Approved by the order of the Chairman of the Committee on Statistics of the Ministry of National Economy of the Republic of Kazakhstan

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**Methodology for calculating the price index for imported goods as part of the consumer price index**

**Chapter 1. General provisions**

1. This Methodology for calculating the price index for imported goods as part of the consumer price index (hereinafter - the Methodology) refers to a statistical methodology formed in accordance with international standards and approved in accordance with the Law of the Republic of Kazakhstan dated March 19, 2010 "On State Statistics".

2. The methodology determines the method for calculating the price index for imported goods as part of the consumer price index using official statistical data generated within the framework of existing nationwide statistical surveys.

3. The methodology is intended for use in statistical activities by employees of the Committee on Statistics of the Ministry of National Economy of the Republic of Kazakhstan.

4. The consumer price index (hereinafter - CPI) is a generally recognized statistical indicator that characterizes the level of inflation in the country.

On the basis of its information flows in the statistical practice of Kazakhstan, the following derived indicators are calculated:

price index for socially significant food products;

price indices for population groups with different levels of per capita cash income;

basic inflation.

The price index for imported goods as part of the consumer price index (hereinafter - CPI-imp) is also a derivative indicator that characterizes the magnitude of price changes for imported goods, taken into account in the CPI values and formed under the influence of price dynamics for imported goods and for goods of domestic producers, entered the domestic market of the country.

The calculation of CPI-imp is based on the same set of products, representatively selected for CPI according to consumer expenditure items with certain and unchanged quantitative ratios of constituent elements over a given period of time.

The CPI-imp indicator is used in the economic analysis of inflation trends, its determining factors, current and medium-term forecasting.

**Chapter 2. Initial data and list of positions for calculation**

5. The initial data for calculating CPI-imp are the following flows of statistical information:

1) to determine the shares of domestically produced goods and imported goods in the resources of the country's domestic market, the data of the statistical bulletin "Balance of resources and the use of the most important types of raw materials, industrial and technical products and consumer goods" (hereinafter - Balance of resources) are used;

2) to determine the "conditional" weight of domestic and imported goods for CPI-imp, CPI weight components are used according to the list of items included in the calculation;

3) to assess price changes, the following are used:

consumer price indices by classes and groups of goods;

industrial producer price indices (hereinafter - PPI) by types of manufacturing activities that reflect the production of consumer goods;

sales price indices for agricultural products (hereinafter - SPIAP) for products entering the consumer market without preliminary processing (fresh vegetables, potatoes, fruits and fruits, raw milk, eggs);

price indices of import receipts of products (hereinafter - PIIRP) by types of goods belonging to the group "consumer goods" according to their final destination;

in the absence of PIIRP - wholesale price indices for goods produced in the CIS countries and countries outside the CIS (hereinafter - WPIG).

6. Based on the above information flows, positions are determined for the calculation of CPI-imp.

According to the Balance of Resources and taking into account the import dependence of goods, the list includes items for which:

1) more than 80 percent of the resources of the domestic market of the country are formed by imports;

2) the resources of the domestic market are represented by domestic production and imports, and the condition is met that the volume of their consumption within the country exceeds exports;

3) the share of imports is less than 20 percent.

The list of positions for calculating CPI-imp covers 15 classes of food products and 40 classes of non-food products that make up CPI, and is given in Appendix 1 to this Methodology.

Services included in the CPI are not included in the CPI-imp calculation, they are considered to be produced within the country.

7. The above statistical indicators used to calculate CPI-imp are formed on the basis of their respective standard classification with different disaggregation systems.

The industry classifications for the Resource Balance, PPI, SPIAP and PIIRP (WPIG) are:

1) SCIP - statistical classifier of industrial products (goods, services);

2) SCPA - statistical classifier of products (services) of agriculture, forestry and fisheries;

3) CN FEA EAEU - Commodity nomenclature of foreign economic activity of the Eurasian Economic Union.

Consumer price indices are classified according to the Classification of Individual Consumption by Purpose (NCCPI) Commodity Item Nomenclature, designed to classify household final consumption expenditures.

