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Not All Energy Shocks Are Created Equal



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Abstract

The inflation surge of 2022–2023, and the risk of recurrence following the outbreak of conflict in the Middle East in early 2026, raises fundamental questions about the appropriate monetary policy response to supply-driven inflation. We examine the anatomy of both inflationary episodes, the challenges in distinguishing between supply and demand shocks in real time, the adequacy of the ECB's response to the 2022–2023 energy crisis, and the lessons that can be drawn for responding to the current inflationary pressures.

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LIST OF ABBREVIATIONS

ECB	European Central Bank
GDP	Gross Domestic Product
HICP	Harmonised Index of Consumer Prices
NEIG	Non-Energy Industrial Goods
NPV	Net Present Value
OFCE	Observatoire Français des Conjonctures Economiques

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EXECUTIVE SUMMARY

- Renewed geopolitical tension in the Middle East has triggered a sharp rise in oil prices in early 2026, broadly mirroring the energy shock following Russia's invasion of Ukraine in 2022. It raises questions about the appropriateness of the ECB policy responses, both then and more recently.
- The euro area inflation surge of 2022–2023, the sharpest since the creation of the single currency, was driven primarily by energy and commodity price shocks linked to the post-pandemic recovery and Russia's invasion of Ukraine, rather than by excess domestic demand.
- The resurgence of energy price pressures following the outbreak of conflict in the Middle East in 2026 makes it urgent to draw lessons from that episode, in particular regarding the appropriate monetary policy response when inflation originates in supply-side disruptions rather than demand conditions.
- Unlike in 2022–2023, the current episode occurs in a context of weaker growth, softer demand conditions, and inflation that had largely returned close to the ECB's target before the shock.
- The paper argues that the distinction between supply-driven and demand-driven inflation is essential for monetary policy, but difficult to establish clearly in practice. Energy shocks propagate through production costs, wages, inflation expectations, and fiscal responses, making the boundary between temporary and persistent inflationary pressures inherently blurred.
- The ECB's response to the 2022–2023 inflation surge illustrates the trade-offs involved in responding to supply shocks. While the ECB initially looked through the shock, it tightened monetary policy rapidly once inflation broadened and persistence risks increased.
- The paper argues that monetary tightening is not automatically the optimal response to energy-driven inflation. Higher interest rates have limited influence on global energy prices, may weaken demand excessively, and can slow renewable-energy investment by increasing financing costs for green infrastructure projects.
- The main policy conclusion is that monetary policy frameworks should become more flexible, state-contingent, and focused on inflation persistence rather than reacting mechanically to the initial price shock. In an environment of more frequent geopolitical and energy-related disruptions, effective stabilisation will also require stronger coordination between monetary and fiscal authorities.
- Although the ECB's 2025 Strategy Review embraced a more context-sensitive approach to monetary policymaking, it remains to be seen whether this framework will be fully reflected in upcoming monetary policy decisions.

1. INTRODUCTION

The resurgence of inflation in the euro area during 2022–2023 period has reopened fundamental debates about the nature of inflationary shocks, the appropriate role of monetary policy, and the institutional capacity of the European Central Bank (ECB) to respond to a rapidly changing macroeconomic environment. After more than a decade characterised by persistently low inflation and unconventional monetary accommodation, the euro area experienced in 2022–2023 the sharpest inflation episode since the creation of the single currency. Headline inflation exceeded 10% in late 2022, driven initially by energy and commodity price shocks linked to the post-pandemic recovery and Russia's invasion of Ukraine. Although inflation gradually declined towards the ECB's 2% target during 2024 and 2025, renewed geopolitical tensions in the Middle East and the resulting increase in energy prices have once again raised concerns about the persistence of inflationary pressures in 2026.

This new inflation episode raises a central question: is the euro area facing a repetition of the inflation dynamics observed in 2022–2023, or does the current environment differ in economically significant ways? More broadly, the 2022–2023 experience has highlighted the difficulty of distinguishing, in real time, between supply-driven and demand-driven inflation, a distinction that lies at the core of modern monetary policy frameworks. Conventional macroeconomic models generally imply that central banks should react differently depending on the origin of inflationary pressures. Demand-driven inflation typically calls for restrictive monetary policy, while supply shocks involve a more complex trade-off between price stability and real economic activity. In practice, however, the boundary between supply and demand forces is often blurred. Energy shocks propagate throughout the economy through production costs, wage-setting dynamics, inflation expectations, and fiscal responses, making it difficult to isolate "first-round" from "second-round" effects.

The ECB's response to the 2022–2023 inflation surge therefore provides an important case study for assessing how monetary policy should operate in an environment increasingly shaped by geopolitical fragmentation, energy transition pressures, and recurrent supply disruptions. The ECB initially adopted a cautious approach, reflecting uncertainty about the persistence of inflationary pressures and the risk of tightening prematurely in response to a largely external supply shock. Once inflation broadened and concerns about persistence intensified, however, the ECB implemented the fastest tightening cycle in its history. Whether this response was appropriately calibrated remains a matter of debate. The episode also revived broader discussions concerning the ECB's mandate, the coordination between monetary and fiscal policies, and the effectiveness of conventional monetary instruments when inflation originates outside domestic demand conditions.

This paper examines these issues through the lens of the recent inflation experience in the euro area. It first compares the current inflationary episode in 2026 with the inflation surge observed in 2022–2023, highlighting both similarities and important structural differences. It then discusses the conceptual and empirical difficulties involved in separating supply-driven from demand-driven inflation, with particular attention to energy shocks, inflation expectations, and the interaction between monetary policy and green investment dynamics. Finally, the paper evaluates the ECB's response to the energy crisis, focusing on the timing and magnitude of monetary tightening, the constraints imposed by the ECB's mandate, and the adequacy of the available policy toolkit in the face of future supply shocks.

The central argument of the paper is that the recent inflation episode does not necessarily call for a fundamentally different monetary policy framework, but rather for a more flexible and state-contingent application of existing principles as emphasized in the ECB's 2025 Monetary Policy Strategy Review. This flexibility does not call for a rapid reaction to any rise of inflation but rather for a more pragmatic

response when there is uncertainty around the nature and persistence of the shock. In a world where supply shocks are likely to become more frequent and persistent, effective monetary policy will depend increasingly on the ability of central banks to distinguish temporary price movements from persistent inflationary dynamics, while coordinating more effectively with fiscal and structural policies.

2. TWO INFLATIONARY EPISODES: 2022–2023 AND 2026

Although inflation had been converging towards the ECB's 2% target after its peak at 10.6% observed in October 2022, the outbreak of the war in the Middle East has led to renewed tensions in the energy markets and driven up prices in the euro area. Inflation was already above 2% in March 2026, raising concerns that the euro area could face an inflationary surge similar to that seen in 2022.

The comparison between the 2022–2023 inflationary episode and the renewed inflationary pressures observed in 2026 is therefore central to understanding whether the euro area is once again facing a temporary supply shock or the beginning of a more persistent inflationary regime.

The 2022–2023 inflationary episode provides an essential benchmark as it also followed a rise in energy prices triggered by the invasion of Ukraine by Russia.

