

Outline of the 2015-Base Consumer Price Index

1 Characteristics of the index

The Consumer Price Index (CPI) is calculated to measure the average price movements of goods and services purchased by households throughout the country. It reflects changes of the cost of purchasing goods and services in a fixed consumption pattern of households.

2 Outline of the index

(1) Scope of the CPI

Since the CPI measures the price changes affecting the life of households as consumers, the scope should be the living expenditure of a household economy (religious contributions, donations, money gifts, other obligation fees and remittances are excluded).

Thus, expenditure such as direct tax and social insurance premiums (non-consumption expenditure), security purchases, land and housing purchases (expenditure for saving and purchase of properties) are not included in the scope of the CPI.

Housing cost of owner-occupied housing is incorporated into the index by the “imputed rent” approach.

(2) Index formula

The index is calculated as the weighted arithmetic mean with a fixed basket in the reference period preceding the observation period (Laspeyres formula).

$$I_t = \frac{\sum_{i=1}^n p_{t,i} q_{0,i}}{\sum_{i=1}^n p_{0,i} q_{0,i}} \times 100 = \frac{\sum_{i=1}^n \frac{p_{t,i}}{p_{0,i}} w_{0,i}}{\sum_{i=1}^n w_{0,i}} \times 100$$

I : index
 p : price q : quantity
 w : weight (= pq)
 i : item
 0 : base period t : comparison period

(3) Index reference period of the index and weight reference period

Both the index reference period and the weight reference period are the calendar year 2015. The weight is mainly calculated by average monthly expenditure by item per household in 2015, which is obtained from the Family Income and Expenditure Survey.

(4) Items to be priced

The number of items priced for the calculation of the index is 585 consisting of 584 items and an item of imputed rent of owner-occupied housing (including 4 items priced only in Okinawa Prefecture).

Items are selected in consideration of the relative importance of each item to the total consumption expenditures, representativeness of price movements and feasibility of price collection, in order to represent the price movements of all the goods and services purchased by households.

(5) Price data

Prices of index items are derived from the Retail Price Survey (RPS) in principle. Note that the number of surveyed municipalities (villages, towns and cities) is 167.

For three items, “personal computers (desktop)”, “personal computers (notes)” and “cameras”, the average price and the number of units sold for each product derived from scanner data, collected from major electric appliance shops across the country are used for compiling price indices instead of the RPS.

(6) Index calculation

Index aggregation begins from the calculation for the smallest groups. Namely, the price index for each item ($P_{t,i}/P_{0,i}$) is averaged with weight assigned to each item to obtain indices for the smallest groups. Then the index thus obtained is averaged with weight for each group, the sum of weights assigned to items in the group, to obtain the index for the groups immediately above the smallest groups. Repeating the same procedure, the indices for the subgroups, the 10 major groups, and the all items index are obtained in succession.

In the case of the all items index for Japan, the index is computed as follows (the same procedure is also taken for the city groups and districts). First, price relative by item for each municipality ($P_{t,i}/P_{0,i}$) is calculated and then averaged with the respective weight for each municipality to obtain the average price index by item for Japan. Then this index is averaged with weight for each item for Japan to obtain indices for item groups including the all items index.

3 Index series available

The following indices are available. The all items index, sub-indices for 10 major groups, sub-indices for lower groups. Index for each individual item is also released for Japan and Ku-area of Tokyo.

Indices are compiled for regional groups, that is, city groups, districts (including 4 major metropolitan areas), cities with prefectural governments (excluding ku-area of Tokyo), Kawasaki-shi, Sagami-hara-shi, Hamamatsu-shi, Sakai-shi and Kitakyushu-shi.

Index for each item is also aggregated into index for goods and that for services for Japan and Ku-area of Tokyo.

Indices aggregated based on baskets of the specific household groups for Japan, and indices by the characteristic of items are also available.

Laspeyres' chain index for Japan is compiled for reference.

Seasonally adjusted consumer price indices such as "all items", "all items, less fresh food", "all items, less fresh food and energy" (15 indices) is also released for Japan and Ku-area of Tokyo.

4 Publication of consumer price indices

In principle, the index figures of the preceding month for Japan is released at 8:30 A.M. (Japan time) on Friday of the week including the 19th of each month*. The preliminary figures of the current month for the Ku-area of Tokyo is released at 8:30 A.M. (Japan time) on Friday of the week including the 26th of each month.

For details of the Consumer Price Index in Japan, please refer to the following link:
<http://www.stat.go.jp/english/data/cpi/index.htm>

* Since January 2018 result, the CPI for Japan has been released a week earlier than before. Until December 2017, the release date was Friday of the week including the 26th of each month.