ECONOMETRIC ANALYSIS OF THE ECONOMIC GROWTH OF THE REPUBLIC OF UZBEKISTAN IN THE CONDITIONS OF THE DIGITAL ECONOMY

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Abstract:
The article describes the scientific and practical aspects of the econometric analysis of economic growth in Uzbekistan in the context of an extensive, intensive and digital economy. It also analyzes the pros and cons of ensuring the quality of economic growth in an extensive, intensive and digital economy.

Keywords. Extensive, intensive factors, digital economy, econometric analysis, comparative analysis

Economic growth is measured by the increase in the volume of production in society or the volume of products and services created per capita. It is definitely represented by an increase in real gross national product or real national income. Measuring economic growth by absolute GDP growth or by real GDP per capita growth depends on how it is being done. Usually, measuring the economic growth of a country by the increase in the absolute volume of GDP is used to assess its economic potential, and measuring it by the increase in the amount of real GDP per capita is used to compare the standard of living in the country. The ratio between the rate of growth of the social product and the change in the amount of production factors determines the extensive or intensive types of economic growth. Extensive economic growth is achieved due to the increase in the amount of factors of production while preserving the previous technical basis of production.

Let's say that in order to increase production by two shares, another enterprise will be built along with the existing enterprise, which is similar in terms of capacity, quantity and quality of installed equipment, the number of labor force and the composition of skills. In extensive development, if it is carried out purely, the efficiency of production remains unchanged. The fact is that the extensive method of growth has not only a positive side (simple and cheap growth, up to certain limits), but also a negative side:

- due to the fact that the quantitative growth of product production is not followed by technical and economic progress, it is characterized by technical stagnation;
- in most cases, the growth of production assumes a cost-effective character.

It is important to increase the standard of living of the people, to build a free and prosperous life, to ensure the stable growth of the national economy and to increase the income of the members of the society. Currently, the stage after industrial development is typical for the development of the world's leading countries, and the role and place of economic growth factors are changing at this stage. The factor of scientific and technical development has been added to the traditionally calculated three factors: labor, land, and capital, and information and knowledge have become the most important resources. The digital economy is formed directly on this basis, and a person and his potential play a decisive role in this economy.

Analysis of literature on the topic.
The use of information technologies in the economy of Uzbekistan, the current issues of the introduction of the digital economy, and the researches related to the measurement of the impact on the socio-economics were researched by S.S. Gulyamov[1]. , including: B. Panshin [2] explains the origin of the new type of economy as a result of the electronic information and neural network technological revolution. The following processes stand out as necessary conditions: emergence of technological innovations in electronics; existence of public demand for digital competences; The emergence and development of "Internet of Things"; introduction of technological innovations into the social sphere; development of digital platforms in various fields; normative regulation of the use of information and telecommunication technologies in various spheres of activity, etc. Considers that the main focus is on qualitative changes in the foundations of economic development, the principles of organization of production and management, the transition of the entire world system to a state of instability, R. Bukht[3] justifies that the basis of the digital economy is the "digital sector", that is, the main digital information/information and communication technologies (ICT) enterprises producing products and services. In addition to analyzing the difficulties that arise in determining the scale of the digital economy, this article provides an approximate estimate of the share of the digital economy in the world economy: according to the proposed definition, it is about 5 percent of the world GDP. and covers 3% of the world labor market. A.G. Aganbegyan[4] considers that the success of developed countries is explained by a change in the attitude towards human capital from the point of view of public policy: spending on the social sphere, considered irreversible, begins to be considered as an investment in the future well-being of the country. G.I.Tarakanov[5] studied the influence of 30 macroeconomic variables on the growth rate of GDP per capita in 1960-2004 based on the selection of countries created by the method of correlation analysis. It is shown that the nature of this effect depends on the level of development of the country. 6 main factors of economic growth were identified, and it was revealed that their impact on the growth dynamics of GDP per capita largely depends on the level of development of the state economy. Khan W. [6] In modern conditions, the most appropriate model of the economic development of the Russian economy is the achievement model. The introduction of this model of development allows to upgrade equipment at the expense of foreign samples in a short period of time and to achieve an increase in the volume of production, primarily in the light and food industry. It is justified that it helps to reduce unemployment and create new workers. I.E. Dolgova[7] analyzes the advantages and

characteristics of econometric modeling. The article discusses the possibilities of using it for the macroeconomic study of the development of the state's national economy.

Developed a complex recursive econometric model describing the development of the national economy of Uzbekistan in 2010-2020. This econometric model studies the implementation of predictive calculations of macroeconomic indicators of the socio-economic development of the republic for the medium-term perspective.

Research methodology

Analysis and synthesis, economic-mathematical modeling, comparative analysis, correlational and regression analysis, scientific abstraction, forecasting and other methods were used in the research.

