8 June 2021

# Research Euro Area

## Mind the inflation gap

*This is the third publication in our series on global inflation. Here we look at the drivers for euro area core inflation and what to expect over the next 1-2 years. Our first publication looked at the manufacturing overheating (see Global Research: Global manufacturing heading for a hot (inflation) summer, 12 May 2021), while our second publication explored the direct impact of commodity prices on headline inflation (see Global Research - The impact on inflation of a commodities super cycle, 26 May 2021).*

- **During the last months, inflation fears have returned to markets, notably in the US, which have spilled over to the euro area. Looking at both external and domestic drivers of inflation, we try to shed light on the question whether a regime-shift in core inflation is underway in Europe following the corona crisis.**
- **Overall, we find limited evidence that euro area core inflation is about to return to the highs preceding the Global Financial Crisis on a sustained basis. However, we have lifted our core inflation forecast for 2022 to 1.2% (1.0% previously), mostly on the back of higher goods price inflation**
- **In light of increasing evidence of rising external price pressures, we expect some pass-through of higher production costs to core inflation to materialize in 2022, especially for goods prices. An abating effective euro appreciation should give further tailwind to durable goods. That said, we remain sceptic on second-round effects from higher inflation expectations lifting core inflation. Not only are inflation expectations still showing a very heterogeneous picture, but selling price expectations are also highly adaptive in nature and will likely abate again in 2022 with the decline in commodities inflation. Furthermore, the inflation process in the euro area is – in contrast to the US – largely backward looking, with inflation expectations and labour market conditions playing a relatively less important role than past low rates of core inflation.**
- **Notably the labour market holds the key to more a more sustained rise in inflation pressures, but a broader analysis of labour market conditions points to the existence of considerable slack in Europe. Short-term staff squeezes might prompt sporadic wage increases in some sectors that experience temporary demand surges after re-opening. However, we see few signs of widespread labour shortages emerging in the euro area, as more workers will re-join the labour market with the expiration of furlough schemes. Wage moderation in the latest sectoral pay deals concluded under the shadow of the recession will also hold wage growth at bay for the coming two years. Upside risks stem from further national minimum wage increases and a faster economic recovery than anticipated. But even if wage growth in the coming years surprises on the upside against our expectations, the weakening responsiveness of core inflation to measures of economic slack means a sustained rise in underlying inflation pressures is by no means a given.**

### Other readings

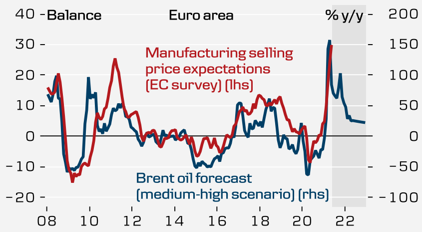
Global Research - The impact on inflation of a commodities super cycle, 26 May 2021

Global Research: Global manufacturing heading for a hot (inflation) summer, 12 May 2021

Research Euro Area - Measuring the euro area inflation pulse, 9 November 2020

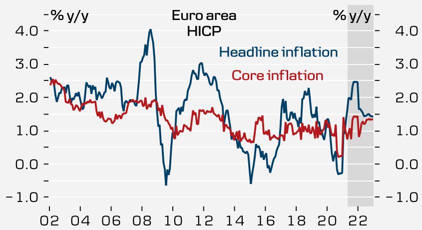
Research Euro Area - Decoding Europe's recovery plans, 17 May 2021

### Price expectations are highly adaptive




Source: EU Commission, Macrobond Financial, Danske Bank

### Euro core inflation not to return to pre-Global Financial Crisis highs




Source: Eurostat, Macrobond Financial, Danske Bank

*Senior Analyst*
Aila Mihr
+45 45 12 85 35
amih@danskebank.dk

## A core conundrum

**Euro area core inflation excludes volatile items such as energy and food and thereby gives a clearer picture of the 'true' underlying inflation pressures in the economy**. Hence, it is not surprising that ECB policymakers have de facto used core inflation to guide their monetary policy stance, despite its de jure 'close to, but below 2%' inflation target being defined by HICP (or headline) inflation. Core inflation is made up of two broad subcategories, non-energy industrial goods (NEIG) and services, whereby the latter is by far the most important driver (for HICP weights see appendix).

**In the aftermath of the Global Financial Crisis of 2008/09 a level shift has been visible in core inflation**, explaining the ECB's struggles to generate sustainable inflation pressures over the past decade. While core inflation still averaged 1.6% from 2000-2010, that eased to 1.1% from 2011-2021. Various academic studies have sought to explain Europe's inflation conundrum and the persistence of low inflation pressures despite tightening labour market conditions. Discussions generally centre on the so-called Phillips curve (i.e. the negative relationship between inflation and domestic economic slack, often measured through the output or unemployment gap). Over the period of 2000-2011, there appeared to be a well-established Phillips curve, however, since 2012 an inflation puzzle has emerged. A 'missing disinflation' episode in 2012-2014 was followed by a 'missing inflation' episode from 2014 onwards, where core inflation remained persistently low despite considerable declines in the unemployment rate.

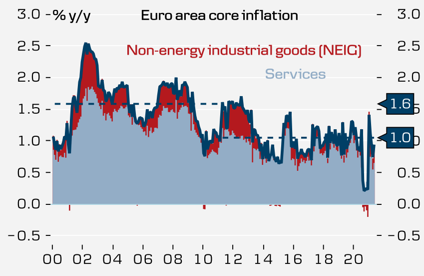
**Could a regime-shift in core inflation be underway in Europe following the corona crisis?** The fact that the drivers behind the low inflation conundrum in Europe are imperfectly understood by academics and central bankers alike complicates a clear answer to this question. After all, the underlying inflation dynamics in the euro area will only change course, if some of the factors that have depressed inflation over the past decade will also change in a post-corona world. Various possible culprits have been mentioned, including wage dynamics, demographics, productivity and global disinflationary forces. We do not pretend to have the ultimate answer to the euro inflation puzzle, but in the following, we will try to take a closer look at some of the common short and medium-term inflation drivers and asses their potential impact on core inflation. For a more comprehensive discussion on the structural inflation drivers, see also *Research Euro Area - Measuring the euro area inflation pulse*, 9 November 2020.

