Digital Economy In Improving The Quality Of Economic Growth

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Abstract: The article examines the three traditional factors of economic growth: labor, land, capital, scientific and technological progress, the impact of information and knowledge in the digital economy in order to improve the living standards of the population, build a free and prosperous life and increase the incomes of society. to increase the total wealth, to expand the state's capacity to address poverty, hunger and other social problems. It is also important to consider the increase in income as the main means of expanding human capacity for employment in a prestigious job that creates material and moral satisfaction, the fair distribution of resources expands the choice of benefits for all members of society, income measured by gross domestic product (GDP) It is stated that only the increase in GDP from the world practice does not lead to an increase in the level of education, strengthening human health, ensuring human rights and freedoms.

Keywords: Digital economy, economic growth, sustainable development, information and communication system (ICT), quality of economic growth, being balanced, economic growth, the quality of economic growth investments, quality indicators of economic growth, modernization.

1. INTRODUCTION

Even in the twentieth century, many theorists have described the development process as a series of stages of economic growth that each country must go through. They believed that an increase in the aggregate volume of production (e.g., an increase in GDP per capita) would increase the overall well-being of the population. Underlying this was the idea that production brings income, and an increase in income improves material or economic well-being.

This U.U. It is most clearly expressed in Rostow's Stages of Economic Growth (1961). According to the concept of this author, there are the following fundamental differences in the historical transition of society from one stage to another on the basis of economic growth:

sectoral structure of the economy;

level of technical development;

the share of the fund in national income (fund rate);

composition and level of consumption.

U.U. Rostow identified 5 main stages of development (Table 1):

1. Traditional society. It is a primitive and stable agricultural production based on hand tools, a hierarchical social structure, landlord domination, and a level of science and technology

typical of the pre-Newtonian era. At this stage, incomes have declined due to limited opportunities for the development of productive forces, on the one hand, low economic growth rates, on the other hand, high birth rates. This was followed by features that stabilized the population and income. At this stage, there were no practical conditions for expanding the reproduction of the national product.

2. Transition society or "flight preparation". This stage has led to a sharp increase in economic growth. At this time, new technologies began to be used in production, capital inflows increased, a "new category of entrepreneurs" emerged, and a centralized state was formed. At this stage, as a result of the introduction of scientific advances in production, economic growth has accelerated, communications and international trade have developed, and investment in agriculture and mining has increased.

Table 1 Stages of economic development of U.U. Rostow

Indicators	The main types of economic development				
	Traditional society	Transition Society	"Flight"	"Maturity"	"The period of high mass consumption"
Validity period (year)	1770-1830	1830-1880	1880-1930	1930-1980	Since 1980
Decisive factors of production	Textile machines	Steam engine-wire	Electric motor, steel	Internal combustion engine-wire, oil	Micro-electronics
Leading networks	Textile industry	Machinery, coal industry	Electrical engineering, steel production	Automotive, oil extraction and refining	Electronics industry, software
Leading countries	United Kingdom, France	United Kingdom, France	Germany, United Kingdom	USA, Western Europe, Japan	Japan, USA, Western Europe

Countries around the world are generally considered to be at the following stages in terms of their level of development:

in the advanced stage of economic development before industrial development. At this stage, the main driving force of economic development is the agricultural sector of the economy;

at the stage of industrial development of economic development. The basis of this stage is the development of industrial production and science and technology;

in the post-industrial stage of economic development. At this stage, high-capacity industries, including information technology, are of paramount importance.

2. MATERIALS AND METHODS

The study used comparative economic analysis, sample observations, statistical and multidimensional methods of econometric analysis, multivariate analysis

3. LITERATURE REVIEW

The study of the relationship between economic growth and development directions is typical for economists of various schools and individual researchers. The interconnection of dynamics and economic growth rates was studied by J. Schumpeter [1], and F. Liszt [2] considered the problem of state policy of stimulating national development. Institutional economists, developing J. Schumpeter's approach, noted the important role of the technological factor in economic growth, described the relationship between basic technologies and the nature of the economic development of society. The technical and economic aspects of the development of the economy are devoted to the work of T. Veblen [3], J. K. Gelbraith [4], J. Dosi [5], N. Clark, S. Perez-Perez, J. Hodgson, K. Aires, K. Yuma in the framework of the "mainstream". Theoretical and practical aspects of economic growth were investigated by J. M. Keynes, E. Domar, R. Harrod, R. Solow, J. Tobin, E. Phelps.

