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ANALYSIS OF THE DEVELOPMENT OF THE NATIONAL ECONOMY OF UZBEKISTAN

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Abstracts: *This article is devoted to the analysis of the economic development of the national economy of the Republic of Uzbekistan within the independence period, as well as the elaboration of an econometric model that enables predicting the basic macroeconomic indicators of the development of the republic for the medium-term prospect.*

Key words: *sustainable economic growth, macroeconomic stability, region, analysis of economic development, industry, agriculture, investments, gross value added of industries, econometric modeling.*

Introduction. The Republic of Uzbekistan, being an integral part of the world community and global financial and economic market, as an equal partner successfully implements the formation and development of the market economy, participates in the world economic and financial relations, as well as continues its integration into the global economy.

It should be noted that 2020 has been declared the Year of the Development of Science, Education and the Digital Economy in our country. As the President of the Republic of Uzbekistan Sh.M. Mirziyoyev has noted in his outstanding message to the Oliy Majlis of the Republic on January 24, 2020: *"This year, our main goal is to ensure macroeconomic stability and curb inflation in the process of economic reforms, further formation of a competitive economy"* (Mirziyoyev, 2020).

The strategy of gradual economic reforms, which has been implemented in our country since the first days of independence, has illustrated the whole world the efficiency of the state policy implemented in Uzbekistan.

This is definitely confirmed by the indicators of the socio-economic development of our state over the years of independent development.

During the first years of independence, thanks to the implementation of its own model of transition to the market economy, Uzbekistan managed to avoid a large-scale decline in production, a sharp reduction of living standards of the population, and an excessive growth of internal and external public debt. The decrease of the GDP of Uzbekistan for 1991-1995 was the smallest among all CIS countries and amounted to only 18, 8%. Within the period between 1996 and 2003, the economy of Uzbekistan was developing at a moderate pace at the level of 3, 8-5, 2% per year. Since 2004, as a result of deepening economic reforms aimed at creating a favorable business environment, modernization,

technical and technological renewal of production, the economy of the republic has demonstrated high and steady rates of economic growth.

The analysis of the basic socio-economic indicators of the development of the Republic of Uzbekistan in 2019 illustrated that the Gross Domestic Product of the republic in 2019 constituted 511838,1 billion UZS which amounted to 125,9% of the level of 2018. The gross value added of industries was equal to 465357,4 billion UZS. Gross Domestic Product for the first quarter of 2020 accounted for 104,1% compared to the corresponding period of 2019.

Maintaining sustainable high economic growth rates is accompanied by a further strengthening of the national macroeconomic stability with an average inflation rate which in 2019 amounted to 15,2% per year. It should be noted that in 2019 investments in the amount of 189 924,3 billion UZS were made in the economy of the republic.

The implementation of program measures for the further development of industry and expansion of the production of competitive products contributed to an increase in industrial production in 2019 by 40,6% compared with 2018, which constituted 331006,6 billion UZS in value terms. Consumer goods production in 2019 increased by 33,5% compared to the level of 2018 and accounted for 111494,3 billion UZS in value terms. For the first quarter of 2020 the volume of industrial production increased by 4% from the level of the corresponding period of 2019.

The measures to raise productivity in agricultural production, further strengthen the material and technical base of farms, and the transition to a cluster system ensured an increase in gross output of agriculture, forestry and fisheries by 14,96% in 2019 compared to 2018 which in value terms constituted 224288,8 billion UZS. For the first quarter of 2020 the gross output of agriculture, forestry and fisheries equals to 3,9% of the level of the corresponding period in 2019.

Implementation of an active investment policy aimed at accelerating the processes of modernization, technical and technological renewal of operating production facilities, creation of new production capacities, construction and reconstruction of infrastructure facilities, ensured a significant growth in the volume of capital investments and construction works within the reporting period. The volume of construction works in 2019 was equal to 68854, 4 billion UZS and its growth amounted to 134,7% compared to the same indicator of 2018. The volume of construction works for the first quarter of 2020 has increased by 6, 5% compared with the same period in 2019.

Sustainable economic growth of the state basically depends on the rate and level of development of its regions. Balanced socio-economic development of the regions of Uzbekistan constitutes the basis of macroeconomic stability, as well as dynamic development of the regional economy.

