

8. PRICES

The price indices are calculated as **sample indices**, i.e. the calculation is based on prices of **selected representatives** (goods and services) obtained in a **sample of reporting units**. The individual price indices for the representatives are aggregated into aggregate indices for groups of representatives and then into an aggregate index for the whole set of the representatives. The aggregation is done by means of a weighted arithmetic mean of individual indices; as constant weights are used structural indicators of value (production, sales, turnover, purchases, household expenditures, etc.) of individual representatives or a group of representatives. These structural indicators are determined from base ("zero") period (e.g. year 1999, 2005) figures.

Price indices (monthly and quarterly) are calculated from prices measured in the reference period (around the middle of a month for monthly indices, in the 2nd month of a quarter for quarterly indices). Annual indices are calculated as an arithmetic mean of the indices (agricultural producer prices as a weighted average) for individual months/quarters of the year, related to a selected price base, which is considered to be a constant base for a certain period of time.

Rebasing is made and constant weights are usually changed once in five years on the occasion of comprehensive revision of price indices. The last revision was made in 2006. Starting from 2007 price indices are published calculated using the 2005 weighting scheme; they are sales 2005 for producer prices and household expenditures 2005 for consumer prices. The price base is December 2005 (or the year 2005).

To ensure comparability of the time series, revisions of price indices which take place every five years include recalculation of existing indices to new price bases.

The individual producer price indices use the Classification of Products CZ-CPA linked to the Classification of Economic Activities CZ-NACE, while consumer price indices are derived on the basis of the international Classification of Individual Consumption by Purpose (CZ-COICOP) – see the statistical classifications and nomenclatures in force in the introduction to this yearbook. Export and import price indices are constructed according to the Harmonized Commodity Description and Coding System (a system for classifying goods in international trade) and calculated to comply with the SITC (Standard International Trade Classification published by the UN). Other price bases were put in place, namely the 2000 average and 2005 average.

Notes on tables

Table 8-1. **Producer and consumer price indices**

Agricultural producer price index

The price index of agricultural producers is derived monthly from nominal prices of selected products. Agricultural producer prices are measured on 95 basic agricultural products (62 crop products including fruit and vegetables and 33 animal products) among about 500 selected agricultural producers. Prices of selected products (classified to CZ-CPA divisions 01 and 03) designed for the domestic market are measured. The prices are adjusted for VAT. Average prices of observed products are calculated as a simple arithmetic mean of prices of individual producers.

A constant weighting scheme is laid down to calculate individual, group and aggregate price indices. It is derived from the structure of sales and amounts of agricultural products in individual months of 2005. Average annual indices use a separate constant weighting scheme compiled on the basis of data on sales of products and amounts (and their aggregates) for 2005 in total. The price base is average 2005 prices.

Agriculture input price index

Since 2002 the AIPI calculation complies with Eurostat methodology. The AIPI is composed of two price sub-indices, namely **Goods and services consumed in agriculture** and **Goods and services contributing to agricultural investments**.

The price base is 2005; the weighting scheme corresponds to the structure of agricultural costs in 2005.

Forestry (raw timber) price index – only forest owners

The index has been calculated every quarter since 2007 from prices measured by quarterly national statistical questionnaire.

Since 1 January 2007, forestry prices have been collected for 18 basic non-coniferous and 19 coniferous raw timber assortments among approximately 120 reporting units. The prices are contractual prices of deliveries to the domestic market only and do not include in-house consumption.

Since 2009 indices and prices for selected forest owners have been published (the same as to date) covering newly also the forest non-owners – companies trading with timber. Methodological instructions for price reporting are the same for both groups of respondents.

The new table shows the quantity of timber sold by major timber trading companies. Selected assortments are broken by forest owners and non-owners.

Average prices of products under survey are calculated as a simple arithmetic mean of prices of individual timber producers. Weight proportions are calculated for both products and their aggregates from 1999 sales figures. The price base is average 2005 prices.

Industrial producer price index

Industrial producer prices are collected monthly based on the data from selected organizations (approximately 1 200) on selected representatives (approximately 4 700). Reported prices are prices agreed upon between the supplier and consumer residing in the CR (excluding VAT, consumer tax, costs of transport to the customer and costs related to transport) and invoiced for important business deals. The prices are measured between the 1st and 18th calendar day of the reference month.

The constant weights for the industrial producer price index are calculated from reported prices. The index measures the average price development of all industrial products manufactured and sold in the domestic Czech market. Industrial products are products classified to CZ-NACE divisions B–E.

In 2008 the original Classification of Products by Activity (SKP 2003) was replaced by a new Classification of Products by Activity (CZ-CPA 2008). Since 2009 price indices have been compiled, calculated and published according to CZ-CPA. Re-calculation of price indices for the last periods was made up to 1991 inclusive.

