

II Outline of the 2020-Base Revision of the Consumer Price Index

1 Purpose of revision and statistical standard

The base period of the CPI is periodically revised (“base revision”), items and weights are reviewed, and new groupings are increased and refined for publishing to maintain and improve the accuracy of measuring consumer prices, and to ensure the validity of price index.

The CPI has been revised every five years since 1955. The base period is revised to 2020-base in accordance with the statistical standard pursuant to the Statistics Act, “Statistical standard on the base period of index” (the Ministry of Internal Affairs and Communications Notice No. 112, 2010) (refer to “VIII 3 Japanese statistical standard on the base period of index”, hereinafter abbreviated to “statistical standard”.)

2 Revision of the index base period

The base period of index (the year of setting index 100) will be revised from 2015 to 2020 in accordance with the provision of the statistical standard which defines that the base period of the index should be revised every five years, in the years with 0 or 5 in the last digit.

The old and new indices are linked to enable time-series comparison of each index grouping, provided that the rates of change including month-to-month, year-ago month, or year-on-year are not recalculated with the linked indices, and the figures already published in each of former bases are used.

3 Revision of weights

The weights used for calculating the index by the 2020-base fixed-base method are conventionally supposed to be computed using the result of the Family Income and Expenditure Survey (FIES), etc. of 2020, which is the same year as the index base year to update, in accordance with the provision of statistical standard* stipulating that “the index with a fixed weight shall be calculated from the weight of the year which is the base period of that index.” However, in light of the impact of COVID-19 infections, they are computed based on the average monthly expenditure by item per household in 2019 and 2020. Note that the household consists of two or more persons (excluding the index for total household).

Because there is a large fluctuation in monthly purchase quantities by item, monthly weights for fresh food (fresh fish & seafood, fresh vegetables, and fresh fruits) are calculated using the monthly purchase quantities in 2019 and 2020 in addition to the expenditures by item in 2019 and 2020 in the FIES (the monthly group weights for fresh fish & seafood, fresh vegetables, and fresh fruits are fixed for the entire year). Moreover, the expenditures of “pocket money” and “social expenses” in the FIES are allocated to other CPI items in accordance with the results of the “Private Income and Expenditures” in 2019 National Survey of Family Income, Consumption and Wealth. The weights for the imputed rent are also calculated based on the “Imputed rent” in 2019 National Survey of Family Income, Consumption and Wealth.

The weights used for calculating the index by the chain-linking method are updated every year using the results of the FIES in the previous year, etc.

*As for the “weight of the year which is the base period of that index”, it is described that “it is customarily computed based on the results of statistical surveys targeting the base year, but it is also acceptable to use the weight computed by a method reasonable in terms of statistical techniques based on the role required for that index, as well as the weight that is generally accepted as the ‘weight of the year which is the base period’.” (April 14, 2010, decided by the Director-General for Policy Planning (Statistical Standards) of the Ministry of Internal Affairs and Communications).

4 Revision of items

The items used for calculating the CPI are added or removed according to the importance and other criteria in living expenditures for improving the accuracy of measuring price changes.

The criteria to add or remove the items are shown below.

<Criteria for addition>

The items which meet all of the following criteria are added to the index items:

- 1) Importance in living expenditures has increased due to change in the consumption patterns owing to the appearance and spread of new goods and services, and taste changes.
- 2) Items that can contribute to improve accuracy and to retain representativity of subgroup indices.
- 3) Items that can be smoothly collected their prices and correctly represent their price changes.

<Criteria for removal>

The items which meet any of the criteria 1) to 3), and are not considered to hurt the representativity of subgroup indices are removed.

- 1) Items whose importance for living expenditures has decreased due to changes in the consumer patterns.
- 2) Items that even when eliminated do not affect the ability to ensure the accuracy of the subgroup indices.
- 3) Items that become difficult to collect smoothly or those where the price changes cannot be clearly shown.

The items in 2) may be integrated to other items.

In the 2020-base revision, 30 items were added, 28 items were removed, and 10 items were integrated into 5 items, resulting in a total of 582 items in the new base index. Appendix 1 lists the items to be revised in the 2020-base index.

In addition, the item names are changed due to the expansion of the conceptual range of items, and the survey period is changed in light of the sales period of products (goods and services) in the market. Appendix 2 shows the items whose names are changed and for which the survey period is changed in the 2020-base index.

5 Expanded adoption of sales prices on the Internet

In light of the recent increase in online purchases and advances in information collection technology, web scraping technology is utilized to calculate the indices of “Airplane fares”, “Hotel charges”, and “Charges for package tours to overseas”, and scanner data from the POS information including prices for face-to-face sales and Internet sales are utilized to calculate the indices of “TV sets”, “Video recorders”, and “PC printers”.

