26 May 2021

Global Research

The impact on inflation of a commodity super cycle

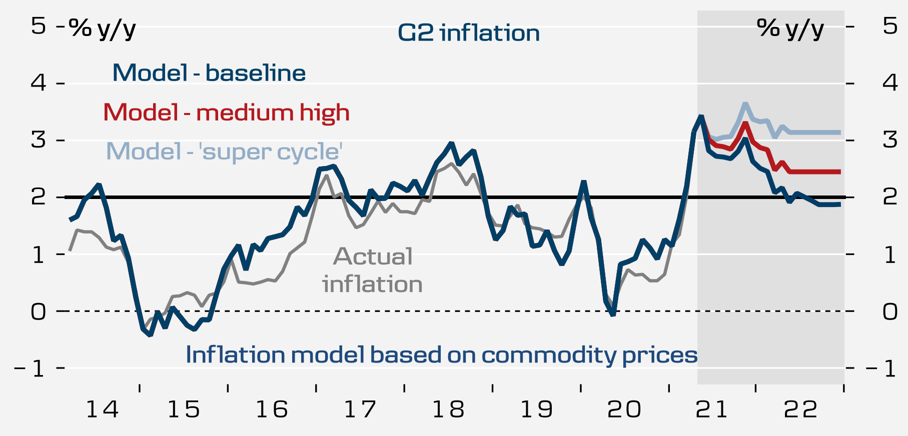
- **In this publication we look at three commodity price scenarios and what it means for headline inflation in the US and the euro area.**
- **In our baseline scenario, US headline inflation peaked in May while euro inflation does not top out until September. In this scenario, the rise in inflation is transitory. In a 'commodity super cycle' scenario, the rise in G2 inflation becomes more sustained and stays above 3% on average in 2022.**
- **Although developments in core inflation will be key for central bank policy, a peak in headline inflation has historically eased inflation fears in bond markets.**

This is the second publication in our series on global inflation. Here we look at the direct impact of commodity prices on headline inflation. In a forthcoming publication we look closer at the drivers for 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.

A scenario analysis on commodity prices and inflation

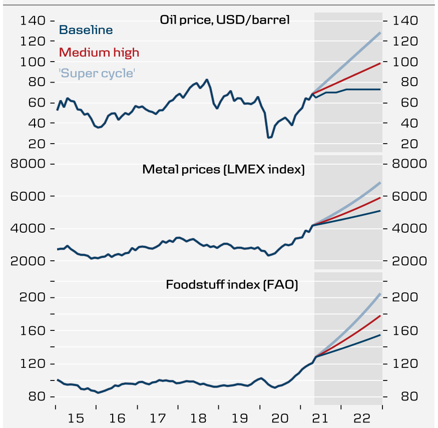
Commodity prices are a key driver for headline inflation and also an important input for core inflation. Over the past year, commodity prices have surged and oil prices are now back to pre-crisis levels while metal prices and food prices are close to 50% and 30% higher than pre-crisis levels, respectively. These sharp rises have raised the question of the inflationary impact with some (such as the Federal Reserve), arguing the impact will only be temporary as commodity price inflation comes down, while others project a super cycle

Models based on scenarios for oil prices - headline inflation peaks soon but stays close to 2%



Note: G2 here is US and euro area
Source: Macrobond Financial, Danske Bank

Commodity price scenarios



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in commodity prices due to the strong growth in the global economy amid unprecedented fiscal and monetary stimulus as well as the lifting of restrictions.

To get a sense of what is needed to see a sustained rise in inflation rather than a transitory increase we have drawn up three scenarios for commodity prices and looked at the impact on inflation. As the analysis focuses on upside risks to inflation, we have chosen to only look at scenarios that imply higher prices than what we have in our baseline. Of course, another scenario could be that commodity prices starts to decline at some point. This would imply a sharp drop in headline inflation next year.

As it is only a partial analysis we do not look at other drivers than commodities, and the scenarios are chosen for illustrative purposes (see more in the box on page 3). Equally important for whether the inflation increase is sustained or transitory will be the spill-over into core components of inflation, wage growth and how tight the labour market is. We will look more into these drivers of core inflation in our next paper in this inflation series.

