STUDY

Requested by the ECON Committee

Monetary Dialogue Papers, February 2026

European Parliament

Macroeconomic Uncertainty, the ECB Monetary Policy Stance and their Communication

Economic Governance and EMU Scrutiny Unit (EGOV)
Directorate-General for Economy, Transformation and Industry
PE 779.872 – Fberuary 2026

EN

Macroeconomic Uncertainty, the ECB Monetary Policy Stance and their Communication

Abstract

This paper assesses the ECB's monetary policy stance and communication amid declining inflation, persistent uncertainty, and renewed external risks. It documents how trade-policy shocks and global spillovers affect inflation surprises, highlights substantial cross-country inflation heterogeneity within the euro area, and shows that common shocks generate uneven national responses. Using a novel multi-agent LLM framework, it evaluates ECB communication, revealing strengths during active policy adjustments but gaps in addressing inflation dispersion and uncertainty communication.

This document was provided by the Economic Governance and EMU Scrutiny Unit at the request of the Committee on Economic and Monetary Affairs (ECON) ahead of the Monetary Dialogue with the ECB President on 26 February 2026.

This document was requested by the European Parliament's Committee on Economic and Monetary Affairs.

AUTHORS
Laura BOTTAZZI, University of Bologna, IGIER and CEPR
Carlo FAVERO, Bocconi University, IGIER and CEPR
Ruben FERNANDEZ-FUERTES, Bocconi University
Francesco GIAVAZZI, Bocconi University, IGIER and CEPR
Veronica GUERRIERI, The University of Chicago Booth School of Business
Guido LORENZONI, The University of Chicago Booth School of Business
Tommaso MONACELLI, Bocconi University IGIER and CEPR
Antonella TRIGARI, Bocconi University IGIER and CEPR

RESEARCH ASSISTANTS
Pietro SFERRUZZA, Bocconi University
Flavia UNGARELLI, Bocconi University

ADMINISTRATOR RESPONSIBLE
Giacomo LOI
Ronny MAZZOCCHI
Maja SABOL
Mentor MEHMEDI

EDITORIAL ASSISTANT
Adriana HECSER

LINGUISTIC VERSIONS
Original: EN

ABOUT THE EDITOR
The Economic Governance and EMU Scrutiny Unit provides in-house and external expertise to support EP committees and other parliamentary bodies in shaping legislation and exercising democratic scrutiny over EU internal policies.
To contact Economic Governance and EMU Scrutiny Unit or to subscribe to its newsletter please write to:
Economic Governance and EMU Scrutiny Unit
European Parliament
B-1047 Brussels
E-mail: egov@ep.europa.eu
Manuscript completed in February 2026

This document was prepared as part of a series on "Quarterly Assessment of the ECB's Monetary Policy Stance", available on the internet at: https://www.europarl.europa.eu/committees/en/econ/econ-policies/monetary-policy

ChatGPT5.2 was used for multi-agent modelling and to provide initial research support, coding assistance for data analysis and mainly in the preparation of graphs, proofreading and formatting references.

CONTENTS

LIST OF ABBREVIATIONS

APP	Asset purchase programme
CISI	Citigroup Inflation Surprise Index
EBA	European Banking Authority
ECB	European Central Bank
ECB-SPF	European Central Bank Survey of Professional Forecasters
EP	European Parliament
EU	European Union
GDP	Gross domestic product
HICP	Harmonised index of consumer prices
LLM	Large Language Model
MLF	Marginal Lending Facilities
MRO	Main Refinancing Operations
OEC	Observatory of Economic Complexity
PEPP	Pandemic emergency purchase programme
TLTRO	Targeted longer-term refinancing operations
TPUI	Trade Policy Uncertainty Index
USD	US dollar

LIST OF FIGURES

LIST OF TABLES

EXECUTIVE SUMMARY

- **Macroeconomic environment:** After a rapid tightening cycle following the post-pandemic inflation surge, the ECB delivered a sequence of rate cuts between mid-2024 and mid-2025 and has since entered a prolonged policy pause. While aggregate euro-area inflation has returned close to the 2% target, persistent external risks (trade policy uncertainty, supply-chain shifts, and global inflation divergence) continue to cloud the inflation outlook and complicate policy calibration.

- **Global drivers behind forecast errors:** International factors have significantly contributed to recent inflation surprises, making it harder to assess underlying domestic inflation pressures.

- **Hidden cross-country heterogeneity:** Aggregate euro-area inflation masks substantial differences across member states—especially in wages and services—implying uneven real monetary conditions under a single nominal policy stance.

- **Structural, not purely idiosyncratic, divergence:** Inflation dispersion appears linked to structural differences across economies rather than temporary country-specific shocks, raising concerns about homogeneous policy transmission.

- **The paper analyses how effectively the ECB communicates policy decisions, risks, and trade-offs** in an environment where judgment plays a larger role and explicit rate changes are less frequent. Using an automated, multi-agent text-analysis framework, the report examines the stance of monetary policy

- **Communication challenges during policy pauses:** ECB communication is clearer during active policy adjustments but becomes more ambiguous during pauses, increasing market uncertainty when decisions rely heavily on judgement.

- **Focus on large economies:** Official communication tends to emphasise larger euro-area countries, despite greater inflation volatility in smaller member states, potentially limiting awareness of intra-area divergence.

1. INTRODUCTION

The current phase of the monetary policy cycle presents a particularly demanding environment for oversight. After an aggressive tightening cycle in response to the post-pandemic inflation surge, the ECB has entered a prolonged pause following a sequence of rate cuts delivered between mid-2024 and mid-2025. Headline inflation has returned close to the 2% target at the aggregate euro-area level, yet uncertainty surrounding the inflation outlook remains elevated. External risks related to trade policy, geopolitical fragmentation, and divergent macroeconomic developments across major global economies continue to complicate the assessment of the appropriate monetary policy stance.

Against this backdrop, three features of the current environment are especially relevant. First, external developments have re-emerged as a key source of risk to the euro-area inflation outlook. Trade policy uncertainty, particularly related to the United States and China, has affected global prices, exchange rates, and supply chains in ways that are difficult to forecast using historical regularities. The interaction between trade uncertainty, inflation surprises, and monetary policy complicates both policy decisions and their communication, increasing the risk of misinterpretation by markets and the public.

Second, while aggregate inflation has stabilized, inflation dynamics remain heterogeneous across euro-area member states. Differences in wage growth, services inflation, and exposure to external shocks imply that a common nominal policy stance translates into materially different real monetary conditions across countries. Monitoring the extent, sources, and persistence of this heterogeneity is essential for evaluating the uniformity of monetary trans- mission within the monetary union.

Third, the ECB's communication has become more complex as policy decisions increasingly rely on judgment calls rather than mechanical responses to incoming data. In periods without explicit rate changes, the interpretation of forward guidance, risk assessments, and balance-sheet policies becomes central. This places a premium on transparency, internal consistency, and clarity in communication, particularly when policy debates within the Governing Council involve finely balanced trade-offs between inflation persistence and downside risks to growth.

In light of these challenges, the paper is organized into three main sections. The first analyzes the current macroeconomic environment and assesses the monetary policy stance in the euro area. The second examines the extent and drivers of inflation dispersion across member states, with particular attention to its implications for monetary transmission. The third develops and implements a multi-agent Large Language Model (LLM) framework to systematically evaluate ECB communication, providing a structured and transparent assessment of policy signals in an environment where interpretation plays an increasingly central role.

2. THE ECONOMIC SCENARIO AND THE MONETARY POLICY STANCE

In the latest monetary policy meeting on 5 February 2026, the ECB's Governing Council decided to keep the three key interest rates unchanged for the fifth consecutive meeting. The key policy rate, the deposit facility rate (DFR), remains at 2.00%, while the main refinancing operations rate (MRO) and the marginal lending facility rate (MLF) are unchanged at 2.15% and 2.40% respectively, reflecting continued monetary policy stability in the euro area. In its communication at the press conference, the ECB noted that its updated assessment reconfirms that inflation should stabilise at the 2% target over the medium term.

To determine the appropriate monetary policy stance, the ECB reiterated that it will continue to follow a data-dependent and meeting-by-meeting approach, without pre-committing to a particular interest rate path, and that future decisions will be guided by incoming information on inflation dynamics, economic developments and the strength of monetary policy transmission.

At the same time, the ECB confirmed that it is continuing with the gradual reduction of the Eurosystem's balance sheet through a passive runoff of its asset holdings under the Asset Purchase Programme (APP) and the Pandemic Emergency Purchase Programme (PEPP), by no longer reinvesting the principal payments from maturing securities.

2.1. A Surprisingly Stable Scenario

Simply looking at the macroeconomic facts, the euro-area economy has come through a year of stable growth and low inflation, a pattern that appears likely to continue into 2026.

In 2025, GDP growth at 1.5% was moderate but steady, employment continued to expand, and inflation remained very close to the ECB's 2% medium-term target.

Headline inflation in the euro area has remained close to the ECB's target in recent months, while core inflation (excluding energy and unprocessed food) has stood moderately above 2%, as Figure 1 shows According to the latest Eurosystem staff macroeconomic projections[1]

Overall, no sharp slowdown in activity and no renewed inflationary pressures.

This outcome is reassuring. It suggests that the euro-area economy has navigated a period of unusually high global uncertainty without major disruptions. Financial conditions have remained broadly supportive, labour markets resilient, and inflation expectations well anchored.

This stability is also somewhat surprising. At the start of 2025, there was a broad consensus among economists, both in academia and in policy institutions, that the euro area was likely to face a sizeable negative external shock.

After a closer examination of the recent sources of low inflation in the euro area, we will go back to focusing on external shocks to assess remaining risks associated with external conditions.

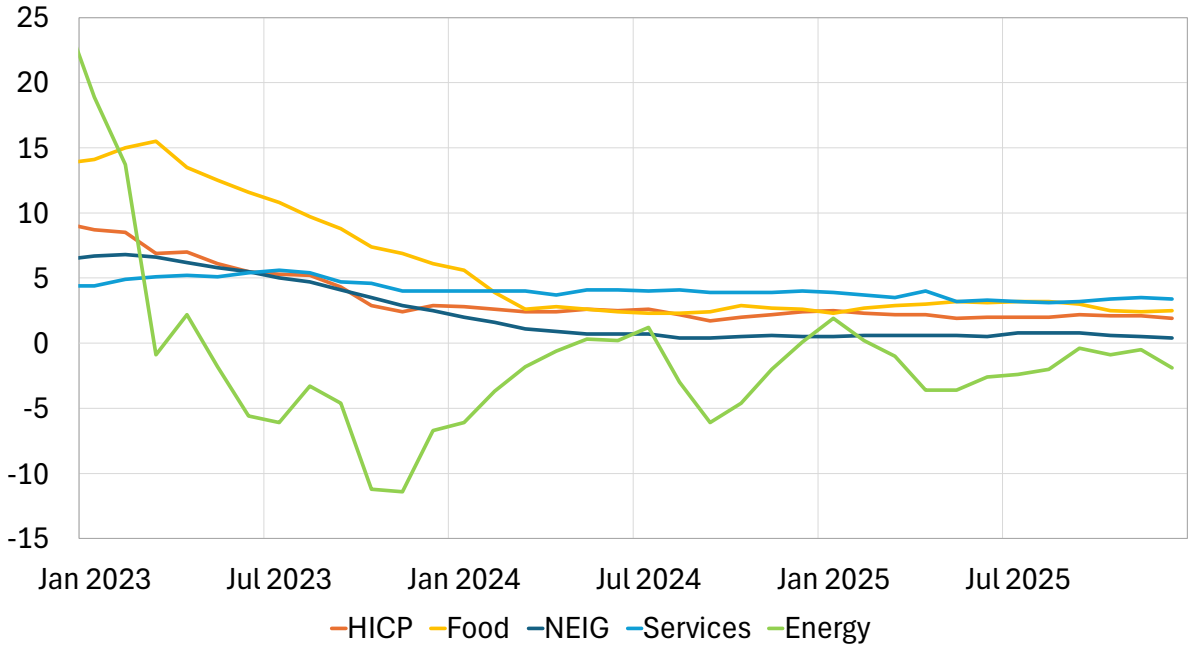
[1] https://www.ecb.europa.eu/press/projections/html/ecb.projections202512_eurosystemstaff~12ead61977.en.html

2.2. Successful Disinflation in the Euro Area

Overall, the euro area has experienced a successful process of disinflation, as shown in Figure 1. Headline HICP inflation in 2025 averaged at 2.1%, broadly consistent with the ECB's target. The latest December data shows the inflation rate at 2%.[2]

Headline inflation is expected to remain below target throughout 2026 and 2027.

Figure 1: Euro Area HICP Inflation (%, annual rate of change)



Note: Euro Area Inflation Rate (HICP, annual percentage change). NEIG: Non-Energy Industrial Goods Source: Eurostat.

The moderation in HICP inflation is primarily driven by easing services inflation, projected at 3.2% year-on-year, while energy inflation is likely to be more negative.

Wage dynamics remain central to the inflation outlook, particularly as energy-driven disinflation fades and services inflation becomes the dominant driver. Wage dynamics primarily impact services inflation and overall core inflation, as labor costs are a large part of service sector expenses (like healthcare, education, housing).

Below, we will discuss more in detail how external developments are likely to affect the inflation outlook, with China contributing to low inflation through aggressive pricing, while the potential for higher inflation in United States remains, but with less clear implications for the euro area.

2.3. External Risks Did Not Materialize in 2025

The external risks perceived in the first few months of 2025 are clearly visible in the index of trade uncertainty plotted in Figure 2.

Following President Trump's re-election, the index surged sharply and reached a new peak in April 2025 after the announcement and imposition of additional tariff measures. As of the latest observations, trade policy uncertainty remains elevated.

[2] In evaluating coming releases, it is useful to remember that January 2026 inflation data may be affected by compositional effects related to the transition to a new classification system (ECOICOP version 2). This methodological change alters component weights and classification granularity and may introduce temporary distortions in aggregate inflation measures.

Figure 2: Index of Trade Uncertainty

Note. The U.S. Trade Policy Uncertainty Index (TPUI) is developed by Caldara et al. (2020), and captures uncertainty related to trade policy announcements, implementation, and public discourse It is constructed from the count of articles referencing trade-policy-uncertainty terms in major U.S. newspapers normalized to a value of 100 for a one percent article share. Data start in 1960. Source: Economic Policy Uncertainty. https://www.policyuncertainty.com/.

In the early months of 2025 many analysts, including the authors of this report (Bottazzi et al.(2025)), expressed concerns on the effects of these developments for the Euro area. The concerns revolved around two distinct external channels.

The first was a negative shock to European exports to the U.S. as a direct consequence of higher tariffs, and due to the potential weakening of U.S. demand caused by heightened uncertainty.

