

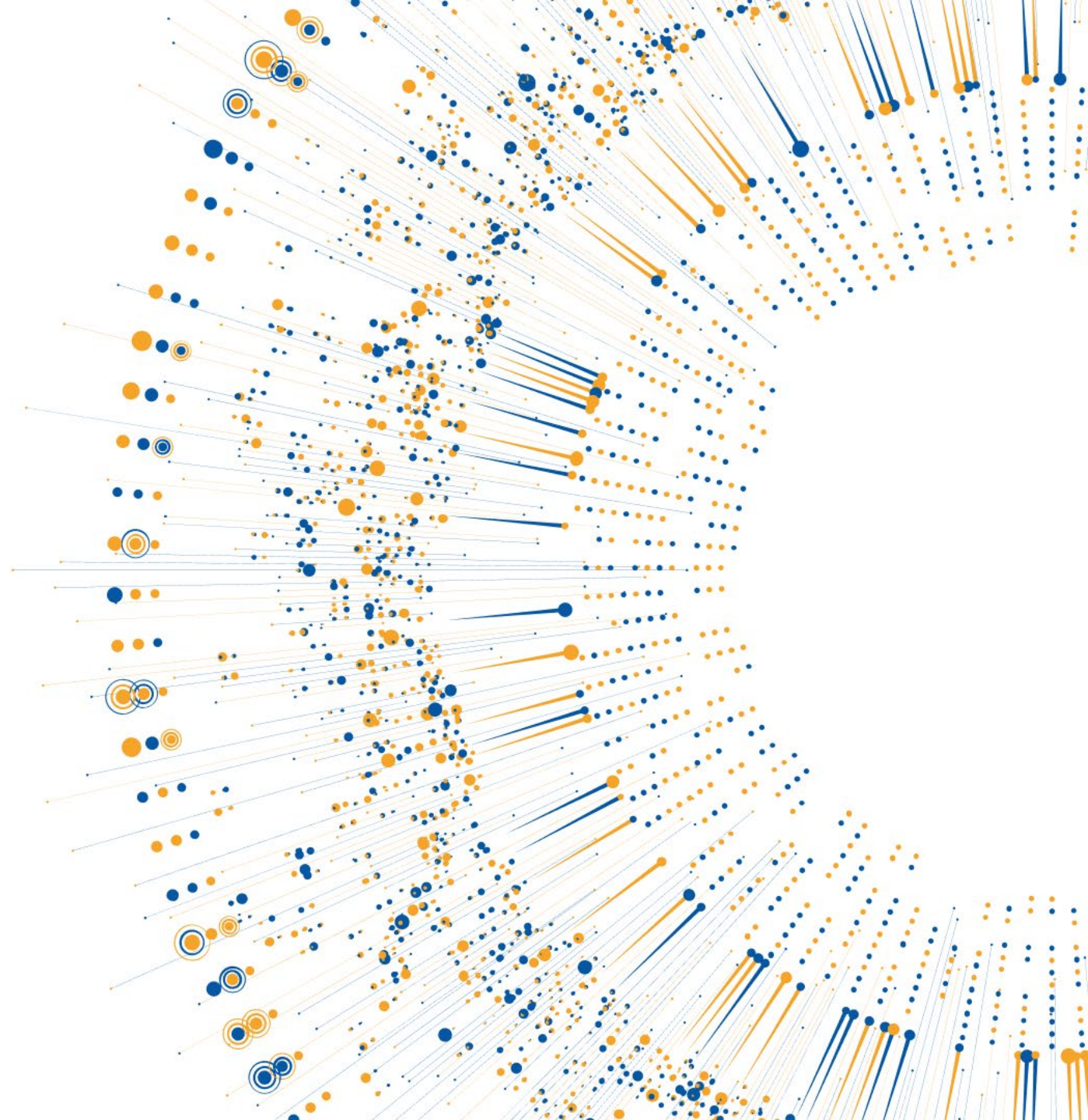


Agency for Strategic planning
and reforms of the
Republic of Kazakhstan
Bureau of National statistics

