10 October 2022

Euro inflation notes

Energy variations

- **With no end of the Russian-Ukraine war in sight, energy price developments will likely stay volatile, rendering any inflation predictions highly uncertain. Therefore, we look at some alternative scenarios how HICP inflation could evolve over the coming 12 months with (1) stronger and faster energy feed-through to consumer prices than historically and (2) with price caps for gas and electricity as currently discussed at the EU-level and for various EU countries.**
- **Overall, we find that upside risks to euro area inflation exist in the magnitude of 2-4pp compared to our baseline HICP inflation projection and market pricing, if wholesale prices remain at current elevated levels and pass-through for gas and electricity prices happens faster than historically.**
- **Our back of the envelop calculations (which disregard second round effects) suggest the downside risk to euro inflation from gas and electricity price caps is relatively limited and in the magnitude of 0.5-1pp compared to our baseline HICP inflation projection and market pricing. But the lack of clarity on the design and implementation of any caps, combined with the indirect effects of a weakening demand environment render any numerical estimates highly uncertain.**
- **With the outcome span for euro inflation remaining unusually wide next year, policy makers such the ECB face a tough job in calibrating the right monetary policy stance, increasing the risk of policy mistakes.**

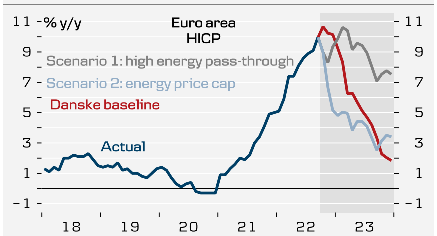
Energy shock will hit consumers with a lag

While wholesale gas and electricity prices have come somewhat off their previous peaks, the latest energy price shock has yet to fully filter through to consumer prices and HICP inflation, which rose to 10.0% in September. As an *EU Commission study* also points out, the pass-through from wholesale to consumer gas prices is usually only around 13% and can take up to 12 months to materialize. For electricity prices, the effect is even lower, as historically only about 4% of a change in wholesale gas prices is passed on to consumers' electricity prices within 12 months (and only 25% of the effect materializes within the first month).

Cross-country heterogeneity is strong and regulatory frameworks and government interventions differ significantly across euro area countries. Even within countries, multiple contracting practices co-exist (f.ex. between different German states), with some households and firms still holding longer-term contracts that lock in prices for several months. This is also visible, f.ex from the divergence between the PPI inflation faced by electricity distributors (141.0% in August) and German industry (12.9%, see chart).

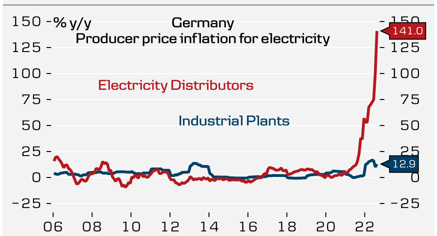
All else equal, this implies that the rise in wholesale prices observed in 2022 is set to exert continued upward pressure on retail gas and electricity prices throughout next year as well. In other words, it will also take some time until the full energy bill arrives with consumers and firms, and in turn the full scale of the drag on consumption and production might not materialize until H1 23.

Wide outcome span for euro inflation next year



Source: Eurostat, Macrobond Financial, Danske Bank

Higher wholesale prices take time to filter through...



Source: Bloomberg, Eurostat, Macrobond Financial, Danske Bank

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However, we also see good arguments why the pass-through this time around could be larger and happen more quickly. This already seems to bear out in the data, with f.ex. sticky German gas and electricity prices rising more quickly since the beginning of this year. We expect that larger price increases will occur especially with the turn of the year, as many energy providers will seek contractual price increases in light of the new reality in energy markets.

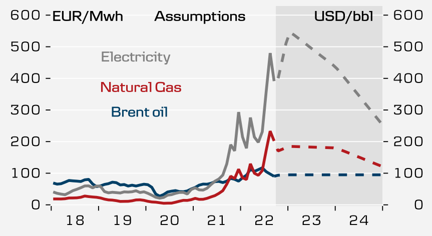
Scenario 1: What if energy pass-through is stronger and faster?

