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INFLATION IN POLAND: MACROECONOMIC ANALYSIS

The research relevance is predefined by the need to explain the nature of inflation and assess the effectiveness of anti-inflationary policy in Poland. The research aims to study the factors that cause price growth and the tools to reduce its pace during the global economic crisis. The following research methods were used: analysis of statistical data on inflation dynamics; comparison – for comparing price growth indices; expert estimates – for forecasting inflation; graphical – for displaying results; and generalisation – for summarising information on the use of inflation reduction tools. The main results obtained in this study are: determination of the dynamics of producer price indices, consumer prices and the gross domestic product (GDP) deflator in Poland; comparison of Poland's inflation rate with other European countries and justification of the reasons for its rapid growth; analysis of the use of inflation targeting in Poland, Romania, the Czech Republic and Hungary; and assessment of the effectiveness of the central bank's increase in the key interest rate and required reserve ratios, as well as the impact of these instruments on the inflation rate in Poland; proving the non-monetary nature of inflation and identifying its main drivers in the period 2020-2023 (coronavirus pandemic, rising global energy and food prices, war in Ukraine); identifying the effects of lowering value-added tax (VAT) rates on certain goods on inflation and tax revenues to the Polish budget; comparing the forecast inflation rate and GDP growth by the end of 2023 and 2024-2025 based on expert estimates; substantiating the ways to slow down inflation, considering a wide range of external factors affecting the Polish economy. The results and conclusions are of practical importance for the Government of the country and managers of the banking sector in developing measures to regulate the rate of price growth.

Keywords: price growth indices, GDP deflator, global crisis, monetary policy, interest rate, targeting
JEL classification: ***A11, E31, O11***

Актуальність дослідження зумовлена необхідністю пояснити природу інфляції та оцінити ефективність антиінфляційної політики в Польщі. Дослідження спрямоване на вивчення факторів, що зумовлюють зростання цін, та інструментів його зниження в умовах світової економічної кризи. Використано такі методи дослідження: аналіз статистичних даних щодо динаміки інфляції; порівняння – для порівняння індексів зростання цін; експертні оцінки – для прогнозування інфляції; графічний – для відображення результатів; узагальнення – для узагальнення інформації щодо використання інструментів зниження інфляції. Основними результатами, отриманими в цьому дослідженні, є: визначення динаміки індексів цін виробників, споживчих цін і дефлятора валового внутрішнього продукту (ВВП) у Польщі; порівняння рівня інфляції у Польщі з іншими європейськими країнами та обґрунтування причин її швидкого зростання; аналіз використання таргетування інфляції в Польщі, Румунії, Чехії та Угорщині; оцінка ефективності підвищення центральним банком ключової процентної ставки та обов'язкових резервів, а також впливу цих інструментів на рівень інфляції в Польщі; доведення немонетарної природи інфляції та визначення її основних драйверів у період 2020-2023 рр. (пандемія коронавірусу, зростання світових цін на енергоносії та продукти харчування, війна в Україні); визначення впливу зниження ставок податку на додану вартість (ПДВ) на певні товари на інфляцію та податкові надходження до польського бюджету; порівняння прогнозних

темпів інфляції та зростання ВВП до кінця 2023 р. та 2024-2025 рр. на основі експертних оцінок; обґрунтування шляхів уповільнення інфляції з огляду на широкий спектр зовнішніх факторів, що впливають на економіку Польщі. Результати та висновки мають практичне значення для Уряду країни та керівників банківського сектору при розробці заходів щодо регулювання темпів зростання цін.

Ключові слова: індекси зростання цін, дефлятор ВВП, глобальна криза, монетарна політика, процентна ставка, таргетування

JEL classification: ***A11, E31, O11***

Introduction. Economic crises caused mainly by energy shortages, the coronavirus pandemic and Russia's armed aggression against Ukraine have adversely affected the global economy and the financial condition of each country. One of the consequences of such processes is the increase in prices for goods and services in the market and their growth from year to year, which in turn results in currency depreciation and heightened poverty levels. Among the countries of the EU, Poland is the country that has received the largest number of refugees from Ukraine fleeing the war. This influx has put a significant strain on Poland's economy, already impacted by rising prices for energy, raw materials, food. In this regard, there is a need to analyse inflation rates, their dynamics, and instruments used to regulate inflation and to find ways to combat the rapid rise in prices in the face of negative external factors for the Polish economy. Polish, Ukrainian, Indian, and other scholars have studied the causes, nature, and consequences of inflation, as well as ways to neutralise it.

