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METHODS OF ASSESSING THE CONSUMPTION INDEX OF AGRICULTURAL PRODUCTS INCLUDING THE CONSUMER BASKET AND COMPARING THEM

Abstract: The article compares methods for assessing the consumption index of agricultural products included in the consumer basket. The number of products corresponding to one year for the population of the Republic of Uzbekistan in relation to the consumer basket has also been determined.

Key words: food products, consumer basket, food security, agriculture.

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Introduction

The development of the country's economy and its integration into the world economy depends, first of all, on improving the welfare of the population. This, in turn, requires the provision of the population with the necessary caloric foods. Therefore, they try to use the "consumer basket" to assess the level of availability of products necessary for the survival of the population in the global economy. The "consumer basket" is the minimum set of products, goods and services necessary for the maintenance of human life and health for a certain period of time. The minimum standards in this regard will be the basis for determining the minimum cost amount required for subsistence.

Typically, the cost scheme changes gradually, and this is done in response to changes in prices, income levels, demographic changes, evolving habits, and the availability of new technologies. New products and services are introduced to the market and existing ones are replaced or obsolete. As a result, the basket will need to be reviewed periodically to reflect changes in consumer spending. The consumer price index is used in this regard. The consumer price index shows the change in the price of a particular good or service in a regular shopping cart over a period of time

and is used to index the wages or contract of a particular group. In any case, the consumer price index should cover the relevant group.

$$\text{CPI} = \frac{\text{Market basket price in the main}}{\text{Market basket price in a given year}} \quad (1)$$

This means that the consumer price index used to index pensions may use weights appropriate for retired households, and this may exclude educational products that do not belong to the household group. Similarly, for domestic indexation, the consumer price index should only cover the costs of the permanent population. In general, a decision must be made as to whether the consumer price index should be primarily a cost of living index (GPI) or a commodity cost index. When using indexation, of course, everyone may prefer to use the index out of self-interest (seller high, buyer low). In such cases, the sub-index should have sufficient statistical quality for this purpose.

When a food product is put on the market, a buyer is found for it and the price of the product is determined by agreement of both parties. Of course, the value of this product fluctuates with respect to inflation over time. It can be said that central banks need a general inflation index, not consumer inflation.

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However, nonprofits are often unable to compile such indices due to problems in measuring government indices. In the absence of such an index, most central banks rely on the consumer price index using an internal concept, but are measured on a comprehensive basis as much as possible in terms of product and geography.

It should be noted that some countries use the cost of living index instead of the consumer price index in production. But such an index is actually a type of high index, which, as mentioned above, is not devoid of specific practical shortcomings and cannot be compiled in real time. Many states report that they use the Laspeyres index for the national consumer price index in published metadata, which is not the case in practice. The Laspeyres index is determined by weighing prices in two periods based on the consumption volume of the base period and reflects the change in the value of the consumer basket of the base period that occurred in the current period.

Purchase the same set of consumer goods at current prices - $\sum_{i=1}^n (Q_i^t P_i^{t-1})$.

Costs of purchasing a consumer basket during the base period - $\sum_{i=1}^n (Q_i^{t-1} P_i^{t-1})$

The index is calculated as the ratio of the cost of purchasing the same consumer goods at current prices to the cost of purchasing a consumer basket in the base period:

$$I_L = \frac{\sum_{i=1}^n (Q_i^t P_i^{t-1})}{\sum_{i=1}^n (Q_i^{t-1} P_i^{t-1})} \quad (2)$$

The Laspeyres index is determined by weighing prices in two periods based on the consumption volume of the base period and reflects the change in the value of the consumer basket of the base period that occurred in the current period. The index is calculated as the ratio of the cost of purchasing the same consumer goods at current prices to the cost of purchasing a consumer basket in the base period.

