



Box E:

QB 3 – July 2022

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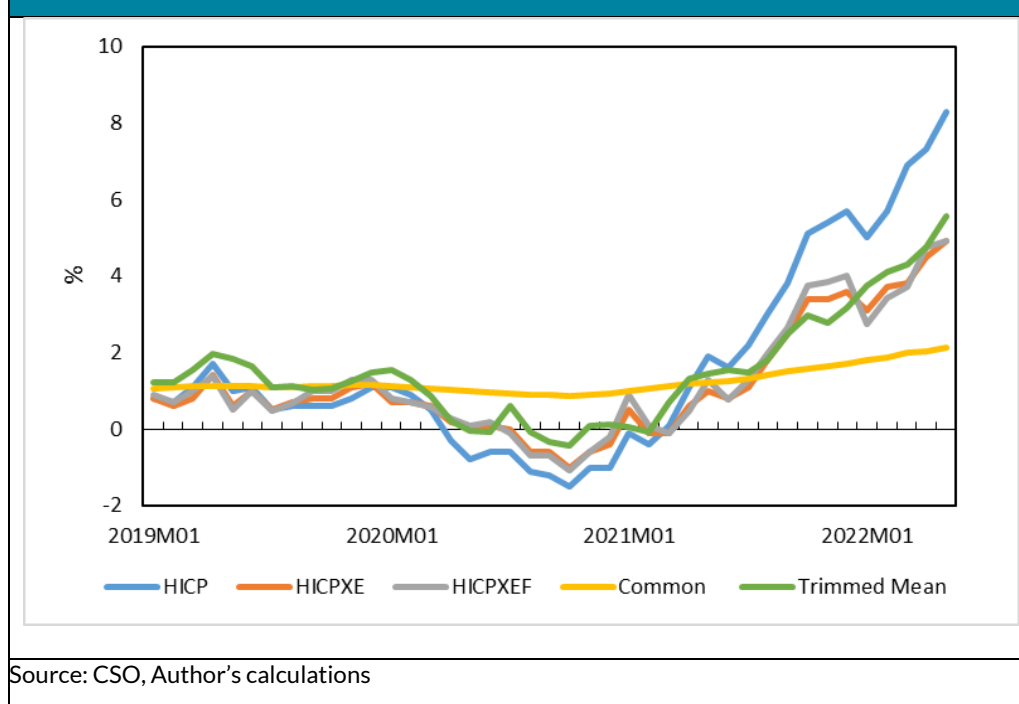
Developments in the underlying inflation trends – have sector specific shocks become broader?

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This Box builds on Box E in *Quarterly Bulletin 1 2022* that looked at a measure of underlying inflation known as common inflation. We present updated estimates of core, trimmed and common inflation for Ireland and consider whether increases in energy and food prices are broadening to other categories of consumer goods and services.

Figure A shows estimates of underlying inflation for Ireland for the 2019 to 2022 period.