A study of the factors influencing price growth in Poland in 2021 was conducted by I. Brukwicka and I. Dudzik [1]. They found that energy, food, and core economic inflation had the greatest impact, and stressed that measures such as monetary or fiscal policy easing helped to mitigate the effects of the coronavirus pandemic on economic growth. A statistical analysis of the relationship between inflation and economic growth indices was carried out by M. Pyra and A. Siedlecka [2], who found an inverse relationship between them, i.e. the higher the inflation rate, the lower the economic growth index. The authors note that the relationship between inflation and economic growth does not change its nature regardless of external factors, such as a pandemic. M. Mrozek [3] assessed inflation in Poland in the context of supply chain, credit and public finance issues, identifying the main cause of inflation in the euro area as rising energy prices. At the same time, J. Sokolowski et al. [4] note that rising energy prices increase the risk of poverty and inequality and propose the use of energy vouchers to be issued to energy-poor households to cover their average energy costs, as well as encourage people to participate in programmes to support the transition to green energy. A comparison of the impact of central bank decisions on interest rate changes, macroeconomic forecasts, and the content of policy documents on household expectations was conducted by P. Baranowski et al. [5], who showed that central banks can influence expectations and use this communication strategy in managing expectations. The importance of expectations of the government's measures for inflation targeting policy was shown by A. Dubey and A. Mishra [6], who noted that most central banks conduct targeting after achieving success and reducing inflation. However, while inflation targeting fixes already low inflation rates, it does not reduce high inflation rates.

Thus, scientists have made a significant contribution to the study of this issue, but the global economic crisis provokes the emergence of new conditions and external factors that need to be studied. The research aims to provide a macroeconomic analysis of the rate of price growth in Poland and develop ways to slow it down. The main research objectives are to identify the nature of inflation in the current conditions of the country's development, analyse the feasibility of using monetary and non-monetary instruments to curb inflation and

justify the directions of anti-inflationary policy.

Materials and Methods. The research employed the following methods: analysis of statistical data used to assess the dynamics of inflation; comparison of price growth indices in different European countries; expert assessments of inflation forecasting; graphical presentation of results; summary of information on the use of inflation control instruments. The theoretical basis of this study is based on the works of Polish, Slovenian, Indian, Czech, Ukrainian, American, and other scholars who have analysed the nature of inflation, its influencing factors and tools to combat its rapid pace. The statistical data on the dynamics of the producer price index (PPI) of Poland for 2013-2022 is analysed based on information, encompassing a variety of financial instruments for traders and investors [7]. The study examined the indicators of the harmonised consumer price index (CPI) for European countries in March 2023, as well as the forecast values of the CPI. The data were sourced from the German online platform Statista, which specializes in collecting and visualizing statistical data, reports, and consumer information [8].

The changes in the CPI during 2013-2022 and its structure in 2023 were studied based on information posted on the official portal of the Central Statistical Office [9] and the electronic resource Trading Economics [10], which contains financial data and forecasts of indicators for 196 countries. The information on the value-added tax (VAT) rates set for certain goods and services under the Anti-Inflation Shield was taken from the Polish government portal [11]. The comparison method and the World Bank data were used to compare the PPI and the gross domestic product (GDP) deflator in Poland for 2013-2022, as well as to compare the changes in the CPI and key interest rates that were raised under the targeting policy as of February 2022 and the end of 2022 in Poland, Romania, the Czech Republic, and Hungary [12].

Guided by experts' estimates of the forecast inflation rate set out in the Inflation Report of the National Bank of Poland (NBP) for 2023, the forecasts for CPI and GDP by the end of 2023 and for 2024-2025 are provided [13]. The graphical method was used to display information on the harmonised European price index, CPI, PPI, GDP deflator, and interest rate, as well as the forecast of CPI and GDP dynamics in the form of graphs and diagrams. The application of the generalization method enabled the summarization of results obtained during the study on the inflation rate in Poland, factors accelerating it, and comparison of these indicators with those of European countries. Additionally, it allowed for the evaluation of the results of anti-inflationary measures implemented by the Polish Government. Conclusions drawn from these results serve as the final reflection of the study, namely: to substantiate proposals for anti-inflationary policy and to determine further approaches for studying the issue of price growth in the context of the impact of military events in Ukraine and the rise in energy prices.

Results. Inflation is one of the key macroeconomic indicators reflecting the state of a country's economy. The inflationary process is characterised by rising prices for goods and services, coupled with a decrease in the purchasing power of the population from one period to another compared to the previous one. The opposite process of inflation is deflation, a fall in the price level in the current period compared to the previous one. The rate of inflation is expressed through changes in price indices, which, in turn, express the cost of certain goods or services in a certain period and are determined as a percentage. The most commonly used inflation indicators include CPI, PPI, and GDP deflator [14]. Each index carries its own significance and characteristics. For example, the CPI shows the change in the cost of goods and services purchased by the population for consumption, but not for production.

The PPI reflects the change in prices in the production sector in a given period compared to the base period. This index is more volatile than the previous one, as it primarily focuses on goods sold in highly competitive markets and less sensitive to changes in the

labour market. The PPI is mainly limited to the industrial and agricultural sectors of the country. A higher-than-expected value of the index is perceived as positive (higher) for the national currency, whereas a lower-than-expected value is perceived as negative (lower) [7]. The GDP deflator is a price index that shows the overall change in prices in the economy over a certain period, adjusted for GDP. Unlike the CPI, the deflator captures price increases for all services and goods, not just those included in the consumer basket. The GDP deflator is used to adjust estimates of economic growth, as otherwise the growth rate will be overstated [14].

The EU countries have developed a harmonised CPI. Inflation in the economy means a decline in the purchasing power of consumers, when they can no longer buy the same amount of goods and services for a certain amount of money as they used to [14]. The most common causes of inflation, in addition to external factors that contribute to the deterioration of the economy include excessive money supply, budget imbalances, and government intervention, particularly central bank control of interest rates to maintain the desired inflation rate. To control inflation and make timely decisions, it is necessary to assess the current situation and make forecasts for future periods, based on macroeconomic analysis of the inflation rate. There is an ex-post macroeconomic analysis and an ex-ante macroeconomic analysis, which is used to forecast the state of economic development indicators.

