

Influence of State Policy on the State of Higher Education System in Ukraine

Olesia Kanash

Admiral Makarov National University of Shipbuilding

Volodymyr Parsyak

Admiral Makarov National University of Shipbuilding

Olena Zhukova

Admiral Makarov National University of Shipbuilding

Inna Dybach

Admiral Makarov National University of Shipbuilding

Oksana Korniienko

Admiral Makarov National University of Shipbuilding

The task of the authors of this article is to assess the implications of the state policy of Ukrainian governments for the country's higher education system. The author researched the legislative acts determining the institutional conditions of educational activities, as well as information contained in the reports of the State Statistics Service since 1995. It was found that along with the positive consequences of reforms in higher education, they were accompanied by threats to educational institutions. They should be taken into account not only by the developers of the state educational policy, but also by the providers of educational services in order to make amendments to the strategies developed by them. Otherwise, the country will face a slowdown in the expanded reproduction of intellectual capital required by the economy. The information base of the study consisted of the reports of the State Statistics Service of Ukraine. Methods of statistical analysis and graphical visualization of trends were used for data processing and interpretation.

Keywords: state policy, economics, higher education, education system, educational institutions, dual education, participants of educational process, economic security

INTRODUCTION

There are many reasons to consider that the topic of higher education in all its guises has never before gained such popularity as in our time. In one way or another, it is addressed by statesmen, heads of higher education institutions, representatives of public circles and even businessmen. Their common vision is that education is one of the most important services provided by public governments in almost every country

worldwide (Werner, 2009; Sahaidak et al., 2021). And since the provision of these services is accompanied by costs, there is a need to assess the effectiveness of government measures regulating the flow of highly professional experts, as an instrument accelerating the social and economic development of countries (Bokayev et al., 2020; Orlov, 2021; Sitsinska et al., 2021). And these relates both to own citizens and also to those whose envoys temporarily migrate to the host countries to obtain professional higher education (Miežanskienė et al., 2020).

As for the business community, it appears to be interested in engaging in development of education and training that can be used to solve the problems faced by businesses (Hahn et al., 2019). De facto, we are talking about the introduction of dual higher education. The study of the practice of its implementation has convinced us that we should not rely on real achievements in this field without creating an appropriate institutional basis.

“Government regulation” refers to the institutional mechanisms and tools with the use of which public administration bodies influence the organizational and academic behavior of higher education institutions (Ferlie et al., 2008). Familiarization with European practice has shown that they are also used by local authorities within their powers. According to the European Commission, in Spain, for example, the role of local authorities is focused on educational management through the Education Departments or Municipal Education Institutes. The education authorities delegate the exercise of their functions to the municipalities in aspects having a direct impact on them (Administration..., 2021).

This is an important experience considering the reform of local self-government, which continues in our country (Cheremisin, 2018). It is becoming increasingly authoritative among citizens. But the education sector remains beyond the motivating influence of local political, managerial and business elites. First, they have no relevant experience. Second, they still rely too much on central regulatory authorities. It is clear that the limitations of the format of a journal article deprive us of the opportunity to cover carefully the legislative and administrative influences of the Ukrainian authorities on higher education (Hlushchenko, 2021; Nosik et al., 2021). For this reason, it was considered necessary to focus on the consequences they entailed. The information received through the feedback channels proved to be extremely informative and useful.

A careful study of the numerous opinions of our predecessors, including those mentioned so far, and many others (Broucker et al., 2018; Mampaey et al., 2017; Bilyalova et al., 2019; Hsieh and Usak, 2020; Maksymenko, 2021) formed a conscious vision of the reasons that caused the surge of attention to the outlined topic. It refers to the transformations prompted by the massive adoption of digital technology that generate, process, share and transfer information. It builds on the evolution of multiple technologies: telecommunications networks, computer technologies, software engineering and the spillovers resulting from their use (Aly, 2020; Alvarez, 2020).

As a result, production processes transformed radically, actualizing the modernization of human capital, requiring public and business investments in education. This is natural, because it is designed to form digital skills in the new generation of professionals, to train the ability to solve unprecedented problems. The labour market is undergoing major changes worldwide. In addition to the challenges currently faced by employers and companies – high unemployment, technical progress, globalization and an ageing population – digitization and digital techniques are thoroughly changing the world of labour due to their ubiquitousness (Wild et al., 2020).