In the ACTION STRATEGY for five priority directions of the development of the Republic of Uzbekistan the President of the Republic of Uzbekistan Sh.M. Mirziyoyev emphasized that: ***«A comprehensive and balanced socio-economic development of regions, districts and cities, optimal and efficient use of their potential, ensuring the integrated and efficient use of the natural, mineral, industrial, agricultural, tourism and labor potential of each region are required to accelerate socio-economic development, enhance employment and income levels»*** (Mirziyoyev, 2020).

Herewith, the economy of the region as part of a sovereign state is highly dependent on the general state of the national economy. This is due to the fact that the majority of levers of economic incentives refer to the competence of central public administration authorities, in particular: ensuring the stability of the national currency, curbing inflation, shaping the legislative framework, ensuring minimum social benchmarks of living standards (the amount of the minimum wage, incentives, benefits and other public transfer payments).

If at the initial stage of market reforming of the economy the central role belonged to the central public administration bodies implementing one of the most essential principles of the national model of transition to the market "**the state is the main reformer**", then at the stage of further liberalization of the economy and deepening of economic reforms, the center of gravity of the reform shifts to the level of regions. There is a process of gradual transfer of functions, powers of central and higher bodies of public administration to lower structures of the public authorities, as well as self-government bodies of citizens.

The region is a comprehensive socio-economic system, where interrelations are established between the sectors of the economy, production and non-production sectors, structures of the republican and local public authorities. In addition, in this regard there have been elaborated proportions of exchange, which promotes more complete use of natural-production and labor resources.

In the developed countries of Europe, as well as in Japan, administrative-territorial units of different hierarchical levels or so-called program areas created on their basis are considered as theoretical objects of the research.

Thus, the term "region" is not interpreted unambiguously. The author shares the opinion of those scientists who understand the concept "region" as such territorial areas which represent "*integral specific socio-economic systems that differ from other territories of the country in levels of economic specialization and economic development*" (Sergeyev and Pykhova, 2005).

The most significant peculiarities of the region are the integrity and unity of the territory, commonality and the complexity of the economy, specialization in certain sectors of the national economy. One of the main criteria for determining a region is the presence of its own authorities and governing bodies. In terms of Uzbekistan, the regions mean the Republic of Karakalpakstan, 12 regions and Tashkent city.

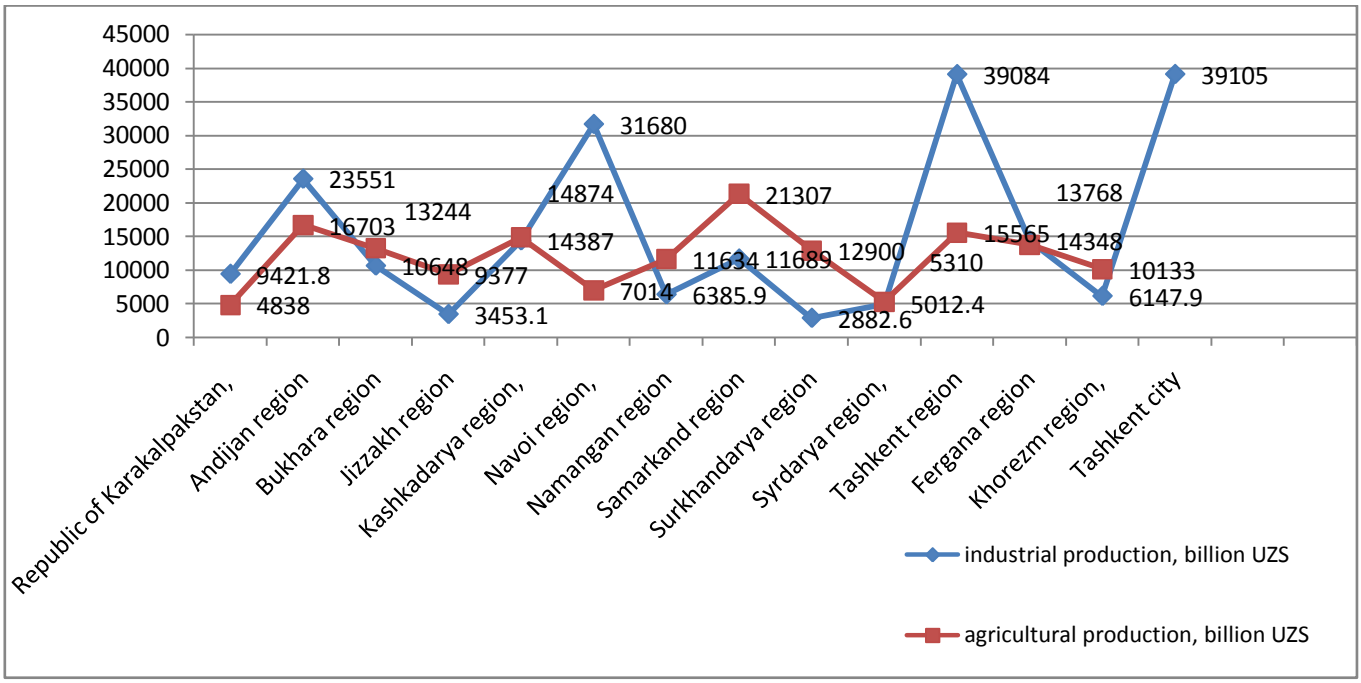
The economy of each region develops in compliance with the territorial division of labor and constitutes an integral part of the national economy. In addition, it has unique socio-economic, natural and demographic resources, both contributing to and curbing the development of productive forces. This factor necessitates the selection of such development areas that entirely take into account these features.

