

REPUBLIC OF AZERBAIJAN

On the rights of manuscript

ABSTRACT

of the dissertation for the degree of Doctor of Philosophy

**WAYS TO INCREASE THE ECONOMIC EFFICIENCY
OF INTERNATIONAL COOPERATION IN
AZERBAIJAN'S EDUCATION**

Specialty: 5310.01 - The world economy

Field of science: 53 - Economic sciences

Applicant: **Asmar Gurban gızı Manafova**

BAKU - 2022

The dissertation work was carried out in the "Globalization and International Economic Relations" department of the Institute of Economics of the Azerbaijan National Academy of Sciences.

Scientific leader : economy doctor of sciences, professor,
Fuad Alinagi oglu Ganbarov

Official opponents: economy doctor of sciences, professor,
Rovshan Rasim oglu Guliyev

economy doctor of sciences, professor
Jabir Jabrayıl oglu Mirzai

doctor of philosophy in economics
Nihad Hafiz oglu Mukhtarli

Operating under the Scientific-Research Institute of Economic Research under the Azerbaijan State University of Economics of the Higher Attestation Commission under the President of the Republic of Azerbaijan FD 1.11 Dissertation Council

Chairman of the Dissertation
council:

Doctor of economic sciences, Professor
Yadulla Hamdulla oghlu Hasanli

Scientific secretary of the
Dissertation council:

Doctor of philosophy in economics
Rashad Aktiv oghlu Huseynov

Chairman of the
scientific seminar:

Doctor of economic sciences, Ass. Professor
Mushfig Yelmar oglu Guliyev

INTRODUCTION

Relevance and development of the topic. In the globalized world economy, international competition has increased and covered all sectors of the economy. Increased international competition depends on the level of development of education, which plays an important role in the formation of human capital. Therefore, as in the developed countries of the world, one of the priorities of the state policy of Azerbaijan is the development of education. That is why, after gaining independence, extensive reforms have been carried out in the field of education in our country.

As stated in the Decree of the President of the Republic of Azerbaijan “On approval of strategic roadmaps for the national economy and key sectors of the economy” No. 1138 dated December 6, 2016, “in developed countries, a large part of national wealth is human capital and intellectual labor has a high specific gravity”¹. To ensure the sustainable development of the country in Azerbaijan, the formation and effective use of human capital is a key priority. Over the past years, extensive measures for the development of human capital have been identified and implemented, and a number of several government programs, and concepts are currently being implemented. The development of human capital, development based on knowledge and innovations is a priority in the “State Strategy for the Development of Education in the Republic of Azerbaijan”. Also, the laws of the Republic of Azerbaijan "On Education" and "On Science" are important state documents that serve the development of human capital in the country. To strengthen general education, which is the guarantor of the development of society, the modernization of the education system must be continued, and content reforms and integrative teaching practices must be deepened. All this will significantly improve the country's position in international assessments. In this regard, Azerbaijan's international cooperation with the world in the

¹Strategic Road Map for the National Economic Perspective of the Republic of Azerbaijan // Approved by the Decree of the President of the Republic of Azerbaijan dated December 6, 2016. - Baku: - URL: <https://static.president.az/pdf/38542.pdf>

field of education is important. World experience shows that such cooperation creates favorable conditions for the development of human capital. In this regard, the study of opportunities for international cooperation in education and the theoretical and methodological basis of the market of educational services, the study of supply and demand mechanisms in this market, It is of great scientific and practical importance to analyze the current state of international cooperation in the field of education of the Republic of Azerbaijan, to determine the main prospects for the development of international cooperation and to develop scientifically based recommendations based on them. Issues related to the development of international cooperation in the field of education have always been at the forefront of research by local and foreign scholars. Ahner, S. Goddard, et al. scientists have studied. Issues related to the development of international cooperation in the field of education have always been at the forefront of research by local and foreign scholars. Ahner, S. Goddard, et al. scientists have studied. Issues related to the development of international cooperation in the field of education have always been at the forefront of research by local and foreign scholars. Ahner, S. Goddard, et al. scientists have studied.

Russian scientists V.Y. Afanasyev, Y.G. Grigoryeva, V.P. Shetinen, A.P. Pankruxin studied the current problems of education and its socio-economic significance in society. Problems of development of the education market in different directions have been studied by Russian researchers M.A. Lukashenko, S.A. Belyakov, O.V. Saginova, and others.

Various aspects of Azerbaijan's foreign economic relations, including export-import operations by Sh.H. Hajiyev, Y.H. Hasanli, I.A. Karimli, R.R. Guliyev, F.A. Ganbarov, M.Y. Quliyev, M.G. Gulaliyev, and various aspects of problems related to the higher education process by SS Khalilov, and has been studied by other scientists.

However, the problems of a competitive human capital and an education system based on modern innovative technologies related to increasing the economic efficiency of international cooperation in the field of education have not been sufficiently developed in these works.

Scientific and methodological research of the mechanisms providing realization of potential opportunities of increase of economic efficiency of the international cooperation in the field of education of the Azerbaijan Republic, creation of the basis of the effective approach to improvement of their activity in the conditions of the single information space and its scientific substantiation defined the purpose of this research.

Aims and objectives of the study. The purpose of the dissertation is to study the current state of cooperation in the field of education in Azerbaijan, to identify existing shortcomings, and to develop scientifically sound proposals to increase the effectiveness of cooperation. For the perpetration the following main tasks were performed:

- research of the essence, theoretical and methodological bases of cooperation in the field of education;
- the study of the no the normative-legal base of international cooperation in the field of education;
- Study of the forms and features of international cooperation in the field of education in Azerbaijan;
- Analysis of the current state of the market of educational services of higher education institutions of the Republic of Azerbaijan;
- Analysis of the current state of export services in the field of education in the Republic of Azerbaijan;
- Analysis and assessment of imports of educational services;
- Identification of public policy in the development of international cooperation in the field of education in Azerbaijan and ways to improve the export of educational services;
- determination of directions for regulation of education expenses abroad;
- Evaluation of educational institutions with the application of econometric models in the optimization of economic activity
- development of concrete proposals to increase the effectiveness of cooperation in the field of education.

Object of research - It is Azerbaijan's international cooperation in the field of education.

Subject of research - Increases the economic efficiency of international cooperation in the field of education in Azerbaijan.

Research methods. Methods such as scientific abstraction, analysis and synthesis, economic-statistical analysis, correlation, and regression analysis were used during the research.

