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# An overview of inflation developments

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# An overview of inflation developments

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Inflation rates have risen substantially in many countries over the course of this year. This has led to renewed interest in understanding the inflation process and in the outlook for inflation over the coming years. In the euro area and Ireland, inflation had been persistently low and below the ECB's target for much of the time since the Global Financial Crisis. This Letter outlines the developments in inflation since the COVID-19 pandemic and explains the drivers of the current high inflation rates. This Letter then discusses the ongoing debate on the inflation outlook and potential monetary policy options.

## 1. Introduction

In the wake of the COVID-19 pandemic, inflation has arguably received more attention than it has in decades, in Ireland, the euro area and worldwide. This reflects the fact that inflation is higher now than for much of the recent past, especially in Ireland and the euro area where inflation has been persistently low since the Global Financial Crisis. Over this period, the Governing Council of the European Central Bank took a range of monetary policy actions to return inflation to its target. Prior to the pandemic, there had been some progress. The euro area labour market had improved significantly and wages were rising. Lending to households and businesses was growing, supported by monetary policy actions to keep financing conditions favourable. Nonetheless, inflation dynamics had not shown clear evidence of sustainably converging on the target.

The pandemic caused a large and unprecedented economic shock, the effects of which permeated throughout the economy. Jobs were lost in large numbers, and many people worked shorter hours or were furloughed. The demand side of the economy contracted. On the supply side, portions of the economy were shut at various times for public health reasons. This has led to disruptions to production and distribution, the effects of which persist and are not likely to be alleviated fully in the short term.

The impact of the pandemic on inflation was negative in the first instance. Inflation rates fell in both the euro area and Ireland over the course of 2020, even turning negative. Over the course of 2021, we have seen the opposite – inflation rates have been rising. They are now higher than seen over the previous decade. There are a number of causes of this. First, supply bottleneck issues remain. Although these are likely to be resolved over the next couple of years, they will not be resolved in a short time span. Second,

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the recovery from the pandemic recession has seen the demand side of the economy strengthen again. This reflects the relative success of fiscal and monetary policy in preventing worse labour market outcomes than we saw, and in preventing widespread bankruptcy of businesses. The expansion of the demand side, when supply remains constrained, has led to higher prices in the economy. Third, there are other factors, such as rising energy prices, which are contributing to higher inflation.

These inflation developments have led to a lively debate about the future path for inflation. Central banks have argued that inflationary factors such as constrained supply and energy prices will dissipate, and inflation rates will reduce. Others argue that inflation will remain persistently high because the current high inflation will feed into higher inflation expectations and wage demands. Together with structural factors like demographic change, these will generate more inflation to come. It is not possible to be certain about which of these outcomes will take place. While it is likely that some of the current inflationary pressure will dissipate, central banks must also be prudent by monitoring incoming data for evidence of inflation dynamics becoming inconsistent with the inflation target.

This Letter begins by reviewing the monetary policy strategy of the ECB. We then outline the recent developments in inflation in Ireland and the euro area and discuss some of the causes of the high inflation rates we currently see. We conclude by discussing the implications of these inflation developments for monetary policy.

## 2. Monetary policy strategy

Ireland is part of the euro area – the monetary union of 19 European countries. Monetary policy for the euro area is set by the Governing Council – the 19 central bank governors and the Executive Board of the ECB. The Governing Council aims to ensure price stability, which means preservation of the purchasing power of the currency over time, for the benefit of the public. The monetary policy strategy targets annual inflation of **2% over the medium term**<sup>2</sup>. Consumer price inflation in the euro area is measured by the Harmonised Index of Consumer Prices (HICP).

Why does price stability not mean inflation of 0%? There are a number of reasons for this. First, with a small inflation buffer, inflation is clear of deflationary territory, which can lead to higher unemployment and weaker consumption and investment ([Consolo et al. 2021](#)). Second, with a buffer, monetary policy has more room to respond to economic shocks by lowering the real rate<sup>3</sup>. Third, the equilibrium interest rate in the economy has been falling over time, meaning policy rates are more likely to be near zero than they were before ([Williams, 2015](#))<sup>4</sup>. Without an inflation buffer, there

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<sup>2</sup> Earlier this year, the ECB concluded a review of its monetary policy strategy ([ECB, 2021](#)). The outcome of this was a symmetric target of 2% annual inflation over the medium term.