For transition economies, the contributions of L. Abalkin, V. Bokov, M. Bunkin, S. Glazyev, T. Koichuev, A. Koshanov, V. Kushlin, K. Mikulsky, R. Rakhimov, and O. Sabden made a significant contribution to the study of the problem. , A. Spitsina, A. Tatarkina, E. Yasina, etc.

In Uzbekistan, various aspects of economic growth are reflected in the scientific works of I.I. Iskandarova, A.M. Kadyrova, N.M. Makhmudova, A.F. Rasuleva, G.K. Saidova, S.V. Chepelya, I.S. Tukhlieva, T.Sh. Shodieva, M.M. Irmatova, D.V. Trostyansky and others

The problems of achieving the economic development of independent states during the transition period in domestic and foreign literature received wide coverage. However, due to the complexity of the problems being solved, these attempts do not yet contain unambiguous solutions for managing the business in the new conditions.

A number of questions remain in the position of measures that reflect only certain stages in the cyclical development of advanced states, but they did not concern transition economies, while others proceed from the national and social characteristics of individual CIS countries and do not provide answers to the most important problems of the quality of economic growth of transformation systems.

Important aspects of this problem, and in particular, the content of the quality of economic growth, the relationship between the quality of growth and economic development, the determination of the priorities of state policy regarding the problem of optimal growth, etc. remain insufficiently studied.

4. RESULTS

Econometric modeling of the economy is complex not only in organizational and technical terms, but also in their methodological and theoretical aspects. The creation of a new concept based on international standards requires the effective use of existing practice, the critical study and development of proposals for its modernization, forecasting. Much attention is paid to the method of correlation and regression analysis at the time of construction of statistical models representing the evaluation between events.

The method of correlation and regression analysis is carried out on the basis of direct econometric modeling, and its stages are as follows:

identification of economic variables of the model in the formation of the research goal (analysis of the research object, forecasting, imitation of development, management decision, etc.);

analysis of the studied economic phenomenon, formation of information known before modeling;

the type of economic model is determined, the interrelationships between the variables are expressed mathematically, the initial conditions and constraints of the model are expressed, and, of course, the necessary statistical information is collected during these stages. The model is statistically analyzed, the quality of its parameters is evaluated. The validity of the model is checked, and the extent to which the structured model fits into a real economic event is determined.

Accordingly, in the study we aimed to use an unconventional method in the implementation of econometric modeling and forecasting of macroeconomic indicators that ensure sustainable economic development, primarily based on current demand (taking into account the impact of the pandemic on the economy). To do this, it is expedient to look at the econometric model of the impact on the gross domestic product of the Republic of Uzbekistan - Y, total income - X1, emissions - X2, investment in fixed assets - X3 and the number of jobs in the economy - X4. In this case, first of all, the correlation between the selected factors and their outcome factor is determined (Table 2).

Table 2 Correlation coefficient between the gross domestic product of the Republic of Uzbekistan and selected factors

	Y	X1	X2	X3	X4
YIM	1				
X1	0,994268	1			
X2	0,715102	0,553242	1		
X3	0,923653	0,719142	0,056988	1	
X4	0,837416	0,664469	0,560006	0,629314	1

From the data in Table 2, it can be seen that the factors selected with the outcome factor ($r_{Y,X1}$=0,9943; $r_{Y,X2}$=0,77151; $r_{Y,X3}$=0,9237 and $r_{Y,X4}$=0,8374) was found to be strongly associated with and there was no multicollinearity between the interaction factors. According to the results, the factors were selected correctly relative to the outcome factor.

Now it makes sense to determine this regression equation using the currently popular Eviews program. This is because it is also convenient to work in this program and also shows whether the defined equation is adequate by allowing the equation to be tested on the basis of several criteria at the same time (Table 3).

Table 3. The regression equation between the gross domestic product of the Republic of Uzbekistan and the selected factors and its verification by criteria

Dependent Variable: YIM	
Method: Least Squares	
Date: 05/04/20 Time: 16:56	
Sample: 2010 2019	
Included observations: 10	

Variable	Coefficient	Std. Error	t-Statistic	Prob.
			$t_{жад}$=2,262157	
X1	0,982808	0,300244	3,273364	0.0219
X2	-17,3884	49,46768	-0,35151	0.0324
X3	0,729039	0,36063	2,021571	0.0992
X4	0,059217	0,024881	2,380017	0.0039
C	10459,36	2314,3	4,519449	0.0406