Three key points come out of the analysis of the commodity price impact:

1. **Oil prices have a very high explanatory power of headline inflation** in developed economies. The explanatory power of metals is not statistical significant, though, once the oil impact is accounted for.
2. **In our baseline scenario US inflation peaks in May** and falls back to just above 2% in H1 2022. Euro area inflation is projected to peak in September at 2.6% and fall down to average 1.4% during 2022. This development generally fits with the view that the spike in headline inflation is transitory.
3. **However, in the medium-high and super-cycle scenarios inflation stays above 2% on a more permanent basis in both the US and the euro area.**

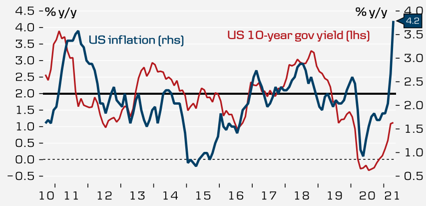
If indeed the baseline scenario plays out and a rise in inflation is transitory it would normally tend to put downward pressure on government bond yields and inflation expectations once we are past the peak in headline inflation (see charts on the right). The relationship is reinforced by the fact that inflation is cyclical and a peak in inflation and a peak in *momentum* of the business cycle often goes hand-in-hand. Moving past these peaks has tended to reduce inflation fears and put downward pressure on bond yields.

US: Commodity prices determine headline inflation

The swings in US headline inflation are usually driven by big swings in commodity prices, not least oil prices, with energy accounting for 6.2% of total CPI. This also means that oil price developments are very important for where headline inflation is heading in coming years. All else equal we are about to see the peak in US headline inflation if oil prices are only moving slightly higher from here. If oil demand gets stronger than we anticipate and oil prices continue higher, we may see US headline inflation around 3% or higher also next year. It is also important to recognise that US inflation is more exposed to oil price volatility than euro area inflation due to lower taxes. The pass-through to consumer prices is much higher. Higher food prices would also push headline inflation higher (food accounts for 14.1% of total CPI inflation) but the relationship is not as strong as for oil (not close to one-to-one and the impact comes with a lag).

It is, however, important to recognise that the Fed ever since the oil price declines in 2014-15 has looked more at core inflation than headline. That means the Fed is looking beyond increases in headline inflation mainly driven by higher food and energy prices. But core inflation is also sensitive to oil prices. While goods prices seem insensitive (partly

US headline inflation has some correlation with 10-year yields



Source: Macrobond Financial, Danske Bank

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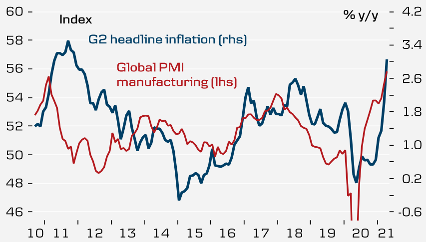
Headline inflation also tends to correlate with manufacturing cycle



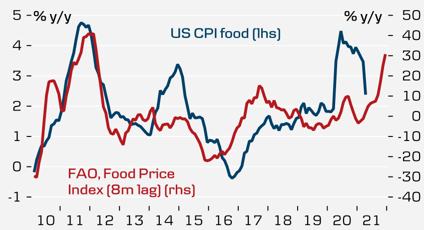
Source: Macrobond Financial, Danske Bank

Inflation expectations have high correlation with oil price changes (as does headline inflation)

Source: Macrobond Financial, Danske Bank

Note: Past performance is not a reliable indicator of current or future results

Rising food prices affect US food price inflation with a lag



Note: Past performance is not a reliable indicator of current or future results.

Sources: BLS, FAO, Macrobond Financial because of other factors like globalisation, competition and the USD), we see a relationship with core services (due to e.g. transportation services). So higher commodity prices also have a tendency to push core inflation higher, vice versa, although not to the same extent.

Box: The commodity price scenarios

On top of our baseline scenario we look at two alternative scenarios with a stronger rise in commodity prices (see chart on page 1).

