



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

Quality report

*The price index for construction in the Republic of Kazakhstan for
2018*

Content

S.1 Contact details

S.2 Introduction - Relevance

S.3 Updating metadata

S.4 Presentation of statistical information

S.5 Unit of measurement

S.6 Reporting period

S.7 Legal basis

S.8 Confidentiality and data protection

S.9 Publication Policy

S.10 Frequency of propagation

S.11 Dissemination format, accessibility and clarity

S.12 Availability of Documentation

S.13 Quality management

S.14 Relevance

S.15 Accuracy and reliability (to be filled in according to the type of observation)

S.16 Timeliness and punctuality

S.17 Comparability

S.18 Consistency

S.19 Load

S.20 Revision of data

S.21 Processing of statistical data

S.22 Notes

S.1 Contact details

S.1.1 Organization

Bureau of national statistics of the Agency for strategic planning and reforms of the Republic of Kazakhstan

S.1.2 Structural subdivision

Department of price statistics

S.1.3 Имя контактного лица

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S.1.3.1 Name of the head of the responsible structural unit

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S.1.5 Contact person's mailing address

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S.2 Introduction-Relevance

Price statistics - a branch of economic statistics, studying the price behavior of the subjects in the various sectors of the economy by monitoring the level of prices and their changes through a system of price indices.

Indicators of price statistics are used to assess the state of the market economy, the impact of price changes on the standard of living of the population and business activity.

The purpose of constructing a price index in construction is to assess the change in the cost of material and technical resources required for construction production.

The price index in construction characterizes the change in prices for material and technical resources used at all stages of the technological cycle of construction production: construction and installation work, machinery and equipment, other work and costs.

To calculate it, data from national statistical observation of prices for materials, parts and structures purchased by construction organizations, statistical information on changes in producer prices and prices of import receipts, on changes in wages and other elements of construction production costs are used.

The construction price index has been formed since 1993.

The index of prices in construction is used in calculating the indices of the physical volume of indicators of construction activity; when calculating gross domestic product and other economic and analytical calculations; construction and design organizations to adjust the cost of a construction project due to changes in the cost of construction resources.

The prices of purchased building materials are used as a guideline for the price offer in tender documents, by government authorities, construction and design organizations to adjust the cost of a construction project due to changes in the cost of building resources.

The Bureau of national statistics of the Agency for strategic planning and reforms of the Republic of Kazakhstan holds meetings of working groups (focus groups), with the participation of potential users and respondents, representatives of interested government agencies, as well as NPP "Atameken", which analyze in detail indicators of national statistical forms for their relevance and avoidance of duplication with indicators of departmental statistical forms and forms of administrative data.

Feedback from users is carried out through the blog of the Minister of National Economy of the Republic of Kazakhstan on the website of the Ministry of National Economy of the Republic of Kazakhstan www.economy.gov.kz.

S.3 Updating metadata

S.3.1 Latest confirmation of updated metadata

November 2019

Last metadata placement

November 2019

S.3.3 Latest metadata update

November 2019

S.4 Presentation of statistical information

S.4.1 Description of data

The quality report is compiled for the monthly construction price index. It is calculated 12 times per year.

The price index in construction is calculated for the regions of the Republic of Kazakhstan; by elements of the technological structure (construction and installation work, machinery and equipment, other work and costs), by types of economic activities by comparison periods (reporting month to the previous month, December of the previous year, to base years, month and period of the reporting year to the corresponding months and periods of the previous year, the reporting quarter to the previous quarter, corresponding to the quarter of the previous year, to the estimated prices of 1991).

The aggregated price index in construction is determined taking into account the share (specific weight) of each element of the technological structure in the total investment in construction by the formula:

$$ISTR = ISMR \times qSMR + IMO \times qMO + IPRZ \times qPRZ,$$

Where:

ISTR - construction price index;

ISMR, IMO, IPRZ - respectively, price indices for construction and installation work, machinery and equipment, other work and costs;

qSMR, qMO, qPRZ - respectively, the shares of construction and installation works, machinery and equipment, other works and costs.

The specific weights of the elements of the technological structure of investments in construction are determined according to the data of the national statistical observation on investment activities for the year close to the reporting one.

The construction of the price index for construction and installation works as part of the price index in construction is carried out on the basis of resource-technological models (hereinafter - RTM).

The price index for construction and installation work is determined by the ratio of the cost estimate of the entire set of costs for their production in the reporting period to the previous period:

$$ISMR = (C_{Rec.B} + C_{Stoim.B})_t / (C_{Rec.B} + C_{Stoim.B})_{t-1},$$

Where:

ISMR - index of prices for construction and installation works;

$C_{Rec.B}$ - the cost of the resource block of construction and installation works;

$C_{Stoim.B}$ - the cost of the construction and installation works cost block.

The RTM for construction and installation works includes items of material costs and costs associated with the production of construction and installation work, its maintenance and management: building materials, products, structures, operation of construction machines and mechanisms, production services of third-party organizations, remuneration of workers employed directly on construction and installation works, the contractor's profit.