The use of cash register data in the formation of CPI

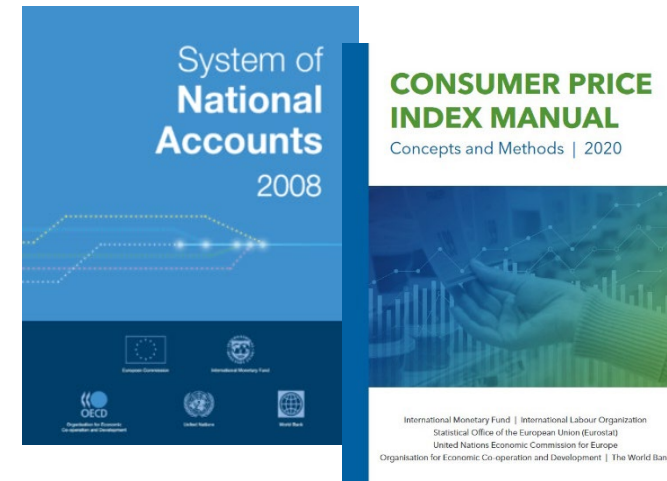
Meeting of the Group of Experts on Consumer Price Indices
7-9 June 2023
Geneva, Switzerland

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SNA 2008

**CPI manual:
theory and practice**



On the basis of the international standards are developed and work:

1. Methodology of CPI compilation.
2. Rules of registration of primary statistical data, except for the data submitted by respondents and households.
3. Methodology of prices observation on consumer goods and services.
4. Specifications of varieties goods (services) selected for price collection.

Geographical coverage – urban and rural settlements. Total 85.

The reference population – all households which incur expenses on country`s territory.



Capital: Astana

Area: 2,7 mln. sq. km.
(9-th in the world)

Population: ~ 19,8 mln.

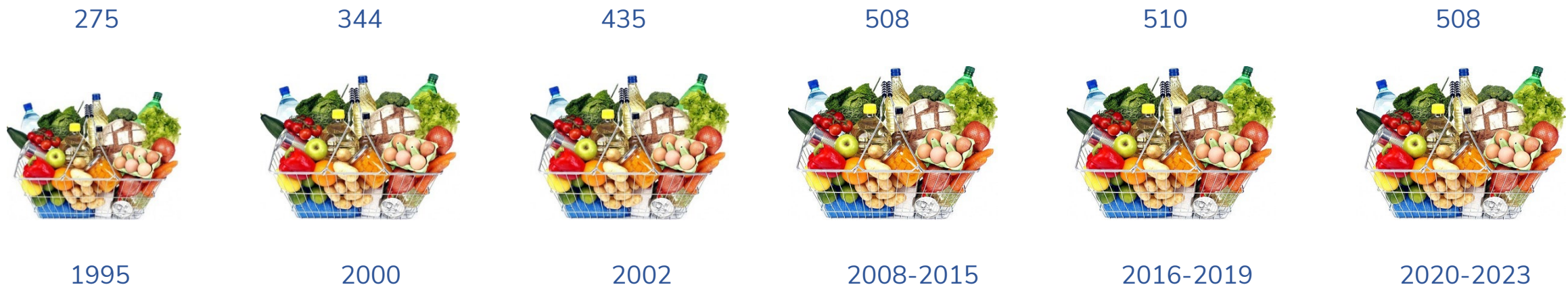
Currency: Kazakh tenge (KZT)

- ✓ Every month about 120 thousand price quotations for 508 goods and services collected all over the country.
- ✓ About 12 thousand outlets in the sample.
- ✓ 290 price collectors in the whole country.

The basket is composed centrally and is the same by composition for all regions of the country.

The distribution of goods and services into groups is made according to the Classification of Individual Consumption by Purpose (COICOP).

HISTORY OF THE COMPOSITION OF THE CPI BASKET



PRICE COLLECTION METHODS



Registration notebook



Mobile app



Fiscal receipt Data*



Data collection and processing

Paper collection and then upload to the system at the end of the day

Electronic collection and instant transmission of status and collected data

Already used **collected data** – unloading from the tax authority

Object coverage and data completeness

Sample survey objects on a specific day of the month/week

Full coverage on all days

Collection control

Supervisor and Bureau employees **manually analyze and monitor** process based on the entered data

Monitoring is carried out by the system (geo-tag, barcode, photo). The Bureau's employees track the status and represent operational analysis

Fiscal checks are monitored. Much **more features** for analysis

Publishing statistics on the site

Inflation (508 goods and services) – **monthly**
Socially significant food products (19 products) – **weekly**

The ability to calculate inflation **on any date**

*Use of fiscal receipts - **PRIORITY DIRECTIONS FOR FURTHER DEVELOPMENT**

IMPROVING THE STATISTICAL DATA COLLECTION PROCESS

In September of this year, a mobile application for price registration is being launched



