

VIII Index Numbers of Commodity Prices in Agriculture

Explanation

This part shows the results of the "Statistical Survey on Commodity Prices in Agriculture" by the Statistics Department of the Ministry of Agriculture, Forestry and Fisheries (hereafter MAFF).

These surveys were initiated in April 1948, by the Statistics Department of MAFF, and since then several revisions of base have been made. In the 2000 base, along with the discontinuation of the index numbers of materials for daily life, the "price index to measure the economic trends in rural areas and price level fluctuation" was replaced by the "price index to measure the price fluctuation in agricultural input and output", and "Index numbers of commodity price in rural areas" were also revised as "Index numbers of commodity price in agriculture". Index numbers of wages for temporary agricultural employees" have been discontinued since the 2005 base. The calculation methods of the index numbers of commodity prices in agriculture are as follows:

1 Calculation methods of base year price and indices

The base year has been set to 2010 since July 2012.

The revised indices have been calculated for each month since January 2010, setting the price of the 2010 calendar year at 100.0.

For the period until December 2009, old indices were linked with the new indices (base year = 2010) multiplying the link coefficient derived from the 2010 indices (base year = 2005) by the old indices. This linking was made separately for general indices and indices by groups and items. Base year price and other factors for calculating the indices are as follows:

(1) Base year price

Base year price in agriculture is the annual average price of 2010, based on the results of the "Statistical Survey on Commodity Prices in Agriculture". It is calculated as follows:

a Prices of agricultural products

First, each of the monthly national average prices of 2010 are calculated by the weighted average of the monthly prefectural average price, using shipment quantity of 2009 and 2010 as its weight.

Second, the 2010 base year national average price is calculated by the weighted average of the thus calculated monthly national average price, using monthly national shipment quantities of 2009 and 2010 as its weight.

b Prices of materials for agricultural production.

First, respective monthly national average prices are obtained from monthly average prices of prefectures.

Second, national simple average prices are obtained by dividing the sum of 12 months' national average prices by 12.

(2) Formula of indices

Laspeyres' formula is used

$$I_t = \frac{\sum W_{oi} (100 \times P_{ti} / P_{oi})}{\sum W_{oi}}$$

I_t = Index number of prices in general and by group
 W_{oi} = Weight by commodity (product / material) in the base period (2010 calendar year)
 P_{oi} = Individual price in the base period (2010 calendar year)
 P_{ti} = Individual price in the current period

(3) Weights and item numbers are shown in the table of weights and item numbers of Index Numbers of Commodity Prices in Agriculture.

In the 2000 base, the calculation of price indices in general and by group of agricultural products were changed from the traditional "Steady combined weight method by item and by month" to "Variable weight by item by month" in which weight for each group is fixed and monthly weight of item is changed in line with specific volume in the market, in order to properly reflect monthly price fluctuation.

2 Prices by commodity (product / material) and indices of each year

Prices by commodity (product / material) are calculated by each of the yearly average prices and indices in the same formula, as for the base year price (as described in 1 above).