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**Methodology for constructing the consumer price index**

Chapter 1 General provisions

1. This Methodology for constructing the consumer price index (hereinafter - 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 following definitions are used in this Methodology:

1) price quotation - the price of a product (service) that has specific consumer properties (name, manufacturer, characteristic features), registered in a specific trading facility;

2) price registration - collection of primary statistical data on prices (tariffs) for goods and services in the course of nationwide statistical observations;

3) base population - a strictly defined category of the population, selected in accordance with the purpose of the consumer price index (hereinafter - CPI), whose consumer spending is used in the calculation;

4) base object - a selected object for observation and registration of prices in it;

5) with specification -description or list of characteristics that are used to identify an individual product (service) selected for price registration;

6) product (service) representative - a set of certain types of goods (services) in a product group that differ from each other in minor features (details) that do not affect the quality and basic consumer properties of goods (services) and are homogeneous in their consumer purpose;

7) weight - a value that reflects the relative importance of goods and services, measured by their shares in the amount of household expenditures;

8) weighting - a procedure used in index calculations to obtain summary indicators and ensure the commensurability of different goods that are not directly summable. The transition to a set of comparable goods (services) is carried out by introducing index weights;

9) a fixed basket of goods and services - a limited set of representatively selected items of consumer spending with certain and unchanging quantitative ratios of its constituent elements over a given period of time;

10) consumer expenditures - a part of the monetary expenditures of households aimed at the purchase of consumer goods and services. Includes the purchase of food, alcoholic beverages, tobacco products, expenses for eating out, non-food items and paid services;

11) registration price - the number of monetary units paid for a specific type of product, service, quality, terms of sale and the period of time for which are clearly defined;

12 ) linkage coefficient - an indicator used to carry out the procedure for linking chain price indices during the period of updating the weight system.

3. This Methodology defines:

1) scope of observation of the consumer price index;

2) sampling for price registration;

3) registration of prices;

4) consumer segment;

5) replacement of basic objects and goods (services);

6) accounting for seasonal goods;

7) accounting for changes in the quality of goods (services);

8) ensuring the quality and reliability of primary data;

9) index weights;

10) calculation of price indices and average prices;

11) derivative price indices;

12) the contribution of changes in the prices of the components of the consumer basket in the consumer price index;

13) dissemination of official statistical information.

4. This Methodology is applied by the Bureau of National Statistics of the Agency for Strategic Planning and Reforms of the Republic of Kazakhstan (hereinafter - the Bureau ) and its territorial divisions when conducting nationwide statistical observations of prices for consumer goods and paid services and constructing price indices.

5. The methodology has been developed in accordance with the following international standards for constructing the consumer price index:

1) 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 the World Bank;

2) Practical Guide to the Consumer Price Index (2009);

3) "Regulation of the European Commission on dealing with seasonal goods" (No. 330, 2009);

4) System of National Accounts (2008).

6. CPI 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.

7. CPI is calculated to identify the real dynamics of consumer prices, reflecting their changes in the regions and the country, as well as providing a detailed picture of the price movements for specific groups of goods and services.

As a generally recognized indicator of inflation, CPI is used in studying the dynamics of socio-economic phenomena, for analyzing and forecasting price processes in the economy, in the monetary, financial, tax, budgetary and social policy of the state.

8. The CPI formation methodology is the basis for calculating price indices for population groups with different levels of per capita cash income, core inflation, and the retail price index. The information base for their calculation is data on the level of prices for consumer goods and paid services purchased by the population, the structure of household consumer spending, and retail turnover.

**Chapter 2 Scope of CPI**

9. The scope of the index combines the geographical coverage of the territory, types of households and trade facilities, the range of goods and services taken into account.

10. The geographic coverage of price registration in terms of consumer spending of the base population includes the entire territory of the republic.

As the base population for constructing the CPI, the “entire population” that spends in the country is chosen. For the index, which measures the average change in consumer prices at the national level, the base households are the “total population” category living in the country. To determine the impact of price changes on individual socio-economic groups of the population, the index is constructed using the consumer spending of these groups.

11. The presence of urban and rural areas in the sample depends on the distribution of the population, differences in expenditure patterns and price changes. The coverage includes large cities (the capital, cities of republican significance, regional centers) and district centers, where the majority of the population lives and the current trade and services sector provides regular price information, taking into account the established requirements for the basics of price registration. Price trends in other localities repeat the price movement in large cities with a certain time period.

12. The coverage of retail outlets is determined by household shopping behavior. Price registration is carried out by the relevant officials of the territorial divisions of statistics (hereinafter - specialist) in trade facilities. All retail outlets where households shop are included in the CPI coverage and form the sampling frame for the selection of baseline outlets.

The main criterion for a sample set of basic objects is their representative representation in the regional and sectoral contexts.

13. The scope of the CPI includes all types of consumer goods and services of importance to the general population, without any exception as non-essential or undesirable. Goods and services purchased for business purposes, expenses for the acquisition of valuable items, payment of income taxes, social security contributions and fines are not considered consumer goods or services and are excluded from the scope of the index.

14. When estimating the cost of consumption items, the “acquisition” approach is used, according to which the consumption of a product is determined at the time of its purchase, regardless of the time of use. The time of acquisition of goods is the transfer of ownership of this product to the consumer. The "acquisition" approach for CPI as a macroeconomic indicator is economically sound.

##### **Chapter 3. Sample for price registration**

15. Price registration is based on the principles of selective statistical observation and covers only a part of the settlements of the region, objects of trade in the settlement, goods (services) and their varieties in the base object. The sample size and selection methods in relation to the basic objects, goods (services), the prices of which are recorded, ensure the representative nature of the monitored prices and their sufficiency to comply with the requirements for the reliability of the index.

When constructing CPI for the selection of basic objects, goods (services), the methods of improbability selection are used:

1) the "cut-off" method. The number of largest sample units is chosen with certainty, leaving zero possibility of including other units in the sample. In the base object, the best-selling product (service) is selected within the framework of a centrally specified specification;

2) the method of "quota selection". In the resulting sample, units are represented in the same proportion as in the general population, in terms of known characteristics. Characteristics are a subgroup of goods, type of retail facility, location, and more. The actual selection of units is made using subjective procedures to ensure that the composition of the final sample meets the quota selection criteria. As a result, the sample becomes self-weighted;

3) the method of "representative products". It is used to select goods (services) according to a centrally specified list, in accordance with specifications.

16. Updating the sample of basic objects, goods (services) means revising the old sample to ensure its representativeness in relation to the general population in a later period. The frequency of updating the sample depends on the rate of change in the assortment in a particular group of goods (services).

To update the selection of basic objects, goods (services), in which different types of goods (services) and basic objects appear and disappear, there are three ways to reflect dynamic changes at the level of elementary aggregates:

1) by updating the selection of goods (services) for the whole elementary aggregate at a certain point in time;

2) by replacing one type of goods (services) or basic object with another type or basic object;

3) by adding and excluding individual elements of observation (goods (services) in basic objects) within the index link.

If a new brand or model of a durable good appears on the market that does not replace any particular old model, the product is added to the sample from the moment it is introduced.

The missing product (service) for observation is removed from the sample without replacement, the price change is calculated for the remaining goods (services). Removal of elementary aggregates becomes necessary if all varieties of this elementary aggregate disappear from most or all of the underlying objects and it is impossible to select similar varieties to provide a sufficient number of price observations for further index formation.

##### **Paragraph 1. Choice of settlements**

17. The main criterion for the selection of settlements is the representativeness of all regions of the country. The consumer price survey includes the capital, cities of republican significance, cities of regional significance (regional centers) and a selective circle of cities of regional significance.

