

## EURO AREA MEMBERSHIP EFFECTS ON INFLATION

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**Abstract:** *The inflation rates and their convergence within the Euro area were a major concern even before the advent of the single currency. The study attempts to examine the main factors of inflation and differentials in members of the Euro area for the period 2007–2022. The search for the causes of the current high inflation starts with the consequences of the Covid-19 pandemic. The global economy recovered fast once the pandemic ended and the restrictions on consumption and travel were lifted. Then conflict between Russia and Ukraine caused energy and commodity prices, including food prices, to increase. The differences between the inflation rates in the various countries of the Euro area first started to widen in 2020 when the pandemic caused stronger disinflation in countries that have large tourism sectors. As the pandemic faded, inflation picked up most in countries where the economy had declined less and where labor shortages were starting to put pressure on wages.*

**Keywords:** *Euro area, European Union, inflation, crisis, impact, economic stability.*

### Introduction

Inflation is one of the most important macroeconomic indicators that influences interest and exchange rates, consumer and investment demand, as well as various social aspects, including expenses and the quality of life. Inflation differentials are a normal phenomenon in any monetary union and even in long-established monetary unions. The relevance of this issue in contemporary conditions is driven by the ongoing surge in prices that began in late 2021 and continues to date. Inflation rates have reached double-digit figures, which, combined with the effects of the COVID-19 pandemic and the conflict in Ukraine disrupted supply chains, create even greater uncertainty and unpredictability.

The aim of the study is to analyse the inflation dynamics and to determine the possible factors for the acceleration in inflation.

The main thesis that is defended is that the countries' membership in the euro area and the adoption of the single European currency as a national currency is not the reason for the realization of higher inflation, but external reasons and factors lead to the rise in prices, including the last euro area member states. This leads to corresponding problems for the ECB due to the difficulties of applying the common monetary policy in countries with different inflation rates.

Many economists hold the viewpoint that inflation, when it is moderate in size and accompanied by a corresponding increase in the money supply, can stimulate production. At the same time, the increase in the money supply in circulation accelerates the money turnover, contributing to the activation of investment activity. In summary, it can be concluded that inflation can have both positive and negative impacts on socio-economic processes. The positive effects of inflation include the following points: Inflation has a stimulating effect on trade, as the expectation of future price increases encourages consumers to buy goods today. Exchange rates can be influenced by inflation differentials between countries; Inflation serves as a factor of "natural selection" in economic evolution. In conditions of inflationary economic

development, weaker enterprises go bankrupt. Only the strongest and most efficient enterprises remain in the national economy. At the same time, inflation can contribute to increasing the competitiveness of local goods. In an economy with incomplete employment, moderate inflation, by slightly reducing the real incomes of the population, compels it to work more and better. During inflation, debtors, buyers, importers, and those working in the real sector benefit. Inflation redistributes income between creditors and borrowers, benefiting borrowers. After obtaining a long-term loan with a fixed interest rate, the borrower will only need to repay a part of it, as the real purchasing power of money will decrease due to inflation.

Some of the negative effects are connected with high or unpredictable inflation, which can create uncertainty in the economy. Businesses may be hesitant to invest or make long-term plans because they are unsure about future prices and costs. All monetary reserves (deposits, loans, account balances, securities) are devalued. Thus, due to unforeseen inflation, holders of savings in current accounts lose their income - money is devalued, and savings decrease. There is spontaneous, uncontrolled income redistribution, resulting in creditors, sellers, exporters, and employees of state-owned enterprises losing out due to inflation. Price increases are accompanied by a devaluation of the national currency exchange rate. All major economic indicators, such as GDP, income, interest rates, etc., are distorted. Inflation affects the volume of national production.

The study is structured as follows: The first part introduces the type of factors developing inflation processes and the importance of a country's monetary policy. The second part describes in detail economic processes and inflation data in the EU and Euro area during the crisis. The inflationary processes in the countries that recently joined the Euro area are analyzed in the end.