Conversion between CZ-CPA and SKP is shown on the CZSO website in section Aggregate data – time series: http://www.czso.cz/csu/redakce.nsf/i/ipc_cr in Table 2.

Re-calculation was based on the corresponding shares of constant weights of individual 4-digit SKP classes conversion to new CZ-CPA classes.

Base period for calculation of industrial producer price indices remains December 2005 = 100 and derived base is the average of 2005 = 100. Weighting scheme is based on the structure of domestic sales in 2005.

Price indices of constructions by CZ-CC

The price index of constructions is calculated quarterly from price indices of construction work calculated from prices collected on national statistical questionnaires Cený Stav 1-04.

In 2009 the questionnaire included 141 price representatives. The reporting network established by purposive sampling embraced about 750 respondents of all size classes and different

legal forms plus some assembling enterprises specialized in air conditioning, lifts and steel structures (CZ-NACE divisions 25, 28, 33, 41, 42, 43, 80).

The quarterly reported prices (realized in the second month of a quarter) are prices negotiated between the supplier and the customer for a unit of construction work carried out by own staff of the reporting unit in the Czech Republic. In addition to material for domestic construction, they include all the other costs needed to perform the activity under survey, and exclude the costs of site preparation and VAT.

For classifying prices of constructions the Classification of Types of Constructions CZ-CC is used. Table 8-1 contains two-digit codes of CZ-CC.

The quarterly survey and calculation of the price index of construction work and types of constructions are supplemented by monthly estimates of trends in construction work prices. The estimates are regularly updated with retrospective effect (on the 45th day after the end of the quarter concerned), according to results of the quarterly price survey. Monthly indices of construction work prices are published in News Releases – Producer price indices.

Price index of market services

Since January 2009 market services price indices are constructed, calculated and published according to CZ-CPA.

The aggregate price index of market services is calculated in relation to other price indices. It includes the following price indices of market services in the business sphere (i.e. services provided between enterprises): freight transport services, storage and cargo handling services, postal and courier services, telecommunication services, programming and consultancy services, information services, financial and insurance services, real estate services, legal and accounting services, architectural and engineering services, advertising and market research services, other professional, scientific and technical services, rental services, employment agency services, security and investigation services, services to buildings and landscape, administrative and other support services.

Prices of market services, which are aggregated into the aggregate price index, include selected services listed in the following CZ-CPA divisions: 49, 50, 51, 52, 53, 61, 62, 63, 64, 65, 68, 69, 71, 73, 74, 77, 78, 80, 81, 82. The surveys use state statistical questionnaires for approximately 550 selected reporting units providing market services mainly in the business sphere.

A constant weighting scheme is laid down to calculate individual, group and aggregate price indices. It is derived from the structure of sales in 2005. The price base is average 2005 prices.

The constant weight of the aggregate index is the sum total of the weights for individual services areas in 2005.

Export and import price index

This index has been compiled for the CR since 1993. The weighting scheme now includes about 1 750 representatives for exports and 1 650 representatives for imports which significantly participate in the volume of the implementation of individual significant groups of external trade. The price base is average 2005 prices. Export and import price indices for the period January 2005 to December 2006 were recalculated during the 2006 revision; the previously published indices for 2005 and 2006 are invalid.

The prices are measured monthly in approximately 520 and 480 reporting units engaged in exports and imports, respectively. The export prices measured are franco prices (free to the Czech border), the import prices are prices invoiced by the foreign supplier. Where a price representative is traded in several countries, the reporting units give average prices as a weighted arithmetic mean of prices obtained in significant commercial transactions (weighted by the quantity of products in physical units). The prices are converted into CZK by means of the Czech National Bank's relevant exchange rate and are measured free of customs duty, VAT and consumer tax.

Consumer price index

Trends in consumer prices are measured on consumer baskets based on a set of selected kinds of goods and services paid for by the population.

The current consumer basket includes about 700 particular goods and services (representatives) according to the national classification CZ-COICOP based on the international Classification of Individual Consumption by Purpose. The base period weights for the calculation of group and aggregate indices are derived from the structure of household expenditure derived from 2005 household budget statistics.

The basic price base is average prices of December 2005; derived price base is 2005 prices.

Consumer prices are measured once a month in the reporting network of selected stores and other outlets (about 8 500) in selected districts of the Czech Republic and the capital city of Prague. The survey is taken by staff of the Czech Statistical Office.

Table 8-2. Harmonized index of consumer prices (HICP)

Harmonized indices of consumer prices (HICPs) came into being in the EU in response to the need to establish comparable indices of consumer prices, so that inflation trends in the EU member states to be used as a criterion for the accession to the European Monetary Union could be measured.

