National Competitiveness and Productivity Council
Bulletin 23-2 Understanding Recent Inflationary Dynamics in Ireland

- After peaking in October 2020 at 9.2%, Ireland's CPI currently stands at an annual change of 5.8% in July 2023. Looking at producer prices, by June 2023, Ireland's Producer Price Index (PPI) had fallen 3.1% year-on-year in contrast to the PPI of the US, UK, and EA over the same period.
- The main drivers of overall inflation are observed in the categories of energy, housing, and food costs.
- Although forecasts predict that levels of inflation will ease over the coming years, external factors such as climate change and the ongoing war in Ukraine may mitigate the rate at which inflation moderates.
- Tightening monetary policy aims at reducing inflation both by dampening demand via the increased cost of borrowing and setting long-term expectations. These rate rises, combined with an increasing number of customers re-setting their mortgages at higher interest rates, will see many households facing increased mortgage costs.

OVERVIEW

In its recently published *Scorecard*[1] report (NCPC, 2023), the NCPC observed that Ireland's low inflation rate over the past decade had contributed to reducing Ireland's relative price level, which has been historically high. However, since 2021, as inflation has risen to record levels in most countries, Ireland can no longer rely on this lower inflation rate to bring down its relative price levels.

Inflationary pressures remain significant. The consumer price index (CPI) rose by 5.8% in the 12 months to July 2023, the twentieth consecutive month where the annualised increase has been at least 5% (following a long period of low inflation from 2012 to 2021). This has been accompanied by a significant fiscal response as the Government has responded to increasing costs with a wide array of supports to both households and businesses.

While still elevated, the rate of inflation has fallen by one third from a peak of 9.2% in October 2022. The available data would suggest that inflationary pressures have begun to ease, both in Ireland and internationally. This change reflects a variety of factors[2], including a feed-through from falling prices on global markets and the impact of domestic competition (as sellers strive to maintain, or grow, market share). The latter is reflected in the recent, and well-publicised, move to reduce grocery prices in the Irish retail sector.

Given the current high and sustained level of upward price pressures, and what these price pressures mean for consumers, enterprises, and Government, this Bulletin endeavours to explore movements in both the CPI and the Producer Price Index (PPI) over recent years. It explores recent inflationary trends in the PPI and the CPI to look at how both businesses and consumers are affected, and it looks at the relationship between these measures.

We look at the PPI for a range of economies to explore differences in trends in recent years, paying particular attention to the PPI facing the food manufacturing sector. In the case of the CPI, we identify the drivers of change and then analyse the change in the category weights to identify those items that have recently acquired greater importance in the index.

PRODUCER PRICE INDEX

The PPI[3], measures the average movements of prices received by domestic producers for goods[4] between one time period and another. This is a very useful economic indicator which captures price movements for goods prior to the wholesale or retail level[5]. Figure 1 below shows developments in the industrial PPI for Ireland, the broader Euro area (hereafter: EA), the UK, and the US from 2019-2023.

Ireland's PPI fell at a faster rate than the EA, UK and the US following the impact of COVID-19, before rising again

[1] Ireland's Competitiveness Scorecard 2023

[2] Technical measurement factors will also have played some role here (see: below).

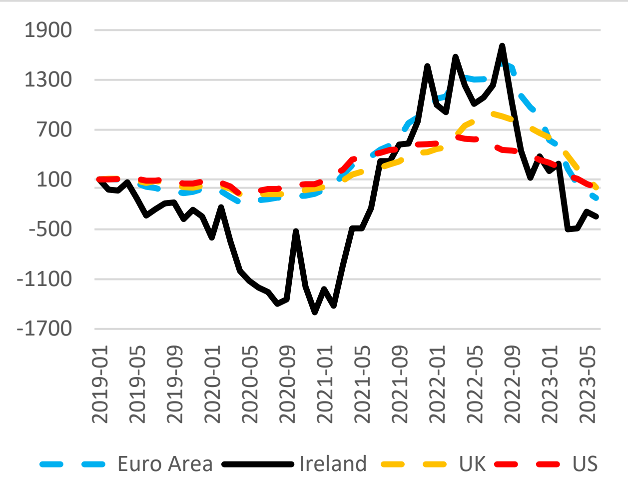
[3] The CSO's Producer Price Index release was previously known as the Wholesale Price Index (WPI). The terms PPI was adopted during 2021.