## **1. Factors contributing to the development of inflation**

Inflation is often caused by a combination of economic and political factors within a country. There are two main categories of factors that influence inflation: *internal factors*, which include monetary and non-monetary aspects, and *external factors*, which involve international market conditions, structural imbalances in the global economy, cross-border capital flows, a country's external debt, etc. Monetary factors are those that lead to a crisis in public finances, a budget deficit, and an increase in public debt. They operate on the demand side and the monetary circulation, relatively independently of the production process (Baumol, Blinder, 2006). Monetary factors of inflation include an increase in money supply - the rise in the money supply, often caused by factors like excessive money emission to cover budget deficits or rapid credit expansion, can lead to increased overall demand, resulting in higher prices and inflation; If the speed at which money circulates exceeds the growth rate of production, it can contribute to inflation. This can happen if the turnover of money in transactions increases disproportionately to the production of goods and services. A persistent deficit in the state budget covered by excessive money emission, unrelated to the real needs of the economy, can lead to additional demand without a corresponding increase in production, contributing to inflation. Another factor is exchange rate instability (imported inflation). Fluctuations in the exchange rate of the national currency, known as imported inflation, can

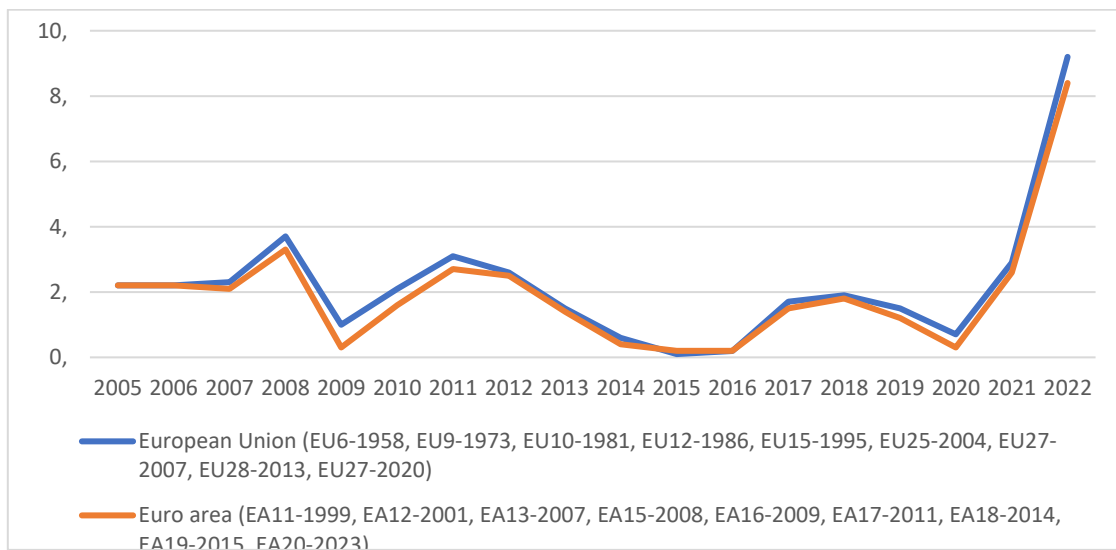
result in the population holding part of the external inflation. Measures taken by currency authorities to stabilize the exchange rate can increase the supply of national currency in circulation, leading to inflation. Overinvestment can create additional unsatisfied demand in the domestic market, and uneven distribution of investments across industries can lead to economic imbalances, increasing the demand-supply gap and contributing to inflation. It is supposed that while monetary factors play a primary role in initiating inflationary processes, inflation solely driven by monetary factors, especially excessive issuance of unsecured money, is a relatively rare occurrence.

The non-monetary factors are those rooted in the sphere of production. They typically manifest as disruptions to economic development (Taylor, 2008). Incorrect monetary policies lead to imbalances in production, sometimes resulting in the monopolization of the economy. Unsustainable Economic Structure is most typical of developing countries with outdated and inefficient economic structures. When the structure of the national economy is not rationalized or diversified, it can lead to economic inefficiency and inflationary pressures; In conditions of economic monopolization, where individual entrepreneurs dominate the market and set their prices, price competition is severely limited. Lack of competition can result in higher prices and contribute to inflation. Another factor is the militarization of the economy: The growth of the military-industrial complex can lead to unproductive use of national income, with a significant portion directed toward military needs rather than civilian requirements. Increased military expenditures often lead to budget deficits, which can indirectly contribute to inflation. Rising production costs can result from increases in wages, profits, or taxes that exceed the growth in productivity. When production costs rise faster than output, businesses may pass those costs on to consumers through higher prices, contributing to inflation.

