

Macao, China

A: Identification

Title of the CPI: Consumer Price Index

Organisation responsible: Statistics and Census Service

Periodicity: Monthly

Price reference period: April/2008–March/2009

Index reference period: April/2008–March/2009

Weights reference period: 2007-2008

Main uses of CPI: Main inflation indicator used for monetary policy, and deflate household expenditures in national accounts.

B: CPI Coverage

Geographical Coverage

Weights: Urban areas

Price collection: Urban areas

Population coverage: Resident households of nationals and resident households of foreigners in the country.

Population groups excluded: Institutional households.

Consumption expenditure includes:

- Food consumed away from home;
- Housing maintenance, minor repairs;
- Luxury goods;
- 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;
- Mortgage interest;
- Major repairs, conversions and extensions to owner occupied housing;
- Purchase of gifts of goods and services given to others outside the household;
- Second hand goods purchased;
- Financial services (including fees for financial advice, brokerage fees);
- 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 Consumer Price Index is an economic indicator that measures the changes in the price level of consumer goods and services purchased by households. The CPI aims to reflect the impact of price changes on the general population.

Definition of consumption expenditures: Consumption expenditures are defined as the total expenditures of goods and services acquired by the household for final consumption, regardless of the payment method.

Classification: COICOP (Classification of individual consumption by purpose) with minor modifications adapted to the local situation.

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: No

Weights for different population groups or regions: Weights are compiled for: 1) general population; 2) households with an average monthly expenditure of MOP6,000 to MOP18,999; and 3) households with an average monthly expenditure of MOP19,000 to MOP34,999.

D: Sample design

Sampling methods:

Localities: Judgmental sampling

Outlets: Judgmental sampling, cut-off sampling (the elements with the highest sales or value of other auxiliary variable are included into the sample)

Products: Judgmental sampling

Frequency of sample updates:

Localities: At the time of updating the basket of goods and services and the weights, every 3-5 years.

Outlets: At the time of updating the basket of goods and services and the weights, every 3-5 years.

Products: At the time of updating the basket of goods and services and the weights, every 3-5 years.

If sample updates are irregular indicate when last updates were introduced: Apr/2008–Mar/2009

Criteria used for determining the optimal sample sizes and the coverage of localities, outlets, items and variety samples i) The number of outlets selected in each Parish of the territory is determined by the density of outlets in that Parish; ii) More outlets are selected for goods and services with higher significance of relative importance; iii) More outlets are also selected to monitor the price changes of those goods and services with frequent price fluctuations to enhance the objective of price movements; iv) In addition more outlets are selected for the goods and services with unstable supply. In practice, at least 9 outlets are selected for each item whenever possible.

Criteria used for selecting an item variety in the outlet in case of loose specifications provided by the central office: A product that matches loose specifications is observed and the most popular brand of that product is selected.

E: Data Collection

Approximate number of localities, outlets and price observations: Localities: 7, Outlets: 490, Price observations: 6,600

Frequency with which prices are collected: Prices on fresh food items are collected twice a week; other food items, beverages, alcoholic beverages, clothing & footwear, transport, communication, recreation, gold prices, rents are collected on a monthly basis. Prices on medical treatment, hospital services and education are collected half yearly; household goods and furnishings, as well as miscellaneous goods and services are collected quarterly, while payment on insurance premium; bus, taxi & ferry fares are collected annually. In addition, when the price changes of public services such as water, electricity charges, gasoline, LP-gas, etc. are officially announced, the new prices will be immediately included in the CPI calculation.

Reference period for data collection: Fresh food prices are collected on every Monday and Wednesday; gold prices on 15th of each month; package tours in the third week of each month; others items throughout the month.

Methods of Price Collection

- Personal data collection for all items except part of the samples of rent.
- Telephone interviews for part of the samples of rent.
- Official tariffs for items of public services.

Treatment of:

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

Black market prices: Not collected.

Second hand purchases: Not included.

Missing or faulty prices: Carrying forward the previous observation is adopted for faulty prices. Missing prices are treated with the following methods: i) Temporary stock shortage – the missing price is imputed with the last observed price, assuming zero price change during the two periods; ii) Temporary suspension of business – price movement of the items sold in this outlet is imputed by that of the other outlets selling similar goods.

Period for allowing imputed missing prices: 2 months after which the substitution process of the respective item is carried out using the following criteria: i) The replacement item belongs to the same kind of goods and services being substituted; ii) Having similar quality and characteristics of the substituted item; iii) The replacement brand has to be a more popular brand than the one being substituted. The relative importance of the substituted item is then attributed to the new item, assuming that the price movement of the new item, prior to its selection, is going in the same direction as the substituted item.