[4] Eurostat Industrial PPI tracks the trading price of industrial products.

[5] Handbook on industrial producer price indices (PPI) - Products Manuals and Guidelines - Eurostat (europa.eu)

in early-mid 2021. Ireland's PPI started to fall again in mid-2022 and by May 2023 had fallen 2.6% year-on-year. By contrast, the PPI rose in the US, UK, and EA over the same period.

Figure 1. Changes in Industrial PPI for Ireland and selected jurisdictions (Index 2019 = 100), January 2019 – June 2023



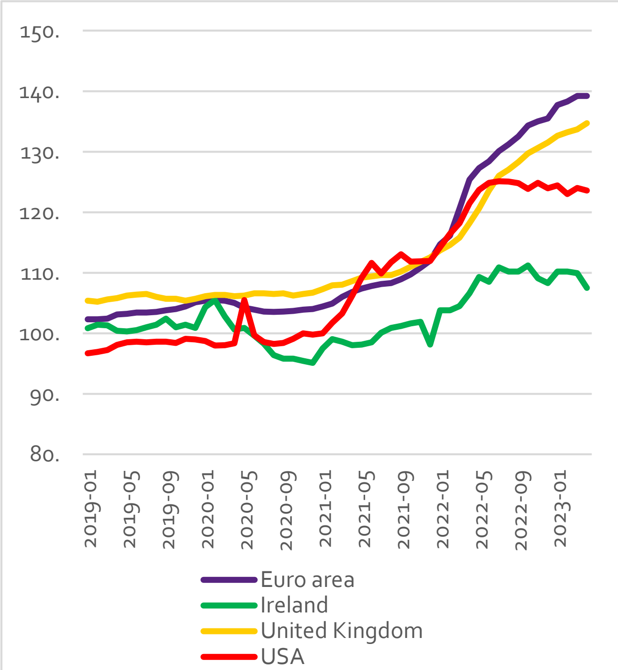
Source: Eurostat, Office for National Statistics and U.S. Bureau of Labour Statistics

Manufacture of food products

From the perspective of consumers as well as producers, one of the most obvious examples of inflation is via food prices. From June 2021 to May 2023 PPI in the manufacturing of food products increased by 8.2% in Ireland whereas in the EA, UK, and the USA these prices increased by 31.0%, 25.3% and 12.0%, respectively.

There was a significant rise in PPI for the manufacturing of food products in Ireland between late 2021 and 2022. This increased by 13% between December 2021 and October 2022 (peaking at an index of 111 in October 2022). From this peak in October 2022, producer prices have been slow to reduce, falling by less than 4% through to May 2023. It is important to note that domestic PPI is not the only factor at play here. Ireland, as a longstanding member of the EU and the EA, is dependent on the broader European market for certain key imports, such as energy and food. Consequently, the PPI in both the EA and the UK are of high importance as increases to this index will feed through into prices (via the cost of imports).

Figure 2. Changes in PPI in Manufacture of Food Products for Ireland and Selected Countries (Index: 2015=100)



Source: Eurostat, Office for National Statistics and U.S. Bureau of Labour Statistics

