

# **Cayman Islands' Consumer Price Index Metadata**

(based on IMF's GDDS Template)

<b>0. Prerequisites</b>	
<u>0.1 Legal environment</u>	<p><b>0.1.1 Responsibility for collecting, processing, and disseminating statistics</b></p> <p>The Economics and Statistics Office (ESO) functions under the authority of the Statistics Law (2016 Revision) – (“the Law”). The Economics and Statistics Office operates under the administration and control of the Director.</p> <p>Under the provisions of the Law, the Economics and Statistics Office is legally authorized to take any Census in the Cayman Islands and to collect, compile, analyze, abstract and publish statistical information relative to the commercial, industrial, social, economic and general activities and conditions of the people of the Cayman Islands.</p> <p><b>0.1.2 Data sharing and coordination among data producing agencies</b></p> <p>Economics and Statistics Office is also authorized to collaborate with all departments of Government in the collection, compilation and publication of statistical records of administration.</p> <p><b>0.1.3 Confidentiality of individual reporters' data</b></p> <p>Section 17 of the Law prohibits the disclosure of information relating to any individual or business in such a form that would allow any person to identify such information as relating to any identifiable individual or business. The Law also sets out particular circumstances where exceptions are permitted (e.g. with written consent of the person or owner of the business).</p> <p>Persons employed in the execution of any duty under the Law shall, before entering on his duties, make and subscribe before a Justice of the Peace an oath or affirmation of secrecy.</p> <p><b>0.1.4 Ensuring statistical reporting</b></p> <p>The Economics and Statistics Office is authorized to require persons (households and entities) to supply particulars for a Census or other statistical collection in accordance with the Law.</p>
<b>1. Integrity</b>	
<u>1.1 Professionalism</u>	<p><b>1.1.1 Impartiality of statistics</b></p> <p>The Economics and Statistics Office acts independently with regards to the methods used in data estimation and follows the international recommended procedures and methodology.</p> <p>In addition to formal training, ESO staff receives regular and ongoing training conducted by both internal and external experts (including regional and international institutions) in statistical methodology and compilation practices.</p>

	<p><b>1.1.2 Selection of sources, methodology, and modes of dissemination</b></p> <p>Section 8 of the Law shall cause the statistics and other particulars collected under the Law to be compiled, tabulated and shall cause such statistics to be published in such a manner as determined by the Economics and Statistics Office in accordance with the publication and dissemination calendar.</p>
<p><u>1.2 Transparency</u></p>	<p><b>1.2.1 Disclosure of terms and conditions for statistical collection, processing, and dissemination</b></p> <p>The Statistics Law (2016 Revision) is a public document and can be accessed at: <a href="https://www.eso.ky/UserFiles/page_docs/files/uploads/statistics_law_2016_revision.pdf">https://www.eso.ky/UserFiles/page_docs/files/uploads/statistics_law_2016_revision.pdf</a></p> <p><b>1.2.2 Internal governmental access to statistics prior to release</b></p> <p>The reports are sent to the Minister who has responsibility for the Economics and Statistics Office. The Minister then takes the report to Cabinet for notation after which the report is released to the general public.</p> <p><b>1.2.3 Attribution of statistical products</b></p> <p>No ministerial or cabinet commentary is attached to the published data.</p> <p>The dissemination of the data by the Economics and Statistics Office is accompanied by a press release on its website.</p> <p>The Economics and Statistics Office makes all its statistical publications available on the website.</p> <p><b>1.2.4 Advance notice of major changes in methodology, source data, and statistical techniques</b></p> <p>There is no advance notice with regards to any major changes in methodology. Information on the changes in methodology is provided in current publications.</p> <p>Revised data are presented in a subsequent report and the revision is marked as revised.</p>
<p><u>1.3 Ethical standards</u></p>	<p><b>1.3.1 Guidelines for staff behavior</b></p> <p>A professional culture is strongly embedded in the institution.</p> <p>Before taking up duties at the Economics and Statistics Office, all employees, service providers, and short-term survey workers, in accordance with Section 9 of the Law, must take an oath or subscribe to an affirmation that they will conform to the requirements of the Law in executing their duties. They will not, without due authority, disclose or make known information that come to their knowledge by reason of their employment. Any violation is deemed an offence and is liable on summary conviction to a fine of five thousand dollars or imprisonment for a term of one year or to both.</p> <p>This is primarily to impress upon employees the necessity of preserving the confidentiality of information.</p>

## 2. Methodology

### 2.1 Concepts and definitions

#### **2.1.1 Concepts and definitions**

The ESO compiles the Consumer Price Index (CPI) from a fixed and specified basket of consumer goods and services purchased by the population.