2.1. Anatomy of an energy shock

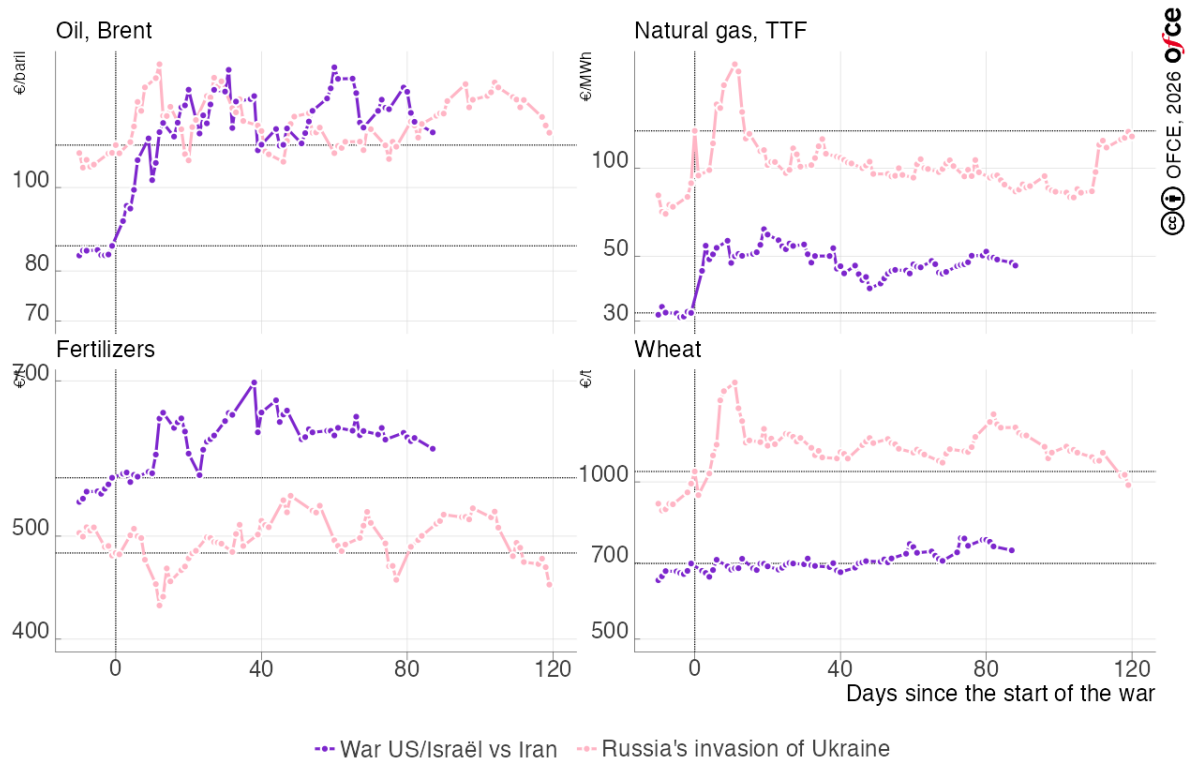
As in 2022, the war in the Middle East has caused significant pressure on energy prices (Figure 1). The price of Brent crude oil rose from USD 71 (EUR 60) on 27 February 2026, the day before hostilities broke out, to over USD 100 (EUR 87) on 12 March, peaking at USD 138 (EUR 119) on 7 April. Prices have then receded but show high volatility. The ongoing conflict has led to the closure of the Strait of Hormuz, a key transit route for certain supplies, thereby creating a risk of supply disruption. At first, we may be tempted to find strong similarities between both situations and thus fear a new episode of inflation as observed in 2022, when inflation exceeded 10%. Yet the current energy disruption differs from the situation observed in 2022 in several important respects, with significant implications for both inflation dynamics and the appropriate policy response.

The most important structural difference is geographical scope. The 2022 shock was triggered by Russia's invasion of Ukraine and remained comparatively concentrated in Europe. While the current disruption is more global in nature, affecting energy markets across a much wider set of economies simultaneously, Europe and Asia are among the most affected regions. The 2022 increase in gas prices was both stronger and more concentrated in Europe. Above all, the rise in energy prices preceded the first day of the conflict. On the one hand, oil prices had risen throughout 2021 against the backdrop of the post-COVID global economic recovery, with Brent rising from a low of USD 15 (less than EUR 14) in April 2020 to USD 90 (EUR 81) by the end of January 2022. On the other hand, Russia had, as early as 2021, reduced its natural gas exports to spot markets, which had led to a rise in gas prices. The price of wheat rose sharply at the start of the Ukraine–Russia conflict, largely due to the blockage of the Black Sea shipping routes through which a substantial share of Ukraine's exports transited.

By contrast, the conflict in the Middle East is characterised by rising fertiliser prices linked to the closure of the Strait of Hormuz, which is a key transit route for fertiliser inputs. In the 2026 episode, the transmission to food prices may therefore occur through higher agricultural input costs rather than primarily through grain export disruptions, as was the case in 2022. If these increases persist, they could place additional upward pressure on food prices over the coming months by increasing the cost of future harvests.

This has two important and somewhat countervailing consequences. Since other major economies are similarly affected, it is no longer possible for European firms to absorb the energy cost increase by substituting away from domestic energy-intensive production toward cheaper imports. The traditional channel through which a regionally concentrated energy shock gets partly absorbed, namely trade reallocation, is closed. In that sense, the inflationary pass-through may be more complete.

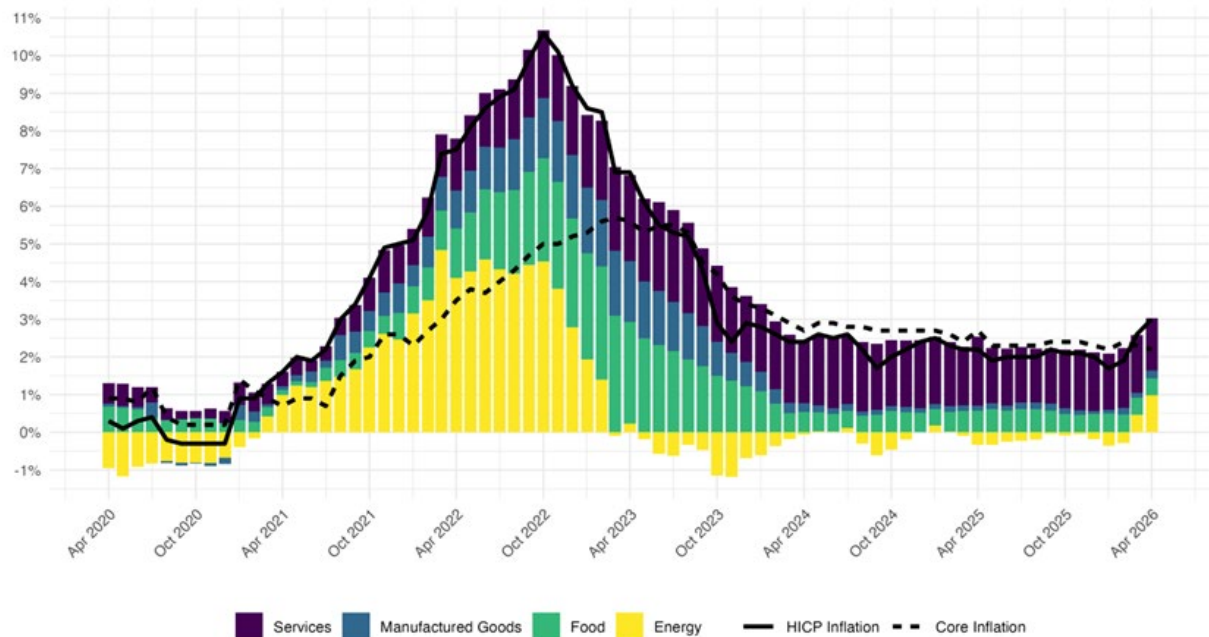
Figure 1: Brent crude (EUR/barrel), TTF natural gas (EUR/MWh), fertilisers (EUR/t), and wheat (EUR/t); days since the start of the conflict



Source: Yahoo Finance, OFCE calculations

In fact, the current rises in energy prices were immediately passed on to fuel prices. As of December 2025, energy was making a slight negative contribution (-0.18 pp), suggesting that the initial supply shock was largely unwound (Figure 2). However, by March–April 2026, this pattern reversed abruptly: the energy contribution rose to around +0.47 pp in March and +1.00 pp in April, becoming the main source of the renewed headline inflation spike, while services still contributed around +1.34 pp in April. This renewed energy impulse is consistent with the latest geopolitical shock, including the war in Iran and the associated increase in oil and gas price pressures.

The 2022 situation also reveals that energy was overwhelmingly the initial driver of the inflation surge, contributing over 4 percentage points to headline inflation at its peak in early 2022, largely reflecting the pass-through of international gas and electricity prices, first disrupted by the post-pandemic reopening and then amplified by Russia's invasion of Ukraine in February 2022. The food component (both processed and unprocessed) added between 1.5 and 2 percentage points, partly through direct commodity price effects and partly via energy-intensive agricultural production costs. By contrast, the contribution of services and non-energy industrial goods (NEIG) remained moderate in the initial phase of the shock.

Figure 2: Contributions to euro area headline inflation by component, 2020–2026

Source: Eurostat (*prc_hicp_minr*, *prc_hicp_iw*), authors' calculations.