At the elementary level, an individual price index is calculated for the type of building material j based on information about the price level or their change for representative materials.

To calculate individual price indices, a simple (unweighted) geometric mean of individual price indices is used, which is equivalent to the ratio of unweighted geometric mean prices (Jevons index):

$$I_j = \frac{\sqrt[n]{\prod_{j=1}^n P_{jt}}}{\sqrt[n]{\prod_{j=1}^n P_{j,t-1}}} \quad \text{или} \quad I_j = \sqrt[n]{\frac{\prod_{j=1}^n P_{jt}}{\prod_{j=1}^n P_{j,t-1}}},$$

Where:

I_j - individual price index for the type of material j ;

P_t, P_{t-1} - the price of the representative material in the corresponding period;

i - individual price indices;

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

j - type of building material that combines several material-specific representatives (from one to n);

n - number of material-representatives, determining the type of construction material. An individual price index is calculated for each commodity item for each region.

The price index by classes (groups) of building materials by regions and the Republic of Kazakhstan is calculated by dividing the sums of the valuation of materials included in this class (group) in the compared periods:

$$I_m = \frac{\sum_1^n W_j \times P_{j_t}}{\sum_1^n W_j \times P_{j_{t-1}}},$$

Where:

I_m - price index for material group m ;

W_j - volume of the material j , included in the group of materials m ;

P_{j_t} , $P_j (t-1)$ - actual prices of material j included in material group m in the reporting and previous periods;

n - the number of kinds of materials in the group m .

The price index for machinery and equipment as part of the price index in construction characterizes the change in prices for technological and engineering equipment of objects purchased for construction production.

The price index for machinery and equipment is calculated by the formula:

$$I_{MO} = I_{Proiz} \times d_{Proiz} + I_{gruz} \times d_{gruz} + I_{NDS} \times d_{NDS},$$

Where:

I_{MO} - price index for machinery and equipment;

I_{Proiz} - producer price index, including imports, for machinery and equipment;

I_{gruz} - index of tariffs for the transportation of construction materials by road and rail;

I_{NDS} - change in the value added tax rate;

d_{Proiz} , d_{gruz} , d_{NDS} - the share, respectively, of producer prices, transportation costs, payments and taxes in the cost of the purchased equipment.

The construction of the price index for other works and costs as part of the price index in construction is carried out by taking into account price changes for the following main types of costs:

- 1) for design and survey work for construction;
- 2) for the preparation (development) of the construction site.
- 3) to carry out geodetic works;
- 4) costs associated with sending workers to perform construction, installation and special construction work and other additional costs.

To aggregate the price index for other works and costs, the geometric mean formula is used:

$$I_{PRZ} = \sqrt[n]{\prod_{j=1}^n i}$$

Where:

IPRZ - price index for other works and costs;

i - price indices for components of other works and costs;

n is the number of components included in other work and costs.

S.4.2 Classification system

When constructing a price index in construction, the following classifications are used:

OKED - "General classifier of types of economic activities",

SKPP - "Directory of industrial products (goods, services)",

SVMSP - "Directory of types of materials, parts and structures used in the construction industry, to monitor prices" (hereinafter - the List),

TNVED EAEU - "Commodity nomenclature of foreign economic activity of the Eurasian Economic Union", which are posted on the website of the Bureau of national statistics of the Agency for strategic planning and reforms of the Republic of Kazakhstan www.stat.gov.kz in the section Home / Classifiers.

S.4.3 Sectoral coverage

The surveyed segment of the economy according to the current General Classifier of Economic Activities is represented by Section F "Construction".

S.4.4 Statistical concepts and definitions

1) The construction of the price index in construction is carried out in accordance with the "Methodology for the construction of price indexes in construction", which is available on the website of the Bureau of national statistics of the Agency for strategic planning and reforms of the Republic of Kazakhstan www.stat.gov.kz in the section "Methodology" / "Price statistics", and on the website www.adilet.kz.

Monitoring the level of prices for building materials is carried out in accordance with the "Methodology for monitoring changes in prices for building materials, parts and structures purchased by building organizations", which is available on the website of the Bureau of national statistics of the Agency for strategic planning and reforms of the Republic of Kazakhstan www.stat.gov.kz in the "Methodology" / "Price Statistics" section, and on the website www.adilet.zan.kz.