One of the events that shook up the economies of nearly all countries worldwide was the war in Ukraine, the consequences of which were keenly felt by Poland, a country closely situated to Ukraine. Poland received a significant influx of migrants and its economy was adversely affected by disruptions in supply chains, energy shortages, and rapid inflation. In the EU, annual inflation accelerated to 7.5% in March 2022, up from 5.9% in February 2022, surpassing the European Central Bank's target set at 2%. A comparison of inflation among European countries can be made based on the harmonised CPI (Fig. 1).

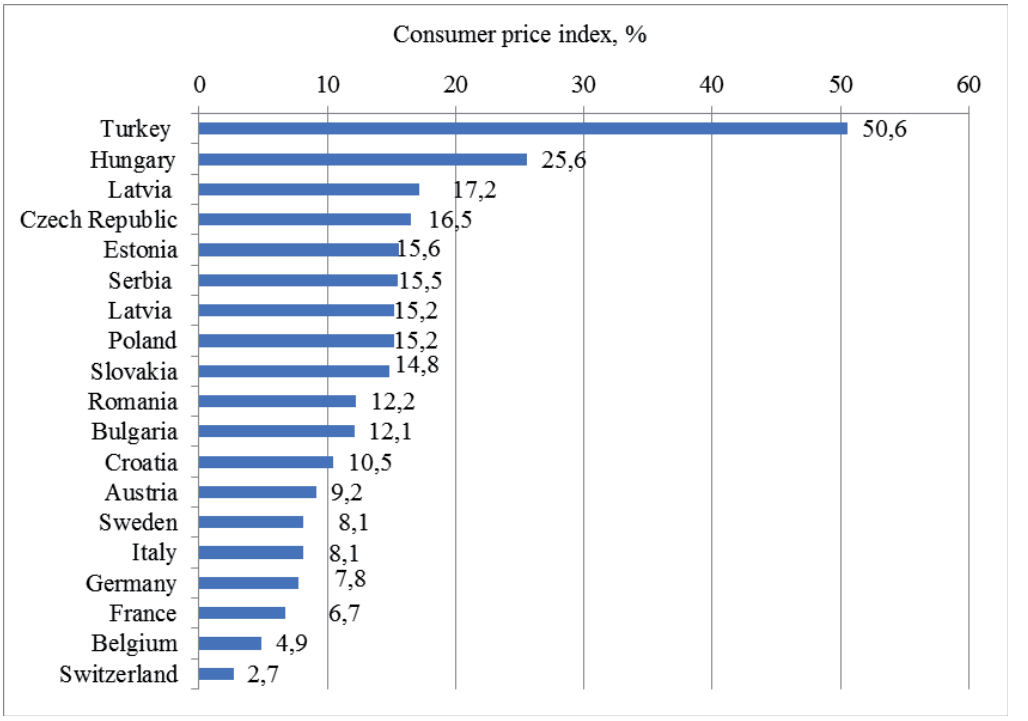

Fig.1. Harmonised CPI of European countries in March 2023
(complied by the author based on [8])

Fig. 1 shows that the highest inflation rate as of March 2023 was observed in Turkey, and the lowest in Switzerland. Poland exhibited an average rate (of 15.2%) compared to the other countries, with the average inflation rate among the analysed Eurozone countries standing at 14.1%, due to disruptions in the supply chain caused by the war in Ukraine. The structure of Poland's CPI by categories of goods and services can be presented as follows (Fig. 2).

Fig. 2 shows that food and non-alcoholic beverages accounted for the largest share of the CPI structure (24%), followed closely by goods and services related to housing, water, and energy, which accounted for only 2% less in this structure. This indicates that these categories have been most affected by price increases in the country. Analysing the CPI by year makes it possible to identify its dynamics and trends (Fig. 3).

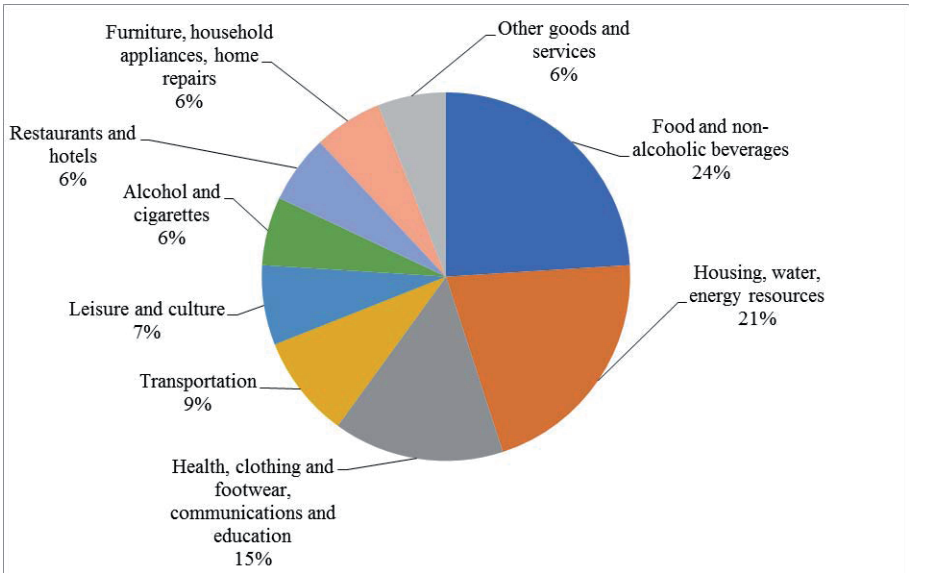

Fig. 2. The structure of the Polish CPI in March 2023
(*complied by the author based on [10]*)