R-squared	0.996006	Mean dependent var	228663.8
Adjusted R-squared	0.992810	S.D. dependent var	141655.6
S.E. of regression	12011.26	Akaike info criterion	21.93193
Sum squared resid	7.21E+08	Schwarz criterion	22.08322
Log likelihood	-104.6596	Hannan-Quinn criter.	21.76596
F-statistic	311.6988	Durbin-Watson stat	2.042282
Prob(F-statistic)	0.000004	$F_{жад}$=5,192168	

Based on the data in Table 3, we first focus on the values of the regression equation on the t-Statistic column to verify the significance of the parameters, α=0,05 and df=9 when t_{tab}= 2,2622 from equality $t_{tab} > t_{X2}$=-0,35151 and $t_{tab} > t_{X3}$=2,0216 because $t_{tab} < t_{account}$ since the condition is not met, these parameters are insignificant. To make sure of this, it would be appropriate to check with both MAPE and TIC criteria (Figure 1).
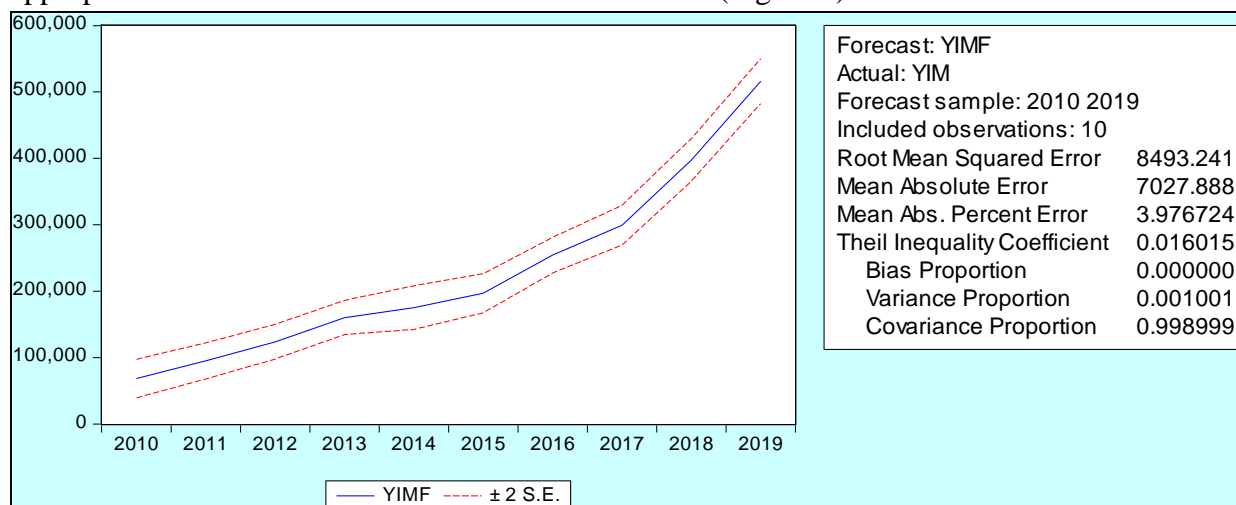

Figure 1. Test results using MAPE and TIC criteria.

Average absolute percentage error *(Mean Absolute Percentage Error-MAPE)* according to the criterion, $MAPE < 10\%$ - the forecast accuracy is high, $10\% < MAPE < 20\%$ - the accuracy of the forecast is good, $20\% < MAPE < 50\%$ - The accuracy of the forecast is satisfactory as well $MAPE > 50\%$ - the accuracy of the forecast is unsatisfactory/ Tayl coefficient (TIC) $0 \le TIC \le 1$ varies in range. As a result, MAPE=3,976<10 and Tayl coefficient (TIC) 0≤TIC=0,016<1 The forecast accuracy is high and all the selected parameters are important.

Now it is necessary to check the significance of the regression equation by the Fisher criterion. α=0,05; k1=4 and k2=5 when Ftab= 5,192168 which is determined from the equation Fhis = 311.6988 according to the condition Fjad <Fhis

Estimation Command:
=========================
LS Y X1 X2 X3 X4 C

Estimation Equation:
=========================
YIM = C(1)*X1 + C(2)*X2 + C(3)*X3 + C(4)*X4 + C(5)

Substituted Coefficients:
=========================
Y = 0.982808*X1 - 17.3883760932*X2 + 0.729039012512*X3+ 0.059217*X4 + 10459.36

Y=0,98*X1-17,4*X2+0,73*X3+0,06*X4+10459,4   **(1)**

Since the (1) -regression equation is significant and DW = 2.042282, there is no autocorrelation. Hence, according to the values and conditions of the measurable criterion examined, equation (1) -regression is reliable and adequate.

