in the banking sector in Poland amounted to PLN 152 billion, including PLN 93 billion of euro-denominated deposits (this corresponds to 13.5% and 8.3% of all household deposits, respectively);
- the foreign assets of households at the end of 2023 can be estimated in the range of PLN 50 billion, including PLN 17 billion of assets denominated in euro. Most of those foreign assets are securities (bonds, shares, investment fund units), bank deposits, cash, and real estate (i.e. assets with a high value denominated in currencies other than the zloty). Although the structure of investors by wealth is not known, it can be assumed that mainly the more affluent households invest their funds abroad, in particular, households holding real estate abroad serve as an example (including, for example, households that have purchased real estate in Spain over the recent years);
- at the same time, it should be borne in mind that only a minor part of Poles[5] travel abroad and have to bear the transaction costs of currency exchange. Therefore, the potential benefits of eliminating exchange costs for Poles travelling abroad would affect a smaller part of the population, as one may assume – its more affluent part.

5 According to the CBOS survey, only 24% of Poles went abroad in 2018, with even lower percentage in subsequent years (18% in 2022).

The role of monetary policy in stabilising the economic activity

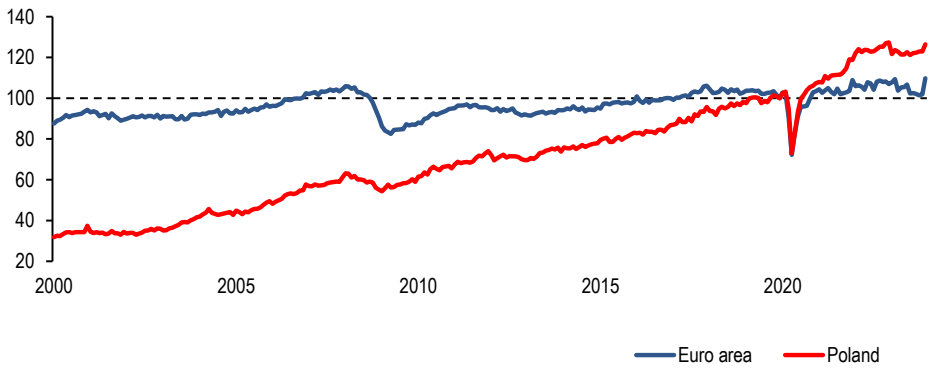
The synchronisation of Poland's business cycle with the euro area is incomplete and lower than in the major economies of the monetary union. The autonomous monetary policy therefore has an important role to play in stabilising the economy.

The compatibility of business cycles has been recognised as one of the requirements for accession to the monetary union according to the theory of the optimum currency area (Mundell, 1961). This is because when periods of slowdown and expansion in the economic activity in monetary union member countries are not synchronised, there is a risk that the common monetary policy will be inadequate to the current economic situation in some countries.

In the case of Poland, the correlation coefficients of business cycles with the euro area in 1995-2019 amounted to 0.6 for GDP and 0.8 for industrial output. It means that while the business cycles in Poland and in the euro area generally follow a similar pattern, the correlation is not complete (Figure 12).

Figure 12.

Industrial output in Poland and in the euro area (index, 2019M12=100)

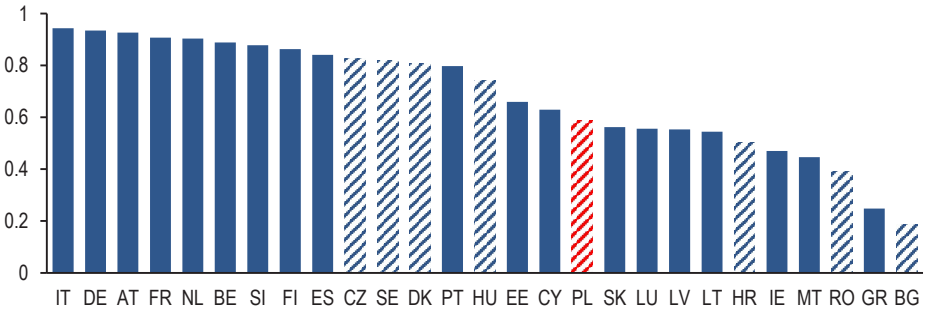


Source: Eurostat data.

The level of correlation with the euro area is much lower than for economies such as Germany, Italy, Austria, the Netherlands or France[6] (Figure 13). At the same time, there are periods when the convergence of the business cycle between Poland and the euro area decreases. This was evident, for example, during the pandemic crisis (Figure 14).

Figure 13.

Correlation of the cyclical component of GDP between EU and euro area countries in 1995-2019



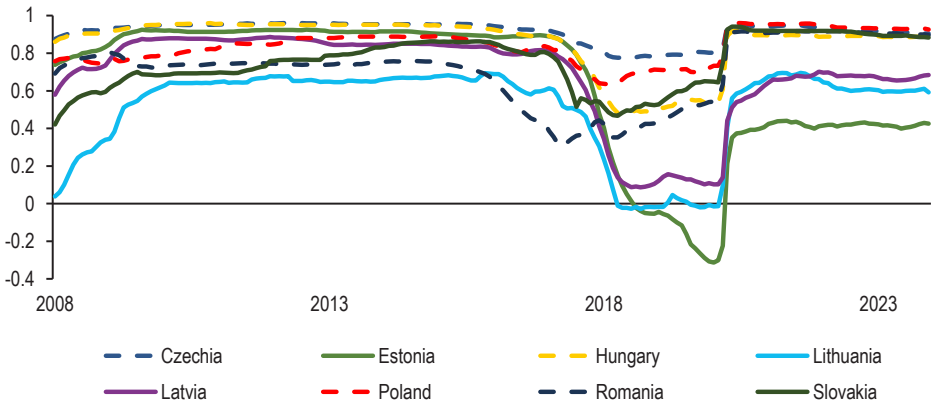
Source: NBP study based on Eurostat data.
Note: Countries that have their national currencies are distinguished with diagonal stripes.
Cyclical component calculated based on the Hodrick-Prescott filter.

I would like to recall here the studies carried out in recent years that show that the accession to the euro area does not result in a sustained increase in the synchronisation of business cycles. For example, Guerini et al. (2023) show that the introduction of the single currency was followed by an increase in the degree of synchronisation of cycles, but this was a short-lived process and concerned the period before the onset of the Global Financial Crisis. According to this study, a decline in business cycle synchronisation after the Global Financial Crisis was recorded. Also according to the study by Miles and Vijverberg (2018), accession to the euro area did not affect the degree of

6 This is partly due to the statistical effect – i.e. the fact that these are the countries that constitute the euro area.

Figure 14.

Correlation coefficients of the cyclical component of industrial output between CEE countries and the euro area (rolling 8-year windows)



Source: NBP study based on Eurostat data.
Note: Countries that have their national currencies are distinguished with a dotted line. The year on the horizontal axis indicates the end of a given 8-year window (e.g. for 2008, the correlation in the 2000-2008 window is shown). Cyclical component calculated based on the Hodrick-Prescott filter.

synchronisation of business cycles. At the same time, Belke et al. (2017) indicated that the increase in the degree of synchronisation only affected the central countries of the euro area. The peripheral countries saw a decline in business cycle synchronisation with the euro area.

The experience of the CEE countries that introduced the euro also does not indicate that accession to the euro area had a positive impact on the degree of synchronisation of business cycles with the euro area. The correlation coefficients of the cyclical components of industrial output of Slovakia, Estonia, Latvia and Lithuania did not fluctuate much between 2001 and 2017. In particular, no changes were apparent that could be directly attributed to the accession of these countries to the euro area (in 2009, 2011, 2014 and 2015, respectively).

In light of this, I would consider illusory the expectation that, following Poland's accession to the euro area, the synchronisation of business cycles would increase, reducing the risks associated with the loss of monetary autonomy.

Joining the euro area creates a risk of slower convergence

Poland's economy is growing faster than in more affluent EU countries. The accession to the euro area does not lead to an acceleration of convergence and even creates a risk inhibiting it.

I would like to make it clear that while having a national currency does not guarantee economic success, the absence of a national currency and the persistent mismatch between the monetary policy pursued and the needs of the economy creates a significant risk of macroeconomic and financial imbalances (e.g. debt crises or loss of competitiveness) that can inhibit the economic growth for many years. Converging economies in particular, where maintaining of the macroeconomic balance requires higher interest rates than in the most affluent euro area economies, are vulnerable to such crises.

Poland's economy is developing much faster than the euro area countries (about 2.5 times). In the years 2013-2019, the average annual GDP growth rate in Poland was 3.9%, compared to 1.6% in the euro area. After the outbreak of the COVID-19 pandemic, Poland's GDP also recovered significantly faster. In 2024 Q1, the level of GDP in Poland was nearly 11% higher than before the pandemic outbreak (i.e. in 2019 Q4) and by only 3.4% in the euro area.

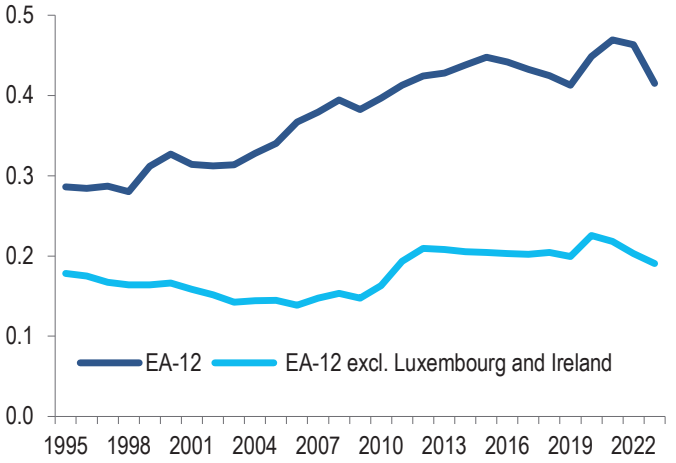
While opinions appear that accession to the euro area may contribute to accelerating the convergence process of less prosperous economies, past experience shows the opposite trend. Since the creation of the euro area, within the group of its 12 original members (EA12)[7] the diversification in GDP per capita expressed in purchasing power parity has increased (Figure 15).

The experience of southern European countries shows that economic growth can accelerate after accession to the euro area, but this process is not sustainable. Indeed, a decline in interest rates and the resulting increase in debt, which can lead to macroeconomic imbalances, contributes to faster growth after euro adoption. In the case of Spain, Greece and Portugal, a period of expansion in the early years of the 21st century was followed by a deep and long-term economic downturn (Figure 16).

7 The euro area was established in 1999 by 11 countries (Austria, Belgium, Finland, France, Germany, Ireland, Italy, Luxembourg, the Netherlands, Portugal and Spain) and Greece joined on 1 January 2001.

Figure 15.

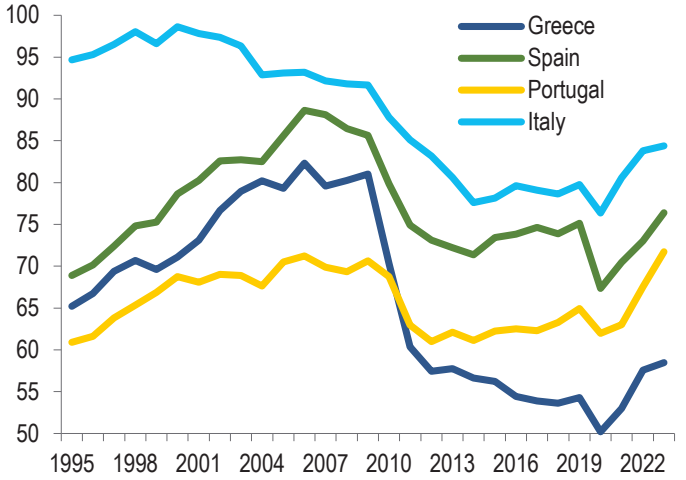
Coefficient of GDP per capita variation in PPS among the economies originally constituting the euro area



Source: Eurostat data, NBP calculations.
Note: Coefficient of variation – the standard deviation divided by the mean.

Figure 16.

GDP per capita in PPS of selected euro area economies compared to Germany (Germany = 100)



Source: Eurostat data, NBP calculations.

Consequently, in 1999-2023 the narrowing of the gap in GDP per capita relative to the richer EA12 economies by the least developed EA12 economies was an exception rather than a rule. Portugal managed to narrow the gap towards Germany by a small margin. On the other hand, the difference in GDP per capita in Greece vis-à-vis Germany has clearly increased, while in Spain it has not changed significantly.[8] In all of these economies, the ratio of their GDP to German GDP was subject to strong fluctuations. On the other hand, GDP per capita in Italy in 2000 was practically at the same level as in Germany (98.6%), while this ratio steadily decreased in subsequent years. In 2023, Italy's GDP per capita was over 15% lower than in the case of Germany.

When analysing the convergence process of the CEE countries to date in the context of euro adoption, I would note the specific nature of the CEE countries, including in particular two factors that have strongly determined the convergence process.

Firstly, all CEE countries in 2004[9] demonstrated a markedly lower GDP per capita according to purchasing power parity than EA12 countries. Also within the group of CEE economies itself, significant differences in terms of prosperity were noticeable. GDP per capita in 2004 (according to purchasing power parity) ranged from approx. 30% of the average for the affluent euro area countries (EA12) in Romania and Bulgaria, to approx. 70% of the EA12 average in Czechia. This starting point had a key impact on the further pace of the convergence. In accordance with the economic theory, the distance was caught up faster by countries that were at a lower level of development than by more developed countries (Figure 17).

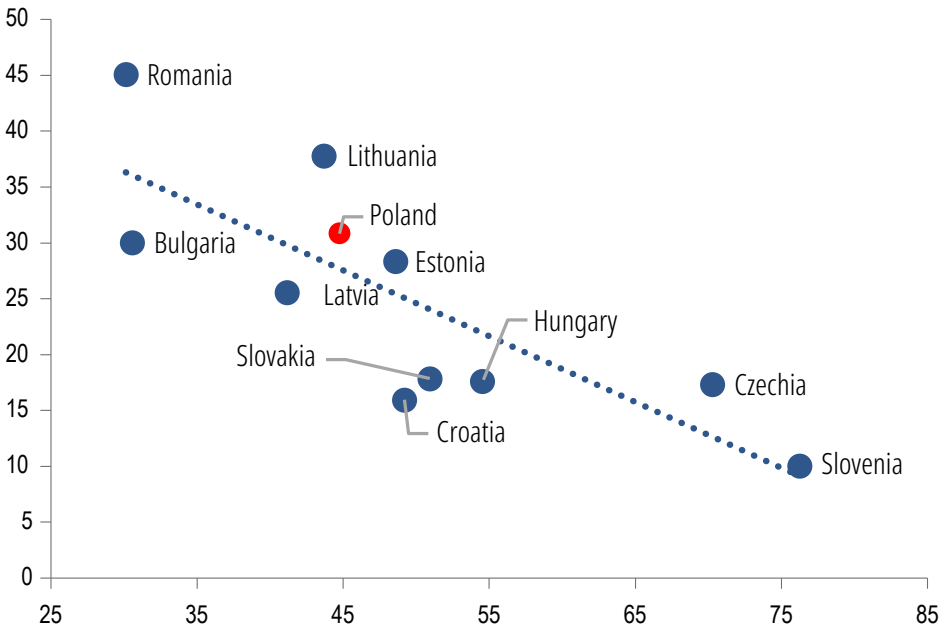
Secondly, the convergence in all CEE economies was possible due to structural changes associated with the transition towards market economies (which involved the release of post-transformation reserves in productivity), the inflow of foreign investment and the integration of these countries into global trade networks, as well as improvements in the quality of human capital.

When analysing the pace of economic growth after the adoption of the euro, it can be noticed that:

8 In 1999, GDP per capita in PPS in Germany was 50% higher than in Portugal, 44% higher than in Greece and 33% higher than in Spain. In 2023, GDP per capita in Germany was 39% higher than in Portugal, 71% higher than in Greece and 30% higher than in Spain.
9 The year 2004 was chosen as the starting point of the analysis due to the accession of most countries in the region to the EU at that time.

Figure 17.

GDP per capita in 2004 (horizontal axis) and the rate of convergence in 2004-2023 (vertical axis) in CEE economies



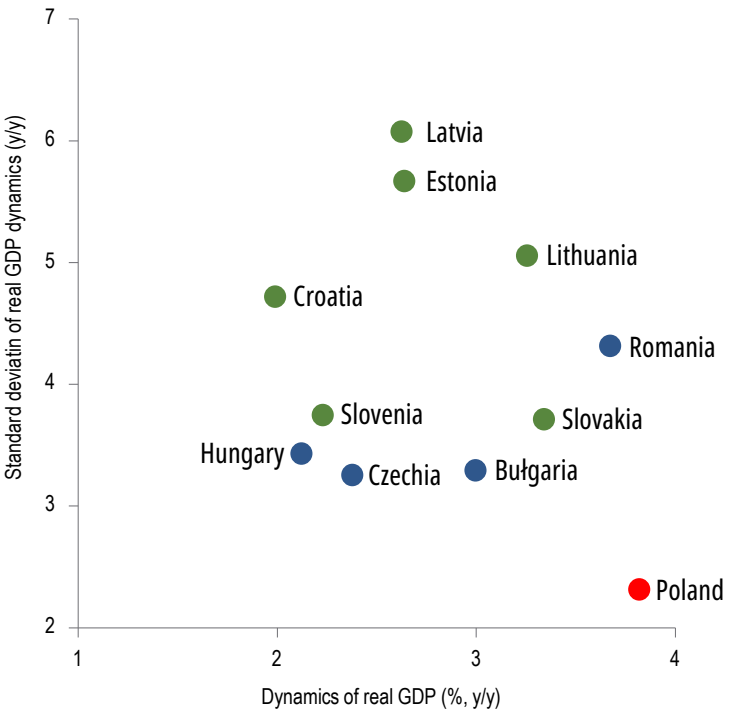
Source: Eurostat data, NBP calculations.

- Slovakia and Slovenia grew more slowly after adopting the euro than CEE countries that did not adopt the euro,
- GDP growth rates in the Baltic States after the adoption of the euro were similar to those observed in the CEE countries that did not adopt the euro. When analysing the economies of the Baltic States, their specific characteristics should be taken into account: they are very small economies, a kind of "cities-states", which even remaining outside the euro area, would not have a possibility to conduct an autonomous monetary policy under the conditions of underdeveloped domestic financial markets as well as strong trade and capital links with the euro area.

Notwithstanding the above determinants, the volatility of GDP growth in 2004-2023 in CEE economies that adopted the euro at some stage was markedly higher than in CEE countries with their own currencies (Figure 18, Figure 19, Table 1).[10] The high volatility of GDP growth was also accompanied by higher volatility of the unemployment rate. At the same time, it is worth noting that the volatility of GDP growth in Poland was the lowest among all CEE countries.

Figure 18.

Average GDP growth in 2004-2023 and its standard deviation

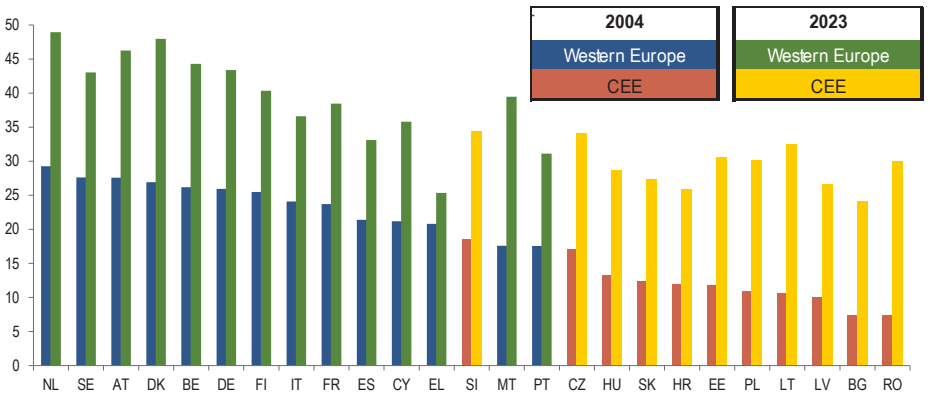


Source: Eurostat data, NBP calculations.
Note: Green dots represent economies that have adopted the euro, red dot represents Poland and blue dots – the other CEE economies. The year of adoption of the euro differs between countries (cf. Table 2). Calculations based on annual data.

10 The CEE countries adopted the euro at different moments and were not part of the euro area for the entire period of 2004-2023. On the other hand, already at least two years before the adoption of the euro, countries do not have an autonomous monetary policy, since they are members of the ERM2 system. Notwithstanding the foregoing, the Baltic States applied a fixed exchange rate before the introduction of the euro and therefore did not have an autonomous interest rate policy.

Figure 19.

Level of GDP per capita according to purchasing power parity in EU countries in 2004 and 2023 (EUR thousand PPS)



Source: Eurostat data.
Note: The figure does not present data for Luxembourg and Ireland due to the impact of multinational corporations' activities on the GDP of these countries. For Croatia – data for 2022.

Table 1.

Level of GDP per capita in PPS in the CEE countries that adopted the euro compared to the group of non-euro area CEE countries (Poland, Romania, Czechia, Hungary and Bulgaria) in the year of euro adoption (t) and 5, 10 and 15 years later (index, t=100)

	t	t+5	t+10	t+15
Slovenia (t=2007)	100	98.6	115.3	144.6
Average PL, RO, CZ, HU, BG (t=2007)	100	118.4	143.9	194.6
Slovakia (t=2009)	100	120.1	127.4	
Average PL, RO, CZ, HU, BG (t=2009)	100	117.6	153.1	
Estonia (t=2011)	100	119.1	156.5	
Average PL, RO, CZ, HU, BG (t=2011)	100	116.2	150.4	
Latvia (t=2014)	100	126.9		
Average PL, RO, CZ, HU, BG (t=2014)	100	130.1		
Lithuania (t=2015)	100	126.9		
Average PL, RO, CZ, HU, BG (t=2015)	100	122.1		

Source: Eurostat data, NBP calculations.

Accession to the euro area is not crucial for trade integration

The literature indicates that while a single currency may indeed intensify trade, the quantitative assessment of this impact varies significantly between studies and many of them suggest that the impact of the single currency on the development of trade links is limited. Other factors, including, geopolitical, technological or structural ones, have the major influence on the development of trade. In the case of the CEE region, the growth of linkages within global supply networks has been crucial in the development of trade. This was a common phenomenon for the entire region, regardless of euro area membership.

According to the comprehensive analysis by ECB economists (Gunnella et al., 2021), as a result of the adoption of the single currency, trade between euro area countries increased only by approx. 5%.[11] The single currency area, despite its possible positive impact on the development of economic ties (Gunnella et al., 2021), is only one of several factors that have affected the growth of trade between EA countries over the past 20 years.

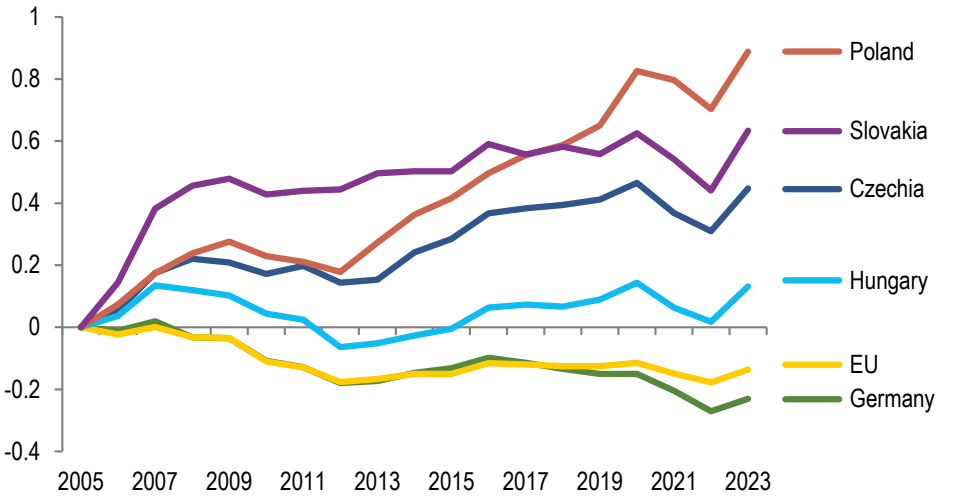
At the same time, membership of the euro area does not necessarily directly imply a higher share of the euro area in the structure of export. The share of the euro area in the geographical structure of Poland's exports is comparable to that of other CEE countries, including those that have adopted the euro. The share of euro area countries in Poland's exports in 2023 amounted to 59% and was higher than in the countries of the region that joined the euro area, i.e. higher than in Estonia (56%), Latvia (49%), Slovakia (46%) and Lithuania (42%). At the same time, Czechia (66%) and Hungary (61%), which are not euro area members, were those countries for which euro area countries feature a higher share in exports structure than in Poland.

