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

dated December 20, 2017 202

(with amendments introduced by the order of the Head of the Bureau of National Statistics of the Agency for Strategic Planning and Reforms of the Republic of Kazakhstan

dated December 8, 2022 36)

**Methodology for the formation of indicators and the calculation of the gross output of industrial products (goods, services)**

**Chapter 1. General Provisions**

1. This Methodology for the formation of indicators and calculation of the gross output of industrial products (goods, services)
(hereinafter - the Methodology ) refers to a statistical methodology, formed in accordance with international standards and approved in accordance with the Law of the Republic of Kazakhstan "On State Statistics".
2. The methodology is applied by the Bureau of National Statistics of the Agency for Strategic Planning and Reforms of the Republic of Kazakhstan and its territorial divisions in the formation of indicators and calculation of gross industrial output (goods, services).

3. The System of National Accounts 2008, the International Recommendations for Industrial Statistics and the International Recommendations for the United Nations Industrial Production Index are used as a methodological basis..

1. The following definitions are used in this Methodology:
2. outsourcing (outsourcing) - the transfer by the main production unit (customer) to another production unit (contractor) of specific functions, including in full or in part the activities of the customer in the production of goods or services;
3. establishment - an enterprise or part of an enterprise located in one place and engaged in one type of production activity or in which the main type of activity accounts for the predominant share of value added;
4. industrial production index - a short-term economic indicator of industrial statistics, which reflects changes over time in the physical volume of value added in industry;
5. gross value added in industry - the difference between industrial output and intermediate consumption;
6. gross industrial output, - the result of the total production activity of industrial units, is defined as the total value of all goods and services actually produced or rendered within an establishment and available for use outside that establishment, taking into account any goods and services for own final consumption.
7. The information base for the formation of indicators of industrial production (goods, services) is the primary data of nationwide statistical observations of industrial enterprises, enterprises with a secondary activity "Industry", the volume of products manufactured by individual entrepreneurs, peasant or farm enterprises, survey data on expenditures and incomes in households .
8. In accordance with the classification of products by type of economic activity, the following sectors are included in industrial statistics:

mining and quarrying;

manufacturing industry;

|  |
| --- |
| with electricity, gas, steam, hot water and air conditioning supply; |
| in water supply; collection, processing and disposal of waste, activities for the elimination of pollution. |

7. Statistical information for the formation of indicators of industrial production is monthly formed as follows:

continuous accounting : for large, medium and small ( with an annual production volume of over 1 billion tenge ) industrial enterprises according to the data of the nationwide statistical observation on the production and shipment of goods and services for the reporting month;

settlement: additional calculation is carried out for small ( except for enterprises with an annual output of more than 1 billion tenge ) industrial enterprises - 1/3 of the quarterly production of small industrial enterprises for the last quarter;

for enterprises with a secondary type of activity "Industry" (regardless of the number) - 1/3 of the quarterly volume of enterprises with a secondary type of activity "Industry" for the last quarter;

for individual entrepreneurs - 1/12 of the annual nationwide statistical observation data on the activities of individual entrepreneurs for the last reporting period;

for the household sector - data from the nationwide statistical survey on expenditures and incomes of households.

**Chapter 3** **Formation of indicators of industrial products**

**Paragraph 1. Index of industrial production**

1. To calculate the industrial production index (hereinafter referred to as the IPI), the Laspeyres-type volume index is used, the arithmetic version of which is the Young index , which is a weighted average ratio of individual quantities , obtained using weights w i, b period b (where b ≤ 0). And the Young index is equal to the Laspeyres index if the base period for the weights and the calculation of the index coincide (b=0). In practice, the basis for the weights period (b) is much longer than periods 0 and t. The calculation of the weights is based on data on expenditures for an annual period or more, data on quantities are taken for month and refer to the later year.

9. The calculation of the IPI is carried out according to the following formulas:

|  |  |
| --- | --- |
|  | (1) |

 Where:

- indices characterizing the change in production in the reporting period t (month or period from the beginning of the reporting year) compared to the average monthly volume of the base year;

and - the number of products in the reportingand base periods, respectively;

- the average annual price of the base year.

|  |  |
| --- | --- |
|  | (2) |

 Where:

 - indices characterizing the change in production in the past period t-1 (the previous month, the corresponding month of the last year or the corresponding period since the beginning of the last year) compared to the average monthly volume of the base year;

 - the number of products in the previous month, the corresponding month of the previous year or the corresponding period from the beginning of the previous year;

 - the number of products in the base period;

- the average annual price of the base year.

|  |  |
| --- | --- |
|  | (3) |

Where:

- indices characterizing the change in production in the reporting period *t* (month or period from the beginning of the reporting year) compared to the previous period *t-1* (the previous month, the corresponding month of the last year or the corresponding period from the beginning of the last year) , which are obtained by dividing the indices calculated in formulas (1) and (2);

 - indices characterizing the change in production in the reporting period t (month or period from the beginning of the reporting year) compared with the average monthly volume of the base year;

- indices characterizing the change in production in the past period t-1 (the previous month, the corresponding month of the last year or the corresponding period since the beginning of the last year) compared to the average monthly volume of the base year. Comparison of the volume of production for the period t with the volume of production for the period t-1 is carried out by comparing the deviations of these two volumes from the average monthly value of the base year.

1. When using the cost volumes of output in the calculations of the IPI, the corresponding deflator is used to transfer to the physical volumes of output. Deflation is defined as extracting the volume component (quantity and product quality) from data containing two components, the price component and the volume component. When calculating the IPI, it is used deflation method using the price index of enterprises producing industrial products. The algorithm for calculating the IPI is given in the Methodology for calculating the index of industrial production.
2. The challenge in constructing the IPI is to obtain the best approximation of short-term changes in industrial value added. The basis for calculating value added is indicators characterizing the value of output and output in physical terms.
3. The value of output covers the goods and services produced for both sale and own consumption in the period in which it was produced and is valued at the basic prices prevailing in the period. The ratio of value added and output does not change significantly over short periods of time, with the exception of processes that affect the change in the structure of production (in particular, outsourcing and outstaffing).
4. Outsourcing is carried out in three forms: outsourcing of auxiliary functions, outsourcing of parts of the production process, outsourcing of the entire production process. When outstaffing, industrial establishments are provided with human resources by employment agencies or similar organizations.

**Paragraph 2. Volume of production in physical and cost expression**

14. The volume of production in physical terms is determined by the production of products in pieces, tons, liters. This approach is used in the production of homogeneous products, the quality characteristics of which are unchanged over the period under review. The qualitative characteristics of a product distinguish it from the rest from an economic point of view and change over time. Changes in product quality are included in changes in the physical volume of production and are taken into account when calculating the IPI. Output in physical terms is used to measure industrial production in industries where homogeneous products are produced and their quality remains the same over time.

15. Statistical information on the volume of production in physical terms is formed in accordance with the established list of product names, which provides a summary of the results of their individual types for the enterprise and across the industry. The volume of production in physical terms is accounted for by gross output, including products for own final consumption in units of measurement that ensure the unity of accounting and generalization of data. Indicators of the volume of production in physical terms are taken into account for the full range of economic entities, taking into account the activities of individual entrepreneurs and peasant or farm enterprises engaged in the production of industrial products.

16 . The volume of manufactured industrial products (goods, services) in value terms is calculated in the prices of manufacturing enterprises, that is, excluding value added tax and excises, trade and sales margins, transport and other costs associated with the movement of products from the manufacturer to the buyer. The volume of industrial output includes the cost of products intended for sale, goods for further processing, works (services) of an industrial nature (except for current repairs and maintenance of own fixed assets). Works, services of an industrial nature are included in the volume of manufactured products at their cost, including the cost of own auxiliary materials used up , but without the cost of products and materials received from the customer .

**Paragraph 3. The volume of shIPIed products in value terms**

1. The volume of shIPIed products in value terms is the transfer to the side of all goods produced by this establishment during the reporting period. The number of goods produced by an establishment includes goods produced by other organizations from materials supplied by this establishment.
2. The value of goods shIPIed is calculated at the price of the establishment assigned to the consumer (sales price or price with delivery), including all costs included in the invoices issued to customers, the costs are included in separate invoices in relation to the costs of transport operations (as carried out by this establishment with its transport funds and carried out by external organizations). This item is deducted from refunds, price discounts and incentives for returns provided to consumers, and the cost of return packaging. Included are cash discounts deducted from sales in sales reporting. The valuation excludes all duties and taxes imposed on products manufactured by this establishment, including value added tax included in the manufacturer's invoice to the customer.

**Chapter 4. Classification of industries based on the technological intensity of production**

19 . Structural changes in the manufacturing industry reflect its ability to create new and high-growth industries with higher value added. The classification of the manufacturing industry used is based on the classification of the Organization for Economic Cooperation and Development, which links industry spending on research and development with value added and production statistics.

20. Raw material processing consists of mainly low-tech activities characterized by labour-intensive production processes and low capital intensity.