Analysis and discussion of results. There is no doubt that economic growth serves to increase the country's general wealth, expand the state's capabilities to solve poverty, hunger, and other social problems. That is why the high level of economic growth is one of the main indicators of economic policy in most countries of the world.

Material wealth plays a huge role in society and human life. An increase in income can be seen as a major means of expanding human opportunities, such as employment in a prestigious job that provides material and moral satisfaction. In addition, income is a source of taxes and other revenues, which are necessary to ensure social protection of vulnerable segments of the population, to implement social programs, that is, to redistribute material goods.

Equitable distribution of resources expands the choice of benefits for all members of society, and also creates the basis for improving the quality of life. The relationship between income and human life should be formed with the help of a state strategy that includes tax-budget and social policy measures.

At the same time, income measured by the amount of gross domestic product (GDP) cannot be the only criterion of human development. Many examples can be given from the world practice that only the increase of GDP does not lead to an increase in the level of education, strengthening of people's health, and provision of human rights and freedoms. Even in countries with almost the same average income, quality of life indicators can differ significantly from each other.

Econometric modeling of the economy is complex not only from the organizational and technical point of view, but also from its methodological and theoretical aspects. It requires the creation of a new concept based on international standards, its effective use, critical study and development of proposals for its modernization, forecasting. A lot of attention is paid to the method of correlation and regression analysis during the construction of statistical models representing the assessment between events.

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

- formation of the research goal (analysis of the research object, forecast, simulation of development, management decision, etc.) determination of the economic variables of the model;

- analysis of the studied economic phenomenon, formation of information known before the start of modeling;
- the type of economic model is determined, the interrelationship between variables is expressed in mathematical form, the initial conditions and limitations of the model are expressed, and, of course, the necessary statistical information is collected among these stages. The model is analyzed statistically, the quality of its parameters is evaluated. The validity of the model is checked, it is determined how well the constructed model corresponds to the real economic phenomenon.

Nevertheless, in the research, we will initially perform an econometric analysis of extensive growth using statistical data of the economy of the Republic of Uzbekistan for the years 2000-2020.

For this, the volume of the gross domestic product of the Republic of Uzbekistan - GDP, investments in fixed capital - AKI, the value of fixed assets in economic sectors - AFQ, the number of jobs in the economy - IBS, the number of enterprises and organizations operating in the economy of the Republic of Uzbekistan - KS and income from available natural resources - TRD factors we will analyze the change as a result of the effect econometrically. In this regard, in order to make sure that the influencing factors are correctly selected, the correlation coefficients between them are determined (Table 1).

Table 1 Correlation coefficient between factors of intensive change of gross domestic product of the Republic of Uzbekistan.

	YIM	AKI	AFQ	IBS	KS	TRD
YIM	1					
AKI	0.9742931	1				
AFQ	0.9743633	0.692868	1			
KS	0.81907498	0.697102	0.70072	1		
IBS	0.97493993	0.747873	0.64392	0.755496	1	
TRD	-0.20283965	-0.01753	-0.02283	-0.50675	-0.17204	1

2-table The parameter and quality criteria of the extensive change model of the gross domestic product of the Republic of Uzbekistan

Dependent Variable: LNYIM				
Method: Least Squares				
Date: 10/08/21 Time: 17:35				
Sample: 2000 2020				
Included observations: 21				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
LNAKI	-0.38635	0.267137	-1.44627	0.0049
LNAFQ	0.474321	0.142377	3.331438	0.0046
LNIBS	8.45557	1.249186	6.768864	0.0000
LNKS	1.046709	0.399382	2.620823	0.0193
LNTRD	0.067062	0.057822	1.159788	0.0043
C	-75.44575	12.04991	-6.261104	0.0000
			t=2.13145	
R-squared	0.998570	Mean dependent var		10.99539
Adjusted R-squared	0.998094	S.D. dependent var		1.614075
S.E. of regression	0.070469	Akaike info criterion		-2.232339
Sum squared resid	0.074488	Schwarz criterion		-1.933904
Log likelihood	29.43956	Hannan-Quinn criter.		-2.167571
F-statistic	2095.525	Durbin-Watson stat		1.962872
Prob(F-statistic)	0.000000	F=4.618759		

All factors are weakly inversely associated with the number of operating enterprises and organizations, and since there is no conditional multicollinearity between the factors, the regression equation can be determined using the EViews program. Since the factors selected

for this purpose have different measurement units, logarithms of the factor indicators are used to form a non-linear equation, and it is checked based on quality criteria (Table 2).

