ASYMMETRIC EFFECTS OF ECB MONETARY POLICY ON EMERGING EU ECONOMIES

NICOLETA PANAIT
Lecturer, PhD, Faculty of Economics and Business Administration
"Nicolae Titulescu" University, Bucharest
npanait@univnt.ro

Abstract: Following the COVID-19 pandemic, the European Union experienced a period of persistent inflation driven by energy shocks, supply chain disruptions, and the rapid recovery of domestic demand. In 2022, the inflation rate reached a record high of 10.6% in the euro area and 11.5% in the EU, prompting the European Central Bank (ECB) to implement the most restrictive monetary policy in its recent history. Between 2022 and 2023, the ECB successively increased its policy rate to 4%, followed by a gradual easing phase beginning in 2024. This study examines the effects of the ECB's monetary policy on emerging EU economies — namely Romania, Poland, Hungary, the Czech Republic, Bulgaria, and Croatia — which have experienced the policy's impact asymmetrically compared to the core euro area countries. Recent data indicate that while average inflation in the euro area declined to around 2.3% in 2025, it remained between 4% and 6.5% in most emerging EU economies, reflecting structural differences in monetary transmission and domestic vulnerabilities. The paper aims to highlight the degree of nominal convergence after 2022 and the resilience of monetary policy transmission channels in a context of prolonged global uncertainty.Preliminary results suggest that while the restrictive monetary stance contributed to price stabilization, it also deepened growth disparities and imposed higher economic adjustment costs on emerging EU members with partial integration into the euro area.

Keywords: monetary policy, inflation, emerging economies, European Central Bank, nominal convergence

1. Introduction

After the COVID-19 pandemic, European economies faced a rapid and persistent increase in inflation, initially driven by disruptions in global supply chains, rising energy and commodity prices, and the recovery of domestic demand. In 2022, the inflation rate reached its highest level in the last four decades in the European Union — 11.5% at the EU level and 10.6% in the euro area, according to Eurostat data. This inflationary environment marked a fundamental shift in the orientation of European monetary policy, following a decade characterized by extremely low interest rates and quantitative easing programs.

Beginning in July 2022, the European Central Bank (ECB) initiated the most extensive monetary tightening cycle in its recent history, successively raising the policy rate to 4.0% in September 2023. The measures aimed to curb aggregate demand and anchor inflation expectations, but at the same time generated significant side effects on financing costs and economic growth. After a year and a half of restrictive policy, the ECB began a gradual easing process in June 2024, lowering the rate to 3.75%, and throughout 2025 continued the reductions, reaching 2.0% for the deposit facility, a level maintained into the autumn of the same year.

Against this backdrop, inflation in the euro area gradually declined, reaching 2.3% in February 2025, close to the 2% target. However, the emerging economies of the European Union — such as Romania, Hungary, Poland, Czechia, Bulgaria, and Croatia — recorded significantly higher values. In February 2025, annual inflation stood at 5.7% in Hungary, 5.3% in Romania, and 5.0% in Croatia, while in August 2025 Romania continued to have the highest rate in the EU (6.6%). This divergence confirms the existence of structural differences in the transmission of monetary policy between core euro area economies and emerging ones, which are either outside the euro area or still in the process of nominal convergence.

The persistence of these differences reflects several factors: distinct exchange rate regimes (floating currencies outside the euro area), a higher share of energy and food in the consumption basket, labor market rigidities, and varying levels of financial market depth. Consequently, the response of emerging economies to the ECB's tightening cycle was asymmetric — inflation declined more slowly, while financing costs and real interest rates rose rapidly, affecting investment and consumption.

Analyzing these mechanisms is essential to understanding the impact of the common monetary policy on economic convergence within the European Union, as well as to assessing the challenges faced by countries outside the euro area but highly financially integrated. The relevance of this topic is even greater considering that 2025 marks the transition toward a new phase of monetary policy, in which the ECB aims for a 'soft landing' of the economy, keeping inflation under control without triggering a widespread recession.