## **2. Inflation processes in the European Union and the Euro area**

At the European Union level, in the post-global financial crisis period, there were no significant changes in the inflation rate, with its values remaining below the target set by the European Central Bank. There were even periods of deflation. The situation began to change from the beginning of 2021, initially with a gradual increase in the price level, accelerating towards the end of the year and in the period following the onset of the military conflict in Ukraine. The disrupted supply chains due to the war caused a shortage of goods and an increase in the prices of essential raw materials, particularly energy sources. This, in turn, triggered an inflationary spiral, raising prices for all other goods and services, as energy and fuels are a major component of costs in any production. In some countries, including Bulgaria, inflation reached double-digit values for several months. Fig. 1 presents the annual inflation in the Euro area and the EU for the period 2005 – 2022.

*Fig. 1. Annual inflation in the EU and Euro area*



Source: [https://ec.europa.eu/eurostat/databrowser/view/PRC\\_HICP\\_AIND\\_custom\\_7421803/default/table](https://ec.europa.eu/eurostat/databrowser/view/PRC_HICP_AIND_custom_7421803/default/table)

Looking at the data on the figure, it becomes clear that the current inflation, which started in 2020 and continues to the present day, is double the rate even compared to the major crisis in 2008. Adhering to the trend, the inflation rate in 2008 was around 3.8%, slightly above the target annual inflation rate. In contrast, in 2022, we observe an inflation level of 8.5%, which does not even reveal the full picture. We get a clearer understanding of the real state of inflation when we include expenditures on energy, housing, and food in the equation. With these factors, inflation jumps to over 18%. This precisely implies the need for a thorough investigation of the dynamics in inflation processes from 2017 to the present to discover possible causes and the moment when the world is facing economic challenges more severe than those of 2008. There is a slightly different perspective - the difference between how people perceive inflation versus the actual measured rate. This issue is important because individuals' perceptions of inflation today - and their expectations of it for the future - influence their spending and saving behavior, and thus affect overall macroeconomic outcomes. Moreover, inflation expectations have significant implications for the credibility of the percent inflation target and for the effectiveness of monetary policy. Many people feel that the official consumer price index (CPI) inflation rate does not reflect the higher inflation they believe they are facing. The average consumer tends to think they are facing higher inflation than both measured inflation and the target of the Central Bank. The behavior of consumers—which is determined by psychology as well as knowledge—has been found to have a significant impact on inflation perceptions and expectations. Consumption habits have an impact on the “personal” inflation rate. While all of the expenditures are included in the basket, each experiences a different inflation rate. The more individual spending pattern differs from the composition of the overall spending pattern, the more personal inflation rate deviates from measured inflation (Euro Area Statistics, 2023). In terms of behavior, research shows that consumers' perceived inflation rate tends to be influenced more by rising prices. The perception gap narrows when sharply declining prices are excluded. The reason behind this is simple: in forming their perceptions of inflation, consumers seem to put more weight on prices that go up rather than down. The loss of purchasing power from rising prices has been found to have an outsized psychological

impact. (Vogel L., Menz J.-O., and. Fritsche U. (2019).

The annual inflation rate in the Euro area was 1.5 % in January 2017 and 1.7% in the EU during the same period. In January 2017, the lowest annual rates were recorded in Ireland (0.3%), Romania (1.1%), and Bulgaria (1.2%). The highest annual levels were recorded in Belgium (2.8%), Latvia and Spain (both at 2.9%), and Estonia (3.7%).