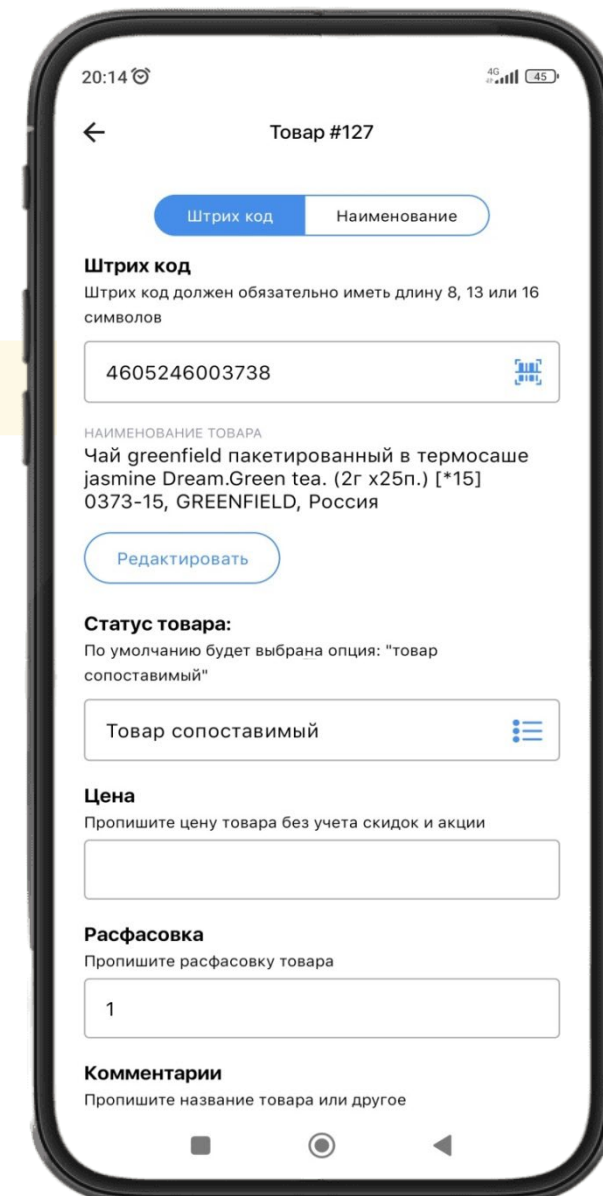
Instead of a paper-based price registration process, switch to digital collection through scanning **barcodes**, fixing the path and location of the price collector

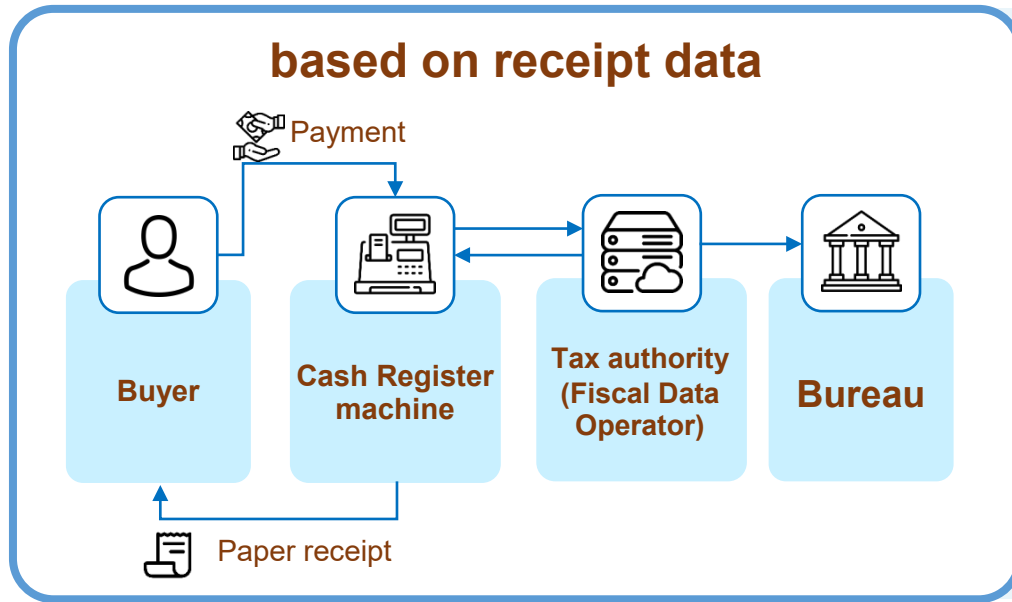
A mobile app data entry module has been developed

Modules for primary data storage and processing them are being developed

Advantages:

- improving the quality of primary data by minimizing input errors (ability to transmit product screenshots, error detection)
- online data transmission and faster data processing
- tracking the movement of price collection specialists, efficient planning of work by optimizing routes
- expanding your price analysis capabilities