In each region, individual settlements are selected in accordance with the following criteria:

1) large settlements are included in the survey, in which the trading network is mainly concentrated and the majority of the population lives;

2) the settlements selected for monitoring prices reflect the geographical features of the region and are located in its various parts;

3) the sample does not include settlements located in close proximity to each other and from the regional center, if the levels and dynamics of prices in these settlements do not have fundamental differences;

the settlements selected for observation are characterized by a stable presence in the consumer market of goods and services included in the sample for price registration.

In large cities, where the consumer market is represented by the presence of a significant number of objects of trade and the sphere of paid services, a wide range of goods and services provided, price registration is carried out for all goods and services selected for observation. In small settlements, price registration is carried out for the most important consumer goods and certain types of services, since the insufficient number of trade and service facilities in them does not allow obtaining full data and tracking price changes for a long time.

This approach ensures the representativeness of the district level in the calculation of CPI and reduces the likelihood of distortion of the index value for the whole region due to the need for numerous additional calculations of missing information in case of an unstable supply of goods.

##### **Paragraph 2. Selection of basic objects**

18.The choice of basic objects is carried out from their totality available in the settlement selected for the survey. First, the selection of geographical places (districts) is carried out, after which the selection of trade facilities within each of these places is carried out.

The statistical business register, telephone business directories, directories and other lists of wholesalers and retailers are used as the basis for selection.

The choice of basic objects is made subject to the following conditions:

1) objects with different terms of trade (services) are selected. It includes large retail facilities with a wide range of goods and paid services (hypermarkets, department stores, trading houses, specialized stores and facilities providing a range of paid services), small and medium-sized, selling one or two groups of goods or paid services, clothing, mixed and food markets;

2) objects are included in which significant volumes of goods (services) are sold from their total sale in the selected locality;

3) their territorial representativeness is ensured. Includes basic facilities located in various parts of the settlement (center, microdistricts, on the outskirts);

4) objects of various forms of ownership are selected;

5) the readiness of employees of the basic facilities to participate in the survey, to assist in assessing the quality and representativeness of the product when registering prices for it is taken into account;

6) objects in which prices for sold goods (services) are slightly higher than the average level are included in the observation, provided that they have a high turnover and they sell goods (services) that are designed for the mass consumer in terms of consumer properties and price level.

The observation does not include trade facilities, the level of prices for goods in which is many times higher than the average prevailing level of prices for similar goods. In stores (boutiques) selling exclusive models of clothing or trendy shoes of prestigious foreign companies, prices are higher than in other stores, and goods are supplied to them in small batches, with constant updating of the assortment. Such objects are not connected to observation.

**Paragraph 3. Selection of goods (services) representatives**

19. Centrally selected consumer goods and services form the basis of regular purchases and purchases of services by the population. Their choice is made on the basis of household consumption expenditures. The international standard classification of individual consumption expenditure is the Classification of Individual Consumption by Purpose (hereinafter – CICP). The distribution of expenditure items (positions) of households into sections, groups, classes of goods (services) is carried out in accordance with the CICP within the hierarchical system and in accordance with the directions of their use by households.

20. On the basis of CICP, to detail the classes of goods and services, the Nomenclature of commodity items for CICP (hereinafter - NCICP) was developed, which has the status of a departmental classifier and which defines subclasses, types and subtypes up to 8 characters.

# The NCICP has the following levels of detail:

1. section - 1 level (2 characters);
2. group - 2 level (3 characters);
3. class – 3 level (4 characters);
4. subclass – 4 level (5 characters);
5. type of goods, services – 5 level (6 characters);
6. subtype of goods, services - 6 level (8 characters).

The main twelve sections of the NCICP include the following goods and services:

1) food and non-alcoholic drinks;

2) alcoholic beverages, tobacco products;

3) clothing and footwear. Includes fabrics, clothing, knitwear, all types of footwear for adults and children, haberdashery, as well as clothing care and shoe repair services;

4) housing services, water, electricity, gas and other fuels. Combines services paid by the population for the use of housing, cold and hot water, heating, gas, electricity, as well as apartment repair services and goods for it, the rent of the owner of the dwelling;

5) household items, household appliances and routine housing maintenance. Takes into account furniture, carpets, household appliances, dishes, detergents and cleaning products and others;

6) healthcare. Combines pharmaceuticals and medical services;

7) transport. Takes into account the purchase of own vehicles, fuels and lubricants, car maintenance services, public transport services;

8) communication. Includes postal, telephone, cellular communication services and communication equipment;

9) recreation and culture. Covers goods andservices related to cultural leisure, sports, games and other leisure activities;

10) education. Considerspre-school and primary, general secondary, vocational secondary and higher education. Includes education programs designed for adults;

11) restaurants and hotels. Includes accommodation services in hotels and the consumption of food, drinks in restaurants, cafes and canteens;

12) different goods and services. Combines goods and services that are not included in other groups (personal care, insurance, legal, financial, funeral services, and others).

The distribution of groups and classes of goods (services) by the main sections of the NCICP is given in Appendix 1 to this Methodology.

The structure of the code for the type of goods (services) in accordance with the NCICP is given in Appendix 2 to this Methodology.

21. When forming a basket of consumer goods and services, their relative importance for the consumption of the population, representativeness, and stable availability on sale are taken into account. For each type of goods and services, their specific varieties, goods (services) representatives are selected.

The choice of representative goods (services) is made taking into account the following criteria:

1) goods are regularly sold by basic objects in large volumes, are consumer goods and are purchased by all buyers;

2) the services are obligatory for payment or are permanently provided by the basic facilities;

3) changes in prices and tariffs for them are typical for the item of goods (services) they represent;

4) prices and tariffs for selected representative goods (services) are available for survey.

The observation includes domestic and imported goods.

In order to maintain the representativeness of the consumer basket, the selection of goods (services) is periodically updated. Expenditure items that have lost their relevance in household consumption are replaced by new ones that have appeared on the market and meet the selection criteria.

22. A specification is drawn up for each representative product (service). Distinguish between wide and narrow specifications.

Wide specificationis intended for a general description of goods (services) with a listing of their varieties and features without any restrictions for inclusion in the observation. Broad specifications provide an opportunity to include in the sample different types of goods (services) common in a particular locality and maintain interregional comparability.

In order to ensure representativeness and comparability, goods (services) included in price observation have broad specifications. For certain goods (services), certain restrictions are set on their main price-determining characteristics (volume, size, body type, memory capacity, and others). This narrows the range of goods (services) for selection and guarantees a decrease in price dispersion within the sample.

A narrow specification is a fairly accurate description of a product (service) and contains certain requirements for their attributes. They significantly limit the coverage of goods (services) for sampling and are used to monitor the prices of goods (services) with the same properties. Narrow specifications are compiled to clarify the features of the observed goods (services) that are typical for local markets.

23. Within the framework of the developed specifications, the most representative goods (services) are selected in the selected basic objects of the settlement and detailed characteristics are compiled for them.

A detailed characteristic is developed for the purpose of a more detailed description of the representative product (service). It contains the name of the product (service) and a description of all qualitative and technical attributes that distinguish it from other varieties (brand, model, type of material, composition of raw materials, manufacturer (country), grade, size, article and others). The method of selling the goods is also fixed, whether it is sold by weight or in packaging. In the course of subsequent surveys, this chosen option for selling the product is followed.

An additional purpose of a detailed description of the observed representative product (service) is to ensure the selection of a comparable replacement when it disappears and the possibility of registering prices in the temporary absence of a specialist who is assigned this product and the basic object of observation.

24. The real structure of purchases by the population of specific goods (services) in the objects of trade (services) with different conditions for their sale is reflected through the number of price quotations collected during registration.

At least 6 price quotations are registered for each representative product (service). The exception is regulated types of services and those in a competitive environment (housing and communal services, communications, transport, and others).

For observation, goods with a different range of price quotations are selected, which allow one to representatively determine the average price for a particular product (service).