Figure 1: Measures of Inflation 2019-2022



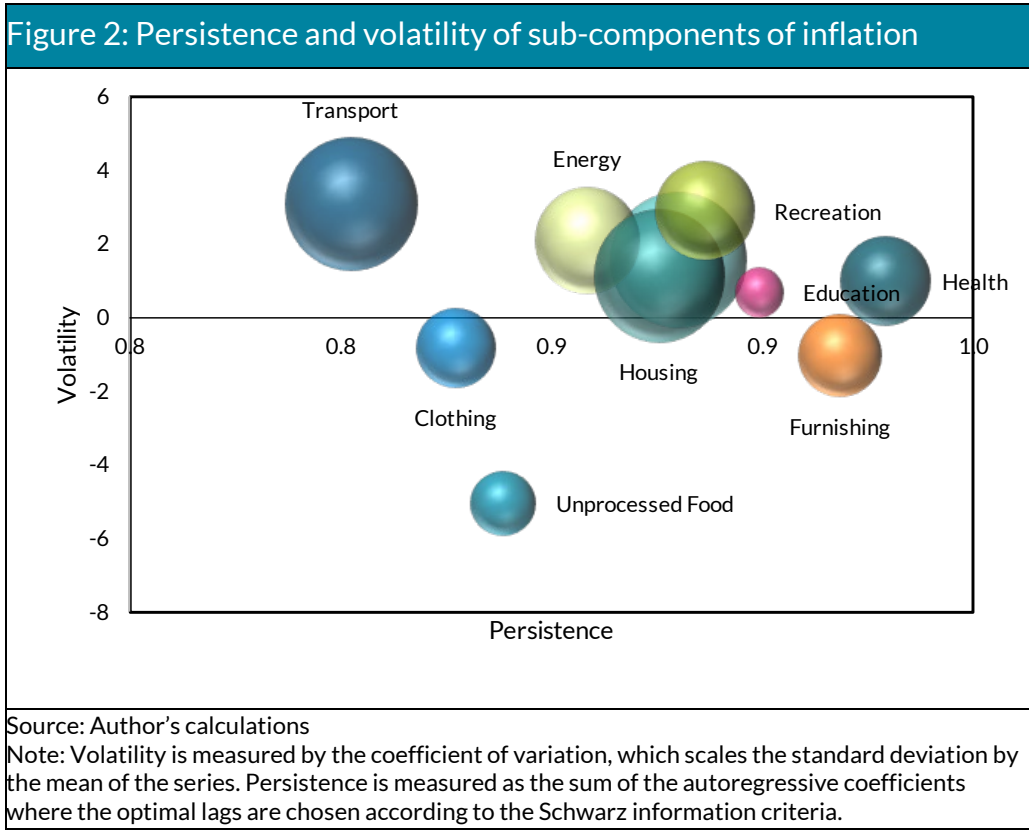
Source: CSO, Author's calculations

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² Monetary Policy Division



The most common estimate of underlying inflation is core HICP inflation, which permanently excludes the most volatile components of food and energy. Figure 1 indicates that inflation excluding energy (HICPXE) and inflation excluding food and energy (HICPXE) increased to 4.9 per cent in May 2022. This measure of underlying inflation could be indicative that price pressures are broadening. Traditionally, components of inflation that exhibit high volatility also tend to be less persistent (Figure 2). Volatility in inflation can sometimes be attributable to temporary factors that may not affect the medium-term inflation outlook. Swings in energy and food prices can be short-lived and reflect temporary factors like mechanical problems in pipelines or adverse weather that could quickly reverse and are not general inflationary (or deflationary) trends. In the present situation, however, the increase in energy and, to a lesser extent, food prices has been more protracted than previously anticipated. These measures of core HICP inflation – excluding energy and excluding food and energy – may still include the effect of other transitional effects not in the food and energy categories. One such possibility is base effects related to low inflation experienced during the pandemic. It is useful, therefore, to examine a range of underlying measures to gauge changes in the medium term inflation outlook.



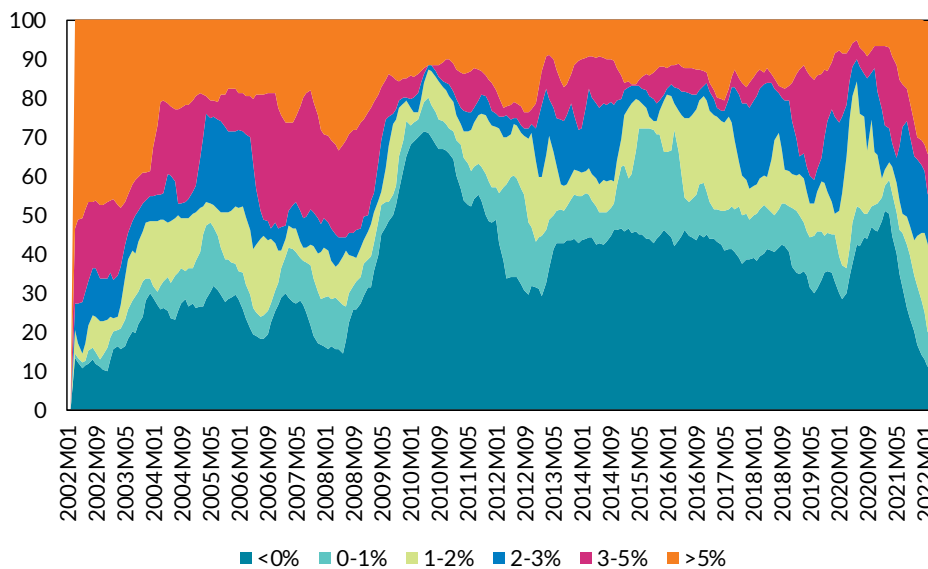
Other measures of underlying inflation use temporary exclusion methods like the trimmed mean. Large temporary outlying fluctuations can occur in sub categories of inflation that may be unrelated to



broader macroeconomic developments that can impact headline inflation. Trimmed means that exclude the outlying fluctuations may give a better sense as to broad-based movements. These measures offer more flexibility than the core measures as they can abstract from large one-off price changes in items that are traditionally non-volatile. We also present estimates of the trimmed mean (Figure 1). This is the average rate of inflation after trimming away a certain percentage of the distribution of price changes at both extreme ends of the distribution, in this case the 30 per cent trimmed mean. This measure also shows an increasing average trend during 2021 and 2022, and stood at 5.6 per cent in May 2022.