<sup>3</sup> This is the nominal policy rate minus the inflation rate.

<sup>4</sup> In order to boost economic growth and inflation, the interest rate should be below the equilibrium rate.

would be less space for policy action than in the past. Fourth, there can be issues with measuring inflation that cause uncertainty for policy.

The other key feature of the monetary policy target is its **medium term view**. Inflation rates are volatile (Chart 1) as they can rise or fall in response to shocks hitting the economy. When we analyse the drivers of inflation, we need to understand whether price developments are part of a broader, persistent trend or if they will unwind themselves. Monetary policy works through the demand side of the economy: tighter policy reduces aggregate demand, all other factors held constant. Monetary policy should avoid causing unnecessary unemployment by overreacting to a temporary shock.<sup>5</sup> Instead, it should take a **medium term** view and try to discern whether a shock will last. This involves “looking through” the shocks that will not last but being prepared to respond to shocks that will cause a deviation from target over the medium term ([Coeuré, 2018](#)).

### 3. Recent developments in inflation

The HICP tracks the prices of a large basket of consumer goods and services every month.<sup>6</sup> This information allows the calculation of the rate of change of the prices of the items in the basket. By aggregating the various relative price changes, the HICP provides an overall measure of consumer price inflation. The aggregation is achieved by weighting each item based on an estimate of how much consumers spend on the item compared to their total expenditure on items in the HICP basket.

The aggregate inflation rate is the focus of monetary policy. This provides a representation of the price changes experienced by the public as a whole. Individual people and households can experience changes in the relative prices of their specific consumption basket that differs from the aggregate price developments. The scale of the difference depends on the patterns of their consumption across broad types of goods and services, on their choices between different brands of similar items, and on their budgets. There is a link between demographics and people’s experience of price changes, and an important role for fiscal policy.

#### Recent inflation dynamics

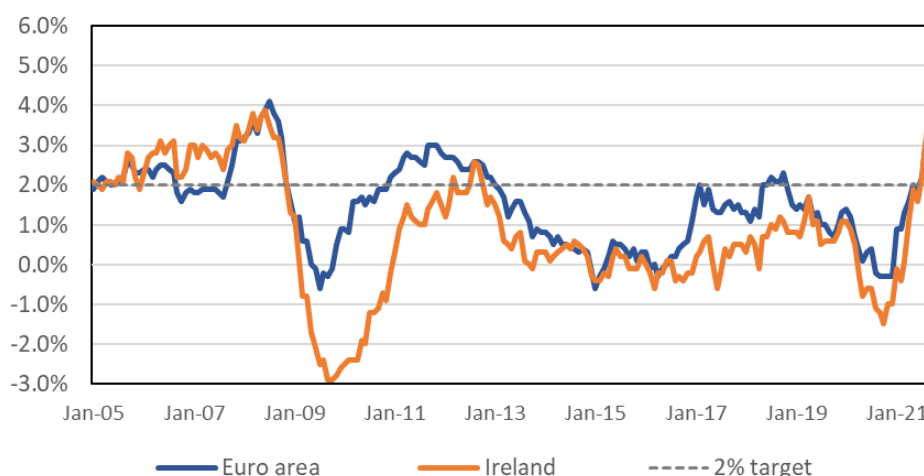
The COVID-19 pandemic has had a significant impact on inflation. The annual rate of inflation in the euro area and Ireland was low in 2020, even turning negative. Since the start of 2021, inflation has been gradually increasing. Euro area inflation was 4.1% in October and 5.1% in Ireland. While inflation exceeded the target of 2% in recent months, it was

<sup>5</sup> There is also a limit to which a domestic monetary policy can have an effect in response to a global shock, such as some types of energy prices shocks ([IMF, 2021](#)).

