Sectoral Inflation Dynamics in Europe

Evidence from Monthly HICP Data (November 2024 – October 2025)

_____

Introduction

Inflation dynamics often differ substantially across consumption categories, reflecting heterogeneous cost structures, regulatory frameworks, and demand elasticities. In particular, sectoral inflation plays a crucial role in understanding short-run price persistence and cross-country divergence within the European Union. While aggregate inflation indicators provide a broad overview, disaggregated price indices offer more precise insights into the underlying drivers of inflationary pressures.

This paper analyses short-run sectoral inflation dynamics across selected European countries using monthly Harmonised Index of Consumer Prices (HICP) data published by Eurostat. The focus is on comparing price level trends and cumulative inflation across key consumption categories, with particular attention to food, energy, housing, transport, and services. By examining sector-specific price movements, the analysis highlights heterogeneity in inflation patterns that may be relevant for policy evaluation and cross-country comparison.
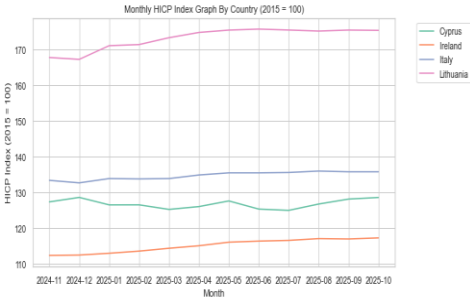
Data and Methodology

The analysis uses monthly HICP data obtained from Eurostat. All series are expressed as index values with a common base year (2015 = 100), ensuring cross-country comparability. The sample covers the period from November 2024 to October 2025 and includes four European countries: Cyprus, Ireland, Italy, and Lithuania.

The HICP measures changes in price levels rather than nominal expenditures or consumption quantities. Therefore, the analysis focuses exclusively on price dynamics. For each consumption category, two indicators are examined. First, monthly index levels are used to analyse short-run price trends and relative price levels across countries. Second, cumulative inflation over the sample period is computed as the percentage change between October 2025 and November 2024. Summary statistics, including mean, minimum, maximum, standard deviation, and range, are reported for selected key sectors. This study was conducted as an independent self-initiated project and does not form part of any supervised coursework.
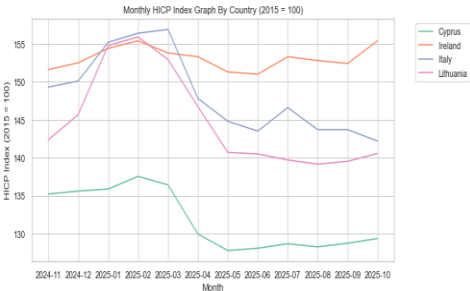
Sectoral Price Level Trends

Figure 1 illustrates monthly HICP index levels for food prices across the selected countries. Food prices exhibit relatively smooth dynamics over the sample period, with noticeable differences in price levels across countries. While all countries show moderate upward trends, cross-country gaps remain persistent, suggesting structural
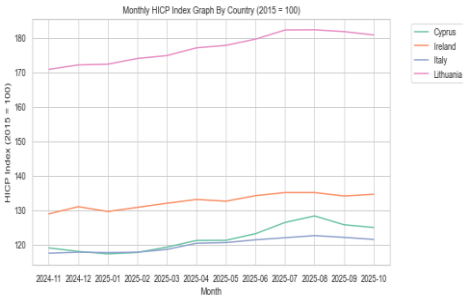
differences in food price formation.

Figure 2 presents monthly HICP index levels for energy prices. In contrast to food, energy prices display substantially higher volatility and stronger short-run fluctuations. The dispersion between countries is more pronounced, indicating heterogeneous exposure to energy price shocks and differences in energy market structures. These results underline the importance of sectoral analysis, as aggregate inflation measures may mask such variability.

Service prices, shown in Figure 5, exhibit relatively stable dynamics over time. Although price levels differ across countries, month-to-month changes are modest compared to energy and food. This pattern is consistent with the higher degree of price rigidity typically observed in service sectors.