Since the basket remains constant, the index does not reflect changes in the consumer's tastes, preferences or changes in the standard of living due to changes in income levels. It is therefore necessary to revise the basket of goods and services every five (5) years in order to capture changes in consumer expenditure patterns. The revision should also take into account quality changes in products and commodities that enter or leave the market.

The CPI is consistent with the Consumer Price Index Manual: Theory and Practice, 2004 (International Labour Organisation (ILO), International Monetary Fund (IMF), Organisation for Economic Co-operation and Development (OECD), Eurostat, United Nations, and the World Bank).

### 2.2 Scope

#### **2.2.1 Scope**

Scope of the data

- **Population coverage:** Based on the expenditure data from the Household Budget Survey (HBS) 2015, the target population includes all private households in the Cayman Islands.
- **Geographic coverage:** All districts in Grand Cayman, Cayman Brac and Little Cayman are covered by the expenditure weights used for the CPI. However, price data collection for the CPI is done only on Grand Cayman.
- **Item coverage:** Consumer goods and services with a retail price are included in the CPI. These goods and services are classified into commodity divisions which are based on the United Nations Statistical Division's Classification of Individual Consumption according to Purpose (COICOP). An index is derived and published for divisions, groups and classes. There are 12 divisions as follows:
  1. Food & Non Alcoholic Beverages;
  2. Alcohol and Tobacco;
  3. Clothing and Footwear;
  4. Housing, Water, Electricity, Gas and Other Fuels;
  5. Furnishings, Household Equipment and Routine Maintenance;
  6. Health;
  7. Transport;

- 8. Communication;
- 9. Recreation and Culture;
- 10. Education;
- 11. Restaurants and Hotels; and
- 12. Miscellaneous Goods and Services.

Divisions	Items (at the 7 <sup>th</sup> digit COICOP Level)	Division weight
1 Food and non-alcoholic beverages	551	66.1
2 Alcoholic beverages & tobacco	153	22.3
3 Clothing & Footwear	273	33.3
4 Housing, Water, Electricity, Gas and Other Fuels	153	334.5
5 Furnishings, Household Equipment and Routine Maintenance	316	42.7
6 Health	124	20.9
7 Transport	198	162.0
8 Communication	40	39.1
9 Recreation & Culture	94	59.2
10 Education	46	38.2
11 Restaurant & Hotels	103	83.5
12 Miscellaneous Goods & Services	176	98.2
<b>Total</b>	<b>2,227</b>	<b>1000.0</b>

- Approximately 2,227 price quotes are collected each quarter at approximately 203 outlets during the second full week of the second month of the quarter.
- The CPI captures price data for the George Town, West Bay, and Bodden Town districts of Grand Cayman, as well as, prices from the United States of America.
- The CPI captures rental price data for the three most populated districts of Grand Cayman. These districts are George Town, West Bay, and Bodden Town.
- The current CPI weights are derived from the Household Budget Survey 2015.