To ensure data linkage when used in the CPI-imp calculation according to the hierarchical structure corresponding to the NCCPI, an Information Flow Correspondence Table (hereinafter - Correspondence Table) is compiled.

In the Correspondence Table for each CPI-imp position, according to the NCCPI, the corresponding position is selected, classified according to SCIP, SCPA and CN FEA EAEU.

One CPI-imp position corresponds to one or more SCIP, SCPA or CN FEA EAEU positions.

All of them are included in the Correspondence Table, and an algorithm for their preliminary aggregation is determined for use in calculations.

**Chapter 3. The procedure for calculating the price index for imported goods
as part of the consumer price index**

8. A change in the price of a product in the consumer market depends on a change in the price of a similar product from domestic producers and a change in the price of imported goods. This relationship is expressed by the following equation, which is the basis of the CPI-imp calculation:

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Where:

*w 0 × i t* - change in the price of a product in the consumer market in period *t* , taking into account its weight in the CPI structure;

*i ppi × d ppi* - the change in the price of domestic goods *( ppi )* taking into account its share in the resources of the country's domestic market;

*i imp x d imp* - change in the price of imported goods *( imp )* taking into account its share in the resources of the country's domestic market.

9. The formation of CPI-imp is carried out in two stages.

Preliminarily, for each group of goods included in the CPI-imp, the share of goods produced by domestic enterprises and imported, and their "conditional" weight for use in CPI-imp calculations, is found.

The shares are calculated according to the Balance of Resources for January-December of the year, taken in the calculations of CPI-imp as the base one, according to the formula:

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Where:

*d imp , d ppi* – the share of imported *( imp )* and domestic goods *( ppi )* in the resources of the domestic market of the country;

*∑ res -* the cost of the country's domestic market resources;

*∑ imp* - the cost of products imported into the country;

*∑ ppi* - the cost of domestic products.

Based on the calculated shares and according to the weight of the CPI position, "conditional" weights are determinedgoods of domestic and imported production according to the formula:

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Where:

*w imp , w ppi* – “conditional” weight of imported *( imp )* and domestic goods *( ppi )* in the CPI structure;

*w 0* - weight of goods in the CPI structure;

*d ppi* - the share of domestic goods *( ppi )* in the resources of the domestic market of the country;

*dimp \_* – share of imported goods *( imp )* in the resources of the domestic market of the country.

Import shares and “conditional” weights of domestic and imported goods in CPI-imp calculations remain unchanged during the reporting year.

10. CPI-imp - directly calculated on a monthly basis in the following order:

1) According to the Correspondence Table, from the information arrays PPI (SPIAP), PIIRP (WPIG), the actual price relatives ( *i cpif* , *i impf , i ppif* ) are determined.

For individual CPI-imp positions, the initial price relatives are determined according to the algorithm specified in the Compliance Table.

Taking into account price relative and "conditional" weights, structural price relative *(SPR) are calculated* :

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Where:

*scl ( cpi* , *imp , ppi* ) – respectively, structural price relative ;

*w 0* , *w imp , w ppi* - respectively, the weight of the CPI product and the "conditional" weights of imported and domestic goods in the CPI structure;

*i cpif* , *i impf , i ppif* - respectively, the actual price relative.

2) the sum of structural price relatives for domestic and imported goods is found and compared with the value of the structural price relative according to CPI.

Note: if the amounts are equal, the structural relative prices for domestic and imported goods are normalized.

Normalization factor ( *K N* )- calculated as the ratio of the structural price relative by CPI and the sum of the structural price relatives for domestic and imported goods:

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Where:

*Kn \_ -* the normalization coefficient;

*СЦО ( cpi* , *imp , ppi* ) – respectively, structural price relative.

3) normalization of structural relative prices for goods of domestic and imported production is carried out by multiplying them by the obtained coefficient:

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Where:

*scl N* *( imp , ppi* ) – respectively, the normalized structural price relative;

*scl ( imp , ppi* ) – respectively, structural price relative;

*K N* - the normalization coefficient.