Scientific novelty of the research consists of:

- Theoretical views on the impact of educational services on economic growth were grouped, modern features of the world education market were identified and compared with Azerbaijan;

- The potential of cooperation in the field of education in Azerbaijan was assessed and ways to increase the economic efficiency of this cooperation were indicated;

- In the reports of international rating organizations, Azerbaijan's position on education services was assessed by comparing it with other countries;

- In determining the prices of tuition fees for specialties of the higher education institution, indirect costs and profit norms were determined in the structure of educational expenses;

- In Azerbaijan education costs Of GDP volume, the inflation rate in the country, budget revenues of volume, the effects of nominal incomes of the population were modeled and evaluated;

- The volume of education expenditures is projected for 2030, taking into account the impact of GDP, inflation, population incomes, and budget revenues.

Practical significance of the research. The results and proposals obtained in the research can be used in the training of personnel in research institutes and universities of the republic, to increase the effectiveness of relations with countries around the world in the field of education.

Printing and approbation of research results. The general content and results of the research are reflected in 30 scientific articles published in prestigious scientific journals of Azerbaijan and Russia.

Name of the organization where the dissertation work is carried out. The dissertation work was carried out at the Institute of Economics of ANAS.

The structure and scope of the research. Introduction (10629 symbols) to the dissertation, three chapters (I chapters -85451 symbols, II chapters – 67329 symbols, III chapters – 56715 symbols), conclusions, and recommendations, 200 references. The total volume of the work is 150 pages (228427 symbols) , 25 tables, and 13 figures.

MAIN PROVISIONS PROVIDED FOR DEFENSE:

1. As a result of the study, it was determined that even though the average statistical ratio of public universities in Azerbaijan is higher than 5, the situation with educational services in all universities is still unsatisfactory.

Table 1

Statistical coefficient of state and non-state educational institutions in the export of educational services in Azerbaijan

		2008-2009	2009-2010	2010-2011	2011-2012	2015-2016	2017-2018	2019-2020
State Higher Educational Institutions	Total number of students	115994	117934	120488	123530	140642	153341	169015
	Foreigners	6468	6171	4500	4000	3200	3554	4388
	Statistical ratio (%)	5.57	5.23	3.73	3.24	2.27	2.31	2.59
Non-State Universities	Total number of students	20593	21260	19753	19616	20592	14326	18639
	Foreigners	682	637	223	231	225	230	300
	Statistical coefficient	3.31	3	1.13	1.18	1.09	1.6	1.6
Total	Total number of students	136587	139194	140241	143146	161234	167667	187654
	Foreigners	7150	6808	4723	4231	3425	3784	4688
	Statistical ratio (%)	5.23	4.89	3.37	3	2.12	2.25	2.4

Source: Compiled by the author e based on information from ARDSK.

The country's competitiveness in the field of educational services also depends on the quality, organization, and other processes of education in its universities. The calculation of the statistical coefficient of individual universities shows not only the

competitiveness of this university in the market of educational services but also the degree of demand for relevant specialties.

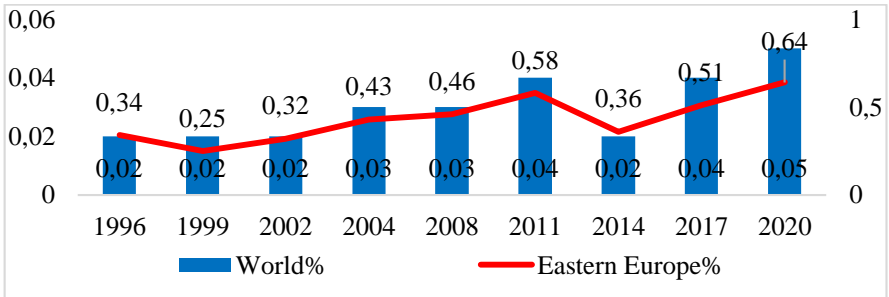
One of the main indicators used to study the market of educational services, the place of this or that country in this market is the ratio of the number of foreign students studying in the country to the total number of students, ie a structural coefficient that is a relative statistical indicator. If the structural coefficient is between 5-15%, it is considered optimal. An increase of more than 25% means a qualitative renewal of the university's strategy. The fact that this ratio is less than 1% indicates that universities are in transition. In this case, it can be said that the education of foreign students in universities is unsustainable and random. As can be seen from Table 1, foreign students prefer to study in public universities in Azerbaijan.

As can be seen from Table 1, the statistical coefficients of public universities in Azerbaijan were slightly higher than 5 in 2008/2009 and 2009/2010. In other years, the statistical coefficient is slightly lower than 5. Of course, in theory, it can be argued that the educational services of public universities in these years are in an "optimal" condition. However, private universities have a significantly lower rating in this area. In 2017/2018 and 2019/2020, the statistical coefficient of universities is much lower than in previous years. In general, the fact that the statistical ratio of Azerbaijani universities in the export of educational services is less than 5 shows that Azerbaijan is not yet competitive in this service market.

2. As a result of the research, the rating of scientific and educational institutions in Azerbaijan is relatively low in terms of the number of scientific articles and books indexed in the Web of Science market.

Graph 1 shows the share of Azerbaijan in the world and Eastern Europe in the number of scientific articles and books indexed in the Web of Science market.

As can be seen from the graph, the number of indexed documents is 0.02% worldwide from 1996 to 2002, 0.03% from 2004 to 2008, 0.04% in 2011, and 0.02% in 2014. , Was 0.04% in 2017 and 0.05% in 2020.



Graph 1. The share of Azerbaijan in the number of documents indexed in the Web of Science market for 1996-2020

Source: <https://scimagojr.com/countrysearch.php?country=AZ>

The number of indexed scientific articles and books on Eastern Europe increased by 0.34% in 1996, 0.25% in 1999, increased by 0.58% in 2011, and decreased by 0.36% in 2014. was 0.51% in 2017 and 0.64% in 2020.

According to the number of documents indexed by specialties in 2020, Azerbaijan is ranked as follows: physics and astronomy - 460, engineering - 374, medicine - 268, mathematics - 340, chemistry - 258, chemical engineering - 143, computer science - 242, social sciences - 125, agricultural and biological sciences-86, economics, econometrics, and finance-74 articles.

3. As a result of the study, it was determined that in the second phase of the post-independence period of Azerbaijan, significant changes took place in the field of educational services, the number of foreign students coming to the country, import-export operations in the field of educational services began to increase. During this period, there was an increase in the number of foreign students studying in Azerbaijan.