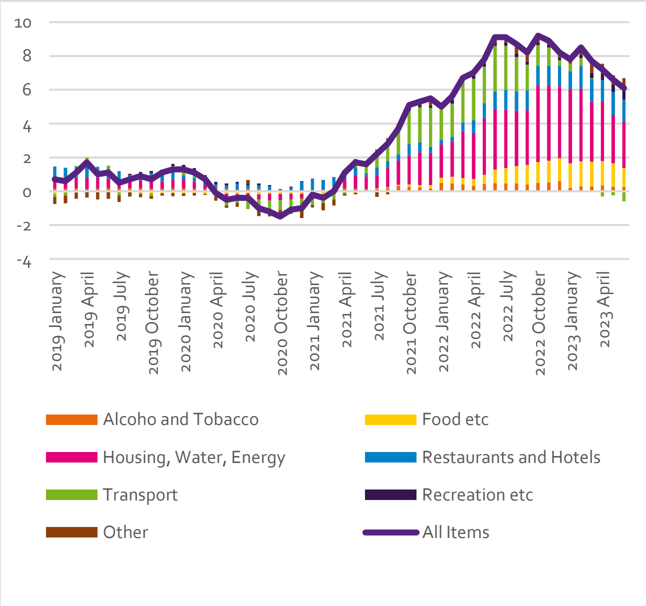
CONSUMER PRICE INDEX

The CPI is the official measure of inflation in Ireland. It is a price index rather than a cost-of-living index (i.e. it does not measure changes in direct taxation or social insurance contributions)[6]. The CPI measures the overall change in the price for a basket of goods and services in the economy, including mortgage interest costs, rents, food, cars, education, and recreation. It does this by collecting approximately 53,000 prices every month and comparing these to the corresponding prices from the previous month(s). While a level of in-person data collection continues, the CSO is now collecting more price data from retailers in electronic formats.

The rise in inflation commenced in 2021 as the effects of the COVID-19 pandemic unwound with a rapid resumption in economic activity, and amid heightened geopolitical uncertainty following Russia's invasion of Ukraine. These geopolitical tensions have disrupted supply chains, causing large rises in international prices for energy, food, and other commodities.

[6] Another index used to measure inflation is the Harmonised index of consumer prices (HICP) The HICP is a standardised measure used to track consumer price inflation, and to facilitate international comparisons of inflation. This is broadly comparable to the CPI, but differs in that it excludes some items, such as mortgage interest, trade union subscriptions, local property tax and some insurance costs (Bermingham, Coates and O'Brien, 2016).

Figure 3. Contributions to CPI, Ireland, January 2020-June 2023



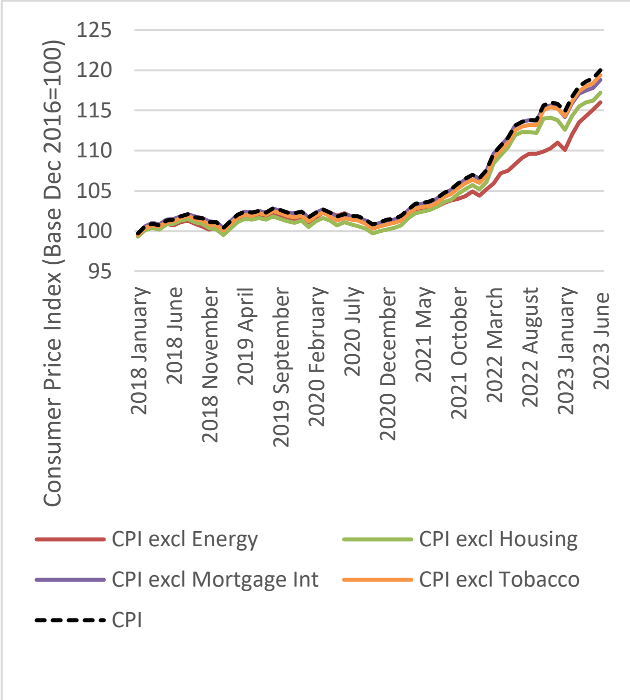
Source CSO

Note: Category items (i) 'Food, etc' refers to food and non-alcoholic beverages; and (ii) 'Housing, Water, Energy' refers to housing, water, electricity, gas, and other fuels.