4) the normalized value of price changes for domestic and imported goods is determined as the ratio of normalized structural price relative and “conditional” weights:

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Where:

*i N* *( imp , ppi* ) – respectively, the normalized relative price;

*scl N* *( imp , ppi* ) – respectively, the normalized structural price relative;

*w imp , w ppi* – “conditional” weights of imported and domestic goods in the CPI structure.

The resulting value *i Nimp* - the CPI-imp value, which characterizes the change in prices for imported goods as part of CPI for a particular position.

An end-to-end example of calculating CPI-imp for the “groats” position is given in Appendix 2 to this Methodology.

11. The calculation of CPI-imp for all higher levels of aggregation and in general is carried out by successive summation of the normalized structural price relatives and weights included in the corresponding aggregate.

When the share of imported goods is 100 percent and domestic production is 0 percent, and vice versa, the calculation uses the actual price relative from CPI, which is taken into account in the respective sums of product groups or imported or domestic production.

12. CPI-imp calculations are carried out on the price indices of the reporting month compared to the previous month.

Monthly price indices by December of the previous year are calculated using the chain method, that is, by multiplying the price index by December of the previous year for the month preceding the reporting month by the price index of the reporting month.

Due to differences in the time of formation of price indices used for evaluation, the calculation of CPI-imp is carried out retrospectively.

13. The revision of the information flows used is carried out as follows:

1) changes are made to the list of CPI-imp when expanding, reducing the positions of the Balance of Resources;

2) The correspondence table is reviewed simultaneously with the change in the List of CPI-imp positions and with the rotation of information flows to form the corresponding price indices (PPI, SPIAP, PIIRP, WPIG);

3) the shares of imports for calculating the “conditional weights” of CPI-imp are updated annually after the publication of average annual data on the volume of domestic market resources for the previous year;

4) "conditional weights" of CPI-imp are recalculated annually based on the updated shares of imports and weight components of CPI determined for the current year of its calculation.

Appendix 1
to the Methodology for calculating the price index for imported goods as part of the consumer price index