There is no need to explain, a well-educated person enhances the competitive advantages of their employers - owners of business and management through the creation of greater added value. The latter do not remain in debt and increase wages to the effective employees and take care of their fate during economic troubles. And they appear from time to time, namely financial and economic crises, mass social unrest, pandemics, etc. Our assumptions in that regard have come true (Table 1).

TABLE 1
THE INFLUENCE OF A CITIZEN'S EDUCATION ON THE AVERAGE WEEKLY EARNINGS
AND THE UNEMPLOYMENT RATE IN THE UNITED STATES

Degree of education	Earnings, USD	Growth rate	Unemployment rate, %	Growth rate
Doctorate degree	1885	3.05	2.5	1.00
Master's degree	1545	2.50	4.1	1.64
Bachelor's degree	1305	2.11	5.5	2.20
College without degree	877	1.42	8.3	3.32
Secondary school	781	1.26	9.0	3.60
Less than secondary school	619	1.00	11.7	4.68

Source: U.S. Bureau of Labor Statistics (2020)

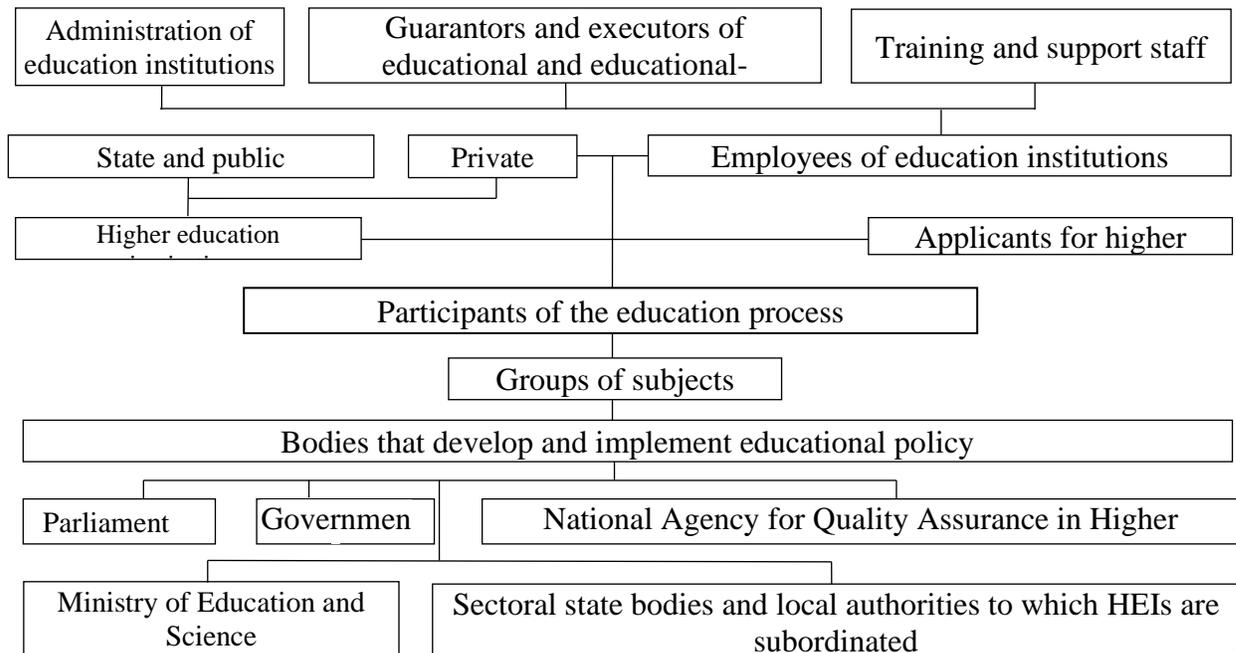
At least that is the case overseas, where the unemployment rate among people with a doctorate degree is almost five times lower than among those who have less than a secondary school education. To the contrary, intellectuals receive the salary three times as much. A similar picture is observed in the European Union (E-commerce statistics..., 2021). It is now clear why far-sighted management seeks to attract creative, educated staff to its subordinate enterprises. It requires the ability to make responsible decisions autonomously, use resources efficiently and manage intricate information.

