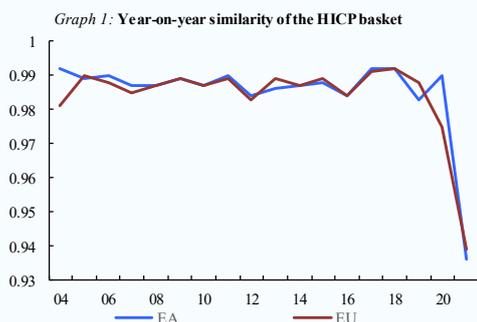


Box 1.2.2: The pandemic and inflation: technical factors driving volatility

Substantial changes to consumption patterns and the strong economic policy response triggered by the pandemic have affected individual and aggregate prices through multiple channels. While policy-makers are primarily interested in the ‘fundamental’ drivers of inflation, temporary factors can cause volatility in inflation. This box reviews some of the ‘technical factors’ that have affected recent inflation readings across the EU and that are set to continue playing a prominent role in the near term.

Changes in the composition of the HICP basket

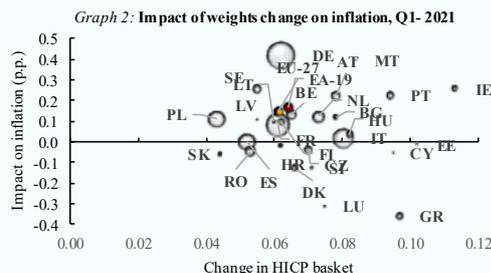
The weights used to calculate the Harmonised Index of Consumer Prices (HICP) are proportional to the expenditure shares of different products and services in the consumption basket of a representative household. They are updated at the start of each year, based on observed consumption patterns.⁽¹⁾ The consistency of consumption behaviour implies that annual updates of weights are typically minor (Graph 1).



Note: Year-on-year similarity is defined as $SIM_t = \sum_i \min(w_{i,t-1}, w_{i,t})$, where w is the share of a given item in the HICP basket in year t . Similarity is hence bounded between 0 and 1 (identical).

During the pandemic, certain markets, notably services, closed down partially or fully, or were avoided by consumers for fear of infection. While the consumption share of the affected items, such as restaurants, culture, package holidays, inevitably dropped, they nonetheless retained their weight in the inflation basket throughout 2020. Derogating from the standard practice set out in the HICP Regulation, the 2021 HICP weighting scheme reflects the consumption profile of 2020, rather

than of 2019. The current HICP weights are thus more representative of consumption patterns in times of restrictions to the consumption of services.⁽²⁾ Predictably, the changes in weights between 2020 and 2021 were exceptionally large (Graph 2), both at the aggregate level and in individual Member States.



Note: The graph plots the change in HICP baskets ($1 - SIM_t$) against the difference in headline inflation calculated with actual (2021) and counterfactual (2020) weights (3-digit COICOP level). The size of the bubbles corresponds to the country weight in the EU HICP aggregate.

Annual headline inflation captures both changes in prices of the individual items included in the consumption basket, as well as changes in their weights. Revisions to weighting schemes thus have the *potential* to leave their mark on inflation readings, even if the sign and size of the impact on inflation is *a priori* unknown. For the euro area and the EU, the 2021 update of HICP weights added between 0.1 and 0.2 pps. to annual inflation in the first quarter (on average). As illustrated in Graph 2, while the change in weights has been substantial for all Member States, the impact on inflation in the first quarter of 2021 has been uneven. It has been positive and large in some Member States (e.g. Germany), and negative in others (e.g. Greece). Meanwhile, in some Member States (e.g. Estonia, Italy and Spain), there has been almost no impact on headline inflation, despite large changes in the inflation basket.

As markets progressively reopen, consumption patterns are likely to revert towards pre-Covid-19 ones, even if not necessarily fully. Future updates of HICP weights are thus likely to be substantial, with the potential to significantly affect inflation readings again.

⁽¹⁾ The HICP is an annually chained Laspeyres-type index. In accordance with the HICP Regulation (Regulation (EU) 2016/792), the annual update of HICP weights is based on national account data from two years earlier ($t-2$).

⁽²⁾ The calculation of the 2021 weights exceptionally took into account preliminary national accounts data of 2020 and other sources (Implementing Regulation (EU) 2020/1148).