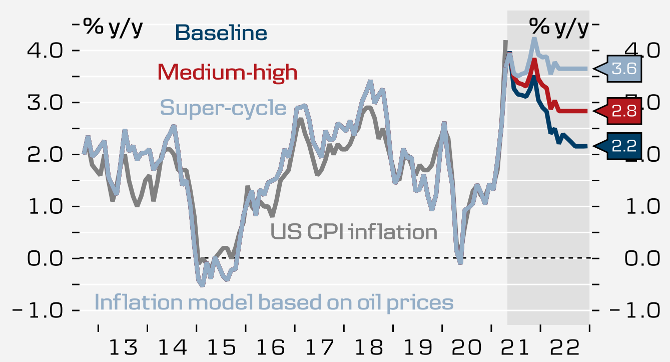
In our **baseline scenario** oil prices rise gradually to USD73 in 2022 and stay around that level. It is based on an increase in demand from the global recovery and an increase in transportation as tourism picks up. However, OPEC+ and US shale producers are likely to accommodate the move, which is why we do not look for a sharper increase. We still project rising metal prices as goods demand is expected to be solid as capex picks up and goods demand increases in Europe. But we expect the pace of increase to slow down as the extraordinary strength in US goods consumption fades and China tightens policy towards commodity-intensive sectors such as infrastructure and construction. More supply will also come to the market as COVID-related disruptions fade and new investments add capacity. On food prices, the forecast is as always very uncertain but we have assumed a gradual further increase.

In the **'medium-high' scenario** we have pencilled in a bit stronger rise in commodity prices with oil prices (brent) rising gradually to around USD100 by the end of 2022 and metal and food prices rising at a robust pace in 2022 as well. This could take place if US goods consumption stays elevated for longer or that we underestimate the pick-up in goods consumption in the rest of the world as well as manufacturing investments.

In the **'super cycle' scenario,** we pencil in continued strong increases in commodity prices. It would require a very strong economic global recovery with central banks staying accommodative for long and accepting higher inflation – at least for some time. Stronger demand from infrastructure plans in US and Europe and commodity intensive green investments could also underpin such a scenario.

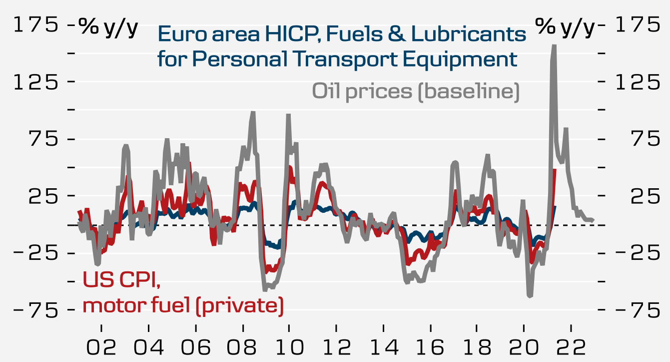
What concerns the Fed the most with respect to rising commodity prices is second round effects, i.e. that other prices (and/or wages) start to increase as a response to higher energy and food prices. This is also why the Fed prefers to look at inflation expectations, which the Fed considers being the most important driver of actual inflation in the long-run. Both market-based and survey-based inflation expectations have been increasing lately and are now back to where the Fed would like them to be. This may be an early sign that second round effects are indeed at play. However, as illustrated above there is a tendency that inflation expectations are 'adaptive' in nature and thus correlating highly with current inflation. It suggests that lower headline inflation in H2 2021 will work to dampen inflation expectations again.

Oil price development is very important for headline inflation



Sources: BLS, Bloomberg, Macrobond Financial, Danske Bank scenarios

US motor fuel inflation more volatile



Sources: Eurostat, BLS, Macrobond Financial

Euro inflation: HICP back to target – but how persistent?

As in the US, energy price developments have caused a noticeable pick-up in euro area HICP inflation over recent months. The oil price is the most prominent factor driving energy inflation (HICP weight: 9.5%) in the euro area. This reflects the strong and close-to-immediate pass-through of oil price changes to transport fuel prices, while the link with electricity, gas and other energy price components tends to be looser. Energy inflation has been pushed up both by recent oil price increases and by base effects linked to the collapse in oil prices at the beginning of 2020. Additional changes in VAT rates and other surcharges linked to Germany's introduction of a price on CO_2 emissions also affected energy inflation, creating an upwards bias of around 0.8 percentage points in energy inflation throughout 2021. However, this upward bias will fade with the turn of the year, leaving oil price changes and base effects back in the driving seat.

