

Republic of Mauritius

A: Identification

Title of the CPI: Consumer Price Index

Organisation responsible: Statistics Mauritius

Periodicity: Monthly

Price reference period: July 2006 – June 2007 = 100

Index reference period: July 2006 – June 2007 = 100

Weights reference period: July 2006 – June 2007

Main uses of CPI: Indexation of wages, pensions and/or social security payment, indexation of rents, contracts and/or other payments, main inflation indicator used for monetary policy, deflate household expenditures in National Accounts, computation of purchasing power of households, 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: Institutional households (0.6%).

Consumption expenditure includes:

- Food consumed away from home;
- Mortgage interest;
- Housing maintenance, minor repairs;
- Purchase of gifts of goods and services given to others outside the household;
- Second hand goods purchased (second hand motorcars only);
- Luxury goods;
- Financial services (including fees for financial advice, brokerage fees);
- Non-life insurance premiums (e.g. vehicle, housing, other property, medical), gross of claims;
- Licences and fees (e.g. driver's licence, hunting licence, vehicle registration)

Consumption expenditure excludes:

- Foods produced for own final consumption;
- Other goods produced for own final consumption;
- Services produced for own final consumption;
- Income in-kind receipts of goods;
- Income in-kind receipts of services;
- In-kind goods received as gifts;
- In-kind services received as gifts;
- Purchase of owner-occupied housing;
- Mortgage repayments;
- Major repairs, conversions and extensions to owner occupied housing;
- Interest payments (excluding mortgage interest payments);
- Life insurance premiums;
- Gambling expenditure, gross of winnings;
- Investment-related expenditures (e.g. purchase of shares/stocks);
- Occupational expenditures;
- Other business-related expenditures;
- Social transfers in-kind of goods and services from government and No-profit institutions serving households;
- Expenditures abroad

C: Concepts, definitions, classifications and weights

Definition of the CPI and its objectives: The CPI is an indicator of changes over time in the general level of prices of goods and services acquired by Mauritian consumers. As prices change, the total cost of the basket also changes and thus the CPI is a measure of the change in the cost of this fixed basket. It provides a way to compare what this basket costs at a given period relative to a reference or base period. The composition of this basket reflects the general consumption pattern of all types of private households of the Republic of Mauritius. The CPI is the most widely used measure of inflation. It plays a major role in formulating the monetary and fiscal policy of government. It is often used, among other indicators, to assess the effectiveness of government economic policy. The CPI is also commonly used for adjustment of wages, pensions and social security benefits to compensate for erosion of purchasing power as prices increase. Furthermore, many financial arrangements make use of the CPI. For instance, payments associated with private contracts, insurance premiums, rent, alimony, etc. are often indexed on the CPI. The CPI is also resorted to for the conversion of a series measured at current prices to a constant price series. Such conversion which is known as deflation, gives a better indication of changes in real terms (volume) by adjusting for price changes. For example, the CPI is often used to deflate the value of the rupee to calculate the purchasing power. The CPI is used as a deflator in National Account compilation.

Definition of consumption expenditures: Detailed expenditure information given by households during the Household Budget Survey (HBS) 2006/07 provided the starting point for determining the CPI basket. The acquisition approach is used; expenditure is recorded during the month in which they are acquired, even if they were not yet delivered or paid for. The survey data were first checked for consistency against data from other independent sources (data on production, imports, exports and local sales) and were found to be in line, except for alcoholic beverages and cigarettes. Some adjustments were thus made to the HBS data for underreporting of alcoholic beverages and cigarettes. Since the CPI is designed to reflect price movements of goods and services entering consumption, only household

consumption expenditure was used to derive the CPI weights. Besides, as the interest of the index is for prices paid for goods and services bought on the market, imputed values of consumption (such as consumption of own-produced goods as well as goods and services received free) were excluded. The following items, which did not fall within the scope of the CPI, were thus excluded: a) income tax, savings, life insurance premiums, loan repayments (other than housing loan) and social security contributions, b) investment-related items such as purchase of land, houses, shares, etc., c) expenditure associated with gambling, d) goods and services received free from government (such as education and health) and from other sources, e) consumption of own-produced goods and services e.g. vegetables grown and consumed by the household, rental value of owner-occupied and free housing, f) Travelling expenses to work (since these are intermediate expenses for the employer). For infrequent purchased items such as air tickets, cars, computers and other household durables, data collected over a recall period of one year (instead of the usual reference month) was used in order to obtain more reliable expenditure estimates for deriving the weights.

Classification: COICOP (Classification of Consumption Expenditure according to Purpose) at four levels with 12 divisions, 43 groups, 84 classes and 194 items.