But this is the case if the governments of the countries support the national higher education systems (HES) in a balanced state thanks to a balanced and prudent policy, take care of its ability to form and update citizens' urgent professional competencies. Sustained and substantive investment is required in order to turn education into a driver of development. Authorities in Member States remain responsible for the way higher education is organized and delivered in their countries. EU activities are designed to bring an additional international dimension to studying, teaching, researching or making policy in higher education (*About higher...*, 2021). In an effort to ensure the validity of the formulated working hypothesis, we set ourselves the goal to assess the effectiveness of the educational policy of the Ukrainian government over the past decades from the standpoint of those to whom it applies first of all.

CONSEQUENCES OF STATE POLICY FOR HIGHER EDUCATION INSTITUTIONS

The structure of the higher education system, which developed as a result of its permanent transformations during the period of independence of Ukraine, is prescribed in the Law “On Higher Education”.

FIGURE 1
SUBJECTS OF DEVELOPMENT AND IMPLEMENTATION OF STATE POLICY IN THE
FIELD OF HIGHER EDUCATION IN UKRAINE



Source: summarized by the authors as per (the Law of Ukraine..., 2021)

The said components are of interest to us in terms of clarifying the factors influencing the key aspects of the activities of participants in the educational process. So, let's look at them with the attention they deserve. According to the legislator, higher education institutions (HEIs) are designed to perform a number of important tasks:

- to measure the demand and supply of specialists in relevant specialties in the labor market, to create a comfortable material environment and favorable psychological conditions for work and study for participants of the educational process; to form professional competencies facilitating employment for students and ensuring progress in the country;
- to bring up individuals who share social moral and ethical values, follow the rules of law in their professional activities, care for preservation of environment, cultural and scientific heritage of mankind, are socially active, prefer a healthy lifestyle;
- to conduct scientific research with the commercialization of the obtained results and ensuring the creative and material uplift of researchers.

If these tasks are performed in compliance with the quality standards of educational services, in the space where higher education institutions are located, there are chances of their improvement and risks of weakening of the security of each of them. Long-term observations have convinced us that the struggle for applicants cannot be without winners and losers (Table 2).

TABLE 2
CHANGES IN THE NUMBER OF HIGHER EDUCATION INSTITUTIONS IN UKRAINE

Indicators	Academic years					
	1995/96	2000/01	2005/06	2010/11	2015/16	2019/20
Number of higher education institutions, units						
Total	1037	979	951	854	659	619
Including:						
colleges, technical, vocational schools,	782	664	606	505	371	338
universities, academies, institutes	255	315	345	349	288	281
Calculated indexes, %						
HEIs – total	100	94.4	91.7	78.4	62.3	63.7
Including:						
colleges, technical, vocational schools	100	84.9	77.6	64.6	47.4	43.2
universities, academies, institutes	100	123.5	135.3	136.9	112.9	110.2
Distribution of higher education institutions by forms of ownership, units						
State and public	926	816	749	666	525	504
Private	111	163	202	188	134	115
Calculated indexes, %						
State and public	100	88.4	80.9	71.9	56.7	54.4
Private	100	146.8	182.0	169.4	120.7	103.6

Source: *Higher education... (2020)*

It is obvious that 418 HEIs left the market in 25 years, or 40.3% of their total number for 1995-1996. In each of the two groups the events developed according to different scenarios. The first, institutions of higher vocational education, demonstrated a decline in activity with growing negative dynamics. Losses for 2019-2020 amounted to 444 institutions or 56.8%. The second group increased its capacity before 2010-2011, 94 new universities, academies and institutes were founded. Although the negative trend has been discernible here, it is difficult to compare the pace of liquidation of colleges, technical and vocational schools, with those that are typical of academic institutions. There are still more of them (for 10.2%) compared to the year taken as the starting point.