The annual inflation rate in the Euro area was 1.8% in December 2018. One year earlier, the rate was 1.5%. In the European Union, the annual inflation rate was 1.8% in December 2018. One year prior, the rate was again 1.7%. The lowest annual inflation rates were recorded in Greece (0.8%) and Denmark (0.7%). The highest annual rates were observed in Estonia (3.3%), Romania (4.1%), and Hungary (2.9 %). During the examined period, the lowest inflation was observed in 2020. In December 2020, the annual inflation in the Euro area was 0.3%. One year earlier, the percentage was 1.2 %. The annual inflation in the European Union was 0.3% in December 2020, compared to 0.2 % in November. One year earlier, the percentage was 1.5 %. The lowest annual rates were recorded in Greece (-2.4%), Slovenia (-1.2%), and Ireland (-1.0%). The highest annual levels were reported in Poland (3.4 %), Hungary (2.8%), and the Czech Republic (2.4%).

*Table 1. HICP - Annual data (average index and rate of change) for EU and Euro area countries*

TIME	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
<b>GEO (Labels)</b>																
European Union (EU6-1958, EU9-1973, EU10-1980)	2,3	3,7	1,0	2,1	3,1	2,6	1,5	0,6	0,1	0,2	1,7	1,9	1,5	0,7	2,9	9,2
European Union - 27 countries (from 2020)	2,4	3,7	0,8	1,8	2,9	2,6	1,3	0,4	0,1	0,2	1,6	1,8	1,4	0,7	2,9	9,2
European Union - 28 countries	2,4	3,7	1,0	2,1	3,1	2,6	1,5	0,6	0,1	0,2	1,7	1,9	1,5	:	:	:
Euro area - 20 countries	2,2	3,4	0,3	1,6	2,7	2,5	1,4	0,4	0,2	0,2	1,5	1,8	1,2	0,3	2,6	8,4
Euro area - 19 countries	2,2	3,3	0,3	1,6	2,7	2,5	1,3	0,4	0,2	0,2	1,5	1,8	1,2	0,3	2,6	8,4
Belgium	1,8	4,5	0,0	2,3	3,4	2,6	1,2	0,5	0,6	1,8	2,2	2,3	1,2	0,4	3,2	10,3
Bulgaria	7,6	12,0	2,5	3,0	3,4	2,4	0,4	-1,6	-1,1	-1,3	1,2	2,6	2,5	1,2	2,8	13,0
Germany	2,3	2,8	0,2	1,1	2,5	2,2	1,6	0,8	0,7	0,4	1,7	1,9	1,4	0,4	3,2	8,7
Estonia	6,7	10,6	0,2	2,7	5,1	4,2	3,2	0,5	0,1	0,8	3,7	3,4	2,3	-0,6	4,5	19,4
Greece	3,0	4,2	1,3	4,7	3,1	1,0	-0,9	-1,4	-1,1	0,0	1,1	0,8	0,5	-1,3	0,6	9,3
Spain	2,8	4,1	-0,2	2,0	3,0	2,4	1,5	-0,2	-0,6	-0,3	2,0	1,7	0,8	-0,3	3,0	8,3
France	1,6	3,2	0,1	1,7	2,3	2,2	1,0	0,6	0,1	0,3	1,2	2,1	1,3	0,5	2,1	5,9
Croatia	2,7	5,8	2,2	1,1	2,2	3,4	2,3	0,2	-0,3	-0,6	1,3	1,6	0,8	0,0	2,7	10,7
Italy	2,0	3,5	0,8	1,6	2,9	3,3	1,2	0,2	0,1	-0,1	1,3	1,2	0,6	-0,1	1,9	8,7
Latvia	10,1	15,3	3,3	-1,2	4,2	2,3	0,0	0,7	0,2	0,1	2,9	2,6	2,7	0,1	3,2	17,2
Lithuania	5,8	11,1	4,2	1,2	4,1	3,2	1,2	0,2	-0,7	0,7	3,7	2,5	2,2	1,1	4,6	18,9
Luxembourg	2,7	4,1	0,0	2,8	3,7	2,9	1,7	0,7	0,1	0,0	2,1	2,0	1,6	0,0	3,5	8,2
Romania	4,9	7,9	5,6	6,1	5,8	3,4	3,2	1,4	-0,4	-1,1	1,1	4,1	3,9	2,3	4,1	12,0
Slovenia	3,8	5,5	0,8	2,1	2,1	2,8	1,9	0,4	-0,8	-0,2	1,6	1,9	1,7	-0,3	2,0	9,3
Slovakia	1,9	3,9	0,9	0,7	4,1	3,7	1,5	-0,1	-0,3	-0,5	1,4	2,5	2,8	2,0	2,8	12,1
European Economic Area	2,3	3,7	1,0	2,1	3,1	2,6	1,5	0,6	0,1	0,3	1,7	1,9	1,5	0,7	2,9	9,2
Switzerland	0,8	2,4	-0,7	0,6	0,1	-0,7	0,1	0,0	-0,8	-0,5	0,6	0,9	0,4	-0,8	0,5	2,7
United States	2,6	4,4	-0,8	2,4	3,8	2,1	1,2	1,3	-0,8	0,6	1,8	2,2	1,4	0,8	5,3	8,7