Figure 3 shows how the CPI has evolved in Ireland since 2019. CPI peaked at an annual change of 9.2% in October 2020 and currently stands at an annual change of 6.1% in June 2023. The main drivers of overall inflation are observed in two categories illustrated by Figures 3: '*Housing, Water, electricity, Gas and Other Fuels*' as well as in '*Food and Non-Alcoholic Beverages'*. For the former, the key drivers over the past 12 months are increases in the cost of Electricity, Natural Gas and Mortgage Interest[7].

These products/items are particularly exposed to international price changes (including interest rate increases). Ireland is also reliant on imports to meet much of its demand for energy products and certain food items. Exchange rate movements play a role here, influencing the price of traded goods, with a consequential impact on consumer prices. The exchange rate channel is particularly important for a small, open economy such as Ireland. In the case of energy imports, there is evidence that international wholesale prices have declined significantly but this has taken time to feed through to domestic consumers (in part, at least, due to the hedging strategies used by the major suppliers).

Figure 4. CPI and CPI excluding energy products, housing, mortgage interest and tobacco, January 2018-June 2023



Source: CSO

Recently, upward pressures on energy prices have dissipated but mortgage interest rates have moved ahead due to continued interest rate increases set by the ECB. For example, energy costs had risen by 56% year-on-year by May 2022 (compared to just 4% for mortgage interest repayments). Just one year later, the equivalent figures were 16% versus 44% as energy price pressures began to ease but the tightened monetary policy stance began to feed through to consumer prices[8].

Government-led price increases for certain products introduced on public health grounds – for instance, tobacco[9] – have not majorly contributed to overall inflation. Figure 4 shows the trend in a number of CPI sub-indices. This indicates that the current heightened levels of consumer price inflation are primarily due to energy prices, rents, and mortgage interest rates. Overall, the rate of increase in the CPI has slowed over recent months but these underlying factors are sustaining heightened levels of consumer price inflation.

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[7] Mortgage interest repayment costs have increased by 44.1% over 12 months May 2022 – May 2023

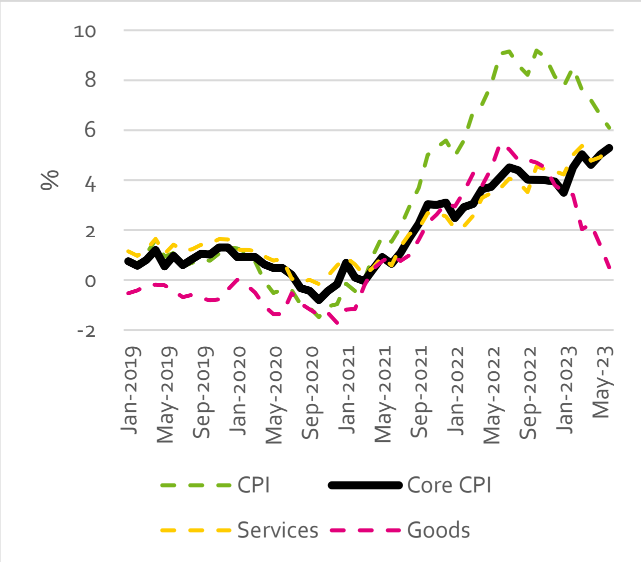
[8] CSO (2012): [Introduction to Series Base D... (cso.ie)]() The 'mortgage interest repayment' component of the CPI is determined by the type of mortgage (i.e. fixed/variable/tracker) and the amount of the mortgage debt outstanding. The CSO estimates '*the mortgage interest paid by a standard set of households with mortgages of varying ages (i.e. fixed age pattern)*'. This approach, then, is predicated on the monthly change in interest costs reflecting both the change in interest rates and the change in estimated house price levels over time.

[9] Minimum unit pricing for alcohol was also introduced in January 2022.

