Methodology of the conversion of the time series of Industrial producer price indices

Coefficients (conversion bridges) for the conversion of time series of industrial producer price

CZ-CPA	Name	Coefficient
C, D, E	INDUSTRY TOTAL	0,9990
C	PRODUCTS FROM MINING AND QUARRYING	0,9970
CA	COAL AND LIGNITE, PEAT	0,9970
CB	METAL ORES AND OTHER MINING AND QUARRYING PRODUCTS	0,9961
D	MANUFACTURED PRODUCTS	1,0000
DA	FOOD PRODUCTS, BEVERAGES AND TOBACCO	1,0040
DB	TEXTILES AND TEXTILE PRODUCTS	0,9930
DC	LEATHER AND LEATHER PRODUCTS	1,0000
DD	WOOD AND PRODUCTS OF WOOD AND CORK	1,0048
DE	PULP, PAPER AND PAPER PRODUCTS	0,9980
DF	COKE, REFINED PETROLEUM PRODUCTS AND NUCLEAR FUEL	0,9680
DG	CHEMICALS, CHEMICAL PRODUCTS AND MAN-MADE FIBRES	1,0189
DH	RUBBER AND PLASTIC PRODUCTS	1,0030
DI	OTHER NON.METALLIC MINERAL PRODUCTS	1,0078
DJ	BASIC METALS AND FABRICATED METAL PRODUCTS	1,0114
DK	MACHINERY AND EQUIPMENT N.E.C.	0,9941
DL	ELECTRICAL AND OPTICAL EQUIPMENT	0,9990
DM	TRANSPORT EQUIPMENT	0,9929
DN	OTHER MANUFACTURED GOODS N.E.C.	0,9951
E	ELECTRICAL ENERGY, GAS, STEAM AND WATER	0,9887

Conversion of time series of overall Industrial producer price indices

Conversion between the time series of the price indices with a constant base before and after the revision is ensured by the coefficients (conversion bridges) either to the new base with the new structure from the year 2005 or to the original base with the original structure from the year 1999. For each time series of the indices (at all levels of CPA structural hierarchy) the coefficient is following number:

$$\text{coeff} = \frac{[\text{index for Dec. 2006 / 100}] \text{ with the base Dec. 2005 = 100 from new time series (on new structure y. 2005)}}{[\text{index for Dec.2006 / index for Dec.2005}] \text{ (both indices from original time series, where Dec.1999 = 100)}}$$

This coefficient represents a difference between the development on the new and the original scheme between December 2005 and December 2006 for each index.

I. Conversion of the original indices, valid till y. 2006, to
    a)   new base December 2005 = 100
    b)   new index base average 2005 = 100

    a)   The indices of original time series with the base December 1999 = 100, which refer to the period 2001 – 2006 (see publication CZSO - Prices), will be transformed to the new base December 2005 = 100, valid since y. 2007, as follows (for each month selected within 2001 – 2006):

index for the selected period with the base December 1999 = 100 from original time series
-- x coeff x 100   (1)
index for December 2005 to the base December 1999 = 100 from original time series

Example of calculation of index for November 2006 with the new base December 2005 = 100

- original index for November 2006 with the base December 1999 = 100:   117,1
- original index for December 2005 with the base December 1999 = 100:   114,1
- coefficient to the appropriate time series :   0,999

$$\text{Index with the new base} = \frac{117,1}{114,1} \times 0,999 \times 100 = 102,5$$

Final index is therefore comparable with newly published indices since year 2007 having the base December 2005 = 100.

b) Conversion to the new index base average y. 2005 = 100 will CZSO calculate from time series of type **(1)** above. Index for any time period within January 2001 and December 2006 to the new index base average y. 2005 = 100 can be calculate from the previously published data as follows (for each month selected within 2001 – 2006):

index for the selected month with the base December 1999 = 100 from the original time series
--- --------------------- x 100   (2)
index for an average of the year 2005 with the base Dec. 1999 = 100 from the original time series

It is necessary to refer to the fact, that formula **(2)** gives the same results as the calculation from the series of type **(1)** only theoretically (if the calculations are done with un-rounded figures)

II. Conversion of the new indices, valid since y. 2007, to
   a) original base December 1999 = 100
   b) original index base average 2000 = 100

a) Continuation of the time series of price indices with the original base December 1999 = 100 (valid till y. 2006) will be ensured by linking of the new time series to the original time series as follows (for each month selected in 2007 or later period):

index for the period y. 2007 (8…) with the base December 1999 = 100   =

index for the period y. 2007 (8…) with the base December 2005 = 100 from the new time series
= --   x
coefficient

x index for December 2005 with the base December 1999 = 100 from the original time series / 100.

Example of calculation of index for January 2007 to the base December 1999 = 100:

- new index for January 2007 with the base December 2005 = 100:   103,7
- original index for December 2005 with the base December 1999 = 100:   114,1
- coefficient to the appropriate time series: 0,999

$$\frac{103,7}{0,999} \times \frac{114,1}{100} = 118,4$$

b) Similar procedure can be used also for conversion to the base average 2000 = 100:

index for appropriate period y. 2007 (8…) with the base December 2005 = 100 from the orig. time series
= -- x
coefficient

x   index for December 2005 with the base average y. 2000 = 100 from the original time series / 100.

Note:
Using of the coefficients implicitly transforms the linking period December 2005 to December 2006. In other words, a published development of the original time series till December 2006, which is linked by the development of indices derived from the new calculation scheme, is retained.