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Measuring inflation in the shadow of the pandemic

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In this study, the Chief Economists of the Savings Bank Finance Group analyse the inflation trend once again, looking in particular at the structural effects since the outbreak of the Corona crisis.

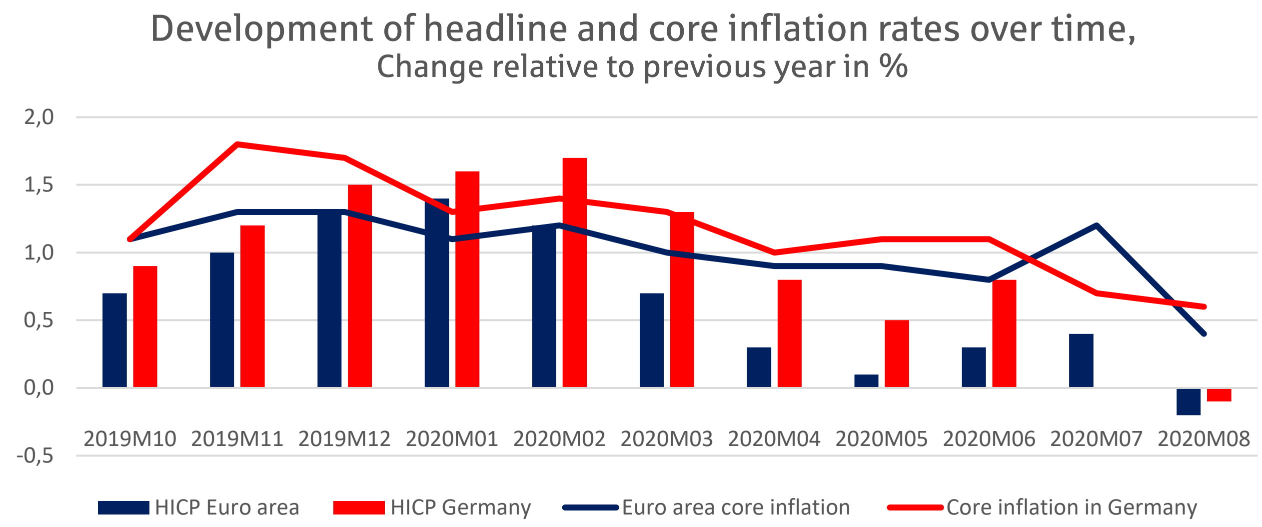
The data to date provide little evidence of changes in general underlying price trends. The most recent attempts at measuring inflation in the shadow of the pandemic have been associated with considerable fuzziness. Such fuzziness has come from unavoidable "imputations" (the assumption-based inclusion of prices that cannot be determined) and from pronounced shifts in spending behavior.

- The inflation time series since the outbreak of the coronavirus pandemic is too short, its development lines and deflections are too little uniform to enable us to draw conclusions about a possibly changing trend towards less or more inflation.
- Imputations and extrapolations are inevitable, but make the analysis and evaluation of current price data even more difficult. The provisional inference is that no serious price turbulences have occurred in the course of the crisis.
- A limited disinflationary composition effect can be assumed, although this will not become fully visible until 2021. Extending or modifying the methodological range of price indices addressing the problem would be worth considering.

Recent inflation readings make confusing reading

Falling inflation in the context of low energy prices

The inflation trend has not been showing any clear direction since the corona eruption. Admittedly, the annual rate of the Harmonised Index of Consumer Prices (HICP) for the euro zone swiftly plunged from 1.4 percent at the beginning of the year to readings close to zero. However, this was largely due, once again, to a massive drop in energy prices, which was exacerbated by the pandemic, but which was an exogenous inflation determinant attributable to a lack of willingness on the part of key producer countries to agree on supply restrictions. By contrast, upside pressure was put on inflation by food prices, above all in April. It was not until the summer that the annual rate in this HICP category returned to normal from previously more than 3 percent to below 2 percent.



Source: Eurostat

Core rate suddenly surges again after an initial decline

At the level of the core rate (i.e. stripping out energy and food, two volatile and therefore distracting and distorting components of the price basket), an only very moderate downward drift in inflation was observed during the lockdown. Interrupted supply chains did not therefore contribute to a surge in general inflation. Where core inflation slipped from slightly above to just under 1 percent, and then, after sharp rises and falls, landed at just 0.4 percent in August. However, this latest low figure is distorted downwards, firstly by the German VAT rate, which was lowered as of July, and secondly by the late "sale", especially in Italy and France.