21. Low-tech industries include manufacturing industries with a low level of technology, but more capital-intensive, corresponding to the following sections of the classification of products by type of economic activity:

food production;

production ;

production of tobacco products;

production of textile products;

manufacture of wearing apparel;

production of leather and related products;

production of wood and cork products, except for furniture; production of products from straw and materials for weaving;

production of paper and paper products;

printing activities and reproduction of recorded media

furniture manufacture;

production of other finished products.

22. High-tech, mediumhigh-tech and medium-tech manufacturing industries are characterized by more complex technologies, high requirements for qualifications, comprehensive training and technological activity. High-tech industries use advanced, fast-changing technologies with high investment in research and development, technological infrastructure, the level of special technical skills and close institutional interaction, corresponding to the following sections of the classification of products by type of economic activity:

high-tech:

production of basic pharmaceutical products and pharmaceutical preparations;

production of computers, electronic and optical equipment;

medium-tech:

production of products of the chemical industry;

production of electrical equipment;

production of machinery and equipment not included in other categories;

production of motor vehicles, trailers and semi-trailers;

production of other vehicles;

medium technology:

production of coke and refined products;

production of rubber and plastic products;

production of other non-metallic mineral products.

metallurgical industry;

production of finished metal products, except for machinery and equipment;

repair and installation of machinery and equipment.

**Chapter 5. Calculation of gross industrial output**

**products (goods, services)**

2 3 . In the indicator system of industrial production statistics, the central place is occupied by physical indicators that are used to characterize the production of specific types of products. For the summary characteristics of industrial production, cost indicators are used that allow one to obtain summary results of the industry's activities, ensuring comparability of heterogeneous types of products.

24. The summary cost indicator in the statistics of industrial production is the gross output of industrial products (services), the calculation is carried out as a whole by section, by sections and groups according to the general classification of types of economic activity. The calculation of gross output is made at the level of certain categories of industrial producers, including enterprises with the main and secondary type of activity "Industry", individual entrepreneurs and peasant or farm enterprises, households. The volume of gross output of industrial products (services) is calculated on a monthly, quarterly and annual basis.

25. Data on gross industrial output (goods, services) are compiled for the non-financial sector, taking into account hidden and informal activities:

  ( 4 )

Where,

- the volume of gross output in the industry as a whole;

- the volume of gross output of the non-financial sector;

- the volume of output produced by the informal sector.

An example of calculating the gross industrial output for the industry as a whole is given in Appendix 1 to this Methodology.

26. The volume of gross output of enterprises in the non-financial sector is determined by the following formula:

  ( 5 )

Where:

- the volume of gross output of the non-financial sector of legal entities and structural units;

- the volume of manufactured products (commercial output) of the non-financial sector, taking into account products intended for sale to the outside;

- the volume of production for own use within the institution;

and  - the value of the balance of work in progress at the beginning and at the end of the reporting period;

- the cost of raw materials transferred for processing to other enterprises.

An example of calculating the gross industrial output of the non-financial sector is given in Appendix 2 to this Methodology.

27 . Commodity output in current prices for the non-financial sector is calculated monthly using the formula:

 ( 6 )

Where:

- the volume of manufactured products (goods, services) in current prices for enterprises with the main and secondary activity "Industry", individual entrepreneurs, peasant or farm enterprises;

- the volume of manufactured products (goods, services) in current prices for medium, large and small ( with an annual production volume of over 1 billion tenge ) industrial enterprises, obtained according to the data of monthly statistical observation;

- the volume of manufactured products (goods, services) in current prices for small ( except for enterprises with an annual output of more than 1 billion tenge ) industrial enterprises, obtained according to quarterly statistical observation;

- the volume of manufactured products (goods, services) in current prices for enterprises with a secondary type of activity "Industry", obtained according to the data of quarterly statistical observation;

 - the volume of products produced by individual entrepreneurs, peasant or farm enterprises.

28 . The volume of production produced by peasant or farm enterprises engaged in activities related to the production or processing of agricultural products is taken into account in the volume of production of individual entrepreneurs and is formed according to the data of the nationwide statistical observation of the activities of individual entrepreneurs.

29 . The volume of gross output of the non-financial sector is calculated taking into account adjustments for hidden activities for statistical reasons, that is, incomplete coverage of enterprises and non-receipt of reports on output:

= +  ( 7 )

Where:

- the volume of gross output of the non-financial sector, taking into account adjustments for hidden activities for statistical reasons;

- the volume of gross output of the non-financial sector;

- the volume of production of hidden activities for statistical reasons .