The new approach will provide **efficiency** generating statistics and more **frequency response** rating, **reduce the** specialists (engaged in price collection), optimize **expenses**, **upgrade quality** data source



The IMF provides technical support for this project. Decision about **full transition** for tax authority data, the following will be accepted: **after confirmation of the model by the IMF and solving open questions**



Experimental calculation of inflation using combined data (alternative sources and data from the traditional price collection method):

- Processing of tax authority data using the hedonic method (*IMF technical assistance is needed*)
- Processing of combined data (*IMF technical assistance is needed*)

 Tax authority

 Bureau

 Consumer price index based on the analysis of the entire price range

Fiscal receipts

- 100 million records weekly average
- Of these, 10 million records by 53 product lines processed for further analysis



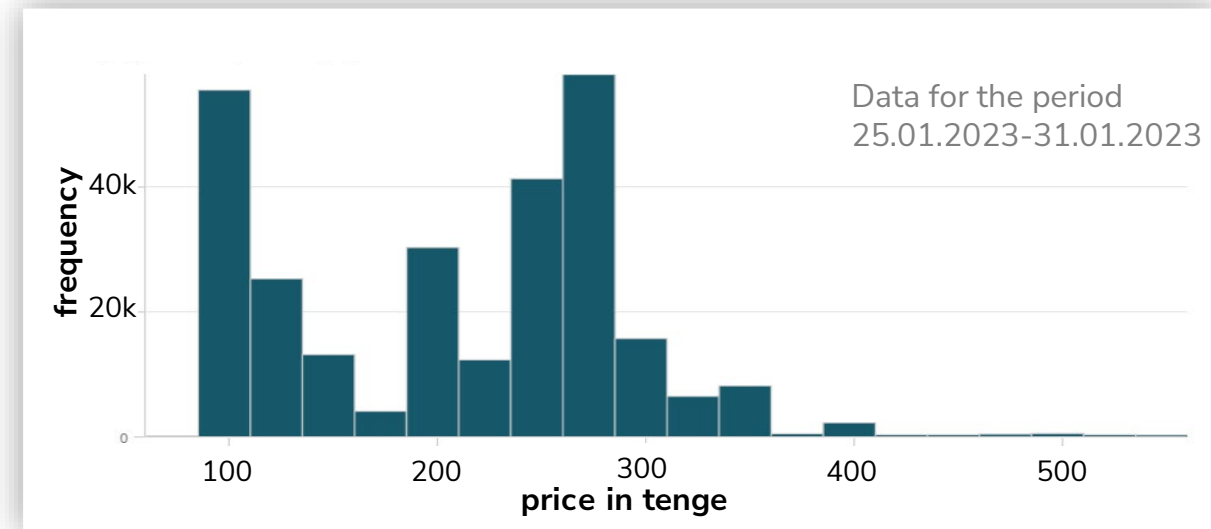
Machine learning model



- Methodological support The IMF



Distribution of onion prices according to tax authority data

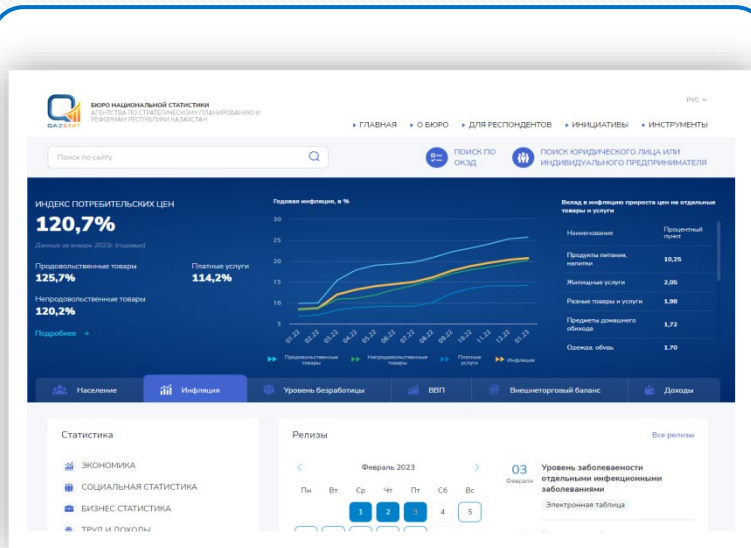


A full transition to the new approach will be made after validation models with The IMF