**An added difficulty in predicting the movements of core inflation stems from various idiosyncratic and technical factors**, such as VAT changes that led to a marked drop in H2 20 or a rebasing of German package holidays that caused a spike in 2015. As these factors can have quite significant effects on the profile, we will in the following also look at alternative measures of underlying inflation pressures, trying to decipher the 'true' inflation dynamics in the euro area.

## Rising external price pressures are simmering...

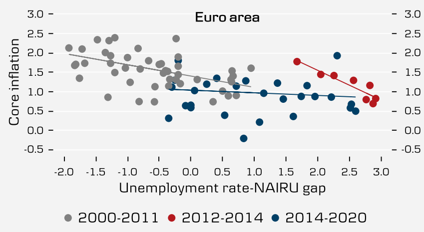
**Both domestic and external forces drive core inflation developments.** On the domestic side, price pressures are largely determined by unit labour costs, profit margins and the pricing power of firms. On the external side, the inflation dynamics are mainly affected through import prices for commodities as well as intermediate and final consumption goods (see overview below).

### Core inflation has been on a downtrend



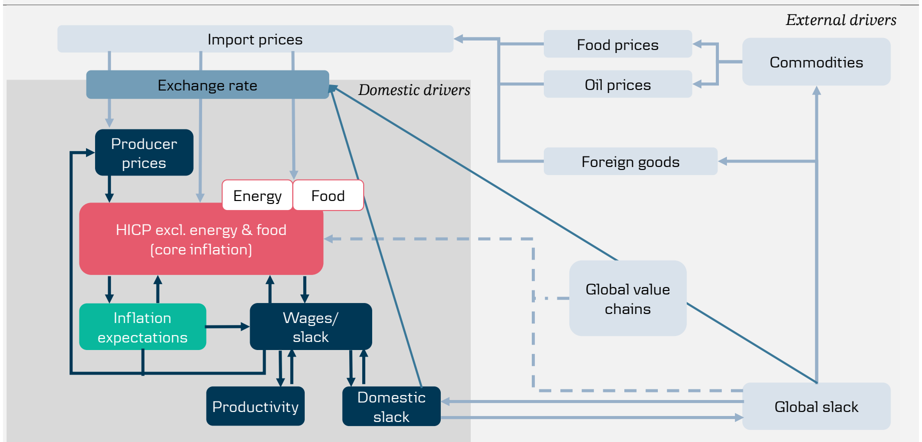

Source: Eurostat, Macrobond Financial, Danske Bank

### 'Missing' inflation despite tightening labour market conditions since 2014




Source: IMF, Macrobond Financial, Danske Bank

### Both domestic and external drivers impact core inflation



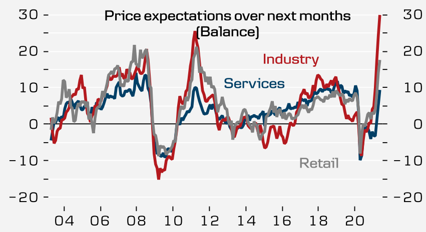

Source: ECB

**One notable change that has emerged since the start of the year is the unprecedented rise in input cost pressures observed at earlier stages of the pricing chain** (see *Global Research: Global manufacturing heading for a hot (inflation) summer*, 12 May 2021). Business surveys such as the PMI bear witness to widespread supply chain disruptions amid lengthening supplier delivery times and rising input costs. With demand continuing to outpace supply for many goods and services, rising PMI output prices point to an increased willingness of producers to pass on higher production costs to consumers. This dynamic is especially visible for the goods-producing sectors, while prices charged for services are rising more modestly especially in corona-hit sectors such as travel and accommodation services. However, this dynamic will likely change with the full re-opening of economies during the summer and we would not be surprised to see similar supply side constraints and selling price increases also emerge in the services sector from H2 21 onwards.

**The pass-through of higher commodity prices to core inflation mainly works through the inputs-to-production channel.** Since mid-2020, producer price inflation (PPI) and import price inflation (IPI) for intermediate goods has been on the rise. However, the pass-through to subsequent stages of the consumer pricing chain remains somewhat muted, as PPI and IPI for non-food consumer goods have yet to recoup their 2019 levels. With inflationary pressures so far more prevalent at earlier stages of the supply chain, it is not surprising that a broad-based rise in NEIG categories has not yet been visible in 2020. That said, the close link between oil/PPI and non-durable goods price inflation (with ca. 12M lag) suggests we should expect some pick-up in non-durable goods price inflation during 2022 (which fades in 2023). On the services side, transport services will be the most exposed to the rise in energy prices that could start to filter through in 2022.

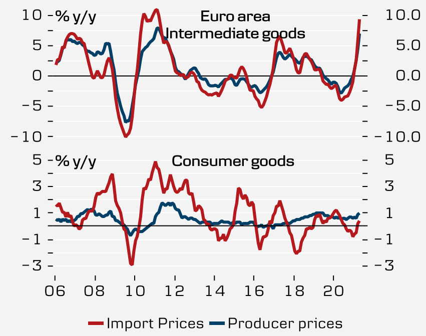
**Exchange rate movements also have an impact on core inflation (and especially NEIG)**, with around 15% of items constituting directly imported consumer goods. The exchange rate pass-through works mainly through durable goods, although the effect can take up to two years to fully work its way through the pricing chain. Assuming an unchanged effective euro exchange rate at current levels, import prices should see a moderate uptrend over the coming two years, thanks to the abating euro appreciation. An accelerating euro depreciation vis-à-vis the US dollar, as envisioned by our latest *FX forecasts*, could imply even more tailwind to durable goods prices. That said, the reality often deviates from the model estimates. When we saw a strong effective euro appreciation of 5.3% in 2018, import prices responded relatively swiftly, but the eventual impact on durable goods prices was much more muted. *ECB research* has also found that the exchange rate pass-through has declined in recent decades, both due to the low inflation environment and the changing composition of imports.