30. To determine the volume of manufactured products hidden for statistical reasons, adjustments are made for incomplete coverage of enterprises and non-receipt of reports on manufactured products:

 ( 8 )

Where:

- the volume of manufactured products hidden for statistical reasons;

 - the volume of products produced by small enterprises in the previous year;

- the number of active small businesses in the previous year;

 - the number of small enterprises that reported for the previous year;

- the difference shows the number of enterprises for which there is no information about the output or the volume of production is underestimated.

31. Excluded.

32. Calculation methods based on a system of sample surveys are used to determine the volume of informal industrial activity. The informal sector includes the production of goods in households, calculated on the basis of data from quarterly sample surveys of family budgets for the following types of activities typical for households:

food production: processing and preservation of meat, and production of meat products; processing and conservation of fish, crustaceans and mollusks; processing and preservation of fruits and vegetables; production of vegetable and animal oils and fats; production of dairy products; production of the flour-grinding industry, starches and starch products; production of bakery and flour products; production of other food products; production of prepared animal feed;

beverage production;

production of textile products;

production of wearing apparel;

production of wood and cork products, except for furniture;

production of products from straw and materials for weaving;

production of other non-metallic mineral products.

33. The volume of manufactured products of the informal sector is calculated monthly according to the formula:

  (10)

Where:

- the volume of manufactured products of the informal sector;

- the volume of production produced in households in the current period in current prices.

34. The volume of production produced in households of the current period in current prices is calculated by the formula:

 ( 11 )

Where:

- the volume of production produced in households in the current period in current prices;

- the volume of production produced in households in the current period in basic prices;

- price index of the current period to the same period of the base year.

35. The volume of output of households in the current period in basic prices (in prices of the previous year) is calculated by the formula:

 ( 12 )

Where:

- the volume of production produced in households in the current period in basic prices;

- the volume of output produced by households in the base period at base prices;

- index of physical volume in households of the current period to the same period of the base year.

Appendix 2

to the Methodology for the formation of indicators and the calculation of the gross output of industrial products (goods, services)

An example of calculating the gross output of industrial (services) products for the industry as a whole (conditional example)

million tenge (hereinafter - million tenge)

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Name of activities | Code | The volume of gross output of the non-financial sector, million tenge | The volume of households in the base period in base prices, million tenge | Index of the physical volume of the household sector, in % | The volume of households in the current period in basic prices, mln. tenge | price index,V % | The volume of households of the current period in current prices, million tenge | The volume of gross output in general for industrialassets, mln. tenge |
| A | B | 1 | 3 | 4 | 5=3\*4% | 6 | 7=5\*6% | 8=1+7 |
| Industry - total |  | 8 603 053 | 141 570 | 83.3 | 117 928 | 108.7 | 128 188 | 8 731 241 |
| Mining and quarrying | B | 4 720 516 |  |  |  |  |  | 4 720 516 |
| Coal and lignite mining | 05 | 131 750 |  |  |  |  |  | 131 750 |
| Extraction of crude oil and natural gas | 06 | 3 788 914 |  |  |  |  |  | 3 788 914 |
| Natural gas production | 06.2 | 36 617 |  |  |  |  |  | 36 617 |
| Technical services in the field of oil and natural gas production | 09.1 | 186 708 |  |  |  |  |  | 186 708 |
| Mining of uranium and thorium ore | 07.21 | 17 110 |  |  |  |  |  | 17 110 |
| Mining of metal ores | 07 | 490 810 |  |  |  |  |  | 490 810 |
| Other mining industries | 08 | 68 607 |  |  |  |  |  | 68 607 |
| Manufacturing industry | C | 3 418 407 | 141 570 | 83.3 | 117 928 | 108.7 | 128 188 | 3 546 595 |
| Food production | 10 | 450 460 | 128 490 | 82.5 | 106 004 | 109.1 | 115 651 | 566 111 |
| Manufacture of tobacco products | 12 | 63 938 |  |  |  |  |  | 63 938 |
| Textile production | 13 | 30 801 | 9 860 | 94.2 | 9 288 | 106.6 | 9 901 | 40 702 |
| Manufacture of leather and related products | 15 | 3 730 |  |  |  |  |  | 3 730 |
| Manufacture of wood and cork products, except for furniture; manufacture of products from straw and plaiting materials | 16 | 8 507 | 1 320 | 88.5 | 1 168 | 107.1 | 1 251 | 9 758 |
| Manufacture of paper and paper products | 17 | 71 310 |  |  |  |  |  | 71 310 |
| Production of coke and refined petroleum products | 19 | 327 261 |  |  |  |  |  | 327 261 |
| Production of chemical industry products | 20 | 93 928 |  |  |  |  |  | 93 928 |
| Manufacture of rubber and plastic products | 22 | 57 617 |  |  |  |  |  | 57 617 |
| Manufacture of other non-metallic mineral products | 23 | 261 308 | 1900 | 80.3 | 1 526 | 96.5 | 1472 | 262 780 |
| Metallurgical industry | 24 | 1 686 067 |  |  |  |  |  | 1 686 067 |
| Manufacture of machinery and equipment n.e.c. | 28 | 113 446 |  |  |  |  |  | 113 446 |
| Manufacture of computers, electronic and optical products | 26 | 66 833 |  |  |  |  |  | 66 833 |
| Manufacture of motor vehicles, trailers and semi-trailers | 29 | 117 398 |  |  |  |  |  | 117 398 |
| Manufacture of other finished products | 32 | 65 803 |  |  |  |  |  | 65 803 |
| Electricity supply, gas supply, steam supply and air conditioning. Water supply; sewerage system, control over the collection and distribution of waste | D and E | 464 130 |  |  |  |  |  | 464 130 |