Using the coefficients presented in the table, a linear logarithmic equation is first determined and it is expressed as follows:

$$LnYIM = -0.38635173 LnAKI + 0.474 LnAFQ + 8.456 LnIBS + \\ + 1.05 LnKS + 0.067 LnTRD - 75.45 \qquad (1)$$

In order to simplify the mathematical rules and calculation processes and to achieve the accuracy of the results, the regression equation 1 created above is potentiated and the following equation is created according to it:

$$YIM = \frac{AFQ^{0.474} * IBS^{8.456} * KS^{1.05} * TRD^{0.067}}{AKI^{0.38635173} * e^{75.45}} \qquad (1^*)$$

If we pay attention to the significance of the determined parameters of the 1*-regression equation according to the t-Statistic criteria, with a=0.05 and df=15, from the equality of tJad=2.13145, investments in fixed capital - KI(tAKI=-1.44627) and income from natural resources - TRD(tTRD=1.159788) factors are insignificant under the condition this>tjad, and retrospective quality criteria MAPE (Mean Absolute Percentage Error) and TIC (Tayl inequality coefficient - an alternative measure of Tayl forecast accuracy) can be used to check it. (Figure 1).
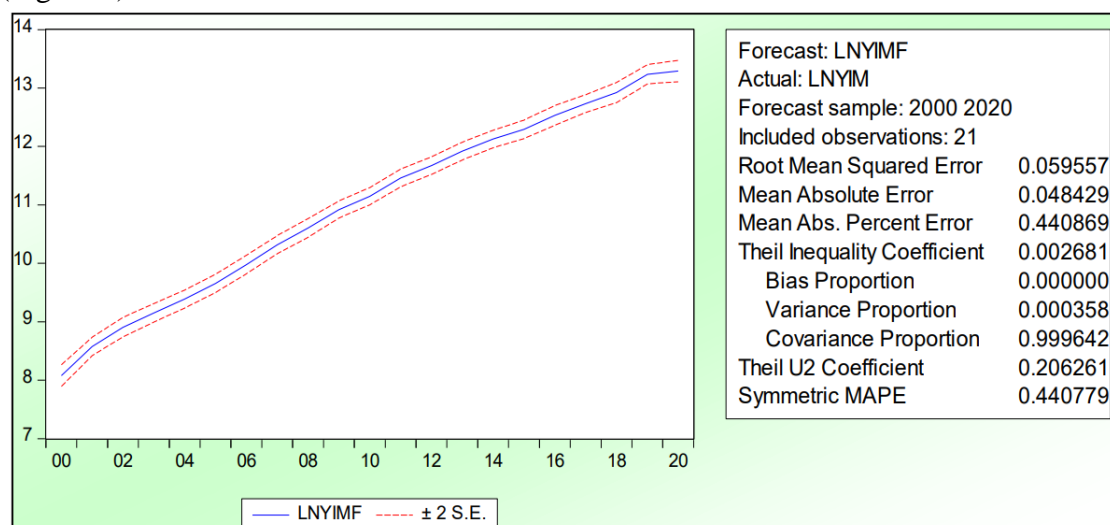

Forecast: LNYIMF	
Actual: LNYIM	
Forecast sample: 2000 2020	
Included observations: 21	
Root Mean Squared Error	0.059557
Mean Absolute Error	0.048429
Mean Abs. Percent Error	0.440869
Theil Inequality Coefficient	0.002681
Bias Proportion	0.000000
Variance Proportion	0.000358
Covariance Proportion	0.999642
Theil U2 Coefficient	0.206261
Symmetric MAPE	0.440779

Figure 1. Retrospective quality criteria of extensive growth model parameters

If we give an economic explanation to the defined 1*-regression equation, if the value of the main funds in the economic sectors and the amount of income from available natural resources is 1 bln. if it is planned to increase to soums, then the volume of gross domestic product will be additional, respectively 0.3 bln. soums and 1481.4 bln. soums, if the number of jobs in the economy and the number of enterprises and organizations operating in the country are increased to a thousand, the gross domestic product of the country will increase to 45.8 billion soums. soums and 1560.2 bln. can be increased to soum. It should be noted that currently the country is saturated with investments and the volume of investments in fixed capital is 1 bln.

reducing the country's gross domestic product by 1.3 billion soums. it was found that it will lead to an increase of soum.

In the conditions of intensive type of economic growth, the expansion of production scales is achieved by improving the quality of production factors, modernizing production and improving the skills of the workforce, as well as by better using the existing production potential. The intensive way is reflected in the productivity of each unit of the resources involved in the production, ultimately in the increase in the quantity of the product, and in the increase in the quality of the product. The intensive growth model has a number of new characteristics, features and advantages:

- is a somewhat difficult method of economic growth, in which scientific and technical development occupies a decisive place. Accordingly, it implies a high level of growth of production forces, equipment, technologies and high education and specialization of employees;

It is this method of economic growth that allows solving the problem of limited resources. And it is in this way that one of the main sources of economic growth is the saving of resources, which is somewhat cheaper for society than the growth of resources.

Many studies on growth have identified the accumulation of physical and human capital as the most important factors for economic growth, as well as production technology and sound economic policies. Based on this, based on the above-mentioned characteristics of intensive growth, we will perform an econometric analysis of intensive growth using statistical data of the economy of the Republic of Uzbekistan for 2000-2020.