Exceptions to coverage

- Population coverage: The Household Budget Survey (HBS) 2015,

	<p>from which the 2016 CPI Basket was derived did not include expenditures of persons living in institutions.</p> <ul style="list-style-type: none"> <li>• Item coverage: The CPI basket of consumer goods and services does not include charitable donations such as offerings, contributions made to pension plans, and consumer savings and investments. The CPI also excludes fixed assets and financial assets (which represent savings for future consumption).</li> <li>• Price coverage: Currently, price data collection is done for Grand Cayman. Price collection is not done in Cayman Brac and Little Cayman due to the inconsistent availability of most items in the basket.</li> </ul>
<p><u>2.3</u> <u>Classification/sectorization</u></p>	<p><b>2.3.1 Classification/sectorization</b></p> <p>The classification system used for the CPI is the Cayman Islands version of the Classification of Individual Consumption according to Purpose (COICOP) that was originally developed by the United Nations Statistical Division and published in the Consumer Price Index Manual: Theory and Practice (2004). The Cayman Islands' version of the COICOP gives each item a 7-digit code representative of varieties.</p>
<p><u>2.4 Basis for recording</u></p>	<p><b>2.4.1 Valuation</b></p> <ol style="list-style-type: none"> <li>1. Types of prices: Prices reflect those that consumers pay on the day of the price data collection survey except in instances where a sale price is reflected. When there is a sale on a particular item, the original price is used to maintain a consistent base throughout the collection period.</li> <li>2. Discounts or the discounted price are collected if they are automatically given to all customers. However, these discounted prices are not used for a one-day or one-week sale. There must be a reduced price going forward. Where there is an option of buying cash or on hire purchase, the cash price of items is recorded. This guideline is especially important for furniture stores and retailers of electrical appliances.</li> <li>3. Product specifications are recorded to ensure that the same product variety is priced in subsequent collections.</li> </ol> <p><b>2.4.2 Recording basis</b></p> <p>All price data are recorded on paper price collection sheets and entered/recorded in the data processing software CPI Pro on a quarterly basis. Recording in CPI Pro is normally done immediately after field work.</p>

### 3. Accuracy and Reliability

#### 3.1 Source data

##### 3.1.1 Source data collection programs

- Sources of weights: Weights for all the items are based on the HBS conducted in all districts of the Cayman Islands in the 2015 calendar year, with adjustments based on administrative data from providers (e.g. utility companies) and the Customs database.
- Time period of current weights: Weights for the current series of the CPI are based on the HBS that was conducted in 2015, with adjustments as indicated above.
- Frequency of weight updates: Weights are updated after each HBS is conducted every five (5) to seven (7) years.
- Item selection: Products, classes and groups with expenses of at least \$10 for every \$1000 (0.1%) of total spending are initially selected at each level. The exceptions to this criterion were products (five-digit level) which are considered “basic” consumer goods. These goods are essential to daily living but have low weights primarily due to their low unit costs. Examples of these exceptions include salt, cooking gas and school clothing.

Another criterion for the final selection of the basket of goods and services was the stability of the product in the market as well as the feasibility of obtaining accurate and reliable prices. Reliability of price collection is dependent on the stability of the product to remain in the market over time. In some cases, a product may be constantly in the market, but its varieties are highly variable; for example, used cars are always in the market but there is no single constant variety that may always be available to use as a benchmark for the CPI basket.

- Outlet selection: Judgmental or Purposive sampling is utilized for most items taking into account the type of stores where most people shop, the availability of items in the CPI basket in these outlets, sales volume, and geographic location of outlets. The top five outlets from HBS 2015 were selected. The housing units for rents are selected from the Labour Force Survey. Schools abroad were selected from the Scholarship Administration’s data.
- Sample sizes: Approximately 2,227 price quotations are collected quarterly at approximately 203 providers or outlets.
- Price collection methods: Most price collection is done by personal visits to the various outlets and a few collected by telephone or electronic means. Rents are collected from households or rental agency on a quarterly basis during the second full week of the

	<p>second month in each quarter.</p> <ul style="list-style-type: none"> <li>Item/variety specification: Specifications provide detailed descriptions of the characteristics of the product that is surveyed. In most cases specific models or brands are identified.</li> </ul> <p><b>3.1.3 Source data timeliness</b></p> <p>Timing of price observations: The price data are collected during the second full week of the second month of the quarter on Grand Cayman. In addition, prices of selected items that are vulnerable to monthly changes such as vegetables and fruits, fish, meat, and petrol are collected on a monthly basis.</p>
<p><u>3.2 Assessment of source data</u></p>	<p><b>3.2.1 Source data assessment</b></p> <p>Computer generated spreadsheets are used to highlight unusual price changes (a 10 percent upward or downward movement). If needed, the Field Supervisor or staff other than the original data collector contacts outlets by telephone, or visit outlets to validate the accuracy and reliability of collected price information. Quarterly pre-publication data reviews use comparisons of historical data (at aggregated or detailed levels) to identify common reporting errors or coverage and other reporting problems.</p>
<p><u>3.3 Statistical techniques</u></p>	<p><b>3.3.1 Source data statistical techniques</b></p> <ul style="list-style-type: none"> <li><b>Missing prices:</b> The price of an item may not be collected in some period because the item is missing temporarily or has permanently disappeared from the market. In such cases, any one of the following three approaches is used: <ol style="list-style-type: none"> <li>1. Impute the missing price by the price change for the same item from another similar outlet.</li> <li>2. Impute the missing price by the price change for a particular comparable item from the same outlet or another similar outlet.</li> <li>3. Carry forward the last observed price.</li> <li>4. Impute the missing price by the average price change for the prices that are available in the elementary aggregate; i.e. where the geometric mean prices are computed (this is only used as a last resort).</li> </ol> </li> <li><b>Quality Adjustment:</b> A quality adjustment in an item occurs when the change in specification has resulted in a significant difference between the new variety of the good or service and the one previously selected.</li> </ul> <p><u>Imputation:</u> Where no information is available to allow reasonable estimates to be made of the effect on price of a quality change, the price changes of all</p>