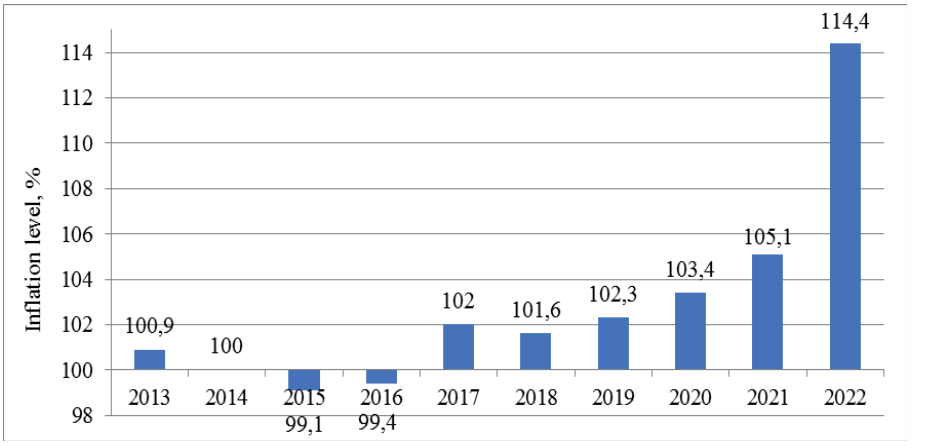

Fig. 3. CPI level in Poland in 2013-2022
(*complied by the author based on [9]*)

The information shown in Fig. 3 highlights that in 2022, compared to other years, there was a rapid increase in the CPI, which can be explained by the impact of military events in Ukraine. In October 2022, the inflation rate reached 17.9%, marking the highest level in Poland over the past 25 years (since January 1997) [9]. The dynamics of the general level of prices for inputs purchased by Polish enterprises for production consumption and the change in the GDP deflator allow for an in-depth assessment of inflationary indicators in the country (Fig. 4).

Fig. 4 shows that, for the most part, the CPI remained below or close to the GDP deflator during the period under review, but in 2022 it exceeded the deflator by 4.4 percentage points (pp). The high level of the CPI compared to the CPI in 2022 proved to be a leading indicator for forecasting consumer inflation, as it reached 15.2% in March 2023. The Polish PPI covers only the industrial sector. One of the methods of state policy used by the authorities to control inflation is inflation targeting, which is based on public disclosure of inflation policy objectives and the obligation of the bank to achieve them within a certain period. The main instrument of this policy is the interest rate set by the central bank. If inflation exceeds the target level, the interest rate is raised. Since 2020, most central banks in Eastern Europe have pursued a policy of raising their key policy rate to combat inflation. In many countries, including Poland, the rate hike cycles have been going on for more than a year (Table 1).

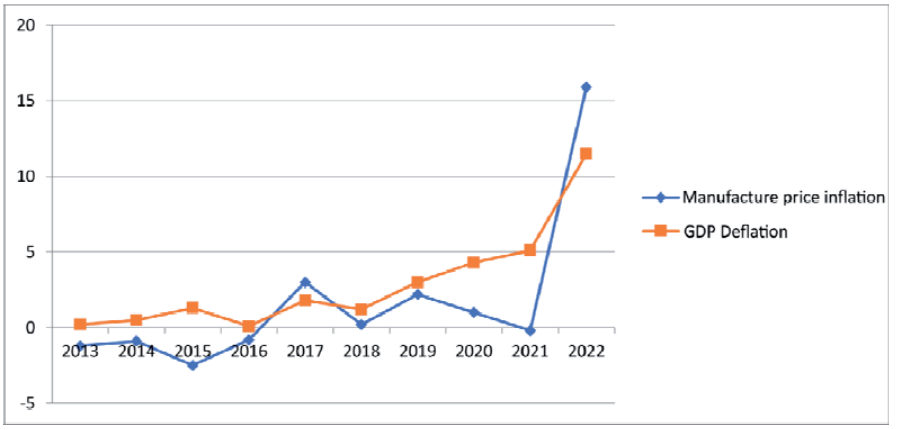

Fig. 4. Dynamics of the CPI and GDP deflator in Poland in 2013-2022
(*complied by the author based on [7; 12]*)

Table 1

Inflation and the key policy rate in Eastern European countries with an inflation-targeting monetary policy in 2022

