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## **Risks in the system of education: assessment and management**

**Annotation**

In the article the relevance of educational risk-management has been revealed. On the basis of the analysis of the wide range of political, economic, global, demographic, technological and other risks it has been proved the necessity of educational risk-management on different levels in education: micro level, regional level, meso level, macro level and meta level. The peculiarities of educational risks connected not only with direct economic losses but with strategic losses have been disclosed. The system of external risks is thoroughly clarified and some possible mechanisms of reaction to them are proposed. Presents current regulatory institution of higher education degree of risk and grounds for the necessity of their changes.

**Keywords**

higher education; educational risks; universities; educational risk management

**1 Introduction**

Ensuring the development of higher education in conditions of complex, uncertain and rapidly changing environment requires new and innovative approaches to its organization and management. The challenges facing the Ukrainian higher education are serious and determined by both global trends and specific conditions of our present moment. Influenced by such challenges as globalization and the spread of information and communication technologies (ICT), changes take place in all spheres of the society, including the education system. National education system, along with global risks, is facing numerous internal threats and moreover unpredicted challenges of a political nature.

In the present situation, when Ukraine got a chance for progress after the Revolution of Dignity, its education system requires a new management oriented towards predictions and consideration of all possible challenges and threats that are radical and require drastic changes. Timely detailed analysis of all challenges and risks must become a fundamental basis for making thoughtful decisions and their implementation in the state education policy. The real innovative, breakthrough development of domestic universities and the entire system on the whole can be reached only when we act on prevention, but not in mode of rapid response to sudden events.

Achieving the goals of building a competitive national education system should be based on an adequate response to the numerous internal and external current challenges, their understanding and comprehension. Education management should be aimed at stabilizing the system, strengthening its power and flexibility in response to current and future risks. The important aspects of such management are: the search for effective forms of educational and scientific activities in interaction with business, expanding the financial base along with increasing autonomy of educational institutions, providing innovative character of the development of national education and science.

**2 Literature review**

In economic theory and practice the perception of risks is widespread in the context of possible losses

in the course of business: loss of profits, investments, capital etc. The foundations for this understanding were laid by the representatives of classical (J. Mill, N. Senior) and neoclassical school (A. Marshall, A. Pigou). John Keynes introduced the concept of "risk appetite". The works of J. Neumann and O. Morgenstern have become the background of the modern theory of risks, in which their substantiated function of utility defines such behavioral characteristics as appetite, aversion and neutrality to risks.

In 1995, the professor from Temple University H. Wayne Sniger coined the term "risk management". Modern economic science has advanced significantly regarding the assessment and risk management (V. Alhin, I. Balabanov, V. Buyanov, V. Vitlinsky, H. Markovits, O. Ustenko etc.). The educational risks are investigated in the works M. Huber (2010; 2011), P. Tufano (2011), C. Raban (2014), L. Ruzic-Dimitrijevic and I. Dakis (2014), M.S.M. Ariff, et al (2015), I. Kalenyuk (2015), T. Kostyukova (2011) ets. However, the increasing instability of modern economic development requires the expansion of approaches to new areas of economic activity, including such important one for ensuring social progress, as the Ukrainian education system.

Modern conditions of the functioning of education sphere require serious research for the development of new approaches as to its management and organization that would reinforce the system and its stability in regard to numerous risks.

Growing importance of educational factors in ensuring the competitiveness of the national economy was the basis for the proliferation of risk management in areas such as education and science hence it stipulates relevance and necessity for further theoretical and practical study of this phenomenon.

**3 A theoretical perspective**

The purpose of this research is substantiating the necessity of the formation of the direction of economic science such as an educational risk management and peculiarities of creating of educational risk management tools. In view of the stated purpose the tasks of the article are: research of the nature and forms of educational risks, risk management system in the system of education.

#### 4 Study

This article is the result of years of research within the scientific school of economics education of Professor I. Kalenyuk. The results and proposals are based on the principle of uniting theory and practice, forecasting the development of economic processes and method of scientific abstraction. The following methods of scientific research were used to reach the goals and objectives: system-structural analysis of economic phenomena and processes (in determining the essential and structural characteristics of the educational risk management); system-functional and synergistic (in determining the regional educational and scientific cluster); expertise and forecast (in determining current and future trends of its development); statistical method (in evaluating the potential of the regional system of education).