In this regard, the GDP of the Republic of Uzbekistan - Labor productivity to GDP - MU, capital productivity - KU, spending on scientific research and development - ITX and assuming that differences in the growth of economic growth rates between countries lead to a significant redistribution of both skilled and unskilled workers , the number of people who graduated from a higher educational institution - we will do an econometric analysis of changes as a result of the influence of OMS factors. Because they tend to move from poor countries or low-wage areas to rich countries or high-wage areas. In order to carry out the analysis, first of all, the correlation coefficients between them are determined to make sure that the influencing factors are correctly selected (Table 3).

Table 3 Correlation coefficient between factors of intensive change of gross domestic product of the Republic of Uzbekistan

	YIM	MU	KU	ITX	OM
YIM	1				
MU	0.999583	1			
KU	0.869922	0.684779	1		
ITX	0.936813	0.733626	0.577564	1	
OMS	-0.508543	-0.403024	-0.55199	-0.66357	1

Based on these results, it is possible to continue to determine the multi-factor regression equation of the gross domestic product of the Republic of Uzbekistan in relation to the observed relationship through the EViews program. Before that, of course, all the selected factors should be logarithmized according to the basis.

The purpose of carrying out this process is that the difference in the units of measurement of the selected factors in relation to the gross domestic product of the Republic of Uzbekistan

requires logarithmization of the factors. After logarithming the factors, the coefficients for creating a multi-factor regression equation of the gross domestic product of the Republic of Uzbekistan are determined by the EViews program and checked based on quality criteria (Table 4).

Table 4 Parameters and quality criteria of the intensive change model of the gross domestic product of the Republic of Uzbekistan

Dependent Variable: LNYIM				
Method: Least Squares				
Date: 10/15/21 Time: 07:18				
Sample: 2000 2020				
Included observations: 21				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
LNMU	1.403124	0.222233	6.313752	0.0000
LNKU	0.043014	0.016840	2.554276	0.0102
LNITX	-0.034120	0.022473	-1.518266	0.0501
LNOMS	-0.061496	0.039718	-1.548316	0.0310
C	1.331662	0.219177	6.075739	0.0000
			2.119905	
R-squared	0.999927	Mean dependent var		10.99539
Adjusted R-squared	0.999908	S.D. dependent var		1.614075
S.E. of regression	0.015455	Akaike info criterion		-5.297468
Sum squared resid	0.003822	Schwarz criterion		-5.048772
Log likelihood	60.62341	Hannan-Quinn criter.		-5.243495
F-statistic	54529.11	Durbin-Watson stat		1.987119
Prob(F-statistic)	0.000000	5.844117		

According to the determined table values, if we first focus on the significance of the parameters by t-Statistic criteria, with a=0.05 and df=16, the cost of scientific research and development is equal to tJad=2.119905 - ITX tITX 1.518266) and the number of graduates – OMS(tITX =-1.548316) factors are insignificant under the condition this>tjad, and it is necessary to check with MAPE and TIC to make sure that these parameters are really significant or insignificant (Figure 2).
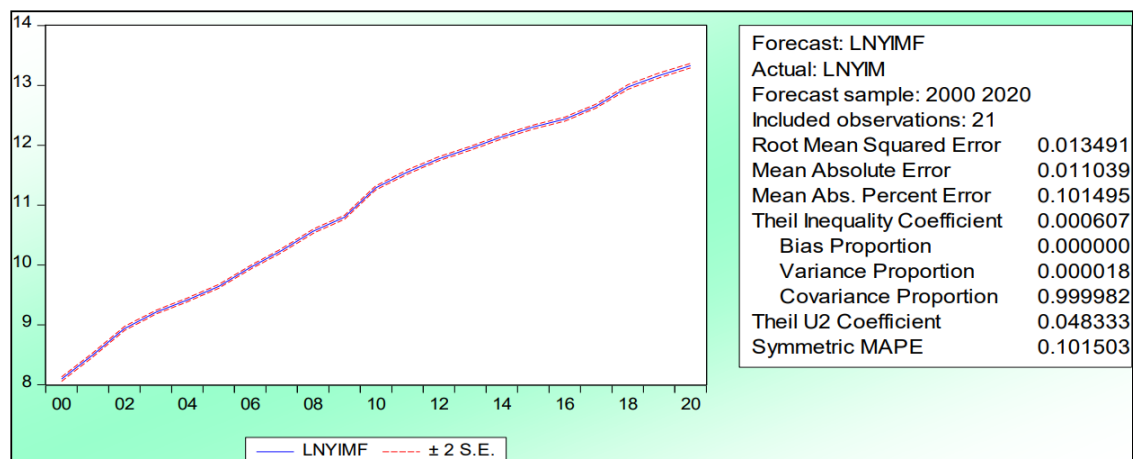

Figure 2. The results of the retrospective quality criteria of the parameters of the intensive change model of the gross domestic product of the Republic of Uzbekistan

In conclusion, higher rates of higher education among the population are not harmful to economic growth, but beneficial because the economy allows more people to be involved in

research. This type of endogenous growth model shows increasing returns to scale with respect to all inputs used in production. Because there is no competition in the intermediate goods sector, inventors can earn income by selling patent rights to intermediate goods producers. Protection of research in terms of patent rights or subsidies to researchers becomes optimal because research increases productivity by increasing the stock of knowledge throughout the economy. This, in turn, results from the connection between the number of highly educated people and the development in ensuring intensive growth.