As the analysis of statistical information shows, the main volume of the Gross Domestic Product (GDP) of the Republic of Uzbekistan in 2019 was produced in Tashkent city (14, 0% of the total GDP of the republic) and Tashkent region (10, 1%) . Then the tendency is followed by Samarkand (7, 6%) and Kashkadarya (7, 3%) regions in terms of the equity participation in the republican GDP. The smallest contribution to the formation of the GDP of the republic belongs to Syrdarya region (2, 1% of the total GDP of the republic).

According to statistics, the main volume of industrial production of the Republic of Uzbekistan in 2019 was manufactured in Tashkent city (**16, 71**% of the total industrial production of the republic), Tashkent region (**16, 7**%) and Navoi region (**13,5**%), The smallest contribution to the manufacturing of industrial products of the republic belongs to Surkhandarya region (1,2% of the total industrial output of the republic) and Jizzakh region (1,5%).

The biggest share of the volume of agricultural products manufactured in the Republic of Uzbekistan in 2019 belongs to Samarkand (**13, 64**% of the total agricultural output), Andijan (**10, 69**%) and Tashkent (**9,96**%) regions. The Republic of Karakalpakstan had the smallest volume of agricultural products (**3, 09**% of the total agricultural production of the republic).

Production of industry and agriculture by regions of the Republic of Uzbekistan



Developed by the author in reliance upon the data of the website www.stat.uz.

Figure 1. Production of industry and agriculture by regions of the Republic of Uzbekistan in 2019 (billion UZS).

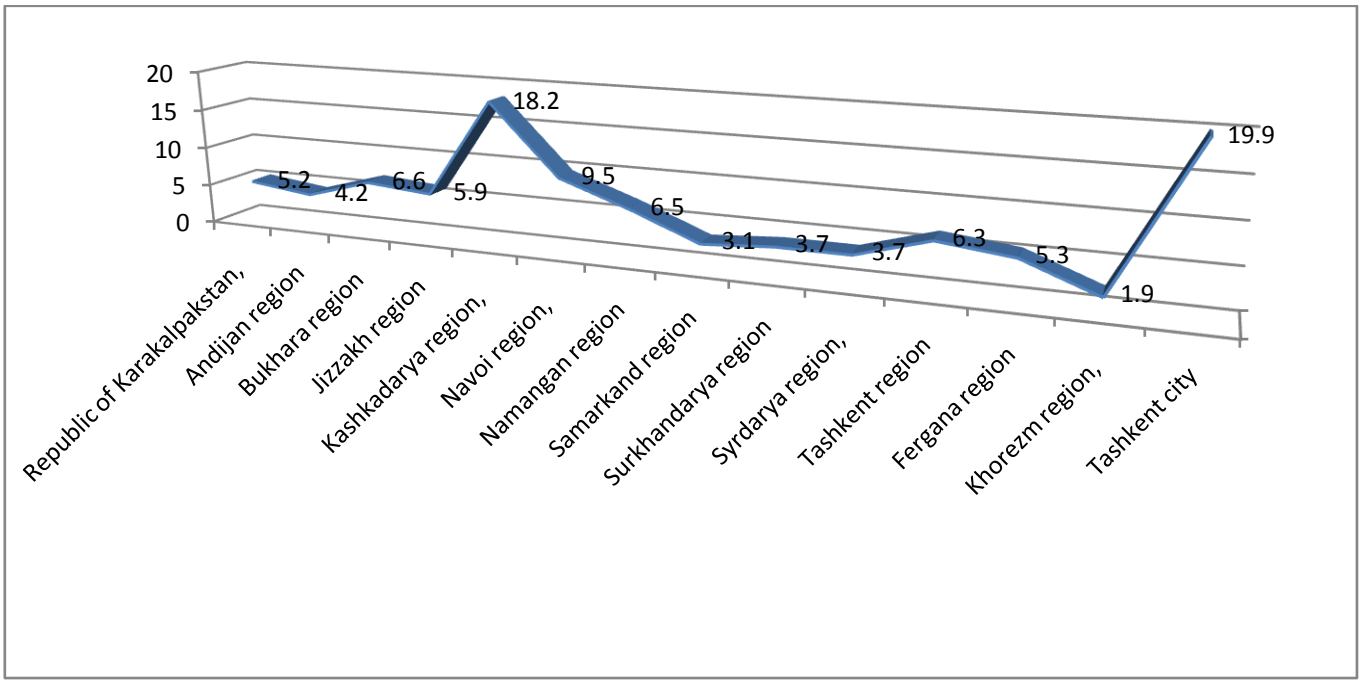
Investments, including foreign ones, represent the basis for the development of the republic as a whole and its regions. In 2019, the volume of foreign direct investment in the republic amounted to 4, 2 billion USD which is 3,1 billion USD, or 3,7 times more than in 2018. The share of investment in the Gross Domestic Product reached 37 percent.