Weights include value of consumption from own production: No

Sources of weights: Household expenditure surveys.

Frequency of weight updates: Every 3-5 years

Price updating of weight reference period to the index reference period: The weights and the index reference period are the same i.e. 2006/07, there is therefore no need to price update weights.

D: Sample design

Sampling methods:

Localities: Sampling with probability proportional to size (PPS)

Outlets: Cut-off sampling (the elements with the highest sales or value of other auxiliary variable are included into the sample), based on most popular products and outlets.

Products: Cut-off sampling (the elements with the highest sales or value of other auxiliary variable are included into the sample), based on most popular products and outlets

Frequency of sample updates:

Localities: At the time of conducting HES, every 5 years.

Outlets: Continuous (on a rotating basis)

Products: Continuous (on a rotating basis)

Criteria used for determining the optimal sample sizes and the coverage of localities, outlets, items and variety samples: Following the recommendations of the ILO Consultant, the present number of price quotations for each item is to arrive at an optimum number that leads to a more accurate and cost-effective index. The number of price quotations for a given item is determined according to the coefficient of variation of the prices. When the coefficient of variation is high, there are more price quotations; alternatively if the coefficient of variation is low, fewer price quotations are used. Also, items which carry more weight have a greater impact on the overall CPI than those with less weight. More price quotations are used for items which carry more weight.

Criteria used for selecting an item variety in the outlet in case of loose specifications provided by the central office: In case of loose specification, an indicator with specification nearest to the defined one and being most popular and within the price range is chosen.

E: Data Collection

Approximate number of localities, outlets and price observations: Localities: 10, Outlets: 480, Price observations: 7,800

Frequency with which prices are collected: Prices of non-perishables are collected monthly in the nine geographical districts of the island of Mauritius and in Island of Rodrigues. Prices of fresh fruits, vegetables, meat and fish are collected on a weekly basis in 9 localities. Information on rent is obtained from a quarterly rent survey of some 100 rented dwellings. Price collection is done on a regular basis. Each month, around 7,800 price quotations are collected in respect of 1,080 item indicators from some 400 outlets selected to be representative of regions across the islands of Mauritius and Rodrigues.

Reference period for data collection: The prices of perishables items are collected on a weekly basis (always on the same day and in a two-hour time interval), whilst those for non-perishables are recorded once a month on a day falling between the 12th and 18th.

Methods of Price Collection

- Personal data collection for all items.
- Mailed questionnaires for insurance and airfare.
- Telephone interviews for administrative data.
- Internet for internet, mortgage interest or other communication services.
- Official tariffs for utilities and petroleum products.

Treatment of:

Discounts and sales prices: They are used in the calculation of the index.

Second hand purchases: Included for second-hand motor cars (actual price paid is used). For new basket of goods and services based on 2012 HBS, the new acquisition method will be used.

Missing or faulty prices: Whenever a product is temporarily not available in an outlet, the missing price is imputed on the basis of the price changes of similar products in other outlets within the same period if this non-availability is likely to be temporary.

Period for allowing imputed missing prices: Maximum 2 months. The item is replaced by a similar within the same price range in the third month.

Disappearance of a given type or quality from the market: In cases when a product is no longer available on the market, then it is replaced by the nearest similar product falling under the same class and price adjustments are made for the difference in the quality of the substitute. When substitution is done, the base price of the substitute is imputed. This is done by assuming that the substitute follows the same price change as the replaced product from the base period to the latest overlap period when both prices are available. Usually, substitutes are priced to cater for this situation though their prices do not enter the CPI computation unless and until a replacement is done. A product which disappears permanently or is no longer available or sold in significant quantities is replaced within the first three months of the product becoming unavailable.

Quality differences: It is often observed that the quality of certain products that are being priced change over time; their components or size may change. When this happens, it is necessary to separate only “pure” price changes. A common adjustment technique is to determine which feature of a product causes the quality to change. The price of the replacement used should be adjusted for any quality difference between the old and new variety. If, for example, air conditioning becomes a regular feature in the newer model of a car, then we need to price models with that feature. In order to compare prices of older and newer models, a quality adjustment needs to be made. After consultation with the suppliers, the value of air conditioning is estimated and is added to the price of the older model. The prices of the two cars then become comparable since the price of air conditioning is included in both.

Appearance of new items: In Mauritius, the CPI basket is updated every 5 years following the conduct of a Household Budget Survey to account for changes in the consumption pattern of the population. The consumption pattern of the population changes slowly over time and 5 years is considered a reasonable interval. Completely new types of goods and services (those that represent new purpose) are considered for inclusion only during one of the periodic re-weighting exercises.