So, we have reason to talk about the inconsistency and unevenness of state policy on the market of educational services. Since Ukraine attained independence, the creation of new training centers was strongly supported, especially of those that were based on private capital. By 2005-2006, their number (202) had almost doubled. This could not happen without proper licensing and accreditation. And this is the exclusive prerogative of the central government. Officials' criticism of the "uncontrolled increase in the number of universities in the 1990s and 2000s that the entire education system of Ukraine is experiencing today" (Annual Report..., 2020) give only an ironic surprise to the professional environment. Especially when, contrary to the announced new course, it is reported of establishment of two new HEIs: "The American University" and the Presidential University" in Kyiv where 80 HEIs exist already (Institutions..., 2021). They say that one hand does not know what the other is doing.

"Predecessor errors" are corrected using several strategies: first, some institutions are closed by the decision of the owner. The results were revealed by the information from the previous table: 418 training centers disappeared from the educational map; second, the HEIs are merging. For example, the State Biotechnology University is being established in Kharkiv. It will consist of National Technical University of Agriculture, State Veterinary Academy, Kharkiv National Agrarian University, and State University of Food and Trade (State Biotechnology..., 2021). The authorities do not hide the reason, the lack of budget funds. Some of them, as you know, go to repay and service a huge public debt. In this regard, it is difficult

to find strong objections to the actions of reform initiators, except the claims to the state economic policy that should contribute to the improvement of the investment climate in Ukraine the prosperity of business and, at the same time, the filling of the state treasury.

IMPLICATIONS OF PUBLIC POLICY FOR HUMAN RESOURCES IN HIGHER EDUCATION INSTITUTIONS

So, we are convinced that number of operators of educational services market is decreasing from year to year. And this process will obviously continue. At the same time, the number of jobs for research and teaching staff (RTS) is declining. This refers to rectors, vice-rectors, directors of institutes, deans, whose activities are directly related to the educational or scientific process, library directors and their researchers, heads of graduate and doctoral programs, heads of departments, professors, associate professors, senior lecturers (Law of Ukraine..., 2021). It seems an axiom to say that their abilities and professional skills influence on, firstly, the level and scope of professional competencies acquired by students, and secondly, the results of scientific research that universities are proud of. And business effectively implements them in production, marketing processes and management. These are the expectations of society.

However, we are convinced that the implementation of state educational policy in its current form is accompanied by exacerbation of problems of research and teaching staff. Moreover, increasing pressure of the government on higher education institutions (due to limited funding), goes hand in hand with the pressure in the markets of educational services (due to intensifying competition between HEIs). And this entails strict administration by the management of universities of the volume of teaching load of teachers. As a result, there is endogenous academic competition. So, we call the economic process of rivalry between professors for additional payments and allowances to nominal wages. Their size depends on personal professional achievements. Let's see how the simultaneous effect of all these factors affected the level of employment of research and teaching staff (Table 3).

TABLE 3
NUMBER AND QUALITY OF RESEARCH AND TEACHING STAFF IN HIGHER EDUCATION INSTITUTIONS

Indicators	Academic years				
	2010/11	2012/13	2014/15	2017/18	2019/20
Number, persons					
General number	142691	137112	117197	107773	105984
of which full-time staff	121896	119387	102679	95154	93101
Share of full-time RTS	85.4	87.1	87.6	88.3	87.8
Calculated indexes, %					
General number	100	96.1	82.1	75.5	73.4
of which full-time staff	100	97.9	84.2	78.1	75.6
Quality, persons					
Doctors of Sciences	13367	13826	12682	13582	14588
PhD (Candidates of Sciences)	66689	67675	62158	61157	60346
Calculated indexes, %					
Doctors of Sciences	100	103.4	94.9	101.6	109.1
PhD (Candidates of Sciences)	100	101.5	93.2	91.7	90.5

Source: (*Vyshcha osvita...*, 2020; *Institutions...*, 2021).