Some factors have a positive and negative impact on the market of educational services in Azerbaijan, especially its export market. These factors also have a significant impact on the country's competitiveness in the education services market. The factors that have a positive impact on this market are:

- ✓ A relatively stable socio-political environment has been formed in Azerbaijan;

✓ The legislation necessary for Azerbaijan's integration into the international education services market is in line with international standards;

✓ International agreements have been reached on the recognition of diplomas of Azerbaijani higher education institutions in many countries;

✓ Education costs in Azerbaijan are low compared to many European countries and some CIS countries.

These features significantly increase the competitiveness of Azerbaijan's education services market.

Table 2

**Number of foreigners studying in state and non-state
higher education institutions**

Country name	2014/2015	2015/2016	2016/2017	2017/2018	2018/2019
Total	3698	3425	3370	3784	4262
From CIS countries	581	606	748	943	834
From other countries	3117	2819	2622	2841	3428
Demon	102	111	75	77	76
Georgia	221	251	270	286	415
Afghanistan	17	16	17	81	19
Palestine	14	10	9	46	4
Jordan	25	25	20	12	6
Iraq	139	117	126	248	364
Iran	329	251	271	316	593
Nigeria	23	31	45	27	38
Pakistan	25	24	24	31	57
Sudan	4	9	9	12	11
Syria	27	28	27	22	16
Turkey	2087	1817	1604	1531	1665

Source: http://www.stat.gov.az/menu/6/statistical_yearbooks/,
<https://www.stat.gov.az/source/education/>

The competitiveness of the education services market in Azerbaijan is negatively affected by the following factors:

✓ Lack of world-class specialties in Azerbaijani universities;

✓ High daily living expenses in Azerbaijan compared to other CIS countries;

✓ High housing costs in Azerbaijan, especially in Baku, and shortcomings in the organization of the transport system; low quality and high prices in the health care system.

Based on the analysis of numerous facts, the training of students in some universities, as a rule, is focused on attractive professions and specialties, rather than meeting the demand for the most needed specialties. This leads to a violation of the balance of the labor market and education services.

The solution to this problem depends on the development of a well-thought-out educational policy based on the results of marketing research, not subjective factors. Therefore, an internal and external competition strategy of universities, faculties and graduation departments should be developed to ensure the competitiveness of specific areas of training.

The majority of foreign students studying in Azerbaijani universities are citizens of the Republic of Turkey (60%), the Islamic Republic of Iran (22%), and the Republic of Georgia. At present, foreigners from about 50 countries study at the preparatory and main faculties of public and private universities in about 60 specialties at the bachelor's, masters, and doctoral levels.

Iranian citizens take second place in the contingent of foreign students studying in Azerbaijan. Students from Iran prefer the Azerbaijani language and literature, music, as well as architecture, engineering, and medicine. There has been a significant increase since 2014-2015. In 2018-2019, this figure was 4,262 people.

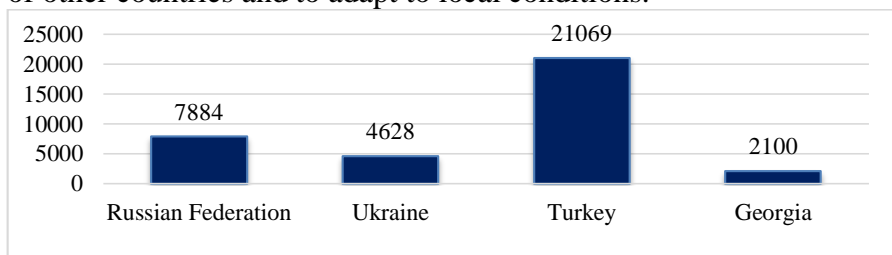
In recent years, there has been an increase in the number of students from other countries in the contingent of foreign students. This increase is mainly due to the number of students from China, India, Bangladesh, Pakistan, and Nigeria.

4. The expansion of Azerbaijan's cooperation with other countries in the field of education is reflected in the increase in the number of students going to study near and far abroad.

Implementation of an important state policy to reduce poverty in Azerbaijan since 2000, the transfer of oil revenues to the Azerbaijani economy, the increase in annual incomes, and living standards have also significantly changed the attitude of the economy and society to education. Starting from this period, the number of students going

abroad to study has increased. The increase in demand for education has revealed some problems of higher education in Azerbaijan. For example,

- ✓ The level of education in Azerbaijan does not allow the effective use of new techniques and technologies;
- ✓ Tuition fees at Azerbaijani universities do not differ much from tuition fees abroad, including in the CIS countries;
- ✓ Opportunities to study at universities at public expense in Azerbaijan are very limited;
- ✓ Studying abroad helps to learn the culture and national traditions of other countries and to adapt to local conditions.



Graph 2. Number of Azerbaijani students studying abroad at their own expense (people) (2020-2021)

Source:^{2, 3} compiled on the basis of data.

According to 2020-2021, a significant part of Azerbaijani students studying abroad at their expense study in the Russian Federation (7884 people), Ukraine (4628 people), the Republic of Turkey (21069 people), and the Republic of Georgia (2100 people). Azerbaijan ranks second in the number of foreign students studying in the Republic of Turkey. Azerbaijan also differs from the Russian Federation in the number of students (Graph 2).

During the research, it was found that the most preferred specialties of Azerbaijani students are: Oil and gas business, mechanical engineering, nuclear and thermal energy engineering, construction

² How much training is available in Russian universities [Electronic resource] / Vuzopedia, URL: <https://vuzopedia.ru/stoimost-obucheniya-v-vuzah-rossii#59>

³ Frequently asked questions [Electronic resource] / [International European University For Foreign Students](https://ie.u.edu.ua/ru/admission-2/faq) URL: <https://ie.u.edu.ua/ru/admission-2/faq>

technology, electronics and radio engineering, aviation, rocket and space technology, nanotechnology, engineering, and land transport technology engineering, electrical and thermal power engineering, technical systems management, shipbuilding and water transport engineering and technology, physical and technical sciences and technology, clinical medicine, health sciences and preventive medicine, nursing, economics, and management.