The following definitions are used in the Methods for monitoring changes in prices for building materials, parts and structures purchased by construction organizations and for constructing price indices in construction:

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

- b) aggregation - combining low-level economic indicators into larger aggregates at all subsequent levels;
 - c) aggregate price index - a relative indicator that characterizes the change in prices for a separate subgroup, group or the studied phenomenon as a whole and is formed on the basis of individual (elementary) price indices;
 - d) individual (elementary) price index - the change in prices of one element of the studied population (specific goods, services);
 - e) price index in construction - a relative indicator characterizing the change in prices for material and technical resources used at all stages of construction production: construction and installation work, machinery and equipment, other work and costs.
- 2) National statistical observation of prices for purchased building materials, parts and structures is carried out on a sample of basic objects.
 - 3) To survey the prices of purchased building materials, parts and structures, a sampling method of observation (targeted sampling) is used.
 - 4) For the selection of basic objects, data from the national statistical observation on the volume of construction work performed for the current year and the year preceding the reporting year are used.
 - 5) Data collection toolkit - a statistical form of nationwide statistical observation "Report on prices for purchased building materials, parts and structures" (index 1-CSM, monthly frequency).
 - 6) The deadline for submission is monthly, up to the 20th day (inclusive) of the reporting period, in accordance with the Plan of statistical work, approved in accordance with the established legislative procedure of the Republic of Kazakhstan by the Order of the Minister of National Economy of the Republic of Kazakhstan.
 - 7) The statistical form is available on the website of the Bureau of national statistics of the Agency for strategic planning and reforms of the Republic of Kazakhstan www.stat.gov.kz in the section "For respondents" / "Statistical forms for 20__" / "Monthly forms" / "1-TsSM".

S.4.5 Statistical object

A statistical object in the field of construction is a business entity engaged in the creation of fixed assets for production and non-production purposes through the construction of new and (or) changes (expansion, modernization, technical re-equipment, reconstruction, restoration, overhaul) of existing objects (buildings, structures and their complexes, communications), installation (dismantling), related technological and engineering equipment.

The list of contractors is formed based on the most significant volumes of work performed. The sample includes construction organizations of all forms of ownership and organizational and legal forms.

At the end of 2018, the sample set of basic objects amounted to 622 enterprises, of which 38% are large and medium-sized enterprises.

In 2018, the number of price quotations for 2606 types of building materials was 10,084.

S.4.6 General population (principle of selection of survey units)

The general population is made up of general construction, specialized organizations that, in accordance with OKED, are classified as the type of economic activity "Construction".

The selection of basic objects takes into account the volume of contract work carried out by construction organizations on their own. Based on the statistical data of the report on the work (services) performed by construction organizations for the previous year, the indicator "cost of construction and installation work actually performed by the construction organization" is determined for the entire general population of construction organizations.

The list of large and medium-sized contractors is formed based on the most significant volumes of work performed.

Small contractors are included in the sample to a limited extent to take into account the types of construction materials for highly specialized work.

When selecting, the sample does not include individual entrepreneurs, which are characterized by their frequent turnover and the ongoing assortment shifts in the purchase of building materials and the specifications of representative goods.

Construction organizations are included in the sample at the place of actual implementation of construction production, regardless of the place of their legal registration. The branches and representative offices of a construction organization located outside the location of the head organization, carrying out construction activities in a significant amount in this territory, are taken into account.

The selection of building materials (representative goods) for registration of prices is made according to the List of types of materials, parts and structures used in construction production to monitor prices. The List contains the types of building materials most typical for the construction industry and representative throughout the republic.

S.4.7 Territorial coverage

All regions, cities of republican significance and the capital.

S.4.8 Time coverage

The price index in construction has been formed since 1993; there are time series from 1993 to the present.

S.4.9 Base period

The base period changes every five years.

In 2011-2015. the base period is December 2010.

in 2016-2020. - December 2015

in 2021-2025 - December 2020 etc.

S.5 Unit of measurement

Percent

S.6 Reporting period

S.7 Legal basis

S.7.1 Legal framework

1. Law of the Republic of Kazakhstan dated March 19, 2010 No. 257-IV "On state statistics".
2. Rules for the provision of primary statistical data by respondents, approved by order of the Chairman of the Agency of the Republic of Kazakhstan on statistics dated July 9, 2010 No. 173.
3. Rules for the submission of administrative data by administrative sources on a gratuitous basis, approved by the order of the Acting Chairman of the Agency of the Republic of Kazakhstan on statistics dated July 14, 2010 No. 183.
4. The plan of statistical work, approved in accordance with the established legislative procedure of the Republic of Kazakhstan by order of the Minister of National Economy of the Republic of Kazakhstan.
5. Schedule for the dissemination of official statistical information, approved by the order of the Chairman of the Bureau of national statistics of the Agency for strategic planning and reforms of the Republic of Kazakhstan.
6. Rules for the provision of statistical information on a gratuitous basis that is not provided for by the schedule for the dissemination of official statistical information and developed on the basis of primary statistical data submitted by respondents in accordance with the schedule for submitting primary statistical data by respondents, approved by order of the Chairman of the Agency of the Republic of Kazakhstan on Statistics of May 20, 2010 No. 113.
7. Rules for the provision and use for scientific purposes of databases in a de-identified form, approved by order of the Chairman of the Agency of the Republic of Kazakhstan on statistics dated July 2, 2010 No. 168. Registered with the Ministry of Justice of the Republic of Kazakhstan on August 13, 2010 No. 6388.
8. "Methodology for monitoring changes in prices for building materials, parts and structures purchased by construction organizations ", approved by the order of the Acting Chairman of the Bureau of national statistics of the Agency for strategic planning and reforms of the Republic of Kazakhstan dated December 30, 2015 No. 232 and registered with the Ministry of Justice of the Republic of Kazakhstan No. 12940. Available on the website Bureau of national statistics of the Agency for strategic planning and reforms of the Republic of Kazakhstan www.stat.gov.kz in the section "Methodology" / "Price statistics", and on the website www.adilet.kz.