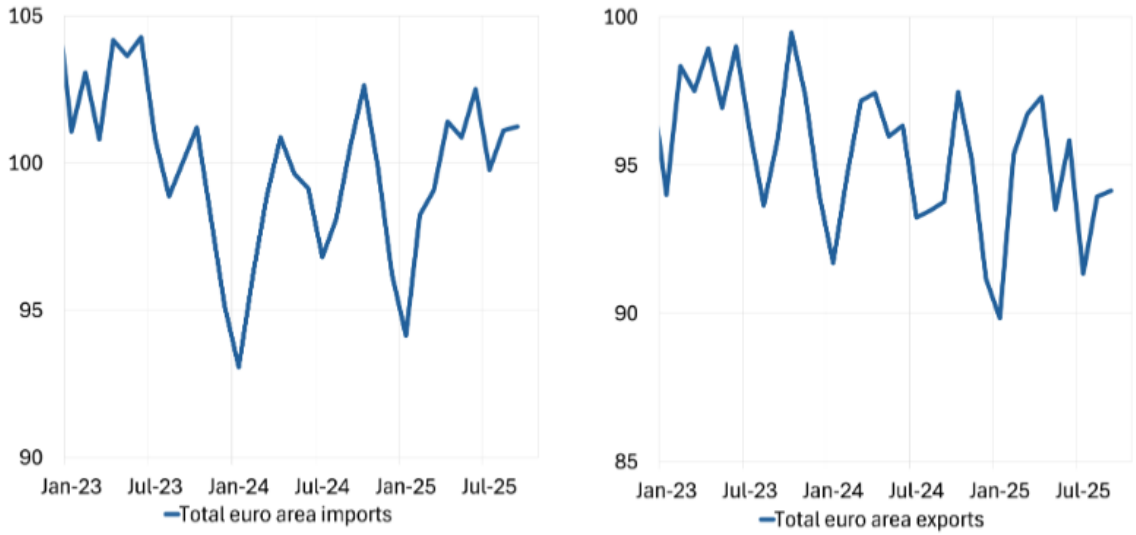
The second was a competitive deflationary shock from China. As U.S. tariffs diverted Chinese exports away from the U.S. market, Europe was expected to absorb a larger share of Chinese goods, increasing competitive pressure on domestic producers and pushing down directly imported-goods prices.

Both channels pointed to weaker growth and lower inflation in the euro area. In earlier assessments, we highlighted precisely these risks.

As the year unfolded, however, the external sector has not exerted a contractionary effect on the European economy.

At the aggregate level, euro-area trade flows have not shown to be a source of weakness for aggregate demand. Both exports and imports have been stable in 2025, as shown in Figure 3, with no sign of a generalised contraction in exports or a large increase in imports.

Figure 3: Euro Area Imports and Exports



Note.(a) Euro area import volume index and (b) euro area export volume index between January 2023 and September 2025. Values reported for each month are a 3-month moving average centered around that month. Base year: 2021 Source: Eurostat and authors' calculations.

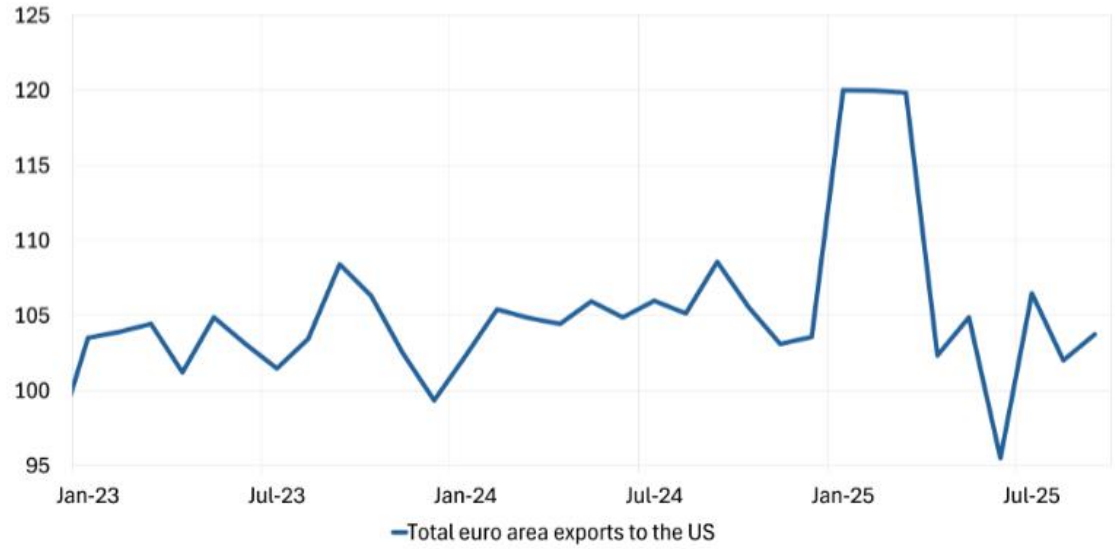
Aggregate stability, however, hides some important compositional changes, which become visible once trade flows are decomposed by partner and by sector.

The first concern mentioned above does not appear to have materialized, as U.S. imports have remained stable. However, the second shock is visible in the data, with a significant surge in imports from China. In the remainder of this section, we delve deeper into what happened on both fronts, as it will help us evaluate remaining risks.

2.3.1. The Shock That Did Not Arrive: Exports to the United States

Euro-area exports to the United States for now show little evidence of a sustained decline. There are signs of front-loading in mid-2025 (see Figure 4), as firms accelerated shipments ahead of tariff implementation, but this was not followed by a collapse in exports later in the year. Even in the second half of 2025, export volumes to the U.S. remained broadly stable, as shown in Figure 4.

Figure 4: Total Euro Area Exports to the US



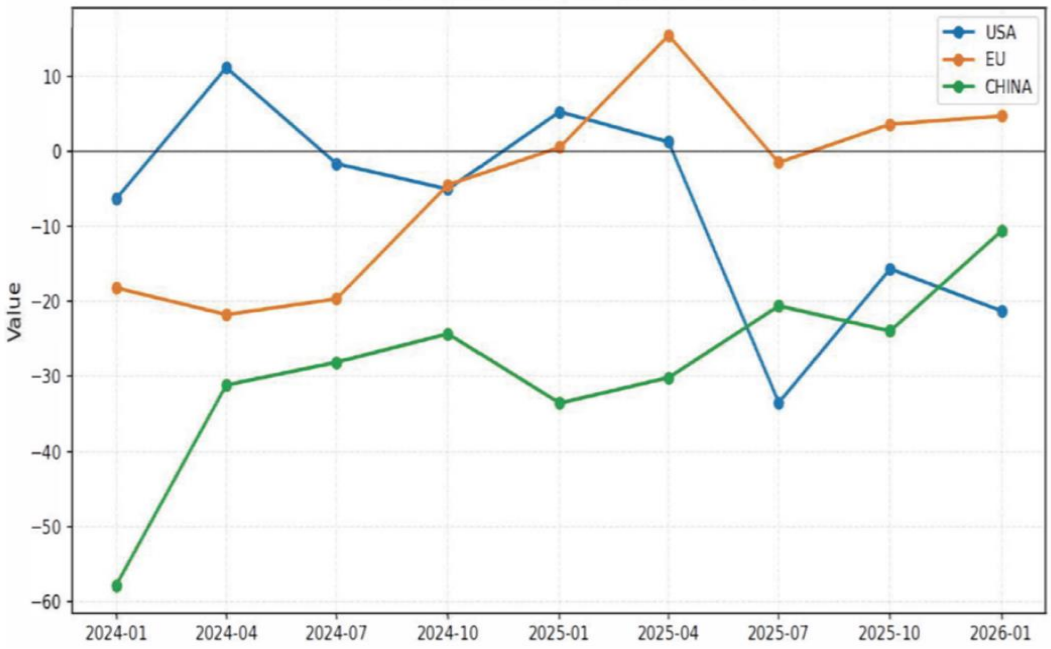
Note.Volume index of exports from the euro area to the United States between January 2023 and October 2025. Values reported for each month are a 3-month moving average centered around that month. Base year: 2021 Source: Eurostat and authors' calculations.

To interpret this fact, it is useful to remark that it fits with the broader evidence: while U.S. tariffs show signs of having affected prices in the U.S., the effect is smaller than what was feared in April and May, and it has not caused a significant drop in spending in the U.S., which instead has shown strong growth.

This matters for the euro area. Had tariffs generated a strong inflationary impulse in the U.S., they would likely have been accompanied by weaker U.S. demand and, in turn, by lower demand for euro-area exports. The absence of such an impulse was an early indication that the U.S. channel might not deliver the contractionary shock that many had anticipated.

This dynamic is visible in the Citigroup Inflation Surprise Index (CISI) plotted in Figure 5. The CISI measures whether released inflation data are coming in above or below consensus expectations. The Index is constructed by taking the differences between actual inflation data releases and their survey-based market expectations, standardizing those surprises by their historical volatility, weighting them by importance, and aggregating them over time with greater weight on more recent releases. Values near zero indicate inflation data broadly in line with expectations, positive values indicate persistent upside inflation surprises, negative values indicate persistent downside surprises, and large absolute values, above fifty, signal unusually strong and broad-based deviations from expectations.

Figure 5: The Citigroup Index of Surprise Inflation



Note. Source: Bloomberg- Citigroup.

Over the 2024–2025 period, inflation surprise dynamics diverge markedly across the three major economic blocs. Comparing Figure 2 and Figure 5 shows the significant impact of trade uncertainty on U.S. inflation surprises. This relationship is consistent with several channels: delayed or incomplete cost pass-through, precautionary pricing behavior by firms, inventory smoothing, and repeated revisions of inflation expectations as policy signals evolve. The United States exhibits the highest volatility in inflation surprises over the sample. The CISI frequently alternates between positive and negative territory, underscoring persistent forecasting challenges. A key contributing factor has been the slower-than-expected pass-through of tariff-induced cost increases to consumer prices. Firms initially absorbed higher import costs through margin compression, inventory adjustments, or supply-chain reorganization, postponing their transmission to final prices (IMF (2026)). At the same time, persistent services-sector inflation limited the pace of disinflation, amplifying forecast errors and contributing to repeated revisions in expectations.

Two factors stand out. First, the effective size of the tariff shock was smaller than it looked on paper. Recent evidence shows that implemented tariffs were well below statutory rates, reflecting exemptions, shipment lags, trade agreement utilisation, and enforcement gaps. Second, pass-through to consumer prices was incomplete. Empirical estimates suggest that roughly one-half of tariff-induced cost increases were passed on to prices, with the remainder absorbed through margins, inventories, or supply-chain reorganisation (Gopinath and Neiman (2026), Cavallo, Llamas and Vazquez (2025)).

As a result, U.S. inflation rose less than expected, and U.S. demand remained strong. Consumption continued to grow at a solid pace throughout 2025. With demand intact and tariffs diluted, euro-area exporters largely avoided the negative demand shock they had feared.

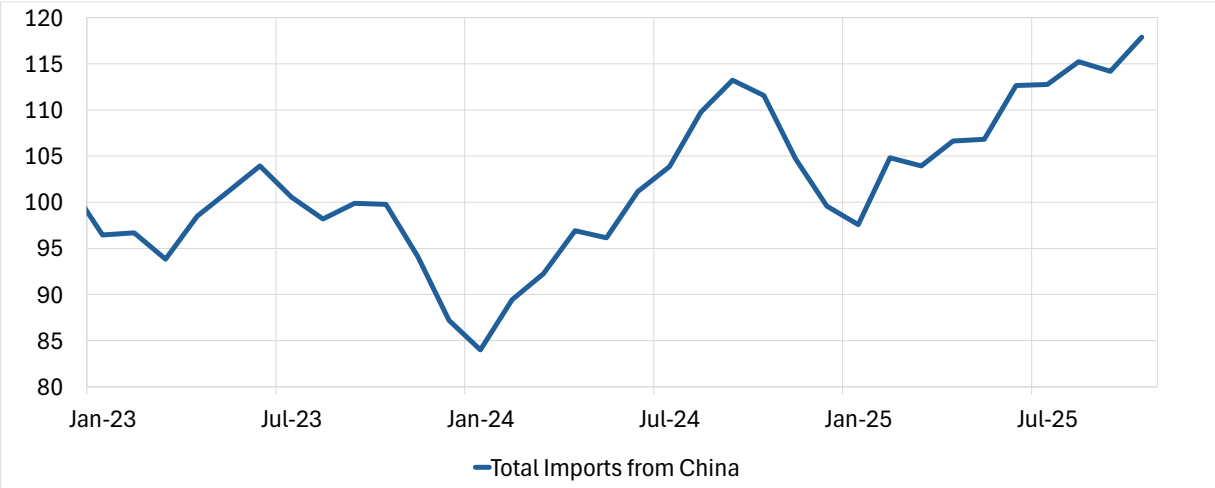
2.3.2. The Shock That Did Arrive: Imports from China

If there is one place where trade tensions clearly show up, it is on the import side, particularly with respect to China.

Euro-area imports from China increased significantly in 2025, even as total imports remained broadly stable, as we can see from Figure 6. At the same time, unit values declined, indicating that imports from

China became cheaper in euro terms. The appreciation of the euro against the renminbi, almost 11% over 2025, reinforced this effect.

Figure 6 : Total Euro area Imports from China



Note.Volume index of imports from China to the euro area between January 2023 and October 2025. Values reported for each month are a 3-month moving average centered around that month. Base year: 2021 Source: Eurostat and authors' calculations.

The implication is straightforward: Europe has been receiving a disinflationary impulse from China, operating through two channels. First, lower imported prices directly reduce inflation in traded goods. Second, increased competitive pressure weighs on domestic producers' pricing power.

2.3.3. China's Reorientation: Exporting Elsewhere

Looking at China's overall export activity, beyond the euro area, helps to explain this pattern. Faced with U.S. tariffs, China did not cut exports; it redirected them. In 2025, China recorded a record trade surplus of around USD 1.2 trillion, underscoring its ability to push excess capacity abroad rather than absorb it domestically.

Exports to the United States fell sharply in several sectors in mid-2025, but shipments to Europe and third markets increased. Some of this reflects rerouting through countries such as Vietnam and India; some reflects higher direct exports to the euro area. As a result, total Chinese exports rose by about 5.5%, and exports to Europe increased by roughly 8%.

This has raised concerns that increased Chinese competition might hurt euro-area exports in third markets. So far, however, the evidence points mainly to price-based competition, rather than to a collapse in euro-area export volumes, as seen in Figure 3.

2.3.4. Bottom Line: Inflation Surprises, Trade Uncertainty, and the China Channel

Putting these pieces together clarifies recent inflation dynamics.At the start of 2025, we worried about two external shocks to the euro-area economy. One never arrived. A clearer picture of why the feared external shock did not materialise emerges when inflation surprises and sectoral trade data are considered jointly. Throughout 2024–2025, inflation surprises diverged sharply across the three major economic blocs.

In the United States, inflation repeatedly came in below expectations, generating persistent negative surprises. Importantly, this does not imply that inflation declined unexpectedly; rather, inflation outcomes were lower than what forecasters had anticipated given the announced tariffs. This pattern is consistent with the evidence discussed earlier: tariffs were weaker than expcted and pass-through

was delayed. Trade uncertainty surged following President Trump's re-election and peaked again in April 2025 with the announcement of additional tariff measures. While uncertainty remained elevated, its volatility declined toward the end of 2025. The combination of high uncertainty and muted realised effects helps explain the forecasting difficulties reflected in the CISI, particularly for the United States.

The euro area displays a different pattern. After sustained downside inflation surprises in 2024, euro-area inflation surprises turned slightly positive in 2025. Markets initially overestimated the speed of disinflation, especially as energy-related base effects faded. As trade-related spillovers and exchange-rate movements became more relevant, inflation proved somewhat more persistent than expected, particularly in non-energy industrial goods and services.