Related to the trimmed mean concept, Figure C presents a weighted distribution of price changes across sub-indices of the HICP at a more disaggregated level over time. Each area in the figure denotes a percentage share of the consumer basket with year-over-year inflation rates falling in the specified intervals. In the latest months, a shift towards the higher rates of inflation is evident, with rates over 3 per cent representing 63 per cent of the consumer basket on average. This suggests there has been a broadening in the range of consumer goods and services experiencing higher inflation rates, but not on an unprecedented scale.³ The lower rates of inflation are now a minority in the basket of HICP goods and services.

Figure 3: The proportion of the overall consumption basket seeing price rises greater than 3 per cent has increased to 63 per cent in recent months



Source: CSO and Central Bank of Ireland calculations

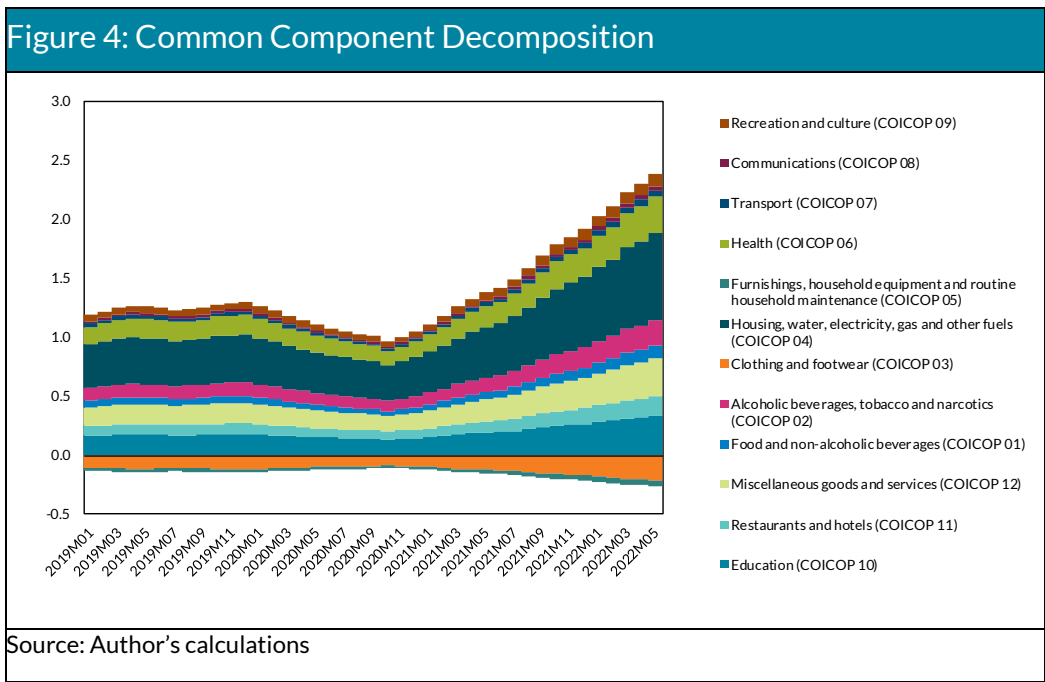
Note: Chart shows the proportion of the HICP basket by inflation pace.

³ Prior to 2009, the share of sub-aggregates with inflation rates above 2 per cent is on average 59 per cent.



We also present updated estimates of common inflation, building on the methodology presented in Nir, Haberkorn, and Cascaldi-Garcia (2021) and discussed in previous *Bulletins*. Taking on board the latest inflation data for May 2022, the common component of inflation is estimated to be 2.1 per cent⁴. This compares to a common inflation measure of 1.1 per cent at the end 2021 and shows that the common component estimate started to trend upwards since around the middle of 2021 (Figure 1). This increase in the common component measure suggests that the post-pandemic environment and Russian invasion of Ukraine are having knock-on effects on underlying inflation in Ireland, not just headline inflation.

