



REPUBLIC OF THE PHILIPPINES
PHILIPPINE STATISTICS AUTHORITY BOARD

**PSA Board Resolution No. 02
Series of 2018**

**APPROVING THE REBASING OF THE CONSUMER PRICE INDEX (CPI)
FROM 2006 TO BASE YEAR 2012 AND ADOPTION OF THE
CHAIN METHOD IN THE 2012-BASED CPI**

WHEREAS, PSA Board Resolution No 01, Series of 2017-145 Approving the Synchronized Rebasing of Price Indices to Base Year 2006, mandates the rebasing of the price indices every six years;

WHEREAS, the consumer price index (CPI) is a measure of change in the average prices of a fixed basket of goods and services commonly purchased by households relative to a base year;

WHEREAS, the CPI is still based on 2006 prices;

WHEREAS, the composition of the market basket of the CPI was those prevailing in 2006 and changes had taken place over a period of six years affecting the relevance of the basket;

WHEREAS, rebasing the CPI periodically is necessary since some of the items may no longer exist or are no longer commonly bought due to technological and quality change or changes in consumer taste and to ensure that this indicator of economic phenomena is truly reflective of the current situation;

WHEREAS, the PSA in keeping with its mission to be relevant to its stakeholders, proposed the rebasing of the CPI to 2012 using as data inputs, the results of the 2013 Survey to Key Informants for the updating of market basket and 2012 Family Income and Expenditure Survey for updating the expenditure weights;

WHEREAS, the Interagency Committee on Price Statistics (IACPS) during its meetings reviewed various proposed methodologies for the computation of the CPI;

WHEREAS, the IACPS proposed a new methodology using a straightforward in the computation of monthly average prices of commodities, chain method for elementary item indexes; geometric mean method at the lowest level (subclass level) of aggregation of price indexes and weighted arithmetic mean at the higher levels of aggregation of price indexes;

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WHEREAS, the IACPS in its meeting on 05 February 2018 agreed to recommend to the PSA Board the methodology in rebasing the CPI to base year 2012 and using a straightforward in the computation of monthly average prices of commodities, chain method for elementary item indexes; geometric mean method at the lowest level (subclass level) of aggregation of price indexes and weighted arithmetic mean at the higher levels of aggregation of price indexes in the 2012-based CPI series (Annex BR 02-20180213-01);

NOW, THEREFORE, BE IT RESOLVED, that the PSA Board approves the rebasing of the CPI to year 2012 and use of the straightforward in the computation of monthly average prices of commodities, chain method for elementary item indexes; geometric mean method at the lowest level (subclass level) of aggregation of price indexes and weighted arithmetic mean at the higher levels of aggregation of price indexes in the 2012-based CPI series as recommended by the IACPS; for and utilization of results by all concerned agencies

RESOLVED FURTHER, that PSA:

- 1) start releasing the 2012-based CPI series beginning 06 March 2018 covering the period January 2012 to February 2018, simultaneously with the 2006-based CPI;
- 2) continue releasing the 2006-based CPI until June 2018 series; and
- 3) back casted values of the 2012-based CPI series from January 1957 to December 2011 will be completed in September 2018.

Approved this 13th day of February 2018, in Pasig City.



ERNESTO M. PERNIA
Secretary of Socioeconomic Planning
National Economic Development Authority
PSA Board Chairman



Attested by:



LISA GRACE S. BERSALES
Undersecretary
National Statistician and Civil Registrar General
Chairperson, PSA Board Secretariat

METHODOLOGY IN REBASING THE CONSUMER PRICE INDEX TO BASE YEAR 2012 AND ADOPTING THE CHAIN METHOD IN THE 2012-BASED CPI

1. Identification of the Base Year

The base period is the period, usually a year, at which the index number is set to 100. It is the reference point of the index number series. The CPI is now rebased to 2012 base year from the current 2006 base year.

The year 2012 was chosen as the next base year because it was the latest year when the Family Income and Expenditure Survey (FIES) results were made available. It is also in accordance with the PSA Board Resolution No.1, Series of 2017-146, which approved the synchronized rebasing of the price indices to base year 2006 and every six (6) years thereafter with consideration that this will serve as an interim approach until the adoption of chained indexes is already possible.

2. Determination of the Market Basket

Market basket refers to a sample of goods and services, which is meant to represent the totality of all the goods and services purchased by households relative to a base year.

Determining the right market basket is crucial because inadequate representation of the typical basket will give wrong signals as to the behavior of prices, a very important factor in economic planning.

To determine the commodities that will form the market basket, the Survey of Key Informants was conducted in 2013, updating the 2006-based market basket. The survey was conducted nationwide to store managers, sellers or proprietors and were asked of the most commonly purchased items or commodities. The commodities are grouped according to the 2009 Philippine Classification of Individual Consumption According to Purpose (COICOP) which is based on the United Nations COICOP.

3. Determination of the Household Consumption Patterns (Weights)

This activity involves assigning weights to the commodity groups/sub-groups. This reflects the consumption priorities of households and the way they allocate resources to meet their needs. Weight is a value attached to a commodity or group of commodities to indicate the relative importance of that commodity or group of commodities in the market basket.

The weights for the 2012-based CPI were derived from the expenditure data of the 2012 FIES, a survey that covered around 50,000 sample households nationwide. The weight for each item of expenditure is a proportion of that expenditure item to the total national expenditure. The total (all items) national expenditure weights is equal to 100.