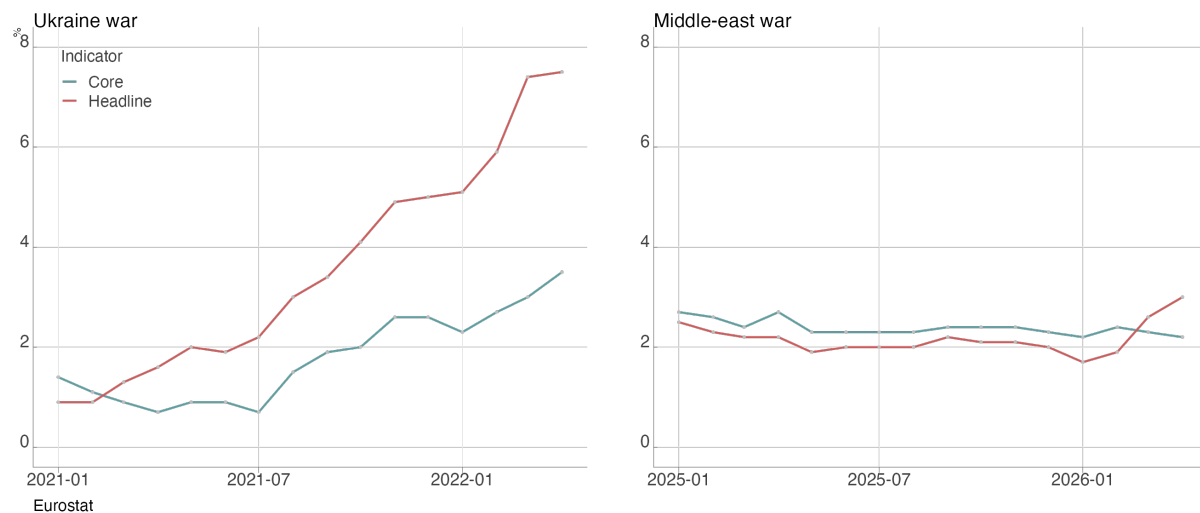
The surge in euro area inflation between 2022 and 2023 was exceptional in both scale and composition. Headline HICP reached 10.6% in October 2022, a peak unmatched since the inception of the euro, before declining sharply to approach the ECB's 2% target by mid-2024. It is, however, crucial to note that the situation before 28 February is very different from that which preceded the invasion of Ukraine (Figure 3). In fact, inflation has fluctuated around the 2% target since the summer of 2025, whereas it had been rising throughout 2021, reflecting not only pressure on energy prices – as highlighted above – but also strong demand and supply constraints. The core inflation indicator had also been on an upward trend since the summer of 2021. Thus, the shock caused by the war in the Middle East is occurring in a different context.

A key issue will also be whether the current increase in inflation will trigger second-round effects. Inflation remained above 2% until August 2024, reflecting some persistence. As energy prices retreated, services inflation – closely tied to the indirect effect of increases in energy prices, domestic wage growth and demand conditions – became the dominant residual driver, contributing approximately 1.4-1.7 percentage points to headline HICP through most of 2024 and into 2025. This "second-round" dynamic – from a supply-driven shock to a demand and wage-driven persistence – is central to assessing both the appropriateness of the ECB's tightening cycle and the risks of the current juncture.

Assuming a 'rapid' de-escalation, inflation would peak in 2026-Q2, and would then decline rapidly. Second-round effects would thus be limited. However, by the end of May 2026, the Strait of Hormuz remained blocked, and oil price movements remain highly volatile, meaning that a prolonged crisis is still a likely hypothesis, even if the most severe crisis scenario, with oil prices above USD 150 (EUR 130) and gas prices over EUR/MWh 80, does not seem to materialize. If that were the case, inflation in the

euro area would remain above the ECB's target in 2026 and 2027 (close to 4% in 2027 according to the OFCE and 3.5% according to the European Commission's latest Spring Forecasts).¹

Figure 3: Headline and core inflation in 2021–2022 and 2025–2026



Source: Eurostat, authors' calculations.

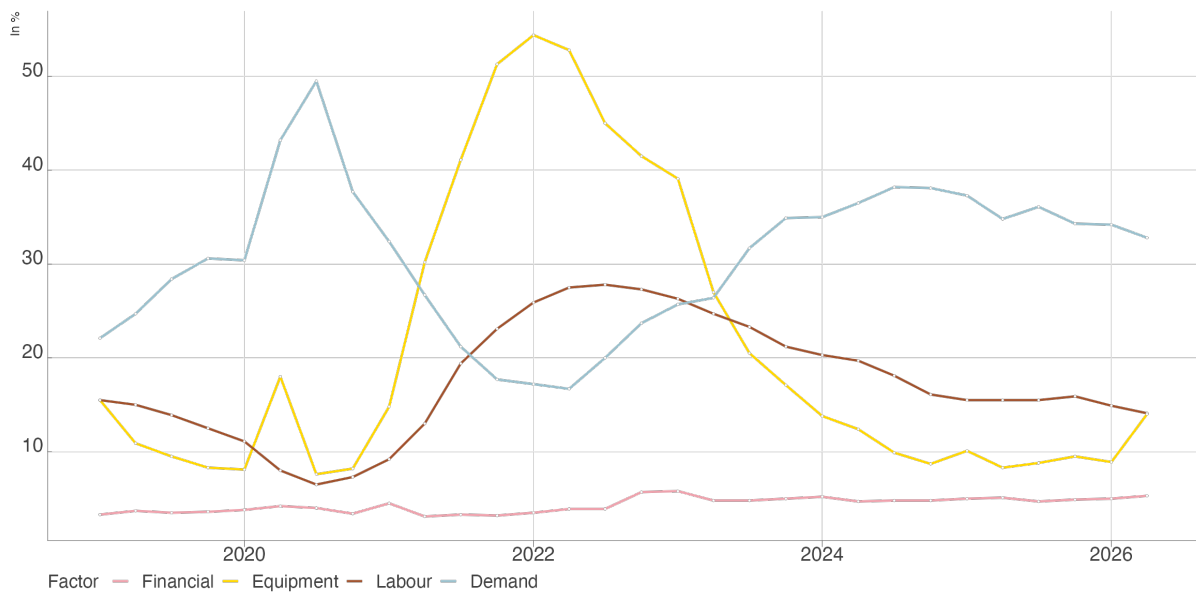
Both crises also exhibit differences regarding the economic situation. In 2021, GDP growth in the euro area stood at 6.4% against the backdrop of a post-COVID recovery. In the first quarter of 2022, the euro area economy maintained dynamic growth with a 0.7% rise in GDP. It is clear that the current economic situation is very different, with growth of 1.5% in 2025 and 0.1% in the first quarter of 2026. Despite historically low unemployment across the euro area, business surveys conducted by the European Commission indicate that output is not currently limited by supply-side factors (such as a need for equipment or labour shortages, which are factors limiting production for 14% of firms in 2026-Q2), whereas 33% of firms indicate that demand appears to be more constrained (Figure 4). By comparison, in 2022-Q1, demand was perceived as a factor limiting production for only 17% of firms – suggesting a buoyant demand – whereas labour shortages and need for equipment were cited as factors constraining production for 26% and 54% respectively. It would thus suggest that the current inflation episode will be less severe.

Compared to 2022, the effect of the current crises may be more widespread. When all countries are affected simultaneously, relative competitiveness losses are more limited, reducing the importance of competitiveness concerns². As a result, the impact on supply, and therefore on output, is smaller than in a situation where countries are affected asymmetrically. At the same time, the global output drain may, on the contrary, be more severe, precisely because there is no spatial margin for substitution at the aggregate level. The overall shock to global productive capacity could therefore be larger, even if its distribution across countries is more symmetric.

Figure 4: Which factors are limiting production in the euro area? 2019–2026

¹ See the OFCE analysis on inflation (<https://www.ofce.sciences-po.fr/prev/prev2603/inter/inflation.html>) and also the European Commission scenario analysis (https://economy-finance.ec.europa.eu/economic-forecast-and-surveys/economic-forecasts/spring-2026-economic-forecast-slowdown-growth-energy-shock-drives-inflation/scenario-analysis_en).

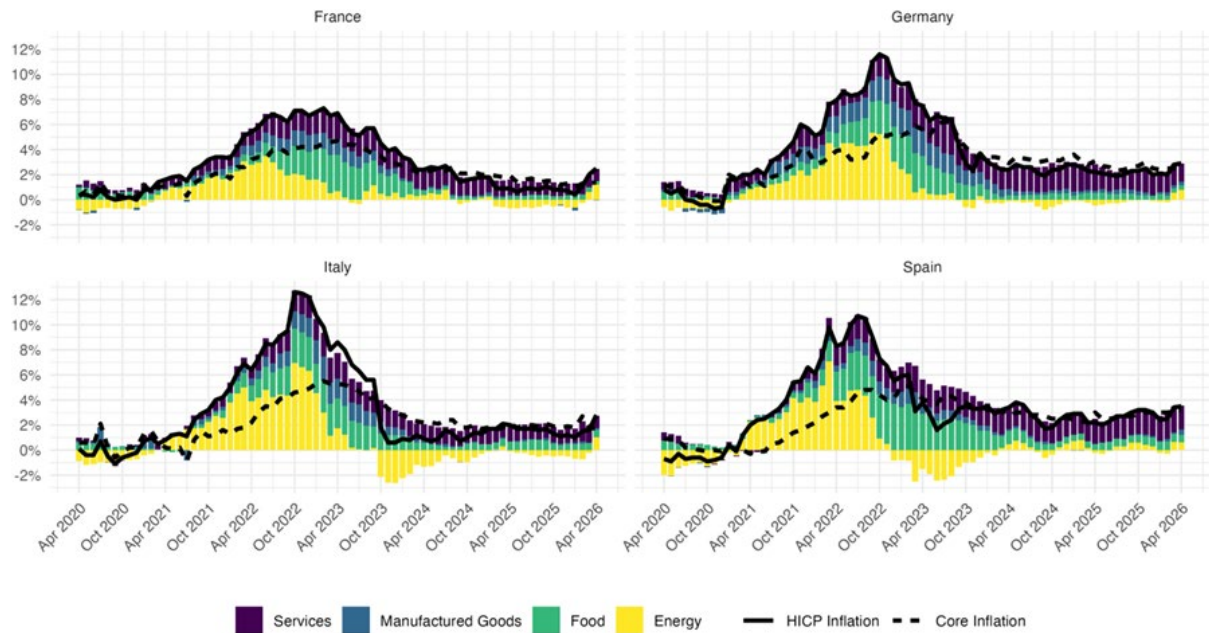
² Although the shock is symmetric, European countries will be hit differently as the effect depends notably on the energy intensity of national production that may not be uniform across euro area Member States.