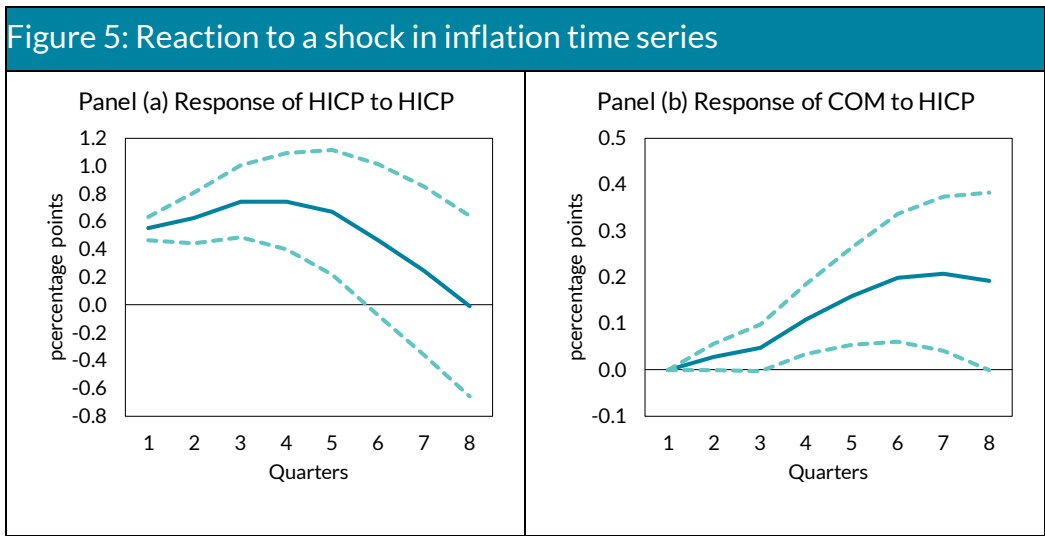
Figure 4 shows a decomposition of the common component into the contributions of each broad category. The main driver behind the recent upward trend is Housing, water, electricity, gas and other fuels (COICOP 04), which contributed 0.7 percentage points (or 35 per cent) to the common component in May 2022. This provides evidence that higher energy prices are feeding through to underlying inflation and highlights one of the advantages of the common component over exclusion-based measures of underlying inflation, such as core inflation, that exclude energy on an a priori basis. Miscellaneous goods and services (COICOP 12), Education (COICOP 10), and Health (COICOP 06) each contributed 0.3 percentage points (or a total of 45 per cent) to the common component in May 2022. Two categories made small negative contribution; namely, Clothing and footwear (COICOP 03) and Furnishings, household equipment and routine household maintenance (COICOP 05).



⁴ We focus here on the aggregated version of the common inflation measure, which uses the 12 category 2 digit COICOP division of the HICP.