How quickly could energy price inflation accelerate in the coming months if the pass-through is higher? To gauge the impact, we look at the counterfactual of Nordic (and more specifically Danish) consumer energy prices, where the feed-through from wholesale gas and electricity prices is almost instantaneous. A back on the envelop calculation would suggest **upside risk of 3.6pp for German and 2.2pp for euro area HICP if consumer price inflation for gas and electricity would have accelerated as strongly as in Denmark.** This estimate is likely to be on the low side, since the rise in Nordic power prices has not been as pronounced as in continental Europe due to less gas reliance in power generation.

For an alternative way to gauge the upside risk to inflation from a higher gas and electricity price pass-through, we employ as simple forecasting model that takes market forward prices for gas and electricity as inputs. Disregarding the lagged response to consumer prices, it suggests a renewed jump in euro inflation to 11% in February and thereafter approaching rates of 7-8% at the end of Q4 23. Overall, this scenario would imply **upside risks of ca. 4pp in 2023 compared to our baseline HICP inflation projection and current market pricing.**

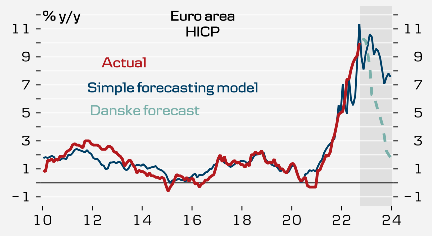
In practice, a confluence of factors, including government interventions, weakening pricing power and the existence of longer-term retail contracts make instantaneous pass-through from wholesale markets unlikely, but overall upside risks to euro area inflation exist in the magnitude of 2-4pp in our view, if wholesale prices remain at current elevated levels and are accompanied by stronger and faster feed-through than historically.

Futures markets expect energy prices to normalize only gradually



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

Euro inflation could stay above 7% next year with stronger energy pass-through



Source: Bloomberg, Eurostat, Macrobond Financial, Danske Bank
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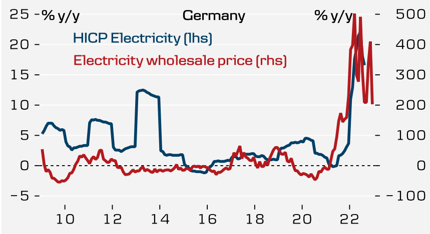
...But pass-through from wholesale to consumer prices has risen lately



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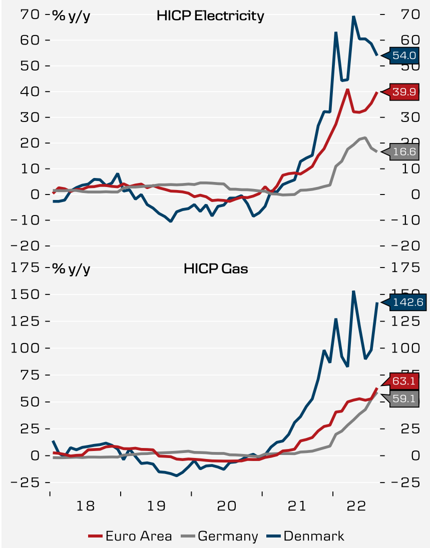
Gas and electricity inflation 2-3 times higher in Denmark than in Germany



Source: Eurostat, Macrobond Financial, Danske Bank

Scenario 2: What if gas and electricity prices are capped?

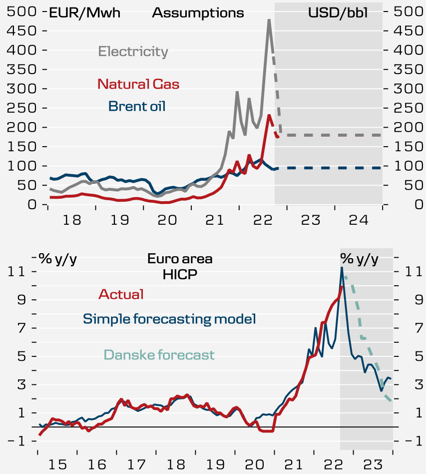
Outright energy price caps as currently discussed at the EU level and in various countries such as Germany would further delay the pass-through from wholesale to consumer energy prices. For simplicity we assume a gas and electricity price cap at EUR/Mwh 180 (as already agreed for electricity generated by non-gas power producers) and that such a cap takes effect from November 2022 and remains in place until end-2024.