No clear picture regarding a dent in inflation during the lockdown

The price data of the last two months showed opposing and unevenly distributed swings across individual euro states. In view of this data situation, it is hardly possible to draw conclusions about a possible paradigm shift in inflation - any forecasts appear to be fraught with considerable uncertainty. Any predictions of a “secular” trend towards decreasing or increasing inflation would be premature.

What would be more worthwhile, for example, would be to make an additional comparison with the "persistent and common component of inflation" (PCCI), which is determined by the European Central Bank on the basis of (country-specific) sub-items of the HICP with price cycles of at least three years. This metric is also available in a version editing out energy and food prices, which does not show any significant fluctuations, let alone trend changes, during the first eight months of 2020.

Travel and apparel are responsible for the decline in core inflation ...

It is also noteworthy that the lower values in core inflation appears to have been primarily attributable to the two expenditure items of travel services and apparel. At any rate, even a correspondingly "slimmed-down" core rate shows a sideways trend without a dent at least up to July, which points to special price concessions in these areas. Such concessions would also be thoroughly plausible, as the pandemic caused extreme drops in demand in these departments. In actual fact, such price concessions or the absence of seasonal price increases for travel became visible only in March and for apparel in April. They were thus limited to the early phase of a progressively tightened lockdown. Why this was so can be intuited from a look at the restrictions to which the price measurement process itself was subject.

... weaker readings on that score, but only in single months at the start of the lockdown

Price measurement has been rendered more difficult

Filling the gaps with "imputations"

Like the economy as a whole, price collection has been massively hampered by the restrictions imposed in the interests of virus containment. As a result, for April almost one-third of the overall HICP had to be filled in with the help of "imputations". In other words, missing, non-computable values were estimated or else the existing trends were simply extrapolated. What is more, the national imputation rates displayed considerable dispersion (from 7 percent in Finland and Estonia, 27 percent in Germany and 40 percent in Italy to 47 percent in France).

Significance decreases, but influence on price trends continues

In the meantime, the list of individual items heavily affected by imputations and therefore to be classified as unreliable has been significantly shortened again. However, it must be taken into account that distortions occurred again, while imputations and extrapolations in inflation measurement dropped out of the picture.

Here, too, the situation in the individual states of the currency area differed considerably. In France, the rate of imputations fell only moderately in June to 26 percent, but suddenly reached a very low level of only 1 percent in July. Italy managed to move closer to the euro zone average of 11 percent in June, but at 9 percent is currently still well above it in July.

For the currency area as a whole, a low figure of 3 percent was reached again in July.[1] However, this does not necessarily apply automatically to the distortions of price trends associated with imputations - especially not if these include volatile individual items such as package tours, and if the focus is naturally on sectors of the economy that have come under severe pressure at the same time such as air travel, parts of the catering and accommodation industry and various cultural services.

The guidelines need to be interpreted

The above-mentioned conspicuous jump in Italian and French inflation to July might not only be due to late sales of textiles, but at least partly to ceased imputations. On a micro level, however, such effects can hardly be traced clearly. Much depends here on the interpretation of the imputation guidelines formulated by Eurostat. These guidelines provide for a priority recourse to alternative sources of information (online portals, telephone inquiries) and, only in the absence of these sources, for an imputation.

Imputations, in turn, require a wealth of assessments to be made in the national statistical offices. Above all, the following must be clarified in each case. Are there transferable price data from other regions or comparable product groups? Is there an updatable seasonal pattern for the item or should the assumed price change be zero instead?

Not meant as a reproach of statisticians

The risk of measurement errors is higher than usual due to the recourse taken to imputations. However, drawing attention to such errors should not be misunderstood as a reproach of statisticians. In these unusual times overshadowed by the pandemic, there is no way around filling in missing price data. In view of the possibility of distorted price trends, however, we must warn against jumping to hasty conclusions on the basis of the current inflation reports.

If price formation has been disrupted, there is no proper reference benchmark

Laying the blame at the door of the statistical offices is out of the question, simply because the reference benchmark for realistic inflation computation is not currently available. If, for example, air travel had been able to take place on a normal scale, massive overcapacities would have meant lower prices on the one hand, and higher individual price tickets on the other, due to high fixed costs and a greater willingness to pay on the part of the remaining customers. What weight each of these factors would have attained can, however, only be verified on the basis of real prices - which are simply not to hand.