### Firms expect price increases ahead



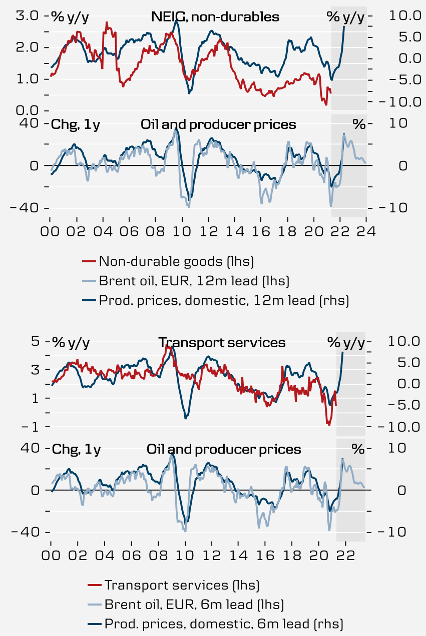

*Source: EU Commission, Macrobond Financial, Danske Bank*

### Input prices for intermediate goods on the rise




*Source: Eurostat, Macrobond Financial, Danske Bank*

### Higher oil prices should create upward pressure for non-durable goods and transport services




*Source: Eurostat, Macrobond Financial, Danske Bank*

**Various factors determine the degree of exchange rate pass-through, including the pricing power of firms, the invoicing currency choice and type of shock driving the exchange rate movement.** In these crisis times, one could argue that corona-related factors probably factor much more prominently in firms' pricing decision than the pure mechanical impact of the exchange rate. Still, the combination of rising import prices and increased demand for durable goods such as audio-visual equipment could create a conducive environment for consumer price increases. Another important category are vehicles (accounting for 44% of durables), which also have seen price increases lately. However, structural changes in the sector will probably be more important than exchange rate movements in determining future pricing strategies (see also *Euro Area Research: Europe's car sector: back on the road again?*, 10 September 2020).

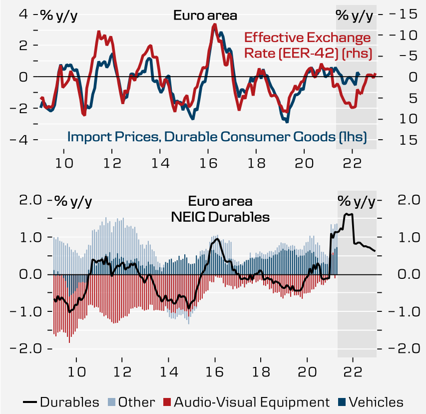
**Beyond the indirect effects of import and producer price increases to core inflation, inflation expectations also play a crucial role in the propagation of higher energy prices to core inflation through so-called second-round effects.** Market-based inflation expectations, as measured by the 5y5y inflation swap forward, have risen back to the highest levels since 2018. However, unless we see further steep commodity price increases in the coming year (not our baseline), we remain sceptic that higher inflation expectations will start to affect the wage formation process in the euro area. While market-based measures of inflation expectations have risen, survey-based ones – such as the survey of professional forecasters – show a more mixed picture. Furthermore, there can be a wide gap between officially measured inflation and perceived inflation by households, which ultimately matters for wage demands (see *ECB study*). While quantitative inflation perceptions and expectations of European consumers ranged between 5-7% in January, this does not seem particularly elevated form a historical perspective (see chart). This divide illustrates the challenges in accurately measuring and understanding inflation pressures in our modern economies, but in sum we are seeing few evidence that a broad-based rise in wage pressures is on the horizon for the coming two years.

## ...But domestic slack should hold core inflation at bay

**With the onset of the Covid-19 pandemic, European governments introduced a range of job retention schemes and labour laws that helped to limit the increase in unemployment.** Some 1.5m people have lost their job in the euro area since March 2020, but the rise in the unemployment rate – standing at 8.0% in April 2021, up 1pp since the pandemic hit – has been relatively contained in light of the sharp GDP contraction observed during 2020. However, despite this benign dynamic, we expect that labour market conditions will normalise only gradually, with the unemployment rate hitting its pre-pandemic level of 7.1% only by 2023.

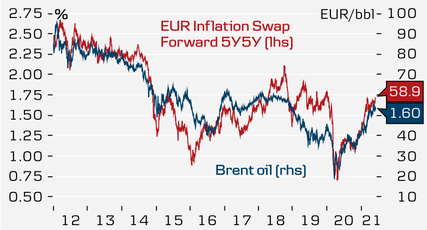
**A broader analysis of labour market conditions points to the existence of more slack than hits the eye just by looking at the unemployment rate.** Job retention schemes still cushion developments in the labour market and ca. 5.6% of the euro area labour force continued to be on short-time working schemes in February. The pandemic also brought a 30% increase in the number of discouraged workers in the euro area and together the share of workers who are unemployed, discouraged or enrolled in short-time working schemes is around 17%, more than double the headline unemployment rate. With the economic recovery, the withdrawal of fiscal support measures should see some inactive and discouraged workers returning to the labour force, increasing the pool of available workers and limiting the decline in unemployment. However, it will be a gradual process that is not without pitfalls, as the recent increase in long-term unemployment illustrates (currently accounting for 40% of total unemployment). Furthermore, some country differences are also to be expected, with France, Italy and Spain exhibiting a slower labour market recovery than Germany.