Another aspect of economic growth is that the penetration of digital technologies into the economy today is a little different from the initial situations, and it is appropriate to pay attention to it in the context of the digital economy. Currently, there is no single standard definition for the academic definition of the digital economy concept. In the field of foreign research studies, in 1996, the American IT-consulting specialist Tapscott was the first to put forward the concept of digital economy in the report "Digital Economy: Opportunities and Threats in the Age of Network Intelligence". The main feature of the concept is the digital flow and transmission of information through the network.

In 1998, the government report "Emerging Digital Economy" published by the US Department of Commerce introduced the term digital economy for the first time, and the concept of digital economy was gradually recognized by governments and scholars around the world[9]. Since then, relevant research on the digital economy has begun to rise, in the process the understanding of the digital economy has been continuously enriched and deepened, and the category of digital economy research has been continuously improved.

There are two main perspectives to narrowly define the digital economy. First, the digital economy is divided into two parts, namely ICT services and manufacturing, which are defined as the digital economy, and the second is retail, the platform economy, and the sharing economy, which are mainly supported by ICT and cannot be separated by official industry codes.

According to Maglio, "the digital economy consists of four parts: internet infrastructure, e-commerce, digital delivery of goods and services, and retailing of tangible goods." According to Meisenberg, the digital economy consists of three main components: e-business infrastructure, e-business and e-commerce[10]. Based on the research, it should be noted that in recent years, many studies have identified relevant products or industries based on the identification of the components of the digital economy. Digital platforms have the potential to bring together people, organizations and resources to facilitate key interactions between businesses and consumers, as well as improve the efficiency of business management.

In this sense, in the research work, the factors affecting the change of the gross domestic product of the Republic of Uzbekistan - GDP are the total number of Internet users in the country - IFJ, the number of subscribers with mobile communication - MAE, the number of enterprises and organizations connected to the Internet - IUK, and the number of broadband Internet access the number of those who were - PIK was selected and it was aimed to conduct research among these selections.

With the help of econometric analysis among the selected factors, the model of the change of the volume of the gross domestic product of the Republic of Uzbekistan in the conditions of

the digital economy was determined. First of all, the level of general and specific correlation between these factors was calculated (Table 4).

Table 4 In the conditions of the digital economy, the degree of connection of the volume of the gross domestic product of the Republic of Uzbekistan with the factors

	YIM	IFJ	MAE	IUK	PIK
YIM	1				
IFJ	0,986981	1			
MAE	0,730989	0,792349	1		
IUK	0,98437	0,684495	0,708376	1	
PIK	0,974688	0,756793	0,621601	0,641791	1

Table 5 Parameters of the regression equation of changes in the volume of the gross domestic product of the Republic of Uzbekistan in the conditions of the digital economy and their quality criteria

| Dependent Variable: LNYIM				
Method: Least Squares				
Date: 10/15/21 Time: 07:09				
Sample: 2000 2020				
Included observations: 21				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
LNIFJ	0.453813	0.106091	4.2775825	0.0005
LNMAE	-0.048803	0.041305	-1.1815228	0.0021
LNIUK	0.848730	0.196946	4.3094461	0.0005
LNPIK	0.111043	0.048379	2.2952952	0.0356
C	-2.088269	1.723236	-1.211830	0.2432
R-squared	0.997015	Mean dependent var		10.99539
Adjusted R-squared	0.996269	S.D. dependent var		1.614075
S.E. of regression	0.098593	Akaike info criterion		-1.591369
Sum squared resid	0.155530	Schwarz criterion		-1.342674
Log likelihood	21.70938	Hannan-Quinn criter.		-1.537396
F-statistic	1336.054	Durbin-Watson stat		1.988438
Prob(F-statistic)	0.000000			

Using the coefficient values determined based on the calculation results presented in the table, the following logarithmic linear equation is first created:

$$LnYIM = 0.45 LnIFJ - 0.0488028 LnMAE + 0.85 LnIUK + 0.11 LnPIK - 2.09 \quad (3)$$

The resulting regression equation 3 is divided by powering to establish the accuracy of the resulting values and the compatibility with the real process, with the following result:

$$YIM = \frac{IFJ^{0.45} * IUK^{0.85} * PIK^{0.11}}{MAE^{0.0488028} * e^{2.09}} \quad (3^*)$$