Possessing the national currency was not a material burden for the strong expansion of Polish exports. On the contrary, in the periods of turbulence, the zloty exchange rate depreciated, helping the Polish economy to remain competitive. In 2005-2023, the increase of Poland's share in global exports of

11 The first empirical studies on the impact of introducing the single currency on the value of intra-euro area trade indicate that the impact ranged between +3% and +22% (Baldwin and Taglioni, 2004; Serlenga and Shin, 2007; Micco et al., 2003; Faruqee, 2004). In the study prepared for the tenth anniversary of the introduction of the euro, Baldwin et al. (2008) indicate that the impact of accession to the euro area on the value of trade was positive, but reached only 2%.
On the other hand, subsequent studies by Glick and Rose (2016) and Eicher and Henn (2011), based on a larger sample of countries and data since 1950, indicate that the impact of the single currency on the value of exports can be as high as 50%. At the same time, the lack of impact of Slovakia's and Slovenia's accession on the value of these economies' exports is indicated in the study by Cieślik et al. (2012).

Figure 20.

Export market share (goods; index, 2005 = 0)



Source: NBP calculations based on WTO data.

goods and services was the highest among EU countries (Figure 20). In this period, Poland's share in global exports of goods increased from 0.8% to 1.6%. The increase in the share of global exports applied to all countries of the region. On the other hand, significant declines in the share of global exports over the same period were recorded in Germany (from 9.2% in 2005 to 7.1% in 2023) and France (from 4.4% to 2.7%).

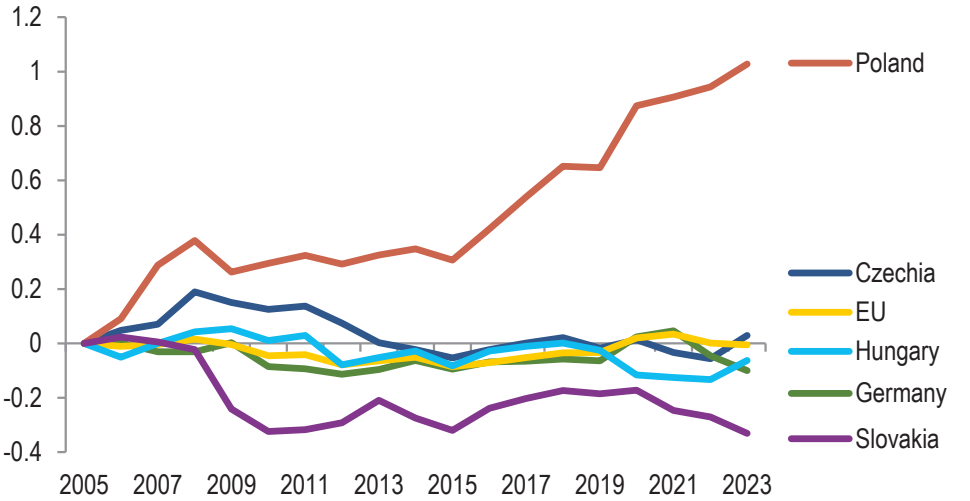
Poland's share in the global exports of services also increased strongly – from 0.7% in 2005 to 1.4% in 2023 (Figure 21). At the same time, Poland, Lithuania and Romania were the only countries in the region to record a significant increase in their share of global services exports during the period under review.

In accordance with the results of the analyses (Figure 22), in the case of Poland the competitiveness effect had a prevailing impact on the increase in the share of EU exports of goods.[12] The high competitiveness of Polish goods is mostly due to low production costs and a professional, skilled workforce.

12 The increase in the share of EU exports also applied to other CEE countries, with a significant decrease in the share of Western European countries, especially France, Germany and Belgium.

Figure 21.

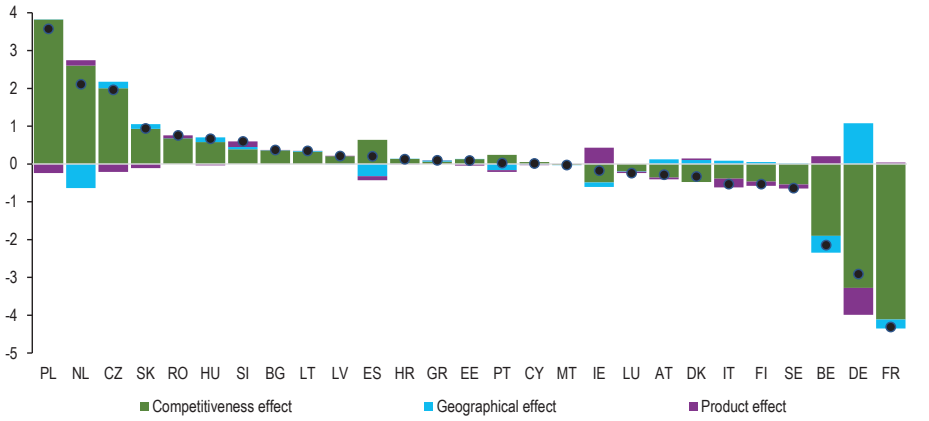
Export market share (services; index, 2005 = 0)



Source: NBP calculations based on WTO data.

Figure 22.

Decomposition of the change in Poland's share in EU goods exports in 2023 Q4 (relative to 2004 Q1, current prices, p.p.)

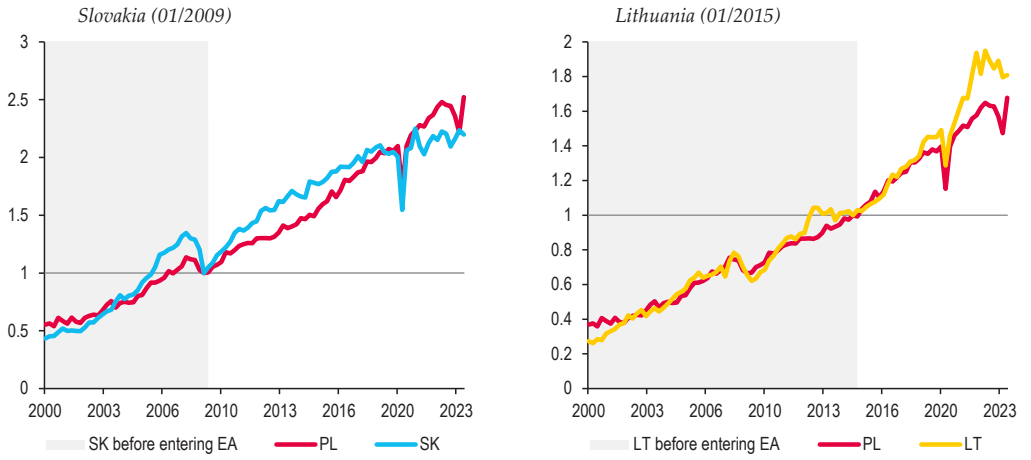


Source: NBP calculations based on Eurostat data.

In the case of the CEE countries, the decision to join the euro area does not seem to have a significant impact on the degree of trade integration within the EU. Despite the positive impact of adopting the single currency on the value of individual countries' foreign trade, demonstrated in the empirical literature based on broader international data, for CEE countries this effect is insignificant compared to the effects of other European integration mechanisms acting, among others, through real convergence and the development of regional supply networks (Figure 23, Figure 24).

Figure 23.

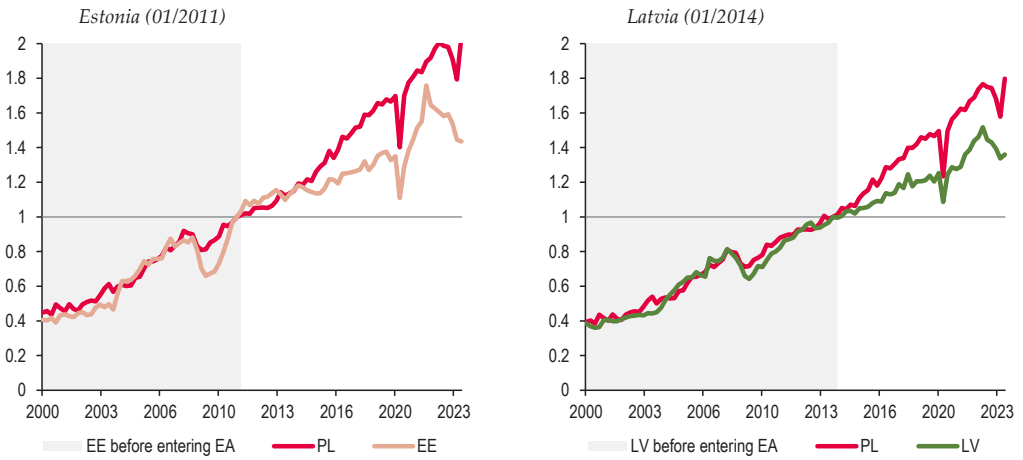
Comparison of the value of goods and services exports for Poland and CEE countries joining the euro area (at fixed prices, 1 = quarter of euro area accession)



Source: NBP calculations based on Eurostat data.

Figure 24.

Comparison of the value of goods and services exports for Poland and CEE countries joining the euro area (at fixed prices, 1 = quarter of euro area accession)



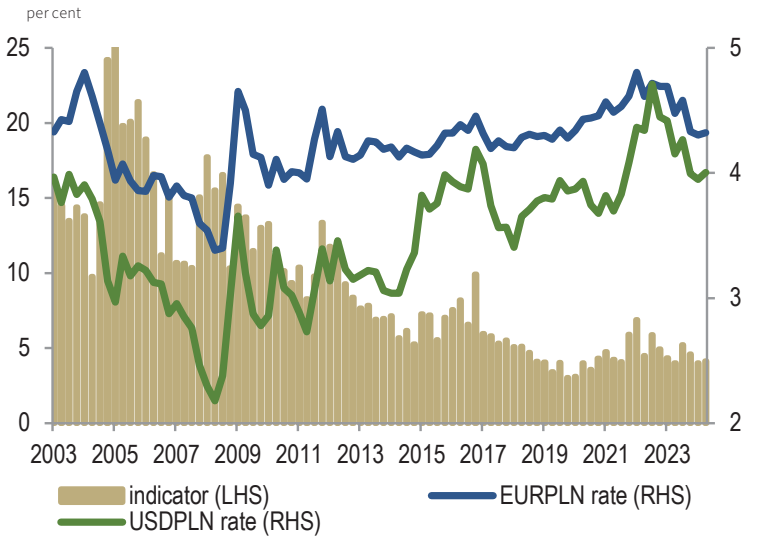
Source: NBP calculations based on Eurostat data.

Volatility of the zloty exchange rate is not a threat to Polish exports

The exchange rate of the Polish zloty against the euro is floating, which implies the occurrence of exchange rate risk. Let me note, however, that in practice its volatility has not been a significant barrier to the growth of Polish enterprises since 2013 (NBP, 2024). In this period, the percentage of enterprises declaring the exchange rate as a barrier to growth reached the average of 5.5% and did not exceed 10% in any quarter (Figure 25, Figure 26). Entrepreneurs declare that more important barriers to growth than the exchange rate include regulations and taxes, demand, prices and costs, as well as uncertainty. The low importance of the exchange rate barrier since 2013 suggests that the exchange rate balanced the interests of exporters and importers relatively well during this period.

Figure 25.

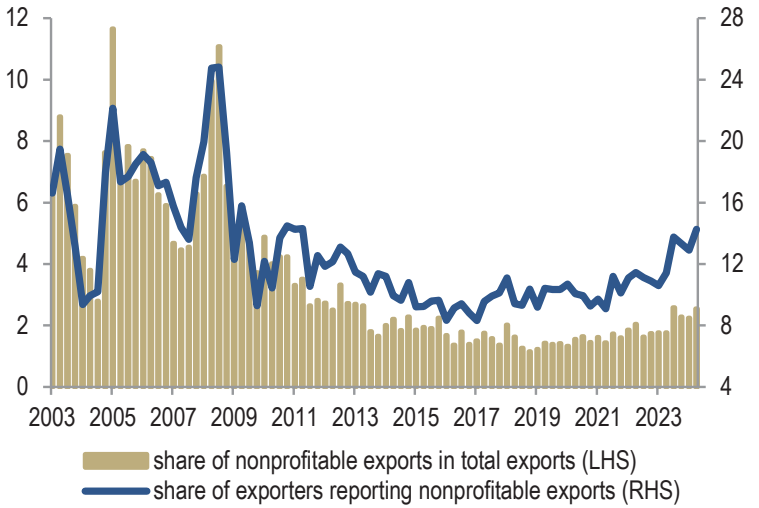
Exchange rate barrier and actual exchange rates of the zloty against the euro and the dollar (in PLN)



Source: NBP Quick Monitoring data.

Figure 26.

Export profitability (per cent)



Source: NBP Quick Monitoring data.

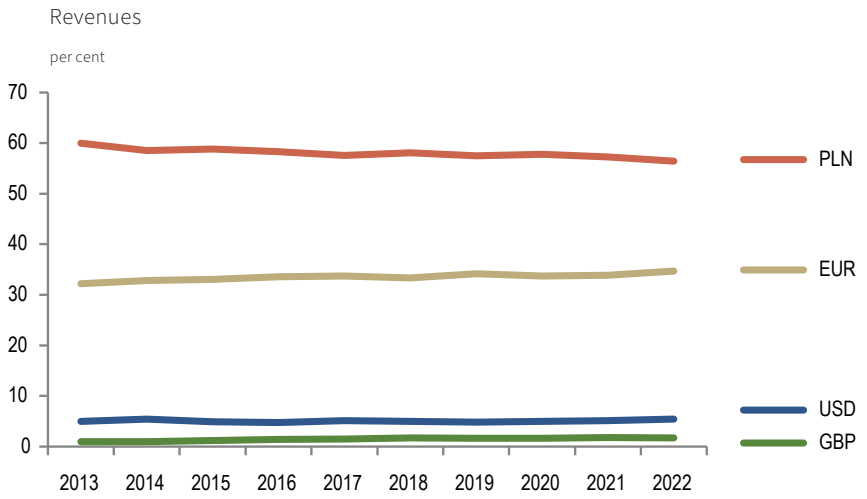
In case of changes in the market exchange rate, enterprises that settle payments in foreign currencies undertake numerous adjustment measures. According to the 2014 survey data, enterprises use adequate financial instruments (65%), renegotiate the purchase price of commodities (56%), look for new sales or supply markets (55%), change their own prices (46%), change the volume of imports or exports (24%) and take other measures (45%).

Enterprises are well protected against the exchange rate risk. Firstly, a significant part of exporters are also importers – in 2023, among enterprises with at least 50 employees, 55% were exporters, while 82% of exporters were simultaneously importers. Secondly, the currency structure of revenues and costs and of exports and imports is relatively stable over time and balanced (the so-called natural hedging, Figure 27). The share of the euro in the currency structure of revenues is approx. 7-8 p.p. higher than in the currency structure of costs; on the other hand, the share of the euro in the currency structure of exports is approx. 5-6 p.p. higher than in the currency structure of imports. Thirdly, the vast majority of enterprises use various solutions and instruments hedging against exchange rate risk – according to survey data for 2022, approx. 74% of exporters and 71% of importers are not exposed to exchange rate risk or are hedging against it.

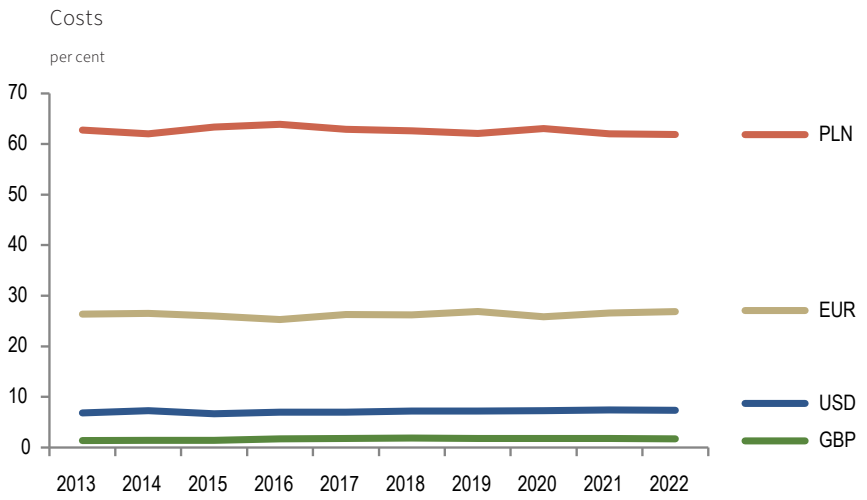
Consequently, the exchange rate risk, eliminated entirely by the adoption of the single currency, is already not a significant barrier to the development of Polish enterprises due to the existence of natural hedging and the multiple ways used by enterprises to hedge against this risk, including through financial instruments or the renegotiation of the purchase prices of commodities.

Figure 27.

Currency structure of revenues and costs in a sample of non-financial corporations



Source: NBP estimates based on Statistics Poland data.



Source: NBP estimates based on Statistics Poland data.

The impact of euro adoption on inflation

After (or immediately before) the adoption of the euro, countries experience a one-off increase in inflation. It results from the practice of rounding up prices (e.g. prices with the "99" ending), mainly of goods and services purchased frequently and with a small unit value, to a price that is attractive and easy to remember.

According to Eurostat, the scale of such price increase is noticeable, albeit relatively small. These estimates refer to the changes of inflation immediately (up to one quarter) after the introduction of the euro, therefore, medium- and long-term changes are not included. According to Eurostat studies, the short-term impact of the euro introduction on inflation did not exceed 0.3 p.p. (Table 2).

Table 2.

Short-term impact of introduction of the euro on inflation in new euro area member states (p.p.)

Country (year of euro adoption)	Estimated euro changeover effect on inflation (p.p.)
Slovenia (2007)	0.3
Cyprus and Malta (2008)	0.2-0.3
Slovakia (2009)	up to 0.3
Estonia (2011)	0.2-0.3
Latvia (2014)	0.12-0.21
Lithuania (2015)	0.04-0.11
Croatia (2023)	0.04-0.18

Source: Eurostat estimates (European Commission 2007, 2008, 2009, 2011, 2014, 2015, 2023).

Analyses carried out by central banks and governmental institutions (Table 3) indicate a slightly greater, although still limited impact.

Table 3.

Short-term impact of introduction of the euro on inflation in new euro area member states (p.p.)

Country	Research	Estimated effect on inflation (p.p.)
Slovenia	Institute of Macroeconomic Analysis and Development of the Republic of Slovenia, (2007), "Euro Changeover Effect on Inflation in Slovenia", *Slovenian Economic Mirror, Economic Analyses* vol. 13, No. 2	0.24
Slovakia	National Bank of Slovakia, (2006), *Effects of Euro Adoption on the Slovak Economy* , NBS Research Department	up to 0.3
Estonia	Rõõm, T., Urke K., (2014), "The Euro Changeover in Estonia: Implications for Inflation", *Bank of Estonia Working Papers*, No. 6/2014	0.0–0.5
Croatia	Falagiarda M., Gartner C., Mužić I., Pufnik A., (2023), *Has the euro changeover really caused extra inflation in Croatia?*, ECB Blog	0.4

Source: NBP survey based on the publications indicated.

The accession to the single currency area by countries at a lower level of economic and financial development should consequently promote an acceleration of lending (which may lead to the emergence of the so-called boom-bust cycle), an increase in demand and thus have an impact on accelerating the rate of price growth.

However, in the medium term – based on the analysis of cumulative price increases – it is difficult to conclude unequivocally that the adoption of the euro in CEE countries was associated with faster price increases, although in some economies such a process did indeed take place.

The cumulative price increase in Slovenia and Slovakia after the adoption of the euro (until the end of 2019) was even significantly lower than in the corresponding period in Poland or on average in Poland, Czechia and Hungary

(CEE-3, Table 4), i.e. in countries that have not adopted the euro. However, it should be borne in mind that Slovakia and Slovenia are countries with lower economic growth. Furthermore, and importantly, Slovakia entered the euro area with an overestimated exchange rate (Fidrmuc, 2013), which contributed to a decline in price competitiveness, a deepening of the decline in Slovak exports and a deeper recession during the Global Financial Crisis (GDP fell by 5.5% in 2009), which at the same time reduced price pressures. On the other hand, Slovenia is a relatively highly developed country compared to other CEE economies, and simultaneously a country affected by the banking crisis in 2012-2013. As a consequence, although inflation in Slovenia increased markedly (to 7% in mid-2007) immediately after joining the euro area – to which both the strong rise in food prices and the increase in consumer demand in an environment of relaxed monetary conditions and credit expansion contributed (cf. IMF, 2009) – over the longer term, cumulative price growth was lower than in other countries of the region.

On the other hand, the cumulative price growth in Lithuania, Latvia and Estonia after the adoption of the euro was higher than in Poland and the CEE-3 over the same period (Table 4). According to the estimates of the Bank of Lithuania of 2020, the total price growth in 2015-2019 was 0.53-0.59 p.p. higher as a result of accession to the euro area (while the cumulative price increase in Lithuania at that time was 4.0 p.p.).

Table 4.

Cumulative increase in HICP price level from the accession to the euro area compared to CEE-3 countries (per cent)

	Year of euro adoption	Cumulated increase in price levels in a euro adopting country		Cumulated increase in price levels in Poland		Cumulated increase in price levels in Poland, Czechia and Hungary (average)	
		until 2019	until 2023	until 2019	until 2023	until 2019	until 2023
Slovenia	2007	26.2	50.3	29.0	76.7	36.7	91.7
Slovakia	2009	17.9	53.8	20.7	65.3	24.0	74.0
Estonia	2011	25.7	70.1	13.1	54.9	17.2	64.5
Latvia	2014	9.5	44.7	4.1	42.6	7.4	50.6
Lithuania	2015	8.6	48.5	4.0	42.5	7.2	50.4

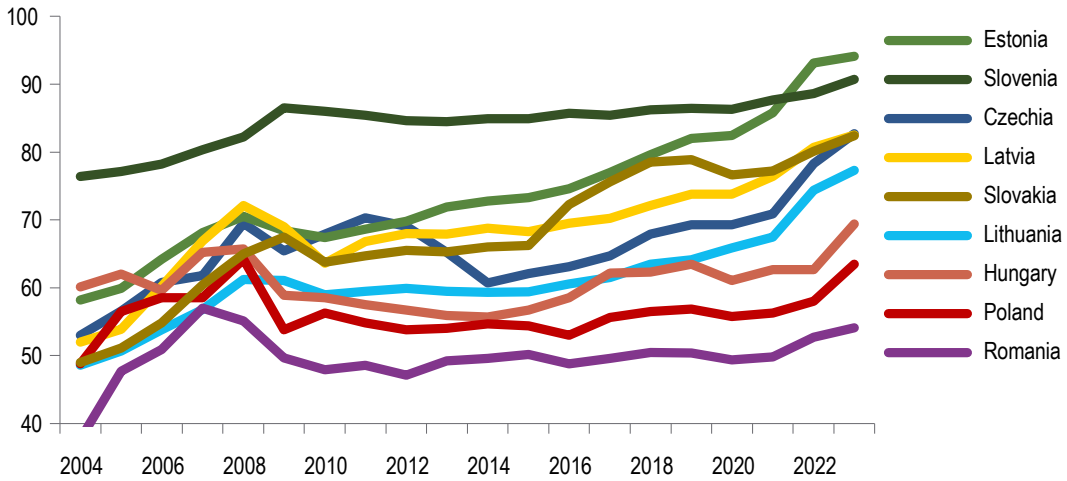
Source: Eurostat data, NBP calculations.

In the years 2004-2022, all CEE economies experienced price convergence to prices of more affluent EU countries. However, it varied in terms of magnitude, and significant price diversification between CEE countries persists. The fastest price convergence of a unified basket of consumer goods since 2004 took place in Estonia, Slovakia (euro area countries) and Czechia (a country with its national currency).

In 2023, Poland, Romania, Hungary, i.e. countries outside the euro area, demonstrated the lowest average price level of a unified basket of consumer goods among the CEE countries analysed (Figure 28). The highest price levels for a unified basket of consumer goods were recorded in the most affluent countries of the region, namely Slovenia, Estonia and Lithuania (countries that adopted the euro), but also in Czechia (a country outside the euro area). At the same time, it can be noted that most of the CEE countries outside the euro area (including Poland, Romania, Hungary) saw a lower price level than the countries of the region that adopted the euro, although this should primarily be linked to the lower level of GDP per capita calculated in euro (Figure 29).