items, or of more or less similar items, are assumed to be the same as that for the missing item.

Overlap: Where no information is available to allow reasonable estimates to be made of the effect on price of a quality change, but where a replacement item exists in the same period as the old item, the price difference between the old item and its replacement in the overlap period is then used as a measure of the quality difference.

Direct comparison: If another item is directly comparable, that is, it is so similar that it can be assumed to have had more or less the same quality characteristics as the missing one; its price replaces the unavailable price. Any difference in price level between the new and old is assumed to arise from price changes and not quality differences.

Explicit quality adjustment: Where there is a substantial difference between the quality of the old and replacement items, estimates of the effect of quality differences on prices are made to enable quality-adjusted price comparisons to be made.

**Outlet Substitution**: Outlets are substituted when:

- Owners/operators are uncooperative.
- Items required for CPI are not available or no longer sold by that particular outlet.
- Outlet goes out of business.

Experienced field officers recommend suitable replacements for outlet substitutions.

- **New items**: New items are not included until a HBS is conducted
- **Imputed Rentals of Owner-Occupied**: the weight includes expenditure of homeowners' maintenance and repairs.

### 3.3.2 Other statistical procedures

- **Base period**: September 2016=100.

Methods used to combine basic price observations: Once the prices for goods and services have been collected, they are examined individually to ensure the validity of the data being used in the CPI calculations. Prices are compared with the previous month's and/or quarter's data in an effort to monitor price fluctuations and maintain consistency. The geometric mean is used to arrive at average prices.

Formula for aggregation: The CPI utilizes the Lowe's price index formula. The Lowe indices is one of the widest and popular class of price indices which is obtained by defining the index as the percentage change, between



the periods compared, in the total cost of purchasing a given set of quantities, generally described as a “basket”. The Lowe index, P<sub>Lo</sub> is defined as:

$$P_{Lo} = \frac{\sum_{i=1}^n p_i^t q_i}{\sum_{i=1}^n p_i^0 q_i}$$

Where n = number of products in the basket with prices p<sub>i</sub> and quantities q<sub>i</sub>

0 = base period

t = later period being compared

### Geometric mean

The price p = [p<sub>1</sub>, p<sub>2</sub>, . . . , p<sub>n</sub>] for each item from different outlets is the average of prices of the outlets using geometric mean or the formula:

$$p = \left( \prod_{i=1}^n p_i \right)^{1/n} = \sqrt[n]{p_1, p_2, \dots, p_n}$$

Method used to update weights for price change: A price relative is calculated comparing the current quarter’s (t) geometric average price with the previous quarter’s (t - 1) geometric average price. This price relative is then used to move the previous quarter’s elementary index forward to the current quarter, starting with the new base price period of September 2016. Price indices are subsequently computed for the higher level indices such as groups, divisions, and all items by aggregating the elementary item indices and weighting them by their relative importance in the CPI basket.

- Linking the Old Series to the New Series: A parallel series (four quarters) is conducted to compare the old and new series. Procedures are employed to link the old series to the new.

### 3.4 Data validation

#### **3.4.1 Validation of Intermediate Results**

Verification of procedures: All prices are verified for reasonableness. Price changes are also reviewed for consistency with other sources.