<sup>6</sup> The consumer basket underlying the HICP consists of hundreds of goods and services that the public in a country typically buys, including different brands of the same item. One important current omission is a measure of the price of Owner Occupied Housing. The basket currently includes the cost of renting accommodation and some minor maintenance of owned/rented accommodation. There are a number of available methods to represent Owner Occupied Housing, for an overview see [Whelan \(2021\)](#) and [Gros and Shamsfakhr \(2021\)](#).

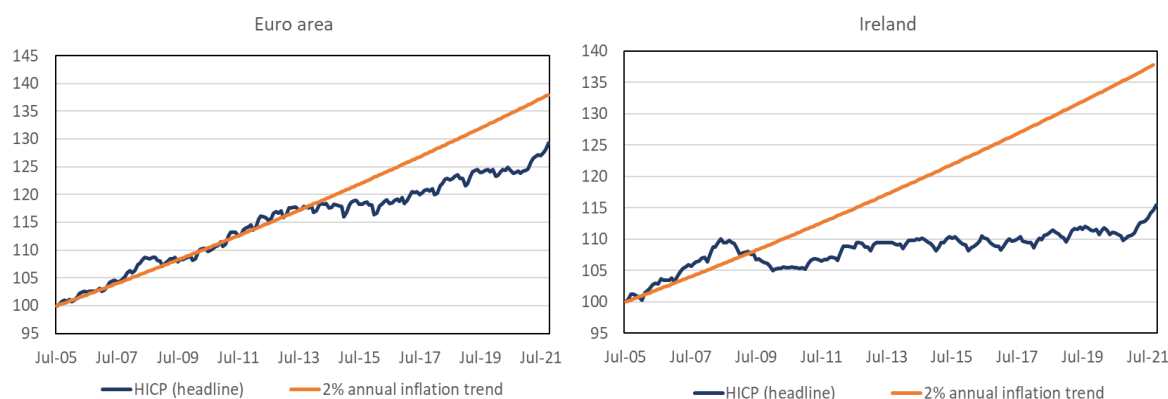
persistently below target<sup>7</sup> for much of the time since the Global Financial Crisis as shown in Chart 1.

**Chart 1: HICP inflation in the euro area and Ireland since 2005**



Notes: this chart plots year-on-year HICP inflation for the euro area and Ireland. The dashed horizontal line denotes the symmetric price stability target of 2%. The last data point is October 2021. Source: Eurostat

**Chart 2: The HICP price index and a 2% inflation rate trend**



Notes: these charts plot the HICP index set to equal 100 in July 2005 (blue line) and the 2% trend (orange line) that shows the hypothetical value of the HICP if it has increased by 2% every year since July 2005. The last data point is October 2021. Source: Eurostat and own calculations.

Chart 2 highlights the cumulative effect of this “undershoot” in recent years.<sup>8</sup> Economic developments, such as effects of the sovereign debt crisis, contributed to weak inflation dynamics in these years. However, a number of structural factors also played an important role in keeping inflation low. These include globalisation, digitalisation, and an ageing population ([Koester et al., 2021](#)).

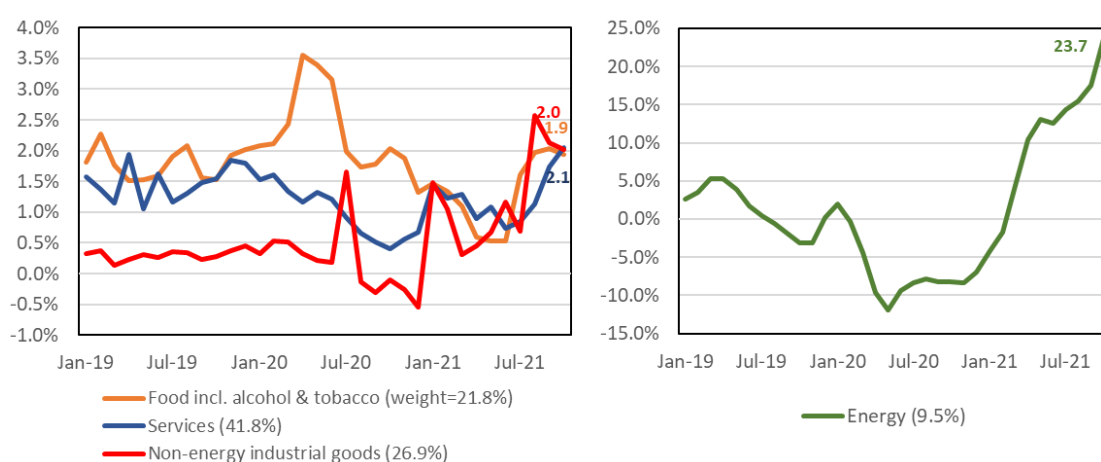
<sup>7</sup> For the majority of this time, the target was an inflation rate “below, but close to, 2%”. We include a 2% target line for simplicity.