Source: European Commission (ei_bsin_q_r2 database).

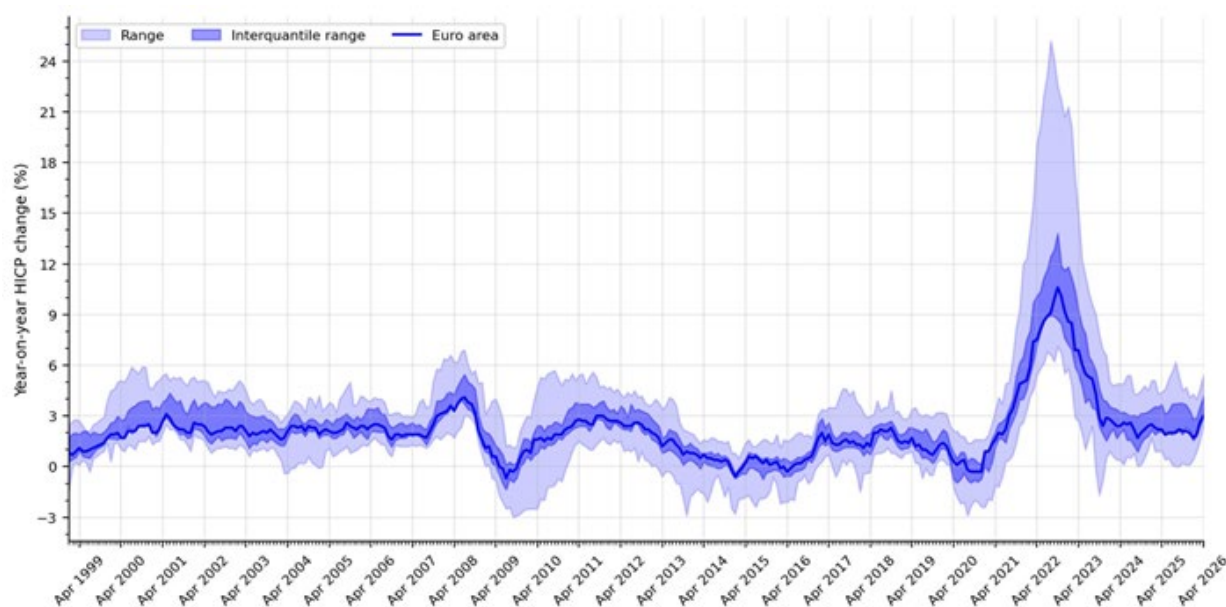
2.2. Inflation dynamics across euro area member states

In Figure 5, Euro area inflation is decomposed by Member State (France, Germany, Italy and Spain), revealing a broadly similar qualitative pattern across countries, albeit with marked quantitative differences reflecting divergent national policy responses, particularly with respect to energy price support schemes.

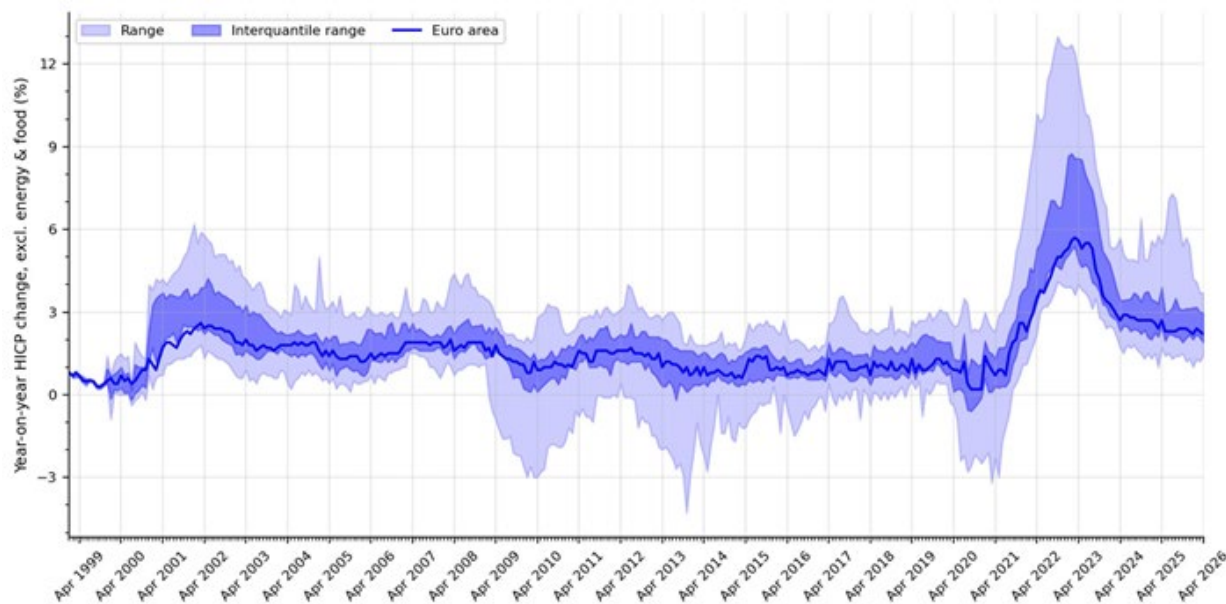
Figure 5: HICP inflation decomposition across selected euro area economies, 2020–2026

Source: Eurostat (*prc_hicp_minr*, *prc_hicp_iw*), authors' calculations.

A second distinctive feature of the 2022–2023 episode was the exceptional degree of cross-country divergence in inflation outcomes, although some of it also stems from differences in HICP inflation measurement across countries (Box 1, p. 15, Blot et al., 2025). Figure 6 and Figure 7 show the distribution of headline and core HICP rates across the 21 euro area Member States from 1999 to April 2026, showing the euro area average alongside the interquartile range and the full min-max band. The degree of dispersion during the 2022 peak was unprecedented historically: in August 2022, the gap between the highest and lowest national inflation rates reached approximately 18.8 percentage points, a figure that dwarfs even the crisis-era heterogeneity of 2008–2012 (Moschella and Romelli, 2023). Countries with large energy import exposure and limited price regulation (notably the Baltic states and some Central European economies) experienced double-digit inflation, while those with controlled energy tariffs or alternative fuel mixes faced more moderate pressures. Looking at the weighted standard deviation of both headline and core inflation across 21 Euro area countries reveals a similar pattern, as shown on Figure 8.

Figure 6: Headline inflation differences across euro area countries, 1999–2026

Source: Authors' calculations based on Eurostat data.