When selecting for monitoring the prices of certain types of clothing and footwear, priority is given not to sharply fashionable goods, but to traditional models. They are price monitored over an extended period, with appropriate replacements made as needed to avoid price monitoring for obsolete models.

##### **Chapter 4 Registration of prices**

25. One of the most important principles of price recording is to maintain continuity and “clean” price changes. Tracking purely price changes provides that in both periods of comparison, the price is fixed for the same product (service) representative of the same quality, their implementation is carried out under the same conditions of sale and payment, in equivalent units of quantity.

The main principle of comparability of goods (services) is the absence of significant discrepancies between the features that determine their price. Prices (tariffs) for goods (services) are considered comparable in two periods (months) if they are registered for the same assortment type, have the same quality characteristics and are sold in selected basic objects.

26. Registration of prices is carried out directly at the places of sale of goods (rendering of services). Prices (tariffs) paid (acting) on the day of registration, including taxes, are observed. Any change in prices (tariffs) is fixed, in the prescribed manner, or its new level, caused by pricing factors and other reasons. When registering, the deviation in prices and tariffs due to a change in quality or quantity (volume of a standard unit) is not taken into account.

27. Prices for consumer goods are fixed by specialists by going around the basic objects and reading them from the label (price tag), if necessary, consultations are held with competent employees of the basic objects or a survey of sellers in the markets.

For paid services, registration of prices (tariffs) is carried out by bypassing the basic objects in which prices (tariffs) are fixed on the basis of posted price lists (hairdressing and beauty salon services, visiting a bathhouse, dry cleaning, etc.), or a survey of persons providing paid services is conducted ( shoe repair, household appliance repair, clothing fitting, key making, etc.).

For certain types of goods and paid services, prices (tariffs) are registered via the Internet (services of passenger rail and air transport, cellular communications, certain types of medical services, and others) or by telephone (fax). In cases where price information is received by phone, specialists periodically (once a quarter) visit base facilities in order to maintain personal contacts with their employees in order to avoid mistakes when choosing representative goods (services) when determining prices, and also to make sure that the specifications of the selected goods are comparable (service) representatives.

In organizations that are characterized by the establishment of prices (tariffs) for a long period of time (sanatoriums, medical and educational institutions, organizations providing funeral services, and others), official letters are sent with a request to provide information on prices (tariffs) for the services provided. Prices (tariffs) are fixed on the basis of the provided price lists. In order to control the reliability of the data, specialists visit base facilities at least once a quarter to confirm the received price information.

Tariffs for housing and communal services are registered on the basis of payment documents (receipts) issued to the population to pay for the relevant types of services. In cases of tariff changes, their new level is confirmed by orders of state bodies exercising leadership in the areas of natural monopolies and regulated markets, and organizations providing these types of services.

28. Registration of prices is carried out monthly according to a pre-compiled schedule. The main condition for registering the price for a certain type of product (service) in a specific base object is fixing the price for it on the same day of the month as in the previous period. Deviation is allowed no more than 1-2 days.

Tracking prices for the main types of goods (services) of daily demand (food, some types of clothing, personal hygiene products, services for which payment is mandatory, and others) is carried out several times during the month. Prices for durable goods are fixed once or twice a month. Their registration is distributed throughout the month.

For registration of prices for perishable products, the time in the first half of the day is selected. Few items remain in stock before the base facility closes, or prices are reduced to minimize rejection, and therefore prices are not considered representative.

29.Prices are not registered for:

1) goods contaminated, with manufacturing defects;

2) food products whose shelf life has already expired;

3) goods offered at "extreme" inflated prices at the beginning of the season, when the supply of goods is limited and it is not a commodity of mass demand;

4) goods sold at reduced prices due to the upcoming closure of the base facility, at the end of the season and for other reasons.

30. Discounts and sales are mainly applied to goods that are not fresh, have lost their presentation, are morally obsolete, out of fashion, damaged or defective, sold at liquidation sale prices. Prices for them are not taken into account for the following reasons:

1) when a new season begins, it is incorrect to compare the prices of goods newly put on sale with reduced prices of goods of the previous season. R ost prices in this case are unreasonably high;

2) trade at reduced prices is not a permanent and widespread phenomenon;

3) for goods sold at sale or discount prices, there are significant restrictions on sales volumes.

Prices for products that temporarily include some additional quantity of the product, as well as special promotions "buy 2 get 1 free" or a gift that comes with each product, are not subject to registration.

Prices for goods with discounts provided only to a limited group of consumers (for pensioners, students and others ) are not recorded.

##### **Chapter 5. Consumer segment**

31. The main task of consumer price statistics is to establish boundaries, the size of the population under study, the sampling frame and selection methods in relation to trade facilities, goods (services). If the sampling frame is too large, the sample size does not meet the predetermined requirement. In international practice price observations, consumer segments are selected as the sampling frame. This basis is considered to be of high quality and ensures the representative nature of the monitored prices, their sufficiency to comply with the requirements for the reliability of the index. Consumer segment means a set of operations related to the supply of goods (services) on the market, which, based on common properties:

1) are sold for consumer use;

2) are described by a general specification;

3) are considered by consumers as an equivalent.

32. The consumer segment is formed on the basis of consumer preferences, the relationship between the intensity of the purchase of a product with various properties and parameters of the product, specific requests for price, assortment, quality and place of sale.

The definition of the consumer segment is made using a set of characteristics that affect the pricing. Depending on the criteria underlying the sample, consumer segments are identified with a focus on low price, long service life, high quality, and loyalty to one or more brands. The consumer segment of the automotive market is subdivided into segments differentiated by brand, vehicle size, engine, and usage (small vehicles for city driving for short distances and family vehicles ). for long trips). The consumer segment of washing machines is identified by pricing characteristics such as brand, maximum load, automatic mode, loading method and spin speed.

33. The consumer segment is formed in relation to the product (service) and classified according to NCICP.

NCICP Customer Segment Hierarchy Diagram on the example of the product tea (level 4, subclass, 5 characters) is given in Appendix 3 to this Methodology.

When forming the sample, attention is paid to the presence of goods (services) of mass demand. In addition to importance, the shopping basket takes into account accessibility, representativeness, stable availability of goods (services), the number, types of outlets and their location, which causes the inclusion of representatives of all groups and thus levels out intergroup disproportions.

The formation of consumer segments involves precise sampling, designed to narrow the range of objects selected for price observation. The correct selection of goods (services) ensures the objectivity and validity of the characteristics, allows you to correctly distribute the units of the sample and take into account the real processes of substitution of goods, increases the accuracy of the survey results. Replacement of goods (services) is carried out within one consumer segment. The consumer segment is the starting point for building a price index, taking into account changes in the quality of goods (services).

#### Chapter 6. Replacement of basic objects and goods (services)

34. Replacement of basic objects is carried out when:

1) closing for a long period of time or liquidation of the base facility. Replacement is made for a similar object of the same profile, form of ownership, sales volumes;

2) the disappearance of the monitored product (service) in the base object and the inability to select a comparable variety in the same object. The replacement of a good (service) is carried out with a good (service) similar, as close as possible in terms of consumer properties in another base object.

For the timely replacement of basic objects, additional objects of trade and the sphere of paid services are selected, in which the range of goods, price levels and conditions of sale are identical to those included in the main observation.

35. Replacement of goods (services) is made if the goods are no longer available, are not sold in significant volumes or under normal trading conditions. Replacement is made within the first three months after the item has become unavailable. To ensure the continuity of the price series and its comparability, the following replacement methods are used.

For goods that do not enter the trade in the previous version:

1. instead of the disappeared assortment type of goods, a newly appeared product with the same consumer properties, but in a new design, is selected. The most popular variety among goods is selected, taken into account in the same elementary aggregate, which is directly compared with the missing type of goods;
2. the disappeared product (service) in the base facility is replaced by a similar one in another base facility with similar conditions of sale and one location;
3. a variety of goods is selected, the sale of which is expected in the future.

