

## Methodological notes

**During the year 2012** the agricultural producer price index was subjected to **standard comprehensive revision**.

Within this revision a selection of representatives and respondents was revised, a new price and index basis was set, and a new weighting scheme based on the structure of sales of agricultural production in individual months was introduced.

The agricultural producer price indices are calculated **from January 2013** to the new weighting schemes derived from the average sales for the years 2009, 2010 and 2011. The indices are calculated on the new price base **average of 2010 = 100**

**Because a new revised structure was necessary to allocate some other agricultural products and include them among seasonal representatives, we changed our approach to the weighting schemes and revised the system of calculation, as follows:**

Each calendar month the weights of agricultural seasonal and unseasonal commodities vary, so a two-dimensional weighting scheme in the form of a matrix is used in the calculation. The first dimension is vertical aggregation from the level of representatives to the highest level, while the second dimension is for 12 months of the year.

**Therefore since January 2013 we use variable monthly weights for calculation of the price index of agricultural producers.**

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### Methodology of price collection and calculation of price indices

Prices are collected through the state statistical questionnaire **Ceny Zem 1 – 12** at about 480 selected agricultural producers (cooperatives, private and governmental organizations). Prices **do not include VAT**.

Surveyed prices are exercise (contract) prices (excluding own consumption) in the domestic and foreign market without transportation costs associated with delivering to customers.

**The average monthly prices** of the observed products are calculated as a simple arithmetic mean of the reported prices of individual producers. The monthly prices of individual products are compared with their average annual price in 2010.

Calculation of the annual average price for 2010 is done differently for seasonal and non-seasonal representatives:

The average annual prices of unseasonal representatives are calculated as an arithmetic mean of the monthly average prices of 2010. The average annual prices of seasonal representatives are calculated as a weighted mean, where weights are based on the ratio of sales for individual months of 2010.

Similarly, the calculation of average prices is accessed from the beginning of each year.

Prices are published according to territorial division (district, regional and national) and according to average unit price (i.e. exercised prices of previous month). The average unit price of products is calculated from the total quantity of sale and from the total sales for production. Data are always reported monthly, which precedes the results of the price survey.

The average price of any given month is published only if the provided number of reported prices is greater or equal to 3.

**The agricultural producer price indices** are based on a survey of 71 basic agricultural products (price representatives), 55 of which are crop products, including fruits and vegetables, and 16 animal products. Furthermore, the prices of 40 other representatives, which do not enter into the calculation of the indices, are observed. Only their prices are published.

**The monthly price indices** of individual representatives are calculated as a ratio of their average price for the relevant month and the average annual prices of 2010. After that, monthly indices are aggregated using a weighted average of the price indices of relevant products (weights in per mill).

The indices are derived from prices of the samples of representatives and selected reporting units by aggregating simple price indices of the representatives into totals using the Laspeyres formula in a modified form. The calculation uses constant weights of the basic period.

$$I_{t/0} = \frac{\sum \frac{P_t}{P_0} p_0 q_0}{\sum p_0 q_0} * 100$$

Where  $p_t$  = the reference period price  
 $p_0$  = the basic period price  
 $p_0 q_0$  = the constant weight of basic period (structure of sales for agricultural production in 2009, 2010 and 2011).

Indices are calculated and published both based on the average price base of 2010 = 100, as well as with derived price basis. The following is a list of all types of indices:

- a) average of 2010 = 100 (basic index calculated from reported prices)
- b) corresponding period of the last year = 100
- c) previous month = 100
- d) ratio of rolling averages

**The indices of type a), c), d), for any aggregation reflect not only the change in the prices of their subheadings, but also the change of the weighting structure, such as on the aggregation for the month involved. Conversely, the index of type b) compares only the period with the same weight structure and therefore higher aggregation indices reflect only the net change in the price levels of agricultural production.**

The indices and the prices are published in the statistical information "**Agricultural Producer Price Indices**" and "**Agricultural Producer Price Indices, Industrial Producers and Consumer Prices of Food Products**" with monthly regularity.