

Effects of corona virus epidemic on consumer price index calculations

The epidemic caused by the new corona virus has influenced the collection of consumer prices and the calculation of the consumer price index as well. Because of enhanced health risks, the usual field price collection is not possible, therefore, alternative price collection methods (on-line collection, telephone and e-mail enquiries) are to be applied in this situation. As only a limited number of prices are available via the internet, moreover, as in case of telephone and e-mail inquiries the response burden and the resource needs of data collection both significantly rise, a smaller volume of data can be collected these ways compared to the usual field price collection. A part of outlets were closed in the period of the epidemic caused by the new corona virus and they cannot be contacted via either telephone or e-mail channels, which makes the collection of data more difficult. Calculations based on fewer observations influence the quality of the consumer price index.

Owing to the lack of observed prices in certain cases, it becomes necessary in addition to impute based on estimates the price index of entire items. To carry out imputations, the Hungarian Central Statistical Office applies an adopted methodology elaborated in co-ordination with international organisations and the statistical offices of other countries. The price index of items and consumption groups actually not observed is imputed in one of the following ways:

- **Imputation based on nearest aggregate:** the missing price index of the respective item (or consumption group) is imputed with the price index of the aggregate one level above in the hierarchy, i.e. the consumption group (or aggregate consumption group). This method can be applied if an adequate number of price observations were already made for the aggregate used for the imputation.
- **Imputation based on an entire consumer price index calculated from actual observations:** to impute the missing price index of the respective item (or consumption group), all product and service groups are considered for which an adequate number of actual observations are available. The price index calculated from these is used to impute the index of the missing item or consumption group.
- **Carrying forward the last observed price or price index:** in this case it is assumed that the price or the annual change in the price index of the missing item or consumption group is unchanged compared to the last implemented price observation. This method can be applied if the price of products observed for the imputed item or consumption group changes typically rarely, or if a particular product or service is not accessible at all owing to the closure of outlets or to administrative restrictions. In the case of products and services with high seasonality it is justified to carry forward with the last calculated annual change in the price index, while in the remaining cases with the last observed price.