Again we look at two different ways to estimate the impact: a top-down and bottom-up approach. For the **top-down approach**, we employ the same simple forecasting model already used in the previous scenario. It suggests that with the price cap, September would already have constituted the inflation peak and base effects would kick in earlier in the energy component that take HICP inflation back to 3.5% by end-2023. However, a price cap at EUR/Mwh 180 would still constitute a notably price increase compared to electricity and gas price levels observed in 2021, and hence **the downward impact compared to our baseline HICP forecast and current market pricing is relatively limited (-0.7pp in 2022, -1.0pp in 2023).**

For the **bottom-up approach**, we model the outlook for four of the six HICP energy sub-components separately, which currently account for 96% of energy inflation: fuels for personal transport (4.4% HICP weight), electricity (3.1% HICP weight), gas (2.2% HICP weight) and liquid fuels (0.7% HICP weight). Fuels for personal transport and liquid fuels have a close link to oil price developments and here we again work with a scenario of unchanged oil prices at 95 USD/bbl. For gas and electricity prices we again assume a cap as above.

Adding up the HICP contributions predicted by the four sub-components, we compare the price cap scenario with one where prices remain at EUR/Mwh 600 for electricity and EUR/Mwh 300 for gas, and find a **negative impact of ca. 0.6pp in 2023**, i.e. of similar magnitude as in the top-down approach. This, however, disregards the impact of any second round effects on food and core inflation items that could also be triggered by the price cap.

With price cap, base effects take energy inflation noticeably lower in 23



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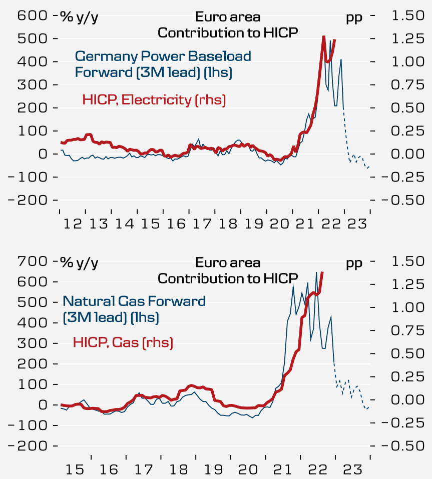
Waning contribution from gas and electricity with price cap



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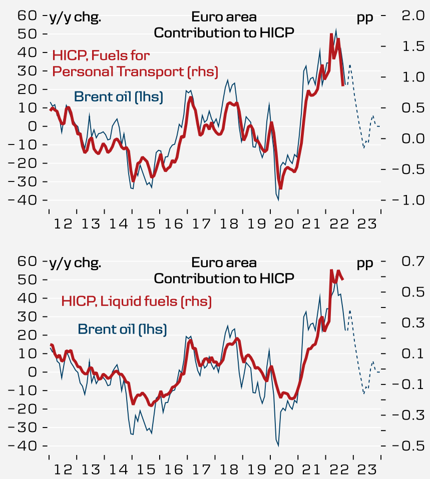
Transport and liquid fuels closely linked to oil price developments



Source: Bloomberg, Eurostat, Macrobond Financial, Danske Bank
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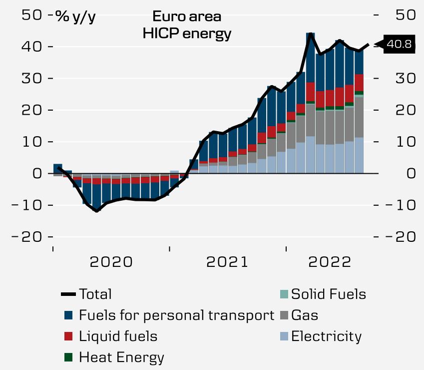
Contribution from gas and electricity to energy inflation has risen in 2022



Source: Eurostat, Macrobond Financial, Danske Bank

Overall, our back of the envelope calculations suggest the downside risk to euro inflation from price caps are in the magnitude of 0.5-1pp compared to our baseline HICP forecast and current market pricing, but the lack of clarity on the design and implementation of any cap, combined with the indirect effects of a weakening demand environment render any numerical estimates highly uncertain.

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

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