For temporarily disappeared and seasonal goods:

1. at constant prices or when they change insignificantly, the price of the last registration is used instead of the missing one;
2. using the price index for the class or group of goods (services) to which the missing item belongs, the "conditional" settlement price is determined. It is assumed that prices for temporarily disappeared and seasonal goods change in the same amounts as for those available in this class or group of goods (calculation methods are set out in subparagraphs 3), 4) of paragraph 42 of this Methodology).

A replacement product is defined as the successor to another that has either completely disappeared from the market or has lost market share or a particular base item. Substitution is also carried out when there is an increase in sales of another type of product belonging to the same group or meeting the same definition of representative products, even if the old variety is sold in significant quantities. If initially the product (service) is selected as the best selling one, then the condition for selecting a new product is observed during the replacement. This approach ensures the representativeness of the product.

The product is replaced with the most similar one when a product with the same consumer properties is selected. When carrying out such a replacement of goods, the problem of making adjustments for a change in quality is solved.

Each specific case of forced replacement requires individual analysis, generalization and decision making.

**Chapter 7. Accounting for seasonal goods**

36. Seasonal goods are goods that are not on the market during a certain time of the year or are available throughout the year, but are characterized by regular fluctuations in prices or quantities, coinciding with certain seasons of their production or seasons. Seasonal goods are conditionally divided into:

1) "strongly expressed". These are goods that are sold in one half of the year "during the season", that is, they disappear from the market at the same time every year and the period of their absence is predictable. These include certain types of clothing and footwear, fruits and vegetables, and others;

2) "weakly expressed". These are goods that are sold throughout the year, but their price fluctuates with the time of year. These include certain types of fruits and vegetables, fish and others.

37. When registering prices for “weakly expressed” seasonal goods, direct interventions and replacement methods are not required. There are difficulties in registering prices for “strongly pronounced” seasonal goods that are not available for sale during the off-season period.

In international practice, two main methods are used to solve this problem:

1) the method of "constant weights", when the weights of goods during all months remain unchanged;

2) the “variable weights” method, when the weights of goods change within a group of goods, while the weight of the group itself remains constant.

When applying the method of "constant weights", the prices of "strong" seasonal goods in the off-season period are calculated in two ways:

1) out of season estimate (counter-seasonal estimation). Price changes for out-of-season items are measured using price changes for in-season items that are in the same NCICP class or group. In winter, the price of an out-of-stock summer season item is calculated based on the price index of a winter season item selected from one NCICP class or group, or vice versa. This calculation method is used for certain types of clothing and footwear;

2) everything is seasonal assessment (all-seasonal estimation). Price changes for out-of-season items are measured using price changes for all commercially available items in the same NCICP class or group. During the winter period, the price of an out-of-stock item in the summer season is calculated based on the price indices of all available items in that period and in the same NCICP class or group, and vice versa. This calculation method is used for certain types of fruits and vegetables.

In both methods of calculation, the price of the missing “strongly pronounced” seasonal product in the first month of the off-season period is equal to the average price from the dynamic series of prices for this product registered in the seasonal period. Starting from the second month of the off-season period and until the product appears on the market, the missing price is calculated using the “imputation of the general average” or “imputation of the middle class” method (the methods are set out in subparagraphs 3), 4) of paragraph 42 of this Methodology).

The advantage of using the "constant weights" method is that it is consistent with the use of a fixed basket when calculating CPI, where the weight of the product remains constant throughout the year.

38. Prices for “highly pronounced” seasonal goods in the off-season are calculated on the basis of an out-of-season and all-season valuation using the “general average imputation” or “average imputation” method. Methods are applied when the prices of seasonal items that are not available during certain periods of the year change in proportion to the prices of similar or equivalent items of the corresponding NCICP class or group that are available in that period.

With the onset of a new season, in the absence of the product of the previous season, a replacement product is selected for it, which has the closest possible consumer characteristics. The price of the replaced item is compared with the last settlement price. If a new season item is judged to be incomparable, then a quality adjustment is applied.

##### **Chapter 8. Accounting for changes in the quality of goods (services)**

39. An important factor in determining the reliability of an index is the quality of price information. There are standard procedures in place to ensure that price recordings are of high quality. They cover the principles of net price change, organizational issues of data collection and control.

40. When replacing a commodity, the exact differences in the characteristics of the extinct and replaced species are determined in order to exclude from the registered price the effect of changes in quality and to estimate the net price change. If there are changes in quality, an adjustment is made to the price of the replacement product. Quality adjustments are made to correctly reflect price changes in the index. This requires knowledge of consumer market conditions, production technology and alternative data sources.

41. “Implicit” (implicit or indirect) and “explicit” (explicit or direct) methods are used to adjust prices for quality.

The choice of quality adjustment method depends on the ability to access information from external sources required for some quality assessment methods, the degree of cooperation with the staff of the base facilities, the adequacy of resources, the qualifications of the specialists who collect prices.

42. Implicit quality adjustment methods estimate the net price change component between old and replacement products based on price changes of similar products. Implicit quality adjustments are simple and do not require significant resources. These include:

1) "direct price comparison" methodIt is used to directly compare the price of a replacement product with the price of an absent one, provided that they are fully comparable in quality. Any changes in price are not affected by changes in quality.

The "direct price comparison" method is used to maintain the consistency of the quality of goods, if the replacement product is representative and in demand by the population. Applying the Direct Price Comparison Methodgiven in Appendix 4 to this Methodology;

2) the method of "combination" is used to adjust the basic price of the missing product to the price of a substitute for the previous period. A replacement by adjusting the base price of an out-of-stock item is made when the replacement item is not comparable to the out-of-stock item. The entire difference in price at a single point in time between the missing item and its replacement is due to the difference in quality. The application of the "matching" method is given in Annex 5 to this Methodology;

3) the method of "imputation of the general average" is based on the assessment of price changes for out-of-stock goods using the average price change for goods of one group. The resulting price change value is used to impute the price of the out-of-stock item. The net price difference between the missing item and its replacement is equal to the average price change of the remaining items. Calculation by the "imputation of the general average" method is given in Appendix 6 to this Methodology;

4) the method of "imputation of the average class" differs from the method of "imputation of the general average" in that the change in prices of equivalent goods is used to estimate changes in prices for missing goods. Calculation by the “imputation of the middle class” method is given in Appendix 7 to this Methodology;

5) the method of "carrying over the price to the next period *".* When calculating price changes, the price of the previous period is used, which is carried over to the next period. This method is used for temporarily out of stock goods when there is information about their future receipts.

43. Using "explicit" quality adjustment methods, the difference in quality between missing and replacement items is directly assessed and one of the prices is adjusted. These include:

1) the “expert adjustment” method is based on the assessment by several experts (commodity experts, trade organization managers, price recorders) of the value of any differences in quality between the missing and replacement product. This method is used when the use of other, alternative methods is impossible;

2) the "differences in production costs" method is based on manufacturers' information on the cost of production associated with new characteristics of replacement products (new models), to which retail mark-ups and related indirect taxes are then added. In practice, this approach is most applicable in markets with relatively few manufacturers and infrequent and predictable model updates. To use this method, you need to track the introductionnew technologies in production, thanks to which costs are reduced while improving product quality;

option cost " method adjusts the prices of substitute goods for the cost of new observable characteristics. This method is used in situations where the missing and replacement products have quantifiable characteristics that are valued in monetary terms based on market prices ( adding an accessory previously sold separately at a separate price to the package of a new car model );

4) the method of "hedonic regression" is used to estimate the price of a product as dependent on its characteristics. The ratio of prices and all relevant and observable characteristics that determine the price is assessed. The results obtained are used to assess the impact and changes of these characteristics on prices. This method requires the use of an extended dataset that includes the values of price-determining quality characteristics for each product.