2. Monetary Policy Transmission and Inflation Dynamics in Open Economies

The analysis of the effects of monetary policy on inflation and economic performance is grounded in the foundations of modern macroeconomic theory. In open economies, monetary policy generates complex effects transmitted through a series of interdependent channels — the interest rate, the exchange rate, credit conditions, and inflation expectations — all of which influence the aggregate behavior of consumption, investment, and prices. The specialized literature defines this mechanism as the monetary policy transmission process (Mishkin, 2007).

According to the New Keynesian model proposed by Clarida, Galí, and Gertler (1999), monetary policy operates through a Taylor-type reaction rule, whereby the central bank adjusts the nominal interest rate in response to deviations of inflation from its target and differences between actual and potential GDP. In open economies, this framework is complemented by the effects of the exchange rate on import and export prices, which reinforces the transmission of monetary policy to domestic price dynamics. Consequently, the decisions of major central banks — particularly the European Central Bank (ECB) — can generate significant spillovers for countries outside the euro area but financially and commercially integrated into the European space.

The transmission channels of monetary policy are multiple, interdependent, and operate through distinct economic mechanisms. The interest rate channel affects the financing costs for households and firms, influencing the level of aggregate demand and investment. The credit channel captures how monetary policy adjustments influence the supply of loans and financing conditions, being especially relevant in economies with a high degree of financial intermediation. The exchange rate channel is essential in emerging economies that do not use the single currency, as changes in ECB interest rates can trigger capital flow movements and exchange rate fluctuations, directly affecting the prices of imported goods and domestic inflation. In addition, the inflation expectations channel plays a fundamental role in anchoring anticipated price and wage developments, thereby shaping the credibility and effectiveness of monetary policy (Taylor, 1993).

Studies conducted by the European Central Bank and the International Monetary Fund show that changes in the ECB's monetary policy rates have generated contagion effects in yield curves, financing costs, and liquidity conditions in EU emerging economies such as Romania, Poland, Hungary, and Czechia (ECB Working Paper Series, 2023; IMF, 2024). These indirect transmission effects are amplified by the high degree of financial and commercial integration, the presence of euro area banking institutions in local markets, and strong correlations among capital markets.

Another important theoretical aspect is imported inflation, which explains the persistence of high price levels in European economies during the post-pandemic period. According to ECB analyses (Economic Bulletin, 2023) and Eurostat, the dramatic increases in energy prices — particularly natural gas and oil — produced a significant pass-through effect on core inflation, especially in countries strongly dependent on imported energy. Recent studies (ECB Working Paper No. 2902/2024) show that energy price shocks and supply chain disruptions played a decisive role in the rise of consumer inflation between 2021 and 2023, with their effects transmitted more slowly in emerging economies due to structural rigidities and the high share of energy and food in the HICP basket.

The literature also highlights that the ECB's monetary policy has had asymmetric effects across the European Union. While core euro area countries (Germany, France, the Netherlands) experienced a rapid decline in inflation in 2024, emerging economies such as Romania, Hungary, and Poland continued to exhibit elevated levels, ranging between 4% and 6.5% in 2025 (ECB Data Portal, 2025). This high inflation heterogeneity among member states, documented in ECB studies (Economic Bulletin, no. 2/2025), indicates uneven monetary transmission and raises challenges for nominal convergence — a central objective of European economic and monetary integration.

Nominal convergence requires the alignment of key macroeconomic indicators (inflation, interest rates, budget deficits, and exchange rate stability) with the average values of the euro area. The persistence of high inflation in emerging economies suggests that their domestic monetary policies must complement the ECB's policy to prevent price and competitiveness gaps. Accordingly, the literature recommends adopting tailored macroprudential and fiscal measures capable of mitigating external effects generated by European monetary cycles (Égert & MacDonald, 2020).