#### 5 Findings

Awareness of the phenomenon of education as a public welfare of the mixed type extends the concept of educational risks beyond the traditional perception of them only as a loss of business income. The peculiarity of educational risks is that they may not bear direct financial losses, and appear more as the threat of such losses in the long run. However, the formation of educational risk management is actual, which serves the purpose of setting up the process of making managerial decisions at different levels (institution, region, industry sector, education in general). These decisions are aimed at reducing the likelihood of unfavourable processes and minimizing potential losses.

Losses in education may be more global due to its strategic importance for the progress of society: poor quality of qualified personnel training, weakness of forming personal and valuable features of human

resources, lack of ensuring the innovative development of the country, losing positions in the international competition, etc.

In 2000, the Higher Education Funding Council of England required all universities to introduce risk management as governance tool. Risk is not the object of regulatory policy making but a method to facilitate and improve decision making. This alteration in the functionality of risk is characteristic of recent developments in the English regulatory state (Huber, 2011, p. 2).

The challenges facing the Ukrainian higher education are serious and determined by both global trends and specific conditions of our present moment. Educational risks are challenges or threats to the functioning and development of the education system of such degree that can cause significant losses. Economic losses in education can be a significant release of highly qualified personnel, closure of educational institutions, a sharp decrease in the contingent of pupils and students, decrease or loss of financial resources. Social losses may be also serious (strengthening the processes of social selection and easing the function of social mobility, significant imbalances in the labor market: unemployment of highly skilled workers, low wages, etc.), pedagogical losses (inefficiency of educational technology, low level of general education or competence of graduates), political losses (lack of prestige of the national education system because of its inefficiency or corruption, low ratings, lack of attractiveness of education system for foreign students) and others (Kalenyuk I. & Kuklin O., 2015, v. 5, p. 24).

The whole set of possible risks in education can be structured as follows: external and internal risks; political, legal, economic, social, demographic and other risks; risks connected with the parameters of the quality or sufficiency of resources (level of training and number

Table 1 Classification of risks in higher education

External risks	Internal risks
Globalization	Availability and qualification of the personnel
Technological	Sufficiency of funds for development
Political	Level of applicants' training
Legal	Management system: <ul style="list-style-type: none"> <li>• management style</li> <li>• focus on innovation</li> <li>• system of communication and relations</li> </ul>
Economic	Obsolescence and lack of material and technical resources, laboratory facilities
Demographic	Weakness of marketing policy

of applicants, quality and number of staff, management quality, quality and quantity of material and technical basis, sufficiency of resources for development, marketing quality, etc.) (Table 1) (Kalenyuk I., Kuklin O. & Yamkovyi V., 2015. vol. 2, p. 72).

The range and complexity of possible risks in education stipulate the necessity of implementation of risk management at different levels in education: micro level (educational institution), regional level (region or district), meso level (the whole sector of education or subsector, for example, higher education), macro level (national education system) meta levels (level of international integration or regional education systems, for example, a European education system). Risk

management at each of these levels has its specific features, which are determined by the acuteness of manifestation of threats.

For example, the number of potential applicants is critical for a separate educational institution. At a higher level - region, branch or country - this criticality may be reduced, provided the restructuring and finding more optimal ways of organizing educational activities. In this article, we draw attention to one of the possible forms that would allow on the one hand, to reduce the acuteness of current problems and possible risks, and on the other hand - the system would be strengthened by ensuring synergetic unity of all components. We consider an educational and scientific cluster to be such

a form of organizing educational activities, which allows to strengthen the ability of educational institutions to perform their functions in modern conditions, to provide high efficiency and competitiveness of the educational system in its close interaction with business and economy.

Globalization as a leading trend of modern development changes radically the environment of educational institutions, for which high uncertainty, total interconnectedness, tense competition are becoming inherent. None of higher educational institutions wherever they are located (in the capital or province) can ignore the actions of these factors in their development. Thinking that globalization is somewhere out there and it does not concern us is very short-sighted opinion. Daily life puts many smaller current issues that take up all the energy, attention and leave little space for trouble on the problems of globalization. However, we are confronted with manifestations of globalization such as the removal of barriers for the movement of potential customers in the international educational market and an increasing competition in different sectors of this market.