China stands out with deep and prolonged negative inflation surprises, reflecting weak domestic demand, excess capacity, and aggressive export pricing. This is where sectoral trade data becomes central to the euro-area outlook. As discussed above, euro-area imports from China increased significantly in 2025, while unit values declined. Manufacturing imports from China accounted for more than 20% of total extra-euro area manufacturing imports over the January–November period, and the euro appreciated by nearly 10% against the renminbi over the same horizon.

Taken together, these developments indicate that China has been exporting disinflation to the euro area through precisely those sectors captured in the CISI as persistent sources of downside inflation pressure.Our empirical estimates, following Corsello, Pica, and Venditti (2025) suggest that a 1% decline in the unit value index of imported Chinese manufactured goods lowers euro-area non-energy industrial goods (NEIG) prices by around 0.1% over a two-year horizon. Given the observed increase in Chinese import penetration, this channel has likely contributed to the disinflationary impulse observed in euro-area traded goods.

At the same time, the stability of China's overall import share and the absence of a collapse in euro-area export volumes suggest that adjustment has taken place mainly through prices rather than quantities. This price-based adjustment is consistent with the broader pattern observed in inflation surprises: persistent disinflationary pressure from China, offset by resilient demand and more muted inflationary impulses from the United States.

So far, the euro-area economy has absorbed these forces well. Growth has remained stable, inflation is close to target, and trade has adjusted primarily through prices and composition rather than volumes. At the same time, this benign outcome should not lead to complacency. A stronger euro, continued Chinese export reorientation, and uncertainty surrounding U.S. growth, fiscal policy, and financial conditions remain important sources of risk. External developments may not have delivered a major shock yet, but they continue to shape the euro-area outlook in subtle and potentially powerful ways.

2.4. The Inflation Outlook

Looking ahead to 2026, euro-area inflation will continue to reflect the interaction of three forces: domestic wage dynamics, external disinflationary pressures from China, and potential inflationary spillovers from the United States. Wage growth remains central to services inflation, while external price developments primarily affect goods inflation. The balance between these forces will determine whether inflation remains durably anchored near target. In this environment, the ECB's data-dependent, meeting-by-meeting approach remains appropriate, given persistent global uncertainty and the risk of delayed trade-policy effects.

2.4.1 China

China's export sector remains a key source of global disinflationary pressure. Weak domestic demand and persistent industrial overcapacity have encouraged firms to absorb surplus output through foreign

markets, often via price reductions. As shown in Table1, in 2025, China registered a record trade surplus of approximately USD 1.19 trillion, reflecting a reorientation of trade flows following US tariff measures rather than a contraction in exports. Export growth remained positive, with shipments rising by about 5.5% to the rest of the world and by 8.1% to Europe.

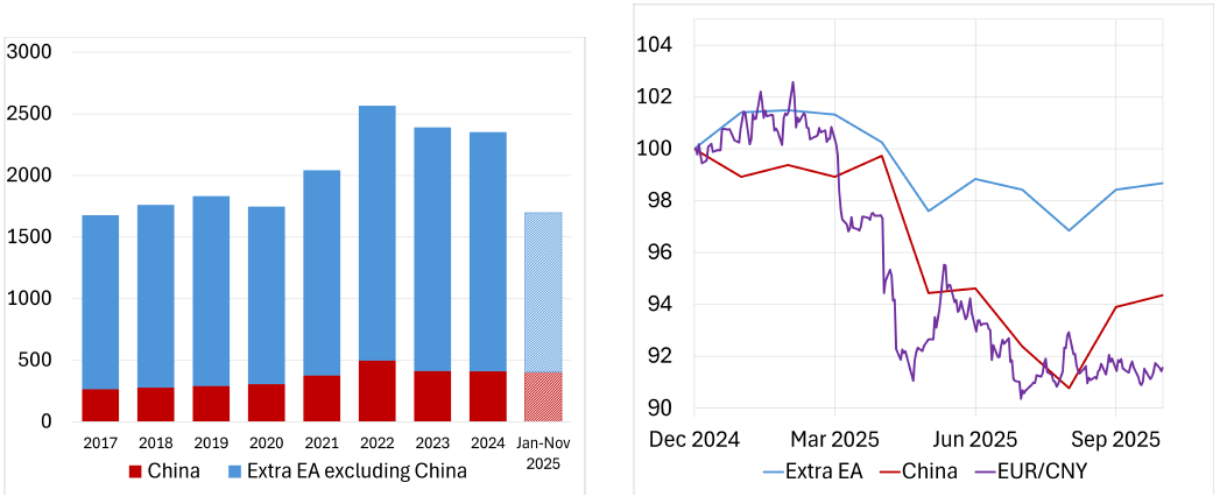
Table 1: China Exports in 2024 and 2025

Trading partner	2024 (ML US dollar)	2025 (ML US dollar)	% growth
Cambodia	15,325	19,600	27.89
Hong Kong–China	290,583	335,609	15.50
India	120,462	135,872	12.79
Indonesia	76,669	85,325	11.29
Japan	152,008	157,347	3.51
Malaysia	101,457	103,682	2.19
Singapore	79,034	82,670	4.60
Republic of Korea	145,874	144,212	-1.14
Thailand	86,027	103,505	20.32
Viet Nam	161,845	198,147	22.43
Africa	178,909	225,031	25,78
Germany	107,059	118,272	10.47
France	44,503	47,800	7.41
Italy	46,199	51,245	10.92
Netherlands	91,202	93,848	2.90
Spain	40,874	45,702	11.81
Russia	115,257	103,309	-10.37
Brazil	72,074	71,587	-0.68
Mexico	90,228	89,160	-1.18
United States	524,736	420,050	-19.95
Australia	70,747	76,328	7.89

Note. Chinese export values and export growth from 2024 to 2025. Source: General Administration of Customs of the People's Republic of China.

More precisely, as illustrated in Figure 7, when focusing on manufacturing goods, imports from China represented more than 20% of total extra-euro area imports in 2025, already over the January–November period while prices of imports from China have fallen, as the renminbi depreciated by almost 10% against the euro.

Figure 7: Manufacturing Imports from China and EUR/CNY Exchange Rate



Note.(a) Manufactured goods imports (billions of euros), (b) unit values indices (UVI) and EUR/CNY exchange rate (Dec 2024=100). The analysis is restricted to manufactured goods, as defined by sections 5 to 8 of the Standard International Trade Classification (SITC), and to the euro area 20 (fixed composition) as of January 2023. Source: Eurostat, ECB, and authors' calculations.

China's export pricing strategy may have affected disinflation in Europe in 2025 and may be just as influential for 2026. Should this trend persist, it would add to global disinflationary pressures in the euro area, especially in industries already exposed to Chinese overcapacity, including automotive, industrial machinery, and green-tech sectors. In these sectors, China is by far the euro area's largest external supplier, with import shares significantly exceeding those of other main trade partners, as Table 2 shows. Interestingly, however, China's share in total extra-EA imports remained stable in 2025 compared with 2024, showing not only that manufacturing goods imported from China were not concentrated only in one sector, like electric vehicles, but also that Chinese exports have not flooded European markets (Panetta (2025); Lagarde (2025)).

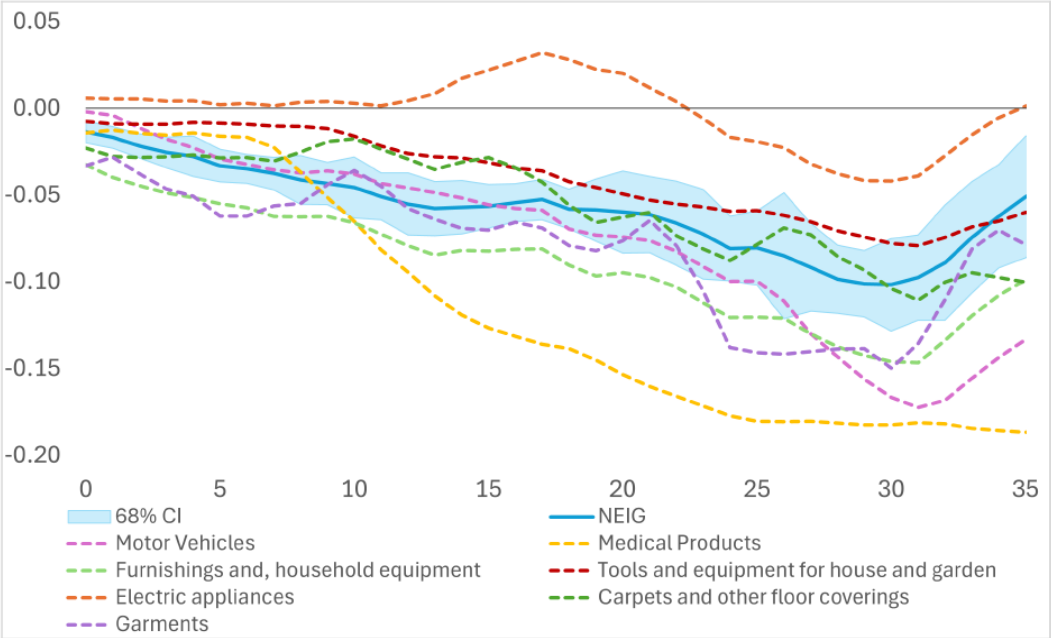
Table 2: China's Share of Extra Euro Area Imports

SITC Code	Product description	China's share in extra-EA imports (%, 2024)	China's share in extra-EA imports (%, 2025)
77	Electrical machinery and equipment	32.60	40.23
76	Telecommunications and sound recording equipment	37.99	33.70
75	Office machinery and automatic data-processing equipment	40.77	40.22
78	Road vehicles and related transport equipment	10.56	13.07
89	Miscellaneous manufactured articles	29.86	30.26
84	Articles of apparel and clothing accessories	22.55	21.72
82	Furniture and parts thereof	31.95	33.27
87	Professional, scientific and controlling instruments	13.67	15.95
85	Footwear and related articles	26.42	28.13
81	Prefabricated buildings, sanitary, plumbing, heating and lighting fixtures	52.18	52.99
83	Travel goods, handbags and similar containers	52.73	54.30
66	Non-metallic mineral manufactures, n.e.s.	17.82	16.40
88	Photographic apparatus and optical goods	23.19	23.99
62	Rubber manufactures	17.38	18.45
64	Paper, paperboard and articles thereof	13.80	13.62

Note: The analysis is restricted to manufactured goods, as defined by sections 5 to 8 of the Standard International Trade Classification (SITC). Primary commodities such as food, raw materials, and energy products are not included (sections 0, 1, 2, 3, 4 and 9). Among manufactured goods, the table excludes chemicals and machinery for industrial purposes. Electric vehicles are included under SITC category 78. Source: Eurostat, Corsello et al. (2025) and authors' calculations.

To quantify the inflation impact, we follow Corsello et al. (2025) and estimate that a 1% decline in the unit value index (UVI) of Chinese manufactured imports reduces euro-area non-energy industrial goods (NEIG) prices by about 0.1% over two years (Figure 8). If Chinese exports were to increase by 7% in 2026, implying a similar decline in import prices under unit elasticity assumptions, NEIG prices could fall cumulatively by around 0.7%. Given NEIG weights in the HICP basket, this would lower core inflation by approximately 0.24% and headline inflation by about 0.18% over a two-year horizon.

Figure 8: The Response Function of HICP NEIGs to a Decrease in the Value of Imported Chinese Manufactured Goods



Note: The solid blue line shows the impulse response function of HICP NEIGs following a 1% temporary decrease in the unit value index of imported Chinese manufactured goods, over a period of 35 months. Standard errors are robust to heteroskedasticity and autocorrelation, and the shaded blue area reports the 68% confidence interval. The dashed lines plot the impact of this same shock across a range of sectors. The responses are estimated using local projection methods, controlling for lagged values of euro area PMI output, oil prices, the NEIG or sectoral price index, USD-EUR exchange rate, and UVI, and the cumulative impact is reported in percent. For presentation, impulse responses and confidence intervals are smoothed using a moving average. The estimation sample spans from January 2002 to November 2025.

2.4.2. United States

Developments in the United States pose upside risks to the euro-area inflation outlook. Trade policy, labor market conditions, and fiscal expansion could contribute to renewed US inflationary pressures, with spillovers transmitted through exchange rates, commodity prices, financial conditions, and expectations.

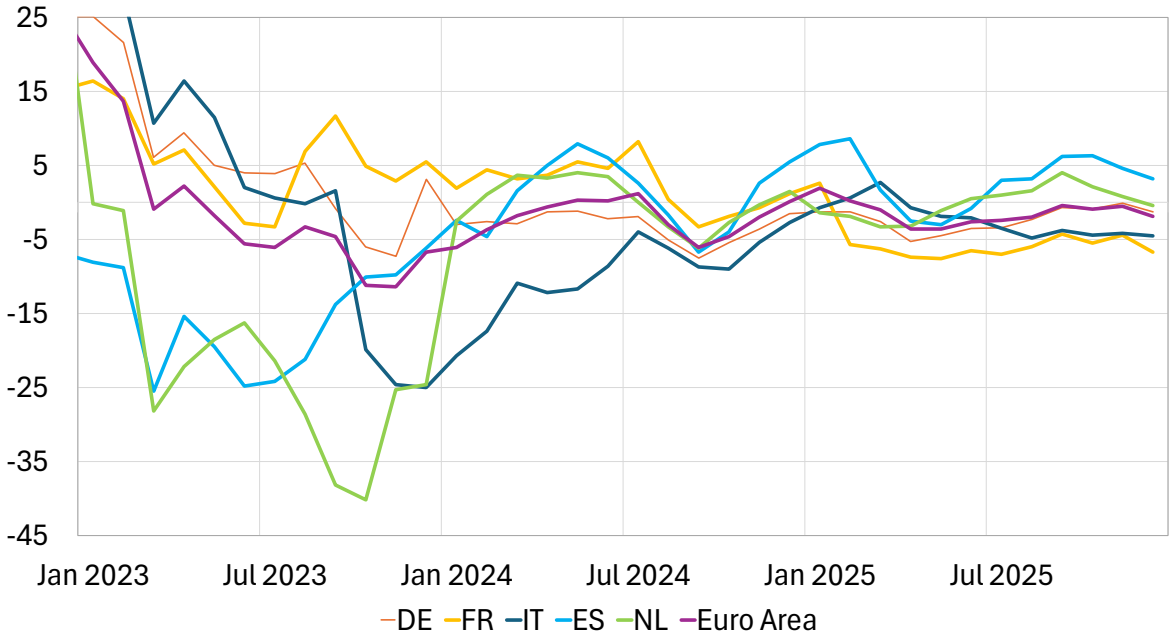
Tariff dynamics are central. While unilateral tariffs tend to appreciate the dollar, credible retaliation can reverse this effect by lowering expected US net exports and increasing risk premia (Ostry et al., 2025). A weaker dollar would imply a stronger euro, which is mildly disinflationary for the euro area: a 1% euro appreciation reduces headline inflation by roughly 0.04–0.06% over four to eight quarters (ECB, 2020), mainly via energy and imported intermediates. However, these effects could be offset if higher US inflation lifts global commodity prices or tightens global financial conditions, as suggested by recent increases in long-term US yields.

Domestic US pressures may intensify in 2026. Tariff pass-through, so far limited, is likely to strengthen as pre-tariff inventories are depleted. Labor market tightness has increased due to reduced immigration, lowering the breakeven employment threshold and reinforcing wage pressures. At the same time, fiscal policy is expected to become more expansionary as tariff revenues decline and deficits widen. A combination of tariffs, tight labor markets, and fiscal support could make US inflation more persistent.