**List of positions for calculating CPI-imp**

| **Group code** | **Group name** | **Components of CPI** | **Information source for pricing:** |
| --- | --- | --- | --- |
| **PPI** | **PIIRP** |
|  |  |  |  |  |
| 0111 | Bakery products and cereals | Rice | X | X |
| Flour | X | X |
| cereals | X | X |
| Bread | X |  |
| Pasta | X | X |
| Bakery and flour confectionery | X | X |
| Cereal products | X | X |
| 0112 | Meat | X | X |
| 01121 | Meat and poultry | Beef | X |  |
| horsemeat | X |  |
| Pork | X |  |
| Mutton | X |  |
| Bird | X | X |
| Other types of meat and offal | X |  |
| 01122 | Sausages, meat products | sausages | X | X |
| Meat products | X | X |
| 0113 | Fish and seafood | Fresh or frozen fish and seafood | X | X |
| Fish processed and canned | X | X |
| 0114 | Dairy products, cheese and eggs | Fresh milk | X | X |
| Canned milk | X | X |
| Dairy products | X | X |
| Cheese and cottage cheese | X | X |
| Eggs | X | X |
| 0115 | Oils and fats | Butter animal | X | X |
| Margarine | X | X |
| Sunflower oil | X | X |
| Olive oil | X | X |
| 0116 | Fruits | Fresh fruits | X | X |
| Fruits processed and canned | X | X |
| 0117 | Vegetables | Fresh vegetables | X | X |
| Potato | X | X |
| Vegetables processed and canned | X | X |
| 0118 | Sugar, jam, honey, chocolate and confectionery | Sugar | X | X |
| Jam, jam, honey | X | X |
| Confectionery | X | X |
| Ice cream | X | X |
| 0119 | Foodstuffs n.e.c. | Spices | X | X |
| Other products | X | X |
| 012 | Non-alcoholic drinks | Coffee, tea and cocoa | X | X |
| Mineral and drinking water | X | X |
| Cold drinks | X | X |
| Fruit and vegetable juices | X | X |
| 021 | Alcoholic drinks | Vodka | X | X |
| Cognacs ordinary, vintage | X | X |
| Wine made from grapes and other fruits | X | X |
| Fortified and sparkling wines | X | X |
| Beer | X | X |
| 022 | Tobacco products | X | X |
| 0311 | Materials for making clothes | X | X |
| 0312 | Outerwear | Knitwear and hosiery | X | X |
| Clothing, except knitwear and hosiery | X | X |
| 0313 | Other garments and clothing accessories | X | X |
| 0321 | Boots, shoes and other footwear | X | X |
| 0431 | Materials for the maintenance and repair of residential premises | Sheet window glass | X | X |
| Wallpaper | X | X |
| Paints and varnishes | X | X |
| Tile | X | X |
| Cement M400 | X | X |
| Dry mixes | X | X |
| 04520002 | Liquefied gas payment | X | X |
| 0454 | solid fuel | X | X |
| 0511 | Furniture and household items | X | X |
| 0512 | Carpets and other floor coverings | Carpet pile, with the addition of wool, silk | X | X |
| Carpet (palace) synthetic | X | X |
| Linoleum | X | X |
| 0520 | Textiles used in the household | X | X |
| 0531 | Large household appliances, electrical and non-electric | Refrigerators, freezers | X | X |
| Washing machines and dishwashers | X | X |
| Large electrical appliances |  | X |
| 0532 | Small electrical appliances |  | X |
| 0540 | Glassware, cutlery and household utensils | Glass and ceramic products |  | X |
| Cutlery |  | X |
| Non-electric kitchen utensils and household products |  | X |
| 0551 | Large tools and fixtures |  | X |
| 0552 | Small tools and various devices | Small electrical products |  | X |
| Hand tools and fixtures | X | X |
| 0561 | Non-durable household goods | Detergents and cleaners | X | X |
| Small household items | X | X |
| 0611 | Pharmaceutical products | X | X |
| 0612 | Other medical products | syringes | X | X |
| Medical bandage | X | X |
| cotton wool | X | X |
| 0613 | Medical equipment and devices | X | X |
| 0711 | Cars | X | X |
| 0721 | Spare parts and accessories for personal vehicles | tires | X | X |
| Autofilters | X | X |
| 0722 | Fuels and lubricants for personal vehicles | Petrol | X | X |
| Diesel fuel | X | X |
| Engine oil | X | X |
| 0820 | Telephone and fax equipment |  | X |
| 0911 | Equipment for receiving, recording and reproducing sound and images | X | X |
| 0912 | Photo and film equipment, optical devices |  | X |
| 0913 | Information processing equipment | Portable personal computer (laptop) | X | X |
| Calculators |   | X |
| 0914 | Recording devices and materials | Recorded materials | X | X |
| Unrecorded (clean) materials |  | X |
| 092 | Other large durable goods for leisure and cultural events |  | X |
| 093 | Other goods and equipment for recreation, sports, gardening and pets |  | X |
| 095 | Newspapers, books and stationery | Books, newspapers and magazines | X | X |
| Stationery and drawing supplies | X | X |
| 1212 | Electrical appliances for personal use |  | X |
| 1213 | Other items, devices and goods for personal use | Shampoo | X | X |
| Toothpaste | X | X |
| Toilet soap | X | X |
| Baby soap | X | X |
| Deodorant | X | X |
| Eau de Toilette | X | X |
| Hair dye |  | X |
| Lipstick |  | X |
| Shaving items |  | X |
| toothbrush |  | X |
| Toilet paper | X | X |
| Sanitary pads | X | X |
| Baby diapers | X | X |
| 12311 | Jewelry and watches |  | X |
| 1232 | Other personal items |  | X |

Appendix 2
to the Methodology for calculating the price index for imported goods as part of the consumer price index

**Cross-cutting example of calculating the price index for imported goods as part of the consumer price index**

The calculation example uses the following abbreviations:

1) product-RK - position in the calculation, reflecting information on the product of domestic production;

2) product-IMP - position in the calculation, reflecting information on imported goods delivered to the republic;

3) Balance of resources - statistical bulletin "Balance of resources and use of certain types of products (goods) and raw materials";

4) CPI - consumer price index;

5) PPI - the price index of enterprises producing industrial products;

6) PIIRP - price index of import receipts of products.