Figure 28.

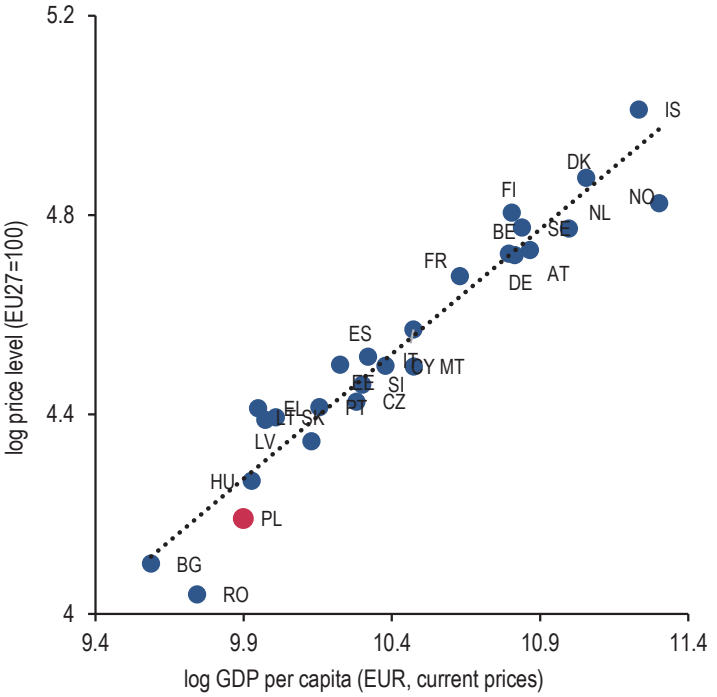
Average price level of a unified basket of consumer goods in CEE countries in 2004-2023 (EU27=100)



Source: Eurostat data.

Figure 29.

Price level and GDP per capita in 2023.



Source: NBP calculations based on Eurostat data.
Note: Due to outliers, Ireland and Luxembourg are not shown in the chart.

Fiscal policy in the context of the euro adoption

In the analysis of fiscal policy issues in the context of the potential adoption of the euro, I would like to draw your attention to three aspects.

Firstly, after entering the euro area, fiscal policy remains practically the only tool for stabilising the economy. To ensure that fiscal policy has a stabilising effect on the cyclical fluctuations of the economy, it should be tightened during the recovery phase and eased during the downturn phase.

In practice, this idea is however not always implemented and fiscal policy tends to be pro-cyclical, thus amplifying fluctuations in activity rather than stabilising it (cf. Figure 30, Figure 31, Figure 32, Figure 33). The study conducted by the European Commission in 2018 for all EU countries found that the assessment of the cyclical nature of fiscal policy in these countries was not explicit (European Commission, 2018). In the first decade of the euro area, i.e. in the years 1999-2008, these policies were acyclical or pro-cyclical and could therefore even amplify the volatility of activity and inflation over the business cycle. On the other hand, in the period after the Global Financial Crisis, Member States were less willing to ease their fiscal policy during the recovery and policy was acyclical or countercyclical.[13]

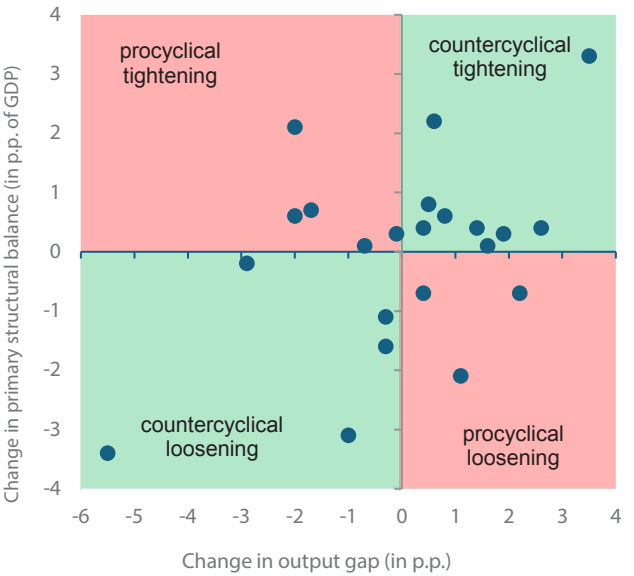
Secondly, accession to the euro area has implications for the application of European fiscal rules.[14] All EU countries are obliged to strive for keeping public finance deficits below 3% of GDP and public debt below 60% of GDP. However, the rules for disciplining EU countries for non-compliance with the excessive deficit procedure recommendations are different for euro area and non-euro area countries. The difference relates to the possibility of imposing financial penalties under the excessive deficit procedure – these penalties can only be applied to euro area countries, a sanction that has not been applied to date. In addition to financial penalties, another mechanism for enforcing fiscal policy rules exists, i.e. the macroeconomic conditionality mechanism of the EU Structural Funds. This mechanism applies to all Member States and consists of a possibility of suspending EU funds in the event of a Member State's persistent failure to comply with the recommendations of the EU economic governance procedures (excessive deficit procedure and macroeconomic imbalance procedure). These penalties also have not been applied so far.

13 Countries that adhered to European fiscal rules pursued less pro-cyclical policies. In countries pursuing loose fiscal policies, the occurrence of the economic downturn resulted in the public finance deficit exceeding the reference value of 3% of GDP and the need to reduce the deficit during the downturn, which was pro-cyclical. Such budget cuts were socially and politically costly, resulting in the "reform fatigue" and a tendency to ease fiscal policy again as soon as the economy started to recover, allowing for meeting the deficit criterion.

14 The legal basis for the functioning of the European fiscal rules, i.e. the Stability and Growth Pact (SGP), is the Treaty on the Functioning of the European Union (Articles 119-144 and Protocol 12). Coupled with the provisions of the secondary legislation, it stipulates that EU countries should aim to keep public sector deficits below 3% of GDP, and public debt below 60% of GDP. If the deficit exceeds the reference value and/or the debt exceeds the reference value and is not reduced at a satisfactory pace, an excessive deficit procedure is launched for the country concerned, which sets a deadline for the correction of the excessive deficit.

Figure 30.

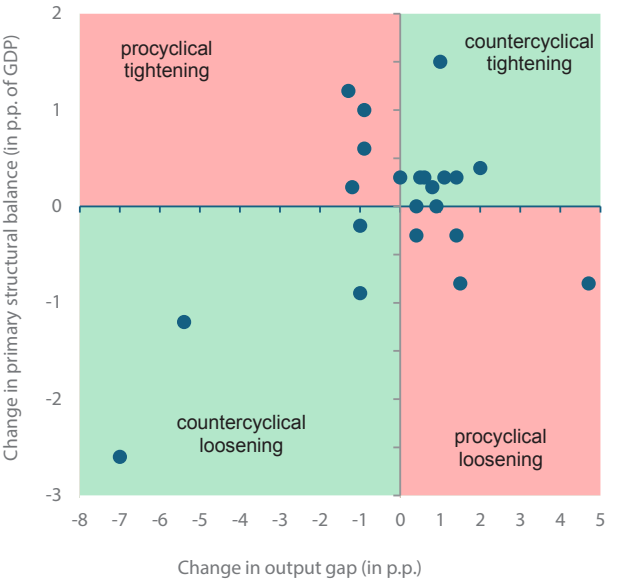
Cyclical nature of fiscal policy in Poland in 2002-2023



Source: NBP calculations based on European Commission (AMECO) data.

Figure 31.

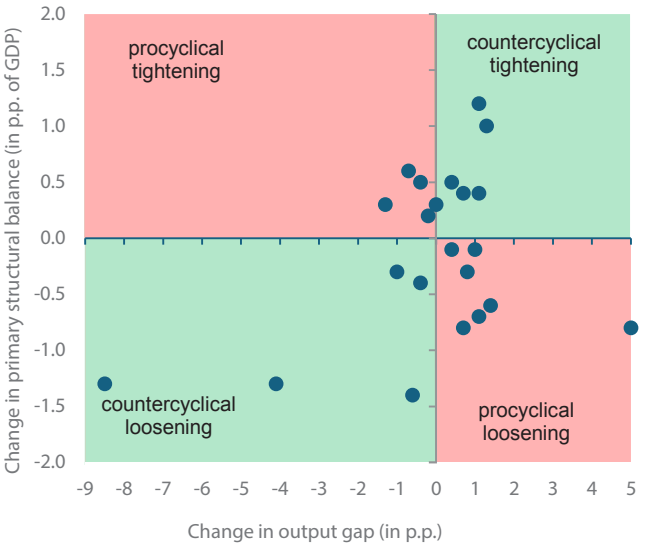
Cyclical nature of fiscal policy in the euro area in 2002-2023



Source: NBP calculations based on European Commission (AMECO) data.

Figure 32.

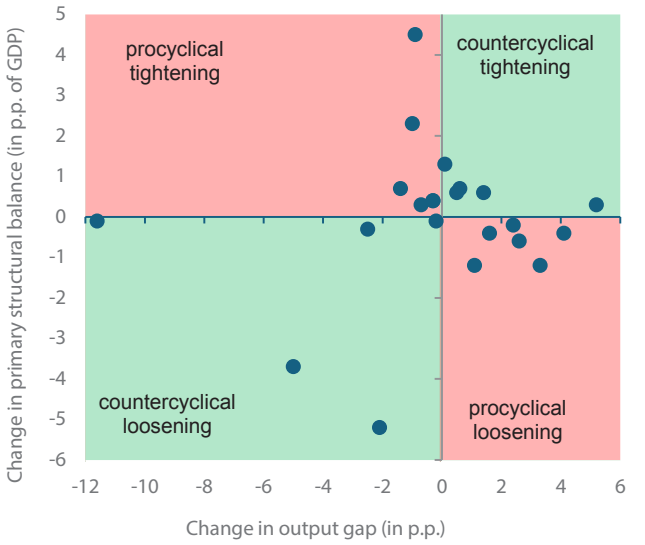
Cyclical nature of fiscal policy in France in 2002-2023



Source: NBP calculations based on European Commission (AMECO) data.

Figure 33.

Cyclical nature of fiscal policy in Spain in 2002-2023



Source: NBP calculations based on European Commission (AMECO) data.

Thirdly, the public debate indicates that accession to the euro area may contribute to a decline in government bond yields, decreasing debt servicing costs. Sovereign bond yields in countries of Central and Eastern Europe pursuing an independent monetary policy (Czechia, Poland, Romania and Hungary) tend to remain higher than yields in euro area countries (especially for bonds denominated in local currencies). This is primarily related to the current and expected levels of central bank interest rates, which are shaped to ensure that inflation stays within inflation targets in the medium term. Central bank interest rates in CEE countries tend to be higher than in the euro area, due to the fact that they are converging economies.

At the same time, I would like to point out here that yields on Polish government bonds denominated in euro (which do not depend directly on the national monetary policy of NBP, but are more closely linked to interest rates in the euro area) are currently at a lower level than, for example, in Italy, a country with a high level of public debt.[15]

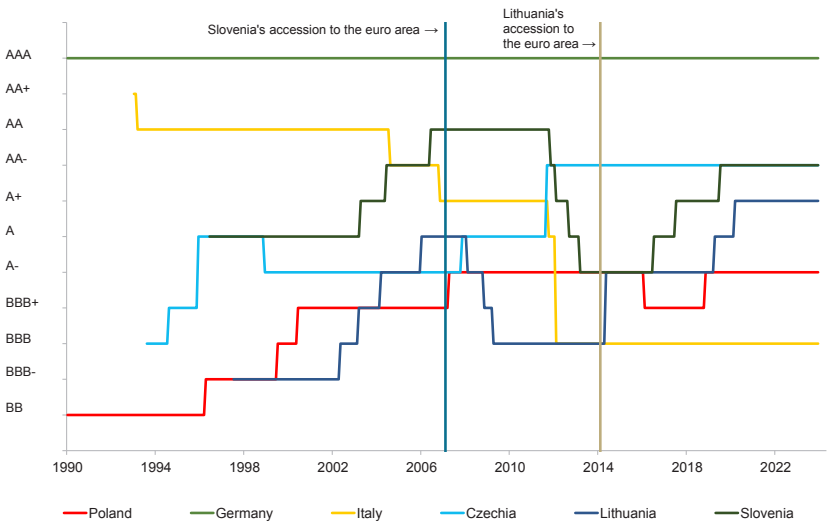
Studies indicate that there is no clear impact of accession to the euro area on sovereign investment risk (Figure 34). Slovenia's rating, for example, fell from AA to A- after accession to the euro area and has still not returned to AA. Italy's rating also repeatedly fell despite Italy remaining in the euro area. On the other hand, the ratings of Poland or Czechia were successively upgraded over the years, despite the fact that the countries remain outside the euro area. Available estimates indicate the existence of a positive rating premium for euro area membership during the first years of the euro area, but after the Global Financial Crisis – which highlighted the risks associated with euro area membership – this premium lost relevance (cf. IMF, 2015; Erhart, 2021).

It should also be borne in mind that the perception of investment risk of euro area countries is largely determined by investors' assessment of the sustainability of the euro area. The problem is much more limited for the other EU countries, as indicated by the much lower volatility of their bond spreads. For example, in the aftermath of the global financial and debt crisis in the euro area, bond spreads have increased strongly for many economies in this currency area, including in particular countries of southern Europe facing high debt (Figure 35). Therefore, accession to the euro area does not guarantee a lasting reduction in interest rates and debt servicing costs.

15 From January 2023 to June 2024, yields of 10-year Italian bonds were on average 0.2 p.p. higher than Poland's euro-denominated bond yields.

Figure 34.

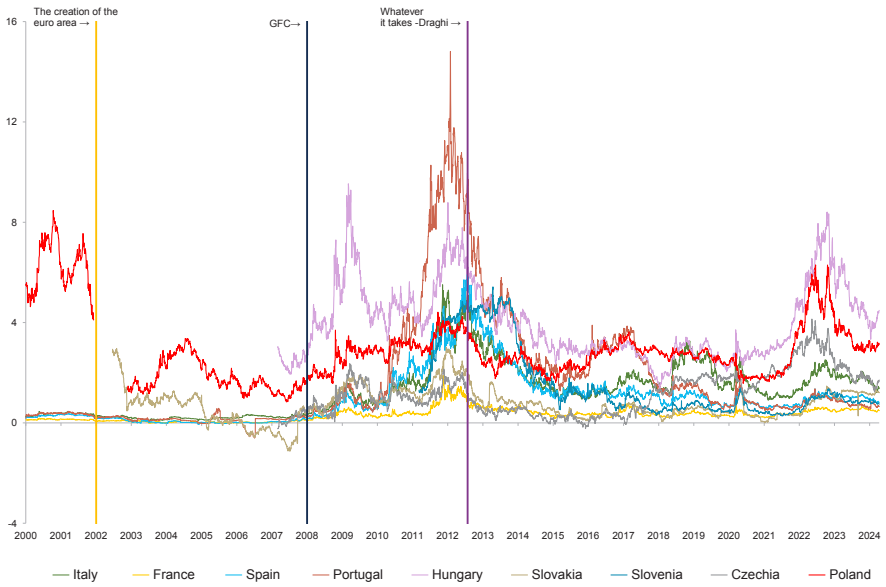
Ratings of selected countries of the European Union



Source: S&P data, NBP calculations.

Figure 35.

Spreads of 10-year government bonds of selected countries against German 10-year bond yields (p.p.)



Source: Bloomberg data, NBP calculations.

Bibliography

1. Ahmed, S., Appendino M., Ruta M. (2015), *Global value chains and the exchange rate elasticity of exports*, IMF Working Paper 15/252, International Monetary Fund.
2. Arestis, P., Phelps, P. (2018), "Inequality implications of European economic and monetary union membership: A reassessment", *Environment and Planning A: Economy and Space,* vol. 50(7), pp. 1443-1472.
3. Bakker, B. B., Klingen, C. (2012), *How Emerging Europe Came Through the 2008/09 Crisis: An Account by the Staff of the IMF's European Department*, International Monetary Fund.
4. Baldwin, R. and Taglioni, D. (2007), "Trade Effects of the Euro: a Comparison of Estimators", *Journal of Economic Integration*, vol. 22 (4), pp. 780-818.
5. Belke, A., Domnick, C., Gros, D. (2017), "Business Cycle Synchronization in the EMU: Core Vs. Periphery", *Open Economies Review*, vol. 28 (5), pp. 863-892.
6. Bielecki, M., Błażejowska, A., Brzoza-Brzezina, M., Kuziemska-Pawlak, K., Szafrański, G. (2023), *Estimates and projections of the natural rate of interest for Poland and the euro area*, NBP Working Papers, No. 364, Narodowy Bank Polski
7. Bielecki, M., Brzoza-Brzezina, M., Kolasa, M. (2020), "Demographics and the natural interest rate in the euro area", *European Economic Review*, vol. 129, 103535.
8. Bouvet, F. (2021), "Regional integration and income inequality: a synthetic counterfactual analysis of the European Monetary Union", *Oxford Review of Economic Policy*, vol. 37 (1), pp. 172-200.
9. Brzoza-Brzezina, M., Makarski, K., Wesołowski, G. (2014), *Would it have paid to be in the eurozone?, Economic Modelling*, Elsevier, vol. 41(C), pp. 66-79.
10. Cesaroni, T., D'Elia, E., De Santis, R. (2019), "Inequality in EMU: is there a core periphery dualism?", *The Journal of Economic Asymmetries*, vol. 20.
11. Cieślik, A., Teresiński J. (2020), "Comparing business cycles in the Eurozone and in Poland: a Bayesian DSGE approach", *Bank & Credit*, vol. 51(4), pp. 317-366, Narodowy Bank Polski.
12. Cieślik, A., Michałek, J., Mycielski, J. (2012), *Consequences of the euro adoption by Central and Eastern European (CEE) countries for their trade flows,* NBP Working Papers, No. 118, Narodowy Bank Polski.

13. Ciżkowicz-Pękała M., Kocięcki A., Łyziak T., Pipień M., Stanisławska E. (2023), *Mechanizm transmisji polityki pieniężnej w Polsce. Stan wiedzy w 2023 roku,* Materiały i Studia, No. 346, Narodowy Bank Polski.
14. Dąbrowski, M. Wróblewska, J. (2016), "Exchange rate as a shock absorber in Poland and Slovakia: Evidence from Bayesian SVAR models with common serial correlation", *Economic Modelling*, Elsevier, vol. 58(C), pp. 249-262.
15. Del Negro, M., Giannone, D., Giannoni, M., Tambalotti, A. (2017), "Safety, Liquidity, and the Natural Rate of Interest", *Brookings Papers on Economic Activity*, vol. 48, pp. 235-316.
16. Del Negro, M., Giannone, D., Giannoni, M., Tambalotti, A. (2019), "Global trends in interest rates", *Journal of International Economics*, vol. 118, pp. 248-262.
17. Dustmann, C., Fitzenberger, B., Schönberg, U., Spitz-Oener, A. (2014), "From Sick Man of Europe to Economic Superstar: Germany's Resurgent Economy", *Journal of Economic Perspectives*, vol. 28 (1), pp. 167–88.
18. Eicher, T. S., Henn, C. (2011), "One money, one market: A revised benchmark", *Review of International Economics*, vol. 19(3), pp. 419-435.
19. Erhart, S. (2021), *The Impact of Euro Adoption on Sovereign Credit Ratings and Long-term Rates*, EUR 30617 EN, Publications Office of the European Union, Luxembourg.
20. European Commission (2007), *Euro changeover and inflation in Slovenia*, Directorate D: Economic and Regional Statistics, https://ec.europa.eu/eurostat/documents/272892/273001/TTNR_EURO_CHANGEOVER_INFLATION_SLOVENIA_2007_03.pdf/bfd07712-28df-4bb2-8aa7-fc7198906da7
21. European Commission (2008), *Euro changeover and inflation in Cyprus and Malta*, Directorate D: Economic and Regional Statistics, https://ec.europa.eu/eurostat/documents/272892/273001/TTNR_EURO_CHANGEOVER_INFLATION_CYPRUS_MALTA_2008-04.pdf/9f986e4b-28a9-4952-a02e-c657c7c58fbc
22. European Commission (2009), *Euro changeover and inflation in Slovakia*, Directorate D: Economic and Regional Statistics, https://ec.europa.eu/eurostat/documents/272892/273001/TTNR_EURO_CHANGEOVER_INFLATION_SLOVAKIA_2009_03.pdf/a649b03c-8e56-4129-b0b0-3ea863b1a1c9

23. European Commission (2011), *Euro changeover and inflation in Estonia*, Directorate G: Business Statistics, https://ec.europa.eu/eurostat/documents/272892/273001/TTNR_EURO_CHANGEOVER_INFLATION_ESTONIA_2011_05.pdf/64221a17-2430-432e-b46e-0ee0f5b902e9
24. European Commission (2014), *Euro changeover and inflation in Latvia*, Directorate C: National Accounts, Prices and Key Indicators, November 2014, https://ec.europa.eu/eurostat/documents/272892/273001/Euro-changeover-Latvia-2014.pdf/8961bd72-f99a-498c-a413-e6dc94802bb5
25. European Commission (2015), *Euro changeover and inflation in Lithuania*, Directorate C: National Accounts, Prices and Key Indicators, December 2015, https://ec.europa.eu/eurostat/documents/272892/7106809/euro-changeover-Lithuania-2015/
26. European Commission (2018), "Fiscal outcomes in the EU in a rules-based framework – new evidence", *Report on Public Finances in EMU in 2018*, pp.105-156
27. European Commission (2023), *Euro changeover and inflation in Croatia*, Directorate C: Macro-economic Statistics, October 2023, https://ec.europa.eu/eurostat/documents/272892/7106809/euro-changeover-note-croatia-2023.pdf
28. Falagiarda M., Gartner C., Mužić I., Pufnik A. (2023), "Has the euro changeover really caused extra inflation in Croatia?", The ECB Blog
29. Faruqee, H. (2004), *Measuring the trade effects of EMU*, *IMF Working Paper*, No 04/154.
30. Fidrmuc J., Wörgötter A. (2013) "Slovakia: The Consequences of Joining the Euro Area before the Crisis for a Small Catching-Up Economy", CESifo Forum, vol. 14, 1/2013.
31. Furceri, D., Loungani, P. (2015), *Capital Account Liberalization and Inequality, IMF Working Paper*. No. 15/243.
32. Glick, R., Rose, A. (2002), "Does a currency union affect trade? The time-series evidence", *European Economic Review*, vol. 46, Issue 6, pp. 1125-1151.
33. Guerini, M., Luu, D. T., Napoletano, M. (2023), "Synchronization patterns in the European Union", *Applied Economics*, vol. 55(18), 2038–2059.
34. Gunnella, V., Lebastard, L., López-García, P., Serafini, R., & Mattioli, A. Z. (2021). *The impact of the euro on trade: Two decades into monetary union, ECB Occasional Paper Series*, No. 283/2021.
35. IMAD (2007), "Euro Changeover Effect on Inflation in Slovenia", *Slovenian Economic Mirror, Economic Analyses*, vol. 13, No. 2
36. IMF (2007), *Globalisation and Inequality, World Economic Outlook*, October 2007.

