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no. 221

**Methodology for calculating the price index for population groups with different levels of average per capita cash income**

**Chapter 1. General provisions**

1. This Methodology for calculating the price index for population groups with different levels of average per capita cash income (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 establishes a method for calculating the price index for population groups with different levels of per capita cash income using official statistical information generated within the framework of existing nationwide statistical surveys , and is applied by the Committee on Statistics of the Ministry of National Economy of the Republic of Kazakhstan .

3 . The methodology was developed taking into account the standards and recommendations of the Consumer Price Index Manual: Theory and Practice (2004) prepared by the International Labor Organization, the International Monetary Fund, the Organization for Economic Co–operation and Development, the Statistical Office of the European Communities, the United Nations Economic Commission for Europe and World Bank.

4 . Based on the information flows of the consumer price index (hereinafter – CPI), which characterizes the change in time of the average price level for a fixed basket of goods and services purchased by the population for personal consumption, a number of derived price indices are calculated related to various subgroups of the base population. Their construction is justified by the existing differences in the structure of consumption of goods and services by different groups of the population, caused by differentiation in the level of monetary income.

The price index for population groups with different levels of average per capita cash income (hereinafter – the price index for population groups) characterizes the change in prices for goods and services for specific population groups with different levels of cash income and consumption patterns . To calculate the price index for population groups, from the decile distribution of a series of incomes used for consumption, ranked by their growth, the population groups with the lowest and highest incomes were selected.

Formed:

1) price index for population groups with the lowest monetary incomes ;

2) price index for population groups with the highest monetary incomes .

5 . When calculating the price index for population groups, the following CPI construction standards are observed:

1) the change in prices for goods and services corresponds to the change obtained from the results of a price survey of a sample population of retail outlets and service delivery facilities and taken into account in the CPI;

2) a set of goods and services, differentiated depending on the population group, is a sample from the CPI consumer basket;

3) the weighting scheme reflects the structure of consumer spending of the population with the lowest and highest incomes by cost items included in the price index;

4) the calculation of aggregated statistical indicators is carried out according to the modified Laspeyres formula;

5) the calculation of price indices for the corresponding periods of the previous year is carried out by the basic method through the dynamic series of indices to a single base period.

6 . The price index for population groups is used for the purposes of socio–economic analysis.

**Chapter 2. Information flows, a set of goods and services,   
weight components**

7 . The following information flows are used to calculate the price index for population groups:

1) data of the nationwide statistical survey on expenditures and incomes of households;

2) the results of nationwide statistical monitoring of prices for consumer goods and services for the calculation of CPI.

Based on them, the sets of goods and services included in the index, their weight components and individual price changes for the corresponding commodity items are determined.

The price index for population groups is formed by regions and on average across the republic. Regional price indices take into account changes in prices for consumer goods and services in the region and the consumption pattern of the respective population groups. The price index for population groups in the republic is determined as a weighted average of changes in prices for consumer goods and services in the surveyed regions.

8 . Income used for consumption is the sum of cash income calculated on the basis of expenses and the cost of consuming products from personal subsidiary plots.

Household consumer spending is part of the money spent on the purchase of consumer goods and services. Consumer spending consists of food, alcohol, tobacco, eating out, non–food items, and service charges. They do not include expenditures on goods and services purchased for business purposes, purchases of valuable items, payment of income taxes, social security contributions and fines.

When distributing the total volume of household income into groups, depending on the level of well–being of the population, the method of ranking individual budgets in order of increasing average per capita monetary income is used. The ranked series is divided into ten equal groups, each of which includes 10 percent of the total population surveyed. The first decile group includes the 10 percent of the population with the lowest monetary income (hereinafter – the first decile group), the second decile group – the next 10 percent of the population, and the tenth decile group – the 10 percent of the population with the highest monetary income (hereinafter – the tenth decile group).

Decile income groups form consumer spending and its structure.

9 . The set of goods and services for calculating the price index for population groups is determined on the basis of the structure of consumer spending of the population belonging to the first and tenth decile groups.

To take into account differences in the composition of goods and services purchased by the population with the lowest and highest monetary incomes, individual items of goods (services) are excluded from the CPI consumer basket. Sets of goods and services are the same for calculating the price index for population groups by region and country.

1 0 . The distribution of expenditure items (positions) of households into sections, groups, classes of goods (services) is carried out according to the international classification of individual consumption by purpose (hereinafter – CCPI) within the hierarchical system and in accordance with the directions of their use by households. To detail classes of goods, services into subclasses, types and subtypes, the Nomenclature of Commodity Items to the CCPI is used, which has the status of a departmental classifier.