<sup>8</sup> To be clear, the monetary policy strategy does not aim to make up for this shortfall in the future.

Digitalisation and population ageing will likely continue to exert a drag on inflation over the longer-term. It may be the case that de-globalisation will have an inflationary impact. It is difficult to know the extent to which these and other structural forces, such as climate change, will affect inflation in the future.

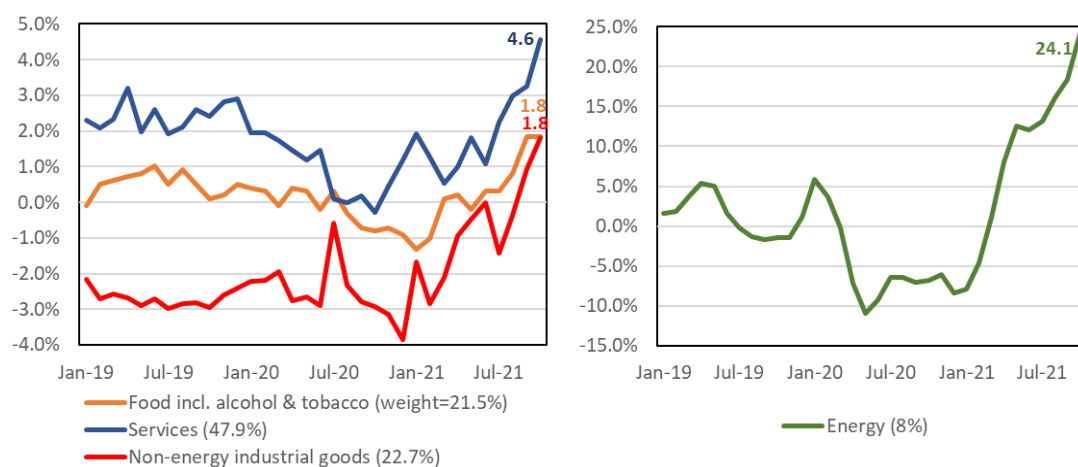
As the economy re-opened in 2021, inflation also picked up, especially so in the second half of the year. Chart 3 shows the price changes and basket weights for euro area non-energy industrial consumer goods (“goods”), services, food (including alcohol and tobacco), and energy (right-hand-side panel). Chart 4 shows the same data for Ireland.

**Chart 3: Euro area HICP inflation across main categories**



Notes: these charts show year-on-year HICP inflation for the main aggregates in the euro area: food, including alcohol and tobacco, services, non-energy industrial goods, and energy (on the right panel). Values in the plot area refer to data for October 2021. Percentages in the legend denote weights for each component in the total HICP in the current year. Source: Eurostat

**Chart 4: Irish HICP inflation across main aggregates**



Notes: these charts show year-on-year HICP inflation for the main aggregates in Ireland: food, including alcohol and tobacco, services, non-energy industrial consumer goods, and energy (on the right panel). Values in the plot area refer to data for October 2021. Percentages in the legend denote weights for each component in the total HICP in the current year. Source: Eurostat

In the first half of 2021, the euro area data did not suggest a sustained increase in inflation for the largest HICP components: services, goods and food. Services and food inflation in the HICP were declining over this period. In contrast, energy inflation increased rapidly since early 2021, with energy prices around one-fifth higher than a year ago in October. Since June, prices of services, food and goods in the euro area have been increasing at a faster pace, and currently are about 2% higher compared to October last year. For food and services, inflation is now broadly in line with 2019 rates. The goods inflation rate is high relative to the recent past.