Firstly, competition is becoming tense for potential students. At the heart of this, there are demographic problems of developed countries related to the reduction of birth rate and a corresponding decrease of the population aged 18-23 years. These circumstances force the countries in which a powerful base of higher education has been created, university complexes with developed infrastructure not just to look for but attract actively young people from other countries.

A striking example of this is the fact that national higher education feels an extremely active foreign strategy of friendly Poland towards Ukraine. Powerful information and advertising campaign is the top of the iceberg of the purposeful educational policy of creating favorable conditions for attracting Ukrainian students. These conditions relate to payment (which is comparable with Ukrainian) language (opportunity to study using Russian and Ukrainian, intensive learning of the Polish language), accommodation, employment. The result of this policy is an unprecedented increase in the number of Ukrainian students - more than five times for a few years, and overall it exceeds already 10 thousand and this is more than a third of all students' contingent in Poland. Ukrainian universities in the west of Ukraine experience this policy as the outflow of young people abroad and that along with the general negative dynamics of demographic trends in our country it creates serious risks for the system of higher education.

It should be noted that intensification of export policy is caused by other reasons, namely, an attempt to attract the most talented young people. So in this case we are speaking about competition for the best brains and the best human resources. There are no general data in the official statistics about the departure of our graduates abroad for temporary or permanent employment. However, their absence should not calm, because a well-known fact is that many specialists of many promising specialties (engineering, chemical, biological and others) work under different conditions in advanced countries. It is important to understand well not only the scale of these processes, but also their long-term consequences for country's development.

Aggravation and diversifying the forms of modern

competition take place not only for students; these processes cover all important kinds of activities in the system of education: scientific, international, entrepreneurial, etc. The embodiment of this phenomenon are various university rankings which carry out the ranking process and target universities for certain purposes to achieve higher levels. It is obvious that namely field of activity on implementation of these goals is becoming business by itself, producing new financial flows and obtaining excess profits. Actually, this should be called the emergence of so-called scientific metric database. The identification of real scientific achievements is controversial enough with an increase in publications in so-called cited editions, which is, incidentally, recognized in the international research. These few statements are not able to resist a modern mainstream - a persistent pursuit of getting into the database of certain editions and a pursuit of increase in publications in the cited editions. Individual scientists as well as universities, research institutions and the whole countries are included in this persistent pursuit. It is clear that the owners of these trademarks are recipients of the monopoly rent that is high income from the sale of their rights to these publications, database etc. Understanding the nature of these processes nevertheless leaves no choice - to hold and occupy a key position in today's highly competitive environment is possible only if the enormous costs are carried out at the level of individual scientists, institutions, regions and the country as a whole.

Innovation technology also bears serious risks for the system of higher education. The challenges, which are connected with the spread of information and communication technologies, stipulate not only the necessity to be at the level of these technologies. The national system of higher education if it wants to have real competitive advantages in today's global environment, should be based on an adequate use of these technologies. In addition, it is necessary to be prepared to respond to the changes that innovation technologies bring into the learning process. Higher education could cope with the emergence of distance learning, having adapted to its requirements. After all, new technologies change qualitatively the learning process, which is carried out without personal contact between a teacher and a student. The function of knowledge transfer and control over its acquirement relies on information and communication technologies.

Dissemination of MOOC (massive open on-line courses) was a new step in the expansion of information and communication technologies and new challenges that have become a real challenge for traditional forms of education. MOOC idea began to be realized even in the 90's of the last century, but it got a new impulse in autumn of 2011, when leading US universities (Stanford and Massachusetts Institute of Technology) presented video courses of subjects that are taught by leading professors in a completely open access. MOOC began spreading rapidly in different countries of the world, and in June 2014 they totaled more than 2,600 worldwide.

It is pleasant to note that our country is also actively involved in implementing this innovation. In particular, a public project "Prometheus" has already been created, the number of offered online courses is growing that were prepared by the teachers of Kyiv National University named after Taras Shevchenko,

Kyiv Polytechnic Institute and Kyiv-Mohyla Academy. This project provides open and completely free access to the best courses of the university level provides free opportunity for universities, leading teachers and companies to publish and distribute courses on this platform. Each course of the project "Prometheus" consists of video lectures of leading teachers of the best Ukrainian universities, interactive tasks and forum on which students will have the opportunity to ask the teacher questions and speak to each other.