If we give an economic interpretation of the regression equation, if we increase the total income of the population by 100% of the investment in fixed assets and the number of jobs in the economy, the country's GDP can increase by 98%, 73% and 6%, respectively. However, it should be noted that in the current conditions of the Republic of Uzbekistan, this figure is significant, allowing to increase the GDP by 17.4 units by reducing emissions by 1 ton.

It is necessary to have tables and graphs of assessment of the forecast quality of each indicator, the ability to visually compare the number of missed indicators, the full range of forecast indicators, the results of monitoring balance ratios, the results of monitoring the range of individual values of each indicator.

We perform a multi-factor forecast of gross domestic product on model (1). For this
Y=0,98*X1-17,4*X2+0,73*X3+0,06*X4+10459,4   **(1)**
The system of equations is used, depending on the time of each of the factors in equation (1):
X1=-30795+37547,8*t;
X2=713,3+15,9*t;
X3=24894,4+19876,4*t;

X4=11282,6+205,6*t.

Table 4 Multifactor forecast of the gross domestic product of the Republic of Uzbekistan

	GDP, billion sum	Total income of the population, billion soums	Pollutants released into the atmosphere, thousand tons	Fixed capital investments (in current prices, billion soums)	Number of employees in the economy (thousand people)
2020 й.	511838,1	382230,8	888,2	193746,0	13544,2
2021 й.	562880,4	419778,6	904,1	213622,4	13749,8
2022 й.	613922,7	457326,4	920,0	233498,8	13955,4
2023 й.	664965,0	494874,2	935,9	253375,2	14161,0
2024 й.	716007,3	532422,0	951,8	273251,6	14366,6
2025 й.	767049,6	569969,8	967,7	293128,0	14572,2

Source: Author's calculation based on the data of the State Statistics Committee of the Republic of Uzbekistan

According to the table, the gross domestic product of the Republic of Uzbekistan in 2025 will increase by 33.3% compared to 2020 and will amount to 767049.6 billion soums. soums. This, of course, is due to changes in the factors seen. In 2025, compared to the base year, the total income of the population increased by 32.9%, emissions by 8.2%, fixed capital investment by 33.9% and the number of jobs in the economy by 7.1%. 569969.8 bln. soums, 967.7 tons, investments in fixed assets amounted to 293128.0 bln. soums and the number of jobs in the economy will reach 14572.2 thousand people.

5. DISCUSSIONS

Experts understand that the digital economy understands that it can contribute to economic growth and sustainable development, but not all countries in the world can move in the same direction at the same pace. After analyzing digital changes in 50 countries, which account for 90 percent of global gross domestic product and 78 percent of the world's population, Huawey compiled the 2016 Global Connectivity Index.

Table 5 Huawey 2016 global connectivity index []

Distribution of individual countries by groups		
Management	**Flexible**	**Beginners**
United States	China	Nigeria
Singapore	Russia	Bangladesh
Sweden	Brazil	Pakistan

In the table above, the first group was led by the United States, Singapore and Sweden. Among the second group are China (23rd place), Russia (26th place) and Brazil (30th place). At the end of the ranking and we can see that the third group is occupied by Nigeria, Bangladesh and Pakistan.

Expanding access to open and global Internet will increase economic growth, create new jobs, and boost e-commerce opportunities. Such incentives may be facilitated by special measures taken by governments at the national and international levels.

Uzbekistan is also working to introduce a digital economy. In particular, Uzbek scientists say: "Great work is being done in our country to develop the digital economy .... In the digital economy, digital data is a key element of production in all socio-economic spheres, and the gradual transition to such an economic system It will increase, create new jobs, promote rapid economic growth and ensure national independence. ".

However, in the process of introducing the digital economy, special attention should be paid to the following:

trade barriers;

protection of personal data;

transmitted data;

new risks associated with payment mechanisms.

The concept of socio-economic development of Uzbekistan until 2030 includes ensuring macroeconomic stability and sustainable economic growth, increasing the competitiveness of sectors, investment and export potential, creating favorable conditions for business development and protection, reducing labor market tensions, income growth and poverty. shortening is implied.

Stable high rates of economic growth, regular revision of wages, pensions, stipends and benefits ensure an increase in incomes and improved quality of life. This is reflected in the fact that the per capita standard of living has increased significantly.