**Impact on durables from import price movements have been muted lately**



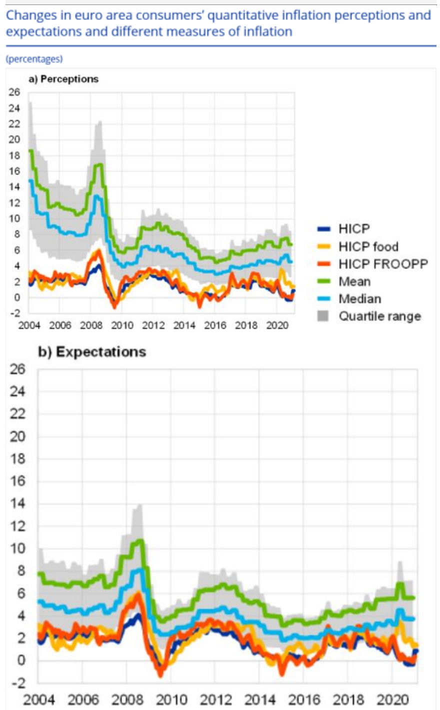

*Source: Eurostat, ECB, Macrobond Financial, Danske Bank*

**Market-based inflation expectations have risen with commodity prices**




*Source: Bloomberg, Macrobond, Danske Bank*
*Note: Past performance is not a reliable indicator of current or future results*

**Consumer perceptions differ widely from measured inflation**




*Source: ECB, EU Commission, Eurostat*

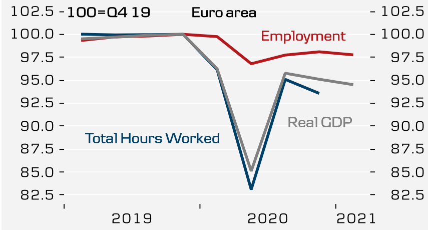
**As the recovery gains steams, firms will likely try to increase hours worked before hiring new staff.** At the end of 2020 total hours worked stood still some 6% below end-2019 level and its recovery has been slower than that of real GDP and employment. That said, latest business surveys such as the PMIs have pointed to an increasing willingness of firms to take on new staff amid strengthening demand and a brightening outlook. Hiring plans have been most pronounced amid manufacturing firms struggling with full order books and capacity constraints, but also service providers are increasingly looking for personnel as re-opening unfolds. Anecdotal evidence of growing difficulties in filling job vacancies has accompanied the growing hiring pace, but this seems largely centred on some specific sectors such as hospitality (see *FT article*).

**While short-term staff squeezes might prompt sporadic wage increases in some sectors, we do not expect to see a widespread labour shortage in the euro area.** With the expiration of furlough schemes more workers will re-join the labour market, limiting the impact of short-term staff squeezes on wage dynamics. Furthermore, there is little evidence that labour shortages and salary rises are about to become widespread in the economy. With wage bargaining still playing a central role in continental Europe, the latest sectoral pay deals do not provide much optimism for ‘inflation hawks’. Negotiated wage growth has been on a downtrend in most euro area countries during 2020 and we expect this development to persist in the coming two years. The latest IG Metall wage bargaining round (representing some 3.8m industrial workers in Germany and usually a good bellwether for negotiated wage trends) agreed on a 2.3% wage increase for the period to October 2022 (equal to a 1.5% annual increase), much lower than the 4.3% wage increase secured in the last round of 2018. Other bargaining rounds concluded under the shadow of the recession have seen a similar trend towards prioritizing job security and flexible working conditions (such as the right to home office) at the expense of wage moderation. And with many of these running for a period of two years, wage moderation is going to persist next year, despite the strong manufacturing activity and rising inflation expectations. An *IMF study* from 2018 also lists backward-looking wage and price-setting behaviours and the long duration of wage agreements as key factors behind the high degree of inflation inertia in Europe. Upside risk could stem, from a potential rise in the federal minimum wage in Germany. Both Social Democrats and the Green party – which will likely be part of the next German government - would like to increase the rate to 12€/h from 9.50€/h currently.

**With wages being a crucial cost item, especially for services firms, there has historically existed a close link between wage growth and core inflation.** Usually, rising wage growth has filtered through to core inflation with a six to twelve month lag in the euro area. However, the wage growth episode since 2016 constituted an exception, were rising wages failed to materially lift core inflation. This illustrates that rising wages are a *necessary* but not *sufficient* condition for a sustained rise in core inflation. What ultimately matters for inflation is wage increases relative to productivity growth (i.e. unit labour costs) and unless wage growth accelerates beyond productivity growth in a sustained manner, inflationary pressures will remain contained. Hence, to what degree higher wage costs are passed on to consumer prices also crucially depends on the extent of firms’ pricing power, profit margins and the general economic backdrop.

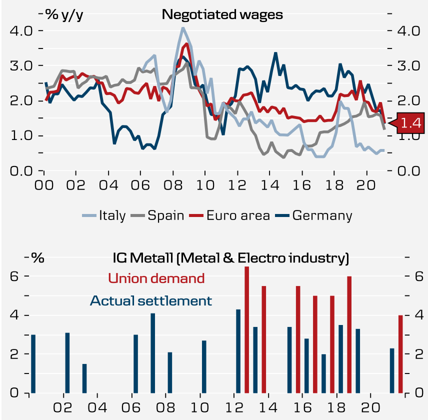
**Furthermore, in contrast to the US, the inflation process in the euro area is to a large extent backward-looking**, meaning that long-term inflation expectations and labour market conditions play a relatively less important role than past low rates of core inflation (see also *IMF study*). Hence, even if wage growth in the coming years surprises on the upside against our expectations, it is by no means a given that it will also translate into persistently higher underlying inflation pressures.