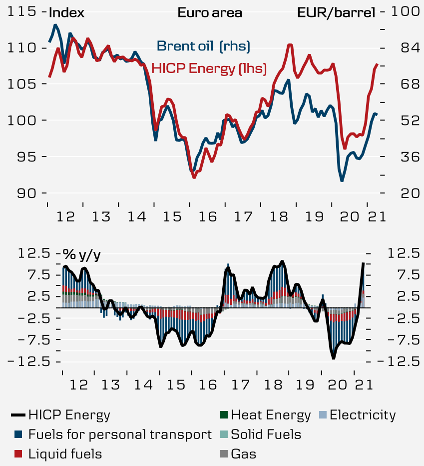
What would happen to headline inflation if oil prices continue to increase in 2021 and 2022? We consider different scenarios as outlined above. Holding both our baseline forecasts for core inflation and food price inflation unchanged and disregarding any changes to the effective euro exchange rate, the medium-high scenario for oil prices would imply HICP inflation topping at 2.7% in Q4 21 and then declining back to average 1.6% in 2022 (compared with 2.5% and 1.4% in our baseline scenario). Under the 'super cycle' scenario for oil prices the base effect would be less pronounced due to continued oil price increases in 2022, leaving HICP inflation to peak at 2.9% in Q4 21 and average 1.9% throughout 2022. Could such a price surge suffice to get ECB policymakers back into tightening mode? We doubt it, as long as volatile commodity prices remain the main inflation drivers.

Additionally, we also consider scenarios where food price increases complement the surge in oil prices. This would result in a picture of more persistent price pressures, not least because food items make up a larger share of the HICP basket (21.8%). In the medium-high scenario, headline inflation would remain elevated and close to the ECB's 2% target throughout 2022, while in the 'super cycle' scenario HICP inflation averages 2.4% in 2022 and remains above target throughout the year. In such a scenario where food price increases complement the rise in energy prices, we think it is likely that discussions about a reassessment of the ECB's policy stance would gather pace in the Governing Council. However, an actual rise in policy rates will remain crucially dependent on an accompanying rise in underlying inflation pressures, i.e. core inflation (HICP weight: 68.7%).

In the scenarios outlined above we have assumed no spill-over effects to core inflation. This seems unrealistic, especially in the 'super cycle' scenario, as continued steep rises in commodity prices will likely start to affect inflation expectations and the wage formation process (i.e. so-called second-round effects materialise). With oil and food being an important input to production, an upward impact on some service price inflation items such as transport services, restaurants and catering services could be expected. However, this indirect effect on consumer prices takes time to materialise and the degree and timing of pass-through will crucially depend on firms' perceived pricing power and the general economic environment. As a rule of thumb, the ECB *estimates* that a 10% increase in oil prices gives rise to a 0.4pp impact on HICP via the direct effect on the energy component and 0.2pp via the indirect effect on other HICP components over a period up to three years. This would imply that core inflation could be 0.6pp and 1.2pp higher in the medium-high and 'super cycle' scenario, respectively, over the next few years.

We will explore more of the second round effects on core inflation in a forthcoming publication.

Close link between oil and energy prices



Source: Eurostat, Macrobond Financial, Danske Bank

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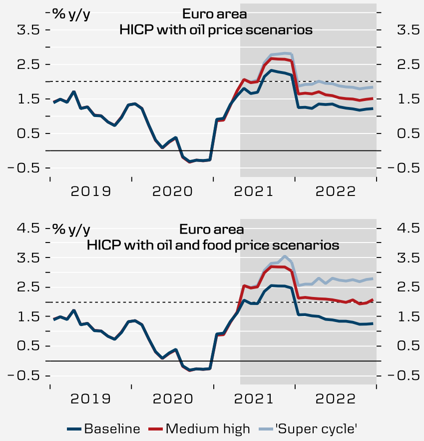
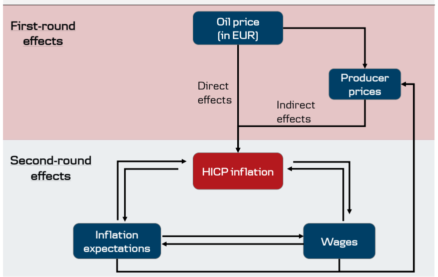
Continued oil and food price increases could push HICP close to ECB's target