Country	CPI target, %	Annual CPI before the start of the key policy rate hike cycle, %	CPI, %		Key policy rate, % per annum		Increase in mandatory reserve requirements
			Max value in 2022	End of 2023 estimate	February 2022	End of 2022	
Poland	2.5	5.9	17.9	9	2.8	6.75	+
Romania	2.5	6.3	16.8	7.7	2.5	6.75	
Czech Republic	2	2.8	18	4	4.5	7	
Hungary	3	5.3	24.5	6.7	2.9	13	+

(*complied by the author based on [10]*)

Table 1 shows that, by the end of 2022, the average increase in the key policy rate by central banks in individual Eastern European countries was about 5 pp. In Poland, this figure is close to the average of 4.25 pp. In addition to raising the key policy rate, some countries, such as Poland and Hungary, employed the regulation of required reserves ratios (RRs). Previously, this measure was primarily used to reduce the level of dollarization of the economy. In 2022, the central bank of Poland raised the reserve requirement ratio from 0.5% to 2% and then to 3.5%, resulting in the withdrawal of approximately 19% of banks' total liquidity [13]. This action contributed to an increase in the interest rate on deposits, leading to a shift of funds from current accounts to term deposits. The effectiveness of inflation targeting can be assessed by analysing the impact of an increase in the key policy rate on inflation (Fig. 5).

Fig. 5 shows that, despite the interest rate hike, inflation grew steadily in 2022, driven by energy and food prices. However, by the end of the year, it began to slow down, and as of June 2023, with the interest rate at 6.75%, the CPI fell to 11.5%, driven by lower energy and food costs. This suggests that the inflation targeting policy has almost no anti-inflationary effect when external factors, such as a war in a neighbouring country, have a strong impact on the economy. Only when Poland's economy began to adapt to new realities, including the establishment of a supply chain that was threatened by the outbreak of war in Ukraine and lower prices for natural gas and other energy carriers, did inflation rates begin to slow. The NBP's management explains that the rate remains at 6.75% as a pause before further increases, as well as the tightening of monetary policy by the US Federal Reserve and the European Central Bank [10].

However, higher interest rates make bank loans more expensive, discouraging consumers from spending excessively and encouraging them to save, which slows down economic development and growth. Thus, the study shows that the lack of an anti-inflationary effect of interest rate hikes in Poland is mostly because inflation is mostly non-monetary in nature. This has been the main reason for the lack of effectiveness of banks' monetary measures since 2020 when the economic crisis caused by the coronavirus pandemic began. Non-monetary inflation

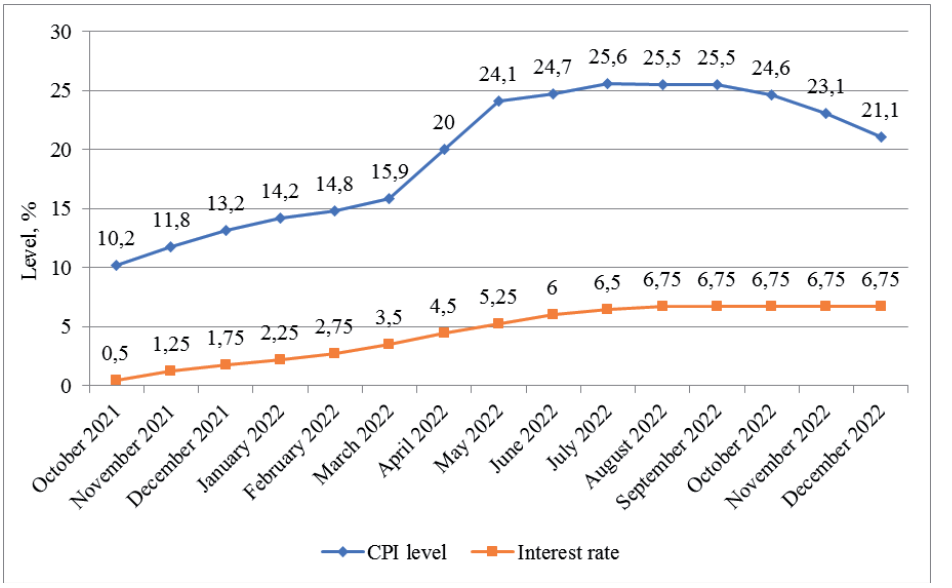

Fig. 5. Dynamics of CPI and interest rate in Poland in 2022
(*complied by the author based on [10]*)

does not result in an excessive increase in the money supply, but rather in a change in the structure of expenditures, which are financed either by other expenditures or by reducing savings. However, rising costs do not eliminate demand for products, but only postpone it, which does not solve the problem. Thus, the non-monetary factors behind inflation in Poland in 2020-2023 were as follows:

- expenses related to the coronavirus pandemic;
- rising global prices for certain food products;
- the war in neighbouring Ukraine caused prices for oil products and energy to increase;
- increase in the cost of maritime transport;
- military and political threats from Russia and Belarus;
- increase in state budget expenditures.

Given these factors, it should be emphasised that the Polish Government's policy directions necessary to reduce inflation should be:

- refraining from further raising the NBP's key policy rate;
- refinancing bank loans and reducing interest rates, in particular for mortgage lending;
- reducing the effects of the war in Ukraine on the Polish economy.

An overview of the instruments used in Poland to reduce inflationary pressures allows to analyse the application of the Anti-Inflationary Shield, introduced in December 2021 to counter the global energy crisis. This programme included a reduction in VAT on the following goods and services [9]:

- fuel from 23% to 8%;
- natural gas from 8% to 0%;
- centralised heating to 5%;
- electricity to 5%.