The use of these "explicit" methods of quality adjustment requires a lot of resources and causes certain difficulties in quantifying the quality of goods.

The exception is the “quantity adjustment” method, which is applied to items that are different sizes from those previously available. Used when converting the price of the product in the actual packaging to the price per standard unit of measure. When registering prices in the month preceding the reporting month, buckwheat "Passim" weighing 1000 grams cost 350 tenge. In the reporting month, a price of 330 tenge was registered for a package of cereals by weight 800 грамм. To determine the change in prices, the price for a standard unit is first calculated (330 tenge / 800 grams × 1000 grams = 412.5 tenge). After that, a price index comparable in terms of units of measurement is found (412.5 tenge / 350 tenge × 100 = 117.9 percent).

##### **Chapter 9. Ensuring the quality and reliability of primary data**

44. The organization of price registration provides for measures to ensure the reliability of data and their quality, compliance with the requirements for price registration, carried out on a regular basis.

The collected data for the same product (service) in the reporting period are compared with the data of the previous period in order to find out the reasons for their change. It also checks the compliance of the trend of their change for similar types of goods (services) in other basic facilities and nearby retail outlets that are not selected for observation, but have these goods on sale.

45. The main ways to ensure the quality and reliability of registered prices are:

1) control visits to base facilities during the price registration procedure;

2) retrospective control, re-visiting the base object directly on the day of price registration or the next day. Retrospective control is carried out shortly after the initial price registration to avoid the problem of price changes.

During the checkout, the following is checked:

1) compliance of the registered price with the actual selling price;

2) the correct selection of assortment types of goods (services);

3) compliance of the consumer properties of the representative product (service) with the recorded characteristic for it in the survey toolkit;

4) the representativeness of the selected base site at the time of the visit.

Retrospective controls are carried out when an illogical separation of registered prices from the overall picture is revealed (when a certain type of product becomes cheaper in several basic objects, and its price rises in one, and vice versa). This event is also used to solve the following tasks:

1) assessing the level of competence of specialists who register prices;

2) compliance with the standard price registration procedure;

3) identifying areas in which price registration is associated with some difficulties.

46. During the control visit, the following shortcomings are revealed:

1) price difference. If the price differs from the previously registered one, it is clarified whether the price has changed since the time the prices were registered with the personnel of the base facility;

2) insufficiently complete description of the goods (services). Each product (service) is clearly defined in order to ensure easy identification of the product (service) during subsequent price registration;

3) wrong choice of goods (services) for price registration;

4) incorrect replacement of goods (services);

5) data entry errors.

47. The following methods are applied to eliminate errors and deviations of the registered data:

1) "manual check". The collected prices are checked manually by comparing them with previously registered prices for the same goods or with the prices of similar goods from other outlets;

2) "verification with the help of comparative tables." A table is compiled containing data on the percentage change in all prices received in this month compared to the previous month and since the beginning of the year. The values are then sorted and reviewed for extreme values that need to be checked and clarified as to the reasons for the significant change;

3) "maximum or minimum prices".A check is made to see if the value of the registered price of a good (service) is outside a certain range. The interval is set based on the maximum and minimum prices for a given product (service) in the previous month and is expanded using a standard scale factor that varies for different products. The coefficient is the change in prices for goods (services) in the reporting month. The definition of the maximum or minimum price is given in Appendix 8 to this Methodology;

4) "index variance reports". This method is used for goods (services) for which a significant change in prices was noted in the reporting month. For each of them, a list of goods (services)-representatives is compiled, indicating the relative price values (the ratio of the reporting price to the previous price). Based on the relative price values, their variance is calculated using the "VARI" function in the Excel format. The next step is to determine the positions for which the price ratios go beyond the boundaries of the intervals of the bulk of observations. The upper (lower) limit of the interval is equal to the sum (difference) of the relative price of the product and the standard deviation (the value of the square root of the dispersion). Once such price deviations have been identified, they are examined using the “price observation reports” method for that commodity. A report on the dispersion of the index is given in Appendix 9 to this Methodology;

5) "price observation reports". They consist of a set of data about the product for which it is concluded that further research is needed based on the “index variance report”. The list of information includes the reporting price of the goods, prices of recent past periods and the price of the previous period, as well as the location of retail facilities and types of stores;

6) "data filtering". Through data filtering, possible errors or outliers in prices are identified. To do this, the boundaries are pre-set ( 5 percent, 10 percent and others ) and it is determined whether the price changes for goods (services) that make up the elementary aggregate go beyond their limits. Over time, the values of the boundaries change depending on the number of detected errors and the magnitude of deviations.

In addition, regular meetings (planning meetings) are organized. The meetings discuss the procedure for organizing the working day of specialists involved in price registration, the methodological aspects of registration that require attention, the difficulties that arose during price registration and ways to solve them.

##### **Chapter 10 Index weights**

48. The weight components of CPI are determined on the basis of the structure of consumer spending of households and are uniform across the republic and regions. The share of each cost item in total consumer spending is its weight.

Household expenditure surveys are conducted on a sampling basis and there is a possibility of errors in the results due to inaccurate responses or non-response, as well as sampling errors. The weights of individual goods derived from household expenditures are adjusted using other sources. As additional information, data from the system of national accounts, the structure of retail trade turnover and the sphere of paid services, the production of certain types of products, and sample survey materials are used.

Weights for items of goods and services are calculated with five decimal places and for the group "Goods and services" are 1.00000.

49. The application of the weighting scheme makes it possible to obtain from many changes in prices (tariffs) for goods (services) the total change in prices (tariffs) in the consumer sector of the economy as a whole. The weighting scheme drawn up remains constant throughout the year and, accordingly, the generated CPI reflects only changes in prices and tariffs.

50. Items are updated when they are no longer typical, reducing their consumer value in household spending.

New types of goods and services that cannot be attributed to existing expenditure classes are connected to the observation during the period of replacing the weighting scheme at the beginning of the year. New models and ranges of existing products that belong to existing spending classes are included in the observation when their market share is estimated to be significant and sustainable.

The weighting scheme is updated regularly (at least once a year), using the most recent annual data on household expenditures.

51. When constructing the CPI, the condition must be met so that the base period of the weights corresponds to the base period of the price. This necessitates the adjustment of the average annual cost of household consumer spending for the base year to the December prices of the previous year. To do this, a correction factor is determined for each commodity item as the ratio of the price index for December of the previous year to the average price index for the year for which the weights are derived. The average price index is calculated as the arithmetic mean of the price indices of the months of the base year to December of the year preceding it.

The weight of each commodity item is multiplied by a correction factor, and by summing up the data obtained, the corrected weight for the Goods and Services group is found. When the weight is not equal to 1.00000, it is normalized (adjusted to 1.00000). To do this, the adjusted weight of each product (service) is divided by the adjusted weight for the Goods and Services group.

**Chapter 11 Calculating Price Indices and Average Prices**

52. CPI is calculated in two steps. At the first stage, the price indices of the elementary aggregate are calculated (hereinafter - individual price index), at the second stage, price indices of a higher level are calculated by aggregating individual price indices (hereinafter - aggregated price indices).

53. An individual price index reflects the change in prices of only one element of the population and is used to characterize an individual phenomenon.

The individual price index by type of goods (services) *j* is calculated on the basis of information about the price level or their change for
representative goods (services) that determine it. This is the only aggregate for which the index value is calculated without weights.

54. An individual price index is calculated for each commodity item for each region. To calculate individual price indices, the formula of a simple (unweighted) geometric average of individual price indices is used, which is equivalent to the ratio of unweighted geometric average prices(Jevons index):

 (1)

where,

 – individual price index by type of goods (services) *j;*

*i* – individual price indices;

*t, t -1* - reporting and previous comparison periods, respectively;

*p t, p t -1* - the price per unit of goods (services)-representative in the corresponding period;

*j* - type of goods (services), which combines several specific goods (services) representatives (from one to *n*);

*n*- the number of goods (services)-representatives that determine the type of goods (services).