37. IMF (2009), *Republic of Slovenia: 2009 Article IV Consultation-Staff Report,* IMF Country Report, No. 09/161.
38. IMF (2015), *Central and Eastern Europe: New Member States (NMS) Policy Forum, 2014, Selected Issues Paper,* IMF Country Report, No. 15/98.
39. Kerschbaumer, F., Maschke, A. (2021), „The Implications of Monetary Union for Income Inequality: An Empirical Assessment", *Wirtschaft und Gesellschaft – WuG*, Kammer für Arbeiter und Angestellte für Wien, Abteilung Wirtschaftswissenschaft und Statistik, vol. 47(4), pp. 537-574.
40. Kose, M., Prasad E., Terrones, M. (2009), "Does financial globalization promote risk sharing?", *Journal of Development Economics*, Elsevier, vol. 89(2), pp. 258-270.
41. Laubach, T., Williams, J. (2003), "Measuring the Natural Rate of Interest", *Review of Economics and Statistics*, vol. 85, pp. 1063-70.
42. Micco, A., Stein, E., Ordoñez, G. (2003), "The currency union effect on trade: early evidence from EMU", *Economic Policy*, vol. 18, Issue 37, pp. 315-356.
43. Miles, W., Vijverberg, C. P. C., (2018), "Did the euro common currency increase or decrease business cycle synchronization for its member countries?", *Economica*, vol. 85, pp. 558–580.
44. Mundell, R. A., (1961), "A Theory of Optimum Currency Areas", *American Economic Review*, vol. 51 (4), pp. 657–665.
45. National Bank of Slovakia (2006), "The Effects of Euro Adoption on the Slovak Economy", *Working and Discussion Papers*, No. 1/2006, NBS Research Department
46. NBP (2024), *Szybki Monitoring NBP. Analiza sytuacji sektora przedsiębiorstw*, NBP, July 2024.
47. Rõõm, T., Urke, K. (2014), *The Euro Changeover in Estonia: Implications for Inflation, Bank of Estonia Working Papers*, No. 6/2014, Bank of Estonia
48. Serlenga, L., Shin, Y. (2007), "Gravity models of intra-EU trade: application of the CCEP-HT estimation in heterogeneous panels with unobserved common time-specific factors", *Journal of Applied Econometrics*, vol. 22 (2), pp. 361-381.
49. Torój, A., Konopczak K. (2012), "Crisis Resistance Versus Monetary Regime: A Polish-Slovak Counterfactual Exercise", *Central European Journal of Economic Modelling and Econometrics*, vol. 4(1), pp. 1-22.
50. Walters A. (1990), *Monetary Constitutions for Europe*, Speech at the 28th meeting of The Mont Pelerin Society, Munich, Germany.

700th Anniversary of the Consecration of St. Mary's Basilica in Kraków
(2022, collector coin)

Prussian Homage, Russian Homage
(2019, set of collector coins)

100th Anniversary of Regaining Independence by Poland
(2018, collector coin)

The Return of Gold to Poland
(2019, collector coin)

3

THE GROWING IMPORTANCE OF GOLD IN OFFICIAL RESERVE ASSETS: NBP VIS-À-VIS OTHER CENTRAL BANKS*

* The data from the International Financial Statistics database included in this study end on 2022.

Gold reserves for good times and bad

There are two goals of having solid, preferably huge, foreign exchange reserves and very large gold holdings at the right location.

The first one is an economic goal, widely known and recognised, which I write about extensively below.

The other goal is related to the security of the state. This is exceptionally important in Poland's case. The geopolitical location and foreseeable future threats to the country's military and economic safety as well as Poland's history compel us to consider every possible scenario. Sufficiently vast foreign exchange and gold reserves are absolutely indispensable in any adverse scenario for Poland.

The significance of official reserve assets and gold reserves

The official reserve assets of Narodowy Bank Polski are easily disposable, liquid foreign assets. They include foreign exchange reserves, i.e., assets in foreign convertible currencies, mainly in the form of securities, deposits and cash, as well as gold. Official reserve assets should be perceived as some of the most important items in the balance sheet total of a central bank. In some theoretical models, central bank assets are limited to loans (provided by the central bank) and the aforementioned reserves. The share of the latter in the total assets of a central bank can often indicate the type of policy pursued by this bank. The greater their share, the more importance the monetary authorities attach to the external equilibrium and vice versa. On the other hand, small reserve holdings usually mean the primacy of the internal balance over the external balance. I would like to point out that the foreign exchange reserves of the United States and the Eurozone (i.e., large and relatively closed economies) account for a small share of both the balance sheets of their central banks as well as the GDP of these countries. In addition, many countries that have decided to switch to a floating exchange rate system find it difficult to dispose of foreign exchange reserves. The point is that any conversion of these into domestic currency will be perceived by definition as a kind of FX intervention. This is one of the important reasons why the monetary authorities in some countries decide to retain reserves – even though their economic conditions would justify their sale. More importantly, high levels of foreign exchange reserves often compel monetary authorities to manage them actively in order to increase the profitability of these assets.

Initially, central banks maintained official reserve assets as a kind of cover for the issued currencies. This coverage did not always have to be in gold. Other metals that fulfilled a similar function were silver, platinum, and earlier even copper. It was not until 1873 that the gold standard was developed, thanks to which gold assumed the role of a reference unit for the new system. Contrary to the rather misleading name of that monetary system, i.e., gold standard, the ratio of gold (or other metal) to the money issued was not 1:1. As an example, we can mention Great Britain, where, due to its strong credibility, there was often a substitution effect, thanks to which the

pound sterling became a real substitute for gold. This state of affairs resulted, among other things, from the fact that the then extremely dynamic private sector settled transactions in currencies rather than in gold. Thus, in order to provide liquidity to this sector, central banks had to have other components than gold in their reserves. Therefore, even then there was a need to diversify official reserve assets. Based on the research by P.H. Lindert of Princeton University, we know that in the years 1900-1913 the share of foreign exchange reserves in total official reserve assets did not exceed 20%. Countries with a high economic potential in particular showed a relatively high tendency to diversify their official reserve assets. On the other hand, countries with a lower economic potential introduced more restrictive legislation regulating the ratio of money issued to gold held. For example, the Spanish legislation of 1874 explicitly stated that the total volume of banknotes issued by the Bank of Spain could not exceed four times the gold holdings or five times the capital contributed.

Over time, foreign exchange reserves began to serve as an element guaranteeing the convertibility of the issued money. This was particularly evident in the era of the Bretton Woods system. A rapid drain of foreign exchange reserves often led to strong currency turbulence. Perhaps the most spectacular example of such a drain was the case of the pound sterling in 1947, when less than six weeks after the introduction of convertibility, as a result of rapidly shrinking reserves, the British authorities decided to suspend the convertibility of the pound.

Another important feature of the Bretton Woods system was the politicisation of both the maintenance of gold reserves as well as the price of the precious metal. In the 1960s, France began – in compliance with the rules of this system – to demand the conversion of its dollars into gold. On the other hand, the price of gold itself was artificially kept too low for fear that a possible revaluation of the bullion could strengthen the position of the former USSR and South Africa. The collapse of the Bretton Woods system meant the de facto introduction of fiat money, based on mutual trust between the parties using such money. The currency that for the longest time (until May 2000) was (formally) linked to gold was the Swiss franc.

I would like to mention that gold seems to be deeply rooted in both Polish tradition and the way monetary policy is conducted. The very name of the Polish currency automatically evokes associations with the precious metal.

123 years of partitions and the almost simultaneous disintegration of the three partitioning powers (along with their monetary systems) made gold de facto the only effective store of value. More importantly, as Harold and Marzenna James emphasise in their book, gold offered a common denominator for Poles from three different partitions. Unlike other means of payment, gold did not have an issuer, and its value was resistant to processes taking place in broadly understood geopolitics. Hence the great attachment of Poles to gold in the interwar period. One of its first manifestations was the introduction - in September 1922 by the then Minister of Treasury, Zygmunt Jastrzębski, in dramatically difficult macroeconomic conditions - of the so-called zloty loan, the value of which was denominated in old (gold) Swiss francs. The establishment of Bank Polski SA (with the initial capital including 25.55 tonnes of gold) and the introduction of the Polish zloty into circulation (the value of which was defined at 1/3.444 grams of pure gold) was a further proof of the strong attachment of Poles to gold. More importantly, Bank Polski SA undertook to cover the issued banknotes in gold at the ratio of at least 30%. In fact, it was at a much higher level and, for example, at the end of 1929 the coverage ratio stood at 38.7%.

Over time, the attachment to gold did not diminish. On the contrary, H&M James point out that with the outflow of gold in the 1930s, the attachment of Poles to the precious metal became even stronger. It is not without a reason that Poland remained, until the end, in the so-called golden bloc – a group of countries that fulfilled (with all related consequences) the obligations resulting from the functioning of the gold bullion standard. The attachment to gold was further intensified by the growing threat to Polish statehood. When the threat finally materialised, in the early days of World War II, many Poles participated in heroic efforts to take the gold stored in the vaults of Bank Polski SA away from the occupied country. This evacuation took place under the leadership of the government commissioner at Bank Polski SA, Lieutenant Colonel Adam Koc, who said "During the war, gold is to serve the defence of the state. It no longer plays the role it played in peacetime, when it was the basis of the Polish currency."

Even in the period of the Polish People's Republic, as part of the infamous denomination of October 1950, the authorities of the time set the parity of the Polish zloty at the level of 1 zloty = 0.222168 grams of pure gold, identical to the one at which the exchange rate of the Soviet rouble had been previously set.

The attachment of Poles to gold was not reduced even by the ban on owning this precious metal, which was originally in force (until 7 November 1956). In addition to the increasingly popular US dollar, gold was still perceived by many Poles as an investment for a rainy day.

The 1990s saw large declines in gold prices, both in real and nominal terms. This was due, among other things, to the end of the Cold War and the peace dividend, as well as the intensification of the processes known as the Great Moderation in the global economy. The first steps to increase NBP's gold holdings took place during the tenure of Hanna Gronkiewicz-Waltz in 1998, with the purchase of over 74.5 tonnes of gold (the equivalent of USD 709.9 million) and as a consequence NBP's resources exceeded 100 tonnes of gold. While until the early 1990s Poland suffered from a chronic shortage of foreign currencies, after the signing of the agreement with the London Club creditors, our country's foreign exchange reserves began to grow rapidly. This state of affairs was a considerable challenge for NBP. The point was that the inflow of capital had to be properly sterilised and the accumulated reserves properly diversified and invested.

At the beginning of the 21st century, the processes initiated in the 1990s continued all over the world. In addition, a number of countries (mainly emerging economies) decided to accumulate official reserve assets, but the share of gold in these reserves was decreasing. The situation changed dramatically at the turn of the first and second decade of the 21st century. The speech delivered by Vladimir Putin, President of the Russian Federation, on 10 February 2007 in Munich, in which he questioned the political order of the time, proved to be a turning point. The sharp increase in the price of gold, which almost doubled between September 2009 and September 2011, was not without a reason.

The increase in official reserve assets is largely generated by emerging economies, whose vision of the world order often differs significantly from the Polish raison d'état. Such an arrangement puts our country in a difficult position, because despite different political interests, the institution I lead follows the trend described above. However, our country was almost at the epicentre of the two most important world wars in the history of mankind. With no intention of spreading war psychosis, but keeping in mind the words of Lt. Col. Koc, I came to the conclusion that during my tenure as the governor of NBP, Poland should increase its exposure to gold. It is also worth remembering that the

monetary authorities of the broadly understood Western world still maintain high exposure to gold. The above arguments confirm my belief in the validity of the policy of increasing exposure to gold initiated in 2018. In this study, I would like to elucidate the issue of official reserve assets, focusing in particular on the increasing role of gold.

Characteristics and functions of official reserve assets

According to the definition of the International Monetary Fund, official reserve assets mean external assets that are readily available to and controlled by monetary authorities (usually a central bank) for meeting the balance of payments financing needs, for intervention in exchange markets to affect the currency exchange rate, and for other related purposes, such as maintaining confidence in the currency and the economy, and serving as a basis for foreign borrowing. Due to their special function, official reserve assets must have a high level of safety and liquidity (they must be able to be sold easily and quickly at a low cost, and the sale should not result in a decrease in the value of these assets).

The structure of official reserve assets is most often presented using the classification contained in the IMF guidelines, where four main categories of assets are distinguished:

- assets in convertible currencies (foreign exchange reserves),
- monetary gold,
- Special Drawing Rights (SDRs);
- reserve position at the IMF.

Foreign exchange reserves are largely composed of debt securities denominated in major international currencies, while deposits and the cash account for only a small fraction.

Let me underline that the official reserve assets held by central banks constitute unconditional international liquidity. The country has this type of liquidity at its disposal sovereignly and unlimitedly. That said, there are other ways to obtain liquidity in convertible currencies. In this case, however, we are dealing with conditional international liquidity. Its most important element are currency swaps between central banks, which are a kind of alternative to

reserve accumulation as a source of liquidity in major international currencies. The significance and use of this instrument increased in particular during the global financial crisis, when four networks of swap arrangements were created around the Federal Reserve Bank (Fed), the European Central Bank, the Swiss National Bank and the Bank of Japan. Initially, swap lines were a crisis management instrument and were not permanent. Of paramount importance was the creation, in October 2013, of a permanent currency swap network with unlimited access to liquidity in a given currency between the Fed, the ECB, the Bank of England, the Swiss National Bank, the Bank of Japan and the Bank of Canada. However, it should be noted that access to liquidity in major international currencies under swaps is mainly available to the central banks of advanced economies, while for emerging economies the accumulation of reserves remains a key element in ensuring access to international liquidity in the event of a crisis. Rising geopolitical tensions and escalating armed conflicts also highlight the superiority of reserves over conditional sources of liquidity in international currencies.

Since the central bank is a public investor and official reserve assets are part of the national wealth, the management of these assets is fundamentally different from the strategies used by private investors. The literature indicates the existence of the so-called classic trilogy of objectives in the management of official reserve assets, i.e., ensuring their safety, adequate liquidity and high profitability. These objectives constitute a hierarchical structure, where safety is the highest priority, as reserves are public assets and are part of the national wealth. The second most important goal relates to liquidity, which means that an asset can be sold quickly and without incurring losses due to the drop in its price caused by an increase in supply. This is an important feature of reserve assets, which must be available to the monetary authorities, among other things, in order to be used in interventions in the foreign exchange market. Traditionally, profitability remains the least important objective, but in view of the dynamic accumulation of official reserve assets in the global economy, the importance of this goal has increased markedly. However, profit maximization is invariably not the main motive for maintaining reserves. On the other hand, the purpose of managing official reserve assets is to maximise their profitability while maintaining a high level of security and liquidity.

The role of official reserve assets as well as their level are determined, in particular, by the type of exchange rate system used by a given country. In fixed exchange rate systems (hard and soft pegs), which assume a more or less rigid pegging of the domestic currency to a foreign currency (usually one of the major international currencies) or a basket of currencies, the central bank is obliged to stabilise the exchange rate, which acts as a numerically defined nominal anchor. The central bank, therefore, strives to achieve the exchange rate target and it does so mainly through foreign exchange interventions. This makes it necessary for it to maintain sufficiently large official reserve assets. In floating exchange rate systems, there is usually no exchange rate target, and the inflation target most often serves as a nominal anchor (it is rarely a target referring to the growth rate of a selected monetary aggregate). This does not imply, however, that there are no official reserve assets in the floating exchange rate regime. This is often a result of historical factors, which I pointed out in the introduction. Moreover, official reserve assets have many functions, regardless of the type of exchange rate system and monetary policy framework. In the floating exchange rate system, the primary role of official reserve assets is to strengthen the country's creditworthiness. The size of the reserves is taken into account, among other things, in the assessment of macroeconomic and financial stability by the IMF, rating agencies or foreign investors. On the other hand, the higher the credit rating, the lower the cost of financing on global markets, the lower the volatility of the exchange rate and the lower the risk of rapid capital outflow. In addition, official reserve assets can also be used to support the stability of the financial markets or the banking sector. This is because the central bank acts as a lender of last resort for domestic banks, providing them with access to foreign exchange financing in crisis situations.

It should be underlined that in the floating exchange rate system, official reserve assets also have a protective function, and their accumulation results from the prudential motive, i.e., the desire to safeguard the national currency against the effects of sudden capital flows and speculative attacks, which cause significant fluctuations in the level of the exchange rate and its excessive deviations from the equilibrium rate. In other words, the accumulation of reserves is a form of self-insurance against financial crises. In particular, adequate

reserves make it possible to contain a sharp depreciation of the national currency in the event of a sudden outflow of short-term capital, and therefore reduce the likelihood of speculative attacks. In addition, the accumulation of official reserve assets by central banks is also dictated by the transactional motive, which is related to guaranteeing the efficient and timely servicing of foreign trade liabilities (imports) and foreign debt. Thus, reserves directly determine the solvency of the country and its ability to meet its current obligations.

An adequate level of official reserve assets means an amount of reserves that is appropriate given the needs of a particular economy. Hence, an adequate level implies a safe level. I wish to stress that appropriately high official reserve assets constitute a buffer which increases the country's resilience to negative external shocks. Traditional measures of the adequacy of official reserve assets are based on simple indicators and relate the amount of reserves to selected macroeconomic variables. The relative size of reserves calculated against these metrics is perceived as safe and adequate to the needs of a given economy. The sources of demand for reserves evolved as the financial liberalisation progressed. Therefore, adequacy measures evolved as well and reflected the emerging new types of shocks to be countered with adequate reserves.

The oldest traditional adequacy metric is the ratio of the level of official reserve assets to the value of monthly imports. This measure was proposed in 1947 by Robert Triffin. It shows how long an economy without external sources of financing will be able to import at the current level. The appropriate amount of reserves is considered to be the level corresponding to the value of three months of imports. The import-based adequacy indicator was developed at a time when the current account was a significant part of the balance of payments. In other words, trade-related capital flows accounted for the bulk of global capital flows.

However, with the liberalisation of capital flows recorded in the financial account of the balance of payments, there appeared a need to create a new measure of reserve adequacy that would take into account the needs arising from possible shocks from this account. This measure is the so-called Greenspan-Guidotti ratio (the G-G measure), which is the ratio of the level of official reserve assets to the value of short-term debt, i.e., with a maturity of up to one year. In case of this measure, an adequate level of official reserve assets corresponds

to the value of 100% of short-term debt. The Greenspan-Guidotti metric is used to assess a country's vulnerability to financial crises. It focuses on the risk of external drain in generating a liquidity crisis. Such a crisis occurs when a sudden outflow of capital leads to a rapid depletion of reserves. Countries with higher levels of reserves relative to short-term external debt are considered to be less vulnerable to financial crises because they reduce the likelihood of a sudden change in capital flows thanks to their safe levels of reserves.

An adequate level of reserves is also determined with reference to money supply. This measure takes into account the risk of internal drain, i.e., the outflow of capital from the domestic banking system (flight to foreign currency or banks). In this case, the adequacy measure takes the form of a ratio of the amount of reserves to the monetary aggregate M2, and 20% is considered to be an adequate value.

The advantages of traditional adequacy measures are simplicity and transparency. However, in order to assess the adequacy of reserves for a given economy, it is necessary to combine various factors determining their appropriate size. For this reason, composite adequacy indicators are constructed, of which the Assessing Reserve Adequacy (ARA) developed and used by the IMF is the most widely applied. This indicator takes into account a wide range of risks that are sources of shocks to the balance of payments. The ARA metric is the weighted sum of four components, which include short-term external debt, the broad monetary aggregate M2, export revenues and other liabilities. The reference value of this ratio, reflecting the adequate level of reserves, ranges from 100% to 150%.

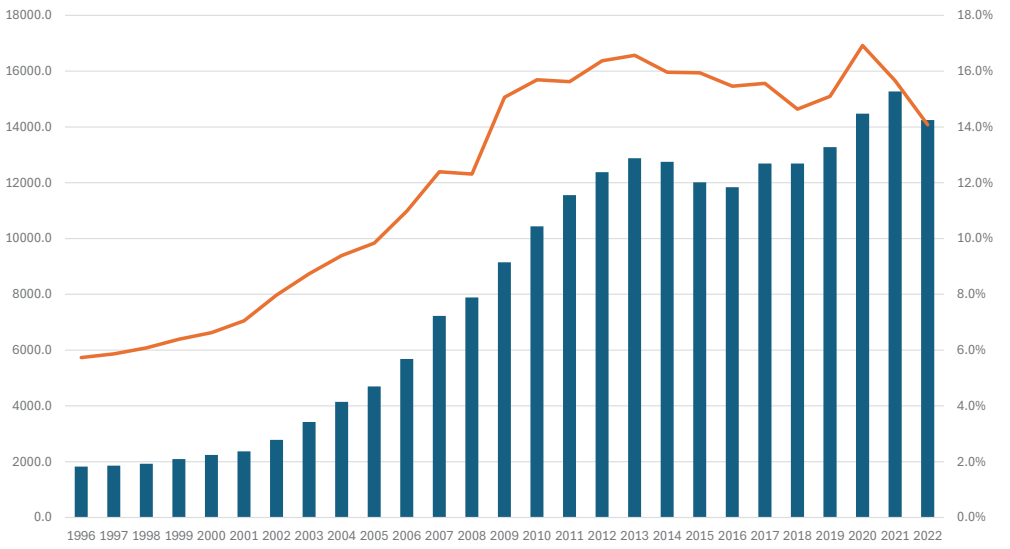
Growth of central banks' official reserve assets in the 21st century

The dynamic accumulation of official reserve assets by emerging market and developing economies (EMDEs) has continued to be a salient feature of the global economy since mid-1990s. This happened and is still happening to a large extent due to the lessons learned from the currency crises that hit emerging economies. Reserves accumulation began after a series of currency crises, in particular in response to the Asian crisis of 1997-98. The countries which at that time availed themselves of the financial assistance of the International

Monetary Fund were very critical of the effects of the adjustment programs required by the Fund. Consequently, they decided to ensure independence from the financial assistance of this institution through the accumulation of official reserve assets, which was a kind of self-insurance against a potential currency crisis. There were also other reasons behind the accumulation of reserves. Firstly, accumulation was and still is influenced by internal factors, related primarily to the export-oriented model of economic growth (characteristic especially of many Asian countries) generating significant current account surpluses. Secondly, the increase in reserves was conditioned by systemic factors, in particular turbulence in the monetary system based on fiat money and the lack of an effective global lender of last resort in a situation of the increasing scale and volatility of capital flows and the crisis-prone nature of the global economy. This process led to an increase in global official reserve assets from USD 1.9 trillion in 1996 to USD 14.3 trillion in 2022. The relative size of global reserves, measured by the ratio of their value to the global GDP, increased from 5.95% in 1996 to 16.9% in 2020, followed by a slight decrease to 14.1% in 2022.

Figure 1.

Global official reserve assets in USD billion and as a percentage of global GDP

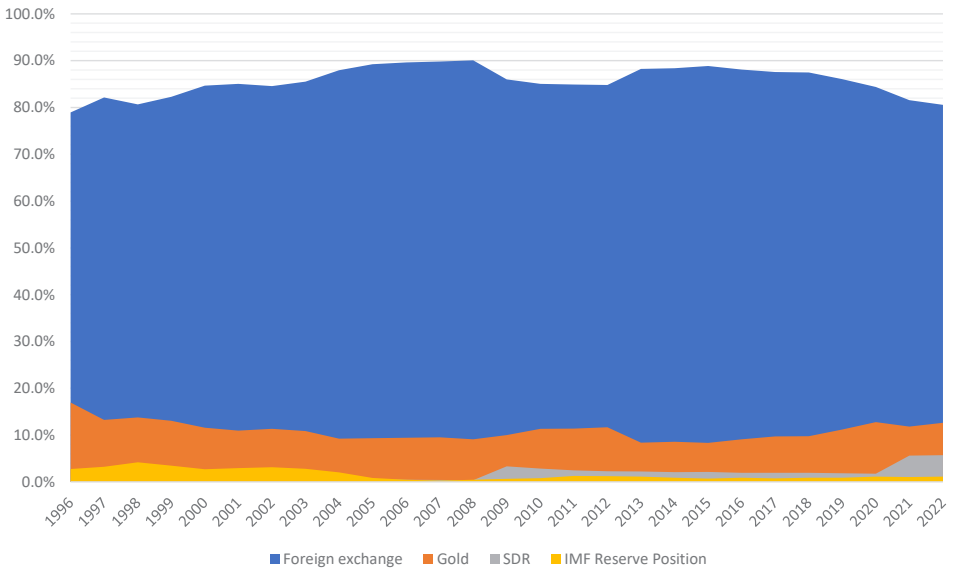


Source: International Financial Statistics data.

The majority of official reserve assets are reserves in convertible currencies (i.e., foreign exchange reserves). Their share in global official reserve assets grew rapidly from 78.9% in 1996 to 88.8% in 2015, but then declined to 80.5% in 2022. Gold remains the second largest component of the world's official reserve assets. Although its share fell from 17% in 1996 to 12.6% in 2022, this was due to the fact that the size of foreign exchange reserves grew much faster than official gold reserves.

Figure 2.

Structure of global official reserve assets



Source: International Financial Statistics data (available until 2022).

