

## EXPLANATORY NOTES ON METHODOLOGY

### A. Export and import price indices

The export and import price index has been calculated for the Czech Republic since 1993. The prices were measured by means of the national quarterly statistical questionnaire Cený ZO 1-04 until the end 1997, monthly report Cený ZO 1-12 has been used since 1998.

During the year 2006, the regular revision of price indices was accomplished which resulted in **revised external trade price indices calculated on external trade structure of 2005** (former indices were based on import and export structure in 1999) **with the index reference period the 2005 average** (previously the 1999 average and derived 2000 average). Price indices for period January 2005 - December 2006 were recalculated. The original indices for these years lost their validity.

The index is compiled according to the Harmonized System and is converted to suit the breakdown by SITC (Standard International Trade Classification), Rev.4 main group and, for the needs of national accounts and Eurostat, the breakdown of the Classification of Products by Activity (CZ-CPA). Abbreviation CZ in the term means national version of international standard. Classification CZ-CPA replaced classification of standard production SKP in 2009.

The indices are calculated using the Laspeyres formula.

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

- $p_1$  - the price (of representative) in the reference period
- $p_0$  - the price (of representative) in the base period – average price for the year 2005
- $p_0 q_0$  - constant weights (relative structure) – the value of implementation of external trade in 2005

Constant weights of index correspond to external trade structure in 2005, determined from customs statistics for 4-digit groups of the Harmonized System. The weights of individual representatives were then determined according to sold volumes of particular representatives or whole groups of representatives, given by sampled reporting units in their reports.

Since 2005, the basic price period for the calculation of the indices has included average prices of the individual representatives in 2005; the indices are also derived on the following bases: corresponding period of previous year = 100 and previous period = 100. Shown is also the ratio of moving averages, which the sum of basic indices for the last 12 months related to the sum of indices for previous 12 months.

The price representatives were chosen by businesses important for the external trade of the Czech Republic (by both production enterprises and enterprises engaged in foreign trade only) - about 520 of them engaged in exports and about 480 in imports. At present, the weight pattern includes approximately 1750 exported and 1650 imported products, raw materials and supplies - price representatives, which take up a significant share in the value of rather significant groups traded in the framework of external trade (both exports and imports). Compared to condition before the revision, about 25% more respondents were addressed and the number of the representatives is also higher (by about 25%).

Price trends are measured on individual price representatives chosen in the framework of the 8-digit code of the Combined Nomenclature, characterized by certain technical and qualitative parameters, mark, unit of measure and possibly stable foreign market. The sample of representatives represents all significant 2-digit-code groups of the Harmonized System and the 2-digit-code groups then include all 4-digit-code groups of Harmonized System, if possible. The groups, which mostly embrace non-standard products, and industrial plants, for which price indices cannot be calculated due to the non-repeatability of their imports or exports, are therefore represented only by repeatedly exported or imported product, on which price trends can be measured. However, only selected chapters of Harmonized System are released.

Reporting units state average prices in terms of weighted arithmetic mean (weighted by the amount of products in physical units) derived from prices achieved in rather significant trade transactions either in different countries or in a stable foreign market, provided it is included in the characteristic of the price representative concerned, for the entire reference month. Prices invoiced by external supplier are measured for imports and FOB prices for exports.

The basis of implementation prices are invoiced prices of significant import and export trade transactions - they are converted into CZK by average monthly exchange rates declared by the Czech National Bank. This is

carried out either by a reporting unit or the Czech Statistical Office if prices are reported in a foreign currency. The price indices reflect thus changes in foreign exchange rates, too. The stated prices are free of duty, value added tax and consumer tax.

Recalculated time series of indices with the base '2005 average = 100', also for the period before 2005, could be found on the web site of the Czech Statistical Office [http://www.czso.cz/eng/redakce.nsf/i/izc\\_ts](http://www.czso.cz/eng/redakce.nsf/i/izc_ts) referring to "Export and Import Price Indices".

## **B. Price indices for international transport and banking services**

### 1) Price indices for international transport of goods by rail

These indices have been released since January 1998. Price trends are measured on 36 chosen representatives using the national statistical report Cený ZO 2 - 12.

Measured are railway freight prices in exports and imports of goods transported over the Czech Republic's territory and in transit. The selection and price characteristic of the price representatives are linked to tariffs for international transport of goods by rail applied in the Czech Republic. Average prices (tax excl.) calculated from tariff prices and from contractual prices (including discounts) are measured when imports and exports are affected. As far as transit transport is concerned, tariff prices are observed and converted from EUR into CZK using the standard railway exchange rate valid at the time of the price reporting. The established prices are averages for the whole month. The reporting unit is the České dráhy company.

### 2) Price indices for international transport of passengers by rail

The indices have been published since January 2000. Price development is measured on 78 selected representatives using the statistical report Cený ZO 2a - 12.

The price development is measured from the viewpoint of assets and liabilities in the balance of payments of České dráhy compared with international railway partners in Europe. The assets include payments of foreign railways for crossing our territory, where they have their destinations. Transport in transit, whose revenues are included in the balance-of-payments assets, is measured separately. Payments made by České dráhy to foreign countries for the use of foreign lines are included in liabilities.

For the purpose of calculating the price index, per ticket rates (excl. tax) relating to the 2<sup>nd</sup> class carriage in CZK without additional charges valid on the 10<sup>th</sup> calendar day of the reference month are measured. International settlement of payments for passenger transport by rail has been made in terms of EUR since 1 January 1999 and converted from national currencies into CZK by České dráhy using the railway exchange rate in force at the time of reporting of prices. České dráhy are the reporting unit.

### 3) Price indices for international air transport

These indices have been also published since January 1998. Observed are tariff prices (tax excl.) in force on the 10th calendar day of the month under observation, using the national statistical report Cený ZO 3 - 12, which is filled in by the ČSA and British Airways company.

A total of 115 airlines of regular air transport have been chosen for price representatives, of which 70 for passenger air transport and 45 for freight air transport. Prices of air tickets bought abroad are converted from national currencies into CZK, using the IATA-Clearing-House Exchange Rates in force at the time of price reporting.

### 4) Price indices for banking services related to foreign countries

The indices have been published since January 2001. Price development is measured by the statistical report Cený ZO 5 - 12 on services selected as representatives.

Price movements are measured by tariffs (tax excl.) of services offered to natural and legal persons in contact with foreign countries abroad. Chosen as reporting units were banks on the territory of the Czech Republic, which offer bank services related to foreign countries, which are charged to clients in CZK.

In 2006, the regular revision of price indices was made and revised price indices for international transport and banking services on the structure of 2005 have been published since March 2007 (the first data being for January 2007). At the same time, the index reference period was changed to the 2005 average (*previously the 1999 average and derived 2000 average*). The revision caused the back-change of indices for 2005 and 2006. The original indices for 2005 and 2006 lose validity.

The calculation of the above-mentioned indices is carried out by the Laspeyres formula, since 2007 with constant weights of 2005. The weights in the index pattern were derived from 2005 sales/revenues and collections, and the 2005 average = 100 was chosen as the constant price base. Further, indices are related to 'the same period of previous year = 100' and 'previous period = 100'.

The new time series of price indices calculated on the new weighting pattern in the first publication for January 2007 is, at the same time, published retroactively for the period January 2005 - December 2006. The new time series of basic indices has the only price base '2005 average = 100'.