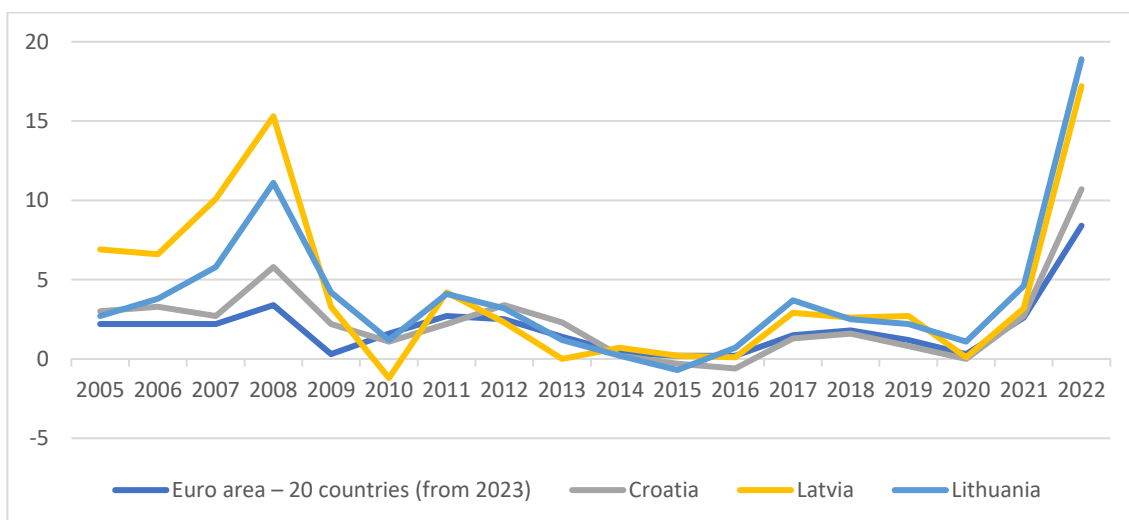
Source: [https://ec.europa.eu/eurostat/databrowser/view/PRC\\_HICP\\_AIND\\_custom\\_7421803/default/table](https://ec.europa.eu/eurostat/databrowser/view/PRC_HICP_AIND_custom_7421803/default/table)

A return to inflationary processes occurred in 2021, when the COVID-19 pandemic also raged, as well as in 2022, as a result of the Russian invasion of Ukraine. Thus, the annual inflation rate in the Euro area is about 2.7 %. Annual inflation in the European Union was 2.9 % in December 2021. A year earlier, the rate was 0.7%. The annual euro area inflation rate was 8.6% in June 2022, up from 8.1% in May. A year earlier, the rate was around 2.0 %. Annual inflation in the European Union was 9.6% in June 2022, up from 8.8% in May. A year earlier, the rate was 2.2%.

In order to clearly assess the impact and effect of membership in the Euro area on inflation, an analysis has been conducted on the latest three countries that joined.