The actual Laspeyres index uses quantitative data whose prices correspond to the same period as the reference period, but is difficult to obtain in practice. In this regard, the geometric Laspeyres index formula is recommended to calculate the Laspeyres index:

$$I_L = \prod_{i=1}^n \left(\frac{p_i^t}{p_i^{t-1}} \right)^{s_i^{t-1}} \quad (3)$$

Here: $s_i^t = \frac{p_i^t q_i^t}{\sum_{i=1}^n p_i^t q_i^t}$ - n is the share of t costs in a good period.

Most nonprofits receive quantitative data or weights later than the relevant period for prices. Also,

weights usually last a year, not a month (or a quarter). This is because one of the main sources of weight data is a study of the household budget, which is ideally conducted for 12 consecutive months.

The first step in calculating the consumer price index is to calculate the elemental price indices, which are then aggregated to obtain higher price indices. The weight of the costs is usually not lower than the initial level. Elementary aggregate (Primary aggregates) is the smallest and relatively homogeneous set of goods or services for which data on costs are determined (used) for the purpose of calculating the consumer price index. This index is the only aggregate whose value is calculated at no specific cost, although other types of weights may be explicitly or implicitly included in the accounts.

The three most common elemental index formulas for calculating elemental indices are Carly, Dutot, and Jevons. All of this is based on average prices, and each of them is associated with a number of assumptions that will affect inflation. The Carly formula is a non-arithmetic mean of individual price indices:

$$I_C = \frac{1}{n} \sum_{i=1}^n \left(\frac{p_i^t}{p_i^{t-1}} \right); \quad (4)$$

The Dutot formula is the ratio of the arithmetic mean prices of the representative goods selected for the corresponding elementary aggregate.

$$I_D = \frac{\sum_{i=1}^n p_i^t}{\sum_{i=1}^n p_i^{t-1}} \quad (5)$$

These formulas have relative advantages and disadvantages in terms of axiomatic theory tests, and the choice of this or that formula affects the accuracy of the elemental aggregate index and ultimately the overall consumer price index. The Jevons formula (simple geometric averages or relative geometric averages) is increasingly being used because it avoids many of the problems associated with arithmetic versions. The Jevons formula is an unmeasured geometric mean of individual indices for a corresponding elementary aggregate:

$$I_J = \prod_{i=1}^n \left(\frac{p_i^t}{p_i^{t-1}} \right)^{1/n} = \frac{\prod_{i=1}^n (p_i^t)^{1/n}}{\prod_{i=1}^n (p_i^{t-1})^{1/n}} \quad (6)$$

This consumer price index has its drawbacks, along with the inherent advantages of the Carly, Dutot, and Jevon formulas, and the values of the three formulas in the table below are structured taking into account the requirements of axiomatic theory (Figure 1).

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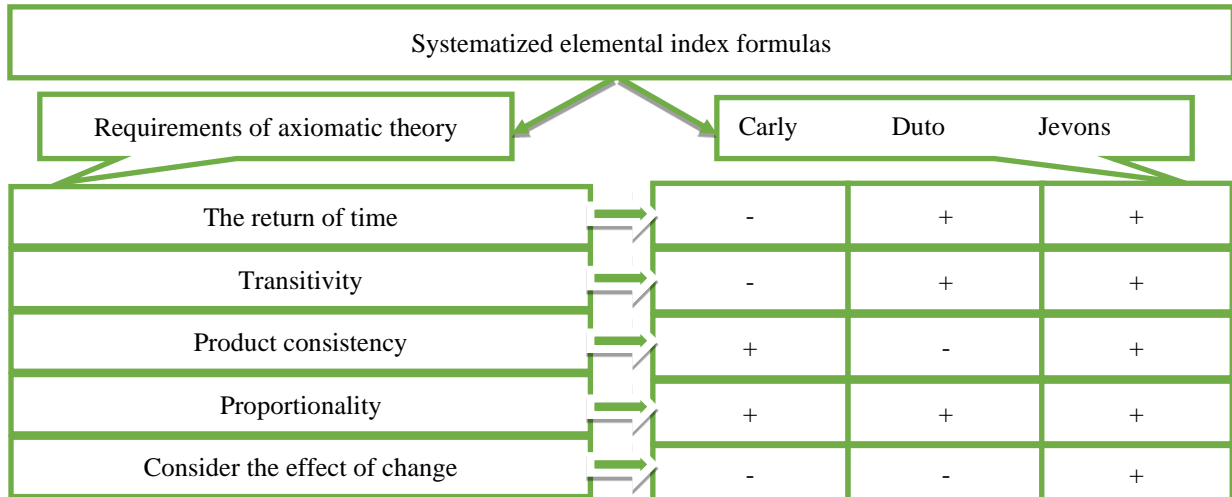