[1] In August, Eurostat will again refrain from reporting the imputation rates due to their decreasing relevance

As far as the overall outturn is concerned, it can be seen that the seasonally-adjusted monthly core inflation rate showed virtually no increase during the lockdown, but also no slackening of price dynamics. This may be interpreted to mean that the ultimate option of provisionally assuming that uncomputable prices have remained unchanged had a certain conservative influence on the level of inflation in these months. But even this is no more than a vague assumption.

Price reactions to Corona can only be determined approximately for the time being

It remains important to note that the more recent inflation data are inevitably no more than approximations supplemented by imputations, and that estimates of the price changes triggered by Corona can therefore only be made for the time being against a backdrop of considerable uncertainty.

Changed expenditure behavior

No signs of a changed consumption structure-

But index adjustment is not an alternative

In general, imputations and extrapolations follow the principle of leaving the individual weights of the expenditure items untouched in the index, so that the index continues to refer to the consumption weights from the previous year. To that extent, this procedure preserves the economic conditions from the period before the coronavirus pandemic. It is true that consumption habits have changed significantly since the outbreak of the pandemic, which means that the measurement of inflation is moving out of line with the empirical reality at private households. However, the alternative of a change from the current Laspeyres index to a Paasche index, which determines inflation readings by means of back calculations based on current expenditure shares, would entail a fundamental methodological break in the measurement of inflation, and would thus be even more problematic.

The current Eurostat practice of always fixing the index weights on the basis of the distribution of consumer spending in the respective previous year could, however, lead to new distortions in 2021, when hopefully this year's limitations will to a large extent be obsolete and private households will be able to get back closer to their customary consumption behaviour. In that case, using the spending pattern under pandemic conditions as a yardstick would, once again, be a questionable reference benchmark.

Drawing on additional information would be helpful

Against this background, at least a parallel collection of inflation data based on a Paasche index could provide valuable additional information on price developments. Alternatively, a change to a longer base period, which would at least smooth out distortions caused by sharply fluctuating basket weights, would also be worth considering.

Compositional influence on the level of inflation

Shift in demand towards home environment

During the Corona crisis, a shift in demand towards spending categories more closely connected with the home environment of private households is evident in principle, but the magnitude of this effect is difficult to estimate. In a rough overview, a good fifth of the HICP appears to be losing importance, with shifts likely to be concentrated on categories that in turn have so far represented a good third of the macroeconomic basket of goods and services. The following table lists the areas that have reacted particularly sensitively to the corona eruption.

It should also be noted here that consumption has declined overall in the Corona crisis, with a good portion of purchasing power being shut down, as is evident from a rising savings rate.

Despite a revival in consumer demand at the present juncture, an annual average decline in private consumption of between five and ten percent is likely to occur, which is strongly concentrated in the five lower areas of the following table and is likely to be accompanied in some cases by additional expenditure (or a smaller decline in demand) primarily in the top seven categories. Altogether, we may therefore see shifts in consumption weights in the middle single digit percentage range, the lion's share of which will presumably involve those segments with a decreasing share of consumption.

Price developments in corona-sensitive HICP expenditure categories

HICP expenditure category	Weight in overall HICP	Trend rate (2013 – 19)
Increasing share in aggregate consumption	**36,80**	**0,07**
Food and non-alcoholic beverages	15,09	0,69
Alcoholic beverages and tobacco products	3,99	2,09
Apartment / maintenance and repair	1,26	1,20
Apartment / electricity, gas, fuels	5,55	-2,15
Household equipment (excluding services)	4,44	0,14
Telecommunication equipment, services	2,83	-1,43
Consumer durables, other leisure and culture goods	3,65	-0,61
Decreasing share in aggregate consumption	**22,51**	**1,50**
Apparel and shoes	5,90	0,54
Transport, passenger transport	2,75	1,52
Leisure and culture services	2,20	1,35
Package tours	1,56	3,71
Catering and accommodation services	10,1	1,74

At least temporarily, the growth in demand should also tend to contribute to an accelerated price increase in those categories registering an expansion, while price-dampening effects should mostly be clustered in those areas that are being particularly affected by a drop in demand.

