

Technical Notes

Concepts and Definitions

Introduction

The CPI measures the percentage change over time in the cost of purchasing a constant “basket” of goods and services representing the average pattern of purchases made by a particular population group in a specified period of time. The “basket” is of an unchanging or equivalent quality and quantity of goods and services, consisting of items for which there are continually measurable market prices over time. Changes in the costs of items in the “basket” are therefore due only to “pure” price movements, i.e. price movements that are not associated with changes in the quality and/or quantity of the set of consumer goods and services in the “basket”.

This “basket” covers a wide range of goods and services, classified according to the United Nations “Classification of Individual Consumption According to Purpose (COICOP)” in the following twelve groups:

- *Food & Beverages*
- *Alcohol Beverages & Tobacco*
- *Clothing & Footwear*
- *Housing, Water, Electricity, Gas & Other Fuels*
- *Furnishings, Household Equipment & Routine Household Maintenance*
- *Health*
- *Transport*
- *Communication*
- *Recreation Services & Culture*
- *Education*
- *Restaurants & Hotels*
- *Miscellaneous Goods & Services*

The CPI is calculated according to the states in Peninsular Malaysia, Sabah and Sarawak. However, the index for state of Perlis is combined with Kedah; Wilayah Persekutuan Putrajaya with Selangor; and Wilayah Persekutuan Labuan with Sabah, considering that the relative contribution for these states are very small. During the Household Income and Expenditure Survey, the sample size for these states was insufficient for the calculation of individual state index. All the state indices will be combined to produce Malaysia’s index. Malaysia’s index is a composite index, weighted by states expenditure weight of each state’s indices.

Coverages

Commencing January 2018, the weights used in the calculation of CPI are based on the pattern of expenditure obtained from the Household Expenditure Survey conducted in 2016. Currently, there are 97 price collection locations in the states of Peninsular Malaysia, 21 in Sabah and 19 in Sarawak, with an overall total of 137 price collection locations.

Price

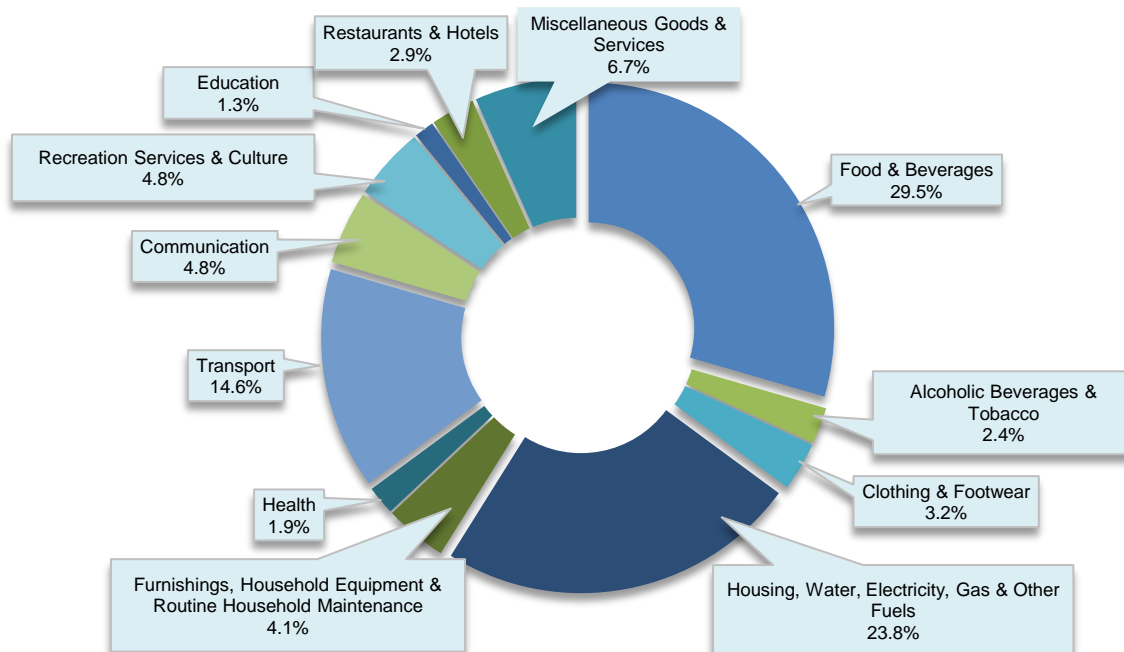
The price used in the CPI calculation is the retail prices or transacted prices including all types of taxes imposed on those goods and services. Prices are collected on a monthly basis for all items, except for perishable food items, it is collected both on monthly and weekly basis. Meanwhile, house rents are collected once in a quarter.

The selection of outlets in which prices are to be collected is made "purposive" with the sample designed to include outlets with high sales turnover (except for house rent). Prices of 552 items (items added = 22; items removed = 2) are used in the calculation of the index and these are obtained from about 17,000 retail outlets in states of Peninsular Malaysia, 2,500 outlets in Sabah and 2,300 outlets in Sarawak.

Weight

The weights used in the calculation of CPI are periodically updated. This procedure is necessary to ensure that the weights reflect changes in consumer expenditure patterns.

The weights used for compiling the CPI (2010 = 100) are as follows:



Index Calculation Methodology

Effective with release of data for January 2016, the Laspeyres chain index method is used in the calculation of the CPI. It employs the December 2015 = 100 reference base. The same method will be used in the calculation of the January 2018 CPI publication using the reference base December 2017 = 100.

The CPI is calculated as a chain of fixed-basket index. This means that a sequence of the fixed-basket indices has been chained together to create a continuous time series. This is necessary to avoid unexpected changes in the index when a basket updates are made.

In order to chain indices between baskets, the hybrid expenditure weights for old and new baskets must be expressed at the prices of a common period. This common period is called the link month.

Link month weights are obtained by price-updating of the link month to the original expenditure weights to obtain the hybrid expenditures expressed for the link months' price.

In the month following the basket link month, price indices calculated using the new basket are multiplied by the index level previously published for the old basket.

$$I_{2010:t \text{ chained}} = I_{Dec2017:t 2016} \times I_{Dec2015:Dec2017 2014} \times I_{2010:Dec2015 2010}$$

where:

$I_{2010:t \text{ chained}}$ is a chained index for the price observation period t with a price reference period equal to 2010;

$I_{Dec2017:t 2016}$ is an index for the price observation period t with December 2017 as the price reference period, calculated using the 2016 basket;

$I_{Dec2015:Dec2017 2014}$ is a chained index for December 2017 with December 2015 as the price reference period, calculated using the 2014 basket; and

$I_{2010:Dec2015 2010}$ is a chained index for December 2015, with 2010 as the price reference period calculated using the 2010 basket.

In the case of the chain index, the weighted average of indices of lower level groups or items do not match those of the corresponding upper level groups (the chain index has no additivity).

Annual Inflation

Inflation refers to the rate of change indicated by price movements. The calculation method used is the percentage change between annual average for the specific current year to the same fixed period in the previous year. The following example illustrates the computation of index points and annual inflation.

Index Point Change

Consumer Price Index	125.4
Less Previous Index	124.3
Equals to	<u>1.1</u>

Annual Inflation

Index point difference divided by the previous index, multiplied by one hundred

$$= \frac{125.4 - 124.3}{124.3} \times 100$$

$$= 0.9\%$$