3. Macroeconomic Context (2022–2025)

At the onset of the crisis triggered by the COVID-19 pandemic, the economies of the European Union began a recovery process accompanied by severe disruptions: supply chain breakdowns, surging energy and commodity prices, and a rapid rebound in domestic demand. This combination generated strong and persistent inflation. Thus, in October 2022, the annual Harmonised Index of Consumer Prices (HICP) inflation rate reached 10.6% in the euro area, while in the EU it climbed to 11.5%.

The European Central Bank (ECB) launched an aggressive cycle of monetary policy tightening. Official data show that by September 2023, the ECB's deposit facility rate had reached 4.00%. Subsequently, as inflation moderated and signs of economic slowdown emerged, the ECB began to ease monetary policy: for instance, on 11 June 2025, the deposit facility rate was reduced to 2.00%.

Regarding inflation dynamics, the general trend was a gradual return toward levels close to the ECB's stability target, although with considerable divergences across member states. In May 2025, the annual inflation rate in the euro area stood at 1.9%, down from 2.2% in April, confirming the growing effectiveness of the restrictive monetary stance. However, the emerging economies of Central and Eastern Europe continued to record higher inflation levels, a phenomenon reflecting persistent structural vulnerabilities as well as a slower and more incomplete transmission of monetary policy impulses compared with core euro area countries.

In addition, the period 2024–2025 was marked by renewed volatility in global energy markets, driven by geopolitical tensions, shifts in gas supply routes, and fluctuations in oil prices. These external shocks placed additional pressure on energy-importing EU member states, particularly in Central and Eastern Europe, where energy dependency amplified the pass-through of global price increases to domestic inflation. As the EU accelerated its green transition and reduced its reliance on Russian energy, the adjustment process generated transitional costs that further contributed to price differentials across member states.

Moreover, the macroeconomic environment was shaped by tightening fiscal constraints, following the reinstatement of the EU fiscal rules in 2024 and the gradual withdrawal of pandemic-era support measures. Many governments in emerging EU economies implemented consolidation strategies to stabilize public finances, which, while necessary for long-term fiscal sustainability, limited their capacity to cushion the impact of high interest rates on households and firms. This interplay between tighter fiscal policies and a still-restrictive monetary stance in early 2025 created a challenging policy mix, slowing the pace of economic recovery and widening the divergence in growth trajectories between core and emerging EU countries.

4. Methodology and Data Framework

The present analysis evaluates the effects of the European Central Bank's (ECB) restrictive monetary policy on inflation dynamics and economic activity in emerging European Union economies between the first quarter of 2022 and the third quarter of 2025. The study employs a comparative and quantitative approach based on official data published by the ECB, Eurostat, and the national central banks of Central and Eastern Europe (CEE).

The sample consists of six emerging EU economies — Romania, Poland, Hungary, Czechia, Bulgaria, and Croatia — selected for their high degree of financial and trade integration with the euro area and their diverse monetary and exchange rate frameworks.While Croatia adopted the euro on 1 January 2023 and Bulgaria operates under a currency board (with the lev pegged to the euro), the other four countries maintain independent monetary policies and managed floating exchange rate regimes. This contrast allows for an assessment of how the transmission of ECB policy varies according to the degree of monetary autonomy.

First, the annual inflation rate (HICP) will be examined and compared with the euro area average in order to highlight differences in price dynamics. This comparison enables the evaluation of nominal convergence and the effectiveness of direct or indirect monetary policy transmission. The persistence of higher inflation rates in emerging economies may indicate weaker anchoring of inflation expectations and a delayed transmission of ECB decisions, particularly through the exchange rate and credit channels.

Second, the analysis of ECB and national policy interest rates offers insights into monetary policy gaps between the euro area and non-euro economies. This allows the identification of adjustment moments and the differentiated reactions of national central banks to the restrictive cycle initiated by the ECB. Differences in real and nominal interest rates can be interpreted as indicators of monetary policy autonomy and effectiveness relative to broader European trends.

