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 13, 2017

no. 198

**Methodology for determining the volume of investments in fixed assets, taking into account hidden and informal activities**

**Chapter 1. General Provisions**

1. This Methodology for determining the volume of investments in fixed assets, taking into account hidden and informal activities (hereinafter - Methodology) refers to the 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" (hereinafter - Law).

2. The methodology defines the main approaches to the calculation of the statistical indicator of the volume of investments in fixed assets, taking into account the hidden and informal economy based on data from national statistical observations, administrative sources and economic calculations.

3. The methodology is intended for use in statistical activities by employees of the Committee on Statistics of the Ministry of National Economy of the Republic of Kazakhstan (hereinafter - the Committee) .

4. The methodology was developed taking into account the principles of the System of National Accounts 2008 (hereinafter - SNA).

**Chapter 2. Determining the volume of investments in fixed assets, taking into account the assessment of hidden and informal activities**

5. Determining the volume of investments in fixed capital, taking into account the assessment of hidden and informal activities, is carried out by a combined method based on data from nationwide statistical observation, information from administrative sources and economic calculations used to determine capital costs that are not observed by nationwide statistical observations.

The shadow sector is defined as “activities that are within the production boundary of the SNA and that are legal (subject to certain standards and regulations) are hidden from the government.

The informal sector is the informal production activity of enterprises that are not registered with the tax authorities.

6. The volume of investments in fixed assets, taking into account hidden and informal activities, is determined according to the following technological structure:

costs for construction and installation works;

the cost of purchasing machinery, equipment, vehicles, tools;

other costs in the volume of investments in fixed assets.

The distribution of estimated volumes of hidden and informal investment activities is carried out according to the detailed structure of assets.

**Paragraph 1. Determination of the volume of costs for construction and installation works, taking into account the hidden and informal sector**

7. The calculation of the volume of construction costs is based on nationwide statistical observations and special calculation algorithms.

When calculating the output for new construction, information is used on investments in fixed assets aimed at the production of construction and installation works and other capital works and costs included in the cost of construction products.

The calculation is carried out on the basis of data from the nationwide statistical observation of investments in fixed capital and the commissioning of facilities by individual developers ( administrative data of state bodies for architectural and construction control and local executive bodies for architecture and urban planning ).

Covert and informal activities include:

underestimation of the cost of individual residential houses of the population in comparison with the actual costs of their construction;

increase in investments in fixed assets for newly built residential buildings sold;

underestimation of the cost of construction of non-residential buildings and structures by individuals.

8. The amount of underestimation of the cost of individual residential buildings per month is determined by the difference between the costs of erecting individual residential buildings per month and their cost, obtained as a result of nationwide statistical observation on the commissioning of facilities by individual developers:

$I\_{zh}=P\_{zh}-P\_{zh is}$, (1)

Where:

$I\_{zh}$- the amount of underestimation of the cost of individual residential buildings per month;

$P$$P\_{zh}$- the cost of erecting individual residential buildings per month;

$P\_{is}$$P\_{zh is}$- the cost of individual residential buildings, obtained as a result of nationwide statistical monitoring of the commissioning of facilities by individual developers.

The cost of erecting individual residential buildings per month is determined by the following formula:

$P\_{zh}=S\_{sr}\*P\_{sr}$$P\_{zh}=S\_{sr}×P\_{sr}$, (2)

Where:

$P$$P\_{zh}$- the cost of erecting individual residential buildings per month;

$S\_{sr}$- the average total area of individual residential buildings per month;

$P\_{sr}$- average actual costs for the construction of one square meter of the total area of residential buildings built by individual developers.

The average total area of individual residential buildings for a month is calculated on the basis of data from a nationwide statistical observation on the start of construction and installation work according to notifications and permits, by dividing the total area of residential buildings by permits submitted to individual developers, on the average duration of the process of building houses by individual developers (determined by calculation, taking into account the norms for the duration of the construction of residential buildings).

The average actual costs for the construction of one square meter of the total area of residential buildings built by the population are determined as the sum of the costs actually incurred by individual developers per square meterthe total area of all residential buildings completed during the reporting month, regardless of the date of construction, degree of comfort and number of storeys.

