

Explanatory Notes on Methodology

The export and import price indices have been calculated for the Czech Republic since 1993. Till the end of 1997, prices were measured by means of the national quarterly statistical questionnaire Cený ZO 1 - 04. Since 1998, the monthly questionnaire Cený ZO 1 - 12 was used. Since 2019, data are measured monthly by means of two questionnaires called Cený ZOD 1 - 12 for import prices, and Cený ZOV 1 - 12 for export ones.

The indices are designed according to the Harmonized Commodity Description and Coding System, hereinafter as the Harmonised System, and then they are converted to be able to create two breakdowns, first, by main group of the Standard International Trade Classification (SITC), Rev. 4, and, second, by the national version, Classification of Products by Activity (CZ-CPA), of the Classification of Products by Activity, Version 2.1. The CZ-CPA replaced the formerly applied national Standard Classification of Production (SKP) in 2009.

The indices are calculated using the modified 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 a representative) in the reference period,

p_0 - the price (of a representative) in the base period – the average price for 2015,

$p_0 q_0$ - constant weights (relative structure) – the actual value of external trade in the national concept in 2015.

Since 2018, the price base for the calculation of the indices is average prices of respective representatives in 2015.

The constant weights of the indices correspond to the external trade structure in the national concept in 2015 as measured for four-digit groups of the Harmonized System. The weights of respective representatives were then determined according to actual values of particular representatives, or whole groups of the representatives, which the sampled reporting units gave in their questionnaires.

The sample of representatives includes all significant two-digit groups of the Harmonized System, and within these two-digit groups then include all the most important four-digit groups of the Harmonized System, if possible. Within these groups the products selected are those, which are exported or imported repeatedly, and thus their price trends can be observed. However, only data for certain selected chapters of the Harmonized System are released.

The price representatives were selected by domestic businesses important for external trade of the Czech Republic. Both production enterprises, as well as enterprises engaged in foreign trade activities only, of them about 610 businesses engaged in exports and around 630 ones in imports. At present, the weighting scheme includes approximately 2490 exported products, raw materials and supplies and 2860 imported ones – the price representatives, which form a significant share in the actual value of trade in rather significant groups of external trade, both exports and imports.

Respective price representatives, which are selected within the eight-digit groups of the Combined Nomenclature and characterized by certain technical and qualitative parameters, marks, brands, units of measure, and potentially by stable external market, are used to measure price trends.

Reporting units give average prices as weighted arithmetic means, weighted by the amount of products in physical units, derived from prices achieved in rather significant trade transactions, either in different countries, or on a stable foreign market, provided it is included in the characteristic of the price representative concerned for the entire reference month. For imports, the prices measured are the prices invoiced by external suppliers, and, for exports, these are FOB prices at borders of the Czech Republic.

The base of actual prices are prices invoiced in rather significant import and export trade transactions converted into CZK by the appropriate average monthly exchange rates declared by the Czech National Bank. The conversion is carried out either directly by the reporting unit, or by the Czech Statistical Office in cases reporting units submit the prices in a foreign currency. The price indices thus reflect, besides the price trend, changes in foreign exchange rates, too. The given prices are free of custom duties, value added taxes, and excise duties.

The terms of trade are expressed as a ratio of export price indices and import price indices.

During the year 2017 a standard revision of the calculation of external trade price indices was carried out. Since the reference period of January 2018, export and import price indices have been calculated using a new weighting scheme based upon external trade structure of 2015, in the national concept, and with the price base of the average of 2015 = 100.

The time series with the price base of the average of 2005 = 100 was recalculated to the new base of the average of 2015 = 100. Since January 2018, newly calculated indices with the price base of the average of 2015 = 100 are chained to this time series of indices, which provides for its continuation. The chaining period is December 2017.

All derived indices (for the corresponding period of the previous year = 100, previous period = 100, and the ratio of moving averages – the sum of base indices for the last 12 months related to the sum of indices for the previous 12 months) have been, since the reference period of January 2018, calculated from the time series of base indices of the average of 2015 = 100. However, base indices calculated this way may not be aggregated.

The calculation of indices with the base of the average of 2005 = 100 was terminated in the reference period of December 2017. The indices published till that period will not be revised.

During the revision, the section 4 – ‘animal and vegetable oils’ was excluded from the original weighting scheme of the sections 0 to 8 in the SITC. This section is statistically insignificant and therefore it is not included in the survey anymore. However, the survey publishes statistically significant divisions of the section 7 – ‘machinery and transport equipment’ as divisions 74, 77, 78 for exports, and divisions 74, 75, 77, and 78 for imports.

In the previous standard revision of external trade indices calculation in 2012, the price indices were calculated using the weighting scheme of the external trade structure of 2010, and with the price base of the average of 2010 = 100. The indices were chained to the time series with the price base of the average of 2005 = 100 in order to provide for continuation of the time series published until the moment.

Indices calculated according to the SITC, with the price base of the average of 2015 = 100, can be found within times series on the Czech Statistical Office webpage at: http://www.czso.cz/csu/czso/izc_ts under the link "Export and Import Price Indices - Time Series".