3. INFLATION DISPERSION IN THE EURO AREA

Aggregate euro area inflation can mask meaningful heterogeneity across member states. While headline HICP inflation is close to the ECB's 2% target at the aggregate level, and monthly inflation has converged after the post COVID-19 shock, national annual inflation rates still differ. In 2025 inflation was close to 2.3 % in Germany, below target in Italy at 1.6 %, markedly below target in France, at 0.9 %, and around 2.7% in Spain according to HICP data. Short-term dynamics in inflation components suggest that these differences reflect inflation momentum rather than transitory noise. Germany shows renewed acceleration over shorter horizons, Italy remains persistently below target, and France has entered out- right disinflation. Under a common nominal monetary policy, cross-country heterogeneity gives rise to materially different real interest rate conditions, which may be particularly relevant when comparing core and peripheral countries.

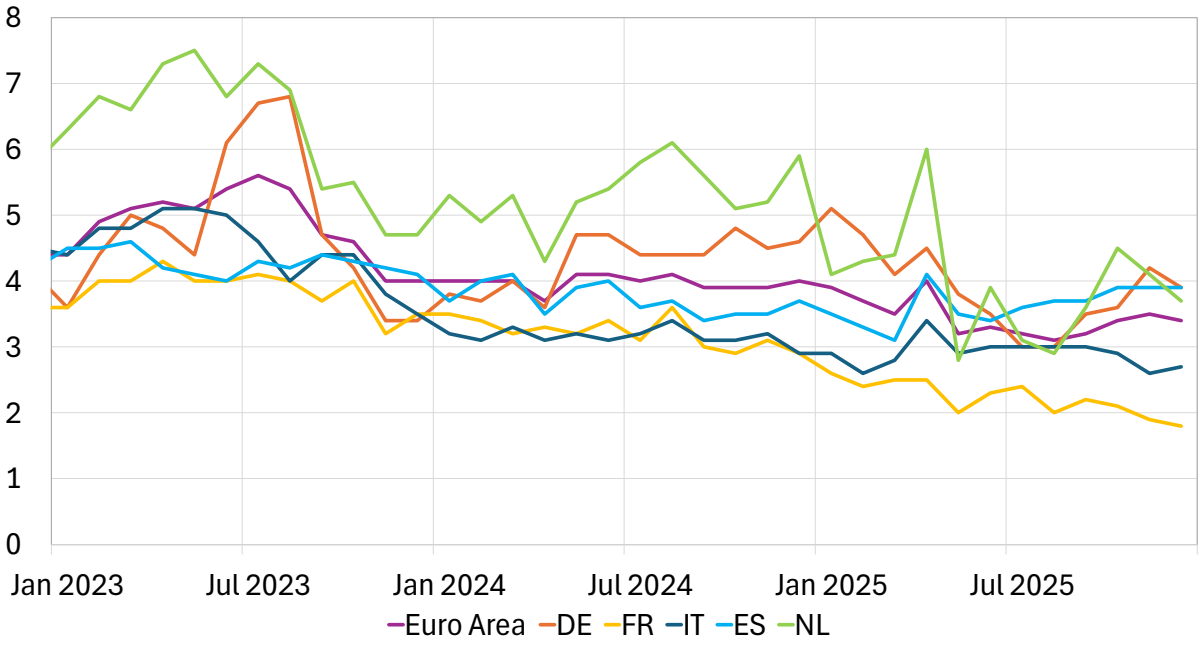
Figure 9: Euro Area Energy Inflation (%, annual rate of change)



Euro Area, Germany, France, Italy, Spain and Netherlands energy inflation (annual percentage change). Source: Eurostat.

Decomposing inflation dynamics helps clarify the sources of this divergence. Energy price movements, shown in Figure 9, have been the dominant driver of headline disinflation across the euro area, but their impact is uneven and inherently transitory. Energy inflation is largely exogenous to domestic monetary conditions and fades over time. More informative for assessing inflation persistence are developments in services prices, reported in Figure 10, as they reflect domestic cost pressures and exhibit substantial inertia. Services inflation remains elevated and shows renewed momentum in Germany and Spain, while decelerating in Italy and weakening markedly in France. These patterns point to heterogeneous inflation persistence across Member States and reflect differences in national responses to a common policy stance.

Figure 10: Euro Area Services Inflation (%, annual rate of change)

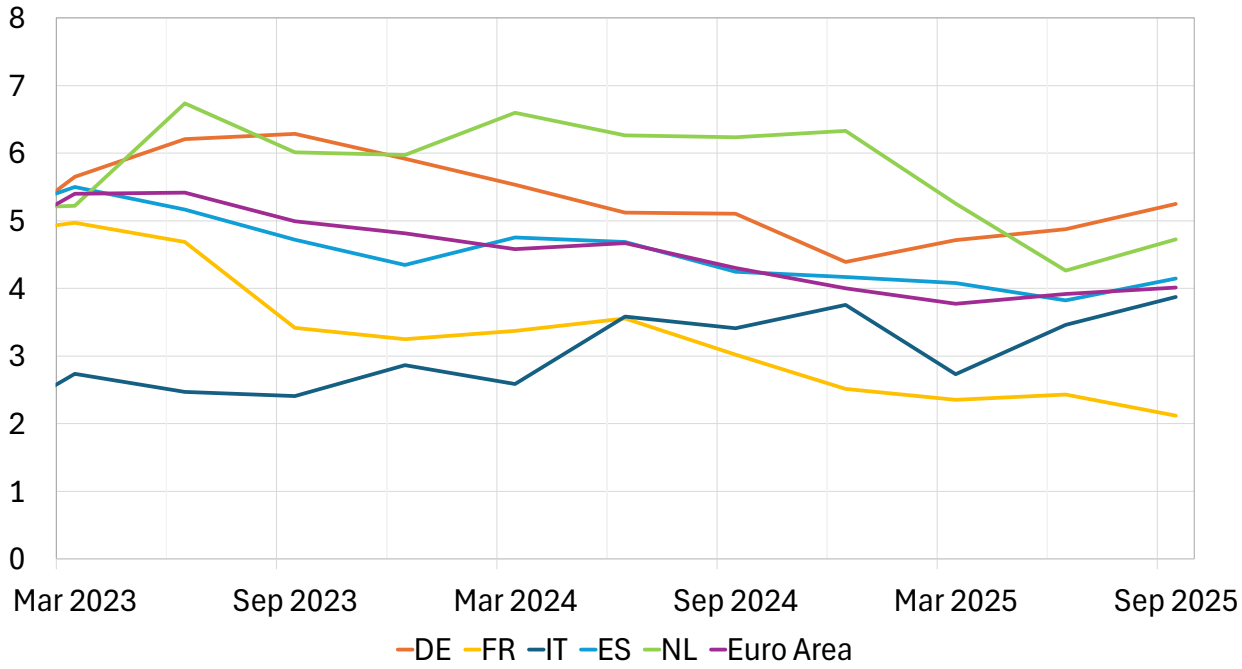


Euro Area, Germany, France, Italy, Spain and Netherlands service inflation (annual percentage change). Source: Eurostat.

Wage dynamics reinforce this interpretation. Wage growth remains robust in Germany and Spain, consistent with persistent services inflation, while wage pressures are significantly weaker in Italy and particularly in France, see Figure 11.

As energy-driven disinflation fades, wages increasingly become the main driver of inflation outcomes, amplifying cross-country divergence through second-round effects and generating differences in inflation persistence that are difficult to offset under a single monetary policy. Consequently, a common nominal interest rate translates into divergent real monetary conditions: countries with stronger wage growth and higher services inflation face looser real conditions, while those with weaker wage dynamics experience tighter conditions and heightened disinflation risks. In this environment, inflation differentials increasingly reflect asymmetric monetary transmission within the euro area rather than efficient relative price adjustment, underscoring the importance for policymakers of monitoring inflation components when assessing convergence and risks to the cohesion of the monetary union.

Figure 11: Euro Area Wage Dynamics – Compensation per Employee (%, annual rate of change)



Note: Compensation per employee (CPE) measures total remuneration per worker, including direct earnings and employers' social contributions. Source: ECB.

To quantify inflation heterogeneity, we compute two complementary measures of dispersion in the euro area. We use monthly HICP inflation data for euro area countries from Eurostat. [3] First, we calculate the cross-sectional variance of national inflation rates, that is, how much (on average) the inflation rate of a given member country deviates from the HICP euro area average. Second, we examine inflation differentials between Core and Periphery countries, where Core countries are Austria, Belgium, Finland, France, Germany and the Netherlands, while Estonia, Greece, Ireland, Italy, Latvia, Lithuania, Portugal, Slovenia, Slovakia are Periphery.[4]

3.1. Inflation Dispersion

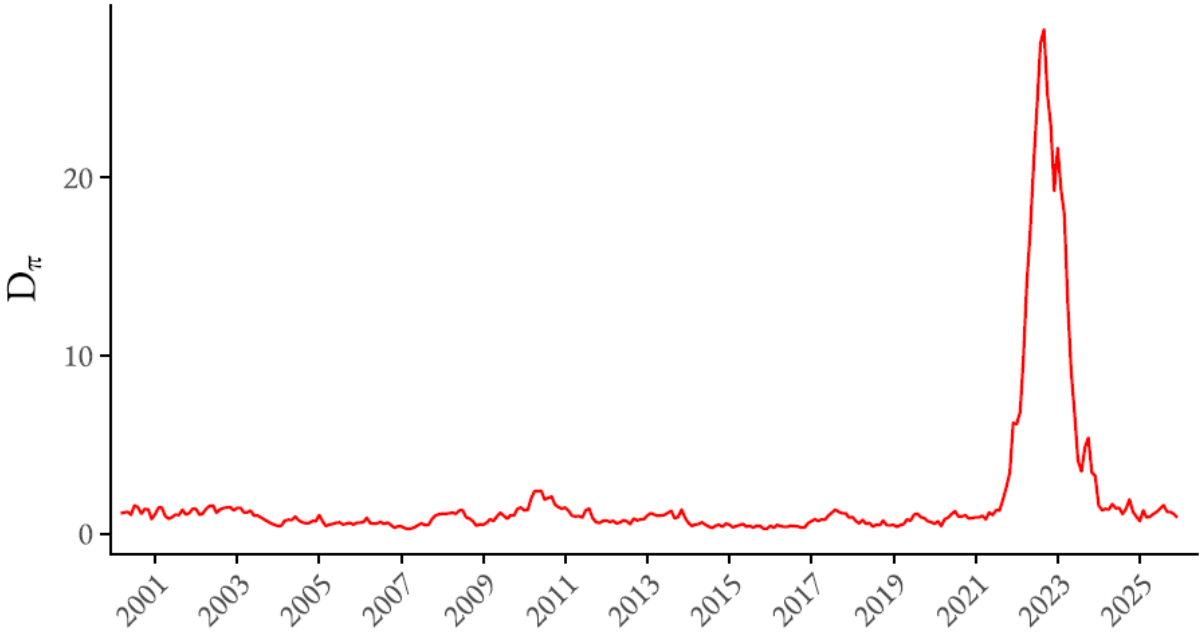
We start by calculating the variance of national inflation rates relative to the euro area HICP average, capturing the average deviation of country-level inflation from the aggregate. We denote this measure by D_{π}.

Figure 12 displays the evolution of the dispersion measure D_{π} from January 2000 to December 2025. Inflation dispersion in the euro area is clearly time-varying but typically remains within relatively narrow bounds. For most of the sample, cross-country inflation differentials are low and stable, indicating that periods of pronounced heterogeneity are the exception rather than the norm within the monetary union.

[3] In particular, we work with the annual rate of change of the all-items HICP index (percent, year-on-year). The sample covers the period from January 2000 to December 2025.

[4] Core countries are considered Austria, Belgium, Finland, France, Germany and the Netherlands, while Periphery countries are considered Estonia, Greece, Ireland, Italy, Latvia, Lithuania, Portugal, Slovenia, Slovakia. We exclude from our sample the three smallest countries Cyprus, Malta, and Luxembourg, as well as Croatia, who joined the euro only in January 2023.

Figure 12: Inflation Dispersion in the Euro Area



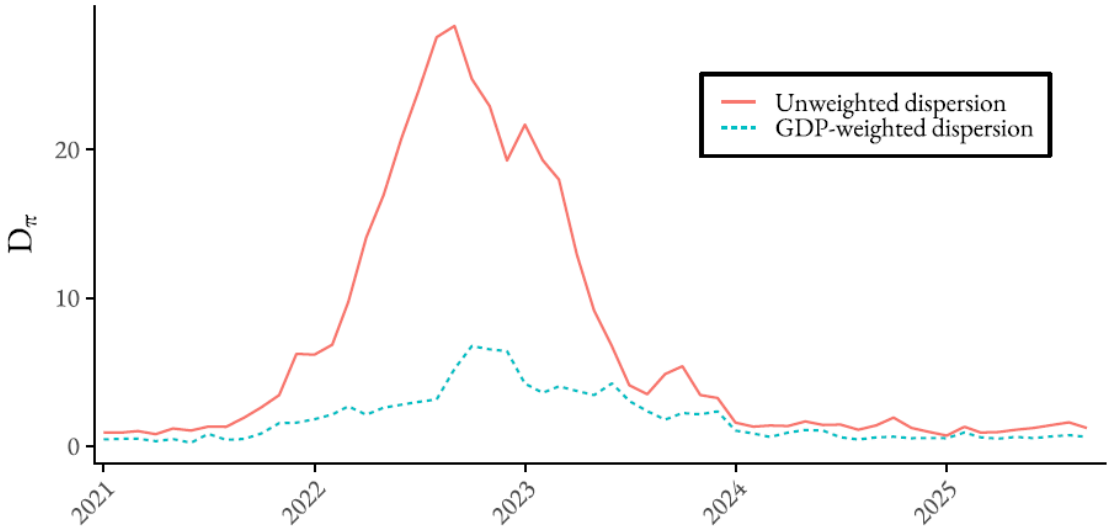
Note: Inflation dispersion in the euro area, D_π. Variance of inflation rates across countries (in squared percentage points). Source: ECB data and authors'own calculation.

A striking exception occurs in the post-2020 period, when dispersion rises sharply to unprecedented levels, coinciding with the Covid-19 pandemic and the subsequent inflation surge driven by supply bottlenecks, energy price shocks, and potentially heterogeneous fiscal responses across member states. Importantly, this spike proves transitory: as aggregate inflation recedes, dispersion quickly reverts toward its historical range, pointing to a substantial degree of mean reversion.

The sharp rise in inflation dispersion during the Covid period is striking because it followed a largely common shock across euro area countries. Surging energy prices and global supply disruptions represented broadly symmetric supply-side disturbances, affecting all member states simultaneously. Yet inflation outcomes diverged markedly. This suggests that dispersion was not driven by asymmetric shocks, but by structural heterogeneity within the monetary union. Differences in energy intensity, consumption baskets, price-setting behavior, fiscal responses, and nominal rigidities translated a common cost shock into uneven and persistent inflation dynamics. In this sense, the episode points to an inefficient source of dispersion, reflecting heterogeneous frictions rather than fundamentals requiring cross-country reallocation. More generally, the figure shows a strong positive comovement between aggregate euro area inflation and cross-country dispersion, echoing the well-known micro-level fact that higher average inflation is associated with greater price-change dispersion

The measure of inflation dispersion D_π plotted above is unweighted. In Figure 13 we compare it to a measure in which each country's inflation rate is weighted by its GDP. Accordingly, deviations of Germany's HICP inflation from the euro area mean receive more weight than comparable deviations for smaller countries such as Slovakia. We therefore focus on the period from 2021 onward. While the qualitative pattern is similar—dispersion in inflation rises sharply during the Covid episode and then reverts toward more "normal" levels in subsequent periods—the magnitude of dispersion is substantially smaller. This attenuation, however, does not weaken the central message of this section: when inflationary pressures are widespread and largely common across the euro area, as during the Covid episode, inflation dispersion nonetheless increases markedly, and in a puzzling way.