Figure 7: Core inflation differences across euro area countries, 1999–2026

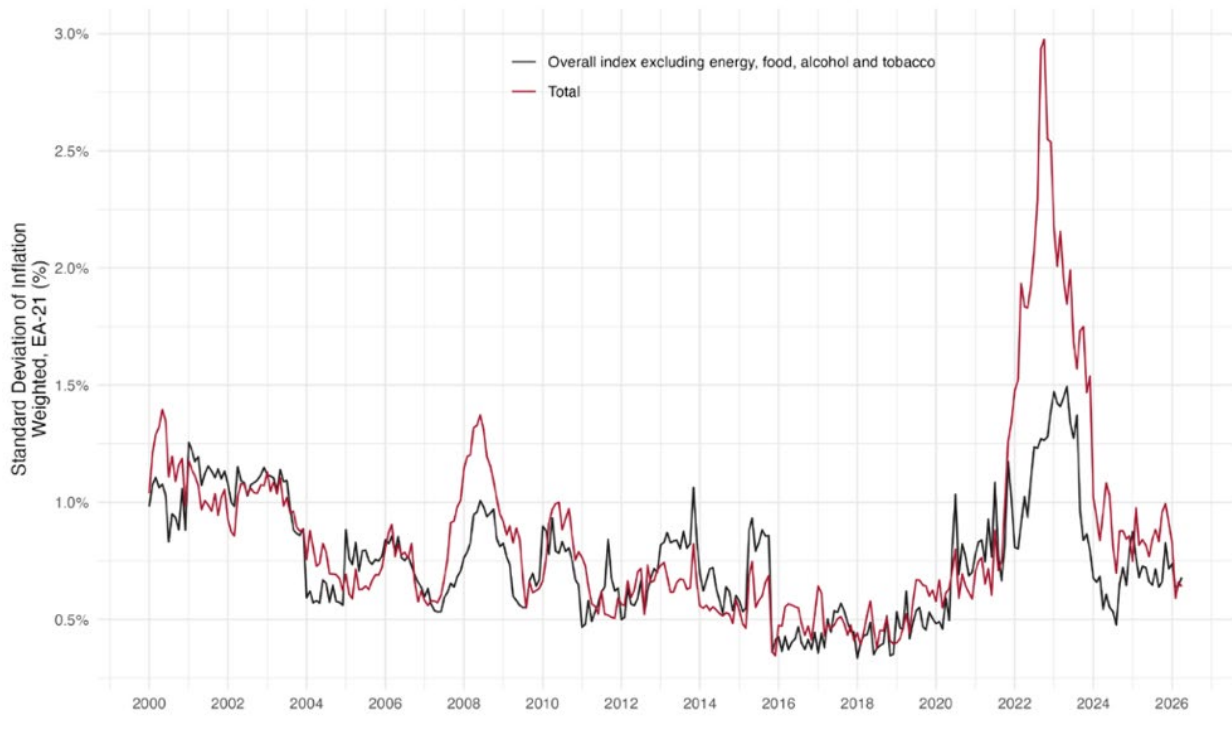
Source: Authors' calculations based on Eurostat data.

By April 2026, this dispersion had narrowed considerably relative to 2022, but had not fully closed. The max-min range across Member States stood at about 3.0 percentage points for headline inflation and about 2.3 percentage points for core inflation; the interquartile ranges remained elevated (around 1.25 pp for headline and around 1.08 pp for core), above the very compressed pre-shock distribution. This suggests that, while aggregate inflation has moved much closer to target over the medium term, underlying price dynamics across the euro area remain heterogeneous.

This cross-country heterogeneity has a direct bearing on the calibration of ECB monetary policy. The ECB sets a single policy rate for an area where inflation rates in April 2026 ranged from approximately 2.4% to 5.4%. A policy stance calibrated to the aggregate may be too restrictive for countries close to

the target and insufficient for those with entrenched service inflation. This structural tension, inherent to a monetary union with asymmetric exposure to supply shocks, is not new, but the 2022-2025 episode has sharpened it considerably.

Figure 8: Weighted standard deviation of headline and core inflation, 2000-2026



Source: Eurostat (*prc_hicp_minr*, *prc_hicp_cw*), authors' calculations.

3. SUPPLY VS. DEMAND DRIVEN INFLATION AND THE OPTIMAL RESPONSE OF MONETARY POLICY

3.1. Central banks should not always tighten monetary policy after energy shocks

Although the primary objective of ECB is price stability, it does not necessarily mean that the central bank should increase interest rates as soon as inflation exceeds the target. From the very beginning, the ECB has always claimed that “price stability is to be maintained over the medium”. This key element was confirmed in the latest overview of the ECB’s monetary policy strategy in 2025, as it is recognized that short-term inflation cannot be controlled by the central bank³. The appropriate monetary policy response depends on both the nature of the shock and its persistence.

Oil price shocks are often analysed as supply shocks but they also have significant negative effects on demand, particularly in non-producing countries, as rising energy prices erode household purchasing power.

Energy prices are also highly volatile, often exhibiting sharp increases followed by partial reversals. For example, by early March 2023, oil prices had fallen markedly (by USD 50) from their peak a year earlier. Such dynamics can produce episodes of high inflation followed by disinflation. Even when energy prices remain structurally higher, their direct contribution to annual inflation is typically temporary, while the associated income loss for households can persist. In this context, immediate monetary tightening is not automatically optimal (Bandera et al., 2023).

On the one hand, higher policy rates have limited direct influence on the global drivers of energy prices, including geopolitical disruptions linked to the conflict with Iran. Their primary effect is to dampen domestic demand and non-energy inflation components. On the other hand, because monetary policy operates with lags, tightening may take full effect only after the initial shock has begun to fade, increasing the risk of undershooting the inflation target. Tightening is more clearly justified when second-round effects emerge, namely when imported-energy and goods-price increases spread to wages and broader domestic prices. In that case, not only headline inflation exceeds the target, but also core inflation increases. As a consequence, interest rates should not be increased rapidly but might be increased more vigorously once it becomes clear that second-round effects are materialising. Finally, there are also cases where the optimal response would be to ease monetary policy if negative demand effects are dominating. The reduction of household real disposable income may weaken private consumption, leading to a reduction of core inflation. According to Auclert et al. (2023), this situation would occur when households are financially constrained, such that the marginal propensity to consume is high, and if they cannot reduce their spending on energy goods and are thus forced to cut other expenditures. As monetary policy cannot address supply-driven inflation, it is better to implement an expansionary monetary policy to mitigate the slowdown of demand-driven inflation.

A final issue is whether the ECB’s policy toolkit is sufficiently broad to manage supply-driven inflation. Over the past decade, the ECB has significantly expanded its instruments, including asset purchases, targeted lending operations, forward guidance, and tools aimed at preserving transmission across member states. This is a substantial evolution relative to a purely rate-based framework.

Yet the toolkit remains primarily designed to influence aggregate demand and financial conditions. It cannot directly remove the supply constraints that generate energy-driven inflation. The central

³ See https://www.ecb.europa.eu/mopo/strategy/strategy-review/ecb.strategyreview202506_strategy_overview.en.html

question is therefore less whether the toolkit is too narrow, and more whether it is deployed in a sufficiently flexible, state-contingent way.

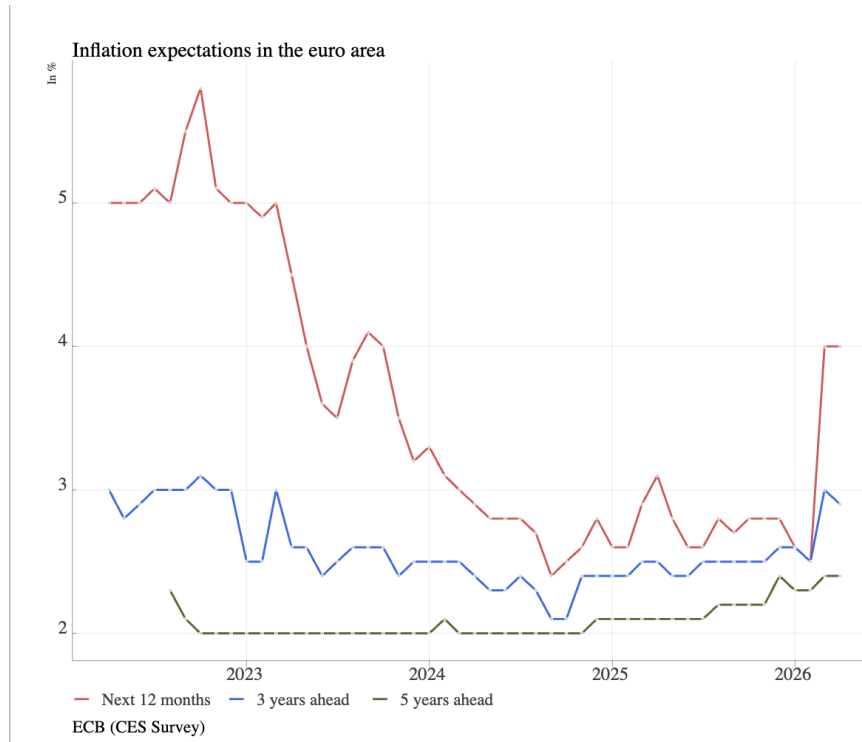
The ECB's response to the 2022–2023 energy crisis suggests that such flexibility is critical. The shift from a highly accommodative stance to rapid tightening showed adaptability as the shock evolved. At the same time, instruments such as the Transmission Protection Instrument reflected a stronger focus on preserving even monetary transmission across the euro area during periods of tightening.

