Methodology of time series back-calculation

The first publication for January 2007 of new time series of price indices calculated on the new weighting pattern contains also back calculated time series for the period January 2005 – December 2006. This new time series of indices uses the only base '2005 average = 100'.

I. Conversion of the original indices valid up to December 2006 to the new base '2005 average = 100'

The indices (1999 average = 100) of original time series covering the period 1994 – December 2006 (from January 2001 to December 2006 – see the publication 'CZSO - Prices' and from 1994 to December 2000 – see the publication 'Revision 2000 – time series converted by coefficients') will be converted to the new base '2005 average = 100' valid since January 2007 in the following manner:

1) The original price indices for the period January 2005 – December 2006 lose their validity and will not be used further (with the exception of the January 2005 index for back-calculations). They are replaced by the newly published time series of indices (2005 average = 100) covering that period. Hence, they need not be recalculated.

2) For the period 1994 – December 2004 the following formula will be used:

$$\textbf{Index (2005 average = 100) for a given period} =$$

$$= \textbf{index (1999 average = 100) for a given period from the original time series} * \qquad \textbf{(1)}$$

$$* \frac{\textbf{index (2005 average = 100) for January 2005 from the new time series}}{\textbf{index (1999 average = 100) for January 2005 from the original time series}}$$

Example calculation of the import price index (2005 average = 100) for April 2004:

- original index (1999 average = 100) for April 2004: 97.8
- original index (1999 average = 100) for January 2005: 95.7
- recalculated index (2005 average = 100) for January 2005: 98.7

$$\textbf{Basic index (2005 average = 100) for April 2004} = 97.8 * \frac{98.7}{95.7} = 100.9$$

The resulting index is then comparable with the indices (2005 average = 100) newly published since January 2007.

II. Conversion of the newly published indices valid since January 2007 to a) the original base '1999 average = 100' and b) the original index base '2000 average = 100'

This conversion to the original bases applies to **all the newly published base indices** (not only to indices for reference periods from January 2007 onwards, but also to indices for the period January 2005 – December 2006).

a) The continuation of the time series of price indices '1999 average = 100' (previous validity up to December 2006, following the release of the new time series validity up to January 2005 only) will be ensured by linking the new time series to the original one in the following manner:

$$\textbf{index (1999 average = 100) for a given period of 2005 (6,7,8,...) =}$$

$$= \textbf{index (2005 average = 100) for a given period of 2005 (6,7,8...) from the new time series} * \qquad \textbf{(2)}$$

$$* \frac{\textbf{index (1999 average = 100) for January 2005 from the original time series}}{\textbf{index (2005 average = 100) for January 2005 from the new time series}}$$

Example calculation of the export price index (1999 average = 100) for January 2007:

- new index (2005 average = 100) for January 2007: 99.3
- original index (1999 average = 100) for January 2005: 100.2
- recalculated index (2005 average = 100) for January 2005: 100.5

$$\textbf{Basic index (1999 average = 100) for January 2007} = 99.3 * \frac{100.2}{100.5} = 99.0$$

b) The same procedure applies to conversion to the original base '2000 average = 100':

$$\textbf{index (2000 average = 100) for a given period of 2005 (6,7,8,...) =}$$

$$= \textbf{index (2005 average = 100) for a given period of 2005 (6,7,8,...) from the new time series} * \qquad \textbf{(3)}$$

$$* \frac{\textbf{index (2000 average = 100) for January 2005 from the original time series}}{\textbf{index (2005 average = 100) for January 2005 from the new time series}}$$