Source: Eurostat, Macrobond Financial, Danske Bank

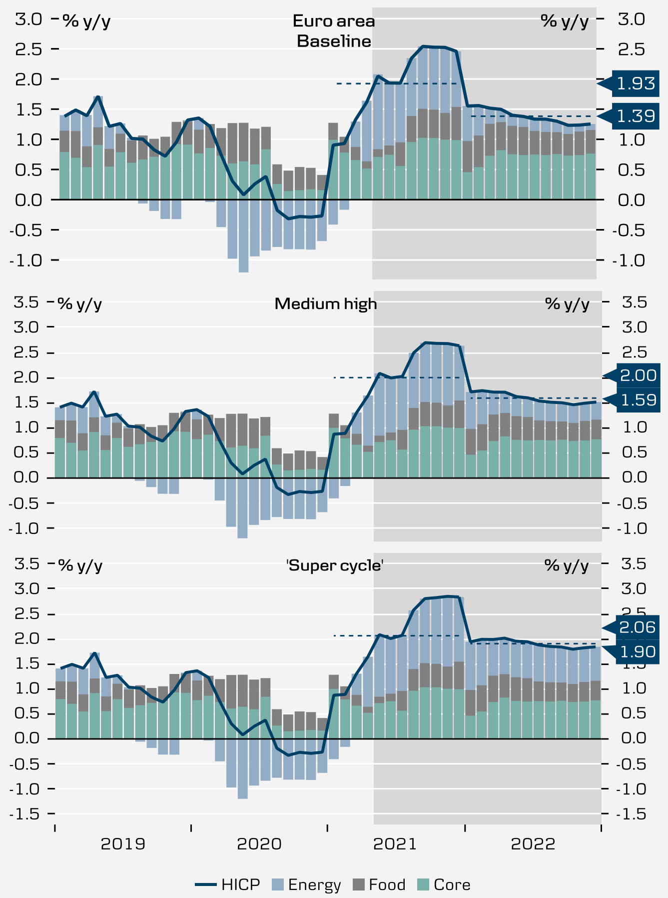
Second round effects hold the key to more persistent price pressures