From 01.02.2022, the Polish government extended the programme until 31.07.2022 and then until 31.12.2022, reducing VAT on food (from 5%) and mineral fertilisers (from 8%) to 0 respectively. The Polish government announced that the Anti-Inflationary Shield in 2022 cost the state budget 11.6 billion zlotys, $3 billion) [9]. Despite the European Commission's negative attitude to this programme, it was extended until the end of 2023, leaving food products with a zero-tax rate. Thanks to this programme, since 1 February 2022, the savings for the population have amounted to more than PLN 12 billion, and by the end of 2023, it was expected that about PLN 19 billion would be saved by the population. Thus, the zero VAT rate on food in 2023 had a positive impact on the average annual inflation rate. The cost of tax cuts for the budget was 0.3% of GDP. Poland's economic activity and inflation in the future mainly depend on the situation in the global economy, which is affected by Russia's military aggression against Ukraine. In addition, the risks to inflation in Poland may be determined by the monetary policy of the central banks of the world's leading countries. The NBP's ongoing assessment of the country's macroeconomic situation allows it to forecast the CPI and GDP for the planned and forecast periods (Fig. 6).

Fig. 6 shows the symmetry of the decline in CPI inflation and GDP growth on the forecast plane. According to analytical forecasts, the interest rate cut in Poland may not take place until 2024 due to inflation still being at a fairly high level. The forecasted levels of GDP and CPI inflation are influenced by changes in Ukrainian legislation. For example, the key government measures that will affect the dynamics of energy prices in 2023 are the cancellation of most tax cuts, the introduction of tariff regulation for certain types of energy, and compensation payments to energy suppliers. It is expected that in 2024-2025, protective measures from the state will be reduced, which will lead to a slowdown in the rate of inflation. In addition, the government plans to support energy-intensive enterprises by partially financing their electricity and gas costs. The cost of this support is expected to cost the public sector 0.1% of GDP in 2023.

Thus, having examined the macroeconomic situation in Poland, in particular the inflation rate, it should be noted that the CPI dynamics in 2022 showed a rather significant jump. The increase in the NBP's

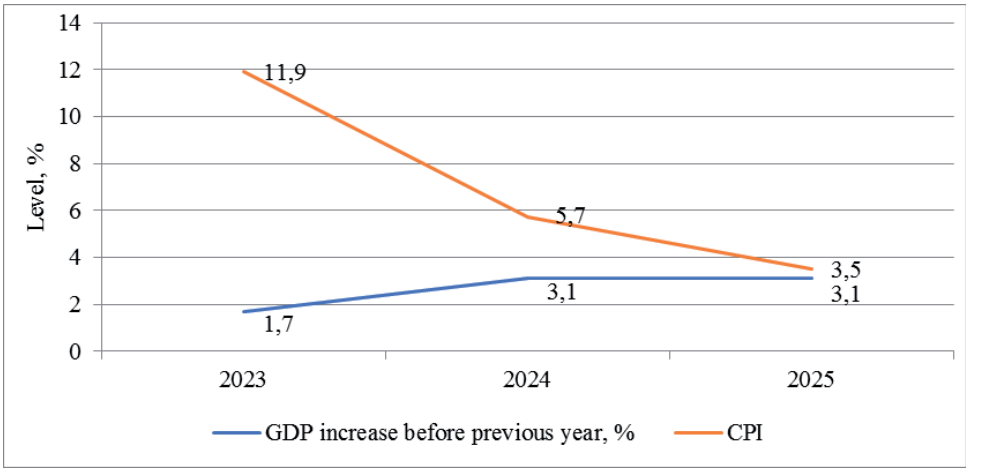

Fig. 6. Forecast of CPI and GDP dynamics in Poland for 2023-2025
(*complied by the author based on [8; 13]*)

key policy rate did not have the expected effect of slowing down price growth, as since 2020, consumer prices have been rising due to the coronavirus pandemic, rising natural gas and electricity prices, and the hostilities in Ukraine. The introduction of the Anti-Inflationary Shield has led to a significant reduction in prices for food, energy, and mineral fertilisers, but this programme is a burden for the state budget, as it slows down budget revenues. To justify the projected CPI and GDP levels, the Polish authorities should consider the following areas in their policy development: refraining from further raising the NBP's key policy rate; refinancing bank loans and reducing interest rates, in particular for mortgage lending; and mitigating the effects of the war in Ukraine on the Polish economy. This will help reduce inflation in the country and improve economic growth.