There are certain differences between the structure of the consumer basket for the national index of consumer prices of the CR and the structure of the consumer basket for the HICP. The HICP weights include receipts from purchases made in the CR by foreigners and does not include hypothetical rent, whereas the national index of consumer prices includes hypothetical rent and does not include receipts from purchases by foreigners.

The HICP uses chain weights which are altered in December every year. National accounts data (final monetary consumption of households) are a source for the updating. Average of the year 2005 is used as the price base.

Table 8-3. Selected industrial producer price indices

The table presents selected groups as defined by three-digit codes of CZ-CPA. In some cases, divisions defined by CZ-CPA two-digit code are shown.

Table 8-4. Price indices of construction work and price indices of types of constructions

Starting from 2009 construction work price indices are classified to CZ-CPA. Selection of construction works is based on price indices published in previous years in Table 8-4 (classified to SKP 45).

Construction work indices of types of constructions are classified to four-digit codes of Classification of Types of Constructions CZ-CC.

Price indices of construction work and constructions are calculated from 1995. In addition, starting from 2004 indices of construction output costs and price indices of material inputs of constructions have been monitored; they are back-cast down to 2001.

As the input values for the price indices of material inputs are used chosen indices of materials, products and semi-finished products consumed in construction, which are derived from the industrial producer prices survey.

The indices of construction output costs include material inputs price indices, earnings of workers, health and social insurance paid by the employer, indices of national transport and overhead costs index.

Table 8-5. Selected price indices of market services

Selected items of the 3rd group are classified to CZ-CPA or to even more detailed classification (classes, categories, sub-categories).

Table 8-6. Prices of selected agricultural products

The current system of statistical surveying has been in use since 1991. The prices are measured in the network of selected agricultural producers. They are mostly nominal prices of selected agricultural products related to main (specified) quality grades. Prices of vegetables and fruit refer to top quality only. The reported price is a simple arithmetic mean of prices of individual significant contracts which were executed around the middle of the reference month.

Table 8-7. Raw timber prices: selected assortments (only forest owners)

Average prices of selected raw timber products (assortments) derived from figures reported in quarterly price surveys. The prices are calculated as a simple arithmetic mean of prices of individual business cases which take place in the whole period of the reference quarter. A change in selection of representatives was made in 2007.

Table 8-8. Consumer prices: selected goods and services

Consumer prices of selected price representatives are nation-wide average consumer prices related to December of a given year, which are, in nature, average values of individual varieties of respective representative. Their arrangement in the table is based on the revised consumer basket structure in force as from 2007.

Table 8-9. Consumer price indices: goods and services

The group indices of consumer prices are broken down as defined by level 3 of the CZ-COICOP.

Table 8-10. Consumer price indices: goods and services, by households total and households of pensioners, 2009

The consumer price indices refer to twelve CZ-COICOP divisions by households total and households of pensioners.

Table 8-11. Price indices of selected kinds of real estate

The source of the data is the real estate transfer tax returns administered by revenue authorities. The price index is the ratio of two average unit-purchasing prices (family houses in CZK/m³, building sites in CZK/m²) for two different time periods. The table shows the kinds of real estates offered by the source database, for which sufficient price information is available.

The price and index base period for index construction is the year 2005. In 2008 the revision of real estate price indices was made which produced a new, more realistic weighting scheme for all observed kinds of real estate. The weights of building sites are based on relative shares of sums of assessed values of real estate under given categories for the years 2004–2006 (for weights to be more robust). There is a compromise for the weights of family houses – they are a combination of outputs from the sums of assessed values and data from the Population and Housing Census on numbers of family houses.

More detailed information on producer price indices, consumer price indices and external trade price indices is available in other CZSO publications published in accordance with the Catalogue of Publications 2009 in thematic group 7 – PRICES:

subgroup 70 – Producer Prices:

- 7001-10 “Price Indices of Construction Works, Price Indices of Constructions and Indices of Construction Costs” (Czech-English) – February 2011*
- 7004-10 “Industrial Producer Price Indices” (Czech-English) – January 2011*
- 7005-10 „Indexy cen zemědělských výrobců“ – January 2011*
- 7008-10 “Market Services Price Indices in the Business Sphere” (Czech-English) – January 2011*
- 7009-10 „Ceny sledovaných druhů nemovitostí“ – December 2010*

subgroup 71 – Consumer Prices:

- 7101-10 “Consumer Price Indices (Cost of Living) – Basic Breakdown” (Czech-English) – monthly, 10th calendar day*
- 7103-10 “Consumer Price Indices (Cost of Living) – Detailed Breakdown” (Czech-English) – January 2011*

subgroup 72 – External Trade Prices:

- 7201-10 “Export and Import Price Indices in the Czech Republic” (Czech-English) – February 2011*

Further data can be found on the website of the Czech Statistical Office at:

- http://czso.cz/eng/redakce.nsf/i/prices_inflation*