Overall, the currently elevated inflation rate is mostly driven by energy inflation. Energy has a weight of approximately 10% of the HICP basket but accounted for half of inflation in October. This means October inflation was around 2% excluding energy prices. However, as the left hand panel of Chart 3 shows, inflation has become somewhat more broad-based in the non-energy items. Monitoring these developments over coming months will be important for policy.

Irish inflation dynamics are similar to those in the euro area. Higher energy inflation accounts for a large share of the overall inflation rate, with signs of larger price increases broadening also in other parts of the consumer basket ([Byrne et al., 2021](#)). Excluding energy, Irish HICP inflation stands at 3.4%. However, relative to the euro area, prices of services in the Irish HICP have recently increased by more in the year to October (4.6%), while prices of goods and food have increased by slightly less (1.8%). Unlike in the euro area, services inflation was the largest contributor to overall inflation in Ireland in October, while energy inflation was the second largest. In more detail, increases in rents (+6.8%) and restaurants and accommodation (+4.2%) stand out, not only for the scale of the increases, but because these categories together account for almost half of all services spending in the Irish HICP services basket. Higher services inflation in Ireland is contributing to the overall inflation rate more than in the euro area also because Irish households spend more (47.9%) on services than euro area households (41.8%).

With respect to energy inflation components, liquid fuels, diesel and petrol prices fell the most during 2020 in both the euro area and Ireland. The prices of all energy components have now recovered and exceeded their levels as of December 2019. Gas and electricity prices also greatly exceed their level as of the end of 2019, not only fuel prices. This partly reflects low supplies of natural gas ([IMF, 2021](#)).

### The drivers of higher inflation

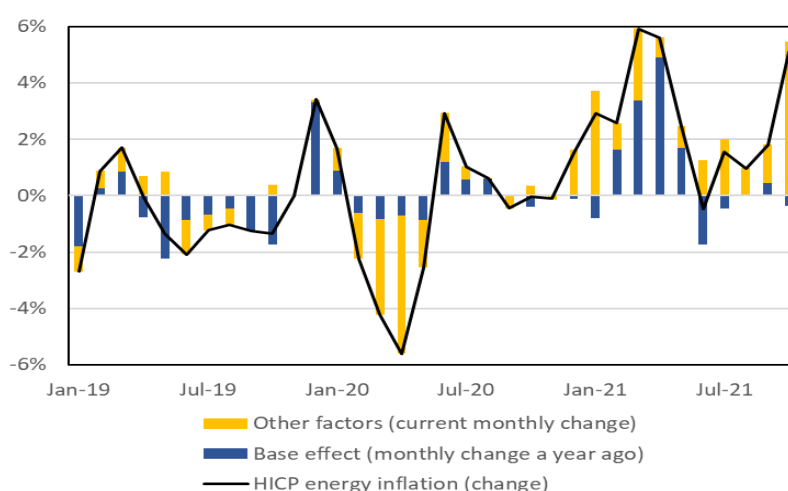
Having highlighted the recent developments in the main components of inflation, this section discusses what is behind these developments.

First, the strong recovery in economic activity in 2021, following a sharp contraction in 2020, led to mismatches between demand and supply. Demand surged for certain goods and high-contact consumer services reflecting, amongst other things, pent-up demand. Supply has not been able

to expand quickly enough in response. Supply shortages have affected production due, for instance, to factory closures and shortages of key inputs like microchips. There have also been transport disruptions leading to shipping bottlenecks and long delays along the supply chains ([Frohmet al., 2021](#)). Many suppliers ran down their stocks over the course of the pandemic. They have struggled to replenish these stocks and to keep up with the increase in demand, resulting in large increases in suppliers' delivery times. These supply chain bottlenecks have been reflected in sharp increases in prices of inputs used for production, i.e., commodities and raw materials ([Rees and Rungcharoenkitkul, 2021](#)). Consequently, goods inflation increased to levels above historical norms. Higher commodity prices are also feeding into food prices increases. Overall, these supply chain disruptions have played an important role in the global increase in inflation rates.