**Hours worked have lagged the recovery in GDP**



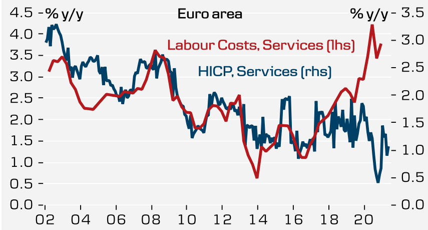

*Source: Eurostat, Macrobond Financial, Danske Bank*

**Negotiated wages are on a downtrend**



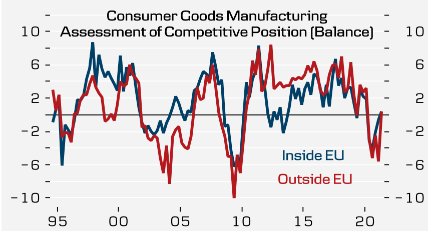

*Source: ECB, Bundesbank, IG Metall, Macrobond Financial, Danske Bank*

**Disconnect between wage growth and core inflation since 2016**




*Source: Eurostat, Macrobond Financial, Danske Bank*

**Concerns about competitive position could limit price increases**




*Source: EU Commission, Macrobond Financial, Danske Bank*

## Mind the inflation gap

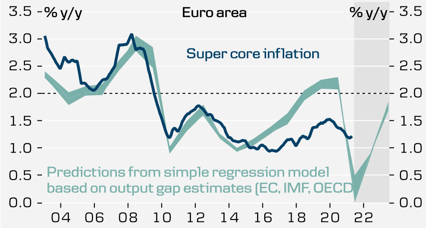
**As core inflation remains distorted by idiosyncratic and technical factors during 2021, it is useful to keep an eye on alternative measures of underlying inflation pressures**, which are also closely monitored by the ECB. Overall, these measures do not yet set alarm bells ringing that a broad-based and sustained rise in underlying inflationary pressures is on the horizon.

**'*Super core inflation*'[1] – which only includes core items statistically related to the output gap – provides clearer signals of turning points in underlying inflation and is an important early warning indicator of inflation momentum.** Super core has been on a steady downtrend during 2020, but has shown signs of a bottoming out in recent months. Although, we look for a strong rebound of the euro area economy during H2 21, it will be a gradual one with pre-pandemic GDP levels only reached by early 2022 and the pre-pandemic GDP trend only sometime in 2023. That also means, the negative output gap will close only gradually over the coming two years, leaving limited scope for a sizable turnaround in (super) core inflation. A simple regression model based on output gap measures from leading economic forecasters, such as EU Commission, IMF and OECD would predict super core inflation to reach rates of 1.5% only by the end of 2022. However, forecasting uncertainty is bigger than usual, as core inflation's responsiveness to economic slack (just as to wages) has weakened since 2017.

**Other measures of underlying inflation pressures provide a similar narrative.** Our weighted-median inflation measure[2] and our domestically generated inflation measure[3] both suggest that underlying inflation pressures have eased during 2020, although less than would appear from the dramatic fall in core inflation during H2 20. Both measures have shown signs of a bottoming out/rebound in early 2021, but neither suggests that core inflation rates are about to revisit the levels observed prior to the Global Financial Crisis. The most upbeat picture of underlying inflation is currently presented by the persistent component of inflation as measured by PCCI[4], which stands at the highest level since July 2018, with a steady uptrend visible since June 2020.

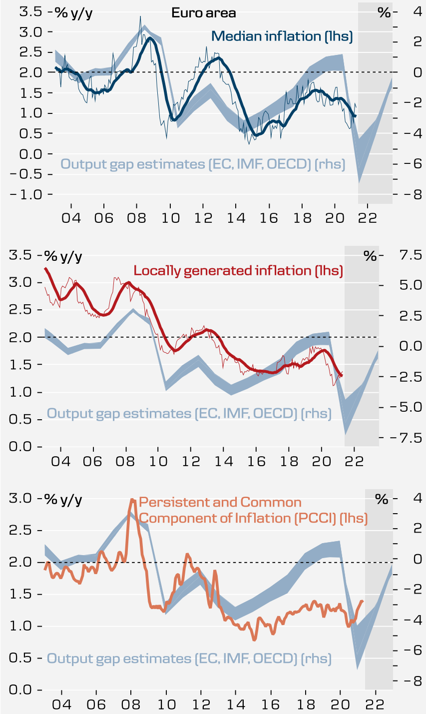
**Overall, our analysis of alternative measures suggests that underlying inflation pressures have been more resilient under the pandemic than the collapse in core inflation during 2020 would have suggested.** Tentative signs of a rebound in underlying inflation are visible across different measures and welcome news for the ECB. Gradually closing output gaps across euro area countries suggests the uptrend will persist in the coming two years, but it will be a gradual one, with added uncertainty on the degree and pace of rebound due to the weakening responsiveness of core inflation to measures of economic slack.

**Output gap will close only gradually, leaving super core inflation subdued**




*Source: Eurostat, EU Commission, IMF, OECD, Macrobond Financial, Danske Bank*

**Underlying inflation measures have turned the corner**




*Source: Eurostat, ECB, EU Commission, IMF, OECD, Macrobond Financial, Danske Bank*

[1] Danske's super core inflation measure constitutes 14 items (accounting for 30% of the HICP weight), with a statistically significant and positive link to the output gap (mostly in the services component).