It is clear that these new phenomena change radically the educational process: teaching, knowledge transfer, knowledge control, teaching methods, printing textbooks and teaching materials. Modern students like to work more in a virtual space, instead of working with printed materials. Perhaps we can talk about reducing the chances for the development of industry of printing teaching materials. Instead of this, the area of their virtual space is expanding that in its turn actualizes the issue of intellectual property protection and adaptation to these processes of the whole educational sphere.

Group of political risks expanded significantly in the context of events in 2014. In addition to such classical risks associated with the unstable political situation in the country and the world, inconsistent public vector in foreign and domestic policy, corruption and others, the threat, generated by open aggression and annexation of territories, was added. The situation has become terrible for all teachers when people are dying, material and technical resources that were accumulated for many years are being destroyed, and as a result of someone's painful ambitions thousands of people lose suddenly their personal property and are forced to wander around the world. Peaceful Ukrainian mentality could not respond immediately to a great insidiousness of the Russians and betrayal of its citizens. But the events of 2014 changed our world, made democratization processes irreversible in Ukraine, leaving its alliance with the authoritarian system of the neighboring country and determining the vector of its development on general human values: respect for others, non-aggression and non-interference, democratic freedoms and mechanisms of state building.

As real consequences of the latest events have become extremely stressful conditions of functioning for most higher educational institutions of Donbass, which lost buildings, laboratory facilities and are forced to look for new location. This is a huge set of problems: moving, finding accommodation, adjustment of the educational process both for the teaching staff and students, and for all employees. The Ukrainian government and the Ministry of Education and Science had to take quick and immediate measures to settle numerous problems of adjusting the activity of educational institutions under the conditions of occupation and evacuation, solving social and domestic issues of the staff and students. Nevertheless, important strategic goals and tasks are not postponed, the processes of reforming the education system are continued gradually.

Corruption risks are no less serious for the future development of the higher education system. The new law "About Higher Education" (Law 2014) which was adopted in June 2014 foresees steps to combat corruption, including the creation of the National Agency for Quality Assurance of Higher Education,

which is independent of the Ministry of Education and Science. However, it is evident that fighting against corruption by means of creating new bodies is not the most efficient way, because it can promote to enhance the "the price issue". The real mechanisms to combat corruption can be only openness, transparency and accuracy of all processes: management (decision-making, elections), financial (funding universities, the directions of their spending), personnel (movement, promotion) and others.

Legal risks are mainly related to imperfect and inconsistent legislative and regulatory framework of educational activities. The law "About Higher Education" that was adopted in June 2014 was the breakthrough and very important for the development of higher education in Ukraine. The main innovations of the long-expected law should include new terms of organizing admission to higher educational institutions: applicants will not apply to the university but to the institution, that conducts external independent testing; depending on the number of candidates' applications, the number of applicants in the framework of the Government commission will be determined. The same institution makes up rating lists of applicants that will study in the framework of public funding and passes them on to every higher educational institution of Ukraine. The number of previous applications will influence the number of applicants in the framework of public funding, and they will be announced by October 1. It is clear that leading universities of the country and educational institutions, which formed a sustainable demand for their educational services in the regions, will be in a better position.

Bachelor graduates can select Master's Degree Program of other specialties ("cross-entry"), which will increase the migration of students from regional universities to the capital or European universities and is a normal European practice. Finally, Ukrainian Universities gained academic, organizational and financial autonomy. The law defines the norm of the disclosure of financial documents and public control over cash flows of the institution.

From now, the highest governing body of educators - the Ministry of Education and Science of Ukraine - does not control or manage higher educational institutions, but only promotes activity and guides the development. Democratic processes are enhanced in rector's elections: now they involve all teachers and researchers. Rector, dean, head of Department cannot be more than two terms in succession. For the first time much attention is paid to monitoring the quality of education in Ukrainian educational legislation. A separate structure - the National Agency for Quality Assurance of Higher Education is being created - a collegial body, which is made up of 25 elected members.