9. "Methodology for constructing price indices in construction", approved by the order of the Chairman of the Bureau of national statistics of the Agency for strategic planning and reforms of the Republic of Kazakhstan dated December 14, 2016 No. 315 and registered with the Ministry of Justice of the Republic of Kazakhstan No. 14694. Available on the website Bureau of national statistics of the Agency for strategic planning and reforms of the Republic of Kazakhstan www.stat.gov.kz in the section "Methodology" / "Price statistics", and on the website www.adilet.kz.

S.8 Privacy and data protection

S.8.1 Privacy Policy

1. Article 8 of the Law of the Republic of Kazakhstan dated March 19, 2010 "On State Statistics", in accordance with which a guarantee of confidentiality and protection of the submitted data by respondents is ensured.
2. Article 28 of the Entrepreneurial Code of the Republic of Kazakhstan dated October 29, 2015 ensures the protection of information constituting a commercial secret.
3. Information security policy (hereinafter referred to as the Policy) approved by the Order of the Chairman of the Bureau of national statistics of the Agency for strategic planning and reforms of the Republic of Kazakhstan dated October 31, 2016 No. 252 defines the goals, objectives, guidelines and practical techniques in the field of ensuring information security of the Committee. The main goal of the Policy is to ensure the availability of official statistical information, confidentiality of information stored and processed on the computer equipment of the Committee under the conditions of its integrity and authenticity.

S.8.2 Privacy - data handling

Rules for the provision and use for scientific purposes of databases in a de-identified form, approved by the order of the Chairman of the Agency of the Republic of Kazakhstan on statistics dated July 2, 2010 No. 168. Registered with the Ministry of Justice of the Republic of Kazakhstan on August 13, 2010 No. 6388.

S.9 Publication policy

S.9.1 Publications calendar

Clause 1, Clause 2 of Article 26 of the Law of the Republic of Kazakhstan "On State Statistics" dated March 19, 2010 No. 257.

The schedule for the dissemination of official statistical information is posted on the website of the Bureau of national statistics of the Agency for strategic planning and reforms of the Republic of Kazakhstan www.stat.gov.kz in the section "Home" // "Basic documents".

S.9.2 Access to the Graph

Clause 1, Clause 2 of Article 26 of the Law of the Republic of Kazakhstan "On State Statistics" dated March 19, 2010 No. 257.

The schedule for the dissemination of official statistical information is posted on the website of the Bureau of national statistics of the Agency for strategic planning and reforms of the Republic of Kazakhstan www.stat.gov.kz in the "Home" section //

S.9.3 User access

Official statistical information is subject to dissemination in accordance with the schedule for the dissemination of official statistical information in the volumes stipulated by the statistical work plan.

State statistics bodies provide users with equal rights to simultaneous access to high-quality official statistical information and statistical methodology by posting them on the Internet resources of state statistics bodies (Website Bureau of national statistics of the Agency for strategic planning and reforms of the Republic of Kazakhstan www.stat.gov.kz).

S.10 Propagation frequency

month

S.11 Dissemination format, accessibility and clarity

S.11.1 News publications

Once a quarter, on the 8th of the month following the quarterly, a press release "On price changes in construction" is published, which contains brief data on price changes for the month compared to the previous month, December of the previous year, the corresponding month and period of the previous year, December of the base year, the previous quarter, and the corresponding quarter of the previous year.

S.11.2 Publications

- 1) Express information "On changes in prices in construction production in the Republic of Kazakhstan" contains data on price indices in construction, for construction materials in the republic and in the context of regions in the reporting period compared to the previous month, December of the previous year, to the base year, the corresponding month and period of the previous year. 12 monthly and 1 annual express information are published throughout the year. Published monthly on the website of the Bureau of national statistics of the Agency for strategic planning and reforms of the Republic of Kazakhstan www.stat.gov.kz in the section Official statistics / By industries / Price statistics / Express information.
- 2) The statistical bulletin "Prices and price indices in construction in the Republic of Kazakhstan" contains data on price indices in construction, price levels by types of building materials and price indices by groups of building materials in the republic and by regions in the reporting period compared to the previous month, December of the previous year, to the base year, the corresponding month and period of the previous year, in the reporting quarter to the previous quarter, corresponding to the quarter of the previous year, to the estimated prices of 1991. During the year 12 bulletins are published: "Prices and price indices in construction in the Republic of Kazakhstan".
Published monthly on the website of the Bureau of national statistics of the Agency for strategic planning and reforms of the Republic of Kazakhstan www.stat.gov.kz in the section Official statistics / By industries / Price statistics / Bulletins.

