

Japan

A: Identification

Title of the CPI: Consumer price index

Organisation responsible: Statistics Bureau of Japan

Periodicity: Monthly

Index reference period: 2010 = 100

Weights reference period: 2010

Main uses of CPI: Indexation of wages, pensions and /or social security payment, indexation of rents, contacts and /or other payments, main inflation indicator used for monetary policy, deflate household expenditures in national accounts and macroeconomic modelling and other analytic uses.

B: CPI Coverage

Geographical Coverage

Weights: Nation-wide

Price collection: Nation-wide

Population coverage: Resident households of nationals

Population groups excluded: One-person households, "households which manage restaurants, hotels, boarding houses or dormitories, sharing their dwellings", "households which serve meals to the boarders even though not managing boarding houses as an occupation", "households with 4 or more living-in employees", "households whose heads are absent for a long time (three months or more)" and "foreigner households".

Consumption expenditure excludes:

- Purchase of owner-occupied housing
- Social insurance premiums

C: Concepts, definitions, classifications and weights

Definition of the CPI and its objectives: The Consumer price index (CPI) is calculated to comprehensively measure the price fluctuation of goods and services purchased by households nationwide in the time series. It reflects changes of the cost of purchasing goods and services in a fixed "market basket", but is not designed to measure changes of the cost of living.

Classification: The Classification of Individual Consumption by Purpose (COICOP) is broadly followed. Classification systems used in Japan follows to the ILO Manual's classification of the CPI. The Ten Major CPI Groups approximate the Eight Major Groups of the 1993 SNA (Food, Housing, Fuel, Light & water charges, Furniture and household utensils, Clothes & footwear, Medical care, Transportation and communication, Education, Reading & recreation, Miscellaneous and General).

Sources of weights: Household expenditure surveys

Frequency of weight updates: Every 3-5 years

D: Sample design

Sampling methods:

Localities: Random multi stage sampling

Outlets: Judgmental sampling

Products: Judgmental sampling

Criteria used for determining the optimal sample sizes and the coverage of localities, outlets, items and variety samples:

Item selection: The enumerator is responsible for the selection of the particular variety and monitoring the same variety over time. The specifications selected are reviewed as needed on the basis of ad hoc surveys. The items are appropriately selected on the basis of the importance of each item in relation to total consumption expenditures, how representative they are of price movements of the product class, and the feasibility of price data collection. In principle, items are selected only from those accounting for more than 1/10000 of household consumption expenditures - such items account for an estimated 85 to 90 percent of total household expenditure (2010 FIES, to date). In principle, 588 items are to be priced in each of 167 selected municipalities.

Outlet selection: The selection of shopping district is with probability proportionate to (population) size while the selection of outlets is judgmental, by the enumerators, on the basis of the highest-volume seller, irrespective of outlet type. No sampling frame of outlets is available. No stratification is done by outlet type.

E: Data Collection

Approximate number of localities, outlets and price observations: Localities: 167 municipalities, Outlets: 27,000, Price observations: 244,000

Frequency with which prices are collected: Prices are collected monthly.

Reference period for data collection: Prices are, for the large part, surveyed on the Wednesday, Thursday, and Friday of the week that includes the 12th of each month. Prices for perishable items, including fresh fruit, vegetables, and fish, are surveyed over three

successive days, three times a month - that is, during the week including the 5th, 12th, or 22nd of each month, in each case on the Wednesday, Thursday, and Friday.

Methods of Price Collection

- Personal data collection
- Scanner data for personal computers, digital cameras and prices on all products sold in major electronic appliance shops.
- Central price collection for railway fares, electricity and tobacco

Treatment of:

Discounts and sales prices: Temporary bargain (within a week) prices, prices for instalment sales and abnormal prices due to disasters are excluded for the CPI.

Second hand purchases: Prices of second hand goods are excluded from the Index.

Missing or faulty prices: For temporarily unavailable, seasonal, perishable items, such as fresh fruit and fish, the overall weight is held fixed at the annual level. The missing items are excluded from long-run price comparisons between the 2010 mean reference price and the price in the current period. However, there is an implicit imputation of the price change of the missing items - one based on the long-run price change of existing items.

Disappearance of a given type or quality from the market: For a permanently missing, or "old" item, a replacement "new" item is found that matches the old item's specification. The replacement item is usually found in the same outlet, but exceptionally a replacement at the same level of specifications in another outlet may be used (except in the case of services). If the price of the new item in the previous period is similar to that of the old one in the previous period, the replacement is considered to be comparable and a direct comparison made. If the new item is not similar to the old one, the new item's price is compared with the old item's price using the overlap method. The outlet manager is asked for the price of the new item in the previous overlap period, and the price change of the new item is linked to the price of the old item in the overlap period.

