General Authority for Statistics

Cost of Living Index
Methodology

2016

Description:

It is one of the essential economic statistics that are concerned in individuals' daily life. This kind of statistics provides information that are necessary for recognizing the prices movement general tendency, and observing the changes in commodity and services prices during the phase of retail selling in Saudi market by calculating the cost of living index.

Definition of cost of living index:

A statistical metric that measures changes in the prices of a stable market basket of commodity and services.

Definitions of some concepts related to cost of living index:

Commodity and services basket:

The actual group of commodity and services on which the household consumer spend for living purposes.

Expenditure and income survey:

The results of expenditure and income survey are used for recognizing the relative distribution of commodity and services expenditure in order to use them in structuring the cost of living index. Expenditure can be defined as (how much the household members spend to get commodities and services either what they spend for the household directly such as food, housing, …etc, or the expenditure of some of the household members such as expenditure on clothes and personal stuff during a specific period of time.

Commodity and services relative significance:

The percentage of commodity and services expenditure compared to total commodity and services expenditure inside the consumer basket.

Sale points:

Institutions and units from which the prices of commodity and services, that are included in commodity basket, are collected. For example, retail shops such as groceries, clothing shops, and other kinds of

shops like doctors services, rental units (apartment, villa, a floor of a villa, old house), and other services shops.

Shadow sample:

A group of reserve sale points which can be referred to when it is necessary to change one of the basic sale points because of inability to get prices for any reason such as closing the shop or unavailability of a commodity.

Comparison period price:

The price of any commodity or service in the current period of time.

Base period price :

The price of any commodity or service in a previous period of time compare to the current price.

Base year:

The year in which the comparison period prices are attributed to its prices. The household expenditure and income survey are conducted in this year.

The followed methodologies in cost of living index:

First: Determining the base year methodology:

The base year is determined and modified periodically based on the results of household expenditure and income survey. The base year must be stable and not affected with any occasional influences.

Second: Used classification methodology:

The classification of individual consumption according to purpose (COICOP) .

Third: Selecting the commodity and services basket methodology:

1- The commodity and services basket is created depending on the final results of household expenditure and income survey and according to the relative significance of the commodity or service inside (the commodity and services basket). By using the (COICOP) classification, each

section has been given a relative significance which represents the percentage of commodity or service expenditure compared to aggregate expenditure inside the consumer basket.

2- 4 rental terms have been included in the commodity and services basket to cover four housing types (villa, floor of a villa, apartment, old house) based on the results of buildings census and the general frame of population and housing census. In this way, all units are priced in a monthly basis.

Fourth: Selecting the sale points sample methodology:

The sale points, from which the different commodity and services prices are collected, is selected according to:

a- The population size in each geographical region

b- Choosing the sale points according to some standards such as:

- Sale point field
- The percentage of shops available in the general frame of establishments all over the city.
- Market type
- The percentage of shopping based on the results of household income and expenditure survey al over the city.
- Shopping percentages and how they are related to the sale point type.
- Sale points relative distribution by commercial activity
- Labor size in the sale point

c- Using a shadow sample in case the main sale point is not available.

Fifth: Collecting data of prices methodology:

The prices data are collected according to the following methodology:

1- Determining the interview method used in collecting data from sale points

2- Collecting data by using palm devices

3- Covering all commodities and services by sale points: (big, medium, or small shops according to the field and labor size inside the source)

4- Determining the price in the same day of visiting the sale point.

5- Determining the terms accurate features in all regions of Saudi Arabia. They should include the most important price factors that affect the term price such as brand, weight, country of origin, size, and others.

6- Adhering to a pricing period for each term (weekly, monthly, quarterly, semi-annual)

Sixth: Entering data of prices methodology:

The data of prices are entered according to the following methodology:

1- The field researcher directly enters the collected data using palm devices.

2- Palm devices are linked with a central data base in which data are automatically processed.