Core inflation

'Core inflation' is a standard concept referenced in the measurement of price changes globally. This is commonly calculated as overall inflation excluding food and energy prices and it is typically used by monetary authorities when looking out over the medium to long-term time horizon. The classification of core/non-core is based on the notion that food and energy are subject to various atypical 'shocks' which are considered to be 'temporary' – ranging from weather events, such as harvest failure, to decisions by international cartels, such as OPEC, and the consequences of geopolitical conflicts – these are not considered to provide a useful guide to the trajectory of consumer prices over the medium to long term.

Figure 5. Trends in Overall, Core (excluding Energy and Unprocessed Food), Services and Goods Inflation in Ireland, January 2019 – June 2023



Source: OECD

Figure 5 shows how core inflation, and inflation in services and goods have moved relative to overall (or headline) inflation in Ireland since January 2019. Prior to early 2021, core inflation was trending in line with the headline measure. From mid-2021, core inflation began to diverge from headline inflation and until recently, it had been significantly lower (as energy and food prices in particular rose). Even with recent reductions in overall CPI, core inflation has remained persistent and has been at, or above, 5% since February 2023 (and is currently 5.3% as at June 2023).

These patterns give rise to a further consideration. Emerging factors such as climate change, geopolitical disruption/conflict, and any retrenchment in terms of recent patterns of globalisation may require some re-definition of what we mean when we refer to the 'temporary' nature of these shocks. Furthermore, both rising food and energy prices are those which impinge most on many households (and which do most to shape public perceptions around price inflation more generally).

Although Ireland is a net exporter for many goods and services, it is exposed to movements in commodity prices globally through its imports. As noted above, 'imported' price increases have played a significant role in driving headline inflation, with increases in energy and commodity prices having a direct impact on consumer prices in Ireland. Import dependency and the economic effects of climate change have contributed to these upward price pressures. Ireland's dependency on imported energy was 76% in 2021, the 4th highest in the EU and above the EU average of 55%. Using data from the SEAI, Ireland's import dependency for 2022 appears to have risen further to 81%[10].

This dependency is down from an average of 89% between 2001 and 2015, primarily due to gas coming from the Corrib field since 2015 and the increasing use of indigenous renewable energy. Notably, since 2018 the state's import dependency has been increasing steadily due to output in the Corrib field reducing. This current high import dependency means Ireland is particularly exposed to external shocks in energy markets, such as the current crisis in Ukraine which has accelerated energy price inflation.

HOW DO THE PPI AND THE CPI INTERACT

On the face of it, it would appear that any change in the PPI would anticipate an (approximate) equivalent change in the CPI. In other words, one might reasonably assume that the direction and size of a price change in Ireland's industrial Producer Price Index (PPI) – for '*finished or manufactured goods*' – would be a useful leading indicator for the '*Goods*' sub-index[11] from the Consumer Price Index (CPI), albeit less so for the latter's '*All Items*' index given that the PPI does not fully cover services at present.

[10] Figure based on author's own calculation using data from the National Energy Balance and formula from Eurostat's energy imports dependency indicator.

[11] Bearing in mind that the PPI data presented above relates to goods only. In the case of the CPI, the sub-index for 'Goods' only accounts for 42% of the overall weighting for 'All Items' at present: Consumer Price Index July 2023 - CSO - Central Statistics Office At the time of writing, the Eurostat PPI series only covers those services associated with the production of these goods (say, installation, maintenance and repair).

The PPI can act as an early indicator of rising price pressures and can foreshadow future price changes for businesses and consumers but when comparing movements in both the PPI and the CPI, it must be borne in mind that these are designed to measure different phenomena. As a consequence, there are a number of important differences in terms of what each index captures and how they are calculated.[12] For instance, the PPI excludes imports in its calculation whilst imports are included in the CPI calculation.

CPI measures consumer expenditure which includes the tax on items while the PPI measures the revenue received by a producer which excludes sales or excise taxes. The Census of Industrial Production is used for the PPI weights whereas the CPI weights are calculated using data from the Household Budget Survey. Finally, the Services Producer Price Index (SPPI) is experimental and covers only a limited number of service sectors.