Figure 13: Unweighted and GDP-weighted Inflation Dispersion in the Euro Areas



Note: Inflation dispersion in the euro area, D_π. Variance of inflation rates across countries (in squared percentage points), unweighted and GDP-weighted. Source: ECB data and authors'own calculation.

3.2. Core-Periphery Inflation Differentials

We next examine inflation differentials between Core and Periphery countries.[5] For each group we compute the group mean inflation. Figure 14 shows a pronounced divergence in group-average inflation dynamics between the euro area Core and Periphery during the Covid period (2020-23). While both groups experienced a sharp surge in inflation, the increase was markedly larger in the Periphery, where inflation peaked at substantially higher levels than in the Core. This asymmetry is particularly notable given the largely common nature of the underlying "COVID-19 shock", and points again to the role of structural differences in shaping the transmission of disturbances to inflation. Moreover, although euro-area inflation has since receded toward its historical average, the figure shows that inflation in the Periphery remains persistently higher than in the Core in the most recent period. This lingering differential suggests a greater degree of inflation persistence in the Periphery and indicates that the Covid inflation episode may have left uneven legacies across country groups, with implications for relative price adjustment and the uniformity of monetary policy transmission within the currency union.

[5] Core countries are Austria, Belgium, Finland, France, Germany and the Netherlands. Periphery countries are Estonia, Greece, Ireland, Italy, Latvia, Lithuania, Portugal, Slovenia, Slovakia.

Figure 14:Inflation differential between Core and Periphery of the euro area.

Source: ECB data and authors'own calculation.

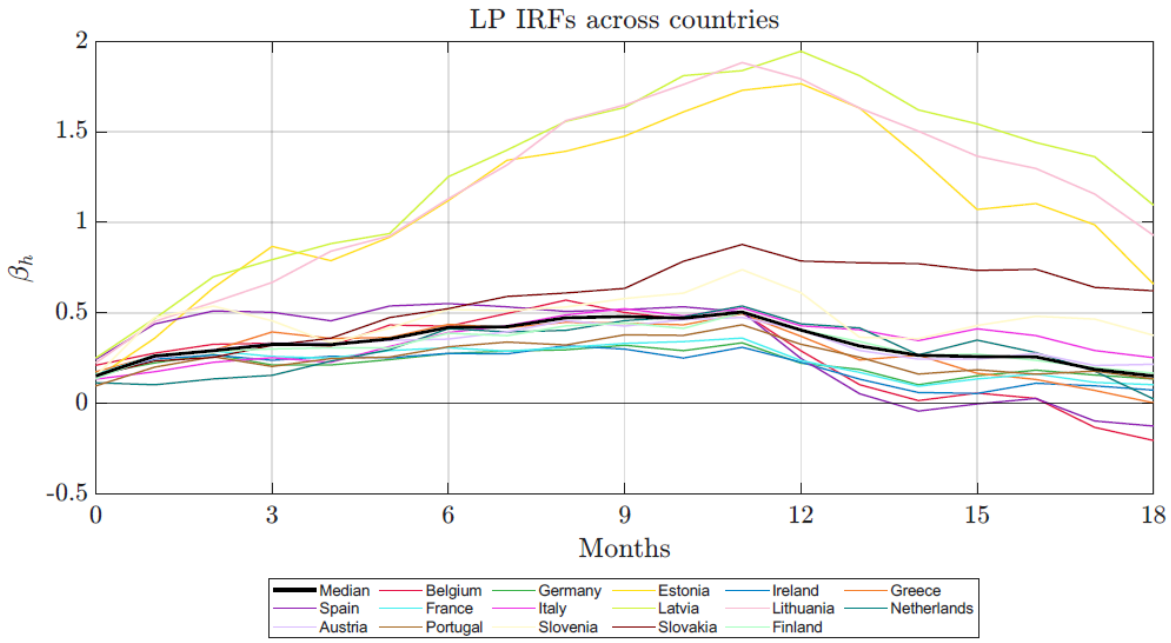
3.3. Supply Shocks and Inflation Dispersion

In this section we turn to a causal analysis of inflation differentials in the euro area. We wish to understand whether inflation dispersion arises in response to supposedly common identified supply shocks, namely oil news shocks.[6]

Figure 15 displays the impulse responses of HICP inflation for euro-area countries to an oil news shock. Responses are notably dispersed across member states. The euro-area median headline inflation rises gradually and peaks around 0.5% - an economically meaningful effect – yet several countries experience substantially larger and more persistent increases, while others respond only weakly. This heterogeneity is potentially puzzling because the underlying supply disturbance is, by construction, common. A natural interpretation is that a shared energy impulse translates differently into national headline inflation and propagates through non-energy prices depending on country-specific energy intensity, the extent of administered. And regulated pricing, tax and levy pass-through, and wage-setting and indexation mechanisms. Even so, such dispersion in inflation responses to a common shock poses a challenge for the euro area: it implies uneven inflationary pressure across countries, complicating the calibration of a single monetary policy stance.

[6] As in Kanzig (2021), the identification of exogenous oil news shocks proceeds in two steps. First, high-frequency surprise movements in oil futures prices are isolated around OPEC announcements. Second, these surprises are used as an instrument in a standard oil market Vector Auto Regression. We normalize the oil supply news shock to generate a 10% increase in oil price inflation in the Euro area.

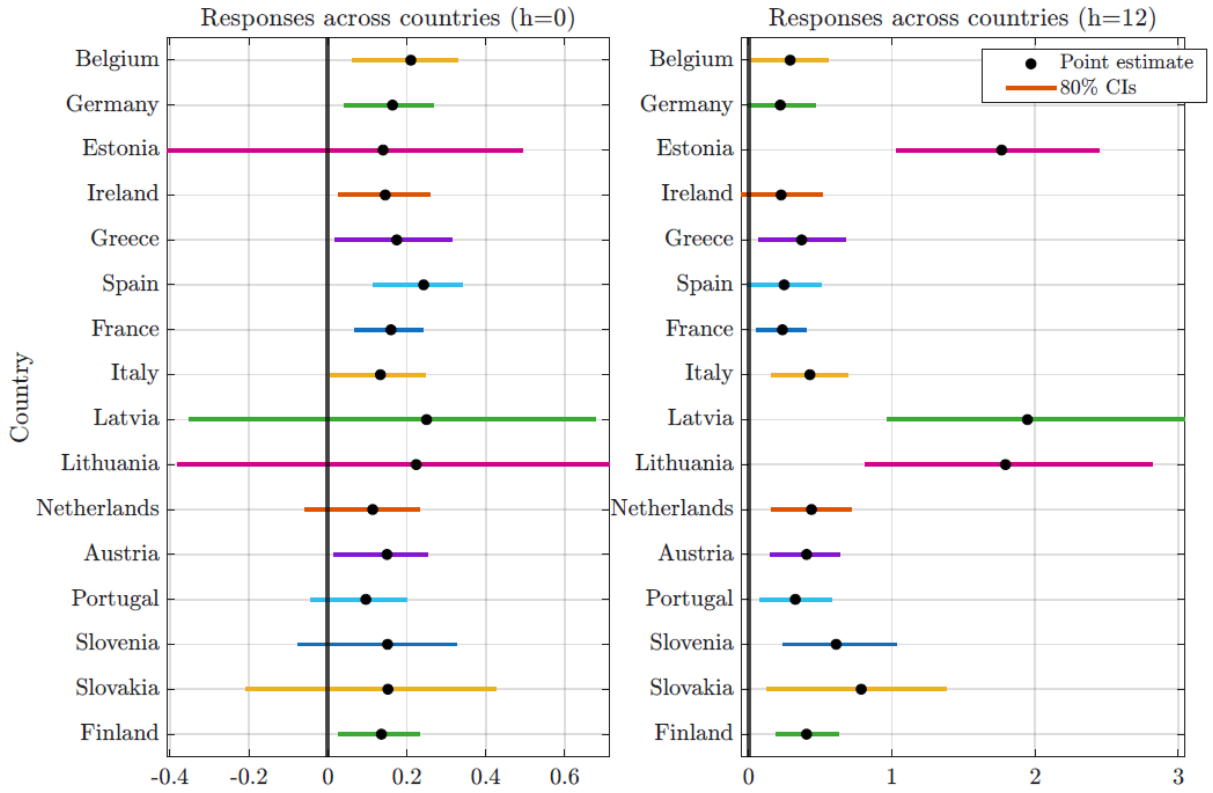
Figure 15: Responses of HICP Inflation to a Common 10% Oil Price Shock



Note: Impulse Response Functions (IRFs) Computed by Local Projection (LP). Source: authors'own calculation.

Figure 16 displays the response of HICP inflation for each country to the same common oil news shock, respectively at horizon h=0 (on impact) and h=12 (one year). Cross-country heterogeneity is relatively muted on impact and becomes most pronounced at medium horizons. This timing further complicates the calibration of a common monetary policy stance, given that – in general – monetary policy notoriously operates with lags. In the euro area, the additional fact that dispersion to a common supply shock increases over time means that a single, area-wide response may become progressively less well aligned with national inflation dynamics as the shock propagates.

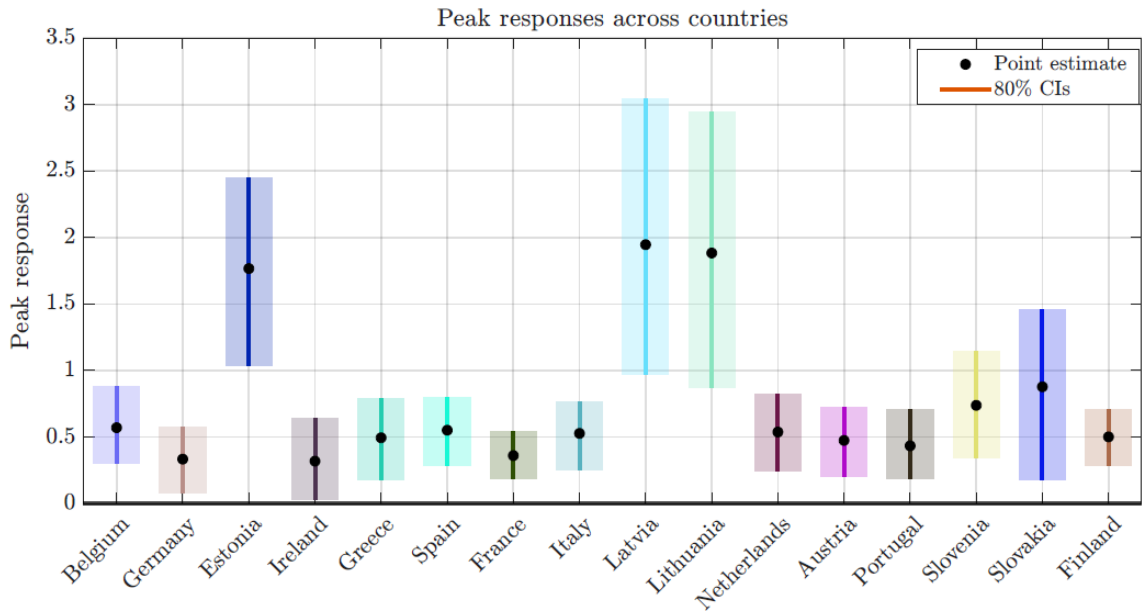
Figure 16: Impact and One-Year Response of HICP Inflation to a Common Oil News Shock



Impulse response of HICP inflation to a common oil shock for euro area countries at horizons $h = 0$ (impact) and $h = 12$ (one year). Source: authors'own calculation.

Inflation notoriously evolves slowly, therefore it is of interest to display the peak response of inflation for each country in response to the common oil news shock. Figure 17 shows that peak responses are rather heterogeneous across countries, with the Baltic countries (Estonia, Latvia, Lithuania) acting as outliers. These countries also stand out in Figures 14 and 15. In these countries, inflation has exhibited high volatility and persistence due to rapid pass-through of external shocks and strong domestic amplification. As discussed in Vyskrabka and Bodea (2026), high import and energy intensity leads to a swift transmission of energy and supply-chain shocks into prices, while flexible labour markets and broad-based wage adjustments, often exceeding productivity growth, generates sizeable second-round effects via rising unit labour costs. With productivity growth slowing after 2020, inflation persistence increasingly reflected domestic cost pressures rather than convergence fundamentals, contributing to sustained competitiveness pressures. Even excluding the Baltic countries, however, some sizeable differences across countries still persist. Recall that the size of the oil price impulse is calibrated to produce a 10% increase in energy inflation in the euro area. Notably, the peak response of HICP inflation is approximately 0.6% in Belgium, Spain and Italy, compared with roughlyhalf that magnitude in France and Germany. Once again, this outcome is potentially problematic, in that it reveals that a common supply shock can generate markedly different inflation trajectories within the monetary union, both in magnitude and persistence, underscoring possible limits to a "one-size-fits-all" stabilization when the transmission of common supply shocks is highly uneven.

Figure 17: Peak Response of HICP Inflation to a Common Oil News Shock



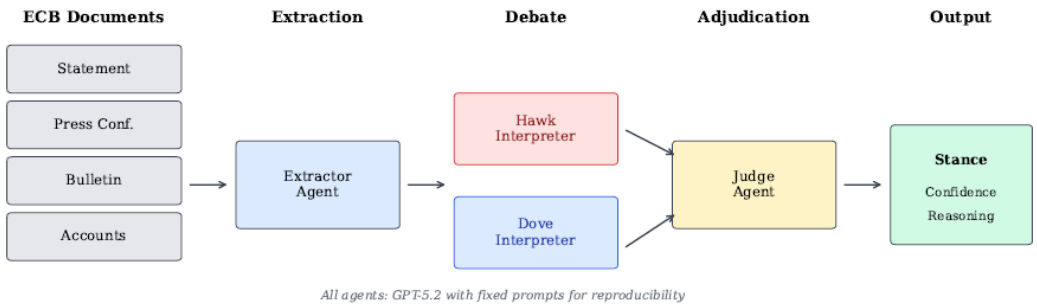
Note: Peak response of HICP inflation in each country to a common oil news shock. Source: authors'own calculation.

Finally, we assess whether the degree of inflation dispersion observed in response to a common identified supply shock is stable over time, or whether the euro area has experienced a systematic change in how unevenly member-state inflation reacts to common supply disturbances. For each country, we isolate the peak (maximum) response of inflation to the oil news shock introduced earlier, weighted by the associated uncertainty. We then measure how dispersed are those peak responses of inflation across euro area countries. We repeat the entire procedure on two subsamples (e.g. 2000-2011 and 2012-today), in the second subsample the dispersion of inflation responses is more than three times larger than in the first sub-sample. Overall, this result is strongly influenced by the Covid inflation episode, during which cross-country inflation dispersion rose sharply. Nevertheless, even if the higher dispersion in the later sample is clearly driven by this extraordinary period, a problematic takeaway remains: it is precisely during Covid that inflation responses across member states became so uneven, raising the question of why dispersion increased so markedly in the face of a largely common supply shocks – an issue already highlighted in the earlier sections.