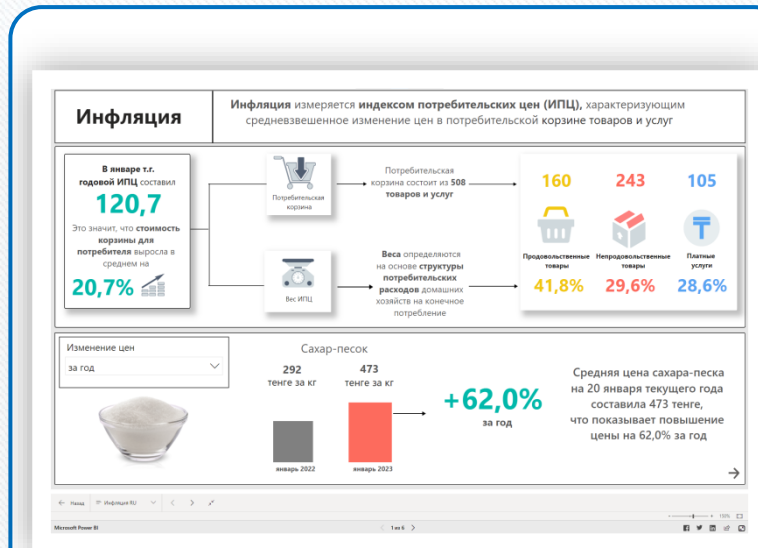
In the future, the project will allow conducting monitoring of inflation on a weekly basis and replace monitoring the prices of socially significant food products, which occupies a small share in the consumer basket

FORMATS FOR PROVIDING DATA ON INFLATION



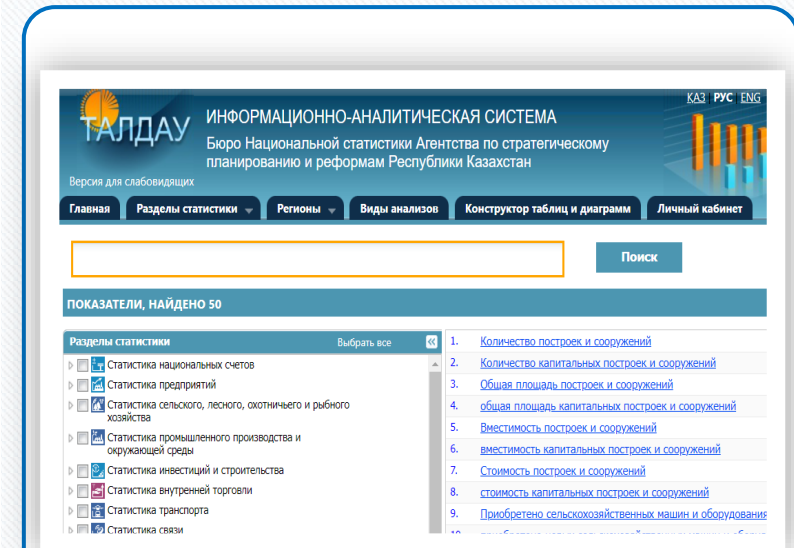
- **New website of the Bureau** with access to key indicators and a new publication format

stat.gov.kz



- **Interactive dashboards** on inflation on the new website

new.stat.gov.kz/ru/instruments/dashboards



- Information and analytical system **Taldau 2.0** to work with detailed data

taldau.stat.gov.kz

IMF mission 1995, 1997:

- The methodology of compiling the CPI meets most international standards and exceed them in the field of annual updates of the weights.

IMF, Report on the Observance of Standards and Codes, 2007:

- Concepts and definitions, as well as the basis for accounting for CPI indicators, meet international standards;
- To compile the CPI indicators are used the economically justified source data and statistical methods;
- Source data correspond to the definitions, coverage and classification, as well as the accounting time, reporting periods and methods for estimating the estimated CPI indicators;
- There are clear rules for including new source data, as soon as practicable;

Eurostat, Global Assessment of the Statistical System of the Republic of Kazakhstan, 2008:

- The CPI is calculated in accordance with international standards;
- The level of detail of the price of goods is sufficient for a detailed analysis of changes in the CPI;
- Weights are revised each year on the basis of a household income and expenditure survey. Such a system of adjusting the consumer basket provides a reflection in the CPI of changes in the structure of consumption.

Eurostat, Global Assessment of the Statistical System of the Republic of Kazakhstan, 2017:

- The CPI is calculated in accordance with international standards;
- There are historical dynamic series of consumer price and producer price indices since 1992;
- A number of improvements were made in the context of the KAZSTAT project with the support of international experts.

Eurostat, Global Assessment of the Statistical System of the Republic of Kazakhstan, 2023:

- The CPI is calculated in accordance with international standards;
- Significant progress since the previous Global Assessment.