Leaving aside these methodological and definitional factors, the issue of any potential 'pass-through' from the PPI to the CPI is another important consideration. Indeed, there are many reasons why it is quite difficult to forecast when, or if, any change in the PPI will ultimately be reflected in the CPI. Firstly, in order to maintain market share a retailer in Ireland may not find it feasible to pass on to their customers any additional costs paid to producers.

Secondly, the same retailer might choose to pass on some, but not all, of these additional input costs (and/or to delay the rate at which they do so over time). Thirdly, some products may have an unavoidable time-lag for price transmission (say, new products) whereas for other products (say, petroleum products), the pass-through could be quite fast.

Recent international literature suggests that that there has been a structural change in the relationship between the PPI and CPI[13]. Although, there was previously a strong correlation between these two indices, they have diverged over the past two decades This has been attributed to the impact of globalisation – in other words, as global supply chains have grown there is likely to have been a reduction in the proportion of domestically-consumed produce that has been produced domestically.

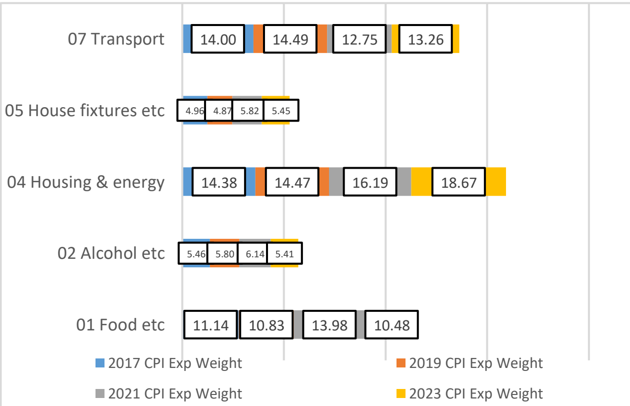
As the world economy has become more integrated through trade and supply chain linkages, global factors – from commodity prices to exchange rates to producer price competition – have become to exert a greater influence on CPI inflation[14]. Such factors will be of particular importance to Ireland, an economy that is now highly integrated with the European single market which, in turn, brings a high degree of exposure to price movements across Europe.

CHANGES TO CONSUMER EXPENDITURE PATTERNS

When considering current inflationary dynamics, we can, in addition to exploring changing price levels, consider how these prices influence patterns of consumer expenditure over time. We do this by examining the weights used. The various categories of goods and services are weighted to reflect their actual share within the household budget. For instance, as households would typically spend more on heating their home than on tea, a rise in the price of energy has a greater impact on the overall CPI than a similar increase in the cost of tea.

The index measures the monthly changes in the cost of purchasing a fixed representative 'basket' of consumer goods and services with identical items being priced in the same outlet on each occasion so that changes in the cost of this constant basket reflect only pure price changes. The representative share (or weight) of each item in the basket is proportional to the average amount purchased by all households.

Figure 6. Selected CPI Divisional Weights 2017-2023



Source: CSO

Note: (i) 'Food, etc' refers to food and non-alcoholic beverages

Given the re-emergence of price inflation over recent years, it is instructive to look at the changing distribution of these weights. In the case of '*Food and Non-Alcoholic*

[12] McCormack (2013): How does the Producer Price Index differ from the Consumer Price Index?

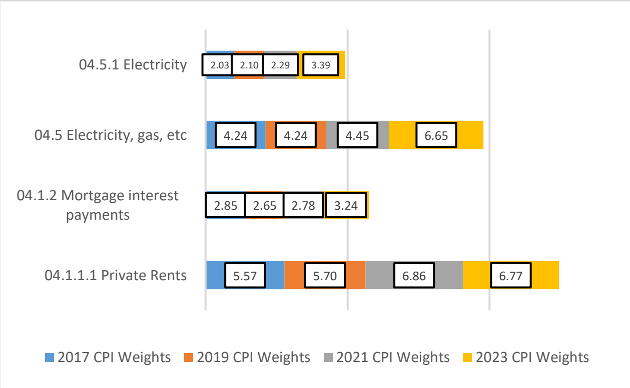
[13] Wie and Xie (2022): On the Wedge Between the PPI and CPI Inflation Indicators (publications.gc.ca)

[14] Forbes (2019): Has globalization changed the inflation process? (bis.org)

Beverages' as a share of household purchases, this has fallen slightly since 2017 but has remained at close to 11% of the total even as prices have risen (Figure 6).