As for “Personal computers (desktop)”, “Personal computers (notes)”, “Tablet computers”, and “Cameras”, scanner data from the POS information will continue to be used to calculate the indices.

As for “Tablet computers”, in the 2015-base, they are combined into one index by weight after calculating price indices of “Personal computers (notes)” (excluding “Tablet computers”) and “Tablet computers”, and they are published as a “Personal computers (notes)” index. In the 2020-base, the “Personal computers (notes)” index (excluding tablet computers) and the “Tablet computers” index are calculated and published.

6 Revision of model formulas

Some items such as “Electricity”, “Medical treatment”, and “Telephone charges (mobile phone)” have various fare structures, with prices that vary according to the purchased conditions. To suitably reflect the price fluctuation in the price index, monthly indices for these items are calculated with special formulas (“model formulas”) which are designed by using a typical utilization case of each item as a model. Various statistics, information consolidated by economic associations, and responses for information requests to private companies are used to compute ratios, etc. to aggregate the prices.

Of the 74 model items in the 2015-base, 4 items are removed, 2 items are integrated to 1 item, and 5 items are added, making a total of 74 model items in the 2020-base.

In the 2020-base revision, the weights used for weighted averages in the model formula are updated, collecting prices and model cases are also revised, and the following measures are taken to perform other necessary revisions for maintaining and improving accuracy. In addition, model formulas for newly added model items are created.

- Based on recent trends in the camera market, the calculation method for a model formula of cameras has been changed from a composite index using three types of cameras (compact, single-lens reflex, and mirrorless single-lens) to an index using lens interchangeable cameras (single-lens reflex and mirrorless single-lens).
- In light of recent trends in the mobile phone charge market, the exclusion of conventional mobile phones (so-called “Galapagos mobile phones”), as well as the combination of the duration of call and communication traffic volume to be adopted as a model case, are reviewed every year.

These measures are taken.

7 Increases and refinement of published groupings

The published groupings have been increased or refined in the base revision to ensure the validity of the consumer price index.

In order to contribute to international comparison, an annual average index, for which the basic classification of Japan is rearranged based on the COICOP 2018 classification* as another index, is published.

In addition, the “consumption tax-adjusted index” excluding the direct impact of the revision of the consumption tax rate is continuously published as a reference value, and the analysis results on quality adjustment of rent based on the secular change of buildings are published as reference material. The secular change of buildings includes not only the physical deterioration of housing (subject to quality adjustment) but also the temporal change of the price evaluation on housing facilities.

As for the indices aggregated based on baskets of specific household groups, the classes of “Households headed by persons aged 65 and over” and “Retired Elderly Households (age 65 and over)” are newly added to “Index by Age Groups of Household Head (10 major groups (annually))” as regrouped, while the “Index for Retired Elderly Households (age 60 and over) (subgroup (monthly and annually))” and “Index for Retired Elderly Households (age 65 and over) (subgroup (monthly and annually))” are not published.

As for the basic classification index, in light of the process of index calculation and its utilization status, etc., the city group of “Cities with population of 50,000 or more” and the districts of “Major Metropolitan Area (Kanto Major Metropolitan Area, Chukyo Major Metropolitan Area, Kinki Major Metropolitan Area, and Kitakyushu-Fukuoka Major Metropolitan Area)” are not published.

* As for the COICOP 2018 classification, refer to “III Chapter 5 Method of index calculation and index grouping”.

8 Routine review of indices after the base revision, etc.

(1) Regular revision of survey specifications

For those goods and services which are subject to price survey, the characteristics (specifications) including the function, standards, capacity, and specification of the hot-selling line of products, are defined for each item to ensure the homogeneity and the representativity of price fluctuations. Given constant changes in corporate strategies and consumption behaviors of households and consequent changes in the hot-selling line of products, the survey specifications need to be regularly reviewed and appropriately and timely revised as required (specification revision).

(2) Suitable method of quality adjustment

Given that the fixed quality is essential for measuring price fluctuations, the most suitable method is selected for appropriate quality adjustment of each item at the time of specification revision, including the overlap method, adjustment by the ratio of quantity, adjustment by the single regression equation, option cost method, class mean imputation, hedonic approach, and direct comparison, to remove the effect of quality changes due to specification revisions.

(3) Efficient collection of information on products (goods and services)

For items with a high purchase rate through online shopping, items having the same price for face-to-face sales and for Internet sales, and items for which the price for face-to-face sales can be identified on the Internet, information on the Internet is utilized to efficiently collect information on products (goods and services). In addition, information on the Internet and POS information are actively utilized even in (1) and (2) above.