The analysis relies exclusively on official and publicly available data from the Eurostat and ECB portals. The selected indicators reflect the main transmission channels of monetary policy: prices, financing conditions, real economic activity, and the exchange rate.

The sample includes six countries with different degrees of monetary integration:

- Croatia – adopted the euro on 1 January 2023;
- Bulgaria – currency board arrangement with the lev pegged to the euro;
- România, Polonia, Ungaria, Cehia – managed floating exchange rate regimes and independent monetary policies.

Table 1. Macroeconomic Indicators in Selected Emerging EU Economies (2022–2025)

Country / Indicator	Monetary Regime	HICP Inflation 2022 (%)	HICP Inflation 2023 (%)	HICP Inflation 2024 (%)	HICP Inflation 2025 (%)	Policy Rate 2022 (%)	Policy Rate 2023 (%)	Policy Rate 2024 (%)	Policy Rate 2025 (%)	Real GDP Growth 2023 (%)	Real GDP Growth 2024 (%)	Average Exchange Rate (vs. EUR, 2025)
Romania (RO)	Managed float	13.8	10.4	6.7	5.0	6.75	7.00	7.00	6.75	2.1	2.8	4.95 RON/EUR
Poland (PL)	Free float	14.4	11.6	6.2	3.8	6.75	6.75	5.75	5.25	0.4	2.3	4.35 PLN/EUR
Ungary (HU)	Managed float	15.3	12.7	6.9	4.6	13.0	13.0	10.75	9.0	-0.8	2.1	385 HUF/EUR
Czechia (CZ)	Free float	14.5	10.7	4.9	3.0	7.0	7.0	6.75	6.25	1.2	2.0	24.6 CZK/EUR
Bulgaria (BG)	Currency board	14.3	8.5	5.0	3.8	1.42	3.75	3.50	3.25	1.8	2.5	1.96 BGN/EUR (fix)
Croatia (HR)	Euro adopted in 2023	10.7	8.0	4.5	2.5	—	ECB rate 4.0	ECB rate 3.25	ECB rate 2.0	2.0	2.8	—
Euro Area	Euro	8.4	5.4	2.7	1.9	0.0	4.0	3.25	2.0	0.5	1.4	—

* The exchange rates are approximate annual averages based on ECB data (2025).

The period 2022 – 2025 captures the full cycle of the ECB's recent monetary policy:

- the aggressive tightening phase (July 2022 – September 2023), during which the deposit facility rate increased from 0% to 4%;

- the stabilization and transition phase (2024), marked by the gradual decline in inflation;

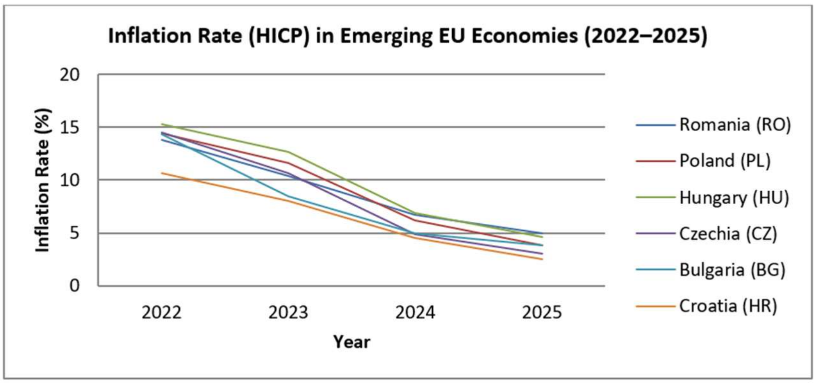
- the beginning of the monetary easing phase (from June 2025 onward), when the ECB reduced the deposit facility rate to 2.0%.