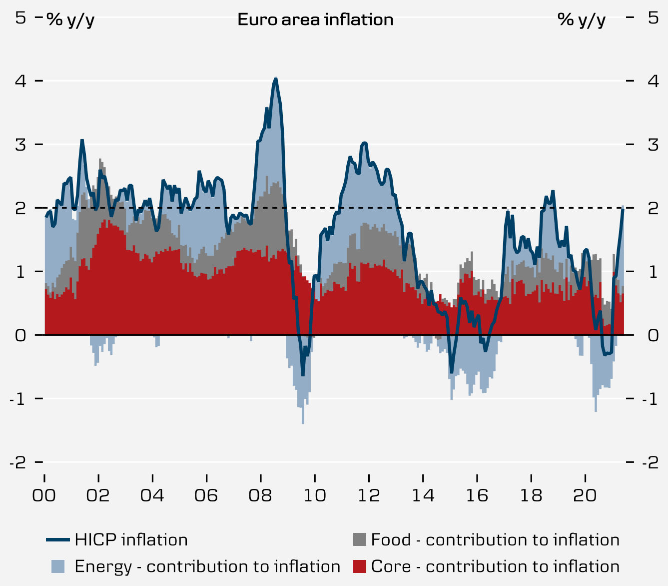
[2] Danske's median inflation follows the methodology of *Ball and Mazumder (2020)* and is constructed from the inflation rates of the 94 industries that make up the HICP. The weighted median is the inflation rate such that industries with half of the total weights have higher rates and industries with half of the weights have lower rates.

[3] Danske's domestically generated inflation measure includes only locally sourced HICP items and aims to filter out the impact of international factors and globalisation. It constitutes 22 locally sourced items (accounting for 40% of the HICP weight), mostly in the services component.

[4] PCCI aims to capture the persistent part of inflation and is an alternative to the typical exclusion-based underlying inflation measures. Methodologically, it relies on a generalised dynamic factor model estimated on a large set of disaggregated HICP inflation rates, see *ECB (2020)*.

# Appendix

### HICP components



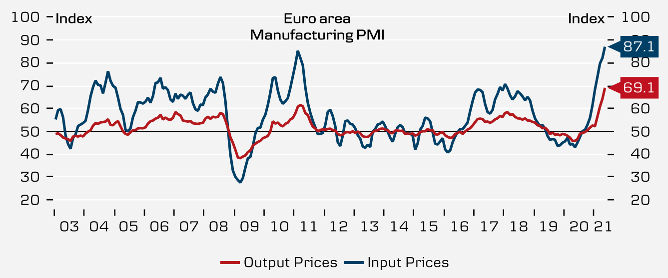

*Source: Eurostat, Macrobond Financial, Danske Bank*

### Services account for nearly two-thirds of core inflation

| | Core weight (%) |
|---|---|
| Non-energy Industrial Goods | 39.1 |
| - Durables | 14.2 |
| - Semi-durables | 14.5 |
| - Non-durables | 10.4 |
| Services | 60.9 |
| - Communication | 3.8 |
| - Housing | 17.7 |
| - Package tours & accommodation | 2.7 |
| - Recreation & personal care | 13.9 |
| -Transport | 9.5 |
| - Miscellaneous | 13.1 |