The obtained individual price indices are the initial information for the construction of aggregated price indices.

55. Aggregate price indices for classes, groups, sections at the national level are calculated as weighted averages of individual price indices using the modified Laspeyres formula. According to it, in each period of time, changes in the prices of elementary aggregates are weighted through constant basic weights. The constancy of the basis weights ensures the purity of the price comparison and excludes the influence of structural shifts (change in quantity).

According to the modified Laspeyres formula, price changes are calculated based on successive price observations. In each time period, the basis weights are multiplied by the last value of the price index:



at  (2)

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.

Using the modified Laspeyres formula allows you to calculate indices with a high level of aggregation and has a number of advantages:

1) really shows a pure price comparison, since constant weights are used to calculate it, in contrast to the Paasche index, which is based on the weights of the current period and, accordingly, reflects not only price changes, but also quantities (volumes of consumption);

2) significantly speeds up the counting process, since the data of the previous period, available in advance, are used for weighting;

3) allows to take into account changes in the range of goods (services) caused by changes in consumer behavior during the year;

4) lends itself better to economic interpretation, since the influence of price and quantity can be traced separately.

These benefits are valid when the following requirements are met:

1) the weighing scheme does not remain unchanged for a long time;

2) fixed weights are distributed to the level of connected homogeneous groups of goods (services) for which they are calculated. Below this level, when the assortment is changed, representative goods (services) are replaced .

56. When changing the weighting scheme to create a continuous CPI series, the values of the index based on the new weighting scheme are linked to those calculated on the previous weighting scheme. The linking or chaining procedure is designed to ensure that the individual price indices at all levels correctly reflect the dynamics over the different years. The linking or linking procedure is carried out using a linking factor. It is defined as the ratio of the long-term price relative to December of the base year using the old weighting scheme to the long-term price relative calculated using the new weighting scheme. The long-term price relative reflects the change in prices of one element of the population in the reporting month compared to December of the base year.

The coupling coefficient is calculated only for group lines and remains unchanged for a year until the next replacement of the weighing scheme. Subsequent calculations of long-term price relatives according to the new weighting scheme are made taking into account the obtained coupling coefficient.

57. The calculation of price indices for each item, groups of goods (services) and for the region as a whole is carried out on the basis of individual price indices, long-term relative price and weights.

The calculation of the price relative for the reporting month to December of the base year and the previous month is given in Appendix 10 to this Methodology.

The calculation of the price relative for the reporting month to December of the previous year is given in Appendix 11 to this Methodology.

58. The republican price indices for each item, groups of goods (services) and in general for all goods (services) reflect the impact of price changes by regions. For aggregation of price indices to the republican level, the share of expenditures of households of each region in their volume in the republic is used.

The individual price index for individual commodity items in the republic is calculated using the formula:

(3)

where,

*Ij* – individual price index for goods (services) *j* in the republic;

*Ij1, Ij2,..., Ij16* – individual price index for goods (service) *j* by regions;

*Wo1,..., Wo16* - the share (share) of household expenditures in each region in their total volume in the republic.

The obtained individual price indices for individual commodity items in the republic are used to calculate price indices for groups and the entire set of goods (services).

59. The construction of price indices for the corresponding period of the previous year (month, period with a cumulative total) is carried out by the basic method, which provides for the "linking" (linking) of monthly price indices with each other to form a consistent dynamic series, having as a base a fixed reference point or a base 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:

** (4)

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:

(5)

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.

Price indices for the quarter, half year and nine months of the reporting year are calculated in a similar way to the corresponding period of the previous year.

Price indices for a 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 period:

(6)

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.

60. The average price - the generalized value of the prices of goods
(services) - representatives of a homogeneous commodity group. Average prices are calculated for a certain period of time, by territory, types of goods (services).

When calculating the average price, the formula for the geometric mean is used:

 (7)

where,

 – average price of goods (services) *j* in period *t;*

- the product of prices for goods (services) - representatives in the period *t;*

*n* - the number of registered prices.

When calculating the average price, the equality of the number of registered prices in the compared periods is taken into account.

If there is no information about the prices in the base object in the reporting period, the "imputed" price for the reporting period is determined.

It is calculated as the product of the price in the base period and the “ imputed” price relative of the reporting period:

 (8)

where,

*P j t* – “ imputed” price of goods (services) *j* in the reporting period *t;*

*I j* - " imputed" price relative of the reporting period, calculated for comparable types of goods (services) of the reporting period;

*P j t - 1* - the price of goods (services) *j* in the base period *t -1.*

If in the reporting period new basic objects are included in the survey and the number of prices has increased, then the “imputed” price for the base period is determined:

 (9)

where,

*P j t -1* – "imputed" price of goods (services) *j* in the base period
*t -1;*

*P j t* - the price of goods (services) *j* in the reporting period *t;*

*I j -* " implicitly calculated" price relative of the reporting period, calculated for comparable types of goods (services) of the reporting period.

61. The average price in the republic is determined by the weighted average formula:

 (10)

where,

– average price for goods (service) *j* in the republic;

*P jr* - the price of goods (service) *j* in region *r;*

*W r* - the weight of the region *r.*

Chapter 12 Derivative price indices

62. The price index for groups of the population with different levels of money income characterizes the change in prices for consumer goods, services for specific groups of the population with different levels of money income and consumption patterns.

The lowest and highest income groups are selected
from a decile distribution where each of the ten groups contains 10 percent of the total population, distributed as a ranked series as monetary incomes rise. The first group includes 10 percent of the population with the lowest monetary income, the tenth group - 10 percent of the population with the highest monetary income.

When constructing CPI for population groups, all existing standards for calculating CPI are observed. The index is calculated on the basis of uniform prices and tariffs for consumer goods and services registered for CPI, and the actual structure of purchases of the population with the lowest and highest incomes, obtained from household survey materials.

63. The retail price index (hereinafter - RPI) characterizes the change in retail prices for goods sold to the population in retail trade enterprises.

When calculating RPI for aggregation into classes and groups of goods, weight components are used, which are determined from the structure of retail turnover. For the weighting scheme, average annual data on the structure of retail trade turnover in the whole country are used. It is updated annually.

The construction of RPI is carried out in a single complex for calculating indices in the consumer sector of the economy. As price information, price registration data in the consumer sector of the economy, relative prices for the index components are used. The Laspeyres formula is used to calculate composite price indices.

64. The Core Consumer Price Index (hereinafter – BCPI) is a sub-index of consumer prices that reflects the long-term dynamics of price changes that are not affected by supply and demand shocks, seasonal, eventual and random factors, as well as administrative influence on pricing processes.

And the BCPI calculation is of great importance for the country's economy, it helps to reveal the nature of the inflationary processes taking place in the country, which are not affected by short-term and reversible price changes of the most volatile goods that have a strong price volatility over time.

The construction of BCPI is based on the methodology for the formation of CPI. The calculation of BCPI is carried out by two methods of direct exclusion from CPI:

1) individual components selected deliberately or purposefully, regardless of the actual inflationary manifestation in them at any time;

2) components, the prices of which during the period under review showed the greatest price changes at a certain point in time, regardless of their social importance and structural weight in the total population.

The initial basis for calculating BCPI using these methods are price quotations for all consumer goods and services formed within the framework of CPI. The weights of the items used correspond to the normalized basic weights of the CPI basket of goods and services, such that the sum of the remaining components included for the BCPI dimension equals one or 100 percent. The procedures for excluding certain types of goods and services depend in each case on the goals and objectives of building BCPI.

Chapter 13 Contribution of price changes of consumer basket components to CPI

65. An important task of consumer price statistics is to study the impact of changes in the prices of individual components of the consumer basket on higher levels, as well as to assess their contribution to the CPI. Registered changes in prices for individual items of goods (services) affect their movement in a class, group, section, which ultimately affects the CPI as a whole.