The estimated amount of underestimation of the cost of individual residential buildings per month refers to the costs of construction and installation work performed on residential buildings.

9. The increase in investment in newly built residential buildings sold per month is calculated based on data on the total area of housing sold to the population per month, the average actual costs for the construction of one square meter of the total area of residential buildings and the sale price of one square meter of the total area of residential buildings in the primary market according to the following formula:

$I\_{prod}=S\_{prod}×(P\_{prod}-P\_{str})$, (3)

Where:

$I\_{prod}$– increase in investments in newly built residential buildings sold per month;

$S\_{prod}$- the total area of housing sold to the population per month;

$P\_{prod}$- the selling price of one square meter of the total area of residential buildings in the primary market ;

$P\_{str}$- average actual costs for the construction of one square meter of the total area of residential buildings.

The calculation uses data generated from the results of nationwide statistical observations on registration of housing prices and commissioning of facilities, as well as data on the calculation of the total area of housing sold to the population per month, built on the basis of data on the number of transactions for the purchase and sale of housing and data on housing fund.

The increase in investments for newly built residential buildings sold per month is calculated separately for individual houses and for apartments in multi-apartment buildings.

According to the specific structure, the increase in investments in newly built residential buildings sold is related to the costs of construction and installation work on residential buildings.

10. Underestimation of the cost of construction of non-residential buildings by individuals for a month is determined on the basis of statistical data on the commissioning of facilities by individual developers and is determined by the difference between the costs of construction of non-residential buildings for the month and their cost, obtained as a result of nationwide statistical monitoring of the commissioning of facilities by individual developers. developers.

To determine the cost of construction of non-residential buildings for the month, the actual costs of construction of the main buildings are adjusted for the timing of their construction (calculated taking into account the norms for the duration of the construction of non-residential buildings):

$P\_{o}=P\_{o is}/R$, (4)

Where:

$P\_{o}$- the cost of construction of non-residential buildings by individuals per month;

$P\_{o is}$- the cost of construction of non-residential buildings by individuals, obtained as a result of nationwide statistical observation on the commissioning of facilities by individual developers;

$R$– average construction time.

Understatement of the cost of construction of non-residential buildings by individuals for a month is calculated by the formula:

$I\_{o}=P\_{o}-P\_{o is}$, (5)

Where:

$I\_{d}$$I\_{o}$- the amount of underestimation of the cost of construction of non-residential buildings by individuals per month;

$P\_{o}$- the cost of construction of non-residential buildings by individuals per month;

$P\_{d is}$$P\_{o is}$- the cost of construction of non-residential buildings by individuals, obtained as a result of nationwide statistical monitoring of the commissioning of facilities by individual developers.

The amount of underestimation of the cost of construction of non-residential buildings by individuals per month is included in the amount of costs for construction and installation work on non-residential buildings.

11. The amount of underestimation of the cost of construction of structures by individuals for a month is determined similarly, based on data on the costs of construction of structures, adjusted for the average construction time, and the cost of structures of the nationwide statistical observation on the commissioning of facilities by individual developers.

The resulting estimated amount of underestimation of the cost of construction of facilities for the month refers to the cost of construction and installation work performed at the facilities.

**Paragraph 2. Determining the cost of purchasing machinery, equipment, vehicles and tools, taking into account the hidden and informal sector of the economy**

12. The volume of expenses for the purchase of machinery, equipment, vehicles and tools is formed by summing up the reporting data obtained from the results of nationwide statistical monitoring and the estimated volume of expenses of the hidden and informal sectors of the economy.

Estimation of the costs of the hidden and informal sector for the purchase of machinery, equipment, vehicles and tools is carried out on the basis of data on the volume of industrial production, export and import volumes for the main commodity groups (foreign trade statistics), as well as on the basis of nationwide statistical observation data on leasing activities and estimated data on the expenditures of peasants, farmers and households engaged in the production of agricultural products for sale, for the purchase of agricultural machinery.