It is time to note that the lion's share of RTS is occupied in universities, academies and institutes. They are single people in colleges, technical schools and colleges. For example, at the beginning of 2020 there

were, respectively, 92130 and 971 of RTS (Vyshcha osvita..., 2020). We see that the number of lecturers decreased by 26.6% in higher education institutions. In practice, this happens in the following ways:

- dismissal of people who have reached retirement age or transfer of them to part-time employment. According to legend, they receive income guaranteed by the state, and therefore must give way to those who do not have such privileges;
- limiting the duration of fixed-term employment agreements, which are concluded for a maximum of 3-5 years. The invitation to work indefinitely remained in the memories of veterans;
- distributing the workload, heads of departments prefer highly qualified specialists. And the higher qualification is the stronger are the chances of the applicant to get a job.

This is well illustrated by the information presented in Table 3. Number of doctors of sciences increased by 9.1% in teaching positions, and number of doctors of philosophy, on the contrary, decreased by 9.5% (Oliinyk et al., 2021). We can guess the fate of those who failed to acquire academic degrees and titles. Agreements with them are concluded for one academic year. Recently, their “titled” colleagues, who are employed on a part-time basis, have been treated in a similar way. Searching for earnings, some of them resort to academic mobility. Its main vector is Eastern European countries, where Ukrainian specialists are invited to participate in the implementation of training programs for which there is a shortage of local lecturers. The usual practice is hybrid business activity. A hybrid businessman is a person who is legalized in two economic dimensions, namely: in business - on the basis of self-employment and in the employment, relationship governed by an agreement that guarantees a monetary reward to the employee (Solesvik, 2017). Sometimes lecturers agree to hold simultaneously administrative positions at the university.

IMPLICATIONS OF PUBLIC POLICY FOR APPLICANTS FOR EDUCATIONAL SERVICES

First, let's find out their number and how it has changed over time (Table 4).

TABLE 4
NUMBER OF STUDENTS IN HIGHER EDUCATION INSTITUTIONS,
THOUSANDS OF PERSONS

Indicators	Academic years					
	1995/96	2000/01	2005/06	2010/11	2015/16	2019/20
Total	1540.5	1930.9	2709.2	2418.1	1605.3	1439.7
Admitted to studies	395.6	536.4	672.3	506.5	323.1	297.1
Number of graduates	339.1	422.2	515.1	636.3	447.4	383.9
Number of students per 10 thousand of population	0.400	0.392	0.578	0.557	0.375	0.343
Calculated indexes, %						
Total	100	125.3	175.9	157.0	104.2	93.5
Admitted to studies	100	135.6	169.9	128.0	81.7	75.1
Number of graduates	100	124.5	151.9	187.6	131.9	113.2
Number of students per 10 thousand of population	100	0.98	144.5	139.3	93.8	85.8

Source: *Vyshcha osvita..., 2020; The main indicators..., 2021.*

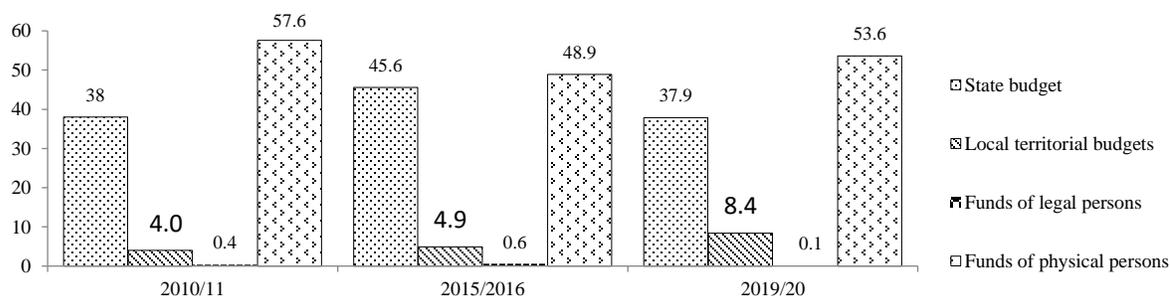
Thus, in 2019-2020, there were slightly more than 1.4 million people in the student ranks, committed to various fields of knowledge. To estimate this number, it is necessary, as it seems to us, to study the dynamics of the indicator values given in the table. For this purpose, the indexes of change in the number of recipients of educational services are calculated. Having analyzed the above information, we state that

starting from 2010-2011 academic year, the number of students began to fall sharply, on average by 27% per year.