3) Annual statistical collection "Prices in construction and for services of the production sector in the Republic of Kazakhstan" - contains annual data on the level and changes in prices in dynamics (monthly, quarterly) by types, groups as a whole for the republic and regions on the Bureau of national statistics website of the Agency for strategic planning and reforms of the Republic of Kazakhstan www.stat.gov.kz.

Published annually on the website of the Bureau of national statistics of the Agency for strategic planning and reforms of the Republic of Kazakhstan www.stat.gov.kz in the section Official statistics / By industries / Price statistics / Publications.

4) Dynamic tables of price indices in construction by elements of the technological structure, by building materials for the month by comparison periods (reporting month to the previous month, December of the previous year, to the base year; month and period of the reporting year to the corresponding months and periods of the previous year; the reporting quarter to the previous quarter corresponding to the quarter of the previous year) are posted in the Taldau information and analytical system on the Bureau of national statistics of the Agency for strategic planning and reforms of the Republic of Kazakhstan <https://taldau.stat.gov.kz>.

S.11.3 Databases in on-line mode

IAS "Taldau"

S.11.3.1 AC1. Data tables-consultation

Not implemented

S.11.4 Access to microdata

Rules for the provision and use for scientific purposes of databases in a de-identified form, approved by the order of the Chairman of the Agency of the Republic of Kazakhstan on statistics dated July 2, 2010 No. 168. registered in the Ministry of Justice of the Republic of Kazakhstan on August 13, 2010 No. 6388.

S.11.5 Other

Not

S.11.5.1 AC2. Metadata consultation

Not implemented

S.12 Availability of Documentation

S.12.1 Methodology documentation

1) "Methodology for monitoring changes in prices for building materials, parts and structures purchased by construction organizations", approved by the order of the Acting Chairman of the Bureau of national statistics of the Agency for strategic planning and reforms of the Republic of Kazakhstan dated December 30, 2015 No. 232 and registered with the Ministry of Justice of the Republic of Kazakhstan No. 12940. Available at the Bureau of national statistics of the Agency for strategic planning and reforms of the Republic of Kazakhstan www.stat.gov.kz in the section "Methodology" / "Price statistics", and on the website www.adilet.kz.

2) "Methodology for constructing price indices in construction", approved by the order of the Chairman of the Bureau of national statistics of the Agency for strategic planning and reforms of the Republic of Kazakhstan dated December 14, 2016 No. 315 and registered with the Ministry of Justice of the Republic of Kazakhstan No. 14694. Available on the website Bureau of national statistics of the Agency for strategic planning and reforms of the Republic of Kazakhstan www.stat.gov.kz in the section "Methodology" / "Price statistics", and on the website www.adilet.kz.

S.12.2 Quality documentation

1. Policy in the field of quality, approved by the order of the Chairman of the Bureau of national statistics of the Agency for strategic planning and reforms of the Republic of Kazakhstan dated April 23, 2015 No. 67.
2. Objectives in the field of quality Bureau of national statistics of the Agency for strategic planning and reforms of the Republic of Kazakhstan, Objectives in the field of quality of the relevant structural unit.
3. Documented information of the quality management system: Quality manual; Documented procedures; Instructions; Process maps.
4. Standard methodology for describing the process of production of statistical information by state bodies, approved by the Order of the Chairman of the Bureau of national statistics of the Agency for strategic planning and reforms of the Republic of Kazakhstan dated March 30, 2015 No. 53.
5. Methodology for assessing the quality of official statistical information, approved by the Order of the Chairman of the Bureau of national statistics of the Agency for strategic planning and reforms of the Republic of Kazakhstan dated May 23, 2018 No. 63.

S.13 Quality management

S.13.1 Quality assurance

The quality and reliability of price statistics data is supported by generally accepted procedures:

- observance of the basic principles of primary accounting;
- use of standard statistical classifications of goods, products, services;
- at the stages of collection and processing of primary data, all control schemes (format-logical, arithmetic) have been developed and implemented;
- to confirm the reliability of primary data, the possibility of obtaining additional information from respondents is legally enshrined;
- rotation of sample sets of lists of goods, products, services and basic objects selected for price observation;
- annual revision of weighing systems;
- application of uniform formulas for calculating price indices at all levels of aggregation.

S.13.2 Quality control

"Methodology for monitoring changes in prices for building materials, parts and structures purchased by construction organizations" and "Methodology for constructing price indices in construction" were developed taking into account the principles and recommendations of the "Manual on the producer price index: theory and practice" prepared by the International Labor Organization , The International Monetary Fund, the Organization for Economic Cooperation and Development, the Statistical Office of the European Communities, the United Nations Economic Commission for Europe and the World Bank.