Figure 1. Systematization of formulas taking into account the requirements of axiomatic theory

As can be seen from the picture, the Jevons formula is the most preferred. Compared to this formula, the Carly and Dutot indices have a number of significant shortcomings. However, they are used in practice in different countries. As a common drawback of the above formulas (including the Jevons formula) can be seen as not paying attention to their weight by paying equal attention to all price ratios. The lack of weight is, in practice, due, as a rule, to the lack of information on the weight of the goods represented separately in the elemental set.

Consumer price index theory requires scientific research to limit these issues, which can have a significant impact not only on how the consumer price index is structured, but also on results. Three different approaches can be identified:

the purchasing approach depends on when the product or service was purchased, regardless of when it was used. Time of possession of the goods - the right of legal possession of the goods passes to the consumer. Usually the buyer is obligated to pay for

this. On the other hand, there is no change in ownership with the service and it is “purchased” at the time it is provided by the manufacturer. Based on this approach, the Consumer Price Index measures the change in the cost of purchasing a product. The time of recorded prices should correspond to the method of recording the value in the cost data used for Consumer Price Index weights.

The method of use depends on the period in which the product was consumed or used. Based on this approach, the consumer price index measures the change in the cost of using a product over time; in other words, the value of a commodity is distributed over its service life. Costs for long-term goods and services may vary depending on their expected lifespan.

In general, in order to achieve the accuracy of the consumer price index, it is necessary to follow the mechanism of creating a consumer basket, and this process should be carried out as shown in Fig. (Figure 2).