In 2019, the biggest share – 52, 5% of all investments in fixed assets was made in four regions of the republic, in particular in Tashkent city – 23, 0% of the total volume, in Kashkadarya region - 11, 0%, in Navoi region – 9, 8% and in Tashkent region – 8,7% of the total volume of investments.

High shares of foreign investments in fixed assets for the reporting period were in Tashkent city with 19, 9% of the total volume of investments (10465, 7 billion UZS), in Kashkadarya region –18, 2% (9548, 4 billion UZS), in Navoi region – 9, 9% of the total

investment (4985, 0 billion UZS). The smallest volume of foreign investment was in Khorezm region - only 1, 9% of the total republican investments and in Samarkand region – 3, 1% of the total investments.

Foreign Investments in the Republic of Uzbekistan in 2019



Developed by the author in reliance upon the data of the website www.stat.uz.

Figure 2. Foreign investments in the Republic of Uzbekistan in 2019, in % to total indicator.

In reliance upon the socio-economic analysis of the development of the national economy of the Republic of Uzbekistan and its regions, as well as on the basis of dynamic series of macroeconomic indicators of this development, in our opinion, the most significant aggregated macroeconomic indicators characterizing the development of the national economy of the republic have been selected. Then they have been included in the aggregated recursive econometric model developed by the author. This model considers the patterns of the national economy development of the republic:

GDP *– Gross Domestic Product, billion UZS.*

GVAI *– gross value added of industries, billion UZS;*

IO *– industrial output, billion UZS;*

AFF *– agricultural, forestry and fishery products, billion UZS;*

CIW *- construction and installation works, billion UZS;*

IN *– investments, billion UZS;*

SE *– services rendered to the population, billion UZS;*

PN *- population number of the republic, (thousand people).*

The econometric model of socio-economic development of the national economy of the Republic of Uzbekistan, calculated by the author with the application of the Microsoft Office Excel program for the period between 2010 and 2019, has the following form:

1. ***Gross Domestic Product (GDP) of the Republic for a year depends on the gross value added of industries (GVAI):***

GDP = 4009,589 + 1,1035**GVAI**

R^2 =0,999, F= 7531,507, SS=1, 81

2. ***Gross added value of industries (GVAI) for a year depends on the Industrial output (IO), agriculture, fishery and forestry production (AFF), construction and installation works completed for a year (CIW), as well as the volume of services rendered (SE):***

GVAI = 8884,126 + 0,12303**IO** + 0,262483A**FF** + 2,5208**CIW** + 0,9587**SE**

R^2 = 0,999, F = 4501,217, SS =1, 48

3. ***Industrial output for a year is the function of investments made (IN):***

IO= 19313, 4 + 1,685**IN**

R^2 =0,996, F= 1873,916, SS=7, 84

4. ***Production of agriculture, fishery and forestry (AFF) represents a linear function from the investments made (IN):***

AFF = 41963, 47 + 1, 09832 **IN**

R^2 =0, 8976, F= 70, 10738, SS=3, 33

5. ***Construction and installation works (CIW) completed for a year depend on the investments made (IM):***