3.2. Supply and demand are intertwined

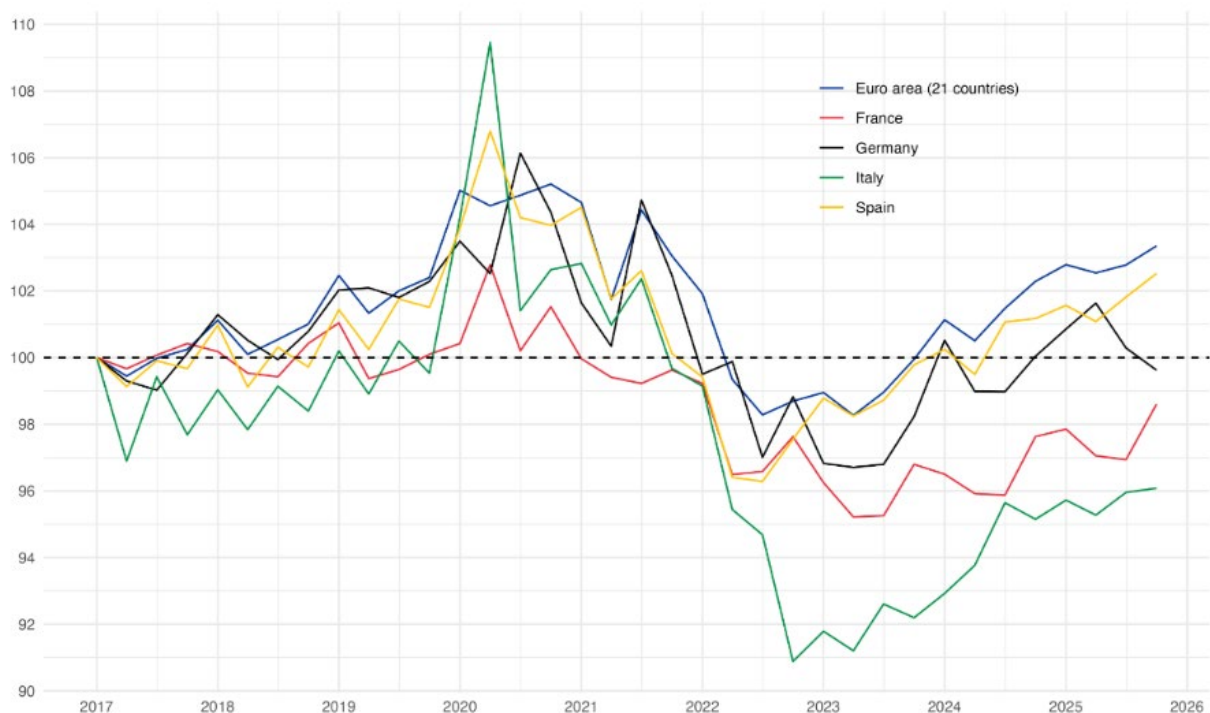
It is also difficult to pin down what second-round effects are, and notably what goes on working through inflation expectations and excessive demand.

A crucial point, often underappreciated in the public debate, is that the first-round effects of an energy shock are both direct and indirect. Even “core” inflation, conventionally defined as inflation excluding energy and food, is in fact affected by energy prices, because energy enters as an input into almost all production processes. The customary distinction between headline and core inflation, while analytically useful, therefore does not cleanly separate energy-driven from non-energy-driven price pressures. However, following the 2022 episode, some progress has recently been made to understand what the pass-through of energy price shocks is: a first pass is full pass-through in levels (Sangani, 2026). Moreover, Indexation clauses, whether in minimum wages, regulated tariffs, or private supply agreements, are potentially ubiquitous and can take quite complex forms, making it hard to disentangle direct from indirect effects in practice. It is also unclear whether these effects should be considered as first-round or second-round.

Inflation expectations rose markedly during this episode, a finding that is perhaps unsurprising in historical perspective: household inflation expectations have long been found to be disproportionately sensitive to fuel and energy prices, reflecting the salience of these prices in everyday consumption: they are encountered frequently, displayed prominently, and fluctuate visibly (Figure 9). This sensitivity means that a surge in energy prices will almost mechanically feed through to measured expectations, irrespective of broader inflationary dynamics. Whether such expectation shifts then propagate into realized inflation (either through wage bargaining, price-setting behaviour, or other transmission channels) is a distinct and more contested question. The theoretical literature, drawing on New Keynesian frameworks, assigns a central role to inflation expectations in driving actual price dynamics (Gobbi et al., 2025); yet the empirical support for this channel, particularly in the low-inflation environment that preceded the recent episode, has been mixed at best (Rudd, 2022; Tarullo, 2017). The extent to which this episode itself constitutes evidence for or against the expectations channel deserves careful scrutiny, not least because energy price movements confound both expectations and realized inflation simultaneously. Moreover, in many countries, real wages have gone down so that fear of a wage-spiral may have been overdone (Figure 10). Strong policy conclusions, particularly those justifying aggressive monetary tightening on the grounds of de-anchoring expectations, should be assessed against the full weight of the empirical evidence, of which there is little, rather than derived primarily from theoretical priors.

Figure 9: Inflation expectations in the Euro area

Source: ECB.

Figure 10: Real wages in the private sector: quarterly wages and salaries deflated by the HICP (2017-Q1 = 100)

Source: Eurostat (*lc_lci_r2_q*, *prc_hicp_minr*), authors' calculations.

The interpretation of energy shocks as pure supply shocks has deep roots in the stagflation episode of the 1970s, which was widely read as a shift in the aggregate supply curve, generating simultaneously higher prices and lower output. But the supply-demand distinction is harder to maintain cleanly in practice. This difficulty is not merely technical. It has direct policy implications: tightening monetary policy is the appropriate response to a demand-driven inflation, but it may be actively harmful in response to a supply shock, insofar as it compounds the output loss without durably addressing the underlying cost pressure, or even making it worse, as the example of green investments shows.

3.3. The example of green investments

Green investments, such as for example wind farms or solar installations, are overwhelmingly capital-intensive and front-loaded in their cost structure: the bulk of lifetime expenditure is incurred at the point of construction, and operating costs are rather modest. As a result, the return to such investments is acutely sensitive to the cost of capital. When monetary tightening raises interest rates, it increases the required return on these projects, raises the cost of debt financing, and compresses the discounted net present value (NPV) of future energy revenues. Projects that were financially viable at low rates may become unviable at high ones, leading to the cancellation of such projects. The inflationary consequences of this energy supply contraction may partially offset the inflation-reduction effects that monetary tightening is intended to achieve. If higher rates reduce the supply of renewables, the energy mix remains more dependent on fossil fuels for longer, keeping the marginal cost of electricity elevated and sustaining upward pressure on energy prices. Through this channel, monetary policy tightens against an inflation it is itself helping to sustain.

Another important aspect concerns the relative importance of nominal versus real interest rates in this context. It is usually assumed that the standard monetary transmission mechanism operates primarily through real rates: it is the real cost of borrowing that determines consumption and investment decisions when prices are flexible and expectations well-anchored. But for capital-intensive energy infrastructure, nominal rates may be the more relevant variable. This is because projects are typically financed with nominal debt contracts so that the actual cash flow burden on developers is determined by the nominal interest rate, not its inflation-adjusted counterpart. When inflation is high and nominal rates rise in response, real rates may remain comparatively modest; yet the nominal debt service burden rises regardless, constraining project viability. In this specific investment context, it is the nominal rate that bites, not the real one. This asymmetry has direct relevance for the calibration of monetary policy during energy transitions, and suggests that central banks operating in periods of supply-driven inflation face a more complex trade-off than standard models acknowledge.