Table 3

Total educational expenses of Azerbaijani students studying at their own expense, (2020-2021)

	Name of the country	Tuition fee (man)	Monthly spending rate	Annual cost norm	Number of students studying	Expenses (manat)
1	Russia	11564	680	1754	7884	104,999,112
2	Ukraine	1100-3230	800	1900-4030	4628	12,804,000-30,985,680
3	Turkey	510-1300	700	1210-2000	21069	32,238,680-69,527,700
	Turkey Private Universities	8600-35000	850	9540-35850		
4	Georgia	5100	850	6460	2100	24,234,000

Source:⁴, ⁵ compiled on the basis of data.

During the study, it was confirmed that the expenses in the country chosen by Azerbaijani students correspond mainly to the level of income in our country. Table 5 shows the tuition fees and annual expenses of Azerbaijani students studying abroad at their own expense.

As can be seen from the table, the lowest tuition fees are in the state universities of the Republic of Turkey. Thus, the annual tuition fee there varies between 510-1300 manat. However, in private universities

⁴What are the tuition fees at State University? How many state universities are there in Turkey? [Electronic resource] / Gidahatti, 9 August 2021, URL <https://www.gidahatti.com/devlet-universitesi-ogrenim-ucretleri-ne-kadar-turkiyede-kac-tane-devlet-universitesi-var-193034>

⁵ Global Innovation Index Azerbaijan 2021 [Electronic resource] / World Intellectual Property Organization, https://www.wipo.int/edocs/pubdocs/en/wipo_pub_gii_2021/az.pdf

of the Republic of Turkey, this figure varies between 8600-35000 manat. In the universities of the Republic of Ukraine, the annual tuition fee varies from 1,100 to 3,230 manat. The Russian Federation differs in terms of annual spending. The annual cost norm is 1,754 manat.

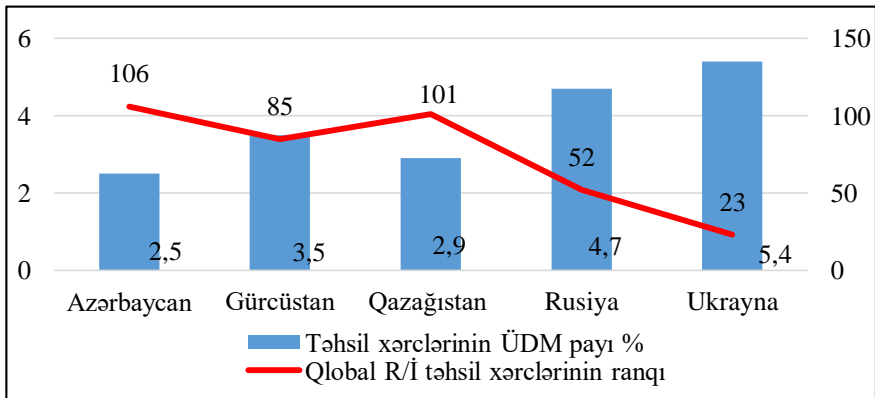
166.0 million for the financing of the State Program on Education of Azerbaijani Youth Abroad in 2007-2015. manats were spent.

I should also note that, “Under the State Program for 2019-2023, doctoral studies at foreign universities have been provided in 55 countries. 7 specialties and 20 specialties have been identified as priorities for doctoral education.

5. There is a need to increase funding for educational services and research to improve the position of the Republic of Azerbaijan among the countries of the world in terms of human capital and research on the Global Innovation Index by 2021.

In the Global Innovation Index, the Republic of Azerbaijan ranks 89th in the world in terms of human capital and research in 2021. Georgia is 60th, Kyrgyzstan is 66th, Russia is 29th and Turkey is 26th. According to the assessments, the Republic of Azerbaijan ranks 84th in education with 42.7 points. It ranks 106th in terms of the share of education expenditures in GDP. As can be seen, the human capital and research activities in the Republic of Azerbaijan are low in the Global Innovation Index on education compared to other countries. This is explained by the low share of education expenditures in GDP. The share of education expenditures in GDP in the Republic of Azerbaijan is 2.5%, which is lower than in other countries studied. The share of education expenditures in GDP in the Republic of Ukraine is 5, Was higher at 4%. The share of education expenditures in GDP in the Republic of Azerbaijan was 1% lower than in Georgia, 0.4% lower than in Kazakhstan, 2.2% lower than in Russia, and 2.9% lower than in Ukraine. As a result, all of this has resulted in a lower ranking of education spending in the Global Innovation Index. Thus, according to these indicators, Azerbaijan fell by 21 points compared to Georgia, 4 points compared to Kazakhstan, 54 points compared to Russia, and 83 points compared to Ukraine. Azerbaijan has shown a weak position in this indicator. As a result, all of this has resulted in a lower ranking of education spending in the Global Innovation Index. Thus, according to

these indicators, Azerbaijan fell by 21 points compared to Georgia, 4 points compared to Kazakhstan, 54 points compared to Russia, and 83 points compared to Ukraine. Azerbaijan has shown a weak position in this indicator. As a result, all of this has resulted in a lower ranking of education spending in the Global Innovation Index. Thus, according to these indicators, Azerbaijan fell by 21 points compared to Georgia, 4 points compared to Kazakhstan, 54 points compared to Russia, and 83 points compared to Ukraine. Azerbaijan has shown a weak position in this indicator.



Graph 3. Position of some countries in the Global Innovation Index, 2021

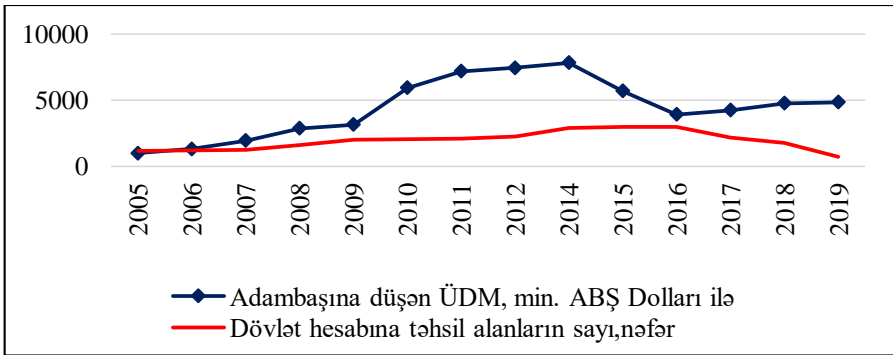
Source: ⁶, ⁷ compiled based on data.

6. The study found that there is a close correlation between the amount of GDP per capita and the number of students studying abroad at public expense. The correlation coefficient of 0.91 in this dependence proves that as the GDP per capita in Azerbaijan increased, the country's economic development, as well as the opportunities to provide financial support to students going abroad to study through the state line, increased.