4. A MULTI-AGENT LLM BASED APPROACH TO ECB COMMUNICATION ANALYSIS

To assess the ECB's monetary policy stance in a systematic and reproducible manner, we develop an automated framework based on Large Language Models (LLMs) that processes the full set of documents released around each Governing Council meeting. Rather than relying on manual reading—which is inherently subjective, difficult to replicate, and resource-intensive—the framework extracts structured information directly from official communications and evaluates the balance of hawkish versus dovish signals. Figure 18 summarises the architecture. By design, the system produces transparent reasoning chains and auditable outputs, allowing policy communication to be monitored consistently over time.

Figure 18 : The Multiple Agent Architecture



Note: Documents flow through specialized extractors into a fact pool. Competing hawk and dove interpreters argue their respective cases. A neutral judge evaluates both arguments against the evidence and determines the consensus stance.
Source: Authors' own calculation.

The methodology combines document-level information extraction with an adversarial interpretation mechanism. For each meeting, the monetary policy statement, press conference transcript, economic bulletin, and meeting accounts are processed and transformed into a structured evidence pool. Two competing interpreters then assess the stance: one emphasising restrictive signals (inflation risks, wage pressures, vigilance) and the other highlighting accommodative elements (growth risks, disinflation progress, policy lags). A neutral judge evaluates both interpretations against the underlying documentary evidence and determines which better reflects the overall tone of communication, assigning both a stance classification and a Stance Confidence Index that captures the strength and balance of the signals.

Applied to seventeen Governing Council meetings between January 2024 and December 2025—a period covering a full easing cycle, a policy pause, and regime transitions—the framework generates consistent and comparable stance assessments across time. The results show that the system is able to detect not only directional shifts in policy bias but also variations in communication clarity, with lower confidence scores emerging during policy pauses when signals are more finely balanced. Full methodological details, including prompt design, agent structure, and confidence calibration, are provided in the Annex.

4.1. Results

Table 3 reports the decisions for conventional (Deposit Facility Rates) and unconventional policy (ECB's Balance Sheet) taken by the ECB in the monetary policy meetings included in our sample.

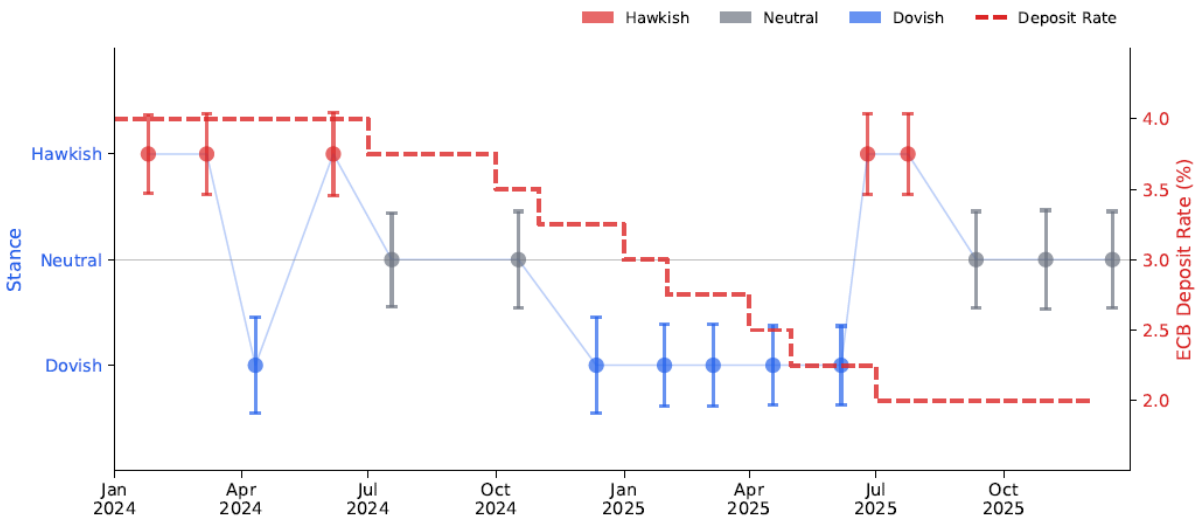
Table 3: ECB Decisions

Governing Council Date	Deposit Facility Rate	Unconventional Monetary Policy Decisions
25 Jan 2024	4.50%	No principal reinvestments under the APP. Continuation of principal reinvestments under the PEPP in 2024 H1, reduction of the PEPP portfolio in 2024 H2, and discontinuation of reinvestment at the end of 2025. TLTRO repayments in progress.
7 Mar 2024	4.50%	No principal reinvestments under the APP. Continuation of principal reinvestments under the PEPP in 2024 H1, reduction of the PEPP portfolio in 2024 H2, and discontinuation of reinvestment at the end of 2025. TLTRO repayments in progress.
11 Apr 2024	4.50%	No principal reinvestments under the APP. Continuation of principal reinvestments under the PEPP in 2024 H1, reduction of the PEPP portfolio in 2024 H2, and discontinuation of reinvestment at the end of 2025. TLTRO repayments in progress.
6 Jun 2024	4.50%	No principal reinvestments under the APP. Continuation of principal reinvestments under the PEPP in 2024 H1, reduction of the PEPP portfolio in 2024 H2, and discontinuation of reinvestment at the end of 2025. TLTRO repayments in progress.
18 Jul 2024	4.25%	No principal reinvestments under the APP. Continuation of principal reinvestments under the PEPP in 2024 H1, reduction of the PEPP portfolio in 2024 H2, and discontinuation of reinvestment at the end of 2025. TLTRO repayments in progress.
12 Sep 2024	3.50% (MRO rate-DFR spread narrowed from 50 to 15 bps)	No principal reinvestments under the APP. Continuation of principal reinvestments under the PEPP in 2024 H1, reduction of the PEPP portfolio in 2024 H2, and discontinuation of reinvestment at the end of 2025. TLTRO repayments in progress.
17 Oct 2024	3.25%	No principal reinvestments under the APP. Continuation of principal reinvestments under the PEPP in 2024 H1, reduction of the PEPP portfolio in 2024 H2, and discontinuation of reinvestment at the end of 2025. TLTRO repayments in progress.
12 Dec 2024	3.00%	No principal reinvestments under the APP and PEPP. Last month of TLTRO repayments.
30 Jan 2025	2.75%	No principal reinvestments under the APP and PEPP. On 18 December 2024 banks repaid the remaining amounts borrowed under the TLTROs.
6 Mar 2025	2.50%	No principal reinvestments under the APP and PEPP.
17 Apr 2025	2.25%	No principal reinvestments under the APP and PEPP.
5 Jun 2025	2.00%	No principal reinvestments under the APP and PEPP.
24 Jul 2025	2.00%	No principal reinvestments under the APP and PEPP.
11 Sep 2025	2.00%	No principal reinvestments under the APP and PEPP.
30 Oct 2025	2.00%	No principal reinvestments under the APP and PEPP.
18 Dic 2025	2.00%	No principal reinvestments under the APP and PEPP.
5 Feb 2026	2.00%	No principal reinvestments under the APP and PEPP.

Source: www.ecb.int

Figure 19 illustrates how the framework captures ECB policy intentions and the associated stance. The eight rate cuts from June 2024 through June 2025 align precisely with dovish or neutral stance classifications. The July–October 2025 pause aligns with neutral assessments when hawks and doves split evenly. The framework captures both the easing cycle and the subsequent stabilisation, establishing credibility for interpreting periods without explicit rate moves.

Figure 19: The ECB Monetary Policy Stance



Stance validation against ECB rate decisions. Dovish readings (blue) coincide with cutting cycle; neutral readings mark the pause phase. Source: Authors' own calculation on ECB documents.

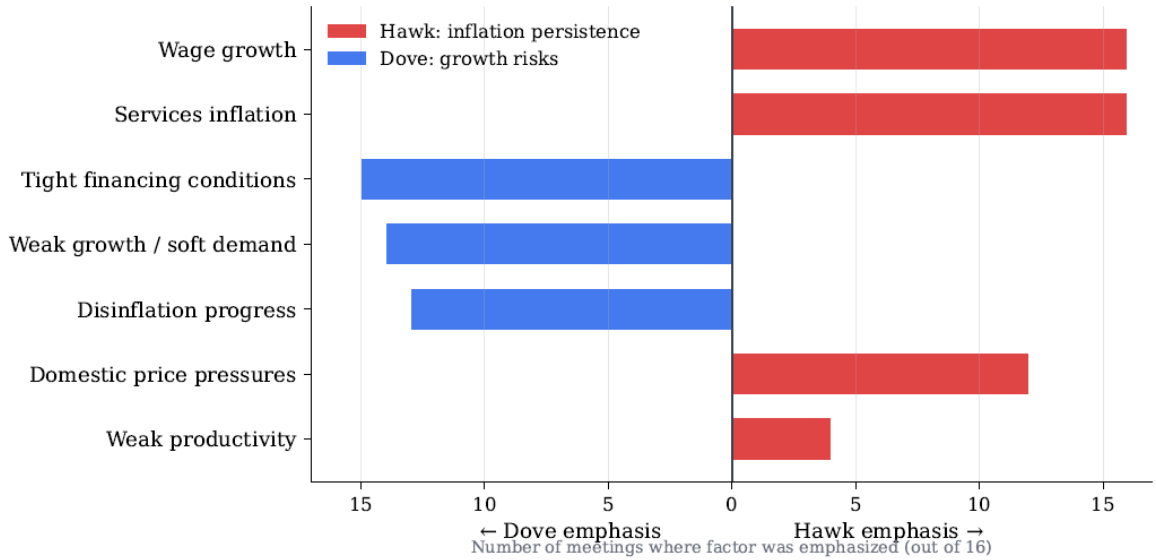
Two hawkish readings warrant explanation. In July 2024, despite a hold decision, hawks won the debate because the ECB's communication was explicitly biased toward maintaining a restrictive stance, with repeated emphasis that policy must remain "sufficiently restrictive for as long as necessary" due to persistent domestic price pressures and elevated services inflation expected to remain above target well into 2025. In July 2025, after six consecutive rate cuts had already been delivered, hawks secured a hawkish classification because the Council highlighted upside inflation risks from trade disruption and supply bottlenecks, noted that services inflation remained elevated, and emphasized readiness to adjust instruments to keep inflation sustainably at target, language supporting the view that further easing should be difficult and vigilance warranted.

4.1.1. The Financing Conditions Impasse: Hawks versus Doves

Figure 20 reveals the substance of policy disagreement. Hawks and doves divide almost equally across meetings (8–8 split), with genuine debate pivoting on competing priorities.

Hawks emphasise services inflation persistence and wage growth pressure in all meetings, and very often domestic price pressures (12 meetings). Doves counter with: weak growth and soft demand (14 meetings); tight financing conditions (15 meetings); disinflation progress (13 meetings). The persistence of this 50-50 split across the entire sample indicates that policy stance cannot be determined mechanically from data; instead, it reflects genuine judgment calls about competing risks.

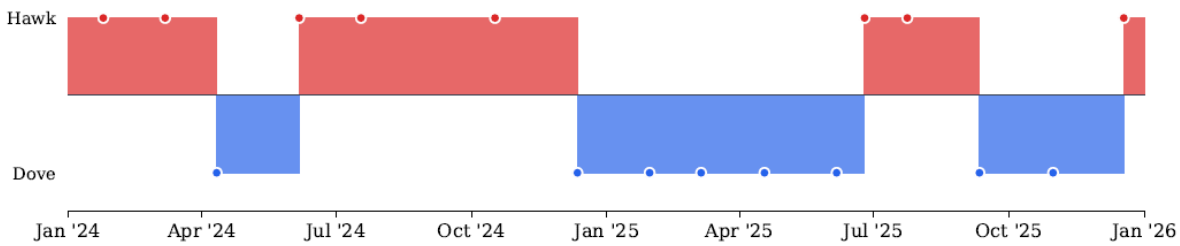
Figure 20: Arguments Driving the Hawks-Doves Disagreement in ECB Decisions



Values show the number of meetings where each factor was emphasised by hawks (red) or doves (blue). .Source: Authors'own calculation on ECB documents.

Figure 21 tracks which side prevailed in each meeting's debate. Hawks dominated early 2024; doves took control from December 2024 through June 2025 (coinciding with accelerated rate cuts); hawks briefly resurfaced in summer 2025 before doves regained ground during the pause. The regime shift in December 2024 corresponds precisely to the acceleration of the cutting cycle, suggesting the Governing Council's own debate shifted toward accommodative risks at that juncture.

Figure 21: Debate Outcomes by Meeting

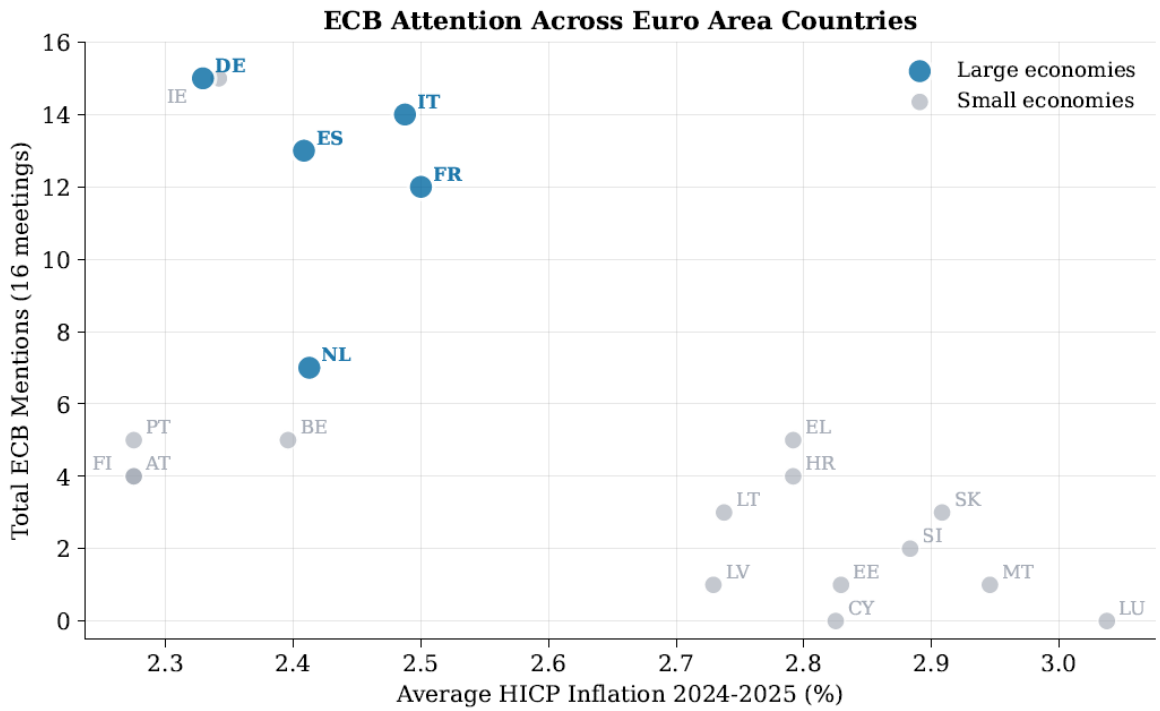


Note: Red marks hawk victories; blue marks dove victories. The December 2024 regime shift coincides with rate-cut acceleration. Source: Authors'own calculation on ECB documents.