S.14 Tgrxcpeg

S.14.1 Wugt'pggf u

Vj g" r tleg" kpf gz "kp" eqputwevkqp" o ggwu" vj g" pggf u" qh" c" y kf g" t cpi g" qh" wugtu. "kpvtgpcn" *ugevqtcn' f kxkukqpu" qh" ucwvukcu+ "gzvgtpcn" *i qxgtpo gpv' ci gpekgu. "geqpqo kuw. "go r m{ ggu" qh" i qxgtlpi " dqf lgu" cpf " hpcpekn" cpf " geqpqo le" ugtxlegu" qh" gpvtr tkugu. " qti cpk cvkqpu. " uelgpv hke. " gpvtgr tgpwtkn'cpf "dcpm'go r m{ ggu. "hcewv. "uwf gpw. "o cuu"o gf k-0

S.14.2 User satisfaction

An annual survey of users of official statistical information is carried out according to the questionnaire Q-002 "Survey of users".

S.14.3 Completeness / R1. Data completeness-share

The index of prices in construction covers 33.4% of the volume of completed construction work in the republic. 10,084 price quotations participated in the observation. All this ensures the quality of the calculated price index.

S.15 Accuracy and reliability (filled in according to the type of observation)

S.15.1 Overall accuracy

The analysis of the accuracy and reliability of data on average prices for building materials purchased by construction organizations for construction production over the past six years was carried out using the coefficient of variation. Coefficient of variation is a measure of the relative spread of a random variable. It shows what proportion is the average spread of a random variable from the average value of this quantity. The greater the value of the standard deviation, the relatively large scatter and less evenness of the investigated values.

The coefficient of variation is calculated by the formula: $C_V = \frac{SD}{\bar{X}} * 100\%$,

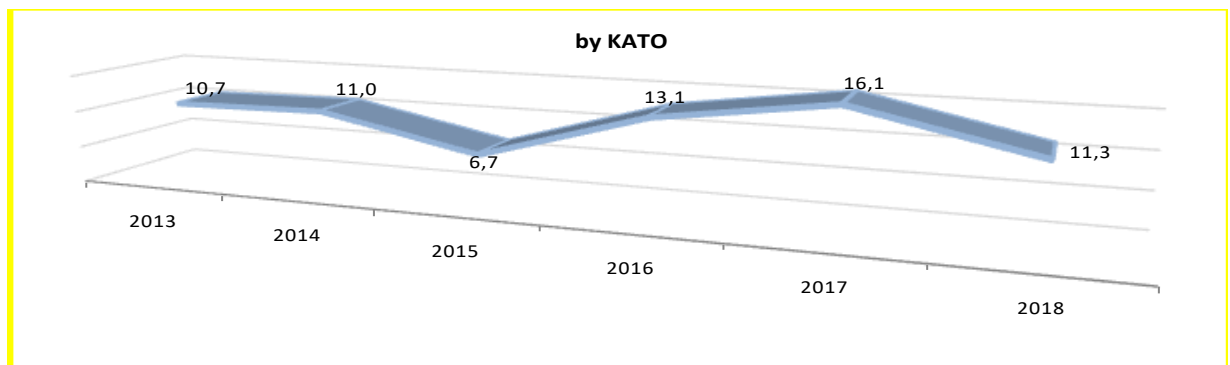
where SD - standard deviation;

\bar{X} – average value.

The standard deviation is calculated by the formula: $SD = \sqrt{\frac{\sum_{i=1}^n (X_i - \bar{X})^2}{n-1}}$.

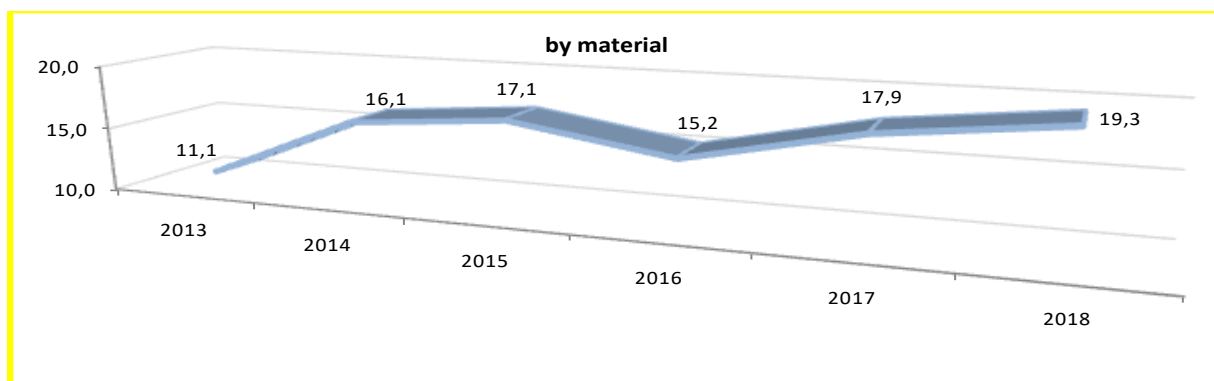
Coefficient of variation of average prices for Portland cement grade M400 in the Republic of Kazakhstan in the context of regions

in percents



Coefficient of variation of average prices for Portland cement grade M400 in the city of Almaty

in percents



As shown by the analysis of average prices in December 2013-2018, in the Republic of Kazakhstan for Portland cement grade M400 in the context of regions, studied data in 2013-2015, and 2018 were quite homogeneous, a small price range was observed in 2016-2017. To analyze the average price for Portland cement itself in the context of respondents, data from the city of Almaty were selected, which showed the average value of the variability of the variation series, which can be seen in the second graph.