The social layer, which is changing by adopting such a document, is so deep that many provisions of the law are postponed in action, because the full implementation requires not only considerable financial resources but also changing numerous regulatory documents. The most important thing is that the new law creates a real competitive environment, because now all the higher educational institutions of Ukraine should provide high quality education in order to prove its uniqueness and usefulness for the Ukrainian society or stop gradually their activities.

However, many questions still need revision: not all educational standards are worked out and adopted, it is necessary to improve the organization of the teaching process and take into account the working hours of teachers.

The life has changed during this time, forms and technologies of the teaching process have changed, Internet and distance learning have appeared, our higher education has become multi staged (the levels of bachelor, specialist, master have been introduced). Universities are guided by the same documents in their activities that do not take into account all aspects. Without mentioning the need to respond to the challenges of European integration. There should be developed mechanisms that provide the ability for moving students between educational institutions on the basis of credit-modular system in order to promote the mobility of lecturers and students.

In such conditions, it is necessary to draw attention to the introduction of administrative innovation. Administrative innovation is any action relating to the implementation of new planning and organization of educational, scientific and other processes of the University (Azmut, 2012, v. 1, p. 67).

The following group of risks is closely connected with legal ones – economic that are quite different by structure: financial, property, fiscal, etc. The biggest difficulties arise because of the amount and structure of financing. The lack of financial resources is a serious risk not only for providing innovative development, but also for the normal functioning of higher education. However, all countries of the world face this problem: both advanced countries and those that are developing. The lack of public resources is becoming obvious for sufficient support of higher education activity, especially in view of its growing role in the innovative development of the society. World practice has found answers to these challenges that can be found in the area of diversification of sources. The processes of attracting other entities (except the state) to funding through various mechanisms are being activated in most countries. The most promising way for our country is the adaptation of stimulating mechanisms for enhancing business participation in the financing of educational and research activities of universities, as well as mechanisms for facilitating the financial burden for private consumers of educational services.

The idea of optimizing the network of educational institutions is very popular now. But its effective implementation requires a clear understanding of what is meant by optimization and what goals it should pursue. If the main goal is reducing expenses for maintaining the system, then there should be clear calculations and plans by which savings will be achieved. If the creation of powerful regional centers of higher education is a priority, then it is important not only to carry out so-called external optimization (combining several universities in one), but ensure effective internal organization of a newly established large higher educational institution. But it seems that optimization means only reducing the number of educational institutions.

It was announced about the implementation of reforms of higher education in Ukraine, a new Law of Ukraine "About Higher Education" and the plan of its implementation were adopted, the draft of the Strategy

of reforming higher education by 2020 was submitted (Ministry of Education and Science of Ukraine 2014), a total inventory (based on accreditation procedures) of higher educational institutions is conducted, amendments are done to the State Budget 2016. The ultimate goal is to modernize the national network of universities through their associations, integration and liquidation of insolvent institutions. In opinion of the authors of reforms, it will lead to the emergence of powerful regional research universities integrated into the global and European educational and research area. The expediency of such an initiative in the regions is clear: contingent of students is reduced in most universities, the training of specialists is duplicated, considerable public financial resources are spent on their maintenance, the competitiveness of university graduates in the domestic and European labor markets is not increased.

In 2015, the network of higher educational institutions of Ukraine consisted of 795 institutions, including 317 (III-IV accreditation levels) and 478 (I-II accreditation levels). Among them, 215 educational institutions are state-owned (III-IV accreditation levels) and 200 (I-II accreditation levels). The processes of network optimization have been activated in our country since 2014: the number of higher educational institutions has been reduced, well-known institutions have been transferred to the Ministry of Education and Science. However, it should be emphasized that the number of universities cannot be an end in itself. The arguments are not given and as a result the position of the Ministry of Education is not clear that the number of universities must be necessarily reduced.

The data are often provided, for example, about the small number of universities in developed countries. Thus, in France there are 79 major universities, but about 500 of so-called Grandes Ecoles operate close to them, private higher educational establishments, which are considered to be the most prestigious. A small number of students can study there, but thanks to handmade work an extremely high quality level of training is achieved. Thus, the creation of large universities is not always the basis for increasing their final efficiency. Therefore, as concerns other universities there is no reason to remove the existing diversification of educational institutions. All countries follow the way of diversification and retain their historic features.