4. LESSONS FROM THE ECB'S RESPONSE TO THE 2022–2023 ENERGY CRISIS AND IMPLICATIONS FOR FUTURE SUPPLY SHOCKS

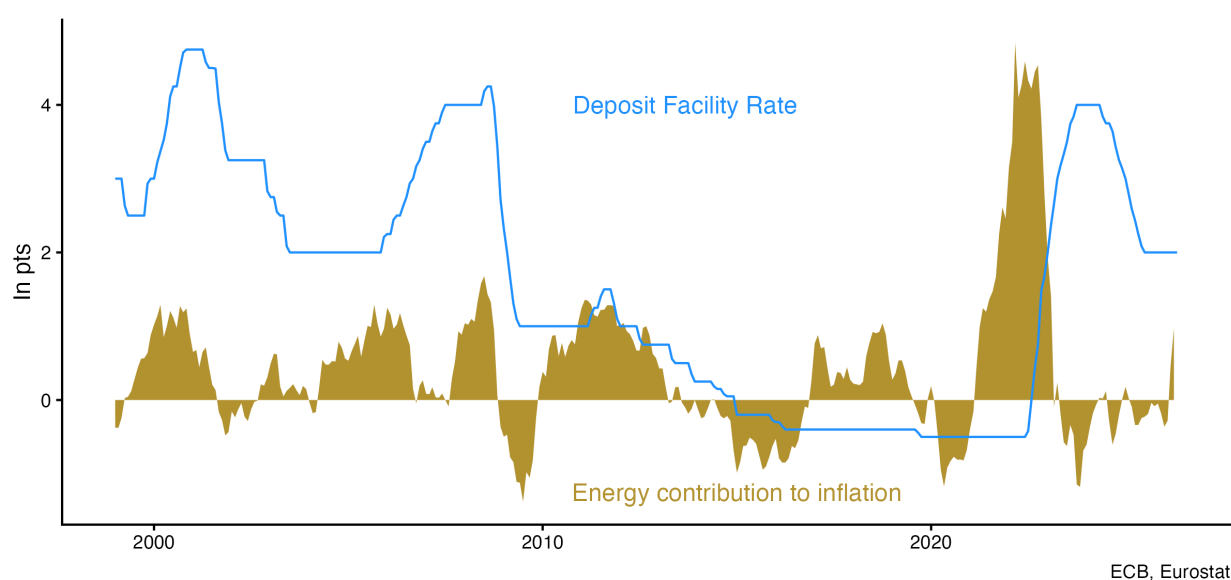
The inflation surge in the euro area from 2021 and until 2023 was triggered primarily by a large and persistent energy shock, itself a consequence of geopolitical disruption following Russia's invasion of Ukraine (see *supra*). This episode posed a fundamental challenge for the ECB, as it required a monetary policy response to inflation that originated outside the domain of demand management.

The ECB's response combined an initially cautious stance with a historically rapid tightening cycle once inflationary pressures broadened. This experience provides a useful lens through which to evaluate the adequacy of the ECB's reaction function, the scope of its mandate, and the effectiveness of its policy toolkit. These three dimensions are central to assessing how well the ECB is equipped to deal with the current supply shocks, which are likely to become more frequent in an environment characterized by geopolitical fragmentation and energy transition risks.

4.1. ECB Reaction to the Previous Inflation Surge: Timing and Magnitude

A central question is whether the ECB reacted too late to the inflation surge and whether the subsequent tightening was excessive. In retrospect, the ECB's initial response appears delayed (Figure 10). Policy rates remained at historically low levels until mid-2022, despite a steady rise in inflation throughout 2021 and early 2022. However, the ECB's initial reluctance to tighten must also be understood against the macroeconomic backdrop. Indeed, the euro area had only recently emerged from a severe recession caused by the COVID-19 pandemic, and it is likely that the ECB did not wish to interrupt the ongoing yet fragile recovery. It may also be stressed that, during the pandemic, the ECB had explicitly signalled the need to keep interest rates as low as possible for a sustained period to prevent inflation expectations from falling persistently below target. By escaping the zero lower bound too early, the ECB might have feared undermining its credibility in fighting against deflationary pressures.

Figure 11: ECB monetary policy rate and energy contribution to euro area inflation, 1999–2026



Source: Eurostat, ECB.

The apparent delay in the reaction of monetary policy must be interpreted in light of the nature of the shock. The initial increase in inflation was driven overwhelmingly by energy prices and thus reflected a relative price shock rather than a generalized demand imbalance. Until June 2022, the ECB and its staff believed that inflation would not remain above the target for a sustained period (Table 1).⁴ They changed their analysis and adjusted monetary policy rapidly after they had revised their inflation expectations upward.

Monetary policy cannot directly offset this shock without imposing real economic costs. According to the standard Taylor-rule principle, the central bank should increase the policy rate more than one-for-one with the rise in inflation. But in the case of an energy shock, it risks imposing high real economic costs without addressing the causes of the shock. A more flexible approach suggests that the policy rate should be adjusted by considering the nature and the uncertain persistence of the shock.

The ECB's initial strategy in 2021 and during the first part of 2022 can therefore be understood as an attempt to distinguish between temporary and persistent inflationary pressures. It might be noticed that this reaction is not specific to the ECB, as Hofman, Manea and Mojon (2024) show that central banks partly look through supply-driven inflation. In fact, the Federal Reserve's response was not very different from that of the ECB.

Table 1: ECB and Eurosystem staff macroeconomic projections for euro area inflation, September 2021 – December 2022

Date of Staff projections	2021	2022	2023
Sept-2021	2.2	1.7	1.5
Dec-2021	2.6	3.2	1.8
March-2022		5.1	2.1
June-2022		6.8	3.5
Sept-2022		8.1	5.5
Dec-2022		8.4	6.3
Realized	2.6	8.4	5.5

Source: ECB

The critical issue was whether energy price increases would generate second-round effects through wage-setting behaviour, inflation in the services sector, and inflation expectations. As long as these channels remained contained, an aggressive tightening response would have risked unnecessarily amplifying the output costs of adjustment.

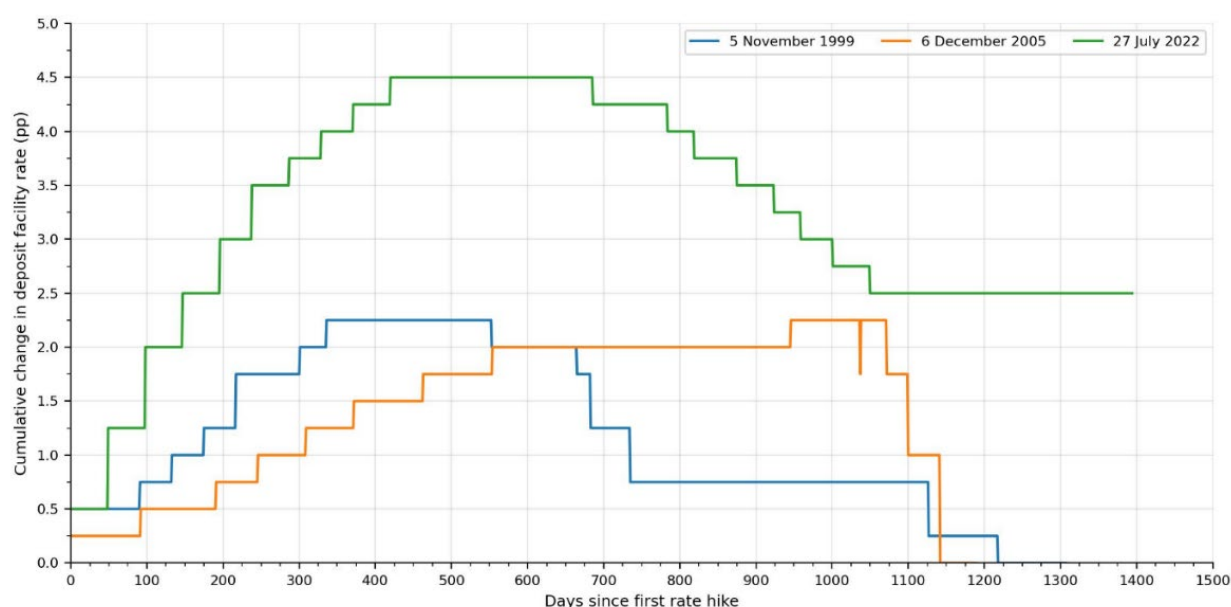
Once evidence accumulated that inflationary pressures were becoming more broad-based, the ECB shifted decisively. Beginning in July 2022, it embarked on the fastest tightening cycle in its history, raising policy rates by 450 basis points within a relatively short period. This shift reflects a change in the perceived nature of the shock, from a relative price adjustment to a potential threat to medium-term price stability. In June 2022, headline inflation exceeded 8%, inflation in services was reaching

⁴ Formally, inflation projections of the staff are not endorsed by the members of the Governing Council. However, the President systematically communicates on those figures during the press conference suggesting that they provide a useful and reliable information.

3.8% and consumer inflation expectations – as measured by the Consumer Expectations Survey – for the next 12 months was at 5%. By tightening forcefully, the ECB aimed to prevent the de-anchoring of inflation expectations and therefore to contain the risk of a wage-price spiral (Figure 12).

Inflation declined significantly from its peak following the sharp increase in ECB policy rates, while evidence of persistent second-round effects remained limited. In that sense, it may be argued that the subsequent monetary tightening was not excessive. However, given the well-known lags in the transmission of monetary policy to the real economy—typically estimated at between 12 and 36 months⁵—the decline in inflation observed after September 2022 cannot be attributed solely to the monetary policy shift initiated in July 2022. A substantial part of the disinflation process reflected the gradual reversal of the initial energy shock, the normalization of global supply chains, and favourable base effects. In this respect, Bandera et al. (2023) emphasize that, in the presence of large supply shocks, the primary role of monetary policy is not to offset the initial rise in inflation mechanically, but rather to prevent temporary price increases from becoming embedded in inflation expectations and wage-setting behaviour. From this perspective, the ECB's transition towards a restrictive monetary stance may have contributed primarily to the re-anchoring of medium-term inflation expectations, particularly among professional forecasters and financial market participants. By contrast, households' inflation expectations appear to have remained more heavily influenced by salient changes in energy and food prices, especially oil and gas prices, directly affecting utility and transportation bills. This suggests that the main contribution of ECB tightening during the early phase of the disinflation process may have been less the immediate reduction of inflation itself than the preservation of monetary policy credibility and the containment of inflation persistence.