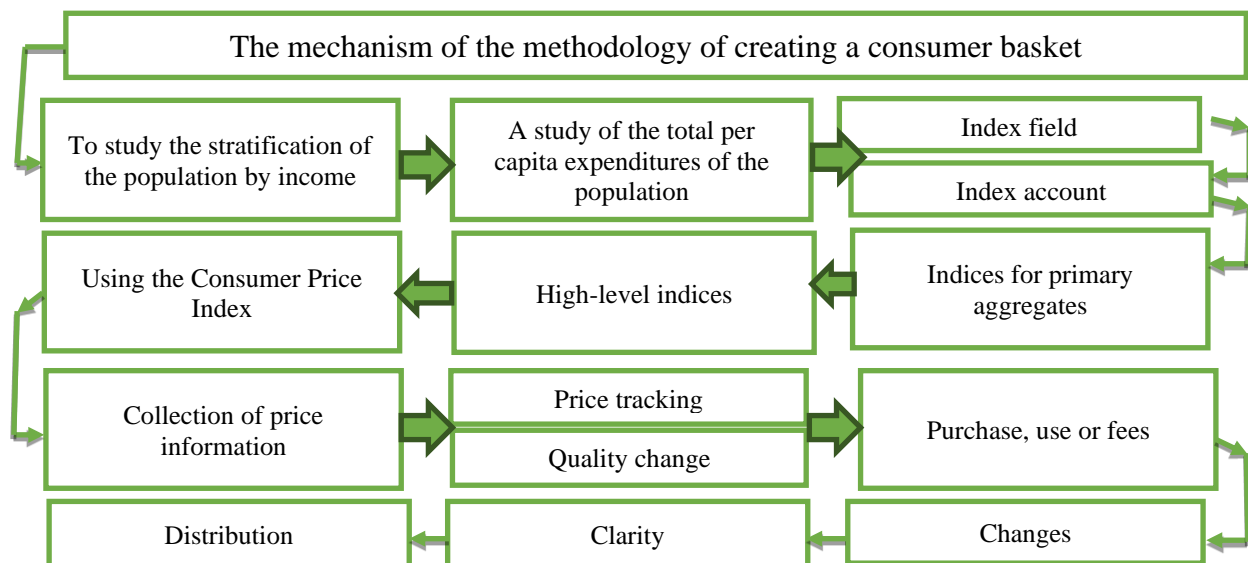


Figure 2. The mechanism of the methodology of creating a consumer basket

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According to the figure, the classification of the population by income, wage level, as well as changes in social insurance payments and other benefits in part or in full in the cost of living or consumption, as a macroeconomic indicator for all households, as well as in national accounts. it is advisable to study in depth the components of the final consumption costs and retail value of households, changes in their size.

When it comes to the index sector, its scope depends on the purpose for which it is used and should be determined by the categories of households, geographical areas and consumer goods and services purchased, used or paid by the target population. in which case it is appropriate to take into account domestic consumption expenditures rather than the costs of resident households.

Compilation of a consumer price index is the collection and processing of price and cost data in accordance with a defined concept, definition, method, and practice, and the application of certain procedures depends on the circumstances. The above-mentioned step-by-step index of the consumer price index is calculated: in the first stage the indices of elementary aggregates are calculated (formulas 3-5), in the next stages the higher level indices are calculated by summing the indices for elementary aggregates.

High-level indices are calculated as the average weight of the indices of elemental aggregates. Several types of formulas can be used to average the indices of primary aggregates. A practical option for calculating the index in a timely manner is to use a formula based on the weights associated with the previous period.

It will be necessary to replace the product when production is stopped or lost. Changes must be made within the first three months after the product is gone. This may also be required in cases where the product is not in stock or is not sold in bulk or under normal conditions. Clear rules for selecting a replacement product need to be developed. Depending on the frequency of selection and the ability to fine-tune the quality, the following are the most common alternatives:

- 1) a product very similar to the type being replaced;
- 2) the most popular variety among the goods registered in the same elemental aggregate;

3) a variety that may be available in the future. Such rules should be consistent with the purpose of the index and the method of selection of points of sale.

If we look at the accuracy of the data, as in all statistics, the estimates of the consumer price index are also prone to errors from various sources. the compilers of the consumer price index should be aware of these sources of error and take steps during the design, construction, and calculation of the index to minimize their impact. For this, sufficient resources must be allocated.

Calculations of the consumer price index should be calculated and published (distributed) after the end of the relevant period and in accordance with a previously published schedule. It should be made available to the public at the same time in a form that is convenient to all users and with brief methodological explanations, and the rules of indexing should be communicated to the public and strictly followed.

The total consumer price index should be compiled and published monthly. If consumer demand for monthly series is not strong or countries do not have the necessary resources, the consumer price index can be prepared and released on a quarterly basis. Depending on country conditions, sub-indices can be output at a frequency that meets the needs of users.

If serious inaccuracies are identified in the price of published indices due to errors in their compilation, corrections should be made and published. Such corrections should be made as soon as possible after errors have been identified and in accordance with the formal procedure for making corrections. When the consumer price index is widely used to change wages and contract amounts, retrospective adjustments should be avoided as much as possible.

In general, in modeling the efficiency of agricultural products included in the consumer basket, it is expedient, first of all, to determine the level of consumption of these products by the population and then to improve the volume of production. It should be noted that the results of the forecast, made using the values of the indicators determined by the results of the analysis, will allow to determine the future production volume and make forward-looking plans to achieve it.

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