There are several factors at play here. Firstly, food is an absolute necessity and therefore consumers must purchase these products as prices increase. Secondly, however, households do have the capacity to respond to price changes by substituting to own brand goods and other cheaper alternatives which assist the consumer in mitigating any loss of spending power.

Figure 7. CPI Divisional Weights: additional insights for selected energy and housing sub-components



Source: CSO

In the case of housing and energy, a given household has few alternatives with which they can opt to substitute. Indeed, as a share of household purchases the weight assigned to this category has risen markedly, from 14.4 to 18.7 between 2017 and 2023. In particular, the increased weights assigned to both private rents and mortgage interest payments alongside electricity and gas are key considerations here (Figure 7). Notably since 2017, the weights for both private rents and mortgage interest have increased significantly.

The share of purchases attributed to household fixtures and general upkeep[15] has also increased. This may reflect price increases on foot of supply chain dislocation and pent-up demand from the pandemic-era. It may also reflect a tendency to spend more on an extant home (say, redecoration, new appliances, etc.) as pressures in the current housing market make it more difficult to purchase a new property[16]. By contrast, the share of purchases attributable to categories such as '*Transport*', '*Recreation*' and '*Restaurants and Hotels*' has fallen over time.

It should be borne in mind that the foregoing reflects changes at the aggregate level but that different transmission channels impact different income groups. In other words, rising costs can impact individual households in different ways[17]. For instance, households with low (or fixed) incomes and/or low net worth, including property assets, will likely have a disproportionately high exposure to rising food and energy costs. Households with a higher net worth are more likely to be impacted by rising mortgage costs as the cost of these spending commitments increase and weigh on consumption (for those with a mortgage outstanding).

OUTLOOK FOR INFLATION

Since 2021, Ireland has been experiencing a high and sustained level of upward price pressures. These pressures have followed on from increased demand and supply chain disruptions following COVID-19 as well as from Russia's invasion of Ukraine as Ireland's high energy import dependency means we are particularly exposed to wholesale price shocks.

Current forecasts signal a continued easing of inflation rates in Ireland. For instance, the Central Bank of Ireland predict that headline inflation will fall from 5.3% in 2023 to 3.4% for 2024[18]. Similarly, the ESRI predicts inflation will reduce to 5% for 2023 and further reduce to 3% in 2024[19]. The Department of Finance predict inflation will average 4.9% for 2023 and further reduce to an average of 2.5% for 2024[20]. In their most recent Fiscal Assessment Report, the Irish Fiscal Advisory Council have noted the Department of Finance's current inflation projections, noting that inflation is expected to reduce to 2% from 2025 onwards[21].

Several factors, however, could come to sustain higher rates of consumer price inflation over the next year or so. One emerging consequence of climate change is 'heatflation', which refers to increased food prices and smaller harvests due to an increasing number of heatwaves and associated droughts across Europe. Similar problems have been encountered across countries

[15] This includes items such as furniture, carpets and other floor coverings, household textiles and soft furnishings, household appliances and other household as well as repairs, cleaning, and gardening.
[16] Major home improvements such as extensions are excluded from the CPI as these are capital investments.
[17] The effects of high inflation and monetary tightening on the real economy- Compilation of papers (europa.eu)
[18] Central Bank of Ireland Quarterly Bulletin: Quarterly Bulletin 2023:2 – economy operating at capacity (centralbank.ie)
[19] ESRI Quarterly Economic Commentary Summer 2023: Quarterly Economic Commentary, Summer 2023 | ESRI. The ESRI' s Spring Commentary forecasted a lower rate of inflation for 2023 (4.5%) and a higher rate for 2024 (3.5%).
[20] Department of Finance: Stability Programme Update
[21] IFAC Fiscal Assessment Report: June 2023

in the EU Southern Neighbourhood region, such as Egypt, Israel, Morocco, and Tunisia. This region is an important source of agri-food imports for the EU. These increased adverse weather patterns may have potentially serious implications for food security and supply, and consequently for future prices.