Table 2 provides data on the number of higher educational institutions in the countries of the world and the number of population. The number of universities is given according to Webometrics world ranking of 2015, which includes all universities presented in the Internet.

The number of population is given according to the data of Country meters site, which gives the number of population in the mode of real time. It is obvious that our country takes quite a mediocre position in regard to the population per one university. It seems that the key objectives of the network optimization of higher educational institutions should be the following: the creation of world-class universities (several, there cannot be many), the formation of powerful regional university centers (with specific features of the regional economy), strengthening the autonomy and competition between institutions.

Perhaps the argument for reducing universities is also

a necessity for more effective funding. This can be achieved not only by closing or combining universities, but first of all by rationalizing expenses. World practice has gained tremendous experience in the use of flexible mechanisms of institutions management not by administrative-command methods but economic, stimulating ones,

including different formulas of public funding. Surely, each of them is not perfect, but the trend is observed towards greater transparency and clarity of procedures for the allocation of financial resources for each educational institution. Typically, this is a clear formula which means a certain amount, determined by the number of students,

Table 2 The number of higher educational institutions and the population of the world

No.	Country	The number of universities (according to data of Webometrics-2015) <sup>1</sup>	Population (for 04.05.2015) <sup>2</sup>	Population per one university
3	Iceland	8	328 105	41 013
4	Denmark	82	5 638 527	68 763
7	Norway	60	5 074 021	84 567
8	Poland	430	38 454 879	89 430
9	Russia	1 531	146 304 153	95 561
10	United States	3 289	324 348 554	98 616
12	Canada	331	35 683 214	107 804
13	Austria	76	8 439 561	111 047
14	Australia	211	23 601 743	111 857
15	Finland	47	5 427 535	115 480
16	France	571	66 795 912	116 981
18	Japan	989	126 380 692	127 786
19	Brazil	1 613	206 266 312	127 878
20	Czech Republic	81	10 469 077	129 248
21	South Korea	387	50 387 471	130 201
23	Mexico	947	125 341 213	132 356
24	Belgium	82	11 154 637	136 033
25	Greece	79	11 123 527	140 805
26	Ukraine	297	42 695 966	143 757
27	Belarus	59	9 349 698	158 469
29	Germany	414	79 868 457	192 918
30	Spain	240	47 663 438	198 598
31	Sweden	48	9 571 246	199 401
32	United Kingdom	292	64 799 264	221 916
33	Israel	35	8 335 024	238 144
34	Italy	236	60 377 611	255 838
35	South Africa	130	51 614 115	397 032
36	Turkey	190	77 079 194	405 680
37	China	2 555	1 373 067 042	537 404
39	India	1 622	1 292 545 957	796 884

<sup>1</sup>Webometrics. Ranking WEB of Universities ([www.webometrics.info](http://www.webometrics.info))

<sup>2</sup>Universe ([www.countrymeters.info](http://www.countrymeters.info))

a certain amount for the development, categorical programs and additional funding can be obtained provided achieving the best results.

It is clear that any organizational restructuring is stressful for the institution, because it means a clash of different corporate cultures and, in general, changes in the common internal culture and system of communications. In such a large structure on the one hand, the threat of a considerable strengthening of bureaucracy of all processes is increasing, on the other hand, a strong potential for synergistic powerful development is being created. Therefore, the most important task is the solution of problems of disclosure of this potential, which requires modern innovation approaches to the management of higher educational institutions, taking into account theoretical and practical achievements of advanced management,

gained by international practice.

We cannot ignore the risks associated with demographic problems. High dynamics of spreading the scale of higher education in Ukraine in the 90's - early 2000s had as its basis the growth of children birth in the 80's. After 2007 a gradual decrease in the population aged 18-23 years has been observed due to the crisis processes of drastic reduction in the birth rate since the early 90s (almost twice). Decrease in the student contingent began in 2008, and since 2011 almost all Ukrainian universities have experienced a dramatic reduction. According to our research, the number of students in universities will grow only in 2019 year.