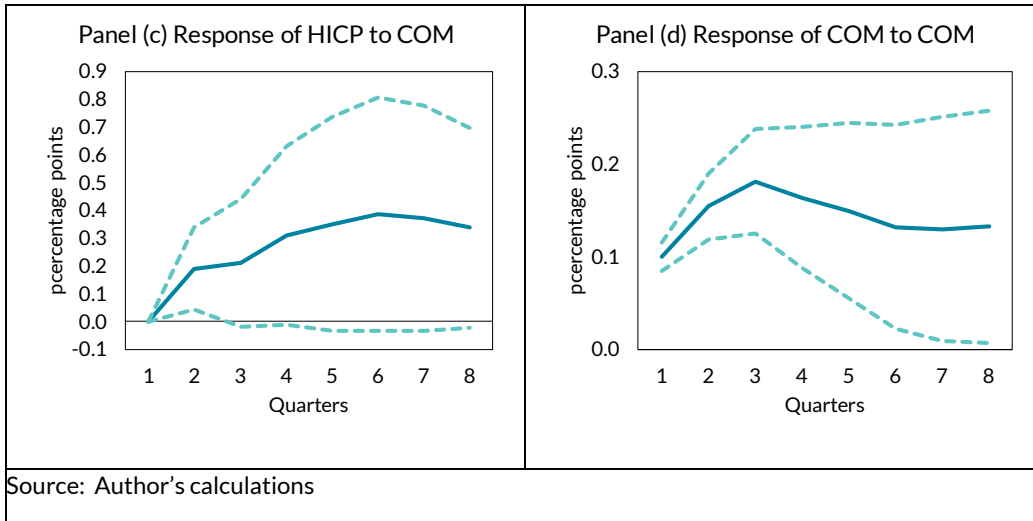


To examine the relationship between the HICP and common component, we estimate a bivariate VAR model and examine how each variables responds to a shock. This allows us to assess the dynamic properties of both series, and whether there is some relationship between them.⁵ Figure 5 presents the results.⁶ In response a shock to HICP, there is an immediate jump in HICP with the peak effect occurring after about 3-4 quarters. HICP returns to the baseline after about 7-8 quarters (see panel A). The common component reacts to a shock to HICP with a lag and peaks around 6-7 quarters later. While the common component increases by less than the shock to HICP, the effect is more persistent, with the common component remaining above the baseline after 8 quarters (see panel B). In the case of a shock to the common component, both HICP and the common component increase and remain above the baseline after 8 quarters (see panels C and D). In summary, there are three key points (i) HICP is more responsive to shocks, particularly in the shorter run, (ii) the common component reacts more slowly with a smaller peak effects, and (iii) shocks have persistent effects on the common component. These simple statistical properties highlight the medium term risk to the underlying inflation outlook.

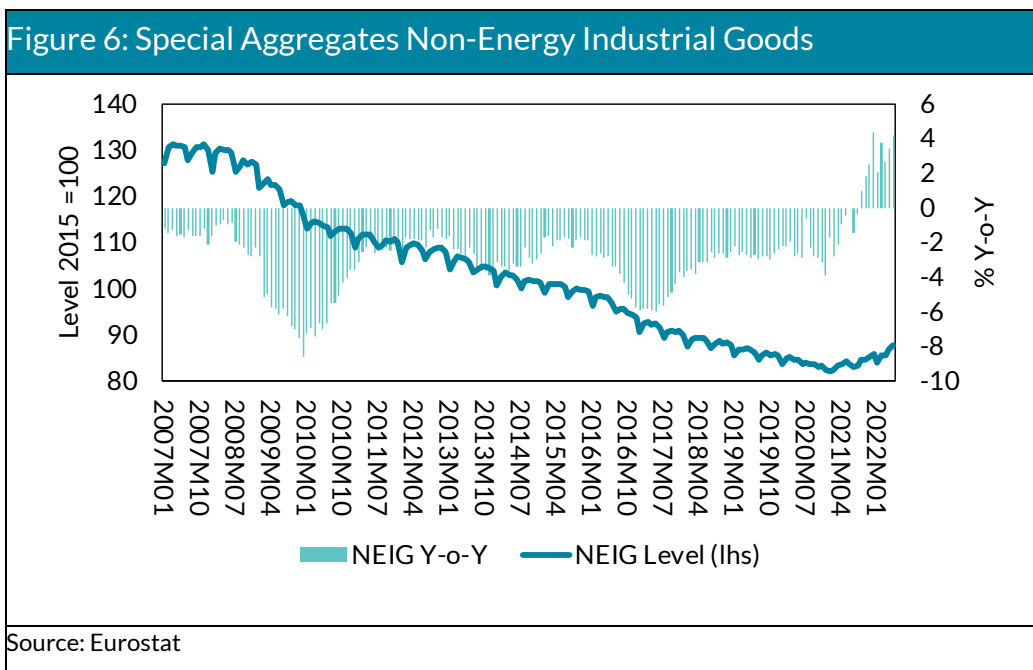


⁵ Note that this is a statistical model and not structural economic model but is useful in examining the inherent properties of the time series. These findings are consistent using a quarterly VAR with 4 lags and a monthly VAR with 14 lags.

⁶ Confidence intervals are plus/minus 2 standard deviations.



Examining different selected categories of goods within the HICP can also give an indication as to whether price increases are being observed across a broader range of goods and services. In particular, the Special Aggregates HICP category Non-Energy Industrial Goods (NEIG) is of interest. This sub-component contains a wide spectrum of consumer goods including footwear and clothing, furniture, large and small household appliances, electronic goods, cars and recreational equipment. This category of goods has experienced a long pronounced price decline in Ireland, evident from the decline in the index in Figure 6. In Q4 2021, however, the year-year rate for NEIG turned positive for the first time in almost two decades, reaching its highest recorded rate of 4.5 per cent in May 2022. This points to a more general rise in goods prices across a range of different products.





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Taken together, the range of measures of inflation presented in this Box – the core, trimmed, common, NEIG and distribution of indices with high rates of inflation – all suggest that underlying inflationary pressures are increasing, with inflation becoming more persistent and widespread over recent months. It should be noted that these underlying measures of inflation are largely statistical in nature and should be supplemented with analysis of the underlying macroeconomic forces driving these developments, presented in the main text.