To determine the share on product-RK and product-IMP, data are found on the lines "resources", "production", "imports" of the Balance of Resources and their share in the line "resources" is determined.

Example 1

Share calculation for product-RK and product-IMP

|  |  |  |  |
| --- | --- | --- | --- |
| Position in the Resource Balance | Resources | Production | Import |
| Cereals, including rice, tons | 71200 | 63215 | 7985 |
| from it rice | 52219 | 46015 | 6204 |
| Data difference | 18981 *(71200-52219)* | 17200 *(63215-46015)* | 1781 *(7985-6204)* |
| ***share for item 011122 "Groats"*** | ***product-RK = 0.9062*** (17200/18981) | ***product-IMP=0.0938*** (1781/18981) |

Taking into account the found share, the “conditional” weight on product-RK and product-IMP for the position is determined in accordance with its weight in CPI.

Example 2

Conditional weight calculation for product-RK and product-IMP

|  |  |  |  |
| --- | --- | --- | --- |
| Code | Name | Share in resources | Weight in CPI |
| A | B | 1 | 2 |
| 011122 | cereals |  | **0.00387** |
|  | product-IMP | 0.0938 | 0.00036=0.00387\*0.0938 |
|  | product-RK | 0.9062 | 0.00351=0.00387\*0.9062 |

The actual relative prices for the reporting month are found: CPI - for the position as a whole, PPI - for the position on product-RK, PIIRP - for the position on product-IMP.

Taking into account their weight, structural relative prices are determined.

Example 3

Calculation of structural price relative

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Code | Name | Weight in CPI | Actual price relative | Structural price relative |
| A | B | 2 | 3 | 4=2 ×3 |
| 011122 | cereals | 0.00387 | **1.0454** | **0.004046** |
|  | product-IMP | 0.00036 | 0.9666 | 0.000348 |
|  | product-RK | 0.00351 | 1.0135 | 0.003557 |

Since the actual values of price indices are used, the price relative for the CPI position (column 3) is not the average value of the price relatives for PPI and PIIRP. That is, the condition that the average value should be within the values of the components is not met. In the example: .

Accordingly, the sum of structural price relatives for product-RK and product-IMP (0.003905 = 0.003557+0.000348) is not equal to the structural price relative for CPI (=0.004046).

Structural relative prices are being normalized for product-RK and product-IMP. The normalization coefficient is determined by the ratio of the actual structural price relative according to CPI to the sum of the structural price relatives of the RC product and the IMP product .

By multiplying the structural price relatives of the RC product and the IMP product by the obtained normalization coefficient, normalized structural price relatives are found.

Example 4

Calculation of normalized structural price relative

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Code | Name | Structural price relative | Normalization factor | Normalized structural price relative |
| A | B | 4=2 ×3 | 5 | 6=4 ×5 |
| 011122 | cereals | **0.004046** | 1.036108 | 0.004046 |
|  | product-IMP | 0.000348 |  | 0.000361 |
|  | product-RK | 0.003557 |  | 0.003685 |

Based on the normalized structural price relatives for product-RK and product-IMP and the weight of these positions, price relatives for product-RK and product-IMP are recalculated.

Example 5

Calculation of price relatives taken into account in CPI-imp by position

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Code | Name | Weight in CPI | Actual price relative | Normalized structural price relative | Normalized price relative |
| A | B | 2 | 3 | 6=4 ×5 | 7=6/2 |
| 011122 | cereals | 0.00387 | **1.0454** | 0.004046 | **1.0454** |
|  | product-IMP | 0.00036 | 0.9666 | 0.000361 | *1.0016* |
|  | product-RK | 0.00351 | 1.0135 | 0.003685 | *1.0500* |

As a result, the CPI value becomes a weighted average that takes into account price trends for product-RK and product-IMP. The condition is restored that the average value must be within the values of the components: .

Thus, for the “groats” position, CPI-imp amounted to 100.2% (1.0016 \* 100%) in the composition of CPI equal to 104.5%.