13. Estimated amount of costs of the hidden sector for the purchase of machinery, equipment, vehicles and tools is determined using the ratio of the national output of machinery, equipment (including imports and exports) with the volume of costs for the purchase of machinery, equipment and vehicles, calculated by the formula:

$$k\_{mash}=\frac{I\_{mash}}{O\_{mash}+Im\_{mash}-E\_{mash}}$$

 , (6)

Where:

$k\_{mash}$- the ratio of the volume of national output of machinery, equipment (including imports and exports) and the cost of purchasing machinery, equipment and vehicles;

$O\_{mash}$$O$- the volume of production of machinery and equipment;

$Im\_{mash}$$I\_{mash}$$I$- the volume of imports of machinery and equipment;

$E\_{mash}$- the volume of exports of machinery and equipment;

$I\_{mash}$- the amount of costs for the purchase of machinery, equipment and vehicles.

Estimated volume of costs of the hidden sector for the purchase of machinery, equipment, vehicles and tools per month is calculated by the formula:

$I\_{o mash}=k\_{mash}\*I\_{mash}$

$I\_{o mash}=k\_{mash}×I\_{mash}$, (7)

Where:

$I\_{o mash}$- the cost of purchasing machinery, equipment, vehicles and tools per month;

$k\_{mash}$- the ratio of the volume of national output of machinery, equipment (including imports and exports) and the cost of purchasing machinery, equipment and vehicles;

$I\_{mash}$- the amount of expenses for the purchase of machinery, equipment and vehicles per month;

Estimated volume of costs of the hidden sector for the purchase of machinery, equipment, vehicles and tools per month is included in the volume of costs for the acquisition of machinery, equipment and vehicles.

14. The costs of the hidden and informal sector for the acquisition of machinery, equipment, vehicles and tools under financial leasing agreements are determined by the difference in the estimated value of the costs for the acquisition of machinery and equipment and the volume of costs taken into account by the nationwide statistical observation.

Costs for the purchase of machinery, equipment and vehicles under financial leasing agreements are calculated using the ratio of the volume of lease payments received and the volume of investments for the purchase of machinery, equipment and vehicles.

According to the data on financial leasing agreements provided by organizations operating in the field of leasing, obtained as a result of nationwide statistical monitoring of leasing activities, the following ratio is found using the formula:

$S={I\_{l}}/{I\_{mash}} $, (8)

Where:

$S$- the ratio of the volumes of lease payments received and the volume of investments for the purchase of machinery, equipment, vehicles;

$I\_{l}$– volume of lease payments received under financial leasing;

$I\_{mash}$– investments for the purchase of machinery, equipment, vehicles;

The resulting ratio is used to determine the cost of acquiring leased property in the reporting month:

$I\_{lmash}=I\_{mash}×S$, (9)

Where:

$I\_{lmash}$- the cost of purchasing machinery, equipment, vehicles under financial leasing agreements per month;

$I\_{mash}$– investments for the purchase of machinery, equipment, vehicles in the reporting month;

$S$- the ratio of the volumes of lease payments received and the volume of investments for the purchase of machinery, equipment, vehicles.

The difference between the calculated amount of costs for the purchase of machinery and equipment under financial leasing agreements for the month and the volume of costs recorded by the nationwide statistical observation is connected to the data on investments for the purchase of machinery, equipment, vehicles obtained by the nationwide statistical observation.

15. To estimate the expenses of peasants, farmers and households engaged in the production of agricultural products for sale, for the purchase of agricultural machinery, equipment and tools, the average prices of agricultural machinery and its quantity are multiplied.

The calculation is based on data from the agricultural register, price and foreign trade statistics on the value of agricultural machinery.

The amount of assessment received for the month is connected to the amount of investments for the purchase of machinery, equipment, vehicles and tools.

**Paragraph 3. Determination of other costs in the volume of investments in fixed assets, taking into account the hidden and informal sector**

16. Other costs in the volume of investment in fixed capital, taking into account the hidden and informal sector, are determined taking into account the costs of peasants, farmers and households engaged in the production of agricultural products for sale, for the purchase of working, productive livestock and the cultivation of perennial plantations, as well as estimated data on the difference in the costs of exploration and evaluation of mineral reserves obtained by comparing the data of nationwide statistical observation and data from administrative sources, estimating the costs of the hidden and informal sectors for information and communication technologies and research and development work.

17. The costs of peasant, farmer and households engaged in the production of agricultural products for sale, for the acquisition of working and productive livestock, are determined by the difference between the calculated data on the costs of acquisition and the volume of costs formed on the basis of the nationwide statistical observation.