This timeframe allows for the assessment of both the immediate and the lagged effects of the ECB's decisions on emerging economies.

a) Inflation (HICP)

Indicator: the annual inflation rate, measured by the Harmonised Index of Consumer Prices (HICP, year-on-year %,). For quarterly analyses, monthly values are converted into quarterly averages. Average inflation in the euro area reached a peak of 10.6% in October 2022, while Romania and Hungary recorded values exceeding 14%, according to Eurostat data (2024).

Chart no.1 Inflation Rate (HICP) in Emerging EU Economies (2022–2025)



The results of the descriptive analysis indicate significant and persistent differences between inflation in emerging economies and that of the euro area. On average, during the period under review, the largest positive deviations from the euro area average were recorded in Hungary (+5.28 percentage points), Poland (+4.40 pp), and Romania (+4.38 pp). These substantial differences suggest weaker anchoring of inflation expectations in these economies, as well as a delayed and incomplete transmission of ECB decisions, particularly through the exchange rate and credit channels.

In contrast, Croatia, which adopted the euro on 1 January 2023, shows an average deviation of only +1.83 pp, reflecting its direct alignment with the euro area monetary framework. Bulgaria, operating under a currency board arrangement, and Czechia, with a free-floating exchange rate and monetary policy autonomy, display moderate but relatively stable deviations, indicating a partial yet more consistent transmission of external monetary impulses.

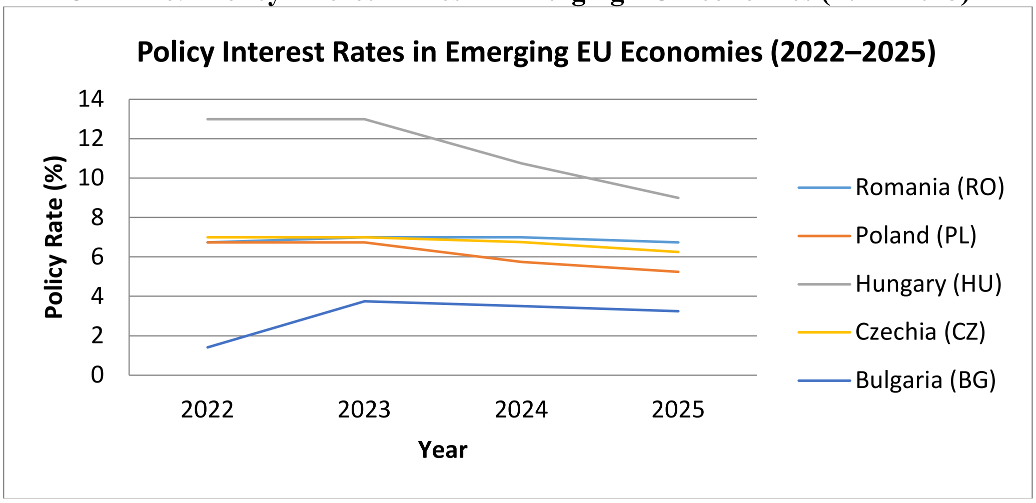
The results confirm the hypothesis that the degree of monetary integration decisively influences the efficiency of the ECB's monetary policy transmission mechanisms on price dynamics in emerging economies. The persistence of significantly higher inflation rates in non-euro countries highlights the limitations of indirect transmission channels, as well as the possible influence of domestic structural factors such as labor market rigidities, procyclical fiscal policy, or the degree of dollarization/euroization of the economy..

b) Monetary Policy Rates

A second direction of the analysis examines how central banks in the emerging economies of the European Union responded to the restrictive monetary policy cycle initiated by the European Central Bank (ECB) starting in the third quarter of 2022. The objective was to identify the gaps between the ECB's monetary policy and that of non-euro countries, in order to assess decision-making autonomy and the degree of synchronization with broader European trends.

Comparative results show differentiated reactions, depending on the monetary regime and domestic macroeconomic conditions. Romania (NBR) increased its policy rate from 2.0% in January 2022 to a peak of 7.0% in July 2023, maintaining this level relatively stable until 2024. Poland (NBP) followed a similar trajectory, raising the rate from 1.75% to 6.75% over the same period, with a slight decline thereafter.