CIW = 6087,215 + 0,3494**IM**

R^2 =0, 9696, F= 254,822, SS=3, 37

6. ***The volume of services (SE) rendered to the population for a year depends on the investments made (IM):***

SE = 30165, 13 + 0,9242**IM**

R^2 =0,930, F= 106, 6146, SS=2, 36

7. ***Total number of the population of the Republic (PN) represents the function from the time (t):***

PN = 27775687 + 546184, 9t

R^2 =0,992, F= 1021,883, SS=2, 46

The developed complex econometric model is dynamic, taking into account changes in the analyzed parameters over time in the form of a time factor ***t*** included in the model. The model consists of a system of recursive regression equations and is solved by sequential substitution of endogenous variables obtained as a result of solving some equations in other equations of the model as exogenous variables. The system recursively makes it possible to estimate the parameters of regression equations by the least squares method for each system equation separately, which greatly simplifies the practical model calculations. To justify the predictive ability of the model, indicators of forecast accuracy have been calculated: determination coefficient $\mathbf{R^2}$, **F-** Fisher criterion, standard error of the **SS** equation.

The input to the model is the volume of investments placed in the national economy of the republic, which is specified outside the model. The development of such sectors of the economy as industry, agriculture, forestry and fisheries, construction works, and the

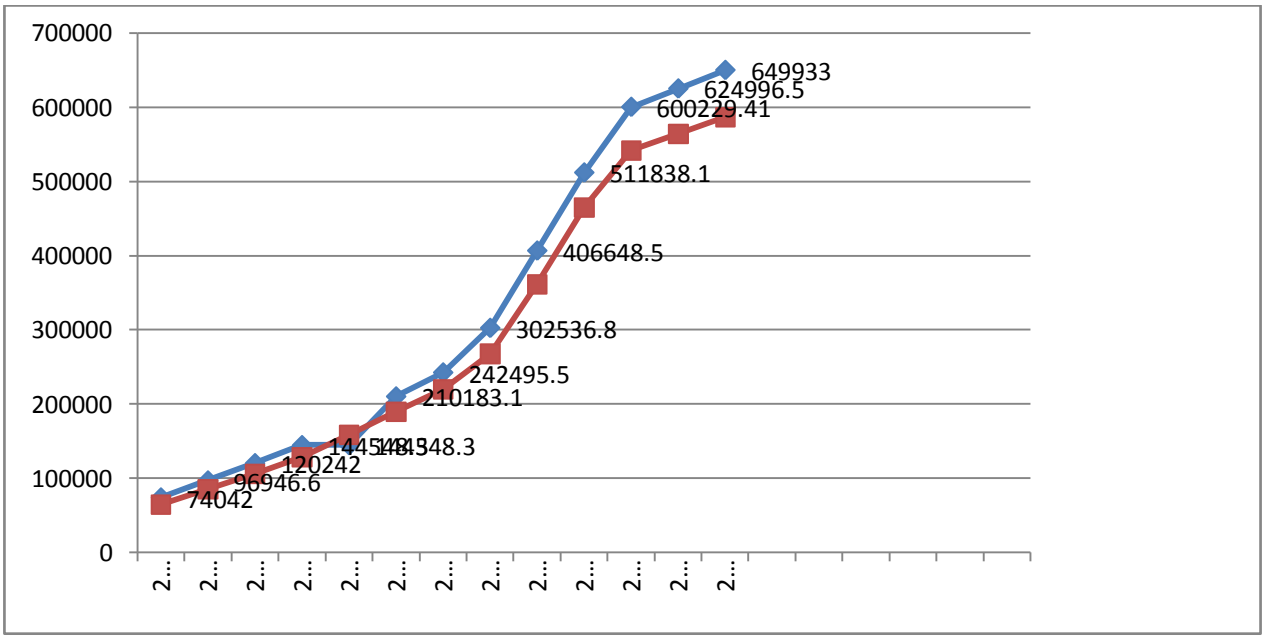
services provided are forecasted depending on the investments made in the economy. The development of these industries significantly affects the volume of gross value added by sectors of the national economy. The forecast value of the Gross Domestic Product of the Republic of Uzbekistan is calculated as a function of gross value added by sectors of the economy.

A comparative analysis of macroeconomic development indicators of the Republic of Uzbekistan in 2019 and forecast values for 2022 calculated by the model are provided in the table. Graphically changes in the relevant indicators are presented in figures №3 and №4.