The 2012 FIES expenditure data were used to directly estimate the 2012 CPI weights at the national and regional levels. However, the 2012 FIES estimates for the expenditure data at the provincial level were not directly utilized in estimating the CPI expenditure weights as the data at the provincial/city level may not be reliable with the use of the households' master sample (MS) that was used in selecting the 2012 FIES sample households. The MS was drawn using regions as domains in generating estimates in all the household surveys of the PSA starting July 2003.

The provincial/city expenditure data were derived using the model-based method in small area estimation procedures using the regional expenditure data as the control total for all the expenditure data within the specific region. Using these estimates, the weight for each item of expenditure is computed as a proportion of that item of expenditure to the total national expenditure. A raking procedure was done to adjust the weights of the provinces so that the provincial weights when added up will equal to the regional weights.

4. Monitoring of Prices of Items in the Market Basket

This involves establishing baseline information for prices of the items in the base year and monitoring the prices of the items on a regular basis. Collection of data for the CPI is done by the provincial staff of the PSA. Except for Food, Beverage, Tobacco (FBT) which is monitored on a weekly basis in NCR, price collection is done twice a month. First collection phase is done during the first five days of the month while the second phase is on the 15th to 17th day of the month. Data are collected from the sample outlets (outlets or establishments where prices of commodities/services are collected or quoted) which were chosen using the following criteria:

a. Popularity of an establishment along the line of goods to be priced - this means the sample outlet is publicly noted in the locality for selling goods included in the CPI survey forms and the outlet is patronized by a large segment of the population.

b. Consistency and completeness of stock

Consistency of stock - the outlet has a constant, steady or regular stock of commodities listed in the CPI survey forms as well as of those commodities of the same kind and belonging to the same commodity group.

Completeness of stock- the sample outlet carries in its stock many if not all of the items included in the CPI survey forms relative to the other outlets in the area.

c. Permanency of outlet - the outlet is an established store or stall in the market area. It should not be an ambulant or transient vendor in order that the collection of data can be done for the succeeding survey rounds.

d. Geographical location- the outlet is conveniently located and is accessible to the majority of consumers in the area.

5. Computation of the CPI

Below are the steps in the computation of CPI using 2012 as the baseyear:

Step 1: Compute the monthly average price for each commodity

$$\text{Monthly Average Price of Commodity} = \frac{\text{Outlet 1 (1}^{\text{st}} \text{ Phase) Price} + \text{Outlet 1 (2}^{\text{nd}} \text{ Phase) Price} + \text{Outlet 2 (1}^{\text{st}} \text{ Phase) Price} + \text{Outlet 2 (2}^{\text{nd}} \text{ Phase) Price} + \text{Outlet 3 Price} + \text{Outlet 4 Price} + \text{Outlet 5 Price} + \text{Outlet 6}}{8}$$

Step 2: Compute the price relative (PR) for each commodity

$$PR = \frac{\text{Current Month Average Price}}{\text{Previous Month Average Price}}$$

Step 3: Compute the index for 5-digit group (Sub-Class)

Step 3.1: Compute the geometric mean of price relatives for each 5-digit group

$$GM_{PR} = \left(\prod_{i=1}^n PR_i \right)^{1/n}$$

Where:

GM_{PR} = Geometric mean of price relatives

PR_i = Price relative of commodity i under the 5-digit group

n = number of commodities under the 5-digit group

Step 3.2: Compute the index for 5-digit group

$$I_{5\text{-digit, current month}} = (GM_{PR}) * (I_{5\text{-digit, previous month}})$$

Where:

$I_{5\text{-digit, current month}}$ = Index of the 5-digit group (sub-class) for the current month

GM_{PR} = Geometric mean of price relatives

$I_{5\text{-digit, previous month}}$ = Index of the 5-digit group (sub-class) for the previous month

D. Compute the index for 4-digit group (Class):

$$I_{4\text{-digit}} = \frac{\sum_{i=1}^n (W_{(5\text{-digit})i}) (I_{(5\text{-digit})i}) \sum PR_i}{\sum_{i=1}^n (W_{(5\text{-digit})i})}$$

Where:

$I_{(4\text{-digit})}$ = index of the 4-digit group

$W_{(5\text{-digit})i}$ = weight of 5-digit group

$I_{(5\text{-digit})i}$ = index of the 5-digit group

E. Compute the index for the 3-digit group (Group):

$$I_{3\text{-digit}} = \frac{\sum_{i=1}^n (W_{(4\text{-digit})i}) (I_{(4\text{-digit})i})}{\sum_{i=1}^n (W_{(4\text{-digit})i})}$$

Where:

$I_{(3\text{-digit})}$ = index of the 3-digit group

$W_{(4\text{-digit})i}$ = weight of the 4-digit group

$I_{(4\text{-digit})i}$ = index of the 4-digit group

F. Compute the index for the 2-digit group (Division):

$$I_{2\text{-digit}} = \frac{\sum_{i=1}^n (W_{(3\text{-digit})i}) (I_{(3\text{-digit})i})}{\sum_{i=1}^n (W_{(3\text{-digit})i})}$$

Where:

$I_{(2\text{-digit})}$ = index of the 2-digit group

$W_{(3\text{-digit})i}$ = weight of the 3-digit group

$I_{(3\text{-digit})i}$ = index of the 3-digit group

G. Compute the index for All Items:

$$I_{\text{all items}} = \frac{\sum_{i=1}^n (W_{(2\text{-digit})i}) (I_{(2\text{-digit})i})}{\sum_{i=1}^n (W_{(2\text{-digit})i})}$$

Where:

$I_{\text{all items}}$ = index for All Items

$W_{(2\text{-digit})i}$ = weight of the 2-digit group (Division)

$I_{(2\text{-digit})i}$ = index of 2-digit group (Division)