Cumulative Inflation Comparison

To facilitate cross-country comparison, cumulative inflation rates over the full sample period are presented in Figures 3 and 4. Figure 3 compares cumulative food price inflation between November 2024 and October 2025. While all

countries experience positive cumulative inflation, the magnitude varies, indicating differences in domestic cost pressures and market conditions.
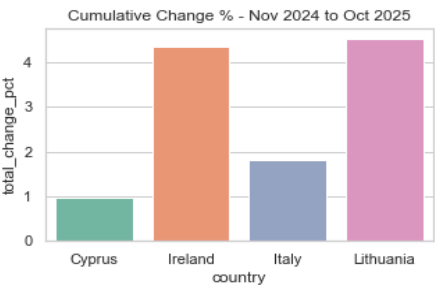

Cumulative Change % - Nov 2024 to Oct 2025

Figure 4 shows cumulative inflation in the energy sector. Energy prices record the largest cumulative changes and the greatest dispersion across countries. In some cases, cumulative energy inflation exceeds that observed in other sectors by a wide margin, highlighting energy as a key driver of short-run inflation volatility during the sample period.

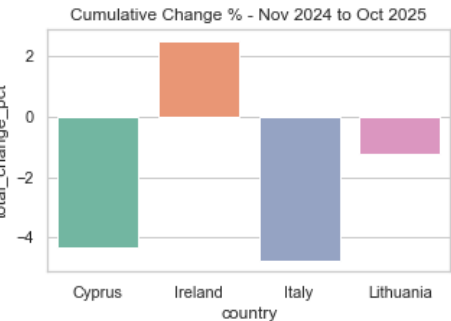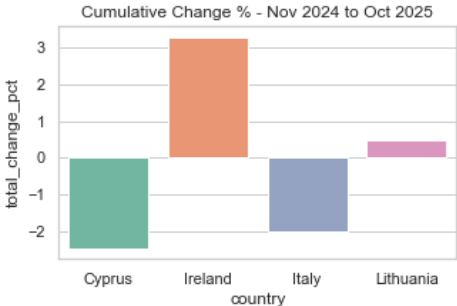Cumulative Change % - Nov 2024 to Oct 2025

Figure 6 presents cumulative inflation for housing prices. Housing inflation appears more moderate and stable compared to energy, although differences across countries remain evident. These findings suggest that housing prices contribute to inflation persistence rather than short-term volatility.

Cumulative Change % - Nov 2024 to Oct 2025

Summary Statistics

Table 1 reports summary statistics for five key sectors: food, energy, services, housing, and transport. The results confirm substantial heterogeneity in both price levels and volatility across sectors and countries. Energy prices exhibit the highest standard deviation and range, reflecting strong short-run fluctuations. In contrast, services and housing show lower volatility, consistent with greater price stickiness. Transport prices fall between these extremes, displaying moderate variability over the sample period.

	country	Lithuania	Italy	Ireland	Cyprus
Energy	min	139.15	142.2	151	127.77
	std	6.32	5.3	1.47	3.91
	mean	144.87	148.35	153.1	131.78
	max	155.91	156.9	155.4	137.54
	delta	16.76	14.7	4.4	9.77
Services	min	170.81	117.5	128.9	117.31
	std	4.24	1.98	2.14	3.78
	mean	177.14	120	132.59	121.87
	max	182.31	122.6	135.1	128.32
	delta	11.5	5.1	6.2	11.01
Food	min	167.15	132.6	112.3	124.9
	std	3.09	1.13	1.87	1.27
	mean	173.08	134.63	115.02	126.73
	max	175.62	135.9	117.2	128.53
	delta	8.47	3.3	4.9	3.63
Transporting	min	137.6	122.4	118.1	108.03
	std	2.13	0.86	2.04	2.46
	mean	140.66	123.5	122.62	110.56
	max	144.53	125.3	125.3	115.77
	delta	6.93	2.9	7.2	7.74
Housing	min	159.15	141.2	161	139.37
	std	3.46	3	1.43	2.65
	mean	162.39	144.48	163.2	142.26
	max	168.38	150.4	166.3	145.5
	delta	9.23	9.2	5.3	6.13

Conclusion

This paper provides a short empirical analysis of sectoral inflation dynamics in selected European countries using monthly HICP data. The results reveal pronounced differences across sectors, with energy and food prices driving short-run inflation volatility, while services and housing exhibit more stable price behaviour. Moreover, cross-country dispersion remains significant across most sectors, underscoring the importance of disaggregated inflation analysis. These findings highlight the value of sectoral HICP data for understanding inflation dynamics and for informing policy discussions. Future research could extend the analysis to a longer time horizon or incorporate additional countries to further explore structural determinants of sectoral inflation differences.