Source: ECB, Danske Bank

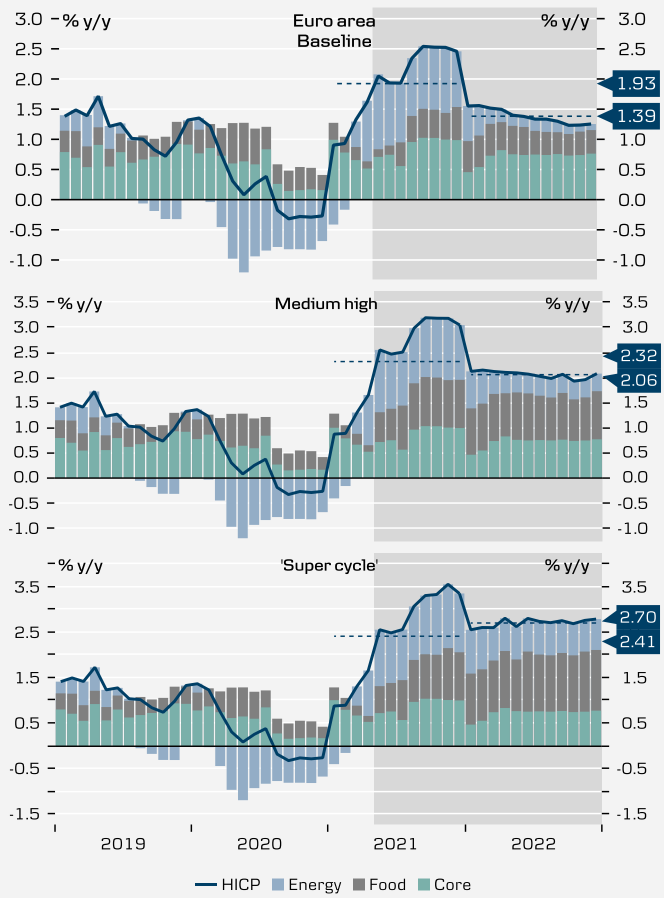
Appendix: Euro inflation charts

HICP scenarios with different oil prices



Source: Eurostat, Macrobond Financial, Danske Bank

HICP scenarios with different oil and food prices



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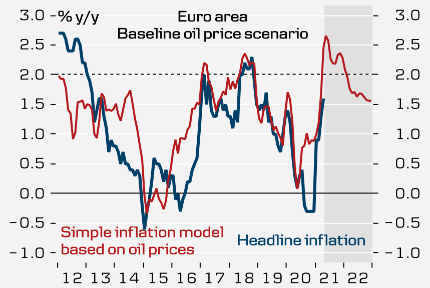
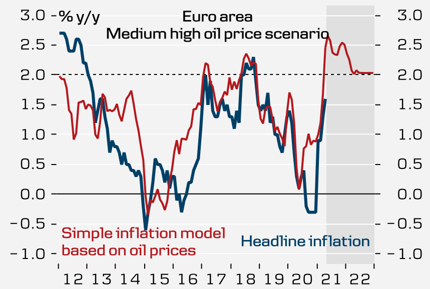
HICP model with baseline oil price scenario



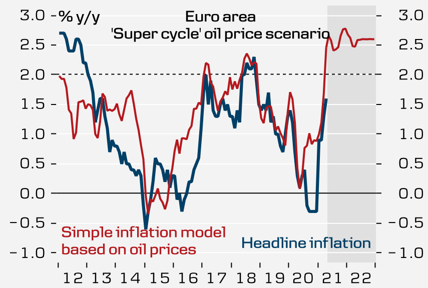
Source: Eurostat, Macrobond Financial, Danske Bank

HICP model with medium high oil price scenario



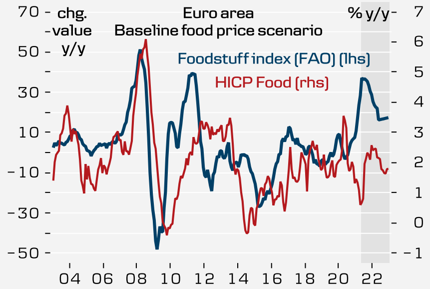
Source: Eurostat, Macrobond Financial, Danske Bank

HICP model with 'super cycle' oil price scenario



Source: Eurostat, Macrobond Financial, Danske Bank

HICP model with baseline food price scenario



Source: Eurostat, Macrobond Financial, Danske Bank

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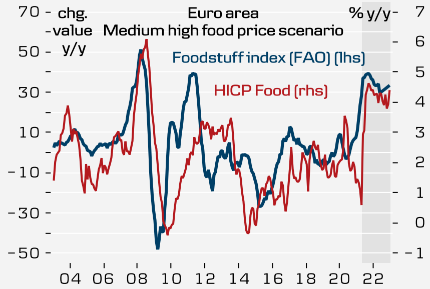
HICP model with medium high food price scenario



Source: Eurostat, Macrobond Financial, Danske Bank

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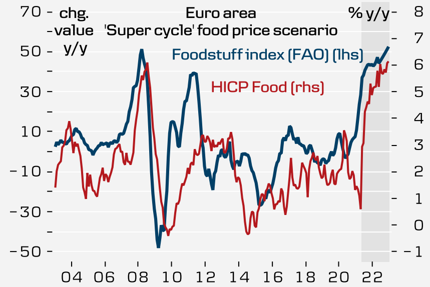
HICP model with 'super cycle' food price scenario



Source: Eurostat, Macrobond Financial, Danske Bank

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