(4) Any time revision of model formulas

The model formula is revised as required to reflect the actual status of the new charging or price system of an item, if any, accurately in the relevant index.

(5) Midpoint-year revision of items

The index items may be added or removed before the next base revision to immediately reflect the rapid spread or decline of relevant goods and services, if any in the index.

(6) Analysis and publication of the impact of the base revision, etc. to the indices

In order to verify the impact on the indices due to the base revision and the difference in the weight reference period, and to contribute to the convenience for users of statistics, the following analyses are conducted and published.

- Comparison for the change from the year-ago month of the all items index between the old and new bases, analysis of the difference in contribution due to revisions of items and model formulas, etc.
- Calculation of indices and year-on-year comparison by the Laspeyres' Chain Index method (reference indices), and comparison with indices calculated by the fixed-base method
- Comparison with the Paasche index with 2025 as the weight reference period (Paasche check)

Items added, removed, and integrated in the 2020-base revision

○ Added items (30) and removed items (28)

10 major groups	Addition	Removal
Food	Cereal Pork (imported) (*2) Seasoned meat Cut vegetables Avocados Nuts Aseptic packaged cooked rice Hamburg steaks Frozen “Gyoza” “Salad chicken” “Oden”, Japanese stew Non-alcoholic beer Home delivery water	Glutinous rice Boiled “Okinawa” noodles (*1) “Shiokara”, salted fish guts Pork-B (*2) Canned pork (*1) “Nigauri” “Toga” (*1) Grapefruits Canned fruits “Okinawa” noodles (eating out) (*1)
Housing	Repairing roofs	
Furniture & household utensils	Sofas Cushions Mattress pads Storage cases Bleach	Chests of drawers Clocks Blankets Sealed kitchenware Moth repellent for clothes
Clothes & footwear	Children’s trousers (for spring & summer) Children’s trousers (for autumn & winter)	Boys’ pants Girls’ skirts
Medical care	Supplies for slight incontinence	Delivery fees in national & public hospital
Transportation & communication	Drive recorders	Telephone set
Education		Kindergarten fees (public) Kindergarten fees (private)

(*1) Items surveyed only in Okinawa Prefecture

(*2) “Pork-B” (legs (excluding berkshire)) that has been surveyed up until now is removed, and “Pork (imported)” is newly added.

○ Added items (30) and removed items (28) (Continued from the previous page)

10 major groups	Addition	Removal
Culture & recreation	Tablet computers (*3) Lesson fees (physical education school) Photography fees	Mobile audio players Video cameras Electronic dictionaries Recordable disc media Dictionaries Lesson fees (cooking school) Photo processing charges
Miscellaneous	Cleansing products Face serums Funeral fees After-school childcare fees	

(*3) In light of the recent market trends of tablet products (there are less technological innovations than laptop computers in spite of the increasing display size, and the product life cycle is getting longer), “Tablet computers” are separated to be independent from “Personal computers (notes)”.

○ Integrated items (10 items to 5 items)

10 major groups	Current	After change
Food	Fresh milk (delivered)	Fresh milk
	Fresh milk (sold in stores)	
	Apples-A (*4)	Apples
	Apples-B (*4)	
Clothes & footwear	Men’s business shirts (long sleeves)	Men’s business shirts
	Men’s business shirts (short sleeves)	
Transportation & communication	Small motor vehicles (over 0.66L, 2.00L or less)-A (*5)	Small motor vehicles
	Small motor vehicles (over 0.66L, 2.00L or less)-B (*5)	
Culture & recreation	Computer games for domestic use (stationary)	Computer games for domestic use
	Computer games for domestic use (portable)	

(*4) “A” is Tsugaru, and “B” is Fuji.

(*5) “A” is a domestic product, and “B” is an imported product.

Items with name/survey period changed in the 2020-base revision

○ Name change due to expansion of item concept

10 major groups	Current	After change
Food	Dried “Udon”	“Somen”, fine wheat noodles
	Pork-A (*)	Pork (domestic) (*)
	Frozen pilaf	Frozen cooked rice
Clothes & footwear	Children’s undershirts	Children’s underwear
Miscellaneous	Toilet soap	Hand soap

(*) “Pork-A” (ribs (excluding berkshire)) that has been surveyed up until now is referred to as “Pork (domestic)” (ribs (excluding berkshire)).

○ Change of survey period

10 major groups	2015-base item name	2020-base item name	Current	After change
Food	Apples-B	Apples	January to July, November to December	All year round
Furniture & household utensils	Fan heaters		January to March, October to December	January to February, October to December
Clothes & footwear	Mufflers		January to February, October to December	January to February, November to December
Miscellaneous	School knapsacks		January to February, December	January to February, May to December