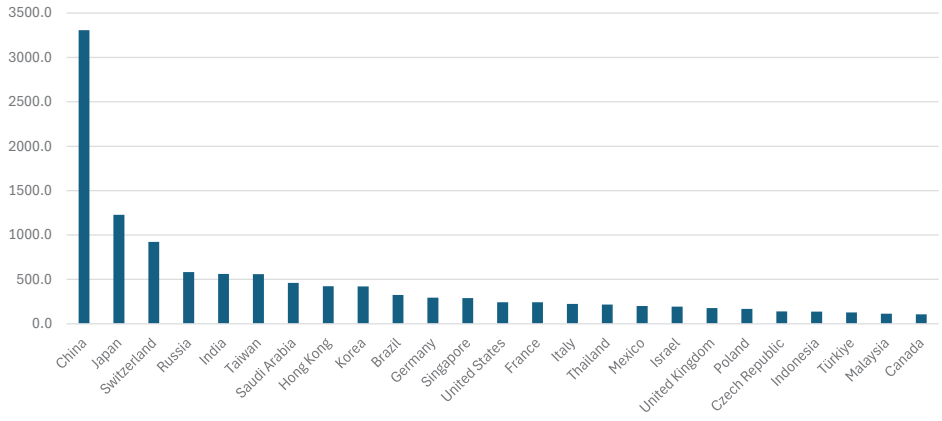
The accumulation of official reserve assets is a phenomenon occurring mainly in emerging economies, which has led to a significant increase in the share of these countries in the world's official reserve assets. China, which held USD 3.3 trillion of reserve assets at the end of 2022, is an unprecedented case. Specific reasons have led to the dynamic accumulation of official reserve assets in two advanced economies, namely Japan and Switzerland. As a result of

this process, Japan ranks second among the countries with the largest official reserve assets (USD 1.2 trillion at the end of 2022), and Switzerland ranks third with reserves of USD 924 billion at the end of 2022.

In the case of both countries, the accumulation of reserves was determined by the intervention motive. In Japan, the dynamic increase in reserves resulted from the measures applied by the central bank to counteract the yen's appreciation, especially in 2004, in order to increase the competitiveness of the export sector, which was one of the instruments of the strategy to combat deflation and weak economic growth through the export growth channel. In the case of Switzerland, the accumulation of reserves was the result of FX interventions of the Swiss National Bank conducted in the face of strong appreciation of the franc. Swiss reserves grew rapidly from 2009, which was directly related to the global financial crisis and the narrowing of the interest rate differential between Switzerland and the other major central banks (which was a consequence of drastic reductions by those central banks and an increase in uncertainty in the global economy). The growing demand for the franc, leading to its strong appreciation, resulted from the so-called safe-haven asset effect, which means that in periods of crisis and increased instability in the global financial system, there is a flight of investors to assets traditionally perceived as safe. The above-mentioned interest rate differential only intensified this demand.

Figure 3.

Countries with the largest official reserve assets at the end of 2022 (USD billion)



Source: International Financial Statistics data (available until 2022).

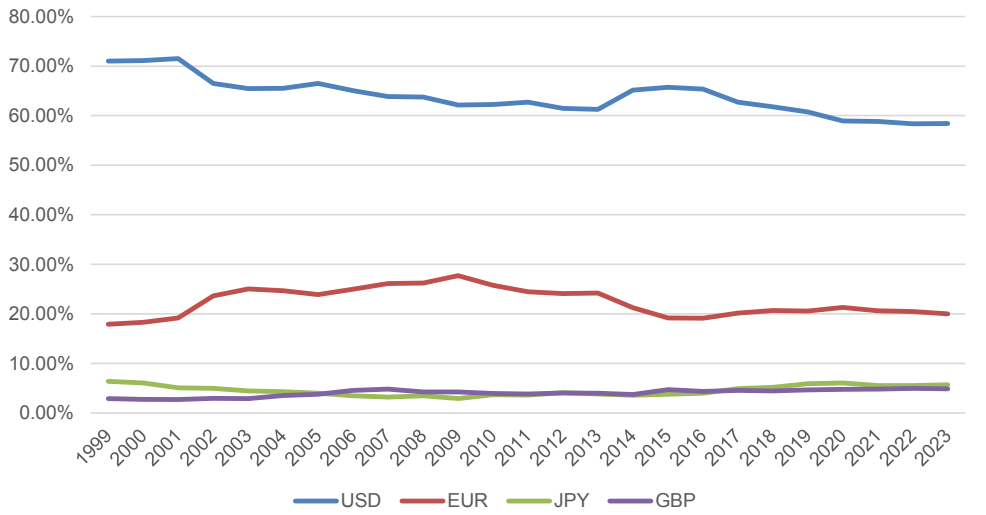
The US dollar invariably occupies the dominant position in the currency structure of global reserves, while the second position, albeit with a much smaller share, is held by the euro, and both currencies account for about 80% of the world's reserves. It should be noted, however, that this applies to the so-called allocated reserves, i.e., a fraction of the world's reserves whose currency structure is disclosed to the IMF by member countries and published by the Fund in the form of aggregated data in the Currency Composition of Official Foreign Exchange Reserves (COFER) database. On the other hand, the currency structure of unallocated reserves is not disclosed by the member countries to the Fund. The analysis of the currency structure of global foreign exchange reserves has long been difficult due to the large share of unallocated reserves. However, there has been a major change in this regard and as a result unallocated reserves accounted for 7.2% of total global foreign exchange reserves at the end of 2023 (compared to 37.6% at the end of 2015). This shift resulted, among other things, from the expansion of reporting on the structure of reserves by the central bank of China.

Although the share of the US currency in global foreign exchange reserves fell from 71.5% in 2001 to 58.4% in 2023, this was not only due to the diversification of reserve portfolios by central banks and the increase in the share of alternative reserve currencies (especially CAD, AUD and CNY), but was also a consequence of the depreciation of the US dollar. In addition, it should be emphasised that, at the same time, the share of the euro – despite temporary growth – remained virtually unchanged (amounting to 19.2% in 2001 and 19.9% in 2023). Therefore, the initial expectations that the US dollar will be dethroned by the euro have not come true. Moreover, despite the great publicity surrounding the internationalisation of China's currency, central banks held only 2.3% of their reserves in the renminbi in 2023.

In the investment structure of the world's foreign exchange reserves, the dominance of government debt securities denominated in major international currencies is noticeable. This is due to the aforementioned features of official reserve assets, which must first and foremost be safe assets. A characteristic feature of accumulation of official reserve assets is investment concentration, in particular in US Treasury securities. It should be emphasised that a significant increase in official reserve assets made it necessary to diversify them. One of the ways in which this diversification was achieved by central banks after the global financial crisis was by increasing gold reserves.

Figure 4.

Currency structure of the world's allocated foreign exchange reserves



Source: Currency Composition of Official Foreign Exchange Reserves (COFER) data.

A change in the approach of central banks to gold

The suspension of the convertibility of the US dollar into gold, which took place on 15 August 1971, was a watershed moment in the history of the international monetary system. In April 1978, the Second Amendment to the IMF Articles of Agreement came into force, sanctioning the elimination of gold as a monetary anchor and the central element of this system. After years of more or less serving as money, this precious metal was demonetised and its formal ties with the national money were finally severed. It should be emphasised that the demonetisation of gold as a result of the collapse of the Bretton Woods system ended the era of pegging a national currency to gold, but did not eliminate it from all functions of money. In the contemporary international monetary system, called the Kingston system, gold does not serve as a means of payment and a unit of account, but to a large extent is used as a store of value in both the official and private sectors.

In their article *The Rise and Fall of a Barbarous Relic: The Role of Gold in the International Monetary System*, Barry Eichengreen and Machael Bordo demonstrated that for about 20 years after the collapse of the Bretton Woods system, gold maintained the dominant position in the structure of the world's official reserve assets. The size of gold reserves in ounces remained virtually unchanged during that period, while their value and share in global official reserve assets was changing due to fluctuations in the price of gold. In 1972, gold reserves accounted for 41.9% of the world's official reserve assets, then remained at an elevated level due to the rise in gold prices. In 1989, this ratio was 40.3% and only from that moment did it begin to decrease clearly and systematically. Bordo and Eichengreen point to five reasons for the continued dominance of gold in official reserve assets long after the collapse of the Bretton Woods system: the power of habit and institutional memory of central banks (gold reserves continued to be associated with currency stability); the lobbying of the gold mining industry; collective responsibility for supporting the practice of holding gold reserves (a kind of behavioural motive: reluctance of central banks holding significant amounts of gold to reduce the share of gold in reserves for fear that other central banks would follow suit, and then a fall in prices would cause the loss of value of gold reserves); the function of gold as a war chest, which was an important premise in the context of the Cold War (not surprisingly, gold reserves began to decline markedly only after 1989); as well as the invariable feature of gold as a good hedge against high inflation (which was important in the context of strong inflation and oil crises in the 1970s).

From the beginning of the 1990s, however, the share of gold in official reserve assets began to decrease. This was determined by several factors. Firstly, countries in East Asia started to increase their reserves exponentially: Taiwan, whose reserves had been growing since the second half of the 1980s, took the lead first, then Japan from the mid-1990s, and finally China from the beginning of the 21st century. Secondly, in the 1990s, some central banks decided to sell their reserves. This was due to a variety of factors, the most important of which were: the generally good global economic and macroeconomic situation, in particular the stabilisation of inflation, as well as the reduction of political risk related to the end of the Cold War, which made the features of gold as a safe-haven asset appear less important. Thus, the decrease in the share of gold in official reserve assets

took place during the Great Moderation. The sell-off of gold led to a decline in its price in the second half of the 1990s, which further reduced its attractiveness as a component of reserves. In addition, the growing pressure to increase the profitability of official reserve assets further prompted decisions to sell the precious metal. As a result of gold sales by some central banks and the IMF, the share of gold in global official reserve assets fell from 35% in 1989 to 9.1% in 2008.

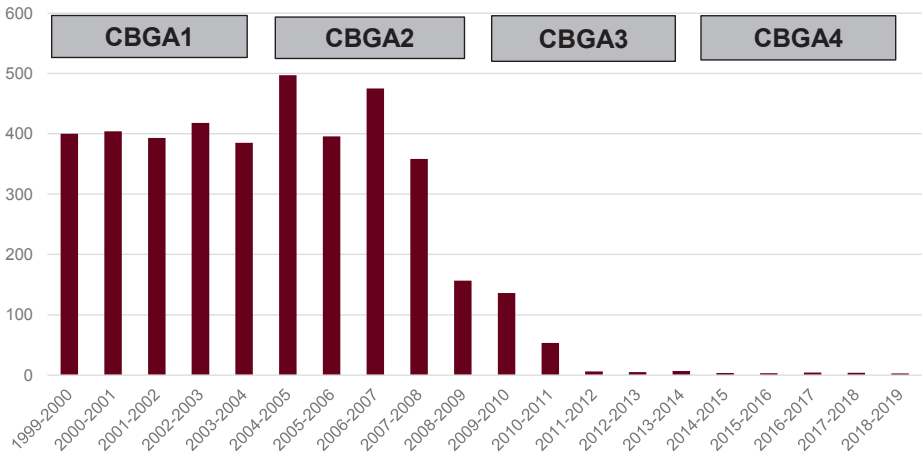
The decline in gold prices observed in the 1990s, caused, among other things, by the sales by central banks, was significant. As signals of the sell-off appeared, the gold price fell to nearly USD 252 per ounce in August 1999 from the average level of USD 380-420 per ounce in the 1980s. In order to prevent further declines in bullion prices, which were also related to the unclear intentions of central banks, 15 European central banks represented at the annual meeting of IMF governors in Washington in September 1999 signed an agreement, in which the central banks of the United States, Japan and Australia, as well as the IMF and the Bank for International Settlements also informally participated. The first Central Bank Gold Agreement (CBGA1) was in force until September 2004 and was designed to reduce the gold reserves held by the participating central banks in a controlled and coordinated manner. It should be emphasised that the central banks that were signatories to the agreement held 45% of the world's gold reserves, while together with the informal participants, as much as 85% of the world's bullion reserves. The agreement introduced upper limits on gold sales for individual central banks. The total limit for the entire agreement was 2,000 tonnes and was completely exhausted by the sale of gold. The second agreement of this type (CBGA2 – the second Central Bank Gold Agreement) was concluded for the period from April 2004 to September 2009. The limit of gold sales was increased to 2,500 tonnes. However, the central banks sold "only" 1,884 tonnes of gold under CBGA2, which is significantly less than the limit. In addition, there was a significant decrease in the dynamics of gold sales at the end of the agreement.

The third Central Bank Gold Agreement (CBGA3) was concluded for the period from September 2009 to September 2014. In this case, the decline in the willingness of central banks of advanced economies to dispose of gold reserves was striking. Most of the central banks of these countries did not sell any gold at all (only Germany did so to a small extent, and Greece, Malta and Slovakia to a marginal extent). Only 207.2 tonnes of gold were sold under

CBGA3, meaning only one-tenth of the planned sales, most of which (181.3 tonnes) were sold by the IMF, while central banks sold only 25.9 tonnes of gold. This should be interpreted as the first very clear sign of changes in the approach of central banks in advanced economies to the role of gold in official reserve assets.

Figure 5.

Central bank gold sales as part of successive CBGAs (tonnes)*



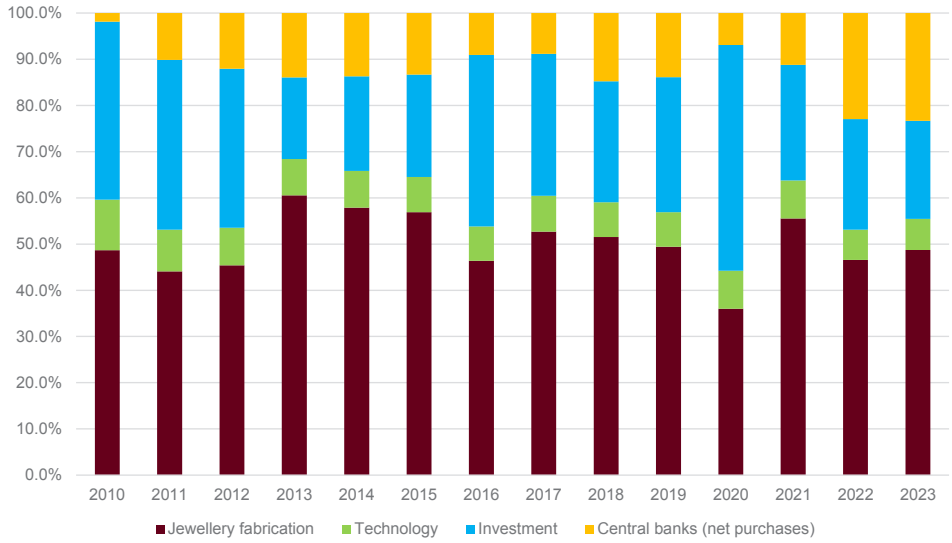
Source: World Gold Council data.
*Purchases in subsequent CBGA years were made in the September-September periods.

Despite the failure to implement the planned sale of gold under CBGA3, the central banks of European countries decided in May 2014 to continue cooperation under the fourth Central Bank Gold Agreement (CBGA4). Symptomatic in this case was the abandonment of gold sales limits. The most important signal, however, was the almost complete discontinuation of gold sales by the central banks participating in the agreement. As part of CBGA4, the central banks sold merely 17.6 tonnes of gold, and it was practically only the Bundesbank that continued selling. After CBGA4 expired, the central banks of European countries decided not to renew the agreement due to the fact that none of them was planning to sell any significant amount of gold at that time.

It is difficult to assess the effectiveness of the CBGAs unequivocally since the price of gold began to rise rapidly in the early years of the 21st century due to the growing demand from many increasingly wealthy Asian countries. Between March 2001 and March 2008, gold prices almost quadrupled, despite relatively low inflation. Rising gold prices not only halted further gold selling, but even encouraged many central banks to increase their exposure to gold. The outbreak of the great financial crisis in 2008 only accelerated the new trend. Thus, the central banks of advanced economies have definitively stopped selling gold and invariably maintain the largest gold holdings. On the other hand, the central banks of emerging and developing economies began to dynamically increase gold reserves. In 2008, central banks in aggregate again became net buyers of gold. This definitively ended a period in which central banks were an important source of gold supply. Since then, net purchases by central banks have become an increasing part of global gold demand. The share of central banks in global demand for gold grew extremely dynamically, from a mere 1.9% in 2010 to 23.3% in 2023.

Figure 6.

Structure of global demand for gold

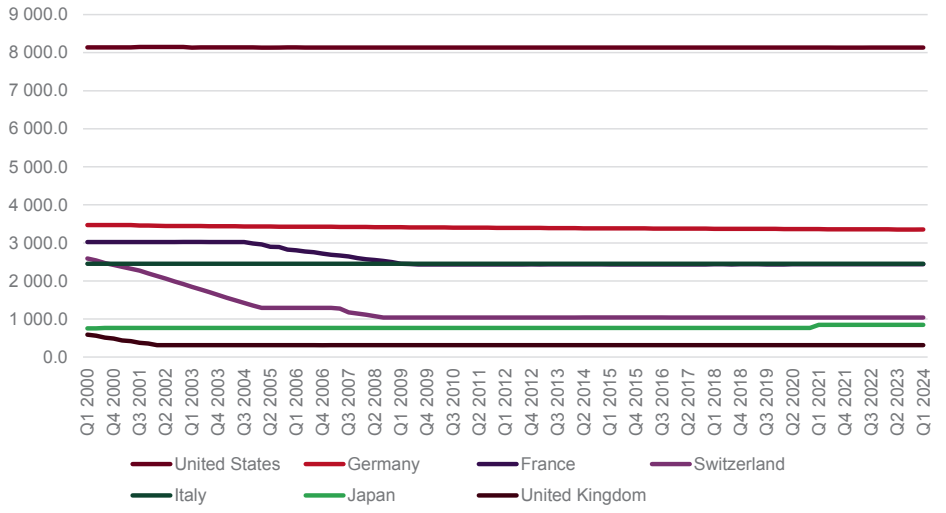


Source: World Gold Council data.

At the same time, I would like to emphasise that the central banks of advanced economies continue to maintain the largest gold reserves. The gold holdings of the United States remain invariably at the level of 8.13 thousand tonnes. In addition to the USA, Germany (3.35 thousand tonnes), Italy (2.45 thousand tonnes) and France (2.44 thousand tonnes) are among the largest holders of gold reserves. In total, these four countries possess 14.4 thousand tonnes of gold, which represents as much as 45% of the world's official gold reserves. Moreover, these countries are also characterised by a very high (significantly above the average for advanced economies) share of gold in official reserve assets. As of June 2024, the share stood at 72.4% in the United States, 71.5% in Germany, 68.3% in Italy, and 70% in France. Among European countries, the Netherlands, Portugal and the United Kingdom are also worth mentioning. The Netherlands made significant gold sales under CBGA1 and CBGA2 between 1999 and 2008, when the central bank sold as much as 400 tonnes of gold. However, the Netherlands stopped reducing its gold reserves at that and did not sell any under subsequent central bank gold agreements. It still holds 612.5 tonnes of gold, accounting for 61.5% of official reserve assets. The central bank of Portugal holds 382.7 tonnes, but gold accounts for as much as 74.1% of official reserve assets in this country. The United Kingdom conducted an unfortunate sale of more than 50% of its gold holdings between 1999 and 2002 under CBGA1. The country sold 345 tonnes of gold at an extremely low price of USD 275 per ounce on average.

Figure 7.

Gold reserves held by major central banks of advanced economies (tonnes)

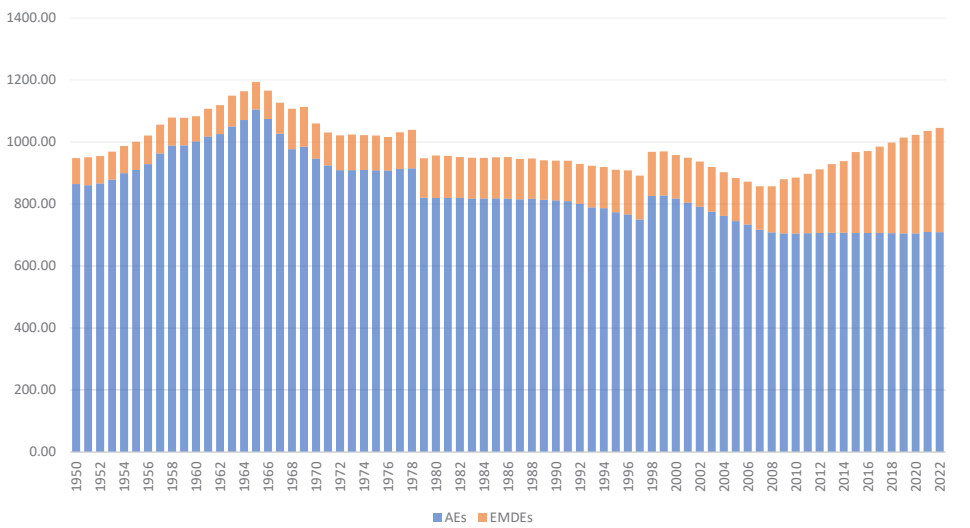


Source: World Gold Council data.

I would like to point out that since the global financial crisis, central bank purchases of gold have invariably been characterised by two trends. Firstly, gold is bought almost exclusively by the central banks of emerging economies, while gold reserves in advanced economies remain stable. Secondly, the significant increase in central bank gold reserves since 2008 is not a widespread phenomenon and is limited to very large purchases by a few central banks. As a result of the purchases, the disproportion between the gold reserves held by advanced and emerging economies has decreased. The share of gold reserves of advanced economies in global gold reserves decreased from 84.7% in 2000 to 68.4% in 2022, while in the case of emerging economies this ratio increased from 15.3% to 31.6% over this period. Nevertheless, the share of gold in official reserve assets in large emerging economies often remains significantly lower than in advanced economies. In 2022, gold accounted for 19% of official reserve assets in advanced economies, while in emerging economies the ratio was 7.3%. It should be noted, however, that in many Western advanced economies, the share of gold in reserves is significantly above the average for this group as a whole.

Figure 8.

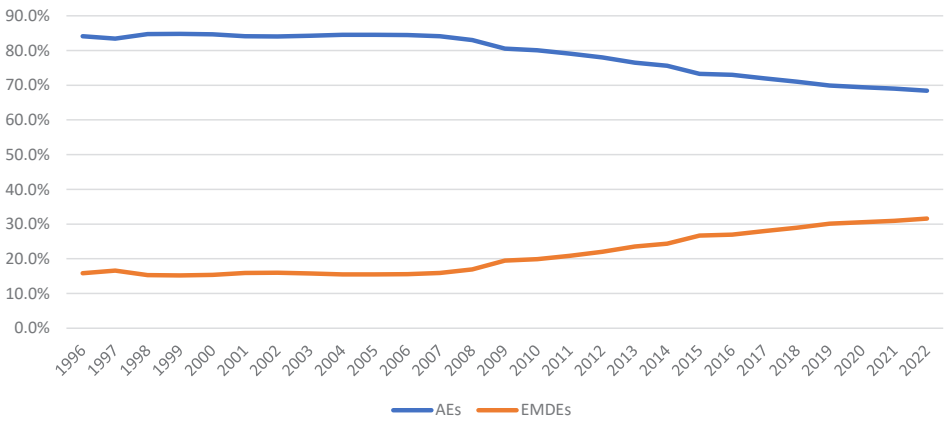
The world's official gold reserves (million troy ounces)



Source: International Financial Statistics data (available until 2022).

Figure 9.

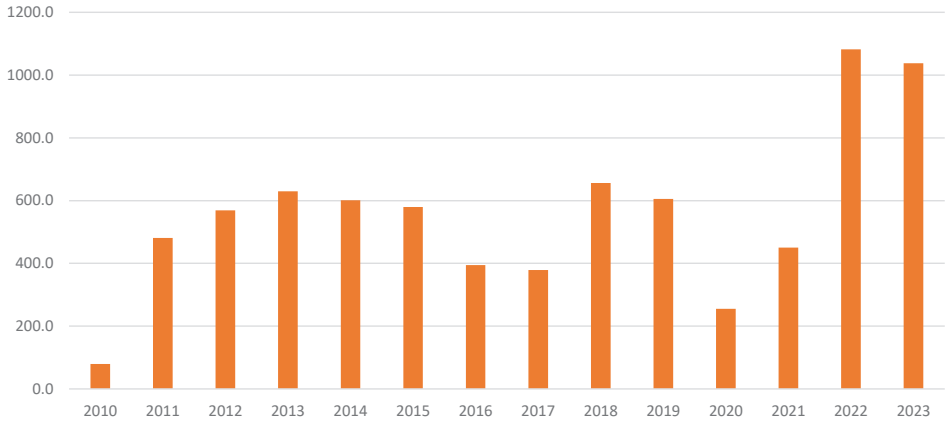
Share of advanced and emerging and developing economies in global gold reserves



Source: International Financial Statistics data (available until 2022).