⁶ Azerbaijan journal // Scimago Institutions Rankings, URL: <https://scimagojr.com/countrysearch.php?country=AZ>

⁷ Economic Value Statistics [Electronic resource] / NAFSA: Association of International Educators, URL: <https://www.nafsa.org/policy-and-advocacy/policy-resources/nafsa-international-student-economic-value-tool-v2#main-content>

Graph 4 shows the number of people studying abroad at the expense of the state with GDP per capita in the Republic of Azerbaijan for 2005-2019.



Graph 4. Number of students studying abroad at the expense of the state with GDP per capita in the Republic of Azerbaijan for 2005-2019

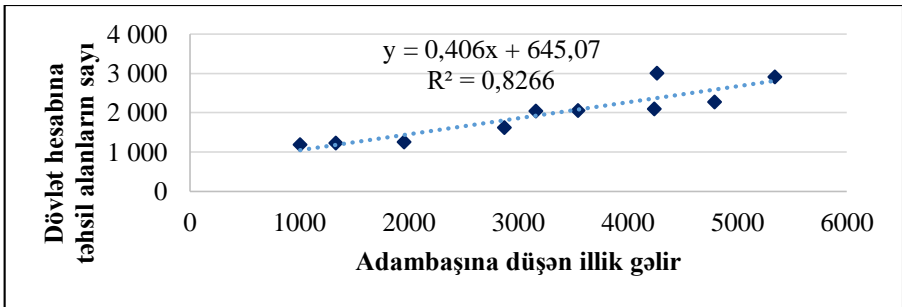
Source. Compiled by the author according to ARDSK

As can be seen from Figure 3, the GDP per capita in the Republic of Azerbaijan for 2005-2014 increased, while in 2014-2016 it decreased. This decline is mainly due to the fall in world oil prices due to the global financial crisis. The decrease was also due to the depreciation of the manat against the US dollar. As can be seen from Figure 3, the GDP per capita in 2019 increased by 23.8% compared to 2016 and amounted to USD 4851.2. All this has had a significant impact on the number of students studying abroad. It should be noted that there is a certain relationship between GDP per capita and the number of students studying abroad at public expense.

7. As a result of the study, it was found that as per capita income increased in Azerbaijan, the funds allocated for educational programs abroad and the number of students studying abroad increased.

Since the correlation coefficient between the number of students studying abroad through the state line and the amount of per capita income is 0.96, there is a close correlation between these indicators on the Chaddock scale. This can be seen more clearly in the correlation

between annual per capita income and the number of people studying abroad at public expense.



Graph 5. Correlation between the annual per capita income in the Republic of Azerbaijan and the number of students studying abroad at public expense

Source. Compiled by the author based on MS Excel program.

Indeed, a certain increase in GDP per capita and annual per capita income allows both the state and families to allocate additional funds for education abroad. Undoubtedly, the financial standards set by the Ministry of Education of the Republic of Azerbaijan to cover the living, education, and transportation costs of students studying abroad have been adjusted to the living standards of the countries where they study. However, in all cases, additional costs are expected. In most cases, parents have to pay for such expenses. The increase in annual per capita income makes it easier for parents to cover such expenses. The rapid increase in annual per capita income in Azerbaijan over the past 10 years is directly related to the increase in oil revenues. These revenues in 2012 increased by 4.7 times compared to 2005.

Education spending is one of the key indicators of competitiveness in the country's education services market. In 2004, \$ 2.4 trillion was spent on education worldwide, accounting for 4.4% of world GDP that year. The bulk of education spending falls on developed countries. According to UNESCO reports for 2007, the potential of the international higher education market is about 140 million students. About 2.8 million of these students study abroad. According to experts, this figure could reach 4.9 million in 2025.

8. Although one of the main factors affecting the competitiveness of a country or any educational institution in the education services market is the average price of educational services, there is no clear and agreed scientific methodology for calculating the volume of exports and imports of educational services.

Table 4

Dynamics of net income from exports of educational services

	2007	2008	2009	2010	2012	2018	2020
Annual payments for accommodation (US dollars)	1440	1680	1680	1920	2400	5355	6120
Annual tuition fee (USD)	2000	2000	2500	2500	3000	5100	5100
Average consumption expenditures in the country (per capita per year, US dollars)	1289	1674	1935	2204	3085	5834.4	6075.12
The average annual cost of an international student	4729	5354	6115	6624	8485	16289.4	23370,24
Number of foreign students	5014	5585	5285	4723	6173	3784	4688
Gross income from foreign students (million USD)	23.71	29.90	32,32	31,29	52.38	20073,4	28058.24

Source: Based on information from ARDSK

According to the methodology developed by the OECD, the volume of exports of educational services is 1) the cost of transport to and from the country offering educational services, 2) payments for accommodation in the country, 3) direct tuition to universities, 4) domestic transport costs and 5) food and other consumption consists of the sum of expenses. For Azerbaijan, these costs can be roughly calculated as follows.

As can be seen from the table, since 2007, the amount of income from the export of educational services in Azerbaijan has increased

significantly. However, this increase was not due to an increase in the number of foreign students, but due to an annual increase in living expenses. Thus, per capita consumer spending in the country increased from 1,106 manat (\$ 1,289) in 2007 to 2,423 manat (\$ 3,085) in 2012. This means that consumer spending will increase by about 2.4 times. The rapid increase in consumer spending significantly reduces the competitiveness of Azerbaijan's education services market. Over the years, a sharp rise in annual rents, as well as increases in tuition fees, have seriously hampered foreign students from studying in Azerbaijan. If the average annual rental price of housing in 2007 was \$ 1,440, In 2012, this figure reached \$ 2,400. Such a significant increase has also occurred in tuition fees. The average tuition fee in 2007 was \$ 2,000, and in 2012 it averaged \$ 3,000. Significant increases in both housing and education payments have hurt Azerbaijan's export potential in the education services market and have significantly weakened the country's competitiveness in the export of educational services.

9. With the application of EViews software package the Republic of Azerbaijan Educational expenditures based on the economic-mathematical model, taking into account the factors affecting education expenditures correlation between According to the study, GDP in Azerbaijan 1% increase in the cost of education 0.0008% increase, 1% increase in inflation across the country education spending 0.0067% decrease in budget revenues 1% increase in the cost of education 0.16% increase, 1% of the nominal income of the population increase in education costs 0.64% increase resulting in.