If we pay attention to the significance of the parameters of the 3*-regression equation according to the tStatistic criteria, with $\alpha=0.05$ and df=16, the number of subscribers who only have mobile communication is equal to tJad=2.119905 (tMAE=-1.181523 <tJad = 2.119905) is insignificant, we check with MAPE and TIC to be completely sure whether this parameter is significant or not (Figure 4).
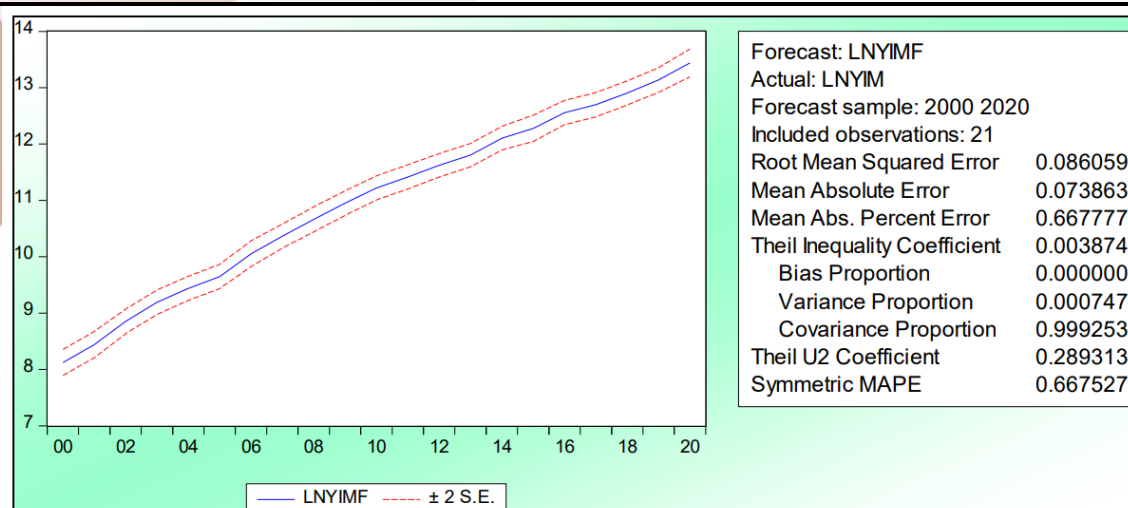
Figure 4. Results of retrospective quality criteria of 3*-regression parameters

Based on the data presented in Figure 4, it can be noted that MAPE=0.668, which in turn is MAPE=0.668.

According to him, if the number of Internet users in the Republic of Uzbekistan is increased to 1000 people, the gross domestic product of the country will be 10.5 billion. additional increase to soums and reduction of the number of subscribers with mobile communication by 1,160.4 billion. it was determined that there will be an opportunity to increase the volume of gross domestic product to soums. This situation can be explained by reducing the speed of the Internet as a result of improper use of the Internet by subscribers who have a mobile connection.

In addition, if we increase the number of enterprises and organizations connected to the Internet by one unit and the number of people who have access to broadband Internet by one thousand, then the volume of the gross domestic product of the Republic of Uzbekistan will be 3.93 billion, respectively. soums and 11.8 bln. it was determined that there is a possibility of additional increase to soum.

Conclusions and suggestions. In short, the Internet has launched the third wave of capitalism, which is changing many aspects of the global market - from consumer behavior to new business models. Mobility, cloud computing, business intelligence, and social media support this shift in both developed and developing economies.

Tectonic shifts in the global economy, along with technological leaps, are irreversibly changing the world market. The global recession of 2008-09 accelerated market trends driven by consumer spending awareness, industry transformation, globalization of markets, business uncertainty and risk, driven by the Internet and other forces. Rethinking it disrupts conventional thinking about key issues: where to find growth, how to satisfy customer needs, and how to go to market.

Although sometimes thought of separately, economic growth and technology are closely related, and studies show that industrial expansion, rising wealth, and population growth in emerging markets have increased the demand for technology. In a developed economy, however, high rates of return for investors reinforce the need to save costs and expand

innovation. Regardless of their location, companies that want to grow must engage with the booming parts of the economy—the digital market and the developing world. This creates a good period that promotes the digital market in developing and developed economies.

In today's interconnected environment, this virtuous circle can lead to rapid market changes unlike in the past. Historically, most firms in advanced economies have modernized as part of an internal strategy, first growing within their own borders and then replicating their business elsewhere. However, today's emerging economies are doing so because technology has made access to global capital, talent, and other resources much easier, allowing them to plan for the global market immediately.

REFERENCES

1. Abdinazarov, X. X., Madumarov, M. J., & Haydarov, S. M. (2019). Zooplankton of Sarikamish Lake (Uzbekistan). *Open Access Library Journal*, *6*(3), 1-8.