Treatment of seasonal items and seasonality

Items that have a seasonal character and their treatment: Certain fresh vegetables are subject to seasonal fluctuations; their prices vary considerably from month to month depending on their availability. In order to smooth out the seasonal price variations, a 12-month moving average price is calculated for seasonal fresh vegetables such as tomatoes, French beans (haricot vert), cabbage, chou chou and chillies. Instead of the actual price, the 12-month moving average price is used in the computation of the overall CPI.

Seasonal food items: Seasonal food items are included in the CPI using fixed weights approach: the weights are kept constant over the year, while prices of out-of season products are estimated or imputed.

Seasonal Clothing: Seasonal clothing items are included in the CPI using fixed weights approach: the weights are kept constant over the year, while prices of out-of season products are estimated or imputed.

Treatment of housing

Treatment of owner-occupied housing: Imputed rents for owner occupied housing are not included in the CPI.

Types of dwellings covered by the rent data: Rent paid for rented dwellings are included and a rent survey of about 100 rented dwellings is conducted quarterly to represent this component. The sample of 100 rented dwellings is extracted from covered rental dwellings during the Household Budget Survey 2006/07 using systematic and stratified sampling method.

F: Computation

Formula used for calculation of elementary indices: The ratio of geometric mean prices (Jevons index) (Direct form)

Formula to aggregate elementary indices to higher level indices: The lowest level indices are determined as a geometric average of the price relatives of the basic observations. The lowest level indices are aggregated according to the Laspeyres formulae. The CPI is computed according to the Laspeyres Formula as a weighted average of price relatives of individual items. The weights are fixed and correspond to the base period expenditures. The Laspeyres Index measures the cost of a basket of goods and services at different points in time, relative to the cost of the same basket in the base period. The formula used for computing the CPI at time t is

$$I_t = \frac{\sum W_i \left(\frac{P_{it}}{P_{i0}} \right)}{\sum W_i} \times 100$$

where,

I_t = CPI for period t with reference to a base period 0

P_{i0} = Price of item i at time 0, i.e. during base period

P_{it} = Price of item i at time t

W_i = Weight of item i

Formula of aggregating regional/population group indices into national index: No regional index is produced. Only CPI is produced at national level.

Software used for calculating the CPI: Excel-based system and FoxPro-based system (a parallel worksheet for control) which is being replaced by a newly developed system web-based JAVA application.

G: Editing and validation procedures

Control procedures used to ensure the quality of data collected: Supervisors regularly visit the outlets to verify that the prices reported are correct and related to the relevant products. Collected prices are validated after proper editing. All prices used for the CPI are edited to ensure that they actually correspond to the same item. Comparisons are made with previous month and across the regions. Major discrepancies in data collected are subject to more control from supervisor.

Control procedures used to ensure the quality of data processed: The twelve sub-indices published with the monthly CPI make it possible to access the reasonableness of the data. Cross-checks are possible with selected items of the producer price and the import price indices. Unusual movement in the index are investigated regularly. A parallel processing in Excel and FoxPro is done to ensure correctness of CPI.

H: Documentation and dissemination

Timeliness of dissemination of the CPI data: The monthly CPI is released within 5 working days after the end of the reference month. The publication on CPI is released 2 weeks after the end of the quarter. The timeliness is in conformity with that prescribed for SDDS (special data dissemination standard). The statistics are released on a pre-announced schedule which is posted on the website of the office.

Level of detailed CPI published

Paper publication: All items CPI, Division-level (12 Divisions), Group-level app. 40 groups

Online: All items CPI, Division-level (12 Divisions), Group-level app. 40 groups

Documentation

Publications and websites where indices can be found: Monthly Consumer Price Index and Economic and Social Indicator on CPI at <http://statsmauritus.gov.mu> and http://www.gov.mu/portal/site/cso/menuitem.dee225f644ffe2aa338852f8a0208a0c/?content_id=e4b5700094d6c010VgnVCM1000000a04a8c0RCRD

Publications and websites where methodological information can be found: The publication is available on the website of the Central Statistics Office at <http://statsmauritus.gov.mu>, HBS Methodological Report 2006/07: <http://www.gov.mu/portal/goc/cso/report/natacc/hbs07/toc.htm>. Monthly CPI for the month of May 2012 on http://www.gov.mu/portal/site/cso/menuitem.e252e3fb5d85cdde965c062ca0208a0c/?content_id=f1996cbcd1bb7310VgnVCM1000000a04a8c0RCRD. Economic and Social Indicators – 1st quarter 2012 on <http://www.gov.mu/portal/goc/cso/ei961/toc.htm>

I: Other Information

Reported by the country in 2012.