In the Republic of Azerbaijan The volume of GDP, the relationship between inflation, budget revenues, nominal incomes, and education expenditures The result based on the EViews application software package obtained as follows.

Table 5

Dependent Variable: Y
 Method: Least Squares
 Date: 09/24/20 Time: 15:48
 Sample: 2006 2019
 Included observations: 14

Variable	Coefficient	Std. Error	t-Statistic	Prob.
X4	0.025714	0.012801	2.008807	0.0755
X3	0.014543	0.017181	0.846466	0.4192
X2	-0.001285	0.004511	-0.284953	0.7821
X1	0.000282	0.005114	0.055191	0.9572
C	0.284525	0.095694	2.973283	0.0156
R-squared	0.978872	Mean dependent var		1.392071
Adjusted R-squared	0.969482	SD dependent var		0.470615
SE of regression	0.082214	Akaike info criterion		-1.886530
Sum squared resid	0.060832	Schwarz criterion		-1.658295
Log likelihood	18.20571	Hannan-Quinn criterion.		-1.907657
F-statistic	104.2436	Durbin-Watson stat		1.405048
Prob (F-statistic)	0.000000			

Source. Eviews application is developed by the author based on the software package.

According to the EViews application software package, GDP volume (X1), between inflation rate (X2), budget revenues (X3), nominal income of the population (X4) and education expenditures (Y)

$$Y = 0.026 * X4 + 0.0145 * X3 - 0.0013 * X2 + 0.00028 * X1 + 0.284$$

high expressed by the model correlation is related (R2= 0.979). Adequacy of the established model F-Fisher was determined using the criterion. According to the table data reflecting the results of the Eviews software package, Since the F-Fisher criterion (104,2443,48), the regression equation as a whole is statistically significant. $F_{c\grave{a}dv\grave{a}l} >$

The conclusion on whether there is autocorrelation in the model was determined based on Darbon-Watson statistics according to Table 8, obtained from the EViews application software package. As can be seen from the table, DW = 1.405. In this case, there will be 4 explanatory variables (m = 4) and n = 14 Darbon-Watson crisis points for observation at the significance level. The conclusion on the existence of autocorrelation has not been determined. $\alpha = 0,05$ $d_l = 0,632$, $d_u = 2,030$ $d_l = 0,632 \leq DW = 1,405 < d_u = 2,030$ This

means that the regression equation as a whole is statistically significant.

The high coefficient of determination indicates that the regression equation is better able to express the initial data and that the majority of the result factor (97.9%) is explained by the factors included in the model.

Based on the coefficient of elasticity, the following results will be obtained if we determine the rate of change of the dependent variable (education expenditure) due to the 1% change in the free variables (factors affecting education costs).

$$E_{\text{ÜDM}} = \frac{\alpha_1 \bar{x}_1}{\bar{Y}} = \frac{43,47343 \times 0,00028}{1,392071} = 0,008744$$

$$E_{\text{infilyasiya}} = \frac{\alpha_2 \bar{x}_2}{\bar{Y}} = \frac{-0,0013 \times 7,142857}{1,392071} = -0,00667$$

$$E_{\text{büdcə gəlirləri}} = \frac{\alpha_3 \bar{x}_3}{\bar{Y}} = \frac{15,11964 \times 0,0145}{1,392071} = 0,157488$$

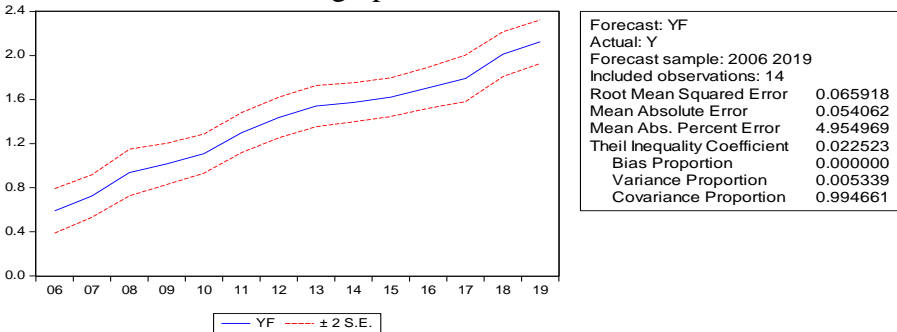
$$E_{\text{Əhalinin gəlirləri}} = \frac{\alpha_4 \bar{x}_4}{\bar{Y}} = \frac{34,40064 \times 0,026}{1,392071} = 0,642508$$

Based on the calculated coefficients of elasticity of the cause and effect factors, it can be concluded that Of GDP volume (X1) a one percent increase in education costs 0.0008% increase, Inflation rate across the country (X2) a single increase in education costs 0.0067% decrease in budget revenues volume (X3) a single increase in education costs An increase of 0.016%, a nominal income of the population (X4) unit increase in education costs 0.64% increase resulted in.

10. As a result of research Expenditures on education in the Republic of Azerbaijan Forecast prices have been set until 2030.

According to the regression equation obtained as a result of the study, education costs The values and standard errors for years, as well as the main characteristics of the use of the equation for forecasting

purposes are determined based on the software package Eviews, and the result is shown in the graph below.

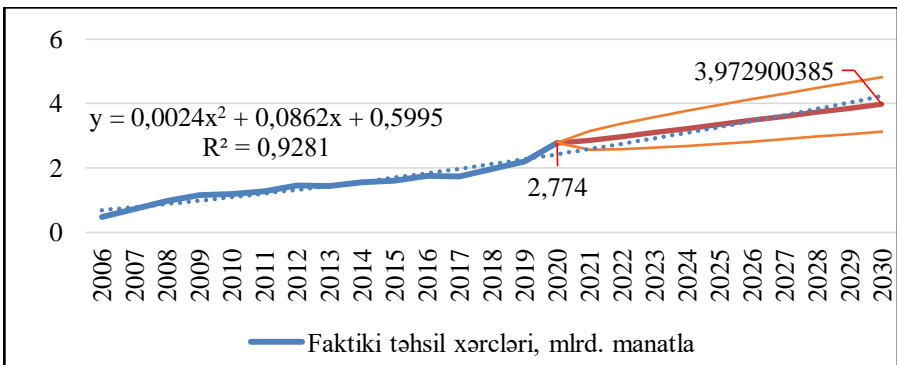


Graph 6. Year-long estimates of educational costs, standard errors and characteristics for forecasting based on the Eviews application software package

Source: Eviews application developed by the author based on the software package.

