

## METHODOLOGICAL NOTES

The development of consumer price indices (cost of living) is observed on consumer baskets based on the set of selected kinds of goods and services paid by the population. These baskets are updated annually (always since January of the given year).

The new revised consumer baskets (index schemes) and the methodology of the consumer price index processing were determined on the base of the requirements of Eurostat resulting from the consumer price indices harmonization and comments and suggestions of the Consulting Commission for the Consumer Price Statistics consisting of representatives of ministries, the CNB, research institutes, the Economic University Prague, trade unions, organisations of the retired and selected departments of the CZSO.

A new detailed selection of goods and services (price representatives) was made for the consumer baskets within a comprehensive revision, which took place for individual price areas during the years 2010-2011 and a new weighting system was constructed. The structure of the aggregate consumer price indices (cost-of-living) is based on the international Classification of Individual Consumption by Purpose (CZ-COICOP), which classifies goods and services into **12 divisions**.

- 1. Food and non-alcoholic beverages** – comprises all food including non-alcoholic beverages.
- 2. Alcoholic beverages and tobacco** – comprises alcoholic beverages and tobacco products.
- 3. Clothing and footwear** – comprises clothing materials, garments, clothing accessories, footwear including hire and repair.
- 4. Housing, water, electricity, gas and other fuels** – comprises rentals including imputed rentals, payments for the use of cooperative dwellings, miscellaneous services relating to the dwelling, materials and services for the maintenance and repair of the dwelling, water supply and sewage collection, refuse collection, all kinds of energy (gas, electricity, heat), solid fuels.
- 5. Furnishings, household equipment and routine household maintenance** – comprises furniture and furnishing, carpets and other floor coverings, household textiles including bed linen, household appliances, glassware, porcelain, tableware and household utensils, goods and services for routine household maintenance, tools and equipment for house and garden.
- 6. Health** – comprises pharmaceutical and other medical products, dental products, services of optometrists, services of physicians, thermal bath care, regulatory fee per using a medical emergency facility.
- 7. Transport** – comprises personal transport equipment including repair and spare parts, automotive fuel, transport services (by railway, by road, by air, local), school transport services.
- 8. Communication** – comprises postal services, telephone equipment (mobile phones), telephone services.
- 9. Recreation and culture** – comprises radio and television receivers, tape and cassette recorders, computer technology, musical instruments, sport equipment including repair, books, periodicals, toys, stationery, cultural services, sporting services, domestic and foreign holiday, flowers and flower products, pets and related products including veterinary services.
- 10. Education** – comprises all levels of education including language teaching and art education.
- 11. Restaurants and hotels** – comprises meals and drinks provided by restaurants, dinners in works canteens, catering services of canteens in schools and universities, accommodation services of hotels, boarding houses, chalets, accommodation in boarding schools and universities.
- 12. Miscellaneous goods and services** – comprises personal care services, electrical appliances for personal care, beauty products, jewellery, clocks, leather fancy goods, insurance (insurance connected with the dwelling, insurance connected with health, insurance connected with transport), social and financial services, administrative fees.

## Selection of representatives

The price representatives are especially products and services which have a significant share in population's expenditure and cover the entire sphere of consumption.

The numbers of price representatives in the new consumer basket for calculation of the consumer price indices are as follows:

| Group of goods and services   | Number of representatives |
|---|---------------------------|
| Total   | 690                       |
| 1. Food and non-alcoholic beverages                                   | 160                       |
| 2. Alcoholic beverages and tobacco                                    | 23                        |
| 3. Clothing and footwear  | 65                        |
| 4. Housing, water, electricity, gas and other fuels                   | 41                        |
| 5. Furnishings, household equipment and routine household maintenance | 80                        |
| 6. Health   | 18                        |
| 7. Transport  | 83                        |
| 8. Communication  | 6                         |
| 9. Recreation and culture   | 109                       |
| 10. Education   | 12                        |
| 11. Restaurants and hotels  | 42                        |
| 12. Miscellaneous goods and services                                  | 51                        |

The selection of representatives is the same for all types of indices but some products and services are not represented in particular social groups of households.

## Consumer price survey method

Prices of individual kinds of goods and services are collected monthly, directly in selected shops (about 8 500) by statistical staff in 35 chosen districts across the Czech Republic and in the Capital City of Prague.

The **average price** of individual representatives for the Czech Republic is calculated from the collected prices, which is involved in the calculation of all types of consumer price indices except indices for households living in the Capital City of Prague. Average prices of representatives involved in the calculation of indices for households living in the Capital City of Prague are the same as average prices collected in the Capital City of Prague for the calculation of consumer price indices for the Czech Republic. Average consumer prices for the Czech Republic are taken over for the calculation as for the representatives of spa treatment, ski lift ticket, accommodation in hotels, boarding houses, chalets, accommodation in boarding schools and universities, catering in university canteens and as for the majority of representatives with centrally surveyed prices.

## Weighting system

A comprehensive revision of the weighting system was in 2010-2011. Starting from 2012, the weights were determined on the base of household expenditure taken from the national accounts statistics in 2010. The weights of elementary aggregates were calculated using data from the 2010 Household Budget Survey. In January 2016 the CZSO began to publish price indices calculated according to new revised index patterns. The weights have been updated on the basis of household expenditure from the national accounts statistics in 2014. The structure of the 2010 Household Budget Survey, which is updated continuously based on other available sources and surveys, has been predominantly kept for elementary aggregates.

The weights were calculated for the following groups of households: households in total, households of pensioners, households living in the Capital City of Prague.

The consumer price index has weights based on the structure of average expenditure of all households; the consumer price indices for the Capital City of Prague are based on the structure of expenditure of households living in the Capital City of Prague and indices for households of pensioners are based on the structure of expenditure of households of pensioners.

**Households of pensioners** – for the purposes of household budget statistics they are defined as households without economically active members where the head of the household is a non-working pensioner and none of the other members is economically active. Only short-term working activity is permissible, and annual income from work of any member of the household is not allowed to exceed CZK 12 000.

## Computation of indices

Calculation of the consumer price indices (cost-of-living) is based on constant weights according to the Laspeyres formula:

$$I = \frac{\sum \frac{p_1}{p_0} * p_0 q_0}{\sum p_0 q_0} * 100$$

$p_1$  = the price of goods (service) in the reference (current) period.

$p_0$  = the price of goods (service) in the base period.

$p_0 q_0$  = constant weight: household expenditure on goods (service) in the base period.

Starting from January 2016, the price reference period of December 2013 for the price indices was changed to December 2015. Starting from January 2017, the indices, which are calculated using this base, are chained newly at all levels of the consumer basket with the base period average of 2015 = 100. A constant is used to transfer the index with the base period December 2015 = 100 into the index time series average of 2015 = 100 (index for December 2015 based on average of 2015 = 100). The index with the base period average of 2015 = 100 is calculated by multiplication of the constant by the index December 2015 = 100. From the resulting time series (on base average of 2015 = 100) the indices to other bases (previous month = 100, corresponding period of previous year = 100 and annual rolling average, i.e. the average of index numbers over the last 12 months to the average for the previous 12 months) are derived.