On 01.01.2014, Latvia became the 18th country to join the Euro area and have the Euro as its official currency. The decision to join the Euro area was made in the context of Latvia's broader integration into the EU and its commitment to participate in the Economic and Monetary Union. The euro is considered a means to enhance macroeconomic stability, promote economic growth, and increase Latvia's competitiveness. On an annual basis, we observe a decrease in the price rates of 0.5 percentage points; thus, the inflation reaches from 0.7% in 2014 to 0.2 in 2015, close to the data of the Eurozone. Only in 2017 was observed a serious increase in this indicator, when it reached 2.9%. Probably Latvia is already reaping the benefits of the transition to the euro, including improved competition, banking brokerage, and lower levels of interest rates, which secure immediate and long-term benefits for the economy. On the other hand, the growth of real estate prices and salaries increases faster, which can be partially accelerated by the expectations related to the Euro. According to Eurostat data, the annual data of HCIP before joining in Euro area (2012-2013) was between 4.2 % and 2.3 %. Over the next three years, levels remain around 0%. Latvia's accession to the Euro area took a total of 10 years and can be considered a success. After the accession, the country's economic indicators stabilized and grew steadily. Joining Lithuania in the Euro area on January 1, 2015, is an important event for the Baltic nation. After nearly a decade of negotiations, the country officially adopted the euro as its currency, becoming the **19th member of the currency union**. On an annual basis, during the year of adoption, there is deflation in Lithuania at a rate of -0.7 %. This percentage is lower than the average for the Euro area, whereas still observed a fall compared to the base year 2014 when Lithuania still uses its national currency. In 2016 there was a rise in the price rates, which in 2017 reached 3.7%. In comparison, the accumulated inflation after Lithuania's accession to the Euro area as of July 2018 is 7.23%. The economic benefits of adoption are significant. Above all, the level of inflation in Lithuania remains relatively low, and the country's exports are growing steadily. In addition, there has been an increase in foreign investment, and Lithuania's economy is positioned among the fastest-growing in the EU.

*Fig.2. Inflation rate in Croatia, Latvia and Lithuania*



Source: <https://ec.europa.eu/eurostat/data/database>

The latest member to join the Euro area is Croatia. For the two-year period in ERM II, Croatia has demonstrated resilience to the convergence criteria and the implementation of additional legislative changes with the aim of Euro area membership. On January 1, 2023, Croatia became the 20th country - a member of the Euro area. Inflation rates in Croatia for the period (2020-2022) were between 0% and 10.7%. At the time, in the April 2022 Convergence Report, the 12-month average rate of HICP inflation in Croatia as of April 2022 was 4.7%, i.e., below the reference value of 4.9% under the price stability criterion. But the levels at the end of 2022 turned out to be higher - 10.7%. This did not prevent Croatia from adopting the euro, i.e., a compromise on the part of the ECB was observed. In the last ten years, the rate of inflation in Croatia fluctuated in a relatively wide range - from -0.8% to 4.7%, with an average of 1.1% for the period. The expectations in the short and long term from the adoption of the euro are related to the attraction of foreign investments, the reduction of transaction costs, and the growth of the economy. Croatia was admitted to the Euro area after some compromises were reached by the European institutions related to its debt ratio exceeding the reference value of 60%.

An analysis of inflation for recent euro area member states shows that inflation does not show up immediately after euro adoption. Indeed, after a certain period, there is an increase in inflation in all three countries, but this is related to external factors that affect all countries on a global scale. The real benefits of adopting the euro for each of these countries should be highlighted, including in terms of attracting investment, boosting confidence and credit ratings, reduction of transaction costs, etc.

### **Conclusion**

Headline inflation is falling in the Euro area, but it still remains too far above the ECB's target of 2%. That measures of underlying inflation are still very high is even more worrisome, as it indicates the presence of more persistent inflationary forces that can be difficult to break. The differences in inflation rates between the member states of the euro area have largely been driven by energy prices and the policy measures taken by governments, and they remain wide. This may become a problem for the euro area, if such differences become persistent and hamper the transmission of monetary policy and the smooth functioning of the currency union. The ECB can only make monetary policy for the euro area as a whole, without tailoring it to the needs of any particular country. This makes it vital that such divergences in national inflation and real interest rates are kept in check by national structural and fiscal policies.

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