If a percentage shows the amount of change in the price of any product over a certain period, then the contribution is the amount of influence of this percentage change on the overall CPI value. By the value of the contribution, it is determined for which group of goods (services) the price movement had the greatest impact on CPI in a given period of time.

The contribution depends on the magnitude of the change in the price of the product (service) and the value of its weight in the structure of the CPI consumer basket. The greater the weight of the product and the change in its price, the more significantly it has its impact on the index for the product subgroup, which it directly includes, and then on the index for the group and on the CPI as a whole.

To calculate the contribution, individual and aggregated price relatives for each commodity item obtained during the construction of CPI and the weighting scheme prepared for the reporting year are used.

The contribution is calculated according to the formula:

*Vklad j = (I j × W j ) - W j* (11)

where,

*Vklad j* – contribution of the type of goods (services) *j;*

*j* - type of goods (services);

*I j* - individual index of the type of goods (services) *j;*

*W j* - the weight of goods (services) *j.*

Calculation sequence:

1) for each commodity item, the structural price relative is determined as the product of the price relative (price index) for the analyzed period by the corresponding weight in the weighing scheme;

2) the difference between the structural price relative and the weight is found. This difference is the contribution of the change in commodity item prices to the increase in prices for the group and CPI as a whole;

3) for group items, the contribution is found as the sum of deposits received for commodity items.

The calculation of the contribution of price changes for a separate group item is given in Appendix 12 to this Methodology.

Chapter 14. Dissemination of official statistical information

66. In accordance with the international Special Data Dissemination Standard developed by the International Monetary Fund, the CPI is published monthly according to predetermined release dates. Information is distributed simultaneously to all users in the form of a press release, express information, by posting them on the Bureau's Internet resource. More detailed information on price changes by groups, classes and types of goods (services) is published in statistical bulletins and collections.

To assist users, the publication of the price index is accompanied by brief methodological explanations.

67. In order to ensure public confidence in the index, the description of price registration procedures and the procedure for calculating the price index is published in the form of booklets, brochures and other publications and is available on the Bureau's website.

# Appendix 1

# to the Methodology for constructing the consumer price index

# Distribution of groups and classes of goods (services) by main sections of the Nomenclature of commodity items to the classifier of individual consumption by purpose

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Chapter | Name | Groups | Classes | Subclasses |
| 01 | Food and non-alcoholic drinks | 2 | 11 | 3 4 |
| 02 | Alcoholic drinks, tobacco products | 2 | 4 | 6 |
| 03 | Clothing and footwear | 2 | 6 | 1 3 |
| 04 | Housing services, water, electricity, gas and other fuels | 4 | 13 | 13 |
| 05 | Household items, home appliances and ongoing home maintenance | 6 | 1 2 | 18 |
| 06 | healthcare | 3 | 7 | 10 |
| 07 | Transport | 3 | 13 | 18 |
| 08 | Connection | 3 | 3 | 3 |
| 09 | Leisure and culture | 6 | 20 | 22 |
| 10 | Education | 5 | 5 | 5 |
| 11 | Restaurants and hotels | 2 | 3 | 3 |
| 12 | Miscellaneous goods and services | 5 | 11 | 16 |
|  | Total | 43 | 108 | 161 |

# Appendix 2

# to the Methodology for constructing the consumer price index

The structure of the code for the type of goods (services) in accordance with the Nomenclature of commodity items for the classifier of individual consumption by purpose

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| X |  | X |  | X |  | X |  | X |  | X |  | X |  | X |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |  |  |  |  |
| Sections |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |
| Groups |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |
| Classes |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |
| Subclasses |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
| Types of goods, services |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
| Subtype of goods, services |  |  |  |  |  |  |  |

01.1.1.21.02 - Wheat flour of the first grade

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 |  | 1 |  | 1 |  | 1 |  | 2 |  | 1 |  | 0 |  | 2 |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |  |  |  |
| Food and non-alcoholic drinks |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
| Food |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
| Bakery products and cereals |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
| Flour and other cereals |  |  |  |  |  |  |  |  |
| Flour |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |
| Wheat flour of the first grade |  |  |  |  |  |  |  |

# Appendix 3

# to the Methodology for constructing the consumer price index

Scheme of the hierarchy of the consumer segment of the Nomenclature of commodity items to the classifier of individual consumption by purpose on the example of the product tea (level 4, subclass, 5 characters)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Subclass of the Nomenclature of commodity items to the classifier of individual consumption by purpose Level 4 (01212 Tea) | => | Black tea 01212001 | => | consumer segment I *(leaf tea)* |
| consumer segment II *(granulated tea)* |
| … |
|   |  |   |
| Green tea 01212002 | => | consumer segment I *(leaf tea)* |
| consumer segment II *(granulated tea)* |
| … |

|  |  |  |  |
| --- | --- | --- | --- |
| Consumer segment I | => | *Pj = 1 Pj=2 Pj=3* | black leaf tea "Piala" |
| *Pj = 1 Pj=2 Pj=3* | black leaf tea "Rakhmet" |
|  |  | *…* |  |
| Consumer segment II | => | *Pj=1 Pj=2* | tea black granulated "Assam" |
| *Pj=1 Pj=2 Pj=3* | black granulated tea "Rakhmet" |

where, *p* - the price of varieties of representative goods;

*j* - a kind of representative product.

# Appendix 4

# to the Methodology for constructing the consumer price index

Applying the Direct Price Comparison Method

|  |  |  |  |
| --- | --- | --- | --- |
| Variety | Price of the previous month | Reporting month price | Price relative |
| Item A | 150 | 160 | 1.067 |
| Item B | 225 | 250 | 1.111 |
| Item C | 140 | - |  |
| Replacement item C |  | 180 | 1.286 |
| Elementary aggregate index (geometric mean) |  |  | 1.151 |

The price of the reporting month for item C is missing. A replacement product is selected, which has the same consumer properties and characteristics, at a price of 180 tenge. The price relative for product C is determined by the ratio of the price of the replacement product to the price of the missing product C : 180/140 = 1.286.

# Appendix 5

# to the Methodology for constructing the consumer price index

Application of the "combination" method

|  |  |  |  |
| --- | --- | --- | --- |
| Variety | Price of the previous month | Reporting month price | Price relative |
| Item A | 150 | 160 | 1.067 |
| Item B | 225 | 250 | 1.111 |
| Item C | 140 | - |  |
| Replacing item C with D | 160 | 180 | 1.125 |
| Elementary aggregate index (geometric mean) |  |  | 1.101 |

At the moment when both goods (C and D ) are available and there is information about the future disappearance of goods C, a replacement product is selected that is similar in quality, but with a characteristic that has differences (good D ). Prices for it are fixed for the previous month (160 tenge) and reporting (180 tenge). To do this, the prices for the replacement type of product D are observed for two to three months or obtained by asking sellers. When calculating the price relative for product D, instead of the value of 140 tenge for product C, the price for the replacement type of product D is taken as the price of the previous month - 160 tenge: 180/160 = 1.125.

# Appendix 6

# to the Methodology for constructing the consumer price index

Calculation by the method of "imputation of the general average"

|  |  |  |  |
| --- | --- | --- | --- |
| Variety | Price of the previous month | Reporting month price | Price relative |
| Item A | 150 | 160 | 1.067 |
| Item B | 225 | 250 | 1.111 |
| Item C | 145 | **-** |  |
| Replacement |  | 158 | Conditional price relative1.089 |
| Elementary aggregate index (geometric mean) |  |  | 1.089 |

The conditional price relative is calculated using the geometric mean of the price relative goods A and B : .

The price of the reporting month for the missing product C is found by multiplying the price of the previous month by the conditional relative price: 145×1.089 = 158 tenge.