Forecast of the main socio-economic indicators of the development of the Republic of Uzbekistan

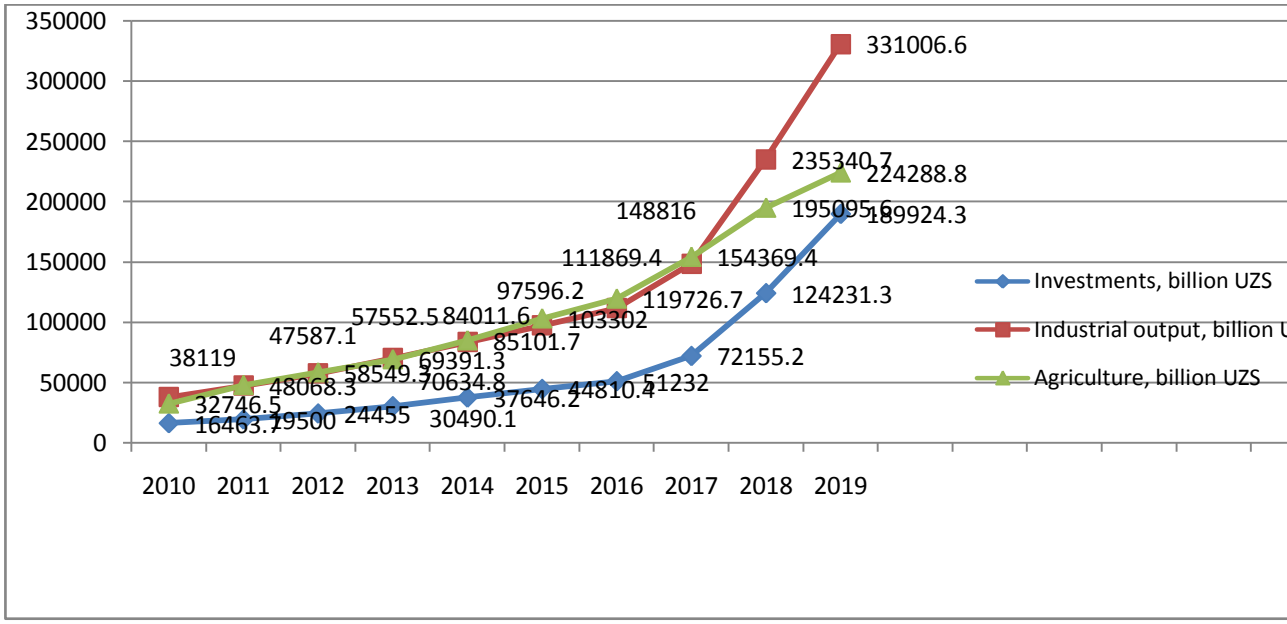
Indicators	2019	2022	Growth rates, %
Investments, billion UZS	189924,3	230000	121,1
Services provided to the population, billion UZS	190356	242730	127,51
Construction and installation works, billion UZS	68854,4	86357	125,42
Production of the agriculture, fishery and forestry, billion UZS	224288,8	294589	131,34
Industrial output, billion UZS	331006,6	406863	122,92
Gross value added, billion UZS	465357,4	586651,3	126,06
Gross Domestic Product, billion UZS	511838,1	649933	127

Dynamics of the development of the basic macroeconomic indicators of the Republic of Uzbekistan for the period between 2020 and 2022



Developed by the author in reliance upon the data of the website www.stat.uz.

Figure 3. Dynamics of the Gross Domestic Product and the Gross value added of the Republic of Uzbekistan for 2010-2019 and the forecast for 2020-2022. Dynamics of the investments, industrial output and agriculture of the Republic of Uzbekistan for the period between 2020 and 2022



Developed by the author in reliance upon the data of the website www.stat.uz.

Figure 4. Dynamics of macroeconomic indicators of the development of the national economy of the Republic of Uzbekistan for 2010-2019 and forecast for 2020-202

It is obvious from the table and graphs that under conditions of maintaining current development trends, the industrial production of the Republic of Uzbekistan in 2022 will increase by approximately 23%, agricultural, forestry and fishery products will increase by 31,34%.

The volume of construction and installation works and services provided to the population of the republic will go up by 25, 4% and 27, 51%, respectively.

The growth of the Gross Domestic Product of the Republic of Uzbekistan by 2022 is expected to be 127% of the level of 2019.

It should be noted the predicted values of macroeconomic indicators obtained as a result of model calculations are considered to be essential analytical information that makes it possible to study and characterize the trends in the socio-economic development of the national economy of the Republic of Uzbekistan for the medium term.

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