The services sector gradually opened up since the spring of 2021, as more high-contact consumer services became available, with services inflation then rising ([ECB, 2021](#)). Some wage pressures materialised in sectors where the demand-supply imbalance is most severe. More recently, energy supply has also been restricted while global energy demand has strengthened ([IMF, 2021](#)). As the economy continues to re-adjust, upward inflationary pressures should ease to some extent. Demand is likely to rebalance further from goods toward services that are now unrestricted, or less so. Supply is likely to increase in order to meet the current excess demand also, reducing the imbalance.

**Chart 5. Monthly changes in annual HICP energy inflation in the euro area**



Notes: this chart shows changes in annual energy inflation in the euro area decomposed into base effects (blue bars) and other factors (yellow bars). The last data point is October 2021. Source: Eurostat and own calculations.

Second, annual inflation rates in 2021 are also affected by price developments one year ago. These are known as “base effects”. Higher inflation rates today reflect, in part, the fall in price levels from a year ago. Some of the increases in energy price changes in 2021, particularly in the first half of the year, also reflect base effects, as shown in Chart 5. Since the



summer, however, the base effect is limited. Falling consumer prices during the pandemic in 2020 were not only a re-calibration of demand and supply at that time – government policies also played a role. For instance, a German VAT tax reduction in July 2020, designed to stimulate domestic demand, lowered the general price level for the euro area. After the effect of the tax reduction is excluded, euro area inflation would be 3.6% in October (in Ireland, inflation at constant taxes is 4.7%).

One way to mitigate this issue of pandemic-related base effects is to take a longer view of inflation. Euro area inflation was 3.8% over the two-year period to October 2021. This is in line with the two-year inflation rates seen over the course of 2018 and 2019. For Ireland, the two-year inflation rate was 3.6%. For a comparison, two-year consumer price inflation in the United States was 7.5% in October. Nonetheless, Irish and euro area inflation has accelerated recently by this measure also, and warrants monitoring.

In addition, some other temporary factors have influenced inflation dynamics this year. For example, different, unusually timed, patterns of seasonal sales in some countries resulted in large swings in goods inflation. Similarly, an update to the HICP weights for 2021 has had an impact on overall inflation to both directions so far this year (see Chart 15 in [ECB, 2021](#)).

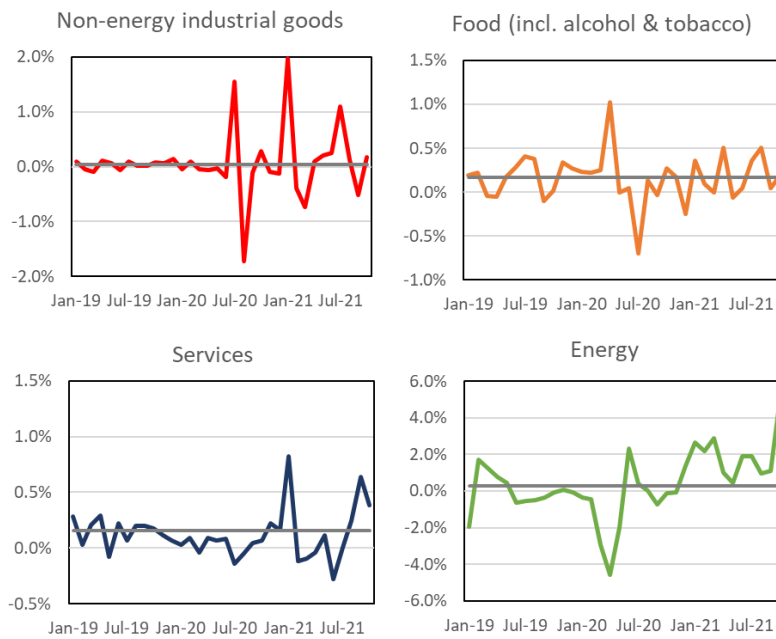
### Monthly price changes

To get a clearer picture of *current* price pressures, we can look at monthly changes in the price level. Charts 6 (euro area) and 7 (Ireland) shows monthly changes in the main HICP sub-indices. The horizontal grey lines in each panel denote the average monthly change in prices (%) over the period 2002-2019. Monthly changes in goods prices have been extremely volatile since early 2020, in both the euro area and Ireland. There have been sharp increases as well as sharp declines in prices, generally fluctuating (widely) around the long-term mean. Food prices are also more volatile, but closer to the long-term mean.