The short-term economic impact of recent environmental and geopolitical events, however, remain unknown but could potentially add upward pressure to food and energy costs. This, in turn, would limit the scope for inflation to reduce over the coming year or so. In addition to developments such as recent global heatwaves[22], the collapse of the Nova Kakhovka Dam in Ukraine and the uncertainty surrounding the agreement that facilitated Ukrainian grain exports have increased concerns regarding food security and prices (and consequently, global inflation expectations).

These are compounded by heavy rainfall in Ireland and the UK which will reduce yields for cereals and other crops (and likely lead to increased demand for imports), as well as by reduced yield due to heatwaves elsewhere in the EU and countries from which we source food.

Developments in the housing market also have the potential to sustain inflation over the short to medium-term. For instance, the continued upward price pressures in the rental market – and associated supply issues across the residential property sector – will likely continue to feed through into the CPI. Changes in mortgage interest repayments have also played some role in the increase in Ireland's inflation levels over the past year, even as other sources of (CPI) inflation have eased significantly. The ECB may continue to raise interest rates in the short-term. ECB rates have already increased by 425 basis points since July 2022. As a consequence, mortgage interest repayments will likely increase further given the anticipated expiration of many fixed rate mortgages in Ireland.

Looking at the distribution of outstanding mortgage loans as at end-2022, the Central Bank of Ireland has estimated that approximately 60% of the market is currently insulated from interest rate rises on account of their fixed-rate mortgage[23]. Close to 10% of the market, however, will roll off their current fixed-rate by end-2023 and will face the prospect of higher repayments (followed by a further 10% by end-2024). This would impact the CPI (but not the HICP).

There are a range of additional factors at play which also have the potential to add to upward consumer price pressures. These range from the impact of rising labour costs and the scheduled increases in the enterprise cost-base. The latter include the planned changes to the 9% rate of VAT for certain sectors later this year and the phased reintroduction of Excise Duty. These factors, amongst other themes, are addressed by the authors in more detail in a forthcoming companion publication to this *Competitiveness Bulletin*[24].

That said, there are still measures that can be taken to address high costs for domestically-produced goods and services. This applies in cases such as – for instance – the banking, legal and insurance sectors where the promotion of greater competition can serve to reduce prices for end-users.

Finally, it is important to bear in mind that inflation is a change variable. As such, any easing in the rate of inflation over the next year or so would reflect a slowdown in the rate of price increases, rather than prices overall falling from current levels.

The NCPC reports to An Taoiseach and the Government, through the Minister for Enterprise, Trade and Employment, on the key competitiveness and productivity issues facing the Irish economy and makes recommendations to Government on how best to address these issues. The latest NCPC publications can be found at: www.competitiveness.ie.

This Bulletin has been issued by the Chair, Dr Frances Ruane, and was prepared by Dr. Dermot Coates, Rory Mulholland, Dr. Keith Fitzgerald, Karen Hogan, and Hugh Creaton in the NCPC Secretariat.

[22] Climate change – alongside the El Nino seasonal weather patterns – has resulted in heatwaves in many regions across North America, North Africa, Southern Europe as well as Russia and Asia.

[23] Byrne et al (2023): *No.2 The interest rate exposure of mortgaged Irish households (Byrne, McCann and Gaffney) (centralbank.ie)

[24] A more detailed Working Paper will be published via the IGEES publications portal: gov.ie - IGEES Publications (www.gov.ie)