According to the schedule in the Republic of Azerbaijan education costs future circuit forecast prices can also be determined.

In the Republic of Azerbaijan using the schedule education costs forecast prices can also be determined.



Graph 7. Dynamics of education expenditures in the Republic of Azerbaijan and forecast prices until 2030

Source. ⁸ Prepared by the author based on the information

⁸ Education Statistics [Electronic resource] / The World Bank, - URL: <http://databank.worldbank.org/data/views/reports/tableview.aspx>

As can be seen from the graph, in accordance with the current prices and conditions of the Azerbaijani economy, the forecast prices of education expenditures in the country will increase by 2030 to 3.973 billion. will be manat. This means an increase of 43.2% or 1.2 billion manat compared to 2020.

In world practice, it has been determined that a 1% increase in education expenditures in the state budget leads to a 0.4% increase in GDP. In Azerbaijan, a 1% increase in education spending led to a 0.11% increase in GDP. Despite the increase in funding for higher education in Azerbaijan, its share in GDP in 2020 will be 3.8%. This is in line with the CIS and some neighboring countries, including Russia (4.1%), Tajikistan (4%), Ukraine (5.3%), Belarus (4.5%) and Iran (4.7%). is low compared to.

MAIN RESULTS

Increasing the economic efficiency of Azerbaijan's international cooperation in the field of education. The following results were obtained in order to eliminate and optimize the identified problems.

- Socio-political conditions in Azerbaijan, Azerbaijani legislation also stimulates the expansion of imports of educational services;

- The average price of educational services in Azerbaijan is high and does not make the country competitive in the market of educational services;

- Revenues from the export of educational services in Azerbaijan have increased in parallel with GDP growth. However, this increase was not due to an increase in the number of foreign students coming to the country, but due to rising prices for domestic consumer goods and services. Such an increase in prices may lead to a decrease in the number of foreign students in the future, rather than an increase;

- identified international exchange centers in, academic services in, information centers in and so on. establishment, competitiveness in the field of educational services in the Republic of Azerbaijan increased can;

- The study revealed that most of the specialties and specialties taught in Azerbaijani universities are still not competitive in the international market of educational services.;

- It was determined that after Azerbaijan gained independence significant changes have also taken place in the field of educational services, and import-export operations for educational services have begun to increase. During this period, there was a sharp increase in the number of foreign students studying in Azerbaijan, as well as students leaving Azerbaijan to study abroad near and far.;

- The share of foreign students in Azerbaijani universities has developed in recent years with a declining trend. In private universities, this figure was lower than in state universities;

- As a result of the study, it was determined that between the volume of GDP per capita and the number of students studying abroad at public expense seriously there is a correlation. The correlation coefficient of 0.91 in this dependence proves that per capita in

Azerbaijan As GDP grows, so does the country's economic development, as well as opportunities to provide financial support to students going abroad to study through the state;

- As a result of the study, it was determined that per capita in Azerbaijan As incomes increase, so does the amount of money allocated to study abroad and the number of students studying abroad;

- Azerbaijan's position on educational services in international ranking reports was examined and compared with other countries and it was determined that although Azerbaijan's position in the main rating reports is high, it lags behind other countries in terms of educational services;

- Web of Science databases indexed in articles and books According to the number of scientific and educational institutions of Azerbaijan reyinqi has been identified and evaluated and it has been determined that although there has been an increase in this indicator in recent years, it is still below the potential level too low;

- as a result of research Expenditures on education in the Republic of AzerbaijanForecast prices until 2030will increase according to the trend model.

- Structural coefficients characteristic of the export of educational services in Azerbaijan of On the basis of comparative calculations it was determined that the market of educational services is exported at the expense of the state to study abroad which is connected exceeds imports. However, if we take into account that the number of students studying abroad at their own expense is higher than the number of students studying at the expense of the state, it can be determined that imports exceed exports in the market of educational services.

- As a result of the research, it was determined that while the number of students sent to the CIS countries at the expense of the state developed with increasing dynamics until 2009, in the following years due to the interstate and regional political situation, significantly reduced.

- As a result of the study, it was determined that the state universities of Azerbaijan in the field of export of educational services Is in "optimal" condition. Lakin is not sustainable competitive, Azerbaijani non-state universities in the field of export of educational serviceshave

a low rating. Exports of educational services from most Azerbaijani universities are very low, and most universities are still in transition. Revenues from Azerbaijan's exports of educational services increased in line with GDP growth. However, this increase was not due to an increase in the number of foreign students coming to the country, but due to rising prices for domestic consumer goods and services. Such an increase in prices may lead to a decrease in the number of foreign students in the future, rather than an increase.

- Number of student dormitories in Azerbaijani educational institutions is small and does not meet modern standards. This prevents the import of education due to the high cost of living, despite the relatively low tuition fees in Azerbaijan. In order to increase the import of education, we believe that student dormitories should be built in public and private institutions, and teaching methods should be adapted to world practice and standards. Also, the introduction of distance education should be accelerated and appropriate steps taken.

- As a result of research, it became clear that there is a great need in Azerbaijan for specialists in agronomy, veterinary medicine, food quality control, food intake, and microbiology laboratory, food and chemical engineering. The needs of enterprises in this field are met by foreign specialists. We believe that international experience is the basis for the development of these specialties and should be used in higher education. Many food engineers in agriculture are foreign nationals. Bu makes their salaries slightly higher than the salaries of local food engineers. For this purpose, we believe that the specialties required in the educational program, including food engineering, should be given priority within the state program.

- As a result of the study, it was determined that the main issue at the problem level of the education economy is the efficiency of resources invested in this area and the profitability of education calculated on the basis of national income per manat of educational expenditures.

-In order to normalize the economic activities of higher education institutions the norm of indirect expenses in the structure of educational expenses should be 298.7% in relation to the teaching staff, and the norm of profit collection should be 20.5%. It should be

noted that this norm (profit collection rate) is an expense financed by the free profit of any higher education institution that will ensure the regulation of Both of the proposed norms are for the specialties of any paid educational institution can be used to determine payment prices.

The econometric model was determined that between education expenditures and GDP in Azerbaijan There is a close correlation, and a 1% increase in education spending in Azerbaijan results in a 0.11% increase in GDP.

-As a result of the study, forecasts of education expenditures in the Republic of Azerbaijan until 2030 have been identified, and according to forecasts, these expenditures will increase in 2030 to 3.973 billion. manat is forecasted.