Disappearance of a given type or quality from the market: Replacement with the most similar product is carried out. If there is no suitable replacement item, the last observed price is adopted.

Quality differences: If the selected replacement product is regarded as comparable, then direct comparison is carried out; if not, a base price is imputed with the observed price assuming zero price change during the two periods.

Appearance of new items: New items are included at the time of updating the basket of goods and services.

Treatment of seasonal items and seasonality

Items that have a seasonal character and their treatment: Prices for seasonal food products and clothing are collected in respective seasons only.

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.

Method to impute the price of seasonal items: The method used to impute price development in out-of season periods is carrying forward the last observed price.

Treatment of housing

Treatment of owner-occupied housing: Rent information on owner-occupied units is measured by the “Rental Equivalence Approach”, assuming that the rent movement is identical to that of the actual rents paid by the tenants in the same Parish and usable floor area. Rent Index of owner-occupied units is the weighted average of these units.

Types of dwellings covered by the rent data: Rent data covers private housing and social housing units in the territory. Rent data on private housing are collected from about 400 housing units every quarter. The samples are divided into three groups and enumerators collect rent information from each of these groups per month, either by direct face-to-face interview or using the Computer Aided Telephone Interviewing (CATI). For the non-contact, owner-occupied and vacant units, they will be substituted according to the location and usable floor area. Rent information collected for the current month (monthly) is combined with that of the past two groups and compared with the data of the previous month compiled using the same method. Identical units with rent information are chosen to calculate the average rent and index of each Parish and usable floor area. The overall Rent Index is the weighted average of all the Parishes and usable floor areas. Rent for social housing is provided quarterly by the Housing Bureau. Based on the information obtained, the average rent and rent index of social housing are compiled by comparing the total value of rents and total floor area of the identical social housing units leased in the past two quarters. Lastly, individual index of private housing, owner-occupied housing and social housing units are incorporated to the CPI according to their relative importance.

F: Computation

Formula used for calculation of elementary indices: The ratio of arithmetic mean prices (Dutot index) (Chained form) and the ratio of geometric mean prices (Jevons index) (Chained form)

Formula to aggregate elementary indices to higher level indices: Aggregation of product indices into item indices is by the formula below:

$$I_{i(t)} = \frac{\sum_{j=1}^n W_j_{(t_0)} * I_{j(t)}}{\sum_{j=1}^n W_j_{(t_0)}}$$

$I_{i(t)}$ - Item Index i at current period t

$I_{j(t)}$ - Index of product j at current period t

$W_{j(t_0)}$ - Weight of each product j of item i at base period t_0

n - Number of products of item i

Monthly and annual average prices: The average price for fresh food is the simple arithmetic mean of prices collected. For other goods and services, the average price is derived from the geometric mean to minimize the effect of significant price variations on a particular item.

Software used for calculating the CPI: Self developed programme.

G: Editing and validation procedures

Control procedures used to ensure the quality of data collected: Field checks are carried out when significant differences are observed in the collected prices, for example, prices collected in the same outlets vary obviously between the current month and the previous month.

Control procedures used to ensure the quality of data processed: Data entry checklists and validation reports are employed.

H: Documentation and dissemination

Timeliness of dissemination of the CPI data: The lapsed time of the monthly CPI between the end of the field operation and the first publication is 3 weeks while the CPI annual report is published in March of the following year.

Level of detailed CPI published

Paper publication: All items CPI, Division-level (12 Divisions), Group-level app. 40 groups, Class-level (100 classes) and Average prices

Online: All items CPI, Division-level (12 Divisions), Group-level app. 40 groups, Class-level (100 classes), Average prices

Separate indices published for specific population groups: The CPI-A relates to households which have an average monthly expenditure of MOP6,000 to MOP18,999 and the CPI-B relates to households with an average monthly expenditure of MOP19,000 to MOP34,999.

Type of products for which average prices are calculated and disseminated: Prices of selected fresh food products, LP gas and gasoline are calculated and disseminated.

Documentation

Publications and websites where indices can be found: Brief Report (monthly); Annual Report; Monthly Bulletin of Statistics; Yearbook of Statistics; and Macao in Figures. Website: <http://www.dsec.gov.mo>

Publications and websites where methodological information can be found: “Rebasing of Consumer Price Index (April / 2008 - March / 2009 = 100)” Website: <http://www.dsec.gov.mo>

I: Other Information

Reported by the country in 2012.