The seriousness of these risks is explained by the fact that human and institutional potential of higher education system was significantly accumulated in the previous years: the number of candidates and doctors has

increased, technical and methodological support of the educational process in universities is gradually improved, teaching traditions and research are formed. The critical dependence of financial and economic stability of the system of higher education on the number of students threatens the possibility of its further development. Perhaps this dependence must be obligatory in terms of the need of competition between universities and encouraging them to improve their activities. However, in terms of the anticipated demographic changes, difficult situation in the labor market, it is important that mechanisms of weakening this dependence to be implemented so that the system could adapt to them without losing their best attainments. Under the new law, teachers' work-load decreases, which will certainly alleviate the situation with a highly qualified staff of higher educational institutions.

The list of external risks can be continued and further analyzed, we outlined only the basic circle. External risks do not exhaust all challenges and difficulties of the development of higher education system, which are also determined by a large group of internal risks. Table 1 outlines the major internal risks that depend on internal resources and management factors. On the one hand, the lack of internal resources (students, highly qualified personnel, finance, computer technology, infrastructure, etc.), and on the other hand - ineffective management of these resources in the current difficult external conditions. A more detailed analysis of internal risks may become a topic for further research and scientific dispute, while we consider it appropriate to stop on the issue of defining a risks degree.

Criteria for assessing a risk degree of a separate educational institution in the system of general secondary, vocational and higher education were defined and approved by regulatory decisions of the Cabinet of Ministers. Risk assessment criteria in higher education include the following: the term of carrying out economic activity with providing educational services in the system of higher education; evidence of violations of legal requirements regarding carrying out economic activity with providing educational services in the system of higher education (lack of legal grounds for carrying out educational activities in certain fields and specialties, violation of requirements regarding forming the structure of higher educational institution and contingent of students, teaching staff, non-completion of plans and curricula); the results of accreditation of educational programs (in terms of accreditation level and / or specialty (field)); implementation of targets that are available in the annual plans of the entity (public funding and financial stability).

The mentioned criteria are analyzed, as a rule, while checking up a higher educational institution and then a general conclusion is drawn about a risk degree of the higher educational institution (small – S, medium – M, high – H). In terms of scientific analysis, the most essential criteria from this list are the execution of the government order and financial stability. However, it should be emphasized the need for more complex assessment and expansion of the indicators (ratio of the actual contingent and licensed number of students, unemployment rate of graduates in the region and others). Risk assessment is relevant at different levels such as institution, region, sub sector (universities of a certain profile or type) and the education sector as a whole.

Obviously, this problem requires a new concept of the development of higher education systems as a main component for the formation and development of the national innovation system. It is difficult to disagree with the author of "The Theory of Economic Development" Joseph Schumpeter: "Put in a row as many mail-coaches as you like – at the same time you will not get the railroad" (Schumpeter, 1982, p. 140).

In today's rapidly changing world the system of higher education must become objectively more mass, creative, dynamic. That is why higher education needs reforms – effective, professional and understandable for the Ukrainian society. Such reforms that will create the organizational and economic prerequisites for the efficient production of new knowledge, commercialization of innovations, which in its turn will lead to the economic development of separate regions and the country as a whole.

In this context, one cannot help but notice the importance of new approaches in personnel policies regarding the management of educational institutions. Obviously, in modern conditions there is a necessity in finding a new type of leaders that are capable of acting in the current coordinates, to think not in terms of personal or political loyalty, but in terms of the concepts and categories of innovation development and competitiveness of their educational institutions in a single system of national education.

## 6 Discussion

Current needs of modern economic science are the further development of mechanisms and tools of risk management in the system of education. Despite the popularity of the educational risks in scientific research, the actual problem is a thoughtful application of this idea in modern Ukrainian higher education. The problems of finding efficient toolkit of educational risk management, strengthening their impact on achieving the strategic objectives of universities development, etc. leave much room for scientific research and further debate.

## 7 Concluding remarks

Increasing uncertainty and instability of the modern external environment of the system of higher education and science requires new approaches to its management and organization. Forming such a direction as an educational risk management is a necessity in the context of strengthening the capacity, sustainability and capability of the education system to resist numerous external and internal challenges. They are defined by the modern global, economic, demographic and institutional conditions. Creating theoretically foundations of educational risk management and its introduction into practice of universities will change the approach to the management and organization of educational and scientific activities.

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