⁵ See for instance Miranda-Agrippino and Ricco (2021) and Romer and Romer (2023). According to Aruoba and Drechsel (2024), transmission lags can be even longer, up to 43 months!

Figure 12: Cumulative changes of ECB policy rate

Source: authors' calculation on ECB data.

The latest data, discussed in Section 2.2 above, confirm a renewed but still moderate inflation pickup in early 2026, with an important energy component linked to renewed geopolitical tensions.

The key lesson is that monetary policy should not respond to the initial impact of a supply shock, but it must react swiftly once there are credible signs of persistence. This places a premium on real-time monitoring of wage developments, measures of underlying inflation (core inflation but also median inflation, trimmed inflation, cyclical inflation...),⁶ and indicators of inflation expectations. It also suggests that policy frameworks should place greater emphasis on risk management and scenario analysis as emphasized in the recent update of ECB's 2025 Monetary Policy Strategy Review,⁷ rather than relying primarily on central projections.

Unlike the previous inflation surge in 2022–23, the euro area has not experienced an overall recession, as it did in 2020. However, growth has been weak since 2023, with some countries (notably Germany) experiencing a recession as a result of the energy crisis. This new inflationary episode may affect the euro area less severely, but it may also have less dramatic consequences in terms of inflation.

While it could be argued that the ECB's response to inflation in 2021–2023 was too slow, this does not justify a more rapid response now. It is still unclear whether the shock will be long-lasting. The current shock is also occurring in a different context. By the end of 2025, inflation will be much lower than in 2021. There is no need to rush into tightening decisions. The flash estimate of inflation for May 2026 suggests that it may continue to increase, albeit moderately, which would allow time to assess whether it will have significant second-round effects.

4.2. ECB Mandate: Scope and Limitations

The energy crisis has also revived the debate on whether the ECB's mandate is too narrowly focused on price stability. The ECB operates under a clear legal framework that assigns primacy to price stability, with other objectives subordinated to this goal. This narrow mandate is often seen as a

⁶ See Ehrmann et al. (2018) for a comprehensive view of the different measures of underlying inflation.

⁷ See https://www.ecb.europa.eu/mopo/strategy/strategy-review/ecb.strategyreview202506_strategy_statement.en.html

constraint, particularly in situations where inflation is driven by supply-side factors that also have significant real economic consequences.

However, the experience of 2022–2023 may suggest that a narrow mandate is a strength rather than a weakness. First, expanding the mandate to formally include additional objectives, such as growth or employment, could have introduced ambiguity into the policy framework and weakened the central bank's ability to act decisively during the inflation surge. Second, the single mandate includes secondary objectives (their role was highlighted by the latest Strategy Review of 2021) and therefore offers policy room for maneuver to dampen temporary shocks. In this respect, the ECB is not forced to overreact to temporary episodes of inflation stemming from an energy crisis. Third, the credibility of the ECB's commitment to price stability has certainly played a role in preventing inflation expectations from becoming unanchored⁸.

It remains important to argue, though, that despite the Federal Reserve having a dual mandate no de-anchoring in US inflation expectations has happened. In light of the experience of the Federal Reserve, it may be argued that, given the supply and demand nature of the energy shocks, monetary policy may be more easily calibrated with a dual mandate. It does not "force" the central bank to tighten and contribute to helping the central bank to "look through" the shock. Rethinking the nature and scope of the mandate may remain at the policy agenda after the latest inflation episode has been fixed.

Actually, the crisis has highlighted the limits of what monetary policy can achieve. The ECB cannot directly address the underlying causes of a supply shock, such as energy shortages or disruptions to global trade. Attempting to do so through monetary policy would be both ineffective and potentially destabilising.

The main and most urgent challenge, therefore, is not necessarily the narrowness of the mandate, but the need for effective policy coordination. During the 2022–2023 energy crisis, fiscal authorities implemented a range of measures to shield households and firms from rising energy costs (see Table 2). For example, the "Iberian exception", or a range of national subsidy schemes across Europe showed that targeted fiscal interventions can be highly effective at shielding consumers and firms from the first-round effects of energy price increases, in ways that monetary policy simply cannot replicate. While these measures were justified on distributional and political grounds, they also had implications for inflation dynamics. In particular, broad-based fiscal support can sustain demand and delay the adjustment to higher energy prices, thereby increasing medium-term inflationary pressures and requiring a stronger monetary policy response. A May 2026 IMF note⁹ draws a direct parallel between current government responses to the 2026 energy shock and the costly mistakes of 2022. In 2022–23, EU countries spent around 2.5 percent of GDP on household support, with roughly 70 percent of that cost coming from measures that were untargeted, price-distorting, or both. Given the large public debt-to-GDP ratios now prevailing in most European economies, the fiscal space for such interventions may be more constrained.

The key lesson for the short run is that, if the ECB's mandate remains focused on price stability, it is important to acknowledge that its effectiveness depends crucially on the coherence of the broader policy environment. Improved coordination between monetary and fiscal authorities is essential to ensure that policy measures are mutually consistent rather than working at cross purposes. This does not imply any weakening of central bank independence, but rather a clearer articulation of the complementary roles of monetary and fiscal policy in responding to common shocks.

⁸ See Gobbi et al. (2025).

⁹ See <https://www.imf.org/-/media/files/countries/europe/imf-note-on-how-to-design-support-in-the-face-of-the-2026-energy-shock-europe.pdf>

Table 2: Main fiscal support measured used in 2022–2023 in a selection of EA countries

Country	Main public policies used in 2022–2023
FRA	The “tariff shield” capped regulated energy price increases. The cap on electricity prices was limited to 4%, and the scheme was extended into 2023 (or 2024 for some electricity contracts).
SPA	Spain combined repeated VAT and excise reductions on electricity and gas with direct support to households, including a EUR 200 subsidy for lower-income families, and later cut VAT on basic foodstuffs from 4% to 0%. Most importantly, the Iberian exception mechanism capped the gas cost used in electricity generation.
GER	Germany adopted a very large EUR 200 billion “protective shield”, centered on gas, electricity and heating price brakes, financed partly by windfall-profit skimming. It also subsidised grid fees, abolished the gas storage levy, and reduced electricity tax for manufacturing.
NLD	The government cut VAT on energy from 21% to 9%, reduced excise duties on petrol and diesel, paid EUR 190 per month to households in late 2022, and introduced a temporary 2023 household energy price cap.
ITA	Italy relied on repeated emergency decrees to contain electricity and gas costs, including energy tax credits for firms and other relief for households and businesses; the Ministry of Environment described the March 2022 decree as aimed at containing electricity and gas costs and supporting energy security. The tax authority notes that 2022–2023 legislation granted credits for electricity, gas and fuels across multiple periods.
IRE	Ireland relied heavily on universal and targeted electricity credits. The government rolled out three EUR 200 electricity credits in Budget 2023, bringing total energy credits to EUR 800 for households over the period; earlier support had already been used in spring 2022.

Sources: Galgoczi (2023) for all countries except The Netherlands (Official website of the government, www.government.nl) and Ireland (Official website of the Government, www.gov.ie)

5. CONCLUSION

The ECB's experience in the 2022–2023 energy crisis underscores the trade-offs inherent in responding to supply-driven inflation. While the initial response was cautious, the subsequent tightening cycle helped reduce the risk that inflation would become entrenched. The current inflation episode does not necessarily call for a fundamentally different monetary framework, but for refinements in how existing principles and tools are applied.

Three lessons follow. First, monetary policy should respond to persistence risks rather than mechanically to the initial shock, with greater emphasis on second-round effects and risk management. Second, the ECB's narrow mandate remains a credibility anchor, but policy effectiveness depends on stronger coordination with fiscal and structural measures. Third, the toolkit is broad, but success depends on flexibility, transmission, and timely adaptation as shocks evolve.

In a context where supply shocks may become more frequent, ECB preparedness will depend less on institutional redesign than on sharper diagnostics, better policy coordination, and sustained credibility in delivering price stability.

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The inflation surge of 2022–2023, and the risk of recurrence following the outbreak of conflict in the Middle East in early 2026, raises fundamental questions about the appropriate monetary policy response to supply-driven inflation. We examine the anatomy of both inflationary episodes, the challenges in distinguishing between supply and demand shocks in real time, the adequacy of the ECB's response to the 2022–2023 energy crisis, and the lessons that can be drawn for responding to the current inflationary pressures.

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