The spread of prices both between regions and between enterprises is associated with such factors as import of material, change of supplier, transportation costs.

In general, the analysis of average prices showed their reliability.

S.15.2 Sample errors - indicators / A1.

Cannot be estimated due to targeted sampling.

S.15.3 Non-sampling error

Errors not related to sampling are not calculated, since the absence of an answer corresponds to the absence of an acquisition by the enterprise.

S.15.3.1 Coverage error

Cannot be estimated due to targeted sampling.

S.15.3.1.1 A2.Excess coverage-share

Cannot be estimated due to targeted sampling.

S.15.3.1.2 A3.Common Units-Ratio

Cannot be assessed due to targeted sampling

S.15.3.3 Non-response errors

S.15.3.3.1 A4.Absence unit-share

Methods for replacing missing prices for building materials are applied in accordance with the Methodology for monitoring changes in prices for building materials, parts and structures purchased by building organizations. The missing response rate is not calculated.

S.15.3.3.2 A5.No answer item - share

The calculation is not carried out.

S.16 Timeliness and punctuality

S.16.1 Timeliness

S.16.1.1 TP1 Waiting period - first results

The time spent on processing the first results, from the time the respondents provided to the first publication of the price index in construction, is 15 days.

The first results are published on the 5th of the month after the reporting period and are final. The release dates were approved and published in the Statistical Work Plan and the Schedule for the Dissemination of Official Statistical Information.

S.16.1.2 TP2.Waiting Period - Latest Results

First results are final.

S.16.2 Punctuality

S.16.2.1 Punctuality / TP3

The data are published and disseminated in accordance with the Schedule for Dissemination of Official Statistical Information, approved annually by order of the Chairman of the Bureau of national statistics of the Agency for strategic planning and reforms of the Republic of Kazakhstan. The terms of publication are set in the Plan of statistical work, approved annually by order of the Chairman of the Bureau of national statistics of the Agency for strategic planning and reforms of the Republic of Kazakhstan and registered with the Ministry of Justice of the Republic of Kazakhstan.

Actual and planned dates coincide, there was no disruption to the publication dates for 2018. Release of publications is postponed to the next business day if the publication falls on weekends or holidays.

S.17 Comparability

S.17.1 Geographic comparability

Within the territories of the Republic of Kazakhstan.

S.17.1.1 Asymmetry in mirror flow statistics-coefficient / CC1

Not

S.17.2 Comparable time series duration / CC2

The dynamic range of the price index in construction has been comparable and continuous since 1993.

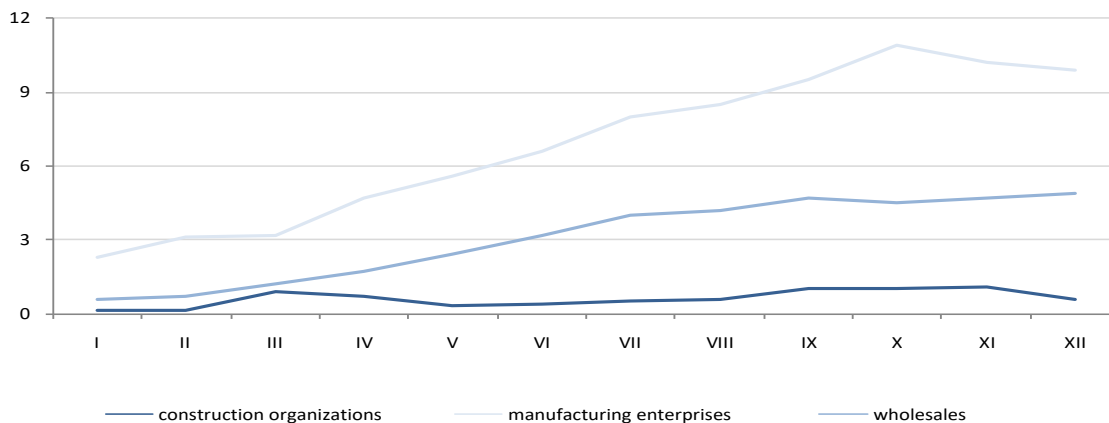
S.18 Consistency

S.18.1 External consistency, cross

The main approaches of the methodology for constructing the price index in construction have been agreed and developed taking into account the principles and recommendations of the "Guidelines on the Producer Price Index: Theory and Practice" prepared by the International Labor Organization, the International Monetary Fund, the Organization for Economic Cooperation and Development, the Statistical Office of the European Communities, the European Economic the United Nations Commission and the World Bank.