Figure 10.

Net purchases of gold by central banks (tonnes)



Source: World Gold Council data.

Since 2010, central banks have increased their gold reserves by 7.8 thousand tonnes and at the end of 2023 they maintained a total of 36.7 thousand tonnes. This represents 17% of the world's gold reserves. At the same time, the share of central banks in the global demand for gold increased from just 1.9% in 2010 to 23.3% in 2023. In 2022, central banks purchased 1,082 tonnes, which has been the largest purchase since 1967, while in 2023 they bought 1,037.4 tonnes of gold, which was only a slightly less than in 2022.

The central banks of the large emerging economies – Russia, China, Turkey and India – played a leading role in gold purchases. Until 2019, the largest purchases of gold had been carried out by the Bank of Russia, increasing its gold reserves by over 1.93 thousand tonnes from 2007 to 2022, which put Russia in the first place among the countries buying gold. In this case, the gold purchases were part of a strategy to de-dollarise reserves, as a result of which the share of the US dollar in reserves was reduced from 43% in 2014 to 16.4% in 2021. At the same time, Russia significantly increased the share of gold in official reserve assets to 21.7% in 2021 (at the end of 2023, gold accounted for 25.7% of reserves).

The central bank of China also plays an outstanding role in gold purchases and increased its reserves by more than 1.63 thousand tonnes in 2009-2023. Although the People's Bank of China (PBoC) stopped buying gold in the autumn of 2019, it resumed regular purchases in November 2022, which was undoubtedly related to the escalation of geopolitical tensions and at the same time a sign of a decline in confidence in US dollar assets after the imposition of sanctions on the Bank of Russia and the freezing of a significant portion of its reserve assets. In 2023, the PBoC took the lead in central bank gold purchases, acquiring 225 tonnes of gold, and in the first half of 2024, it purchased almost 29 tonnes. As a result, the PBoC gold reserves have increased to 2,264 tonnes, making it the sixth largest holder of gold reserves among central banks. Despite these activities of the PBoC, the share of gold in China's official reserve assets remains low at only 4.9%.

Significant purchases of gold were also made by the Reserve Bank of India (RBI). The RBI has been pursuing a policy of systematically increasing its gold reserves only since 2018 (the purchase of 200 tonnes of gold from the IMF in 2009 was a one-off operation). It is characteristic that this central bank buys gold in small quantities, but quite regularly. In 2023, the RBI scaled down purchases compared to previous years and bought 16.2 tonnes of gold (compared

to 77.5 tonnes in 2021 and 33.3 tonnes in 2022). Between 2018 and 2023, it increased its gold reserves by 245.5 tonnes. In the first half of 2024, the RBI continued purchases and acquired 37.2 tonnes of gold, thus increasing its bullion holdings to 840.8 tonnes, and the share of gold in official reserve assets reached 9.6%. It should be emphasised that India is also characterised by a very strong private demand for gold.

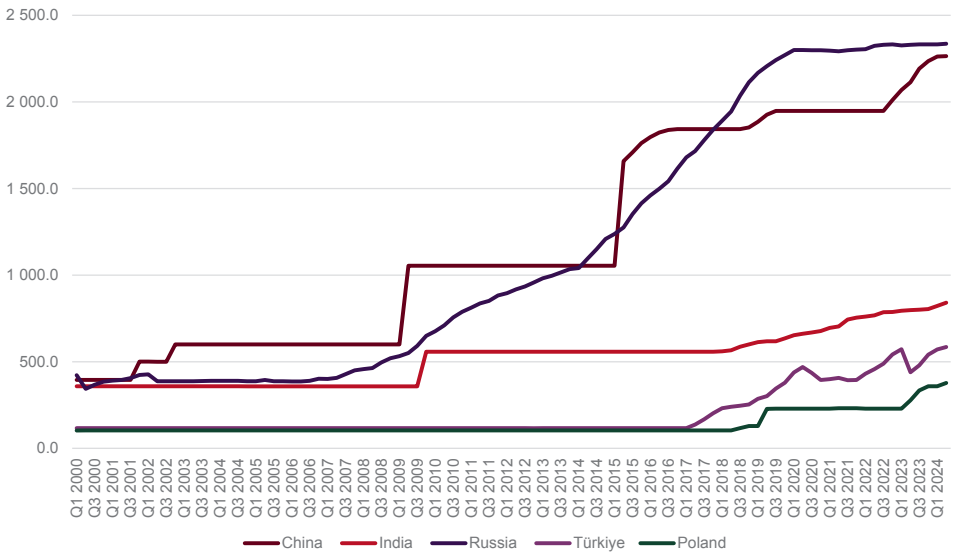
Between 2017 and 2022, the Central Bank of the Republic of Türkiye (CBRT) remained one of the key buyers of gold and its gold reserves defined as official sector gold reserves[1] were increased by more than 425 tonnes in total. In 2022, the CBRT was the central bank buying the largest amounts of gold (147.3 tonnes). It should be noted that the holdings on the balance sheet of the Central Bank of Türkiye are higher than the actual gold reserves held by the CBRT. This is due to the introduction in 2011 of the Reserve Option Mechanism (ROM), which allows commercial banks to pay part of their reserve requirements in gold (up to 10% of the reserve requirement). In January and February 2023, Türkiye bought 45.5 tonnes of gold, while between March and May it sold as much as 158.9 tonnes of gold. This was a response to the strong increase in demand for gold in the face of hyperinflation and a significant depreciation of the lira. As Türkiye introduced a temporary ban on gold imports, the increase in demand posed a risk of destabilising the local gold market. The sale of gold by the CBRT was also aimed at defending the lira. However, in June 2023, the CBRT resumed purchases, which indicated that the selling was a tactical move and did not represent a change in its strategy of increasing gold reserves. Significant purchases in the second half of 2023 enabled the CBRT to rebuild its gold reserves to 540 tonnes at the end of the year, which was only slightly (1.8 tonnes) lower than at the end of 2022. In the first half of 2024, the Turkish central bank purchased 44.7 tonnes of gold, increasing its gold holdings to about 585 tonnes. At the same time, the share of gold in Türkiye's official reserve assets remains high at 34.1%.[2]

1 Official sector gold reserves. For more information about the calculation of gold reserves in Türkiye, go to https://www.gold.org/download/file/16208/Central-bank-stats-methodology-technical-adjustments.pdf

2 The data originate from the World Gold Council (WGC). According what was presented on the website as at 20 August 2024, the data concern November 2022, yet this is most likely a mistake on the part of the WGC, because it can be read on the Council's website that following gold purchases in December 2022, the gold reserves grew to 542 tonnes (accounting for 28% of total reserves at the time). https://www.gold.org/goldhub/gold-focus/2023/02/central-banks-round-2022-more-net-purchases-december

Figure 11.

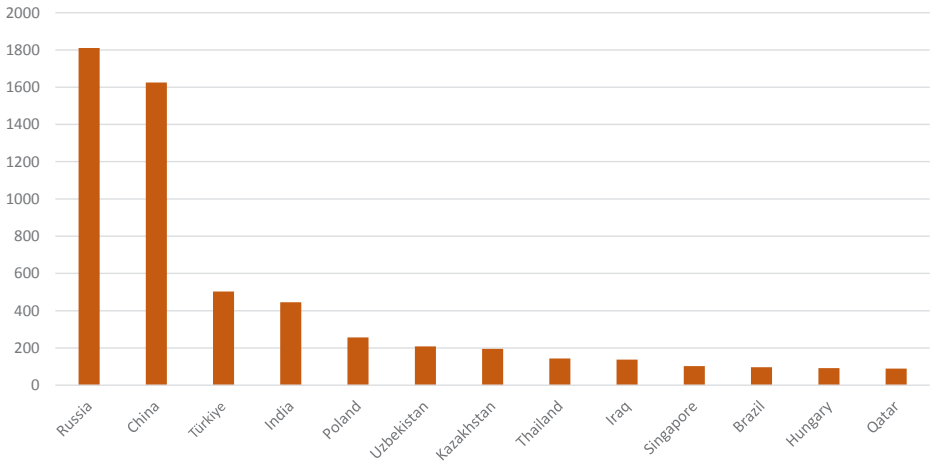
Gold reserves of selected emerging economies (tonnes)



Source: World Gold Council data.

Figure 12.

Largest purchases of gold by central banks in 2009-2023 (tonnes)



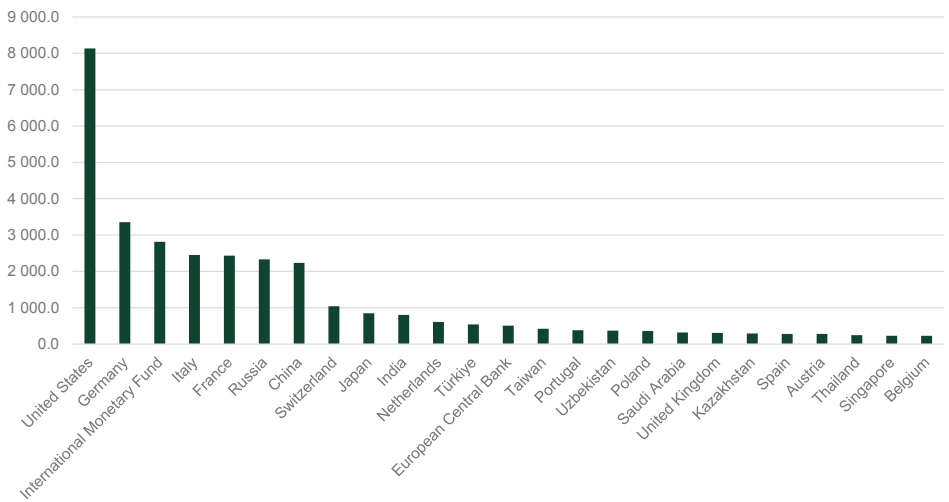
Source: World Gold Council data.

In 2018, the central banks of Poland and Hungary also became important buyers of gold. I will present the gold purchase strategy pursued by NBP in greater detail in the following sections. In 2018, the Hungarian central bank increased its gold reserves from just 3.1 tonnes to 31.5 tonnes, while in 2021 it tripled its gold reserves (by purchasing 63 tonnes of gold in March 2021), increasing them to 94.5 tonnes. The increase in the share of gold in Hungary's official reserve assets was impressive: in 2000, gold accounted for only 0.3% of official reserve assets, while at the end of 2023 its share reached 13.8% and grew to 14.3% by June 2024 (as a result of increase in the value of gold). The strategy of regular gold purchases has also been pursued by the Czech National Bank (CNB) since May 2023. In this case, purchases are made very regularly, every month, but in small quantities, not exceeding three tonnes. Since the start of the purchases, the CNB gold reserves have increased from 12 tonnes to 41.5 tonnes in June 2024. However, the share of gold in foreign exchange reserves of CNB was only 2.1%.

As a result of significant gold purchases, the central banks of several emerging economies implementing such a strategy joined the group of the largest gold holders. However, the group is still dominated by advanced economies, and the top 10 central banks with the largest gold reserves so far include only three emerging economies – Russia, China and India.

Figure 13.

Central banks and institutions holding the largest gold reserves at the end of 2023 (tonnes)



Source: World Gold Council data.

Reasons for the change in central banks' approach to gold

The significant change in the approach of central banks to gold and the scale of their purchases raise the question of the reasons for this phenomenon. There are several factors at play that are of both economic and non-economic nature. There are indications that the tendency to increase gold reserves in many central banks in emerging economies was a result of quantitative easing pursued by major central banks and the resultant persistence of negative real interest rates. In addition, there were fears that quantitative easing could trigger an increase in inflation. At the same time, negative real interest rates reduced the opportunity cost of holding gold reserves. It should also be emphasised that the unprecedented increase in global official reserve assets – mainly reserves in convertible currencies – created a need for their diversification. In this context, concerns about the condition of the US dollar intensified, mainly due to the deteriorating fiscal position of the United States. The tendency among central banks to diversify foreign exchange reserves by reducing the share of the US dollar and increasing the share of alternative international currencies is particularly symptomatic. The rise of gold holdings was also becoming an increasingly important element of diversification of official reserve assets.

The change in central banks' attitude to gold and the resumption of gold purchases are also related to the strategic role of gold in official reserve assets. Gold guarantees preservation of the value of reserves in the long term for central banks (i.e., it is a long-term store of value). Moreover, during periods of crisis, the price of gold usually rises, leading to an increase in the value of the gold holdings of central banks. The historical role of gold in official reserve assets is also important, and gold holdings are sometimes referred to as a war chest. The motives for accumulating gold are increasingly related to the geopolitical conditions. Geopolitical risks have risen sharply amid the wars in Ukraine and the Middle East as well as rising tensions in US-China relations, particularly over Taiwan's status. Symptoms of deglobalisation and fragmentation of the world economy have also become visible, as has the emergence of a clear divide into political and economic blocs. In this regard, the increase in the number and scope of financial sanctions applied by the United States and allied countries since the beginning of the 21st century remains key. In particular, it is argued that the dollar becomes

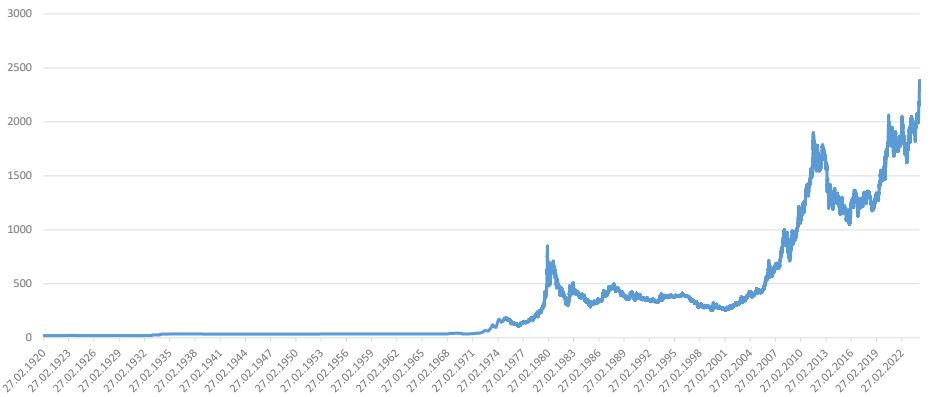
a kind of financial weapon of the United States ("dollar's weaponization") and an instrument to pursue the country's geopolitical interests. The literature increasingly emphasises that the wide application of sanctions reduces the attractiveness of the US dollar as an international currency, since the US currency loses one of the intrinsic features of a global public good, namely unlimited access to it. Sanctions imposed on central banks, which has so far been the case of Iran, Venezuela and Russia, are of particular importance in this regard. In particular, the freezing of official reserve assets of central banks and the risk of their confiscation have a strong signal effect and encourage central banks to seek protection against such risks, including by increasing the share of gold in reserves. However, I would like to stress that gold can be an effective hedge in the event of sanctions and freezing of central bank reserves only if the bullion is stored in national vaults. In this case, gold is actually an unfreezable asset.

The evolution of the price of bullion is particularly important in the context of rising central banks' gold reserves. Since the beginning of the 21st century, there has been a significant increase in the price of gold on the London market, which still remains the world's most important international gold market. Back in 2001, the price of an ounce of gold fell to a 20-year low of USD 276.5. However, as a result of the global financial crisis and the subsequent sovereign debt crisis in the euro area, the price of gold rose sharply. In July 2007, the price of an ounce of gold was around USD 660, while in September 2011 it reached USD 1,902. Gold prices then fell significantly (partially as a result of the Fed's tightening) and remained at a lower level until March 2020, when they rose sharply due to the outbreak of the COVID-19 crisis. At that time, the price of an ounce of gold exceeded the psychological barrier, reaching USD 2,060 in August 2020. Subsequently, gold prices remained at an elevated level during the COVID-19 crisis. They rose sharply as a result of Russia's aggression against Ukraine on 24 February 2022, again exceeding the barrier of USD 2,000/oz. A period of particularly strong growth in the price of gold followed the Hamas attacks on Israel on 7 October 2023. Due to persistent geopolitical tensions, the price of gold remained at an all-time high in 2023 and has stayed above USD 2,000/oz for most of the time since November 2023. However, a truly unprecedented surge in gold prices began in February 2024 as a result of which the price reached USD 2,400/oz in May. In August 2024, the price of

gold broke another record, reaching USD 2,508/oz. This development is largely driven by two factors, namely ever-increasing geopolitical tensions and widespread expectations of interest rate cuts by major central banks.

Figure 14.

Gold price on the spot market (USD)



Source: Bloomberg.

Apart from the direct causes of rising demand for gold among central banks that have been mentioned so far, there are also reasons stemming from gold's unique characteristics. These features of gold have a universal and timeless character and distinguish the precious metal from other components of official reserve assets. I believe that owing to these characteristics, gold ensures financial security to a greater extent than other reserve assets. In particular, I would like to emphasise the following points. First of all, gold reserves are devoid of credit risk associated with the insolvency of the issuer. In addition, there is no currency risk. Unlike debt securities denominated in foreign currencies, whose depreciation or devaluation leads to a decrease in the value of reserves held in these currencies in terms of domestic currency, gold cannot be devalued,

though its price fluctuations are significant. Unlike foreign exchange reserves, gold holdings are also not exposed to the effects of the monetary policy of central banks issuing reserve currencies. In addition, there is no possibility of unlimited increase in the supply of gold, whereas in the case of reserve currencies, central banks have the right of unlimited money creation. Moreover, gold reserves are not exposed to the risk of inflationary debt financing.

Substantial gold reserves increase confidence in the central bank and the national currency. In this case, gold is a symbol of value and is a kind of trust anchor. This is also due to its physical form, durability and indestructibility (gold does not corrode). In addition, it is indicated in the literature that large gold reserves have a positive impact on the assessment of a country's credit risk, which is important for the cost of financing on international markets. The positive impact of gold on the value of official reserve assets is particularly visible in periods of crisis, when its price rises as a result of investors' flight to safe haven assets. The positive correlation between the increase in geopolitical risk and gold prices is also confirmed by the latest research. Surveys conducted by the World Gold Council show that the rise in gold prices during periods of crisis is now the second most important reason for central banks to hoard gold. In addition, the value of gold has maintained a steady upward trend over many years, despite significant fluctuations in its price. Moreover, a special feature of gold relates to its effective inflation hedge role in the long term. An increase in inflation or inflation expectations causes investor demand for gold to rise and, as a result, its price increases. Gold is also an effective diversifier of reserve assets of central banks, primarily due to the low degree of correlation of the price of gold with the prices of other assets and the negative correlation with the US dollar exchange rate. Gold is, therefore, a countercyclical component of the reserve portfolio.

Gold is not exposed to political risks either. In particular, it is free from direct links to the economic policy of any country. On the other hand, the role of political factors is particularly pronounced in the case of reserves held in US dollars, which entail a risk of freezing. The federal administration's considerable discretion in decisions in this regard is also emphasised. Gold reserves provide special protection in this context, as they allow for the diversification of political risk and constitute a strategic protection in the event of an armed conflict. For this reason, gold is referred to as an asset of last resort.

The emerging economies with the largest gold reserves are increasingly inclined to store them domestically. This trend is not limited to emerging economies, as the central banks of Germany, Austria, Belgium, the Netherlands and France have also decided to repatriate their gold holdings. Repatriation also took place in the case of Polish gold. In 2019, almost half of the gold resources at that time, i.e., 100 tonnes, were transferred from the Bank of England to the vaults of the NBP in Poland. The diversification of storage locations results from the strategic nature of gold reserves and is in line with the trend that prevails in other European countries, which store about 50% of gold reserves in their own vaults. In 2013, the Bundesbank decided to relocate part of its gold reserves to the vault in Frankfurt am Main in order to ensure that half of these reserves are held in the country from the year 2020. As a result of this large-scale operation, 300 tonnes of gold from New York and 374 tonnes from Paris were transported to Frankfurt, and the entire project was completed in 2017.

Gold purchases in NBP's strategy

Increase in NBP's official reserve assets

Pursuant to Article 52(1) of the Act on Narodowy Bank Polski, the central bank performs the function of central foreign exchange banking institution by holding and managing foreign exchange reserves, conducting banking operations and taking other measures to ensure the safety of foreign exchange operations and the payment liquidity of the country. The floating exchange rate system has been in place in Poland since the year 2000, and monetary policy is based on inflation targeting strategy. In these conditions, official reserve assets are primarily used to strengthen the country's financial credibility, thus contributing to a reduction of the cost of financing on global markets and the volatility of the PLN exchange rate, as well as to a reduction of the risk of a rapid outflow of capital. Thus, they support the stability of the Polish currency. In addition, reserves can be used to support the stability of the financial markets or the banking sector in the event of significant disruptions in their functioning.

A floating exchange rate system means that the relation of the zloty to foreign currencies is essentially determined by market forces, i.e., the supply of

and demand for the currency. Foreign exchange interventions are carried out by NBP only in exceptional situations and their purpose is not to target a specific level of the exchange rate of the Polish zloty against foreign currencies, but only to counteract negative trends that could disrupt the efficient functioning of the foreign exchange and financial markets or adversely affect financial stability or the effectiveness of the monetary policy pursued by NBP.

It should be underlined that after the watershed of 1989 Poland entered the market system with dramatically small FX reserves, but with huge debts, threatening the bankruptcy of the state. This risk was averted by signing agreements with creditors from the London Club in 1994. Foreign capital began to flow into Poland and the value of foreign currencies held by NBP grew. In addition, one of the objectives of the exchange rate policy after 1991 was to maintain the growth of foreign exchange reserves to ensure their safe level.

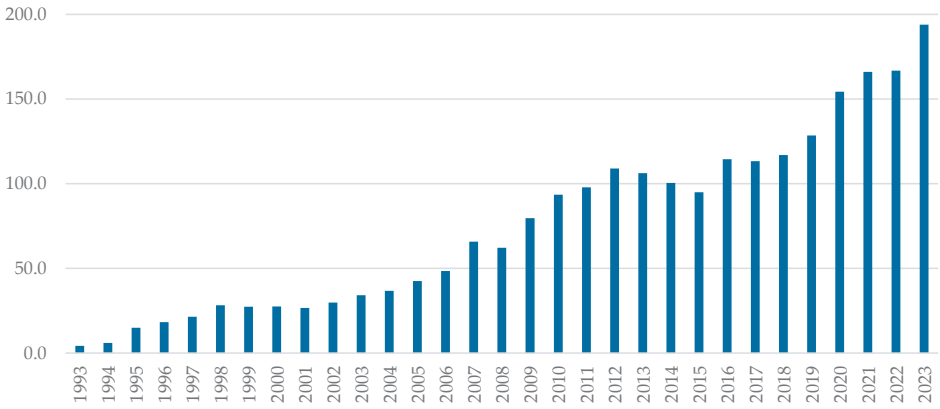
In 1994, NBP's official reserve assets started to grow dynamically due to the inflow of foreign capital in the form of direct and portfolio investments. In 1994-95, the reserves also increased as a result of current account surpluses. From 1995, NBP organised fixing sessions with domestic banks (as part of so-called transaction fixing), during which it purchased foreign currencies from domestic banks. A significant increase in turnover during fixing sessions was a consequence of the development of the domestic FX market, stimulated by the decisions of the Monetary Policy Council, which liberalised the mechanism for setting the zloty exchange rate. In addition, excess liquidity on the interbank market forced NBP to absorb it by selling its own bills. Therefore, the trend for the zloty to appreciate against the main currencies prevailed on the FX market. In this situation, the central bank's interventions carried out in the event of excessive appreciation of the zloty also resulted in an increase in NBP's foreign exchange reserves. It should be emphasised that the rise in NBP's reserves in the 1990s significantly helped to increase the flexibility of the exchange rate mechanism and then to facilitate the transition in April 2000 to the floating exchange rate system in the conditions of a monetary policy based on the inflation targeting strategy. At the same time, the discontinuation of transaction fixing in June 1999 and the de facto lack of intervention in the FX market resulted in a temporary and slight decrease in NBP's foreign exchange reserves.

Since 2000, the pace of accumulation of NBP's official reserve assets has followed the global trend. However, the main reasons for this accumulation were different from those typical of most emerging economies. In the case of Poland, the gradual increase in the value of reserves did not result from foreign exchange interventions, but primarily from a positive balance of external flows, largely stemming from the inflow of funds from the European Union. In January 2004, the Ministry of Finance and NBP signed an Agreement on the sale and purchase of foreign currencies for the servicing of foreign liabilities and receivables of the State Treasury and the rules for the implementation of this service. According to the Ministry of Finance data, net inflows from the EU in 2004-2021 amounted to EUR 143.4 billion (USD 178.0 billion). A significant part of these funds was converted into zloty by NBP and thus increased the level of foreign exchange reserves. The increase in NBP's reserves was also driven by profits from their investment.