In the euro area, and apart from a large spike in January, monthly services inflation has been below its long-term average, and indeed was negative, until August this year. The last three months have seen a stronger pick-up in prices of services, in line with stronger demand for many services that are available once more. In Ireland, services inflation strengthened more notably than in the euro area.

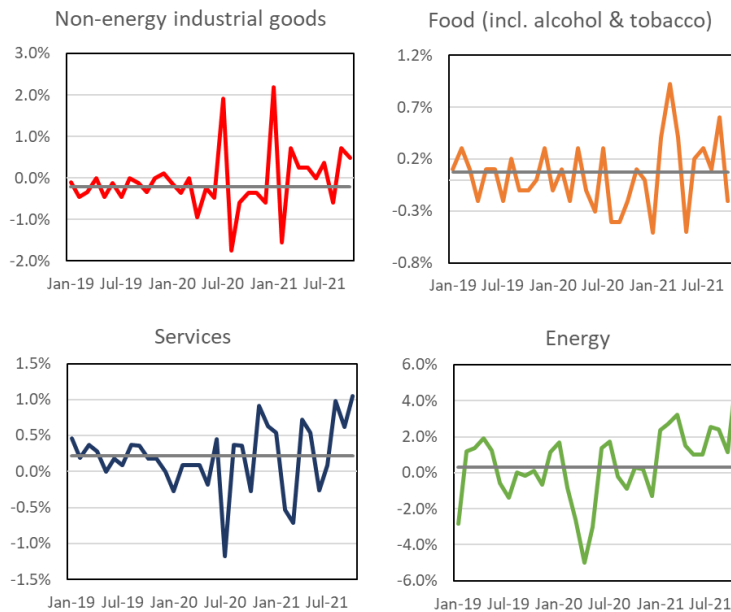
Driven by global factors, monthly energy price changes are almost identical in Ireland and the euro area. On a monthly basis, prices fell most of the 2019-2020 period, before turning positive in 2021. There has been a strong and sustained pick-up in energy prices, with the largest monthly increase so far this year reported for October. These developments can be explained by unusually strong demand for oil and gas as well as supply shortages. From oil and gas futures markets, we can see that expectations are for prices to decline gradually over the next years.

**Chart 6. Monthly inflation rates in the euro area (seasonally adjusted)**



Notes: these charts show monthly price changes for goods, food, services and energy HICP components in the euro area based on seasonally adjusted indices. The last data point is October 2021. Source: Eurostat, Haver analytics

**Chart 7. Monthly inflation rates in Ireland (seasonally adjusted)**



Notes: these charts show monthly price changes for goods, food, services and energy HICP components in Ireland based on seasonally adjusted indices. The last data point is October 2021. Source: Eurostat, Haver analytics.

## 4. The current monetary policy options

Maintaining price stability in the euro area as a whole is the primary objective of the ECB. There is considerable uncertainty around the inflation outlook, leading to a lively debate about what policymakers should or should not do in response. Some of the key questions now are:

- (i) What would inflation dynamics look like if there were no supply side issues?
- (ii) How long will it take the supply side of the economy to clear any current shortages?
- (iii) Will the recent increase in inflation cause a more sustained rise in inflation through secondary channels?
- (iv) Would these second round effects contribute to a sustainable adjustment of inflation toward the medium term target? Would they cause inflation to rise unsustainably?
- (v) Is it appropriate for monetary policy to tighten in response to the recent increase in inflation?

On the supply side, an ECB survey of leading non-financial companies in the euro area was conducted to shed some additional light on the supply bottlenecks ([de Bondt et al., 2021](#)). Firms noted the difficulty in keeping production pace with orders because of a shortage of inputs. A shortage of semiconductors was having a large impact on the automotive industry, for example. Many firms also said congestion at container shipping ports was an important current problem. Looking ahead, the firms expected supply chain disruption to persist in the near term but to ease over the course of 2022, with substantial capacity investment also expected in 2023.