Discussion. A macroeconomic analysis of the increase in consumer prices and the overall inflation rate in Poland over the past 10 years, and in particular since 2020, has helped to identify the main factors that contributed to this increase and the tools used by the Government to reduce the negative effects of inflation. The findings of the study show that various methods and techniques should be used to combat excessive price increases, which may be more or less effective depending on the nature of the inflation. Analysing the key drivers of price increases and their fluctuations in EU countries, C. Baba et al. [15] state that inflation is more sensitive to internal economic weaknesses and external price pressures in European emerging economies than in developed countries. This contributes to the greater impact of global commodity price increases, especially since the start of the coronavirus pandemic, in some countries, leading to more dynamic inflation growth in those countries. In an empirical analysis of the determinants of inflation in European transition economies, L. Caklovica and A.S. Efendic [16] found that economic and structural variables, including unemployment, real wages, and external factors (food and oil prices), determine the short-term inflationary dynamics in these countries. While agreeing with these results, it is worth noting that the current inflation rate is partly determined by the history of these variables. The study of the development of inflation through the prism of hostilities in Ukraine by O. Musiienko et al. [17] confirmed the negative impact of these events on the economic system of all countries of the world and emphasised that this situation can cause and increase poverty in Africa, Colombia.

Paying attention to solving the problems of Ukraine's monetary policy in the context of a full-scale Russian

invasion, D. Hladkyh and O. Lyubich [18] substantiated that the most urgent state measures aimed at overcoming them should be: limiting the growth rate of emission and money supply; ensuring the responsibility of authorities and management in the process of implementing monetary policy; reducing the share of credit loans and deposits in foreign currency; stimulating exports and others that are inherent in maintaining a stable financial system. However, among the proposed measures, it is worth highlighting those that would be appropriate in Poland to reduce inflation, in particular, the use of non-monetary instruments to combat inflation; improving the methodology of mandatory reserve requirements for borrowed funds; and increasing the yield on household deposits. An analysis of the impact of Russia's invasion of Ukraine on the economies of other countries by P.K. Maurya et al. [19] showed that the dynamism of inflation in each country is determined by its geographical proximity and trade activity with countries directly involved in the conflict. Supporting this point of view, it is worth noting that the duration of military events sets a stimulating growth in prices for basic goods. The study examines the use of inflation targeting as a tool for reducing prices and proves that this method does not always produce the expected effective result, especially when inflation is non-monetary in nature. At the same time, O. Dziubliuk [20] emphasized that in the context of constant crisis phenomena, monetary policy priorities should reflect a gradual transition to a more flexible regime using monetary methods to support the economy, create new jobs, and stimulate aggregate demand.

Many researchers are interested in measuring the effectiveness of inflation-targeting systems. In particular, M. Jesic et al. [21], assessing the impact of internal and external factors on the success in achieving inflation reduction in the Czech Republic, Hungary, Poland, and Serbia, showed that inflation targeting is mainly regulated by monetary policy through changes in the key policy rate, but the impact of additional domestic and international factors (exchange rate, growth rate, labour cost growth, external borrowing, harmonised CPI, eurozone inflation) can be significant. Thus, central banks in countries that are willing to apply inflation targeting should consider a wide range of inflationary factors, including external ones, which will increase the usefulness of inflation reduction tools. The study proves that inflation targeting can be ineffective when non-monetary factors influence inflation. Instead, studying inflation targeting in emerging Europe and Central Asia, M. Arsic et al. [22] argued that this tool demonstrated effectiveness in the period 2008-2019, in particular, improved macroeconomic indicators. However, such conclusions need to be clarified, as until 2019, there were no manifestations of the coronavirus pandemic and the rapid rise in energy prices, as in the last 3 years, which negatively affected the economies of all countries, so it can be assumed that it is with a slight impact of external serious factors (pandemic, war) on the economy that targeting can be considered effective in reducing inflation.

K.H. Lee [23] points out that a higher rate tends to reduce demand and prices, but it also reduces the stock market, which can lead to a slowdown in the economy. However, in some cases, a rise in interest rates will not necessarily lead to an economic downturn: if the stock market falls significantly first, it could lead to a drop in commodity prices and moderate inflation. At the same time, lowering interest rates to stimulate demand will not necessarily lead to higher inflation. A study of economists' views on the monetary policy objectives of central banks by G. Ambrocio et al. [24] is noteworthy, as they conclude that most economists prefer that the central bank should have a clear inflation policy target. If measures are needed, the preference would be to raise the current target rather than to raise the interest rate. Agreeing with the position of scholars, it should be noted that the central bank should set other goals for the development of the country's economy in addition to the goal of stabilising prices. The impact of inflation targeting policies on economic growth and inflation uncertainty, in

particular in European countries, was studied by S.T. Nene et al. [25], who emphasized the significant positive impact of such policies on reducing inflation uncertainty and economic growth in European countries (Poland and the Czech Republic) and the negative impact on economic growth in African countries.

Thus, before deciding on an inflation-targeting policy, the central bank must correctly assess the economic situation in a particular country. The study analyses the impact of the Anti-Inflationary Shield in Poland, which provided for a reduction in the VAT rate on certain goods, on consumer price growth. The relationship between tax revenues and inflation was studied by A. Dukic et al. [26], who argued that inflation is good for public finances for the following reasons: rising consumer prices mechanically increase VAT revenues, while rising wages increase social contributions paid; if the public debt in dollars or euros is divided by growing nominal GDP, this ratio decreases. Supporting the researchers' view, it is advisable to recommend that European authorities find a balance between price increases and income growth. The analysis of the impact of corporate income tax rates, inflation and interest rates on income tax revenues was studied by I. Meita and D. Nurdiniah [27], who found that changes in tax rates do not significantly affect tax revenues, but falling and rising inflation affects tax revenues, although the interest rate does not affect tax revenues. These results allow to consider the effects of anti-inflationary policy on the economy as a whole.