Appendix 2

to the Methodology for the formation of indicators and the calculation of the gross output of industrial products (goods, services)

An example of calculating the gross industrial output of the non-financial sector (conditional example)

million tenge

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Name of activities | Code | The volume of manufactured products (goods, services), taking into account products intended for sale to the outside | Volume of production for own use within the establishment | Change in work-in-progress balances | The cost of raw materials transferred for processing to other enterprises | The volume of gross output of the non-financial sector, taking into account hidden and informal activities |
| A | B | 1 | 2 | 3 | 4 | 5=1+2+3+4 |
| Industry - total |  | 7 624 543 | 793 456 | 7552 | 125 280 | 8 550 831 |
| Mining and quarrying | B | 4445328 | 269 811 | 1 150 | 4 149 | 4 720 439 |
| Coal and lignite mining | 05 | 71 817 | 59 933 |   |   | 131 750 |
| Extraction of crude oil and natural gas | 06 | 3 776 625 | 12 290 |   |   | 3 788 914 |
| Natural gas production | 06.2 | 25 140 | 11 477 |   |   | 36 617 |
| Technical services in the field of oil and natural gas production | 09.1 | 186 659 |   | 48 |   | 186 708 |
| Mining of uranium and thorium ore | 07.21 | 16 923 |   | 188 |   | 17 110 |
| Mining of metal ores | 07 | 304 264 | 181 566 | 830 | 4 149 | 490 810 |
| Other mining industries | 08 | 63 900 | 4545 | 84 |   | 68 530 |
| Manufacturing industry | C | 2 764 928 | 474 093 | 6 402 | 121 131 | 3 366 554 |
| Food production | 10 | 396 661 | 8 400 | 248 | 5 729 | 411 038 |
| Manufacture of tobacco products | 12 | 63 414 | 524 |   |   | 63 938 |
| Textile production | 13 | 26 191 | 1 883 | 82 | 1489 | 29 645 |
| Manufacture of leather and related products | 15 | 2573 | 113 | -3 | 1039 | 3 722 |
| Manufacture of wood and cork products, except for furniture;manufacture of products from straw and plaiting materials | 16 | 6060 | 212 |   |   | 6 272 |
| Manufacture of paper and paper products | 17 | 69 574 | 956 | -287 | 724 | 70 966 |
| Production of coke and refined petroleum products | 19 | 193 098 | 39 235 | -1 140 | 96 068 | 327 261 |
| Production of chemical industry products | 20 | 72 253 | 20 209 | 117 | 1 344 | 93 923 |
| Manufacture of rubber and plastic products | 22 | 56 608 | 906 | -123 |   | 57 392 |
| Manufacture of other non-metallic mineral products | 23 | 245 237 | 8 721 | 67 | 5 398 | 259 423 |
| Metallurgical industry | 24 | 1 305 413 | 364 827 | 6 972 | 8085 | 1 685 297 |
| Manufacture of machinery and equipment n.e.c. | 28 | 97 907 | 13 990 | 424 | 949 | 113 271 |
| Manufacture of computers, electronic and optical products | 26 | 65 878 | 602 | 8 | 268 | 66 756 |
| Manufacture of motor vehicles, trailers and semi-trailers | 29 | 117 197 | 137 | 36 | 18 | 117 389 |
| Manufacture of other finished products | 32 | 46 865 | 13 377 | -1 | 20 | 60 261 |
| Electricity supply, gas supply, steam supply and air conditioning. Water supply; sewerage system, control over the collection and distribution of waste | D and E | 414 288 | 49 551 |   |   | 463 839 |