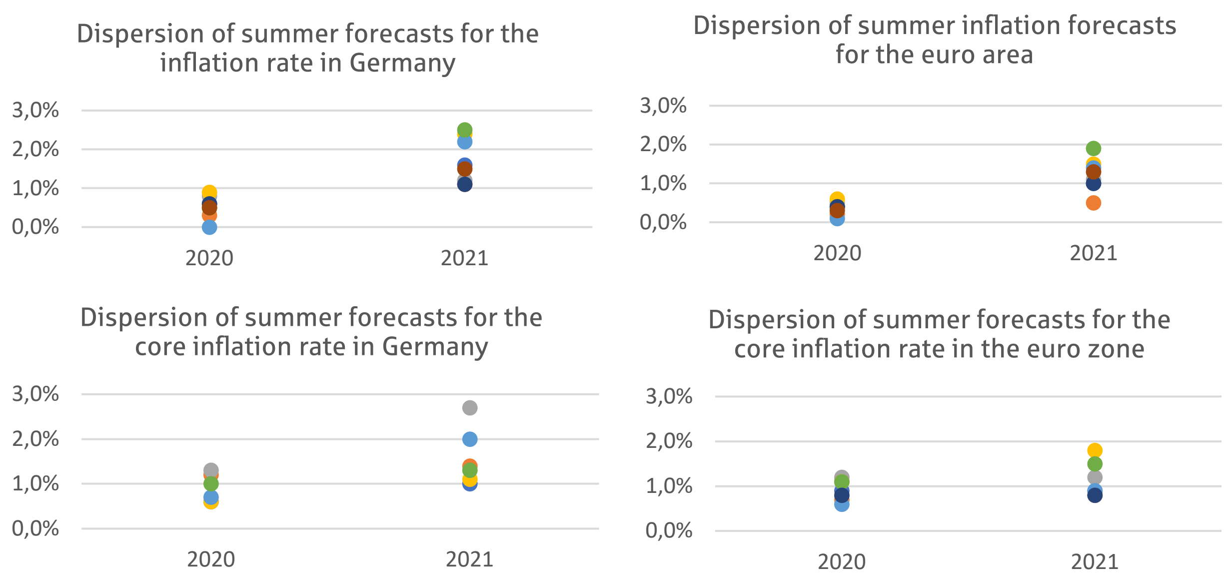
However, price reactions may also fail to materialise for the reasons mentioned above in the example of air travel. It is therefore questionable whether such an alignment of price trends will actually occur. After all, telecommunications, for example, as an expenditure category presumably enjoying higher popularity, is profiting particularly from price-dampening economies of scale.

Accelerated price increase in expanding categories ...

Whether such shifts in demand will drive up the general price level in the further course of the year remains unclear for another reason as well. In general, the tabular overview (see rear column) shows that in the current environment a shift can be assumed from expenditure categories marked by above-average price increase trends to segments that were, at least in the past, characterised by below-average price increases. Due to composition effects, then, a slight disinflationary effect can be expected, which should come into play in the coming year after the switch to the updated expenditure weights.

... which, however, have so far been marked by low price increases

Just how difficult it is at the moment to assess the overall price trend going forward is likewise evident from the wide scatter of inflation-related projections in the current "Joint Forecast" by the Chief Economists of the Savings Bank Financial Group. The dispersion range for individual forecasts for 2021 encompasses almost one and a half percentage points for both Germany and the euro zone.



Source: Joint Forecast by the DSGV Chief Economists
Dots represent the individual “dot plot” votes

Final evaluation

Numerous questions are currently forcing themselves upon us about the inflationary or disinflationary, or outright deflationary, consequences of the corona pandemic. However, it is not yet possible, on the basis of the inflationary data released so far, to ascertain whether more difficult supply-side conditions (e.g. through the restructuring and shortening of supply chains) will cause prices to rise faster or whether a sustained dampening of demand (e.g. also in the context of redoubled efforts to reduce debt) will push inflation down. The inflation time series to date is too short, its lines of development and deflections are not uniform enough for well-informed answers to be feasible.

The situation is further complicated by the fact that the price data for some months could only be collected incompletely and necessarily had to be "filled in" with the help of imputations by the statistical offices. To a small extent this is still happening. This is making interpretation an even more complex endeavour.

In addition, a slightly slower price development is on the cards due to composition effects, because an extraordinarily strong shift is taking place towards expenditure categories which have been characterised by significantly lower price increases in recent years. However, this effect will not be visible in the macroeconomic inflation data until next year, when consumers will hopefully already be able to return, at least to some extent, to the habits to which they used to be accustomed.

Disclaimer

The present position paper by the Chief Economists does not necessarily correspond to the stance of the **DekaBank** or to the stance of the respective **Landesbanken** and Savings Banks or of the DSGV.

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