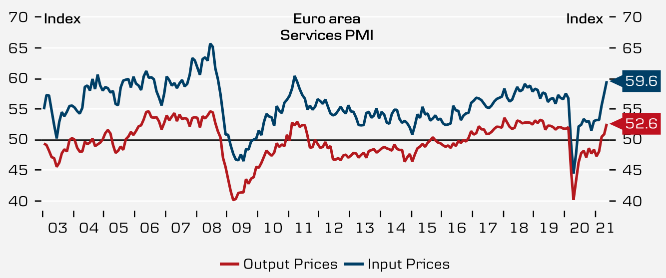
*Source: Eurostat*

### Cost-push inflation showing no signs of abating in manufacturing sector...



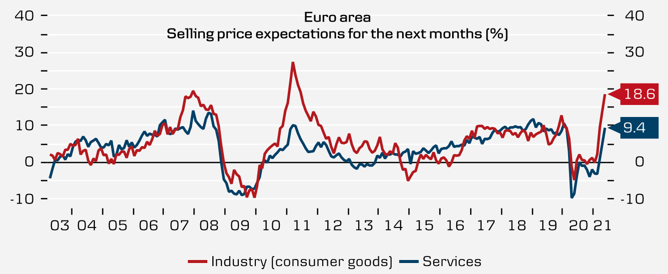

*Source: Markit, Macrobond Financial, Danske Bank*

### ...and increasingly visible in services sector as well



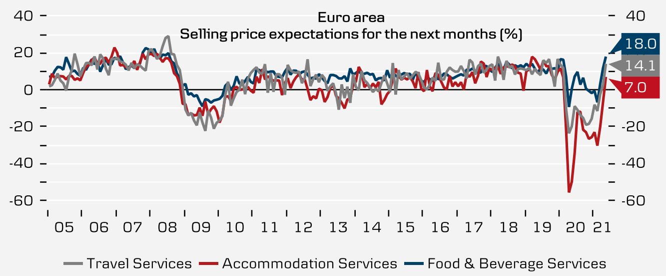

*Source: Markit, Macrobond Financial, Danske Bank*

### Pass-through of higher input costs to consumer prices increasingly visible for goods...



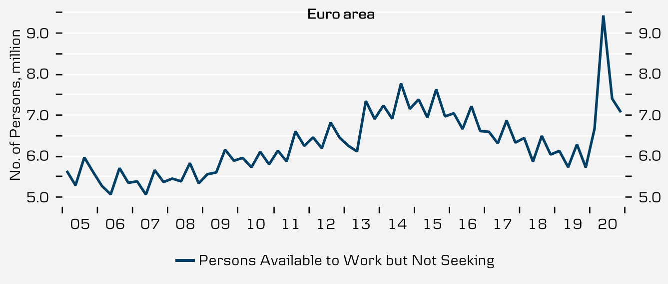

*Source: EU Commission, Macrobond Financial, Danske Bank*

### ... But less in corona hit services sectors



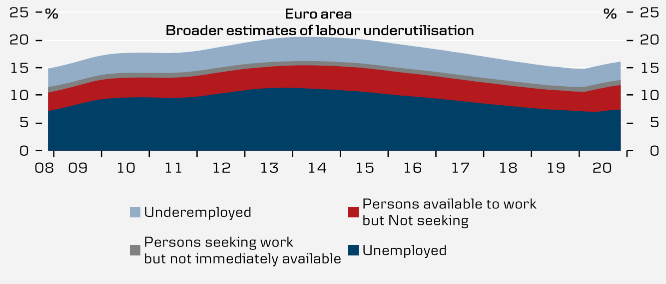

*Source: EU Commission, Macrobond Financial, Danske Bank*

### More discouraged workers than pre-Covid-19



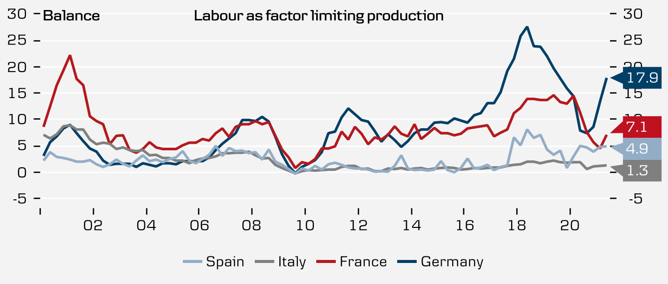

*Source: Eurostat, Macrobond Financial, Danske Bank*

### A sharper increase in broader unemployment measures



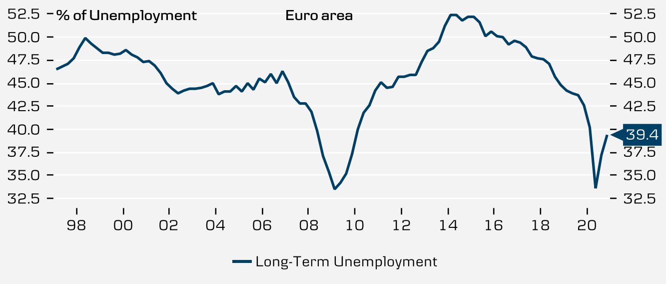

*Source: Eurostat, Macrobond Financial, Danske Bank*

### Labour not yet a major limiting factor to production



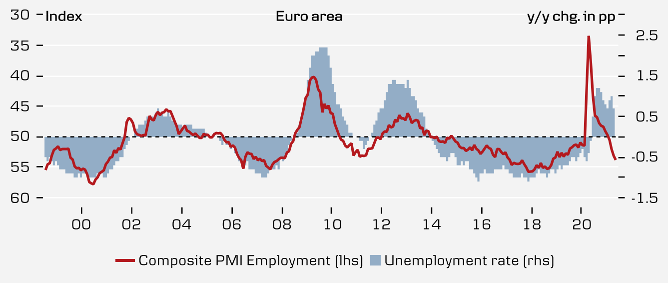

*Source: EU Commission, Macrobond Financial, Danske Bank*

### Share of long-term unemployed workers is on the rise



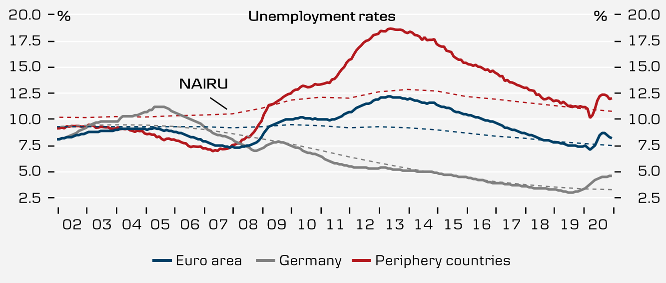

*Source: Eurostat, Macrobond Financial, Danske Bank*

### Rise in actual unemployment less than in previous crises



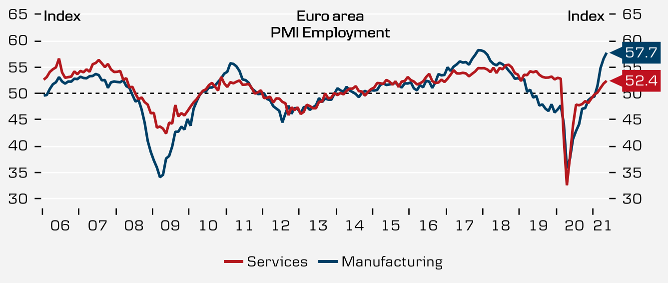

*Source: Eurostat, Markit, Eurostat, Macrobond Financial, Danske Bank*

### Most countries have a positive unemployment gap



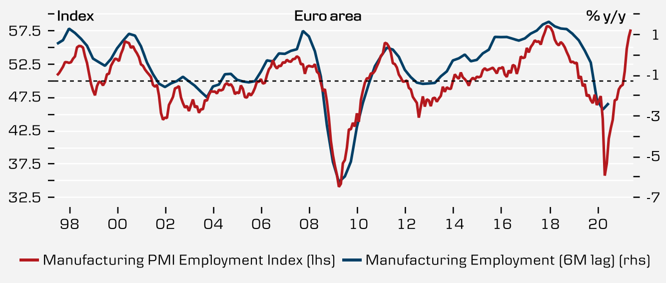

*Source: Eurostat, Macrobond Financial, Danske Bank*

### Euro area firms have started hiring again...




*Source: Eurostat, Markit, Eurostat, Macrobond Financial, Danske Bank*

### ... Benefitting especially manufacturing workers




*Source: Eurostat, Markit, Macrobond Financial, Danske Bank*

# Disclosure

This research report has been prepared by Danske Bank A/S ('Danske Bank'). The author of this research report is Aila Mihr, Senior Analyst.

### Analyst certification

Each research analyst responsible for the content of this research report certifies that the views expressed in the research report accurately reflect the research analyst's personal view about the financial instruments and issuers covered by the research report. Each responsible research analyst further certifies that no part of the compensation of the research analyst was, is or will be, directly or indirectly, related to the specific recommendations expressed in the research report.