Firms expect input price increases to moderate during 2022, but for prices to continue to be passed through the value chain for some time. There would also be pass-through of energy prices if they do not reverse their recent increases. Firms expect increases in wage inflation to protect real incomes, with wages increasing particularly to attract new hires. Based on this survey firms expect some price pressures to fade but others to strengthen.

Central banks expect the global drivers of current inflation, energy prices and supply bottlenecks, to abate over the medium term ([Lagarde, 2021](#); [Powell, 2021](#)). The current ECB forecast is for inflation to average 2.2% in 2021, peaking in the fourth quarter of this year, before falling to 1.7% in 2022 and 1.5% in 2023 ([ECB, 2021](#)). Central banks also expect that the current inflation will not give rise to persistently high inflation over the coming years via “second round effects”. This refers to high inflation feeding into wage setting and inflation expectations, possibly leading to a “wage-price spiral” where inflation and wage growth outstrips productivity growth. The view of these central banks is not universally held. [Goodhart and Pradhan \(2021\)](#), for instance, suggest that there will be higher wage demands to compensate for past and future inflation.

Wage indexation practices could matter for the wage-price spiral. In the euro area, several different regimes exist, including automatic indexation and a regime where inflation plays a formal role in wage negotiations. An overview of these schemes suggests that the current high inflation rate is not very likely to lead to broad-based pass-through to wage growth ([Koester and Grapow, 2021](#)). Nevertheless, inflation may still be an important factor in wage negotiations where it has no formal role.

The history of euro area monetary policy over the past decade has largely been characterised by inflation being below the target. The Governing Council of the ECB has taken a range of measures to achieve its objective over this time ([Altavilla et al. 2021](#)). Forward guidance from the Governing Council explains that accommodative monetary policy will remain in place until inflation converges to the target in a way that is likely to sustain itself over the medium term and without the need for monetary policy support. Inflation should not simply rise due to factors that could later reverse. *Underlying* inflation dynamics should be strong enough to ensure that inflation stays at levels consistent with the target over the medium term. Sufficiently strong inflation dynamics also allow policymakers to remove their support without the risk of them having to reverse course as prices fall once more.

For the euro area, where the ECB has not succeeded in getting inflation to increase to the target over a number of years, some second round inflation could prove helpful in achieving the sustainable adjustment. Prior to the pandemic, the euro area labour market had been tightening over a number of years, leading to greater wage growth ([Byrne and Zekaite, 2020](#)). Lower unemployment rates and higher wages support household income growth, consumption, domestic demand and ultimately inflation dynamics. The euro area labour market is not currently in as strong a position as it was prior to the pandemic. Employment and labour force participation levels remain lower, while many people are still in receipt of pandemic-related supports ([Bodnár and O'Brien, 2021](#)). For inflation to show the sustainable adjustment over the medium term, it is likely that there would need to be stronger labour market conditions than we see currently.

While not currently the most likely scenario, the euro area does face a risk of inflation overshooting the target in a persistent way. It is prudent to be wary of this eventuality. This could happen if supply bottlenecks take longer to be cleared than is expected. Even if they are cleared in the 2022-2023 timeline as discussed above, this may itself be sufficiently long-lasting for there to be an impact on wage growth and inflation expectations. In either case, the magnitudes of the impact on wages and inflation expectations would be important. If inflation expectations and wage growth increased by too much, inflation dynamics could become inconsistent with achievement of the target.

## 5. Conclusion

Higher inflation in recent months can largely be explained by energy inflation that has been driven by global factors. In Ireland, services inflation plays a significant role as well. Price pressures have been gradually strengthening across the wider consumer basket, but to a more limited extent and broadly in line with the price stability objective. Higher inflation rates should be viewed in the context of many years of persistently low inflation before the pandemic and the current unusual economic recovery from the pandemic-induced recession.

Incoming data do not suggest that currently higher inflation will be persistent via a wage-price spiral. However, it is incumbent on monetary policymakers to be aware of the risk, to be alert to signs of an unsustainable adjustment and to be ready to act in that case. There is also the important risk of overreacting to price pressures that do unwind. A balance must be assessed between the costs of tightening monetary policy prematurely, thereby weakening the recovery from the pandemic recession, and the costs of inflation.

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