It is noteworthy that today the digital economy as a new industrial complex is a rapidly growing part of the global economy in the traditional sense, and the development of new technologies in recent years has led to the emergence of huge markets for mobile communications, Internet services, online gaming industry and more. On the other hand, new technologies have a changing impact on some aspects of the activities of established business entities, which mainly consist of the replacement of tax mechanisms with digital elements, as well as modernization (e.g., existing software).

It should also be noted that the growth of the digital economy is associated with the development, improvement and growth of a number of markets that are directly related to digital and mobile technologies.
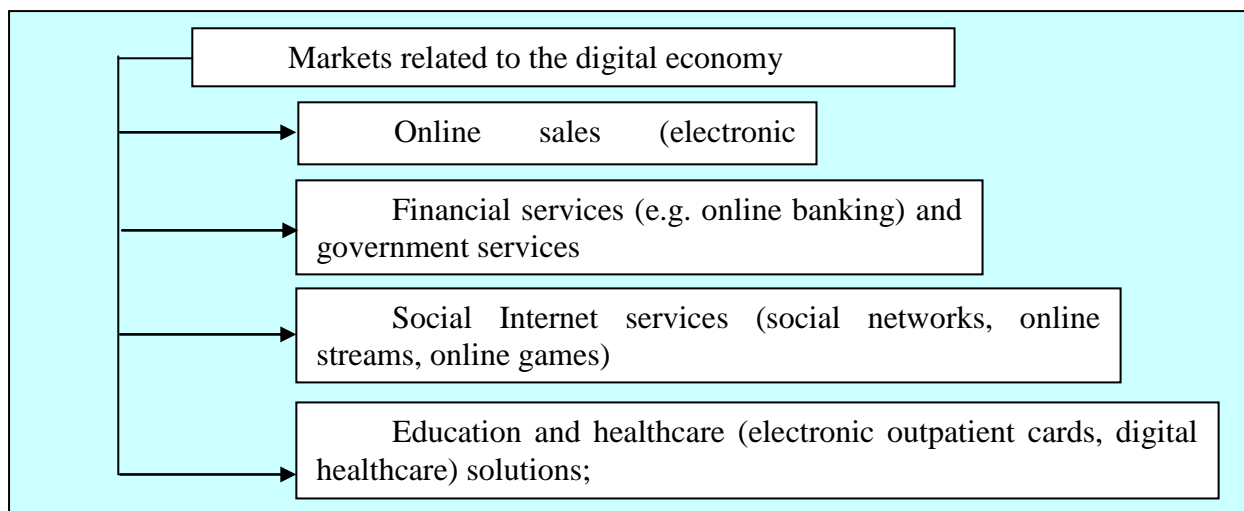
Figure 2. Markets related to the digital economy

The production of new knowledge, the harmonization of digital economic activity with traditional will become a new economic force and therefore requires special attention. At the same time, despite the existing potential, it is necessary to create a qualitatively new mechanism to ensure the potential and real potential of Uzbekistan in ensuring high rates of economic growth to take advantage of the development of the national economy. Of course, this process also has its own shortcomings and problems. Among the important problems in the development of new strategic directions, their economic aspects are not sufficiently studied, in this regard, the priorities of the quality of economic growth, its indicators and the use of econometric models in forecasting practice are appropriate.

6. CONCLUSIONS

The main task of economic change in the Republic of Uzbekistan is to implement structural changes and sustainable economic growth, taking into account the competitive advantages of the republic. In this regard, it is necessary not only to ensure high growth rates, but also to ensure a qualitative change in favor of the processing industries in the economy, which means the need to look for new sources of growth. Including:

growth of non-primary export and import substitution products;

development of new sectors of the economy and expansion of the field of innovation;

implementation of priorities such as improving the investment climate and expanding investment attraction;

The study of the problems of sustainable and high-quality economic growth and ways to overcome them is relevant, first of all, for countries with low economic structure, especially Uzbekistan.

Building a new economic system requires, on the one hand, the traditional factors of economic growth - the accumulation of material resources, natural increase in the number of able-bodied people, technological progress and productivity growth, on the other hand, an effective combination of human, natural and physical capital.

The most important factors determining the quality of economic growth in Uzbekistan are the beneficial effects of economic growth that meet certain criteria. At the same time, it is

recommended to take into account directly the growth of income consumed by the population and not left for the future in order to make calculations. In this regard, the transition of Uzbekistan to a digital economy will provide the necessary additions to improve and stabilize the quality of economic growth.

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