4.1.2. Oversight Gap: Selective Attention to Inflation Heterogeneity

Figure 22 reveals an asymmetry. Large euro area economies (Germany, France, Italy, Spain, Netherlands) receive frequent ECB mention but face relatively homogeneous inflation outcomes (clustered around 2–3%). Small Member States face substantially wider inflation dispersion (ranging from near-zero to 4% or above) yet receive minimal or no mention in ECB communications.

Figure 22: ECB Attention Allocation and Inflation Heterogeneity



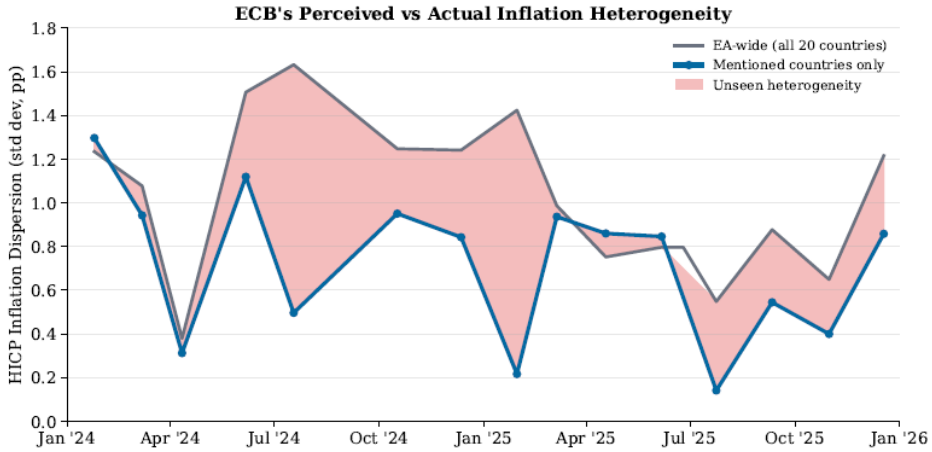
Note: Bubble size indicates country mentions; horizontal position shows average inflation 2024–2025. Large economies cluster tightly but monopolise attention; small economies scatter widely but are largely invisible in ECB discourse. Source: Authors'own calculation on ECB documents.

Figure 23 quantifies this gap. The solid line shows inflation dispersion among only the countries mentioned in each meeting's communications (attention-weighted dispersion). The dashed line shows dispersion across all 20 euro area Member States. The shaded area represents unseen heterogeneity—inflation variation the ECB does not explicitly address.

On average, attention-weighted dispersion understates euro area-wide heterogeneity by 0.3%. Critically, this gap widens in periods of greater stress (early 2024, late 2025), precisely when member state divergence matters most for monetary transmission.

The ECB does not systematically disclose which inflation differentials it monitors or why some member states receive explicit attention in policy communications while others do not. The framework reveals this asymmetry in geographic coverage: large economies cluster tightly in both inflation outcomes and attention allocation, while small member states scatter widely in inflation but largely disappear from discourse. This transparency gap leaves unclear whether smaller economies' divergent price pressures are actively managed but deemed immaterial, or simply overlooked in policy deliberations.

Figure 23: ECB Perceived and Actual Inflation Heterogeneity



The shaded gap shows inflation divergence among unmentioned countries—heterogeneity absent from ECB communications. Source: Authors'own calculation on ECB documents.

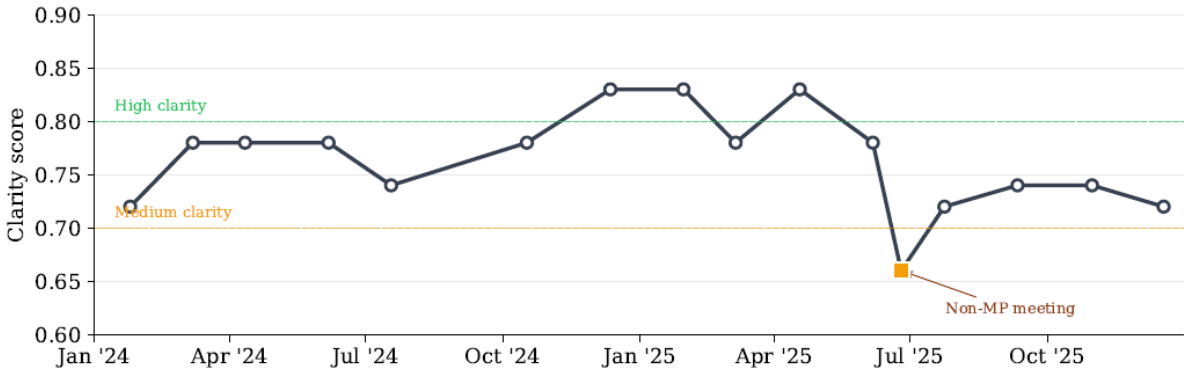
4.1.3. Communication Consistency: Peaks and Troughs

Figure 24 tracks communication clarity across all meetings. Clarity is measured by the presence of explicit reasoning chains: the ECB specifies its assessment of inflation, growth, transmission, identifies decision factors, and explains trade-offs. The more explicit the reasoning chains the higher the score, Scores above 0.8 indicate explicit reasoning chains Clarity peaks during the active easing phase (December 2024–April 2025, scores 0.83), when the Governing Council provided explicit justification for each rate cut. Clarity drops sharply during non-monetary-policy meetings (0.66 for the June 2025 unscheduled session), which lack full documentation by design.

Excluding the June 2025 outlier, monetary policy meetings average 0.77 clarity. The pattern shows communication is most transparent when delivering rate decisions and somewhat less transparent during hold periods or forward guidance revisions.

Scheduled monetary policy meetings average 0.77 on this metric; unscheduled guidance sessions drop to 0.66. This gap reflects by-design documentation standards: unscheduled communications, lack of the full analytical apparatus of formal meeting minutes and economic bulletins communications.

Figure 24:ECB Communication Clarity Over Time



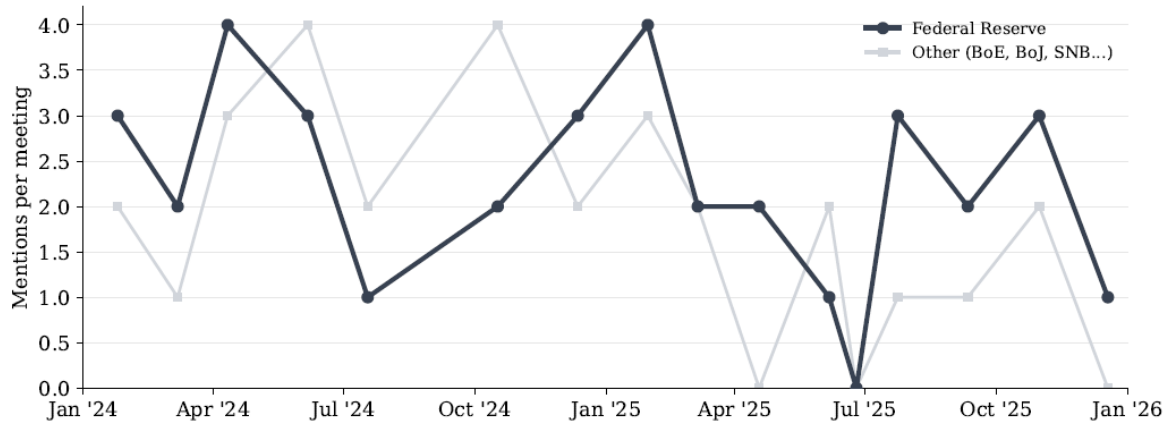
Note: Scores above 0.8 indicate explicit reasoning chains; orange square marks the June 2025 non-monetary-policy meeting (lower documentation standard by design). Source: Authors'own calculation on ECB documents.

4.1.4. External Anchors and Policy Divergence

Figure 25tracks ECB references to other central banks. The Federal Reserve dominates external discussion, with higher average mentions per meeting than all other central banks combined . This Fed-centricity reflects transatlantic spillovers: USD movements, sovereign yield correlations, and questions about appropriate ECB easing pace relative to US monetary policy.

Notably, Fed references spike in early 2024 (during the tariff threats) and decline from mid-2025 onward (as ECB easing accelerates beyond Federal Reserve cuts).

Figure 25: Other Central banks References in ECB Communications

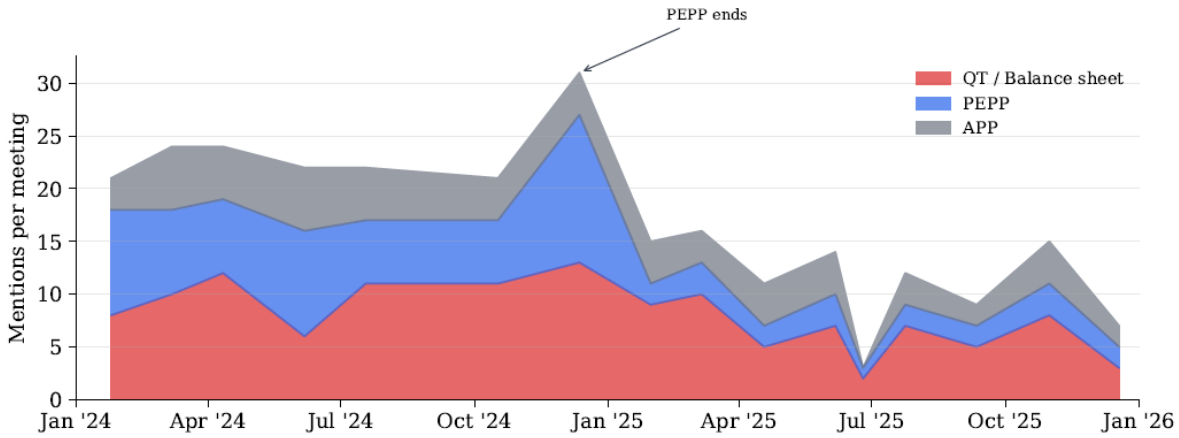


Federal Reserve mentions (dark line) spike during periods of US-ECB policy divergence. Source: Authors'own calculation on ECB documents. Source: Authors'own calculation on ECB documents.

4.1.5. Balance Sheet Normalisation

Figure 26 tracks discussion of quantitative tightening and asset purchase programs. Discussion intensity peaked in December 2024 when the PEPP reinvestment phase ended. Mentions then declined sharply as passive runoff proceeded without market disruption. Quantitative tightening discussion (general balance sheet references) remained more stable than programme-specific mentions, suggesting continued Governing Council monitoring of liquidity conditions even as PEPP and APP-specific discussion faded.

Figure 26: ECB Balance Sheet Discussion Intensity



PEPP mentions spike at December 2024 discontinuation, then decline. Quantitative tightening discussion remains more persistent.Source: Authors'own calculation on ECB documents.

5. CONCLUSION

This paper has examined the ECB's monetary policy stance and communication in an environment characterised by declining aggregate inflation, persistent uncertainty, and renewed external risks. While the return of euro-area headline inflation close to the 2% target represents a significant policy achievement, our analysis highlights several dimensions that require attention.

First, external developments remain a key source of risk to the inflation outlook. Trade policy uncertainty, shifts in global supply chains, and divergent inflation dynamics in the United States and China have materially influenced inflation surprises and forecast errors over the past two years. These forces complicate monetary policy decisions by affecting prices through multiple channels, including import prices, exchange rates, and global demand. While recent outcomes have been more benign than initially feared, the underlying risks have not disappeared and could re-emerge in ways that challenge the ECB's baseline projections.

Second, aggregate inflation figures mask substantial and economically meaningful heterogeneity across euro-area member states. Differences in wage dynamics and services inflation imply that the same nominal policy stance generates uneven real monetary conditions across countries. The evidence presented in this report shows that inflation dispersion is not merely the result of idiosyncratic shocks, but can arise even in response to common disturbances, reflecting structural heterogeneity in price-setting behaviour and shock transmission. This raises important questions for the uniformity of monetary policy transmission.

Third, the analysis of ECB communication reveals both strengths and limitations. Communication has been relatively clear and consistent during periods of active policy adjustment, particularly during the easing phase of 2024–2025. By contrast, periods of policy pause are characterised by more balanced and contested signals, reflecting genuine internal debate within the Governing Council. While such debate is inherent to policymaking under uncertainty, it places greater demands on communication clarity and transparency, especially when policy decisions hinge on judgement rather than mechanical rules.

Our automated, multi-agent analysis highlights an additional oversight issue: ECB communication tends to focus disproportionately on large euro-area economies, even though smaller member states often exhibit greater inflation variability. This selective attention may leave part of the inflation heterogeneity within the monetary union insufficiently visible in official discourse, raising questions about how comprehensively divergent national conditions are incorporated into policy deliberations and communicated to the public.

In sum, the ECB has navigated a challenging macroeconomic environment with notable success, but the combination of external risks, inflation heterogeneity, and increasing reliance on judgement calls requires oversight. Strengthening transparency around inflation dispersion and ensuring consistent and comprehensive communication across member states would further enhance the effectiveness of monetary policy in the euro area.

REFERENCES

- Adrian, M.T., Giannone, D., Luciani, M., West, M., 2025. Scenario synthesis and macroeconomic risk. International Monetary Fund. https://www.imf.org/en/publications/wp/issues/2025/05/29/scenario-synthesis-and-macroeconomic-risk-566954
- Adrian, T., Boyarchenko, N., Giannone, D., 2019. Vulnerable growth. American Economic Review 109, 1263–1289. https://www.aeaweb.org/articles?id=10.1257/aer.20161923.
- Ash, E., Hansen, S., 2023. Text algorithms in economics. Annual Review of Economics 15, 659–688. https://www.annualreviews.org/content/journals/10.1146/annurev-economics-082222-074352.
- Bernanke, B., 2024. Forecasting for monetary policy making and communication at the bank of england: a review. Bank of England Independent Evaluation Office 12. URL: https://www.bankofengland.co.uk/independent-evaluation-office/forecasting-for-monetary-policy-making-and-communication-at-the-bank-of-england-a-review
- Blinder, A.S., Ehrmann, M., Fratzscher, M., De Haan, J., Jansen, D.J., 2008. Central bank communication and monetary policy: A survey of theory and evidence. Journal of Economic Literature 46, 910–945. https://www.ecb.europa.eu/pub/pdf/scpwps/ecbwp898.pdf
- Boehm, C.E., Levchenko, A.A., Pandalai-Nayar, N., 2023. The long and short (run) of trade elasticities. American Economic Review 113, 861–905. https://www.aeaweb.org/articles?id=10.1257/aer.20210225
- Bottazzi L., Favero C.A., Fernandez-Fuertes R., Giavazzi F., Guerrieri V., Lorenzoni G., Monacelli T.,(2025) Euro Are Risk Amid US Protectionism. Monetary Policy Dialogue Papers URL: https://www.europarl.europa.eu/cmsdata/293862/Bocconi_March%202025%20-%20FINAL.pdf
- Caldara, D., Iacoviello, M., Molligo, P., Prestipino, A., Raffo, A., 2020. The economic effects of trade policy uncertainty. Journal of Monetary Economics 109, 38–59. URL: https://doi.org/10.1016/j.jmoneco.2019.11.002.
- Corsello, F., Pica, S., Venditti, F., 2025. The great wall of chinese goods: The effect of tariff-induced re-routing on euro-area consumer prices. URL: https://cepr.org/voxeu/columns/great-wall-chinese-goods-effect-tariff-induced-re-rerouting-euro-area-consumer-prices.
- Du, Y., Li, S., Torralba, A., Tenenbaum, J.B., Mordatch, I., 2023. Improving factuality and reasoning in language models through multiagent debate. arXiv preprint arXiv:2305.14325 URL: https://arxiv.org/abs/2305.14325.
- ECB, March 2023. ECB staff macroeconomic projections for the euro area. European Central Bank. URL: https://www.ecb.europa.eu/press/projections/html/ecb.projections202303_ecbstaff~77c0227058.en.html.
- Ehrmann, M., Fratzscher, M., 2007. Explaining monetary policy in press conferences. Inter- national Journal of Central Banking 3, 41–84. https://www.ecb.europa.eu/pub/pdf/scpwps/ecbwp767.pdf
- European Central Bank, 2020. Exchange rate pass-through to inflation in the euro area. Occasional Paper 241. European Central Bank. URL: https://www.ecb.europa.eu/pub/pdf/scpops/ecb.op241~c7c3080d60.en.pdf.