2. Walli, M. H., Al-Jubouri, Z., Madumarov, M. M., Margaryta, M., & Aldibe, A. A. A. (2022). Genetic and environment diversity to improve wheat (Triticum spp.) productivity: A review. *Research on Crops*, *23*(2), 295-306.

3. Kuchboev, A. E., Najmidinov, E. K., Mukhamediev, M. A., Karimova, R. R., & Yildiz, K. (2021). Morphological and ecological features of some nematodes of the genus Rhabdochona in marinka obtained from Fergana Valley, Uzbekistan. *Journal of Parasitic Diseases*, *45*(4), 1084-1089.

4. Kuchboev, M. J. M. A. E., Abdunazarov, H. K., & Olimlonovich, A. O. (2021). Development of the Parasite Nematode Echinuria Uncinata (Nematoda: Acuariidae) in the Intermediate Host in Uzbekistan. *Annals of the Romanian Society for Cell Biology*, *25*(6), 3118-3124.

5. Мадумаров, М. Ж. (2021). МОРФОЛОГИЧЕСКИЕ И ЭКОЛОГИЧЕСКИЕ ОСОБЕННОСТИ ПАРАЗИТИЧЕСКОЙ НЕМАТОДЫ ECHINURIA UNCINATA У ДАФНИЙ. In *Современное состояние водных биоресуров* (pp. 159-163).

6. Abdinazarov, K. K., Madumarov, M. J., & Khaidarov, S. M. (2020). ZOOPLANKTON OF FISHING FISHERY OF FERGANA REGION. *Scientific Bulletin of Namangan State University*, *2*(1), 93-98.

7. Madumarov, M. J., Kuchboev, A. E., Abdunazarov, H. K., & Amirov, O. O. ARTICLE INFO ABSTRACT.

8. Abdunazarov, L. M. (2020). Amaliy ekologiya o'qitishning ilmiy asoslari. Инновационное развитие науки и образования, 1(1), 30-33.

9. Abdunazarov, L. M. (2020). Ecological security and the need to ensure it. International scientific and practical conference Cutting Edge-Science, 1(1), 49-51.

10. Абдуназаров, Л. М. (2020). Экологик таълим тарбияда экологик маданият тушунчаси мазмуни ва моҳияти. Педогика ва психологияда инновациялар, 20(1), 1053-1062.

11. Абдуназаров, Л. М. (2019). Миллий таълим тизимида экологик маънавиятли шахсни тарбиялаш. Тошкент давлат педагогика университети илмий ахборотлари. 1(18), 24-27.

12. Abdunazarov, L. M. (2019). National Education System of Ecological Education Supply and Implementation It. International Journal of Research, 6(4), 141-145.

13. Абдуназаров, Л. М. (2018). Экология методологияси ва унинг миллий хусуситялари. ЎзМУ хабарлари, 1(4), 26-28.

14. Abdunazarov, L. M. (2018). Issues on Teaching Ecology in National Continuous Eeducation. Eastern European Scientific Journal Germany, 3(1), 265-270.

15. Абдуназаров, Л. М. (2016). Касбий таълимда экологик ўкув унинг таъминоти ва амалга жорий этиш. Кадрлар тайёрлаш тизимида ўрта маҳсус касб-хунар таълимининг ўрни ва ахамияти, 1(1), 31-33.

16. Yusupova, N. V., Ergashev, A. A. (2022). Bo'lajak o'qituvchilarni intergratsion kasbiy faoliyatga tayyorlash mexanizmlari muammo sifatida. TDPU Ilmiy Axborotnomasi, 22(8), 273-277.

17. Yusupova, N. V. (2022). Theoretical and methodological bases of interdisciplinary relations of the natural mathematical cycle in preparation of a future teacher in a pedagogical university. International journal of innovations in engineering research and technology, 9(11), 306-309.

18. Юсупова, Н. В. (2020). Принципы обучения в межпредметные связи. Мактабгача таълимда давлат ва нодавлат секторини ривожлантириш, 1(1), 412-415.

19. Юсупова, Н. В. (2020). Дидактико-психологические основы межпредметных связей предметов естественно-математического цикла в подготовке будущего учителя. Замонавий узлуксиз таълим сифатини ошириш, 1(1), 534-537.

20. Yusupova, N. V. (2020). Fanlararo aloqadorlik asosida o'qitishni matematik statistika taxlili. Fanlarni o'qitishda innovatsion metodikalar, 1(1), 475-481.

21. Yusupova, N. V. (2020). Pedagogika oliy ta'lim muassasalarida bo'lajak o'qituvchilarni tayyorlashda fanlararo bog'lanishlar muammolari. Jismoniy madaniyat va boshlang'ich talim samaradorligini oshirish istiqbollari, 1(1), 402-407.

22. Юсупова, Н. В. (2020). ПРИНЦИПЫ ОБУЧЕНИЯ В МЕЖПРЕДМЕТНЫЕ СВЯЗИ. Nizomiy nomidagi toshkent davlat pedagogika universiteti, 1(1), 412-415.