<b>4. Serviceability</b>	
<u>4.1 Periodicity and timeliness</u>	<p><b>4.1.1 Periodicity</b></p> <p>Quarterly</p> <p><b>4.1.2 Timeliness</b></p> <p>Data are released within 12-weeks after the quarter following the reference quarter.</p>
<u>4.2 Consistency</u>	<p><b>4.2.1 Internal consistency</b></p> <p>Detailed indices are published for the 12 divisions of items. Items contributing to the change in the index are analyzed in the quarterly CPI Report.</p> <p><b>4.2.2 Temporal consistency</b></p> <p>The quarterly publication “The Consumer Price Index Report” contains data on the current Consumer Price Indices and inflation by Divisions and Groups.</p> <p><b>4.2.3 Inter-sectoral and cross-domain consistency</b></p> <p>The published quarterly CPI data are consistent with the concepts and definitions of the ILO CPI Manual, and other price statistics such as the System of National Accounts. Market reports, media articles and other external data sources are used in the process of analysis and compilation.</p>
<u>4.3 Revision</u>	<p><b>4.3.1 Revision schedule</b></p> <p>Revision policy: data contained in the CPI report are subject to revisions based on subsequent quality control checks and updated item prices. Revisions are made in the quarterly report for the period when the updated prices are collected.</p>

## 5. Accessibility

### 5.1 Data

#### 5.1.1 Statistical presentation

The quarterly CPI is disseminated in two different soft copy formats

- Quarterly CPI Report – gives a brief description of the index and presents a graph that shows the percentage change in the CPI of the current quarter over the same quarter a year ago, the quarterly CPI and inflation rates, the annual averages for a number of years, the CPI for the 12 major index divisions and groups for the current quarter, 3 months and a year ago. There are also tables showing quarterly and annual averages by major groups, and average prices for selected items, and the core inflation rate.
- Press Release – presents a brief one-page description of the current quarter's index.
- Compendium of Statistics – presents tables on CPI annual averages, averages by major groups and by quarter. Also, the number of items by divisions and average prices by items are published.
- Data are not seasonally adjusted.

#### 5.1.2 Dissemination media and format

The CPI Reports, Press Releases, and Compendium of Statistics are available in electronic format in English, at the website of the Economics and Statistics Office <https://www.eso.ky>

Various ad-hoc requests are also supplied.

#### 5.1.3 Advance release calendar

Starting 2011, the Economics and Statistics Office gazettes and publishes a Statistical Publication Release Calendar annually at the beginning of the year. The release calendar covers all statistical reports compiled and published by the Economics and Statistics Office within the respective calendar year. This is in accordance with the Law. The calendar explicitly states the target date on or before which the report should be released. However, the release of any report is subject to notation by Cabinet.

The Consumer Price Index Report is available to the public twelve (12) weeks following the reference quarter.

#### 5.1.4 Simultaneous release

The CPI report becomes a public document as soon as it is noted by Cabinet. Once noted, the report is published on ESO's website.

<u>5.2 Metadata</u>	<p><b>5.2.1 Dissemination of documentation on concepts, scope, classifications, basis of recording, data sources, and statistical techniques</b></p> <p>A detailed statement of methodology is included in the Consumer Price Index Report. In addition, information of the methodology used in compiling the index including details on the index formula, the new list of market basket items and weights, and comprehensive details on the methodology are available in the Cayman Islands' 2016 Consumer Price Index Basket Report. The Report is available at the website <a href="https://www.eso.ky/">https://www.eso.ky/</a></p> <p><b>5.2.2 Disseminated level of detail</b></p> <ul style="list-style-type: none"> <li>• The quarterly CPI report contains price indices and their respective weights, at the division; group; and class levels.</li> <li>• Selected items at seven (7) digit.</li> </ul>
<b>6. Plans</b>	
<u>6.1 Recent</u>	<p><b>6.1.1 Plans for improvement – Recent improvements</b></p> <ol style="list-style-type: none"> <li>1. Proposed Household Budget Survey in 2022</li> <li>2. Revision of the Statistics Law.</li> <li>3. The formulation of the National Statistical Coordination Committee (NSCC) with a mandate to coordinate the development of a national statistical system that supports better statistics for decision-making in the public and private sectors, and lead to the economic development of all residents.</li> <li>4. Redesign and upgrade of the Economics and Statistics Office's website to ensure a more user friendly experience and more efficient data management.</li> </ol>
<u>6.2 General</u>	<p><b>6.1.2 Plans for improvement - Short-term</b></p> <p>Continuous review of available items in the market.</p>
<u>6.3 Financial</u>	<p><b>6.1.3 Plans for improvement – T/A financing needs- Medium Term</b></p> <p>T/A and consultancy needed for HBS to be conducted in 2022 to update the weights.</p>