Quality differences: Overlap and explicit quality adjustment methods are used for quality differences. The option cost method is applied to automobiles, quantity adjustments as applicable, and hedonic indices for digital cameras and personal computers.

Treatment of seasonal items and seasonality

Items that have a seasonal character and their treatment: For fresh fish and shellfish, fresh vegetables and fresh fruits, monthly variable weights are used for compiling the index. For seasonal goods excluding fresh foods, the average prices of the month when the survey is conducted are substituted for the prices of the month when the survey is not conducted.

Seasonal food items: Seasonal food items are included in the CPI using variable weights approach: the weights vary over the year.

Treatment of housing

Treatment of owner-occupied housing: Owner occupied housing is incorporated in the index through the imputed rent approach. Data on owner-occupied housing from the 2004 NSFIE are used to impute owner-occupied rents.

Types of dwellings covered by the rent data: A House Rents Survey forms part of the "RPS system" and surveys approximately 26,000 private and public rents per month and their floor space. Sampling of the cities, towns, and villages surveyed is with probability proportional to size based on the 2005 population census data. An estimated regression equation relates rent to dwelling characteristics. Deductions for the cost of repairs and maintenance and land rent are made to avoid double-counting such costs, which are included in rents but excluded from the cost of owner-occupied housing. Approximately 1,000 prices are collected each month from 530 (public and private) hotels by the Hotel Charges Survey, which is also part of the RPS system. The PSO conducts ad hoc surveys, when necessary, for collecting information to support the main compilation (for example, to identify new products and provide source data for weights and prices).

F: Computation

Formula used for calculation of elementary indices: The ratio of arithmetic mean prices (Dutot index)

Formula to aggregate elementary indices to higher level indices: A Laspeyres index using relative expenditure shares as weights is used at the higher level of aggregation. The formula is given as follows:

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

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

Seasonally adjusted indices: Seasonally adjusted indexes are computed to see price trends in the economy. The series include "all items", "all items less fresh food", "all items less imputed rent", "all items less imputed rent and fresh food", "all items less food (less alcoholic beverages) and energy", "goods", "semi-durable goods", and "goods, less fresh food". The indices are calculated by using the US Census method (X-12-ARIMA (X-11 default)).

G: Editing and validation procedures

Control procedures used to ensure the quality of data collected: Tight specifications are given to price collectors. Price collectors enter data into tablet PCs, which automatically displays the previous month's price and the price change. If the change falls outside specified price bands, the price collector has to give a reason. Excessive price changes and their reasons are checked at the SBJ and referred back to an official of the prefecture government for further checking to resolve the query. If a specification is found to be generally unavailable, a change is made to the specification used, to the benefit of the index.

Control procedures used to ensure the quality of data processed: The collected prices are reviewed using computer edits to identify suspicious data. The field supervisors periodically review the work of price collectors to ensure that collection procedures are understood and followed. Specified ranges are set for "acceptable" prices, and these appropriately differ by product group. When prices are outside specified ranges, the cause is investigated. Reasons are given by price collectors, and their veracity has to be considered by prefecture government officials, and if deemed necessary by the PSO. The PSO staff are specialists in particular product areas and check trade magazines, telephone associations, and manufacturers for contextual information.

H: Documentation and dissemination

Timeliness of dissemination of the CPI data: In principle, the CPI is released at 8:30 A.M. on Friday of the week including the 26th of each month. The index figures of the preceding month for the whole country and the preliminary figures of the current month for the Ku-area of Tokyo are released. The average index figures for the calendar year and fiscal year are released when the monthly figures for December and March.

Level of detailed CPI published

Paper publication: All items CPI, Division-level (12 Divisions*)

Online: All items CPI, Division-level (12 Divisions*)

** The number of divisions/groups/classes are provided as an example and are based on the COCIOP classification.*

Documentation

Publications and websites where indices can be found: After release the CPI data are available from a hardcopy summary report (in Japanese only) and on the Internet website (<http://www.stat.go.jp/data/cpi/index.htm> (in Japanese) and <http://www.stat.go.jp/english/data/cpi/index.htm> (in English)). The publications "The Monthly Report on the Consumer Price Index" and "The Annual Report on the Consumer Price Index" available in hard copy and for a fee from the Japan Statistical association and the National statistics office respectively.

Publications and websites where methodological information can be found: <http://www.stat.go.jp/english/data/cpi/pdf/2010base.pdf> (in English) contains easily accessible full version of the detailed outline of the 2010-Base CPI on sources and methods used to compile the CPI. The short form is also included in The *Annual Report on the Consumer Price Index*. Highly detailed appendices are provided in both cases. A short form is also available at (<http://www.stat.go.jp/data/cpi/2010/kaisetsu/index.htm> (in Japanese)).

I: Other Information

Reported by the ILO in 2013.