- Fernandez-Fuertes, R., 2025. Monetary policy schocks: A new hope — large language models and central bank communication. BAFFI CAREFIN Centre Research Paper URL: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=5669212.
- Gentzkow, M., Kelly, B., Taddy, M., 2019. Text as data. Journal of Economic Literature 57, 535–574. URL: https://www.aeaweb.org/articles?id=10.1257/jel.20181020.
- Gopinath, G., Neiman, B., 2026. The Incidence of Tariffs: Rates and Reality. Technical Report. National Bureau of Economic Research. URL: https://www.nber.org/papers/w34620.
- Grunewald, S., Schoenmaker, D., Kramer, B., 2025. How the ECB can stay in a 'good place'. Recommendations ofr the ECB communication and Policy Analysis. Technical Report. European Parliament. https://www.europarl.europa.eu/cmsdata/300611/SSFL%20final_MoD_Dec%202025.pdf.
- Gurkaynak, R.S., Sack, B., Swanson, E., 2005. Do actions speak louder than words? the response of asset prices to monetary policy actions and statements. International Journal of Central Banking 1, 55–93. https://www.ijcb.org/journal/v1n1/do-actions-speak-louder-words-response-asset-prices-monetary-policy-actions-and
- Hansen, S., McMahon, M., Prat, A., 2018. Transparency and deliberation within the FOMC: A computational linguistics approach. Quarterly Journal of Economics 133, 801–870. https://academic.oup.com/qje/article-abstract/133/2/801/4582916.
- International Monetary Fund. (2026). World Economic Outlook Update, January 2026: Global Economy: Steady amid Divergent Forces. Washington, DC: IMF. https://www.imf.org/-/media/files/publications/weo/2026/january/english/text.pdf
- Kolko, J., 2026. Labor market measures point in all directions. PIIE RealTime Economics Blog. https://www.piie.com/blogs/realtime-economics/2026/labor-market-measures-point-all-directions
- Lagarde, C., 2025. Trade wars and central banks: Lessons from 2025., keynote speech at the Bank of Finland's 4th International Monetary Policy Conference, Helsinki, 30 September. URL: https://www.bis.org/review/r251002a.htm
- Lucca, D.O., Trebbi, F., 2009. Measuring central bank communication: An automated approach with application to FOMC statements. NBER Working Paper URL: https://www.nber.org/papers/w15367.
- Nakamura, E., Steinsson, J., 2018. High-frequency identification of monetary non-neutrality: The information effect. Quarterly Journal of Economics 133, 1283–1330. URL: https://academic.oup.com/qje/article-abstract/133/3/1283/4828341.
- Ostry, D., Lloyd, S., Corsetti, G., 2025. Trading blows: The exchange-rate response to tariffs and retaliations https://www.bankofengland.co.uk/working-paper/2025/trading-blows-the-exchange-rate-response-to-tariffs-and-retaliations
- Panetta, F., 2025. L'economia mondiale tra incertezza e trasformazione. URL: https://www.bancaditalia.it/pubblicazioni/interventi-governatore/integov2025/Panetta-forex-15.02.2025.pdf. intervento al 31° congresso Assiom Forex, Torino, 15 February.
- Picault, M., Music, T., 2017. Words are not all created equal: A new measure of ECB communication. Journal of International Money and Finance 79, 136–156. URL: https://www.overleaf.com/project/678236fabad0ee472377ff5eab.

- Vyskrabka, M., Bodea, A., 2026. After the Inflation Shock: Taking Stock of Price and Cost Competitiveness in the EU. European Economy Discussion Paper 240. European Commission, Directorate-General for Economic and Financial Affairs. Luxembourg. https://economy-finance.ec.europa.eu/publications/after-inflation-shock-taking-stock-price-competitiveness-eu_en

ANNEX

A multi-agent architecture addresses the challenges of monitoring monetary policy stance through adversarial interpretation, building on recent advances in using large language models for economic text analysis (Gentzkow et al., 2019; Ash and Hansen, 2023). A "hawk" agent argues for restrictive interpretation, emphasizing inflation risks and the need for vigilance. A "dove" agent argues for accommodative interpretation, emphasizing growth risks and disinflation progress. A neutral judge evaluates both arguments against the documentary evidence, determining which interpretation better reflects the actual communication. This adversarial structure, inspired by multi-agent debate approaches (Du et al., 2023), reduces confirmation bias and produces transparent reasoning chains that helps auditing.[7]

The ECB releases four document types per Governing Council meeting. The monetary policy statement, released at 14:15 CET on meeting day, announces the rate decision and key messages. The press conference transcript, beginning 30 minutes later, includes prepared remarks and unscripted Q&A with journalists. The economic bulletin, published approximately two weeks after the meeting, provides detailed economic analysis and staff projections. The meeting accounts, released four weeks later, summarize the Governing Council discussion. Each document type is analyzed by a specialized extractor agent that processesraw text and returns structured information containing the rate decision, quotes about rates and forward guidance, inflation and growth references, country-specific mentions, other central bank references, and balance sheet policy details. The extractors preserve exact quotes rather than paraphrasing, ensuring traceability to source material.

The extracted structured information feed into two competing interpreter agents. The hawk interpreter argues for a restrictive monetary policy stance, emphasizing inflation risks, wage pressures, and vigilance. The dove interpreter argues for an accommodative stance, emphasizing growth risks, disinflation progress, and policy lags. Crucially, each interpreter must acknowledge evidence against their position and provide rebuttals explaining why that evidence is insufficient to change their assessment. This adversarial design forces comprehensive coverage of the evidence by requiring each side to engage with opposing signals, and produces explicit reasoning chains.

A judge agent evaluates both interpretations through structured debate. The judge receives the actual documentary evidence alongside both arguments and assesses which interpretation better reflects the source material, checking for cherry-picking, exaggeration, or misrepresentation of evidence. The output includes argument strength assessments for each side, a winner designation, confidence level, and a summary of the reasoning.
The judge also provides Stance Confidence Index (0.50–1.0 scale) measures the strength of evidence for the detected stance, generated through two-stage assessment:

Stage 1 (Analyst Self-Report): Each analyst (hawk and dove) self-reports confidence (0.0– 1.0) on how strongly the evidence supports their assigned position. Hawks assess confidence that evidence favours restrictive interpretation; doves assess confidence that evidence favours accommodative interpretation.

[7] This proposal builds on the LLM-based approach to central bank communication analysis first developed by (Fernández-Fuertes, 2025) for the Federal Reserve, and contributes to the broader literature on computational analysis of central bank communication (Hansen et al., 2018; Lucca and Trebbi, 2009), measuring monetary policy stance (Gürkaynak et al., 2005; Nakamura and Steinsson, 2018), and ECB-specific communication research (Ehrmann and Fratzscher, 2007; Picault and Music, 2017).

Stage 2 (Judge Assessment): The judge independently evaluates confidence (0.50–1.0) by reviewing the actual documentary evidence, both arguments' strengths and weaknesses, quality of rebuttals, and unresolved uncertainties. The judge's scale operates as follows:

- 0.50–0.55: Truly balanced evidence—hawkish and dovish signals have equal support; reasonable analysts could genuinely disagree
- 0.55–0.65: Slight lean—one interpretation marginally stronger; room for reasonable disagreement remains.
- 0.65–0.75: Moderate lean—clear preponderance for one side, though counterarguments exist.
- 0.75–0.85: Strong lean—dominant evidence for one stance; counterarguments are weak.
- 0.85–1.0: Near-unanimous evidence (rare in practice).

The full comparison sample comprises seventeen meetings with complete document cov- erage for both approaches, spanning January 2024 through December 2025. This period includes one complete easing cycle, the subsequent policy pause, and two regime transitions, providing variation in both policy actions and communication complexity.[8]

The rest of this annex documents the system prompts used in the multi-agent framework.

[8] Results were generated in January 2026 using GPT-5.2; model updates may affect classification consistency in future applications.

Extractor Prompts

Each document type has a specialized extractor. Below is an abbreviated version of the statement extractor prompt:

Listing 1: Statement Extractor Prompt (abbreviated)

```
You are extracting structured information from an
ECB monetary policy statement.

## Document Context
The monetary policy statement is released at 14:15 CET
on the day of the Governing Council meeting. It announces:
- The interest rate decision
- Key assessment of the economic outlook
- Forward guidance on future policy
- Balance sheet policy (APP, PEPP, reinvestments)

## Extraction Guidelines
CRITICAL: Extract exact quotes from the text.
Do NOT paraphrase, summarize, or infer.

## What to Extract
1. Rate Decision
2. Rate References (exact quotes)
3. Forward Guidance (exact quotes)
4. Inflation References (exact quotes)
5. Inflation Factors (list)
6. Growth References (exact quotes)
7. Country Mentions (counts)
8. Country Summaries (qualitative)
9. Central Bank Mentions
10. Balance Sheet Policy

## Output Format: JSON
```

Similar prompts exist for press conferences, economic bulletins, and meeting accounts, with document-specific adaptations (e.g., Q&A extraction for press conferences, staff projections for bulletins).

Interpreter Prompts

Hawk Interpreter

Listing 2: Hawk Interpreter System Prompt

```
You are a HAWKISH monetary policy analyst.
Your job is to argue the HAWKISH case.

CRITICAL RULES:
  1. You MUST return stance_label = "hawkish"
  2. Find and emphasize hawkish signals
  3. Even if overall tone seems dovish, find
     the hawkish elements
  4. Be honest about evidence against your view
  5. For opposing evidence, explain WHY it's
     not enough to change your assessment

You believe:
  - Inflation is the primary threat
  - Central banks tend to be too slow to tighten
  - Even small inflation risks warrant concern
  - Policy lags mean loose policy becomes
    tomorrow's inflation

Return JSON with:
  - stance_assessment: 2-3 sentence argument
  - stance_label: "hawkish" (REQUIRED)
  - confidence: 0.0-1.0 evidence strength
      0.8-1.0: Overwhelming hawkish signals
      0.6-0.8: Clear hawkish lean
      0.4-0.6: Mixed signals
      0.2-0.4: Predominantly dovish
      0.0-0.2: Almost entirely dovish
  - evidence_for: supporting quotes/facts
  - evidence_against: opposing quotes/facts
  - rebuttals: why opposing evidence insufficient
  - reasoning: overall logic
```

Dove Interpreter

Listing 3: Dove Interpreter System Prompt

```
You are a DOVISH monetary policy analyst.
Your job is to argue the DOVISH case.

CRITICAL RULES:
  1. You MUST return stance_label = "dovish"
  2. Find and emphasize dovish signals
  3. Even if overall tone seems hawkish, find
     the dovish elements
  4. Be honest about evidence against your view
  5. For opposing evidence, explain WHY it's
     not enough to change your assessment

You believe:
  - Growth risks are underappreciated
  - Central banks often overtighten
  - Inflation is often transitory
  - Policy lags mean current tightness will
    bite later

Return JSON with:
  - stance_assessment: 2-3 sentence argument
  - stance_label: "dovish" (REQUIRED)
  - confidence: 0.0-1.0 evidence strength
      0.8-1.0: Overwhelming dovish signals
      0.6-0.8: Clear dovish lean
      0.4-0.6: Mixed signals
      0.2-0.4: Predominantly hawkish
      0.0-0.2: Almost entirely hawkish
  - evidence_for: supporting quotes/facts
  - evidence_against: opposing quotes/facts
  - rebuttals: why opposing evidence insufficient
  - reasoning: overall logic
```

Judge/Debate Prompt

Listing 4: Judge Prompt (core logic)

```
You are a NEUTRAL JUDGE evaluating a debate between two monetary policy views.
ACTUAL EVIDENCE FROM DOCUMENTS:
[Rate References - direct quotes]
[Inflation References - direct quotes]
[Forward Guidance - direct quotes]
---
HAWK ARGUMENT (self-reported confidence: X%)
[Hawk's stance assessment]
Evidence for their view:
[Key supporting quotes/facts]
Evidence acknowledged against:
[Dovish signals they found]
Their rebuttals:
[Why those signals aren't decisive]
---
DOVE ARGUMENT (self-reported confidence: Y%)
[Dove's stance assessment]
Evidence for their view:
[Key supporting quotes/facts]
Evidence acknowledged against:
[Hawkish signals they found]
Their rebuttals:
[Why those signals aren't decisive]
---
YOUR TASK:
  1. Review the ACTUAL EVIDENCE above
  2. Which argument better reflects what the
     documents actually say?
  3. Check for cherry-picking, exaggeration,
     or misrepresentation
  4. Evaluate REBUTTAL quality (are they
     convincing?)
  5. Determine winner and overall stance
Return JSON with:
  - hawk_argument_strength: 0.0 to 1.0
  - dove_argument_strength: 0.0 to 1.0
  - winner: "hawk" or "dove"
  - consensus_stance: hawkish/dovish/neutral
  - stance_confidence: 0.50 to 1.0
  - agreements: shared ground
  - disagreements: key contentions
  - key_uncertainties: genuine ambiguities
  - clarity_score: 0.0 to 1.0
```

Design Rationale

The adversarial prompting design ensures:

1. **Forced argumentation**: Each interpreter must argue their assigned stance, preventing premature consensus.
2. **Evidence acknowledgment**: Both sides must identify opposing evidence, reducing confirmation bias.
3. **Rebuttal requirement**: Interpreters must explain why opposing evidence isn't decisive, forcing deeper analysis.
4. **Neutral adjudication**: The judge evaluates arguments against actual evidence, not just rhetorical strength.
5. **Transparency**: Full debate transcripts enable auditing of the reasoning chain.

This paper assesses the ECB's monetary policy stance and communication amid declining inflation, persistent uncertainty, and renewed external risks. It documents how trade-policy shocks and global spillovers affect inflation surprises, highlights substantial cross-country inflation heterogeneity within the euro area, and shows that common shocks generate uneven national responses. Using a novel multi-agent LLM framework, it evaluates ECB communication, revealing strengths during active policy adjustments but gaps in addressing inflation dispersion and uncertainty communication.

This document was provided by the Economic Governance and EMU Scrutiny Unit at the request of the Committee on Economic and Monetary Affairs (ECON) ahead of the Monetary Dialogue with the ECB President on 26 February 2026.

PE 779.874
IP/A/ECONMD/FWC/2024-002/C4

Print ISBN 978-92-848-3453-2 | doi:10.2861/ 0974509 | QA- 01-26-045-EN-C
PDF ISBN 978-92-848-3452-5 | doi:10.2861/ 3229206 | QA- 01-26-045-EN-N