S.18.2 Internal consistency

Changes in prices for purchased building materials, parts and structures are consistent with changes in producer and wholesale prices for building materials. The trend of change in the price index for construction materials purchased by construction organizations for construction production and price indices for construction materials of industrial manufacturers and wholesales for 2018:



S.19 Load

The collection of prices is carried out in electronic form and on paper at the request of the respondent.

Data collection is carried out online, in which automated arithmetic and logical controls are provided for the respondent, excluding the possibility of typical input errors.

At the end of 2018, the number of respondents was 622, of which more than 90% report online.

Information processing processes are automated using local software systems, control of input and output information, procedures for imputing missing data are provided.

There is no duplication with other examinations.

No administrative data or other sources are used.

When forming individual elements of the index, the indices of prices of manufacturers of industrial products, imports, consumer prices, wholesales, cargo transportation, and the index of wages are used.

S.20 Revision of data

S.20.2 Revision of data / A6

In 2013, the Bureau of national statistics of the Agency for strategic planning and reforms of the Republic of Kazakhstan recalculated statistical data on average prices for certain types of building materials used in road construction in Aktobe, Zhambyl, Kyzylorda and South Kazakhstan regions and the Republic Kazakhstan for the period from 2011-2013. The basis for the recount was the Minutes of the meeting with the Chairman of the Agency of the Republic of Kazakhstan on Statistics Smailov A.A. with the participation of representatives of the Ministry of Transport and Communication of the Republic of Kazakhstan dated June 24, 2013.

At the end of 2013, after a court appeal against the decision of the Committee on Statistics on the revision of prices in the Aktobe region by one of the construction companies, the actions of the Committee on Statistics on the revision were declared illegal. In December 2014, the Committee on Statistics, pursuant to the Resolution of the Supervisory Judicial Collegium for Civil and Administrative Cases of the Supreme Court of the Republic of Kazakhstan No. 3gp-623-14 dated November 5, 2014, recalculated statistical data on the prices of purchasing certain types of building materials for 2011-2012 and January-June 2013 in the Aktobe region and in the Republic of Kazakhstan as a whole.

S.21 Processing of statistical data

S.21.1 Initial data

The construction of the price index in construction is based on the elements of the technological structure of investments in construction. The technological structure is understood as the composition of costs for the construction of an object and their share in the total estimated cost. The estimated cost of construction, in accordance with the structure of investments and the procedure for planning the activities of construction and installation organizations, is divided into the following types of work and costs:

- 1) construction and installation work;
- 2) costs of purchasing machinery and equipment;
- 3) other work and costs.

The specific weights of the elements of the technological structure of investments in construction are determined according to the data of the national statistical observation on investment activities for the year close to the reporting one.

S.21.2 Inspection frequency

month

S.21.3 Method (method) of collecting primary statistical data

Data collection is carried out by filling out and submitting a statistical form by respondents on paper or in electronic form. Filling in the statistical form electronically is carried out through the online data collection information system posted on the Bureau of national statistics of the Agency for strategic planning and reforms of the Republic of Kazakhstan (<https://cabinet.stat.gov.kz/>).

S.21.4 Reliability of primary statistical data

In accordance with Article 17 of the Law of the Republic of Kazakhstan "On State Statistics", the respondent is obliged to submit reliable primary statistical data when conducting statistical observations in accordance with the schedule for submitting primary statistical data by respondents and with the statistical methodology.

When entering primary statistical data, formatting and logical controls of the minimum and maximum price indices are laid down; comparison with the price level of the previous month and others.

When prices change in the reporting month for crushed stone, oil road bitumen, Portland cement, sheet steel, hot-rolled reinforcing steel (wire rod) of class A-III, the respondent, in order to confirm the reliability of the primary statistical data, simultaneously with the statistical form submits additional information to the statistical authorities: invoices, invoices - invoices, certificates of conformity and test reports.

For other types of building materials, when prices change and there is a significant difference in prices, at the request of statistics bodies, supporting documents are submitted within one working day in accordance with clause 17) of Article 12 of the Law of the Republic of Kazakhstan "On State Statistics".

S.21.5 Imputation - share / A7

Imputation is carried out in accordance with the Methodology for monitoring changes in prices for building materials, parts and structures purchased by construction organizations.

To ensure the continuity of the dynamic series of price indices, with a temporary lack of price information due to the irregularity of construction activities and the cyclical nature of the technological process throughout the year, the following methods are used to replace the missing prices for building materials:

- 1) instead of the temporarily absent assortment type of material, a new one with the same technological parameters is selected, it is directly compared with the disappeared representative product, provided there is a slight difference in price levels for them;
 - 2) instead of the missing price, the price of the last registration is used with significant volumes of purchases of building material for the purpose of their long-term use (the period for substituting a constant price is determined by agreement with the specialist of the base object).
- The share of imputed data for 2018 to the total amount of data was about 35%.

S.21.6 Adjustment

There are no statistical procedures and software used to adjust the time series.

S.21.6.1 Seasonal adjustment

Not implemented.

S.22 Notes

Continue work to ensure the quality of statistical data.