The initial data for the calculation are the agricultural register data on the availability and movement of livestock in peasant, farmer and household households in physical terms and price statistics on prices per head of working, productive and breeding livestock.

The expenses of peasant, farmer and households for the purchase of livestock are adjusted based on the ratio of data on the introduced new fixed assets “Adult working and productive livestock (except for young animals and livestock for slaughter)”, obtained from the results of nationwide statistical monitoring of the state of fixed assets and investments in the formation working, productive and breeding herd.

The difference between the calculated data on the cost of purchasing livestock for the month and the volume of costs formed on the basis of the results of nationwide statistical observation is included in the cost of acquiring working, productive and breeding livestock .

 18. The cost of growing perennial plantings in peasant, farmer and households is calculated in a similar way, based on the ratio of data on changes in areas under perennial plantings in these categories of farms, multiplied by the prices of perennial plantings, and the new fixed assets “Perennial Plantings” put into operation .

Obtained by the difference between the calculated data and the data of the nationwide statistical observation for the month, the volume of costs for the cultivation of perennial plantations are connected to other costs in the volume of investments in tangible fixed capital, respectively.

19. For the costs of exploration and evaluation of mineral reserves for the assessment of hidden and informal activities, the difference between the administrative data generated in the course of monitoring and controlling compliance with the terms of subsoil use contracts and data on the costs of exploration and evaluation of minerals of the national statistical observations about investment in fixed assets.

The value of the obtained estimate of the costs of the hidden and informal sector for the exploration and evaluation of minerals per month is included in other costs in the volume of investments in intangible fixed capital.

20. The costs of research and development work of the hidden and informal sector are estimated on the basis of data generated from the results of the nationwide statistical observation of research and development work.

Monthly R&D costs are estimated on the basis of annual data on the cost of research and development performed by third parties under contracts, and a twelfth of the annual costs are included in other costs in the amount of investments in intangible fixed capital.

21. The assessment of the costs of the hidden and informal sector for software development is carried out on the basis of data generated from the results of a nationwide statistical survey on the use of information and communication technologies in enterprises, which is adjusted to take into account in monthly volumes the costs of creating and acquiring computer software and databases respectively.

**Paragraph 4. The volume of investments in fixed assets, taking into account the assessment of hidden and informal activities**

22. The total volume of investments in fixed assets consists of the volume of investments in fixed assets obtained from the results of nationwide statistical observation, the volumes of assessment of hidden and informal investment activities, and additional estimates of the volumes of investments in fixed assets that are not observed (for incomplete coverage and up to the annual volume of investments of economic entities subjects).

Summation of reporting data, taking into account additional estimates and estimated volumes of the hidden and informal sector, is carried out in accordance with the structure of assets.

23. The volume of costs for construction and installation works, taking into account the hidden and informal sector, is determined by the formula:

$I\_{ smr}=I\_{smr otch }+I\_{o smr}$, (10)

Where:

$I\_{smr}$- the volume of costs for construction and installation works, taking into account the hidden and informal sectors of the economy;

$I\_{smr otch}$- the cost of construction and installation works according to the reporting data, taking into account additional estimates;

$I\_{o smr}$– estimated amount of expenses of the hidden and informal sector for construction and installation works.

24. Determination of the costs for the acquisition of machinery, equipment, vehicles and tools is carried out with the inclusion of the costs of the hidden and informal sector for the acquisition of machinery, equipment, vehicles and tools:

$I\_{mash}=I\_{mash otch}+I\_{o mash}$, (11)

Where:

$I\_{mash}$- the amount of costs for the purchase of machinery, equipment, vehicles and tools taking into account the hidden and informal sector of the economy;

$I\_{mash otch}$- the cost of purchasing machinery, equipment, vehicles and tools according to the reporting data, taking into account revaluations;

$I\_{o mash}$– Estimated volume of expenses of the hidden and informal sector for the purchase of machinery, equipment, vehicles and tools.