Poland ranks high in the global ranking of countries with the largest official reserve assets. At the end of 2023, NBP's official reserve assets reached the equivalent of USD 193.8 billion, increasing sevenfold compared to USD 27.5 billion in 2000. In 2023, the size of NBP's reserves was equivalent to nearly 24% of Poland's GDP. In addition, the volume of NBP's reserves ensures that they remain at an adequate level in terms of commonly used reserve adequacy ratios reflecting the potential needs of the balance of payments in crisis situations.

Figure 15.

NBP's official reserve assets (USD billion)

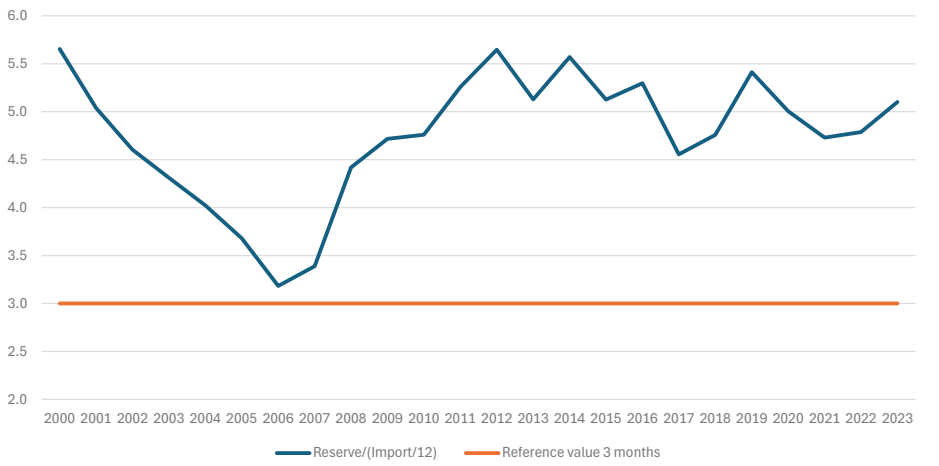


Source: NBP data.

The size of NBP's official reserve assets can be analysed from the point of view of the previously presented adequacy measures. This is important also because the size of NBP's reserves is analysed and assessed in a similar way by, inter alia, the IMF. With regard to the import measure, NBP's reserves not only guaranteed the coverage of the reference value of three months of imports, but remained at a higher level and in 2023 corresponded to the equivalent of 5.1 months of import liabilities. With regard to the adequacy measure based on the ratio of official reserve assets to short-term external debt, the level of NBP's reserves was also significantly above the reference value of 100% and amounted to 145.9% in 2016, 135.4% in 2017, 139.6% in 2018, 140.6% in 2019, 156.4% in 2020, 161.3% in 2021 and 149% in 2022. In the case of the adequacy measure relating the volume of reserves to the M2 money aggregate, NBP's official reserve assets were also significantly above the reference value of 20%, reaching 33.6% of the M2 aggregate in 2023.

Figure 16.

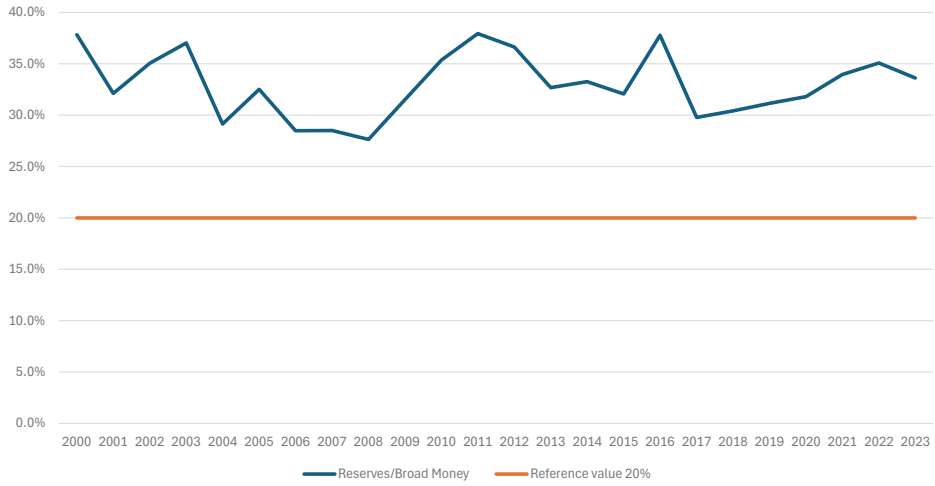
Ratio of NBP's official reserve assets to the value of Poland's monthly imports



Source: IMF data.

Figure 17.

Ratio of NBP's official reserve assets to the M2 monetary aggregate



Source: IMF data.

The evolution of the adequacy ratios of NBP's official reserve assets demonstrates that the Polish central bank maintains reserves at an adequate level, thus ensuring financial security and high resistance to shocks. This was also confirmed by the assessments of the International Monetary Fund. Moreover, in terms of the IMF's composite measure of reserve adequacy, namely ARA, it is clear that since the global financial crisis, NBP has maintained an adequate level of official reserve assets, which in 2023 corresponded to 149.2% of the ARA metric. Positive assessments are included in the IMF's annual consultations under Article IV of the Articles of Agreement. In reports from these consultations, the IMF stresses that NBP's official reserve assets remain at the adequate level that ensures appropriate protection in the event of negative external shocks and market turbulence.

NBP's foreign exchange reserves management strategy

NBP's approach to the management of foreign exchange reserves is similar in terms of objectives to that of other central banks. Due to the role of reserves, priority in managing them is given to ensuring the safety of the invested funds and their adequate liquidity. While observing these criteria, NBP also undertakes measures to raise the yield on the reserves in the long-term horizon. The *Strategy for Foreign Exchange Reserves Management* adopted by the NBP Management Board in 2020 provides for maintaining a diversified currency structure of reserves in order to reduce exchange rate volatility and increase the profitability of reserves in the long term.

NBP's foreign exchange reserves are managed internally, which means that all investment decisions are made and implemented directly by NBP, without the involvement of any external asset management institutions. The framework for the investment process is provided by guidelines approved by the NBP Management Board, including a set of rules, regulations and procedures, in particular concerning the decision-making process, admissible asset classes, as well as financial risk management principles, including the setting of credit limits and criteria for selecting counterparties.

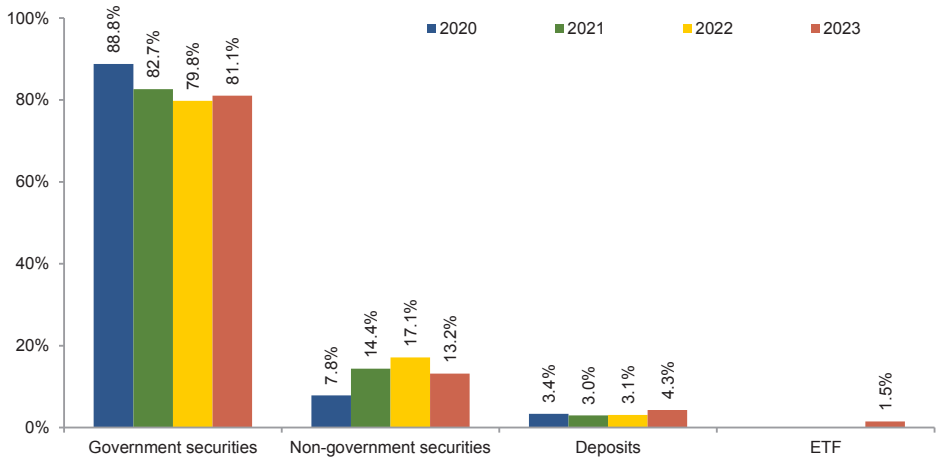
Investment structure of NBP's reserves

NBP invests foreign exchange reserves in typical instruments used by central banks. At the same time, the gradual increase in NBP's reserves and the market conditions (especially the decline in yields on debt securities) created a need to seek investment opportunities offering higher yields and became a premise for NBP to gradually expand its investment spectrum. The dominant part of NBP's reserves is invested in government debt securities (mainly US, German and French). They are characterised by the highest degree of security and liquidity. In 2023, they accounted for 81% of NBP's foreign exchange reserves. The Bank also invests in non-governmental debt securities. They are primarily issued by international institutions, government and state agencies, and corporations. In 2023, they accounted for 13.2% of NBP's foreign exchange reserves. A small part of the reserves are short-term deposits in banks with

high creditworthiness (4.3% of foreign exchange reserves in 2023). Some of the securities in NBP's portfolio (approximately 1.1% of foreign exchange reserves) are green bonds and sustainable development bonds. In 2023, NBP initiated purchases of units in exchange traded funds (ETFs) replicating stock indices on the US, Eurozone, UK, Canada and Australia markets. At the end of 2023, they accounted for 1.5% of foreign exchange reserves.

Figure 19.

Investment structure of NBP's foreign exchange reserves in 2020–2023 (as at the end of the year)



Source: NBP data.

Currency structure of NBP's reserves

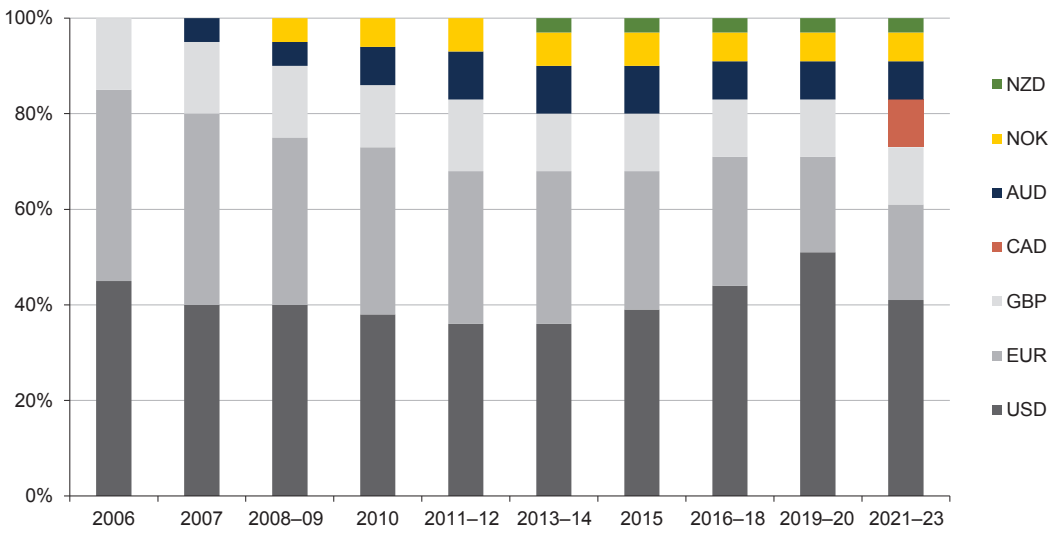
In line with the practice of most central banks, the US dollar and the euro play the dominant role in NBP's reserves portfolio. This is due to the highest liquidity of these currencies and the broadest investment opportunities provided by the markets of US, German and French government securities, with relatively low credit risk. Significant exposure to these markets serves to meet the priority

objectives of the management of the central bank's foreign exchange reserves, i.e., a high level of safety of invested funds and their appropriate liquidity.

Starting in 2006, when NBP's reserve portfolio comprised only USD (45%), EUR (40%) and GBP (15%), NBP gradually included other currencies in its reserves, i.e., the Australian dollar (AUD), the Norwegian krone (NOK) and the New Zealand dollar (NZD), and in 2021 also the Canadian dollar (CAD). The purpose of this process was to increase the profitability of reserves in the long term while reducing the exchange rate risk, which remains the main risk in the process of investing reserves. At the end of 2023, the currency structure of NBP foreign exchange reserves was as follows: 41% USD, 20% EUR, 12% GBP, 10% CAD, 8% AUD, 6% NOK and 3% NZD. It should be underlined that despite the dominant share of USD and EUR in reserves, NBP can be classified as a central bank with a relatively highly diversified currency structure of reserves. The total share of these two main currencies in NBP's reserves is 61%, while in global reserves it reaches 80%.

Figure 20.

Currency structure of NBP's reserves (as at the end of the year)



Source: NBP data.

Gold purchases conducted by NBP

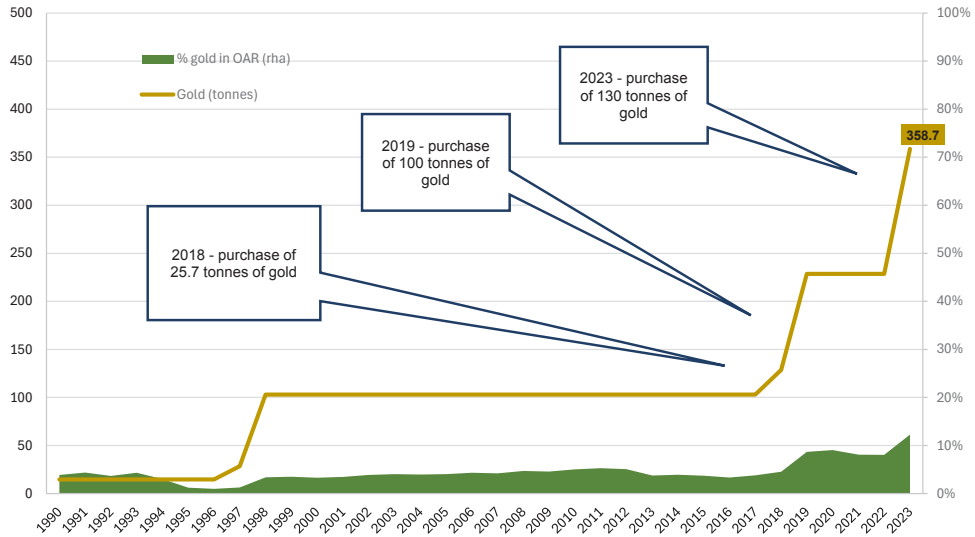
Gold is the second-largest component of NBP's official reserve assets, which also reflects the trend in the structure of global reserves. Moreover, gold is a strategic component of official reserve assets. It is worth noting that from 1990 to 1996, NBP's gold reserves amounted to just 14.7 tonnes. In 1997, NBP changed the way gold was reported as an official reserve asset. Until the end of 1996, only a part of the monetary gold deposited in banks abroad was included. Since 1997, the official reserve assets have comprised all monetary gold constituting NBP's assets. The first purchases of gold were carried out by the Polish central bank in 1998 and the process was related to the establishment of a commission for the management of gold at NBP. Its task was to decide what position the NBP should take on the issue of gold: sell it off, like other central banks, increase its share, keep it abroad or bring it to Poland. Eventually, the commission recommended increasing NBP's gold holdings. As a result, in June 1998, the Polish central bank bought 74.5 tonnes of gold, which increased the total gold holdings of NBP to 103 tonnes and they remained at this level for the next 20 years.

In 2018, a new stage of a significant increase in NBP gold reserves as a result of bullion purchases was initiated. The purchases of gold not only allowed NBP to increase Poland's strategic financial safety buffer, but also brought NBP closer to the average of central banks worldwide in terms of the share of this metal in official reserve assets. In addition, gold purchases allowed for the diversification of NBP's growing reserves. In 2018, the NBP Management Board made a strategic decision to increase gold reserves by 25%. This decision was supported by the fact that the ratio of NBP's gold holdings to its total reserves was lower than in other countries. As a result, in 2018–2019, NBP purchased 125.7 tonnes of gold (25.7 tonnes in 2018 and 100 tonnes in 2019), which increased the gold reserves to 231.8 tonnes. In 2023, NBP ranked second among the central banks with the largest gold purchases. The Polish central bank bought 130 tonnes of gold, increasing its gold reserves to 358.7 tonnes. The share of gold in NBP's official reserve assets also increased significantly from 3.3% in 2000 to 12.3% in 2023. In Q2 2024, NBP purchased a total of 18.7 tonnes of gold and ranked first among central banks in terms of the volume of gold purchases. As a result, NBP's gold reserves increased to 377.4 tonnes. In July 2024, gold accounted for 14.2% of NBP's official reserve assets. In terms of

the size of gold reserves, NBP ranks 14th among national central banks in the world and 7th among European central banks (the IMF and the ECB, being international financial institutions, are not considered here). As a result of the purchases, NBP's gold holdings are now higher than those of the United Kingdom (320 tonnes) and Spain (282 tonnes) and only slightly lower than those of Portugal (383 tonnes).

Figure 21.

NBP's gold reserves (in tonnes and as % of official reserve assets)



Source: NBP and International Financial Statistics data.

In 2024, the NBP Management Board decided to increase the share of gold in official reserve assets to 20%. As a result of this operation, the gold reserves of the Polish central bank will reach the level of almost 600 tonnes, which is similar to the gold reserves of the Netherlands, and Poland will become one of the largest gold holders in the world.

With regard to the storage location of gold reserves, in July 2019, the NBP Management Board decided to diversify the places where gold is stored by bringing 100 tonnes of gold to Poland. This decision was related to earlier decisions of the Bank's authorities to increase gold reserves by a total of 125.7 tonnes. The gold relocation operation was completed in November 2019. The decision of the NBP Management Board to repatriate gold was of a strategic nature and was dictated by the desire to increase the financial security of Poland, in particular to enable unrestricted disposal of gold if geopolitical risk materialises. The Polish gold is currently stored in the vaults of NBP in Poland as well as in the Bank of England and the Federal Reserve Bank of New York.

The gold stored in domestic and foreign vaults is in the form of bars that meet the international London Good Delivery standards – each bar has a similar weight (approx. 12.5 kg) and contains at least 99.5% of pure gold. This ensures easy trading and high liquidity, i.e., the possibility of quick conversion into cash. It should also be emphasised that NBP's gold stored outside the country is in the form of allocated gold, which means that each bar assigned to the NBP account is precisely identifiable, marked with a unique serial number and refiner's mark. The storage of gold by NBP in London creates an opportunity to increase the profitability of reserves by investing gold in the form of deposits on the interbank market.

Summary

The trend of increasing gold reserves initiated by central banks 16 years ago is permanent and resistant to seasonal or cyclical factors. The World Gold Council forecasts that central banks will remain net buyers of gold, but it is unlikely that in 2024 the scale of purchases will exceed 1,000 tonnes for the third year in a row.

Although central banks' demand for gold is largely generated by emerging economies, various sources point to the possibility that some advanced economies would follow suit. The example of Poland does not go unnoticed. There are many indications that NBP's strategy may have encouraged the Czech National Bank to initiate gold purchases in March 2023. In terms of the size of gold reserves, our country, despite the increased activity of NBP, lags behind not only the big three in Europe (Germany, France and Italy), but also countries such as the Netherlands and Portugal. The vast gold reserves in these countries (measured by various indicators) confirm that the direction taken by NBP in 2018 was correct. The purchases of gold conducted by NBP have not only increased the prestige of the Polish central bank, but also improved the financial security of Poland, which is particularly important in the face of the current tense geopolitical situation. Positive expectations regarding gold purchases are also confirmed by the results of surveys conducted by the WGC among central banks. The latest edition of the Central Bank Gold Reserves Survey from June 2024 shows that as many as 29% of central banks surveyed intend to increase their gold reserves over the next twelve months, which is the highest level observed since the report began to be published in 2018.

Bibliography

1. Anderson G., Ando S., Boswell E., Gamba A., Hakobyan S.; Iancu A., Lusinyan L., Meads N., Wu Y. (2020), *Reserve Currencies in an Evolving International Monetary System*, Departmental Paper No 2020/002, International Monetary Fund.
2. Arslanalp S., Eichengreen B., Simpson-Bell C. (2023), *Gold as International Reserves: A Barbarous Relic No More?*, Working Paper No. 2023/014, International Monetary Fund.
3. Baltensperger E. (2016), *Der Schweizer Franken. Eine Ergolgsgeschichte*, Verlag Neue Zuercher Zeitung, 3. (Ueberarbeitete Auflage).
4. Barwiński M., Bratkowski A., Rzeszutek E., Szpunar P., Szwaja R., Wyżnikiewicz D. (2003), *Przesłanki oceny poziomu rezerw dewizowych*, Narodowy Bank Polski.
5. Baur D., McDermott T. (2009), *Is Gold a Safe Haven? International Evidence*, Discussion Paper No. 310, Institute for International Integration Studies.
6. Baur D.G., Smales L.A. (2020), "Hedging geopolitical risk with precious metals", *Journal of Banking and Finance*, Vol. 117.
7. Berłowska B., Bezzubik B., Żaczek M. (2019), *Reserves accumulation and diversification: the case of Poland*, BIS Papers No 104, Bank for International Settlements.
8. Bertaut C., von Beschwitz B., Curcuru S. (2023), *The International Role of the U.S. Dollar. Post-COVID Edition*, Fed Notes, June.
9. Bilski J. (2006), *Międzynarodowy system walutowy. Kierunki ewolucji*, Polskie Wydawnictwo Ekonomiczne, Warszawa.
10. Bordo M., Eichengreen B. (1998), *The Rise and Fall of a Barbarous Relic: The Role of Gold in the International Monetary System*, NBER Working Papers 6436, National Bureau of Economic Research.
11. Borio C., Galati G., Heath A. (2008), *FX Reserve Management: Trends and Challenges*, Bank for International Settlements.
12. ECB (2024), *The international role of the euro. June 2024*, European Central Bank.

13. Eichengreen B. (2011), *Exorbitant Privilege, The Rise and Fall of the Dollar and the Future of the International Monetary System*, Oxford University Press.
14. Eichengreen B. (2022), *International Reserves after the Russia Sanctions: A Role for Gold?*, World Gold Council.
15. *Fifty Years of the Deutsche Mark: Central Bank and the Currency in Germany since 1948* (1999), Oxford University Press (commissioned by Deutsche Bundesbank).
16. Gourinchas P.-O., Jeanne O. (2012), *Global safe assets*, BIS Working Papers No. 399, Bank for International Settlements.
17. IMF (2009), *Balance of Payments and International Investment Position Manual, Sixth Edition* (BPM6), International Monetary Fund.
18. IMF (2011a), *Assessing Reserve Adequacy*, International Monetary Fund.
19. IMF (2011b), *Assessing Reserve Adequacy—Supplementary Information*, International Monetary Fund.
20. IMF (2016), *Guidance Note on the Assessment of Reserve Adequacy and Related Considerations*, International Monetary Fund.
21. IMF (2023a), *Geoeconomic Fragmentation and the Future of Multilateralism*, Staff Discussion Note, International Monetary Fund.
22. IMF (2021), *Republic of Poland: 2020 Article IV Consultation*, Country Report No. 21/35, International Monetary Fund.
23. IMF (2023b), *Republic of Poland: 2023 Article IV Consultation*, Country Report No. 23/189, International Monetary Fund.
24. Irvin D.A., Obstfeld M. (2024), *Floating Exchange Rates at Fifty*, Peterson Institute for International Economics.
25. James H. (2009), *The Cration and destruction of value. The Globalization Cycle*, Harvard University Press.
26. James H., James M. (2024), *The Złoty: A Polish Odyssey 1924-2024*, Narodowy Bank Polski, (forthcoming).
27. James H. (2012), *Making the European Monetary Union*, Harvard University Press.

28. James H. (2020), *Making a Modern Central Bank: The Bank of England 1979–2003*, Cambridge University Press.
29. Kowalewski P. (2001), *Euro a międzynarodowy system walutowy*, Twigger.
30. Kowalewski P., Skopiec D.A. (2023), "Wzrost znaczenia złota w rezerwach dewizowych banków centralnych gospodarek wschodzących", *Bank i Kredyt 54(3)*.
31. Kowalewski P., Skopiec D.A. (2024), "Price processes in the global gold market", *Bank i Kredyt 55(4)*.
32. Lindert P. H. (1969), *Key Currencies and Gold 1900-1963*, Princeton Studies in International Finance No. 24, Princeton University.
33. McDowell D. (2023), *Bucking the Buck: US Financial Sanctions and the International Backlash against the Dollar*, Oxford University Press.
34. McKinnon R.I. (1996), *The Rules of the Game, International Money and Exchange Rates*, The MIT Press.
35. Narodowy Bank Polski (1997-2022) *Annual Reports 1997-2022*
36. Nölke A. (2022), *The weaponization of global payment infrastructures: A strategic dilemma*, Leibniz Institute for Financial Research White Paper No. 89.
37. Nugee J. (2000), *Foreign Exchange Reserves Management*, Handbook No. 19, Centre for Central Banking Studies, Bank of England.
38. Pietrzak E. (1984), *Funt Sterling we współczesnym międzynarodowym systemie walutowym*, Zeszyty Naukowe Uniwersytetu Gdańskiego, Rozprawy i monografie, No. 55.
39. Pietrzak E. (1996), *Wymienialność złotego*, Biblioteka Menedżera i Bankowca.
40. Pietrzak E. (2000), "System dewizowy w Polsce w latach 1989-1999", *Bank i Kredyt*, No. 4.
41. Polášková I., Komárek L., Škoda M. (2019), *The Contemporary Role of Gold in Central Banks' Balance Sheets*, Czech National Bank.
42. Skopiec D.A. (2016), "Akumulacja oficjalnych rezerw walutowych jako determinanta stabilności współczesnej gospodarki światowej", *Studia Ekonomiczne*, *No. 266/2016*, Uniwersytet Ekonomiczny w Katowicach.