23. Yusupova, N. V. (2020). Bo'lajak o'qituvchilarini tayyorlashda tabiy-matematik sikl fanlari fanlararo bog'lanishlarning didaktik psixologik asoslari. TDPU Ilmiy Axborotnomasi, 20(4), 105-110.

24. Yusupova, N. V. (2020). Talabalarning o'rta umumta'lim maktablarda fanlararo bog'lanishlarni amalga oshirish bo'yicha asosiy bilim va malakalari. TDPU Ilmiy Axborotnomasi, 20(2), 105-108.

25. Yusupova, N. V. (2020). Tabiiy-matematik sikl fanlari bo'yicha. TDPU Ilmiy Axborotnomasi, 20(5), 116-120.

26. Mirzaev, U., Umarkulova, B., & Ganiev, Y. (2021, August). Use of organic fertilizers, prepared from local waste, to improve the properties of meadow sulf soils: https://doi. org/10.47100/conferences. v1i1. 1340. In *Research Support Center Conferences* (No. 18.06).

27. Isakov, V., & Yusupova, M. (2021, August). CHANGES IN THE PROPERTIES OF SANDY SOILS: https://doi. org/10.47100/conferences. v1i1. 1376. In *RESEARCH SUPPORT CENTER CONFERENCES* (No. 18.06).

28. Isaqov, V., & Xoshimov, A. (2021, July). CONTAMINATION OF SOILS CONE OF THE RIVER SOKH WITH HEAVY METALS. In *Конференции*.

29. Isakov, V., & Karabaev, H. (2021, July). MEADOW-OASIS SOILS OF THE TRANSPORT CONE AND SOME AGROCHEMICAL PROPERTIES OF THEIR. In *Конференции*.

30. Исаков, В. Ю., & Юсупова, М. А. (2021). ГеНеТИКо-ГеоГРаФИчеСКИе оСобеННоСТИ ПеСчаНЫХ МаССИВоВ ФеРГаНСКоЙ ДоЛИНЫ. *Научное обозрение. Биологические науки*, (3), 16-20.

31. Исаков, В. Ю., Мирзаев, У. Б., & Юсупова, М. А. (2020). Особенности характеристики почв песчаных массивов Ферганской долины. *Научное обозрение. Биологические науки*, (1), 15-19.

32. Isakov, V. Y., & Yusupova, M. A. (2019). INFLUENCE OF THE ANTHROPOGENIC FACTOR ON THE SAND ARRAYS OF THE FERGHANA VALLEY. *Scientific Bulletin of Namangan State University*, *1*(9), 58-66.

33. ТАДЖИБОЕВ, Д. Р., & КУКАНБОЕВ, И. И. (2016). ВЛИЯНИЕ ДОБАВКИ ХРОМА НА СРЕДНЕТЕМЕРАТУРНОГО КАТАЛИЗАТОРА. In *Наука молодых-будущее России* (pp. 165-167).

34. ЮЛДАШЕВ, У. М., ТОЖИБОЕВ, Д. Р. У., ЙИГИТАЛИЕВА, М. А. К., ОЧИЛОВ, Г. М., & КУКАНБОЕВ, И. И. (2015). ИННОВАЦИОННЫЕ ТЕХНОЛОГИИ ОБУЧЕНИЯ, РЕАЛИЗУЕМЫЕ В ПРАКТИКЕ УЧИТЕЛЕЙ ХИМИИ. In *Молодежь и XXI век-2015* (pp. 50-55).

35. ОЧИЛОВ, Г. М., КУКАНБОЕВ, И. И., ХУДОЙБЕРДИЕВ, Ж. Х., ЭШМЕТОВ, И. Д., & АГЗАМХОДЖАЕВ, А. А. (2015). ИОННЫЙ ОБМЕН НА АНГРЕНСКОМ УГЛЕ И ЕГО ОСОБЕННОСТИ. In *Молодежь и XXI век-2015* (pp. 34-36).

36. ТУРСУНОВА, Г. В. К., ИСАКОВ, М. Ю., СОДИКОВ, М. У., & КУКОНБОЕВ, И. И. (2015). О РЕЗУЛЬТАТАХ ИССЛЕДОВАНИЯ АЗОТИСТЫХ ОСНОВАНИЙ ФЕРГАНСКОЙ НЕФТИ. In *Молодежь и XXI век-2015* (pp. 48-49).

37. ЯКУБОВА, Н. Х., ТУРСУНОВА, Г. В. К., ИСАКОВ, М. Ю., & САИДАХМЕДОВА, Н. Ю. (2015). ВЫДЕЛЕНИЯ И ФРАКЦИОНИРОВАНИЯ АЗОТИСТЫХ ОСНОВАНИЙ. In *Молодежь и XXI век-2015* (pp. 55-57).