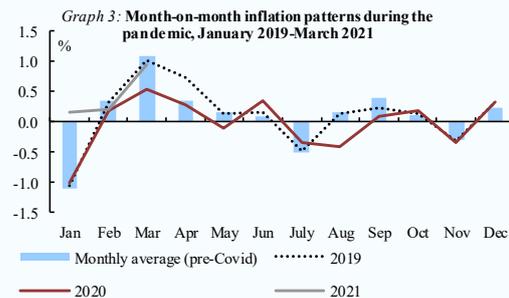
(Continued on the next page)

Box (continued)

Strong base effects

Pandemic-related price disruptions had an immediate effect on annual inflation and will significantly shape the inflation profile for the remainder of 2021 and early 2022 via so-called base effects.

Many HICP items exhibit a strong seasonal profile, notably stemming from traditional sales periods (e.g. clothing) and the holiday calendar (e.g. international flights, package holidays or accommodation). This results in a distinct month-on-month profile for the overall HICP reading too. As illustrated in Graph 3, the shape of the euro area month-on-month inflation profile in the run-up to the pandemic (January 2019 to February 2020) was very close to long-term monthly averages. Since the outbreak of the pandemic, it has deviated significantly in many months. For example, month-on-month inflation in January 2021 was substantially higher than the pre-Covid average.



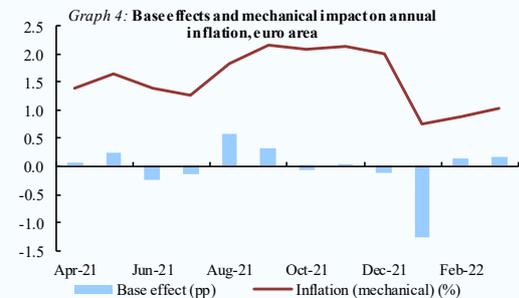
Note: The bars correspond to average month-on-month inflation calculated over the period January 2012-February 2020 (e.g. the January bar corresponds to the average of all January inflation rates observed over 2012-2020). The dotted lines represent pre-Covid observations.

The observed deviations can be explained by different factors. First, the collapse in demand has had a substantial downward effect on certain prices, notably oil prices, which dragged down the month-on-month inflation path in spring 2020. A second explanatory factor is the temporary reduction in value added tax (VAT) in Germany between July and December 2020.⁽³⁾ This lowered consumer prices at the beginning of the second half of 2020 and conversely accounted for a large part of the jump in euro area annual inflation in January 2021 (about 0.4–0.5 p.p.). Third, in many Member States both the 2020 summer sales and the 2021 winter sales were cancelled or postponed due to Covid-19

⁽³⁾ A number of Member States lowered VAT rates during the pandemic, albeit with a less visible effect on aggregate inflation.

related restrictions, which has been visible in categories like clothing, footwear and consumption goods. These changes to the timing of sales have added to volatility in headline inflation.

Decomposing month-on-month inflation into its seasonal average and the deviation from it provides a sense of the ‘strength’ of the base effect over the year ahead (see Graph 4). Where month-on-month inflation in a given month of 2020 was below its monthly average, a positive base effect in the corresponding month of 2021 will have an upward impact on annual inflation. Base effects will be particularly strong in the second half of the year. Conversely, the unusually high month-on-month inflation seen in January 2021 will generate a strong negative base effect in January 2022.



Note: The base effect corresponds to the inverse of the deviation of month-on-month inflation from its seasonal average (Jan 2012–Feb 2020), 12 months earlier. The line shows the mechanically implied inflation rate obtained by cumulating the base effects over the next 12 months.

Another consequence of the lockdowns is that some items were no longer transacted, while obstacles to physical price collection emerged for others. In order to ensure the continued compilation of the HICP, the prices of these items have been imputed by national statistical institutes (NSIs).⁽⁴⁾ Imputation has been more prevalent for certain items, notably services, and varied across Member States. The imputation share generally declined between the first and second wave of the pandemic.

⁽⁴⁾ In the EU, price collection and imputation in the Covid-19 context follow common principles developed by Eurostat and NSIs. To ensure full transparency, NSIs are required to flag sub-indices with ‘low reliability’. For an overview, see Lamboray, C., Evangelista, R., Konijn, P., 2020, ‘Measuring inflation in the EU in times of COVID-19’, *Eurostat Review on National Accounts and Macroeconomic Indicators*, Eurostat, December.