Assessing the impact of the introduction of VAT on the price level in Qatar, D. Delghan et al. [28] found that a VAT rate of 5% would only lead to a 2% price increase, indicating a low temporary impact of VAT on inflation. A similar view on the lack of feasibility of changing the VAT rate to control inflation is taken by J.W. Escobar [29], who argues that VAT cuts often stimulate household consumption of non-priority products. However, the researchers considered the effect of VAT introduction in a stable economy. On the other hand, given the numerous negative factors affecting the Polish economy, it should be noted that under such conditions, a reduction in VAT rates will lead to a slowdown in inflation. Considering the effects of inflation on the country's economy, it is worth paying attention to the importance of developing foreign direct investment, which plays an important role in providing capital and overcoming the problem of limited funds. As such, A.U. Fahmi and Y. Septiani [30] studied the impact of GDP, inflation, and deposit rates on foreign direct investment and proved that inflation negatively affects foreign direct investment in the long run.

Summing up the research of scientists, it should be noted that inflation is a constant problem that affects the global economy. It is worth fully agreeing with I. Angelov [31], who argues that it is extremely important to fight inflation using various monetary, fiscal, and supply-side policy instruments. After all, only a coordinated and multilateral approach that combines these policy instruments will be more effective in overcoming inflation and reducing its effects than a single policy approach. Thus, the analysis of the results of research by scientists on the issue of price growth shows that in the scientific world, it is considered to be the cause of the global economic crisis, and it is recommended to choose tools to reduce the impact of inflation on the economy depending on the external factors that lead to it in a particular country. The main conclusions drawn in the study regarding the nature of inflation and the choice of anti-inflationary methods are consistent with those formulated by other scholars and can contribute to in-depth analysis and selection of effective tools to mitigate the negative effects that hinder the economic development of the state.

Conclusions. The study shows that inflation in a country caused by external factors, such as pandemics, rising global prices, wars in other countries, has a rather negative impact on economic development in that country and is difficult to regulate using standard monetary methods. The research objective and the macroeconomic analysis of inflation in Poland led to the following conclusions. In 2021-2022, the

main inflation indicators, including CPI, CPE, and the GDP deflator, showed the fastest growth since 1997. Among European countries, Poland's inflation rate in 2022 was one of the highest, mainly due to the war in Ukraine. The significant excess of the CPI over the GDP deflator in 2022 was a leading factor in the CPI growth in early 2023. The study found that the main instruments used to reduce inflation were an increase in the key policy rate, the required reserve ratio, and a reduction in VAT rates on several goods, including fuel, food, fertilisers, and other products. The assessment of the impact of the key policy rate increase on inflation proved to be ineffective in the context of the strong impact of military events in the neighbouring country, which confirms the non-monetary nature of inflation. It has been proven that the reduction of VAT on certain goods in the context of rising inflation to some extent slows down the growth of consumer prices, but this leads to a significant reduction in budget revenues.

Analytical forecasts of inflation rates for the end of 2023 and 2024-2025 show a decline to a single-digit value in 2024 and a return to the level of 2020 in 2025, respectively, along with GDP growth. It is substantiated that to regulate inflation, the Government of Poland should refrain from further raising the key interest rate when developing its anti-inflationary policy; refinance and reduce interest rates for bank loans; consider a wide range of external factors that may affect the Polish economy, which will neutralise them, slow down price growth and accelerate economic growth. The conclusions drawn are of practical importance and can be used by the Government and the National Bank of Ukraine management in decision-making and planning future anti-inflationary policy. The main areas of further research in this area will be the search for ways to improve non-monetary instruments to combat inflation in times of unfavourable external circumstances affecting the country's economy.

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INFLATION IN POLAND: MACROECONOMIC ANALYSIS

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The research relevance is predefined by the need to explain the nature of inflation and assess the effectiveness of anti-inflationary policy in Poland. The research aims to study the factors that cause price growth and the tools to reduce its pace during the global economic crisis. The following research methods were used: analysis of statistical data on inflation dynamics; comparison – for comparing price growth indices; expert estimates – for forecasting inflation; graphical – for displaying results; and generalisation – for summarising information on the use of inflation reduction tools. The main results obtained in this study are: determination of the dynamics of producer price indices, consumer prices and the gross domestic product (GDP) deflator in Poland; comparison of Poland's inflation rate with other European countries and justification of the reasons for its rapid growth; analysis of the use of inflation targeting in Poland, Romania, the Czech Republic and Hungary; and assessment of the effectiveness of the central bank's increase in the key interest rate and required reserve ratios, as well as the impact of these instruments on the inflation rate in Poland; proving the non-monetary nature of inflation and identifying its main drivers in the period 2020-2023 (coronavirus pandemic, rising global energy and food prices, war in Ukraine); identifying the effects of lowering value-added tax (VAT) rates on certain goods on inflation and tax revenues to the Polish budget; comparing the forecast inflation rate and GDP growth by the end of 2023 and 2024-2025 based on expert estimates; substantiating the ways to slow down inflation, considering a wide range of external factors affecting the Polish economy. The results and conclusions are of practical importance for the Government of the country and managers of the banking sector in developing measures to regulate the rate of price growth.

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