1 1 . The weight components of goods (services) for calculating the price index for population groups are determined on the basis of the structure of consumer spending of the population belonging to the first and tenth decile groups. The share of each cost item in total consumer spending is its weight. Differentiated weighting schemes reflect the consumer behavior inherent in the respective group of households and are uniform across the republic and regions.

Weighing schemes remain constant throughout the year. They are updated once a year, using the latest annual data on household expenditures by population groups with different levels of per capita cash income.

1 2 . The formation of weighting schemes for calculating the price index for population groups is carried out simultaneously with the development of a weighting scheme for CPI and is carried out in the same sequence of operations defined by the methodology for its construction.

**Chapter 3. Calculation of the price index for population groups with different levels of average per capita cash income**

1 3 . The calculation of the price index for population groups is carried out in two stages. At the first stage, individual price indices are determined for a set of goods and services of the corresponding index. At the second stage, by aggregating individual price indices, price indices of a higher level (aggregate indices) are calculated – by types, subclasses, classes, groups, sections and the entire set of goods (services).

The individual price index for a product, service of the corresponding set of price index for population groups is taken equal to the individual price index for the commodity item of the same name, taken into account when constructing the CPI.

Aggregate price indices by types, subclasses, classes, groups, sections are calculated as weighted averages of individual price indices according to the modified Laspeyres formula, according to which changes in individual price indices in each period of time are weighted through constant basic weights:

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where:

*I L* – price index for the period *t* compared to the previous period *t –1* ;

 – individual price index by type of goods (services) for period *t* to period *t –1* ;

– the cost of goods (services) in the prices of the base period, used as the basis for constructing the weighting scheme;

 – the cost of goods (services) in the reporting period;

 – the product of individual price indices by type of goods (services) to the previous period.

1 4 . The calculation of the price index for population groups is carried out in the following sequence:

1) for goods, services included in the set for the price index for population groups with the lowest monetary incomes and the price index for population groups with the highest monetary incomes, individual price indices (price relative) of the reporting month are found from the array for CPI for goods and services of the same name to the previous month;

2) for goods, services, structural price relatives of the reporting month compared to December of the base year are calculated as the product of the weight of the goods (services), the price relative of December to the base year and the price relative of the reporting month to the previous month;

3) by type of product (service), subclass, class, group, section, structural relative price of the reporting month is found compared to December of the base year, as the sum of the commodity items, types, subclasses, classes, groups and twelve sections included in them, respectively. CCPI for the entire set of goods (services);

4) aggregated relative prices by type, subclass, class, group, section and the totality of goods (services) for the reporting month are calculated to the previous month, December of the previous year and December of the base year . Price indices are determined by multiplying the aggregate price relative by 100;

5) using the basic method, which provides for the "linking" (linking) of monthly price indices to each other to form a consistent dynamic series that has a fixed reference point or a base period as a base, the price indices for the reporting month are calculated for the corresponding period of the previous year (the month cumulative period) .

Calculation of monthly price indices of the reporting year to the corresponding month of the previous year is carried out by dividing the monthly price index in the index row of the reporting year by the monthly price index in the same row of the previous year:

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where:

*I t* – price index for the month *t* of the reporting year *g* to the corresponding month of the previous year *g –1;*

*It g*– price index of month *t* of the reporting year *g* in the index row;

*It ( g –1)* – the price index of month *t* of the previous year *g –1* in the index series.

Cumulative price indices for the corresponding period of the previous year are determined by dividing the sum of monthly price indices of the index series of the compared period with the same sum of monthly price indices of the previous year:

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where:

– price index for January–December of the reporting year to January–December of the previous year;

*I 1 g , I 2 g , ..., I 12 g* – price indices for January, February, ..., December of the reporting year in the index series;

*I 1( g –1) , I 2( g –1) ,… I 12( g –1)* – price indices for January, February, ..., December of the previous year in the index series.

And price indices for the quarter to the previous quarter are calculated as the ratio of the sum of monthly price indices in the index series that define the reporting quarter to the sum of monthly price indices of the previous quarter:

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where:

– price index of the second quarter of the reporting year to the first quarter;

*I 4 g , I 5 g , I 6 g* – price indices for April, May, June of the reporting year of the index series;

*I 1 g , I 2 g , I 3 g* – price indices for January, February, March of the reporting year of the index series.