43. Skopiec D.A. (2016), "Znaczenie porozumień swapowych banków centralnych w kreacji oficjalnej płynności międzynarodowej", *International Business and Global Economy*, No. 35/2016.
44. Skopiec D.A. (2017), *Akumulacja rezerw dewizowych we współczesnej gospodarce światowej*, Oficyna Wydawnicza SGH, Warszawa.
45. Skopiec D.A. (2022), "Rola złota we współczesnym międzynarodowym systemie walutowym i perspektywy jej zwiększenia" (in:) R. Bartkowiak, J. Ostaszewski and Z. Polański (eds.) *System z Bretton Woods i jego dziedzictwo: Od pieniądza złotego do cyfrowego,* Oficyna Wydawnicza SGH, Warszawa.
46. WGC (2021), *A Central Banker's Guide to Gold as a Reserve Asset*, World Gold Council.
47. WGC (2023), *The relevance of gold as a strategic asset 2023*, World Gold Council.
48. WGC (2024a), *Gold Demand Trends: Full Year and Q4 2023*, World Gold Council.
49. WGC (2024b), *Gold Demand Trends Q2 2024*, World Gold Council.
50. WGC (2024c), *Central Bank Gold Reserves Survey June 2024*, World Gold Council.
51. Wheatley A. (2013), *The Power of Currencies and Currencies of Power*, The International Institute for Strategic Studies.

The Great Polish Economists - Władysław Grabski
(2022, collector coin)

In Poland I Believe - A Free and Sovereign Poland
(2024, collector coin)

Banknotes in circulation in Poland - the 10 zloty note
(2023, collector coin)

Banknotes in circulation in Poland - the 20 zloty note (2024, collector coin)

WHY IS IT IMPORTANT TO MAINTAIN CASH IN CIRCULATION?

Cash as a guarantor of national security and individual freedom

The gradual displacement of cash by digital payment systems deprives us of privacy and anonymity in market transactions. This poses a threat to the fundamental principles of individual freedom. If cash is superseded, governments and large financial institutions, including global ones, will control each and every human activity, while the fundamental values of civil liberties and individual freedom will be obliterated and will fall under their absolute control.

Excessive displacement of cash from circulation is also a grave threat to Poland's security, not only in the economy. Cyberattacks of different sorts on a smaller or bigger scale might strike the digital systems of communications and payments any time. Obviously, they are a prelude to every serious aggression.

Taking the above into consideration, let us remember that cash is a guarantor of national security and individual freedom.

This year Narodowy Bank Polski is celebrating the 100th anniversary of putting the zloty into circulation. In this context, I would like to remind you of the importance of having a national currency and maintaining cash in circulation – not only as a factor conducive to economic development, but also as a stabilizer of the public mood at times of global crises.

In the opinion of certain experts, using cash is becoming outdated. They are calling for cashless payments to become the exclusive means of payment. However, the first thing the people who opt for cashless payments on a daily basis did when faced by a threat caused by the outbreak of the COVID-19 pandemic and the Russian invasion of Ukraine was to go to ATMs and bank branches to take out cash – to be on the safe side.

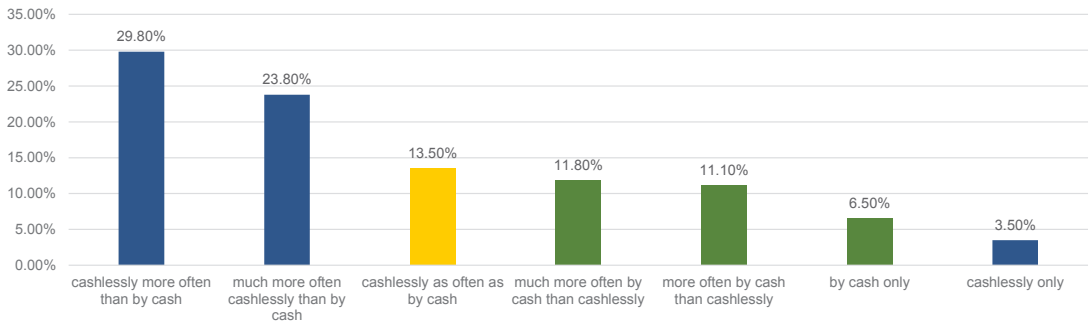
In the public realm one can also hear voices prophesizing that cash is about to disappear soon. I would like to explain to you why maintaining cash in circulation is needed and even necessary for all citizens, including those who do not use cash on a daily basis, and why NBP defends cash. Cash is being increasingly surrounded by many myths that we as the issuing institution are obliged to dispel.

The first myth is that cash is about to be withdrawn from everyday payment transactions. In reality, the percentage of people who declare that they use cash the most often has not changed since 2019, with the exception of the pandemic years, and amounts to about 30%. At the same time, the findings of the survey on payment habits in Poland conducted in 2023 indicate that approximately 60% of the number and 72% of the value of payments made at commercial and service outlets, public offices and among individuals were completed using non-cash instruments.

Who creates, supports and controls non-cash transactions? Non-cash payments are mostly based on solutions developed by global entities providing payment infrastructure, by card associations and so-called big techs producing software and mobile devices. These companies are based outside Poland, or even outside Europe, which gives rise to doubts, among other things, about the accumulation and use of data generated in the process of payment service. Moreover, these entities and banks have a huge influence on establishing the rules for the use of payment cards and the associated fees. The central bank has limited say about the solutions and mechanisms in the non-cash payments

Figure 1.

How often do you pay by cash?



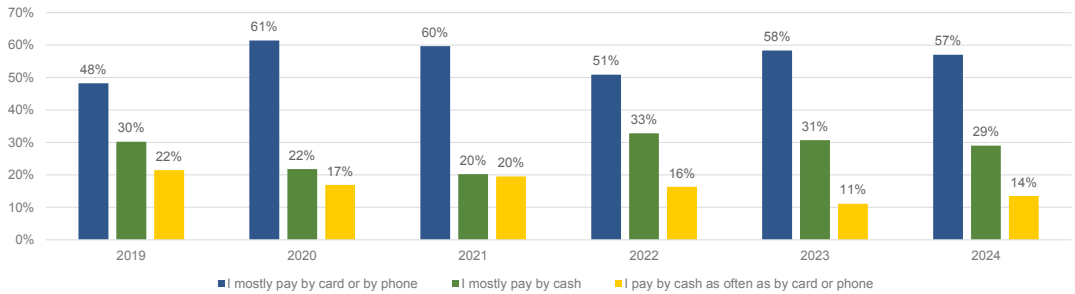
Source: Public opinion survey on banknotes and coins in circulation, commissioned by NBP and conducted by the Research Group: Agencja Badawcza EDBAD Sp. z o.o. Grupa WW sp. z o.o., Instytut Badawczy IPC Sp. z o.o., Warszawa, 2024..

market. I would like to underline that the foregoing clearly shows that having a national currency and the possibility of using this currency in cash payments, independent of global corporations, is not only our safeguard against possible system breakdowns, but also a prerequisite for maintaining the stability of the state during crises.

Taking care of its own interests, the banking sector strongly supports non-cash transactions. For this purpose the Cashless Poland Foundation was established in Poland with the aim of developing a network accepting payment instruments and promoting non-cash payments among Polish entrepreneurs and consumers. Meanwhile, it is beyond any doubt that a properly functioning payment system should comprise not only an efficient market of non-cash services, but also strong and stable cash circulation ensuring the security of the system, anonymity of its users, ease of payments service and resilience in the case of a crisis. Therefore, I strongly emphasise that in the face of such strong support for non-cash transactions, NBP has to take care of those who, as a result of progressive digitisation and promotion of non-cash instruments, could fall victim to financial exclusion because of their attachment to the Polish zloty in the form of cash.

Figure 2.

Means of payment chosen by respondents 2019-2024



Source: NBP's own study based on the results of public opinion surveys (editions 2019-2024).

I would also like to point out that, when using electronic payments, we lose our anonymity and reveal information about our purchases, and also run the risk of cybercriminals depriving us of the savings in our bank account.

According to the data reported to NBP by banks, in 2024 Q1 alone, the number of fraudulent transactions using non-cash payment instruments amounted to 105,600, with the value of PLN 165.9 million, while 4,100 counterfeit banknotes and coins were detected in Poland in 2023, and the ratio of the number of counterfeit banknotes and coins detected per million authentic banknotes and coins in circulation amounted to 1.0. The nominal value of the counterfeit banknotes and coins detected in 2023 was PLN 371,000.

The year 2024 sees a continued upward trend in the value of cash in circulation. At the end of June 2024, it amounted to PLN 393.5 billion. This means that during my term of office as governor of NBP, the value of cash excluding central bank vault cash has more than doubled, rising by PLN 218.4 billion. Therefore, the claim that cash is about to land on the scrapheap is a myth, since its value in circulation is constantly rising. This huge increase is certainly a result of the increase in GDP, but it also demonstrates that people need cash for transactional purposes, as a store of value and for precautionary purposes.

Please bear in mind that the number of banknotes and coins in circulation does not result from the decision of Narodowy Bank Polski, but only from the demand for money in this form reported by the participants in economic transactions (i.e. natural persons and business entities), which is met by NBP via banks.

Narodowy Bank Polski supplies banks with banknotes and coins according to their needs. Payment for the banknotes and coins delivered by NBP to these entities is in the form of electronic money. Thus the introduction of banknotes and coins into circulation by NBP does not lead to an increase in the value of money in the economy, but only results in the exchange of electronic money into cash. So, when issuing cash, NBP does not print money, but simply responds to the market needs.

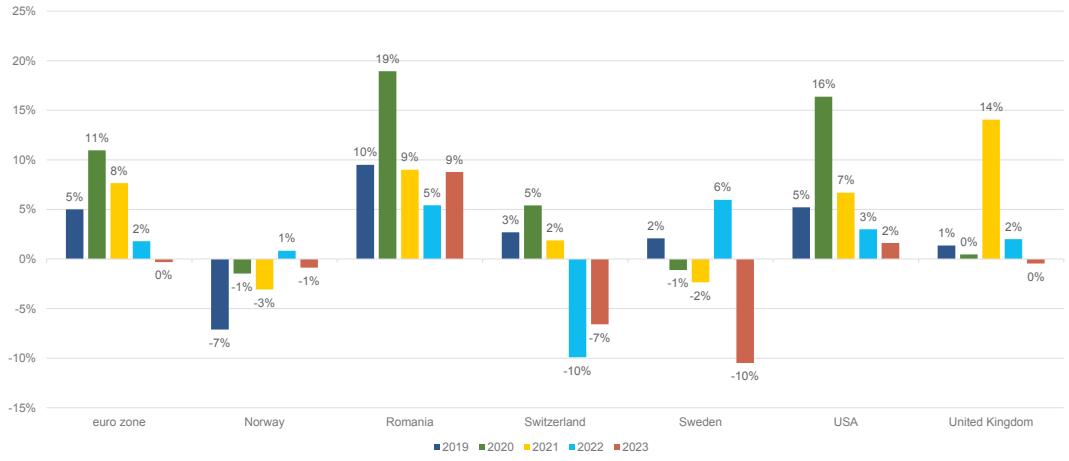
Contrary to the false information about cash being doomed, it is a fact that during the outbreak of the COVID-19 pandemic and in the first days of the Russian aggression against Ukraine, cash turned out to be a test of citizens' trust in the Polish financial system. In the first days of the war in Ukraine alone, between 25 February and 7 March 2022, NBP met an unprecedented demand for cash, fulfilling banks' orders for banknotes and coins totalling PLN 42 billion, which is almost the equivalent of the withdrawals throughout 2021 Q1. On 28 February 2022, NBP recorded all-time high cash withdrawals by banks of PLN 12.5 billion, i.e. 17 times more than the daily average withdrawals in 2021. This amount is twice as high as the value of cash withdrawn from NBP at the initial stage of the COVID-19 pandemic, recorded on 13 March 2020 and amounting to PLN 6 billion. A significant increase in the demand for cash during the COVID-19 pandemic and in the first days of the war in Ukraine was observed in many countries. Early after the outbreak of the war in Ukraine, not only Poland, but also other countries of the region experienced increased demand for cash, ranging from three times the previous average daily withdrawals in Romania to as many as 25 times in Lithuania.[1] As in Poland, the increase was followed by a return of cash to the central banks. Based on the reaction of the cash market to the events in Ukraine, it should be pointed out that both in Poland and in other countries the precautionary function of money has become significant as it gives the holder a sense of security, especially in crisis situations.

1 In Austria 4 times, in Czechia 5 times, in Slovakia 6 times, in Hungary 10 times, in Poland 17 times.

In 2022, the year of Russia's aggression against Ukraine, the growth rate of banknotes in circulation in Poland was 3.6% y/y – significantly higher than in the euro zone (1.8%), the US (3.0%), Norway (0.8%) and Switzerland (-9.9%). Also after the onset of the coronavirus pandemic in 2020, the circulation gains recorded in Poland were markedly higher than in other countries. The growth rate of banknotes in circulation in 2020 in Poland was 35%, which is significantly higher than in the euro zone (11%), the US (16.4%), Switzerland (5.4%) and the UK (0.5%). This happens when demand for cash is growing rapidly and its use is changing, especially amid increasing uncertainty in the economy and concerns about the efficiency and widespread availability of electronic payment systems and the possibility of making non-cash payments.

Figure 3.

Annual changes in the value of banknotes in circulation in selected countries in 2019-2023



Source: NBP's own study based on data published by selected central banks.

I would like to emphasise that cash plays an extraordinary role during countrywide cyberattacks on the clearing system which paralyse all forms of electronic payments and banking operations. In this situation, cash shows the

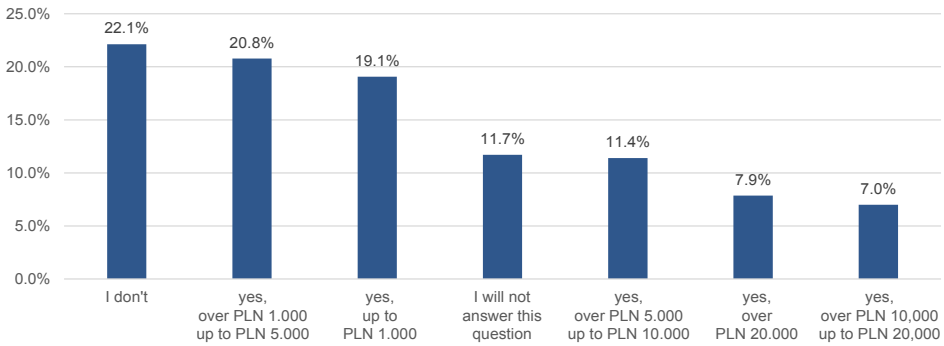
greatest resilience and, among others, permits trade to continue, at least in basic goods and services. Two thirds of the respondents to the survey conducted by NBP keep cash just in case, while nearly 50% of them hold an amount exceeding PLN 1,000.

The measures taken by Narodowy Bank Polski in the last few difficult years have shown that the central bank understands its issuing role and fulfils its tasks. Despite the enormous and rapid increase in the demand for cash, Narodowy Bank Polski executed banks' orders for cash uninterruptedly and for all denominations when Poland was going through difficult periods.

Meeting this challenge was made possible, among other things, by the *National Strategy for Cash Circulation Security* adopted by the NBP Management Board in 2021, just one quarter before the sharp increase in the demand for cash. This document, unique on the European scale, is aimed at strengthening the security of cash circulation in Poland, preventing the elimination of cash from business transactions, defending the freedom of choice of payment instruments and supporting further sustainable development of the cash circulation market while maintaining a high level of its security.

Figure 4.

Do you keep cash in reserve "just in case"
(in case of a serious crisis, natural calamity or disaster)?



Source: Public opinion poll on banknotes and coins in circulation, commissioned by NBP and conducted by the Research Group: Agencja Badawcza EDBAD Sp. z o.o. Grupa WW sp. z o.o., Instytut Badawczy IPC Sp. z o.o., Warszawa, 2024.

The *Strategy* envisages activities in the following areas: cash availability and acceptance, smooth supply of cash, assuring cybersecurity of the IT systems used in cash supply processes and physical security of cash. The *National Strategy for Cash Circulation Security* was developed with the participation of the Cash Circulation Council – a consultative and advisory body to the NBP Management Board, set up in February 2019, comprising representatives of the market and its regulators.

NBP has for years been working hard on reducing the costs of currency issue. We have shown great foresight by changing the alloy of the medium denominations of coins in 2020, introducing the 500-zloty note in 2017 and the first self-service coin exchange machine at an NBP Regional Branch in 2019, before the COVID-19 pandemic. These measures allowed us to save a total of approx. PLN 400 million in the following years.

Thanks to the accumulation of high-value stocks of currency, the streamlining and automation of processes at NBP and changing the regulation of market processes, we were prepared for the crises when they struck.

ATMs remain the primary channel of access to cash in Poland, supplemented by bank branches offering cash services and the post offices of Poczta Polska SA. The number of traditional cash access points is declining, albeit slowly. The cash access network is supplemented by the cash-back service.

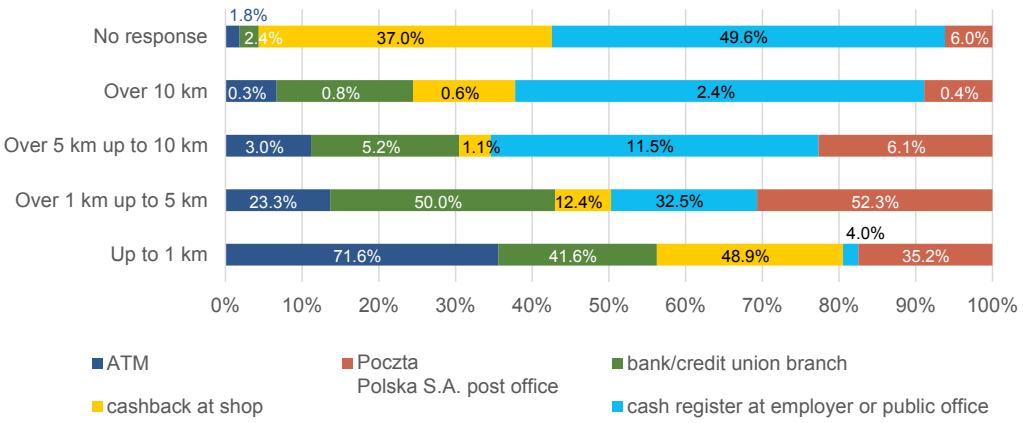
The results of a survey conducted by NBP indicate that the criterion of cash availability[2] adopted in the *National Strategy for Cash Circulation Security* is met. As of 15 December 2023, taking into account the network of access points, about 86% of respondents had access to a cash access point within a distance of up to 5 km from their place of residence. Then, more than 98% of respondents had access to cash within a distance of up to 10 km from their place of residence.

These results were confirmed by a public opinion survey from 2024. The respondents' answers indicate that almost 95% of them have access to an ATM within 5 km of their place of residence. In 2024, the respondents rated the availability of cash access points well: access to an ATM was rated as satisfactory or rather satisfactory by 92% of respondents, and access to a bank branch by almost 80% of respondents.

2 Ensuring that 90% of the population in Poland has access to the nearest bank branch offering cash services or an ATM within a distance of no more than 10 km.

Figure 5.

Please indicate the distance from your place of residence to the nearest cash access point.



Source: Public opinion poll on banknotes and coins in circulation, commissioned by NBP and conducted by the Research Group: Agencja Badawcza EDBAD Sp. z o.o. Grupa WW sp. z o.o., Instytut Badawczy IPC Sp. z o.o., Warszawa, 2024..

At a time when non-cash payment transactions are on the rise, the need to ensure the acceptance and availability of cash has been recognised in many countries. Poland, on the initiative of NBP, introduced a statutory obligation to accept cash. In the euro zone, legislative work is underway to enhance the role of euro banknotes and coins as legal tender and to ensure cash acceptance and availability. Cash protection measures are also undertaken in Ireland and the Netherlands. In the United States of America, a draft Payment Choice Act was resubmitted to Congress in June 2023.

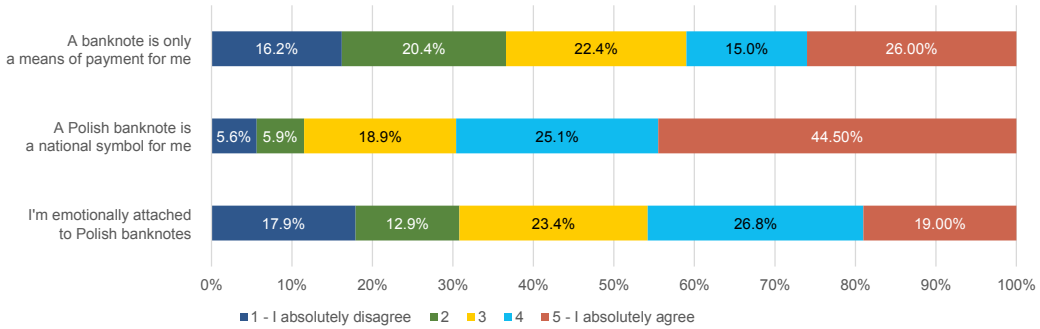
In some countries, the availability of cash is already regulated by law. In Sweden, for example, a country famous for its cashless payments, regulations have been in place since January 2021 requiring the largest banks in Sweden that provide payment account services with basic functionalities to consumers to ensure the possibility of cash withdrawal from these accounts, i.e. to provide an adequate number of cash withdrawal points across the country.

In the United Kingdom, through amendments to the Financial Services and Markets Act 2023, Parliament reinforced the legal framework for the Financial Conduct Authority (FCA), the body responsible for supervising and regulating companies offering a variety of financial services to UK citizens. As a consequence, the FCA suggested new principles to ensure reasonable access to cash for individuals and companies across the United Kingdom.

To improve the availability of cash to customers, some countries conduct initiatives based on cooperation between market stakeholders and regulators, for example on a covenant basis. In spring 2023 in Belgium, another covenant on access to ATMs was concluded between the federal government of Belgium and the Belgian financial services sector. On the other hand, in the Netherlands, the payments sector stakeholders agreed in April 2022 to conclude a five-year Cash Covenant setting out voluntary measures aimed at improving the quality of cash services.

Figure 6.

Please mark on a scale of 1-5 to what extent you agree with the following statements.



Source: Public opinion poll on banknotes and coins in circulation, commissioned by NBP and conducted by the Research Group: Agencja Badawcza EDBAD Sp. z o.o. Grupa WW sp. z o.o., Instytut Badawczy IPC Sp. z o.o., Warszawa, 2024..

In these difficult times, marked by a war with the Russian aggressor beyond our eastern border, it is our common duty to maintain the security of cash in circulation. As many as 70% of Poles regard the Polish zloty as a national symbol. This symbol unites us, gives us stability and a sense of security. That is why I, as the governor of Narodowy Bank Polski, will always stand by cash as a national good. Let us treasure what our ancestors worked so hard for when giving us our national currency one hundred years ago. Let us remember that the appropriate level of cash in circulation is a fundamental guarantee of individual freedom and that it ensures Poland's economic security.

100. ROCZNICA WPROWADZENIA ZŁOTEGO DO OBIEGU

1924–2024

Polski złoty jest jednym z fundamentów dobrobytu i wolności Polaków.

PROF. ADAM GLAPIŃSKI
PREZES NBP

100 lat

STULECIE UTWORZENIA BANKU POLSKIEGO SA I WPROWADZENIA ZŁOTEGO DO OBIEGU