The main content of the research is reflected in the following published scientific works of the author:

1. Mənəfova, Ə.Q. Elm və təhsil sferasında Azərbaycan və Ukrayna arasında mövcud olan iqtisadi münasibətlərin inkişaf perspektivləri // - Bakı: Azərbaycan Milli Elmlər Akademiyası, İqtisadiyyat İnstitutu, Elmi Əsərlər, - 2012. - №2, - 82-86 s.

2. Mənəfova, Ə.Q. Xarici iqtisadi əlaqələrdə təhsil xidmətinin yeri // - Bakı: BDU, Beynəlxalq hüquq və integrasiya problemləri, - 2013. - №2(34), - s.275-281

3. Mənəfova, Ə.Q. Azərbaycanın beynəlxalq təhsil bazarında yeri // - Bakı: BDU, Beynəlxalq hüquq və integrasiya problemləri, - 2013. №3 (35), - s.248-255

4. Mənəfova, Ə.Q. Azərbaycanın təhsil xidməti bazarında ixrac gəlirləri // - Bakı: Azərbaycan Milli Elmlər Akademiyasının Xəbərləri, İqtisadiyyat seriyası, - 2013. №4, - s.119-125.

5. Mənəfova, Ə.Q. Təhsil xidmətləri ixracında Azərbaycanın ali məktəblərinin potensialının qiymətləndirilməsi // - Bakı: Azərbaycan Milli Elmlər Akademiyası, İqtisadiyyat İnstitutu, Elmi Əsərlər, - 2013. №4, - s.390-395.

6. Гюльалиев, М., Манафова, А. Основные свойства международных образовательных услуг в Азербайджане // Экономика образования, - Кострома: - 2013. № 4, - с. 111-115.

7. Gülaliyev, M., Mənəfova, Ə.Q. Azərbaycanda Təhsil xidmətinin idxalı və dövlət hesabına xaricdə təhsilin dinamikası // - Bakı: BDU, Beynəlxalq hüquq və integrasiya problemləri, - 2013. №4 (36), - s.363-371.

8. Манафова, А. Основные характеристики импорта образовательных услуг в Азербайджане // Almatmater, - Вестник высшей школы, -2014. №7, - с.45-49.

9. Гюльалиев, М., Манафова, А. Оценка потенциала высших учебных заведений Азербайджана в экспорте образовательных услуг // - Москва: Alma mater вестник высшей школы, - 2014. №2, - с.82-86.

10. Mənəfova, Ə.Q. Azərbaycanda təhsil xidmətlərinin idxalının əsas xüsusiyyətləri // - Bakı: Azərbaycan Milli Elmlər

Akademiyası, İqtisadiyyat İnstitutu, Elmi Əsərlər, - 2014. - №2, - s.220-228.

11. Mənəfova, Ə.Q. Azərbaycanda Tehsil xidmətlərinin idxalı və öz vəsaiti hesabına xaricdə təhsilin dinamikası // - Bakı: Kooperasiya elmi-praktiki jurnal, - 2014. - №4 (35), - s. 299-309.

12. Gülaliyev M., Mənəfova, Ə.Q. Eyvazov A.A. Azərbaycanın elm və təhsil sahəsində beynəlxalq əməkdaşlığı (kollektiv monoqrafiya) / AMEA, İqtisadiyyat İnstitutu, - Bakı -2015, - s. 210-236.

13. Mənəfova, Ə.Q. Azərbaycanda dövlət hesabına xaricdə ali təhsil alma göstəricilərinin dinamikası // - Bakı: Azərbaycan Milli Elmlər Akademiyası, İqtisadiyyat İnstitutu, Elmi Əsərlər, - 2016. - №6, - 201-206 s.

14. Mənəfova, Ə.Q. Azərbaycanın təhsil sahəsində beynəlxalq əməkdaşlığının müasir vəziyyəti // Strateji islahatlar: Qabaqlayıcı vergi siyasəti” A.Musayevin anadan olmasının 70 illiyinə həsr edilən Beynəlxalq elmi-praktik konfransın materialları. Bakı: - 6 Oktyabr, - 2017, -429-430 s.

15. Манаfoва, А. Возможности повышения эффективности международного сотрудничества в сфере образования Азербайджана // Современные исследования основных направлений технических и общественных наук: материалы международной научно-практической конференции, - Казань: 2017, – 02–03 марта, - 599-602с.

16. Абасова, С.Г., Манаfoва, А. Современное состояние подготовки специалистов с высшим образованием Азербайджана в области сельского хозяйства // «Современные тенденции развития образования, науки и технологий» Сборник научных трудов по материалам IV международной научно-практической конференции, - Москва: - 28 сентября, - 2018, - 92-97с.

17. Mənəfova, Ə.Q. Azərbaycan təhsilinin dünya təhsil sisteminə inteqrasiyası // Respublika qəzeti 2018, 28 iyun, - №139 (6172). – 9 s.

18. Mənəfova, Ə.Q. Azərbaycanın təhsil sahəsində beynəlxalq əməkdaşlığın əsas inkişaf perspektivləri // Ümumi Lider Heydər Əliyevin anadan olmasının 96-ci ildönümünə həsr olunmuş

“Azərbaycanda ali təhsilin beynəlmilləşdirilməsi və rəqabətliyiinin yüksəldilməsi istiqamətləri” mövzusunda Beynəlxalq elmi - praktiki konfrasin materialları, - Bakı: 2-3 may, 2019, - 358-363 s.



The defense will be held on 04 February 2022 at 14:00 at the meeting of the Dissertation council FD 1.11 of Supreme Attestation Commission under the President of the Republic of Azerbaijan operating at the Scientific-Research Institute of Economic Research under the Azerbaijan State University of Economics.

Address: AZ 1001, Baku, Istiglaliyat Street 6, Azerbaijan State University of Economics, Scientific-Research Institute of Economic Research.

The dissertation is accessible at the Azerbaijan State University of Economics Library.

Electronic versions of dissertation and its abstract are available on the official website of Azerbaijan State University of Economics.

Abstract was sent to the required addresses on 05 January 2022.

Signed for print: 28.12.2021
Paper format: 60x84 ¹/₁₆.
Volume: 02/01. Number of hard copies: 20
(37468 Symbols)

“AA – Polygraph” Production and Commercial Association
capevi@internet.ru Tel.: (+99455) 2012809