### Regulation

Authorised and regulated by the Danish Financial Services Authority (Finanstilsynet). Deemed authorised by the Prudential Regulation Authority. Subject to regulation by the Financial Conduct Authority and limited regulation by the Prudential Regulation Authority. Details of the Temporary Permissions Regime, which allows EEA-based firms to operate in the UK for a limited period while seeking full authorisation, are available on the Financial Conduct Authority's website.

Danske Bank's research reports are prepared in accordance with the recommendations of the Danish Securities Dealers Association.

### Conflicts of interest

Danske Bank has established procedures to prevent conflicts of interest and to ensure the provision of high-quality research based on research objectivity and independence. These procedures are documented in Danske Bank's research policies. Employees within Danske Bank's Research Departments have been instructed that any request that might impair the objectivity and independence of research shall be referred to Research Management and the Compliance Department. Danske Bank's Research Departments are organised independently from, and do not report to, other business areas within Danske Bank.

Research analysts are remunerated in part based on the overall profitability of Danske Bank, which includes investment banking revenues, but do not receive bonuses or other remuneration linked to specific corporate finance or debt capital transactions.

### Financial models and/or methodology used in this research report

Calculations and presentations in this research report are based on standard econometric tools and methodology as well as publicly available statistics for each individual security, issuer and/or country. Documentation can be obtained from the authors on request.

### Risk warning

Major risks connected with recommendations or opinions in this research report, including as sensitivity analysis of relevant assumptions, are stated throughout the text.

### Expected updates

Ad-hoc.

### Date of first publication

See the front page of this research report for the date of first publication.

# General disclaimer

This research has been prepared by Danske Bank A/S. It is provided for informational purposes only and should not be considered investment, legal or tax advice. It does not constitute or form part of, and shall under no circumstances be considered as, an offer to sell or a solicitation of an offer to purchase or sell any relevant financial instruments (i.e. financial instruments mentioned herein or other financial instruments of any issuer mentioned herein and/or options, warrants, rights or other interests with respect to any such financial instruments) ('Relevant Financial Instruments').

This research report has been prepared independently and solely on the basis of publicly available information that Danske Bank A/S considers to be reliable but Danske Bank A/S has not independently verified the contents hereof. While reasonable care has been taken to ensure that its contents are not untrue or misleading, no representation or warranty, express or implied, is made as to, and no reliance should be placed on, the fairness, accuracy, completeness or reasonableness of the information, opinions and projections contained in this research report and Danske Bank A/S, its affiliates and subsidiaries accept no liability whatsoever for any direct or consequential loss, including without limitation any loss of profits, arising from reliance on this research report.

The opinions expressed herein are the opinions of the research analysts and reflect their opinion as of the date hereof. These opinions are subject to change and Danske Bank A/S does not undertake to notify any recipient of this research report of any such change nor of any other changes related to the information provided in this research report.

This research report is not intended for, and may not be redistributed to, retail customers in the United Kingdom (see separate disclaimer below) and retail customers in the European Economic Area as defined by Directive 2014/65/EU.

This research report is protected by copyright and is intended solely for the designated addressee. It may not be reproduced or distributed, in whole or in part, by any recipient for any purpose without Danske Bank A/S's prior written consent.

## Disclaimer related to distribution in the United States

This research report was created by Danske Bank A/S and is distributed in the United States by Danske Markets Inc., a U.S. registered broker-dealer and subsidiary of Danske Bank A/S, pursuant to SEC Rule 15a-6 and related interpretations issued by the U.S. Securities and Exchange Commission. The research report is intended for distribution in the United States solely to 'U.S. institutional investors' as defined in SEC Rule 15a-6. Danske Markets Inc. accepts responsibility for this research report in connection with distribution in the United States solely to 'U.S. institutional investors'.

Danske Bank A/S is not subject to U.S. rules with regard to the preparation of research reports and the independence of research analysts. In addition, the research analysts of Danske Bank A/S who have prepared this research report are not registered or qualified as research analysts with the New York Stock Exchange or Financial Industry Regulatory Authority but satisfy the applicable requirements of a non-U.S. jurisdiction.

Any U.S. investor recipient of this research report who wishes to purchase or sell any Relevant Financial Instrument may do so only by contacting Danske Markets Inc. directly and should be aware that investing in non-U.S. financial instruments may entail certain risks. Financial instruments of non-U.S. issuers may not be registered with the U.S. Securities and Exchange Commission and may not be subject to the reporting and auditing standards of the U.S. Securities and Exchange Commission.

## Disclaimer related to distribution in the United Kingdom

In the United Kingdom, this document is for distribution only to (I) persons who have professional experience in matters relating to investments falling within article 19(5) of the Financial Services and Markets Act 2000 (Financial Promotion) Order 2005 (the 'Order'); (II) high net worth entities falling within article 49(2)(a) to (d) of the Order; or (III) persons who are an elective professional client or a per se professional client under Chapter 3 of the FCA Conduct of Business Sourcebook (all such persons together being referred to as 'Relevant Persons'). In the United Kingdom, this document is directed only at Relevant Persons, and other persons should not act or rely on this document or any of its contents.

## Disclaimer related to distribution in the European Economic Area

This document is being distributed to and is directed only at persons in member states of the European Economic Area ('EEA') who are 'Qualified Investors' within the meaning of Article 2(e) of the Prospectus Regulation (Regulation (EU) 2017/1129) ('Qualified Investors'). Any person in the EEA who receives this document will be deemed to have represented and agreed that it is a Qualified Investor. Any such recipient will also be deemed to have represented and agreed that it has not received this document on behalf of persons in the EEA other than Qualified Investors or persons in the UK and member states (where equivalent legislation exists) for whom the investor has authority to make decisions on a wholly discretionary basis. Danske Bank A/S will rely on the truth and accuracy of the foregoing representations and agreements. Any person in the EEA who is not a Qualified Investor should not act or rely on this document or any of its contents.

**Report completed:** 7 June 2021, 15:00 CET

**Report first disseminated:** 8 June 2021, 06:00 CET