Seventh: Auditing data and assuring its quality methodology:

Auditing data and assuring its quality can be done by:

1- Making sure of data Logicality and prices.

2- Working on a number of automatic auditing rules when entering, revising, processing, and publishing data, so that mistakes can be recognized and corrected.

3- Using technical platforms while collecting and auditing data and link them all with a unified center for revising and auditing.

4- Linking the researchers' palm devices with a revising monitor through which supervisors can see that registered data directly. These monitors display notifications in case there is a mistake or a comment about the registered data.

5- Revising the coordinates of the place from which data are collected. This is to make sure of the visit once the application is filled. The coordinates automatically appear when data are revised later by any supervisor.

6- Applying a re-visiting form by (the supervisor or quality observer). The form would ask for another visit to the sale point ,from which data are collected, just to make sure that all data are correct and accurate.

7- Comparing the randomly chosen commodity prices.

8- Applying commodity Concealment processors and resources change.

9- Starting to work with consecutive verification by selecting samples from the sale points and contacting them to ensure the data quality.

Eighth: Qualitative quality methodology:

Qualitative quality is one of the cost of living index program's main components. It enables following the work progress during all phases either office work or field work. Moreover, it makes sure that data are collected accurately according to each term of the program terms. In order to apply the qualitative quality, the following points should be considered:

1- Developing and preparing different software in order to examine data and make sure that they are correct and accurate.

2- Using palm pricing devices and preparing programs linked with sale points or rental units in order to make sure that the researcher has reached the location within the limited pricing time.

3- A group of specialists from the authority's central department, branches, and office should periodically visit each city on a specific time. An automatic quality sampling is done on the city and researcher level.

4- The work should be assessed periodically, and international developments in this field should be followed.

Ninth: Calculating the prices' index number methodology:

Calculating the prices' index number process can be done through the following methodology:

A- Laspeyres formula is used to calculate the index number according to:

• Data of current commodity and services average prices.

• Data of the base period commodity and services average prices.

• Data of commodity and services relative significance.

B- Calculating the prices averages according to prices Geometric mean and equalize them based on the following formula:

$$\left[\prod_j P_{i,j} \right]^{\frac{1}{x}} = \sqrt[x]{\prod_j P_{i,j}}$$

Where:

Pi, j: prices X the period X the source j

x: the number of data sources

The Laspeyres equation comes in the following formula:

$$\text{Index number} = \sum_{a=1}^{N} \frac{P_{i,a}}{P_{0,.a}} \bullet \frac{P_{0,a} Q_{0,a}}{\sum_{a=1}^{N} P_{0,a} Q_{0,a}}$$

Where:

Pi, a: geometric mean of the commodity price a during the month i

P0, a: geometric mean of the commodity price a during the base year o

Q0, a: the term quantities a during the base year o (the term weight)

Tenth: Publishing methodology:

Data of Cost of living index are published according to the following methodology:

1- Publishing the cost of living index results monthly.

2- Publishing them on specified and announced dates on the authority official website.

3- The authority official website www.stats.gov.sa is a certified and official publishing platform.

4- Providing all kinds of beneficiaries with the results using the appropriate mechanism.

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How to benefit from the cost of living index results:

The cost of living index detailed reports are essential for beneficiaries, they can get data of prices statistics, and local and foreign index numbers such as (national income statistics, analysis and reports department, Saudi Arabia monetary agency, international and national organizations, other beneficiaries). Cost of living index data are considered a statistical mean for:

1- Supporting appropriate economic decision making by following changes in the cost of living index and its components.

2- Measuring the changes in prices of purchased commodities and services.

3- Measuring the burden of the consumer and how it develops according to changes in prices.

4- Measuring the economic inflation and regression (in Saudi economy).

5- Measuring the change in actual wages.

6- We can rely on them in the economic and statistical analysis of prices, and to make future estimations.

7- They are used as a metric to measure changes in currency purchasing power.