# Appendix 7

# to the Methodology for constructing the consumer price index

Calculation by the method of "imputation of the middle class"

|  |  |  |  |
| --- | --- | --- | --- |
| Variety | Price of the previous month | Reporting month price | Price relative |
| Item A | 150 | 160 | 1.067 |
| Item B | 225 | 250 | 1.111 |
| Item C | 145 | - |  |
| Replacement |  | 161 | 1.111 |
| Elementary aggregate index (geometric mean) |  |  | 1.0 96 |

To determine the price of the missing product C, the most equivalent product is selected, this is product B with a price relative of 1.111. The price of the reporting month for the missing product C is calculated by multiplying the price of the previous month by the relative price of the equivalent product B : 145 × 1,111 = 161 tenge.

# Appendix 8

# to the Methodology for constructing the consumer price index

Determining the maximum or minimum price

Ultra-pasteurized milk, sterilized

| Product Detail | Price of the previous month | Reporting month price | Price relative | Belonging to the interval |
| --- | --- | --- | --- | --- |
| Ultra-pasteurized, tetrapack Moe 3.2% Kosmi Kostanai | 200 | 220 | 1.1000 | + |
| Ultra-pasteurized, tetrapacket Shadrinskoe 3.2% Russia | 170 (minimum price) | 172 | 1.0118 | **-** |
| Ultra-pasteurized tetrapack Odari 3.2% Kokshetau | 220 (maximum price) | 220 | 1.0000 | + |
| Ultra-pasteurized tetrapack Lactel 3.2% "Foodmaster" Almaty | 210 | 210 | 1.0000 | + |
| Ultra-pasteurized tetrapack Cow 3.2% Foodmaster Almaty | 210 | 225 | 1.0714 | - |
| Ultra-pasteurized Tetrapacket Ainalaiyn 3.2% Almaty | 200 | 200 | 1.0000 | + |
| Ultra-pasteurized tetrapack Moe 3.2% Kostanai | 195 | 195 | 1.0000 | + |
| Ultra-pasteurized tetrapack Mumunya 3.2% Almaty | 195 | 195 | 1.0000 | + |
| Scale factor(price relative of Ultra-pasteurized milk) |  |  | 1.0222 |  |
| Lower limit of the interval(minimum price × scale factor) |  |  | 173.78 |  |
| Upper limit of the interval(maximum price × scale factor) |  |  | 224.89 |  |
| *Result :**check the reporting price for Shadrinskoye and Korovye milk.* |

# Appendix 9

# to the Methodology for constructing the consumer price index

Index Variance Report

Ultra-pasteurized milk, sterilized

| Product Detail | Price of the previous month | Reporting month price | Price relative | Belonging to the interval |
| --- | --- | --- | --- | --- |
| Ultra-pasteurized, tetrapack Moe 3.2% Kosmi Kostanai | 200 | 220 | 1.1000 | **-** |
| Ultra-pasteurized, tetrapacket Shadrinskoe 3.2% Russia | 170 | 172 | 1.0118 | + |
| Ultra-pasteurized tetrapack Odari 3.2% Kokshetau | 220 | 220 | 1.0000 | + |
| Ultra-pasteurized tetrapack Lactel 3.2% "Foodmaster" Almaty | 210 | 210 | 1.0000 | + |
| Ultra-pasteurized tetrapack Cow 3.2% Foodmaster Almaty | 210 | 225 | 1.0714 | **-** |
| Ultrapasteurized Tetrapacket Ainalayyn 3.2% Almaty | 200 | 200 | 1.0000 | + |
| Ultra-pasteurized tetrapack Moe 3.2% Kostanai | 195 | 192 | 0.9846 | + |
| Ultra-pasteurized tetrapack Mumunya 3.2% Almaty | 195 | 195 | 1.0000 | + |
| Ultra-pasteurized milk |  |  | 1.0222 |  |
| Dispersion |  |  | 0.0016 |  |
| Lower limit of the interval*(price relative -* ) |  |  | 0.9825 |  |
| Upper limit of the interval*(price relative +* ) |  |  | 1.0619 |  |
| *Result :**check the reported price for Cow's and Moe's milk.* |

# Appendix 10

# to the Methodology for constructing the consumer price index

Calculation of the price relative for the reporting month

to December of the base year and the previous month

by region (locality)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Name of goods and product groups | Code | Weight | Price relative to December of the base year (for the previous month) | Price relative of the reporting month to | Structural price relative to December of the base year |
| previous month | December of the base year | reporting month | previous month |
| A | B | 1 | 2 | 3 | 4 | 5 | 6 |
| Flour | 01112100 | 0.01939 | 0.934528 | 0.999308 | 0.933881 | 0.01810796 | 0.01812050 |
| premium flour | 01112101 | 0.00713 | 0.947300 | 1.000500 | 0.947774 | 0.00675763 | 0.00675425 |
| flour of the first grade | 01112102 | 0.01226 | 0.927100 | 0.998600 | 0.925802 | 0.01135033 | 0.01136625 |

For a commodity item for a specific product (service), the relative price for the reporting month:

1) to the previous month (column 3) is determined by formula 1;

2) by December of the base year (column 4) is calculated as the product of the price relative to December of the base year for the previous month (column 2) and the price relative of the reporting month to the previous month (column 3).

For a commodity item for a specific product (service), the structural price relative to December of the base year:

1) the reporting month is found as the product of the weight (column 1), the price relative to December of the base year for the previous month (column 2) and the price relative of the reporting month to the previous month (column 3);

2) of the previous month is calculated as the product of the weight (column 1), the price relative to December of the base year for the previous month (column 2).

For a group of goods (services), relative prices are determined through the sums of structural price relatives for homogeneous goods (services) included in the group:

1) for the reporting month to the previous month (column 3) by dividing the sum of the structural price for the group for the reporting month to December of the base year (column 5) by the sum of the structural relative prices for the previous month to December of the base year (column 6)
;

2) for the reporting month by December of the base year (column 4) by dividing the sum of the structural price by group for the reporting month by December of the base year (column 5) by the weight of the group (column 1).

The price index is obtained by multiplying the price relative by 100.

# Appendix 11

# to the Methodology for constructing the consumer price index

Calculation of the price relative for the reporting month to December of the previous year

by region (locality)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name of goods and product groups | Code | Price relative December of the previous year to December of the base year | Price relative of the reporting month to December of the base year | Price relative of the reporting month to December of the previous year |
| A | B | 1 | 2 | 3=2:1 |
| Flour | 01112100 | 0.934528 | 0.933881 | 0.999308 |
| premium flour | 01112101 | 0.947300 | 0.947774 | 1.000500 |
| flour of the first grade | 01112102 | 0.927100 | 0.925802 | 0.998600 |

In the reporting year, column 1 shall contain data calculated in December of the previous year using the weighting scheme of the previous year (for group
lines, taking into account the coupling coefficient). The data in column 1 remain unchanged during the reporting year. Column 2 contains data from column 4 of the table given in Appendix 10 to this Methodology (for group lines - taking into account the coupling coefficient).

The price relative for the reporting month to December of the previous year (column 3)
for all lines is calculated by dividing the price relative of the reporting month to December of the base year (column 2) by the price relative of December of the previous year to December of the base year (column 1).

The price index is obtained by multiplying the price relative by 100.

# Appendix 12

# to the Methodology for constructing the consumer price index

Calculation of the contribution of price changes for a single group item

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Code | Name | Weight in CPI | Price relative | Structural price relative | Contribution to price growth |
| A | B | 1 | 2 | 3 = 1x2 | 4 = (3-1) × 100 |
| 1140000 | Dairy products and eggs | 0.04148 | 1.011822 | - | 0.051 |
| 1141000 | Dairy | 0.03455 | 1.009029 | 0.03486195 | 0.031 |
| 1142000 | Eggs | 0.00693 | 1.028803 | 0.00712960 | 0.020 |