25. Other costs in the volume of investments in fixed capital, taking into account the hidden and informal sector, are calculated using the formula:

$I\_{pr}=I\_{pr otch}+I\_{o pr}$, (12)

Where:

$I\_{pr}$- the volume of other costs in the volume of investments in fixed assets taking into account the hidden and informal sector of the economy;

$I\_{pr otch}$- the volume of other costs in the volume of investments in fixed assets according to reporting data, taking into account additional estimates;

$I\_{o pr}$- the estimated volume of other costs in the volume of investments in fixed capital of the hidden and informal sector of the economy.

The total volume of investment in fixed capital, taking into account the hidden and informal sectoris determined by the formula:

$I=I\_{smr}+I\_{mach}+I\_{pr}$, (13)

Where:

$I$- the total volume of investments in fixed capital, taking into account the hidden and informal sector;

$I\_{smr}$- the volume of costs for construction and installation works, taking into account the hidden and informal sectors of the economy;

$I\_{mash}$- the amount of costs for the purchase of machinery, equipment, vehicles and tools taking into account the hidden and informal sector of the economy;

$I\_{pr}$- the volume of other costs in the volume of investments in fixed assets taking into account the hidden and informal sector of the economy.

The algorithm for calculating the volume of investments in fixed capital of the hidden and informal sector of the economy is given in the appendix to this Methodology .

Appendix to the Methodology for determining the volume of investments in fixed capital of the hidden and informal sector of the economy

**Algorithm for calculating the volume of investments in fixed capital of the hidden and informal sector of the economy**

|  |  |  |
| --- | --- | --- |
| **Name of indicator** | **Line number** | **Formation (calculation) of the indicator** |
| Investments in fixed assets | 01 | line 01=line 02+ line 17 |
| investment in tangible fixed capital | 02 | line 02=line 03+line 09+line 14+ line 15+line 16 |
| costs for construction and installation works and overhaul of buildings and structures | 03 | line 03=line 04+line 08 |
| construction and installation costs | 04 | line 04= line 05+line 06+line 07 |
| including: |  |  |
| on residential buildings | 05 | is determined by summing up the reporting data, taking into account additional estimates and the estimated amount of costs of underestimating the cost of individual residential buildings $I\_{zh}$, calculated by formula (1), as well as data on the increase in investments for newly built residential buildings sold $I\_{prod}$, calculated by formula (3) |
| on non-residential buildings | 06 | is determined by summing up the reporting data, taking into account additional estimates and the estimated volume of underestimation of the cost of construction of non-residential buildings by individuals $I\_{d}$$I\_{o}$, calculated by formula (5) |
| on structures | 07 | is determined by summing up the reporting data, taking into account the estimated volume of underestimation of the cost of construction of structures by individuals |
| the cost of major repairs of buildings and structures | 08 | reporting data |
| costs for the purchase of machinery, equipment, vehicles and their overhaul | 09 | line 09= line 10+ line 13 |
| the cost of acquiring machinery, equipment, vehicles and tools | 10 | is determined by summing up the reporting data, taking into account additional estimates and the estimated volume and costs of the hidden and informal sector for the purchase of machinery, equipment, vehicles |
| of them: |  |  |
| vehicles | 11 | reporting data |
| information, computer and telecommunications equipment | 12 | reporting data |
| overhaul of machinery, equipment and vehicles | 13 | reporting data |
| costs of planting and growing perennial crops | 14 | is determined by summing up the reporting data and the estimated volume expenses of peasants, farmers and households engaged in the production of agricultural products for sale, for the cultivation of perennial plantations |
| costs for the formation of a working, productive and breeding herd | 15 | is determined by summing up the reporting data and the estimated volume expenses of peasant, farmer and households engaged in the production of agricultural products for sale, for the purchase of working, productive and breeding livestock |
| other costs in the volume of investments in tangible fixed capital | 16 | reporting data including revaluations |
| Investments in intangible fixed assets | 17 | line 17= line 18+ line 19+ line 20 |
| costs of creating and acquiring computer software and database | 18 | is determined by summing up the reported data and the estimated volume of costs of the hidden and informal sector for software development |
| expenditures on exploration and evaluation of mineral reserves | 19 | is determined by summing up the reported data and the estimated volume of expenses of the hidden and informal sector for the exploration and evaluation of minerals |
| other costs in the volume of investments in intangible fixed assets | 20 | is determined by summing up the reporting data, taking into account revaluations and spending on research and development work in the hidden and informal sector |