The same refers to the number of persons admitted to studies and graduates. As a result, intellectual potential reduced in the population structure of the country, we have 343 students per 10 thousand of citizens. This is 40.7% less than the record 2005-2006 academic year. Note that total present population fell from 51.7 (1995) to 41.6 million people (2021) for the analysis period (Population..., 2021). Moreover, since 2017 there has been a natural decline in the human population.

Thus, in January-March 2021, number of our compatriots decreased by 106.5 thousand people. Migration growth did not improve the situation either, as it amounted to only 6.1 thousand people (Increase, 2021). The effect is predictable: the fewer students the less revenue to the budgets of institutions. To test this hypothesis, we turn again to the information of the statistical office of the country. We identified four sources of funds that meet the needs of HEI: a) government expenditures within the limits approved by the Ukrainian Parliament, b) expenditures of local territorial budgets, c) funds of physical persons-customers of relevant services, d) funds of business that need to involve specialist in a particular specialty or to improve the skills of the staff involved. The distribution of recipients of educational services can be seen in the diagram (Figure 2).

FIGURE 2
THE SHARE OF STUDENTS STUDYING AT THE EXPENSE OF APPROPRIATE FINANCIAL SOURCES, %



Source: *Vyshcha osvita...*, 2020; *The main indicators...*, 2021.

It is obvious that over the last 10 years, the structure of expenditures for higher education has been dominated by household funds. This means that public policy in the field of education is becoming increasingly committed to the model of countries where students are considered a variety of consumers. Educational institutions produce competencies by setting a price for their intellectual services that reflects their vision of the quality of education and the cost of its provision. Since the acquired knowledge and skills open up the prospect of personal gain to diploma holders, it is logical to assume that they have to reimburse at least part of these costs (Barr, 2004; Barr et al., 2005). This approach has a right to exist in the case of the United States, Japan, Australia or Israel. Their economies are developed; household incomes are the envy of the whole world. Another thing is Ukraine (Table 5).

TABLE 5
DISTRIBUTION OF HOUSEHOLDS BY LEVEL OF MONTHLY AVERAGE PER CAPITA
TOTAL INCOME (THE FIRST QUARTER OF 2020)

Households	All	of which residing	
		in cities	in countryside
Number, thousands of persons	14784.5	10002.2	4782.1
Total income, grn.		Share of total number, %	
up to 3000.0	11.7	10.3	14.4
3000.1-4000.0	19.8	17.3	24.8
4000.0-5000.0	20.9	20.7	21.3
5000.1-6000.0	15.0	14.5	16.1
6000.1-7000.0	10.2	10.8	8.8
7000.1-8000.0	7.2	8.2	5.2
8000.1-9000.0	4.4	5.0	3.6
9000.0-10000.0	3.1	3.8	2.1
10000.1-11000.0	2.4	2.8	1.1
11000.1-12000.0	1.7	2.1	0.9
over 12000	3.6	4.5	1.7
Total	100	100	100

Source: *Distribution..., 2021*

As we can see, almost 78% of families have an income per person that does not exceed 7 thousand hryvnias. In countryside they are 85.4%. Under such circumstances, it is difficult for the average household to afford the cost of higher education for their children. Moreover, the Ministry of Education and Science of Ukraine has introduced a procedure for administering the price of education contracts (P_E). We illustrate its contents using the following formulas:

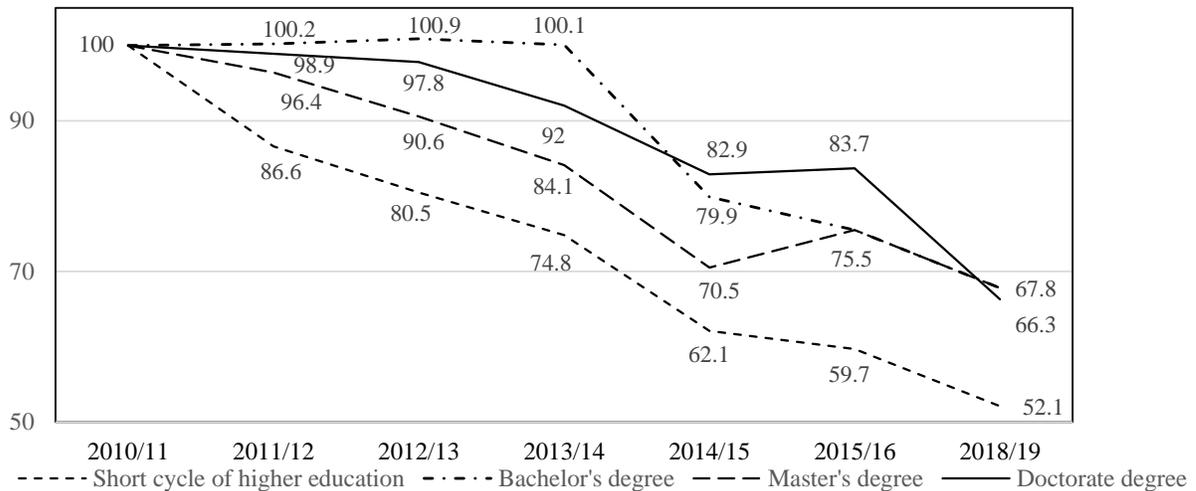
$$P_E = P_I \times n; \quad (1)$$

$$P_E \leq 3 \times S_R^A, \quad (2)$$

where P_I is an indicative price of studies under the contract in a certain specialty, grn. It is equal to the amount of state funding per one government-subsidized student at the university; n is the coefficient of annual approximation of the current price to the indicative level. In 2020, it was 0.6. In 2021 it was 0.7. It is assumed that over time, the values of P_I and P_E should equalize; S_R^A – average salary in the region. The right part of formula 2 means that the P_E cannot exceed the size of the three average salaries in the region where HEI is located.

As for the middle class (and its stratum, judging by Table 4, is meager), they prefer to teach their children abroad. The independent analytical center “Cedos” reports that in the 2016-2017 academic year there were 77.4 thousand of such persons. This is approximately eight percent of the total number of those who study in full-time higher education programs (Ukrainian students..., 2019). The results did not take long (Figure 3).

FIGURE 3
DYNAMICS OF THE NUMBER OF CUSTOMERS OF EDUCATIONAL SERVICES BY
LEVELS OF EDUCATION %



Source: Higher education..., 2020

And here, obviously, we do not expect pleasant surprises. The decline in the number of customers of educational services has been observed both in the master's degree courses and in the field of training highly qualified scientific personnel.

CONCLUSIONS

The events taking place in the field of higher education in Ukraine show that the activities of public authorities are not subject to the achievement of goals that are clearly defined and clearly understood, and therefore supported by all participants in the educational process. The uncertain strategy determines the mechanistic approach to reforms (reduction of state expenditures, reduction of the number of higher education institutions and the number of students in them). This is important, given the circumstances, but we must see not only the trees but also the forest. And this is, above all, the ability of HEI to meet the needs of young citizens of the country and business.

A significant and continuous decrease in the number of higher vocational institutions (colleges, technical schools, vocational schools) reflects the processes of deindustrialization of the country's economy, as a result of which school graduates do not associate their future with work in industrial productions. They are more interested in the prospects of legal, managerial, financial, IT activities. This was evidenced, in particular, by the results of the university admissions process in 2020.

There are consequences of the implementation of the course on the curtailment of state guardianship of higher education. We are forced to emphasize that the political forces in power, despite ideological differences, have failed to contribute significantly to the growth of business in the country. Thus, the lack of funds to form and maintain the nation's human capital in a decent state turned out to be chronic. There is obvious the attempt of governments to shift the burden of this social and economic function to private HEIs, the number of which almost doubled in 2005-2006. But the global financial crisis of 2008-2010 also affected their activities, causing a reverse trend.

In these circumstances, the issue of rational management for the education sector is no less relevant than for real sector enterprises or financial institutions. Therefore, in a radically changing environment, those HEIs have good prospects in which the rector's office, developing strategies for the conduct of subordinate teams, are able to build employee motivation for fruitful research and academic activities.

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