Chart no.2 Policy Interest Rates in Emerging EU Economies (2022–2025)



Hungary (MNB) recorded the most aggressive monetary response: the policy rate was rapidly increased from 2.4% to a maximum of 13%, and later reduced to 9% in 2025 as part of a gradual easing process. This behavior reflects greater vulnerability to inflationary shocks and stronger pressure on the national currency.

Czechia (CNB) opted to stabilize its interest rate at a high level (7%) starting in 2022, maintaining it constant until mid-2024. This decision indicates a cautious approach and strong anchoring of inflation expectations.

In contrast, Bulgaria, operating under a currency board, recorded limited changes in its policy rate, remaining around 3%, without the ability to adjust rates independently due to the lev's peg to the euro.

Croatia, through its adoption of the euro on 1 January 2023, fully integrated the ECB's monetary policy framework, automatically aligning with decisions regarding the deposit facility rate, without autonomous intervention from its central bank.

These differences reflect not only the specific features of monetary regimes, but also the degree of autonomy with which central banks respond to the ECB's policy cycle. Countries with managed floating regimes and independent monetary policies have been able to adjust monetary conditions more rapidly in response to domestic inflationary pressures. At the same time, this level of autonomy requires strong institutional capacity and effective coordination with national fiscal and exchange rate policies.

5. Conclusions

The analysis of the effects of the restrictive monetary policy implemented by the European Central Bank during 2022–2025 highlights an incomplete process of nominal convergence, marked by persistent asymmetries between core euro area economies and the emerging economies of the European Union. While inflation in the euro area gradually returned toward the 2% target starting in 2024, the Central and Eastern European countries continued to record higher rates, between 4% and 6.5% in 2025, confirming a slower and more volatile transmission of monetary policy impulses. These discrepancies reflect significant structural differences — distinct exchange rate regimes, shallower financial markets, a higher share of energy and food in the consumption basket, and greater sensitivity to external shocks.

The degree of monetary integration decisively influences the efficiency of the transmission mechanism. Croatia, recently integrated into the euro area, showed rapid inflation convergence and full alignment with the ECB cycle, while Bulgaria, through its currency board, benefited from a stable but institutionally constrained transmission. Economies with managed floating regimes — Romania, Poland, Hungary, and Czechia — displayed autonomous monetary policy responses, yet with varying effectiveness in anchoring inflation expectations and stabilizing the exchange rate. Hungary illustrated the most pronounced vulnerability, having to adopt the most aggressive tightening to counteract inflationary pressures and currency depreciation.

From the perspective of macroeconomic costs, the analysis indicates that the ECB's restrictive cycle generated significant side effects on economic activity in emerging states. GDP growth remained moderate or even negative in some economies between 2023 and 2024, reflecting a higher elasticity of aggregate demand to interest rate increases and a greater dependence on external financing. At the same time, financial conditions tightened rapidly, and private-sector lending slowed down, which amplified the differences in the pace of disinflation between the euro area core and peripheral economies.

The study's findings confirm that monetary policy transmission mechanisms remain heterogeneous within the European Union, particularly for non-euro economies. Although the ECB's policy succeeded in stabilizing inflation at the aggregate level, its impact was unevenly distributed, widening economic disparities among member states. This reality poses major challenges to the objective of nominal convergence and highlights the need for complementary national policies — including tailored macroprudential measures, fiscal consolidation, structural reforms, and enhanced financial-market resilience.

In the medium term, the ECB's transition toward a more accommodative monetary stance offers opportunities for accelerating convergence, yet its effectiveness depends fundamentally on the ability of emerging economies to strengthen their macroeconomic fundamentals and reduce structural vulnerabilities. Without coordinated adjustments, persistent gaps in inflation and financing conditions risk perpetuating a two-speed Europe, undermining cohesion and the optimal functioning of the Economic and Monetary Union.

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