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«BRAIN DRAIN» FROM UKRAINE AS A THREAT TO NATIONAL SECURITY

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«ВІДПЛИВ УМІВ» З УКРАЇНИ ЯК ЗАГРОЗА НАЦІОНАЛЬНІЙ БЕЗПЕЦІ

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«УТЕЧКА МОЗГОВ» ИЗ УКРАИНЫ КАК УГРОЗА НАЦИОНАЛЬНОЙ БЕЗОПАСНОСТИ

The article studies the emigration of highly qualified specialists from Ukraine. The main threats of «brain drain» to the national security of this country, connected with the loss of significant part of the intellectual potential of the country, worsening of qualitative features of labour resources, loss of financial resources spent on training and development of the emigrating professionals, reduction in labour productivity, weakening of the country's competitiveness, are determined. The express opinion poll of students with respect to their intention to leave for other countries has been conducted and its results processed using information technology that explicitly proved the trend for emigration of young specialists. The ways of regulation of the outflow of intellectual capital aimed both at deterring young scientists from going abroad and encouraging them coming back are proposed.

Key words: intellectual migration, «brain drain», emigration of highly skilled professionals, national security, threats of «brain drain», regulation of the outflow of intellectual capital.

Fig.: 1. Tabl.: 2. Bibl.: 10.

Досліджено еміграцію висококваліфікованих фахівців з України. Визначено основні загрози «відпливу умів» національній безпеці нашої держави, які пов'язані із втратою суттєвої частки інтелектуального потенціалу країни, погіршенням якісних характеристик трудових ресурсів, втратою грошових коштів, затрачених на підготовку та розвиток спеціалістів-емігрантів, зниженням рівня продуктивності праці, послабленням конкурентоспроможності країни. Проведено експрес-опитування студентів щодо намірів виїхати до інших країн й оброблено його результати за допомогою інформаційних технологій, які наглядно підтвердили тенденцію до еміграції молодих спеціалістів. Запропоновано шляхи регулювання відтоку інтелектуального капіталу, спрямовані як на стримування виїзду молодих науковців за кордон, так і на повернення їх із-за кордону.

Ключові слова: інтелектуальна міграція, «відплив умів», еміграція висококваліфікованих фахівців, національна безпека, загрози «відпливу умів», регулювання відтоку інтелектуального капіталу.

Рис.: 1. Табл.: 1. Бібл.: 10.

Исследована эмиграция высококвалифицированных специалистов из Украины. Определены основные угрозы «утечки умов» национальной безопасности нашего государства, которые связаны с потерей существенной доли интеллектуального потенциала страны, ухудшением качественных характеристик трудовых ресурсов, потерей денежных средств, затраченных на подготовку и развитие специалистов-эмигрантов, снижением уровня производительности труда, ослаблением конкурентоспособности страны. Проведен экспресс-опрос студентов относительно намерений уехать в другие страны и его результаты обработаны с помощью информационных технологий, которые наглядно подтвердили тенденцию к эмиграции молодых специалистов. Предложены пути регулирования оттока интеллектуального капитала, направленные как на сдерживание выезда молодых ученых за границу, так и на возврат их из-за границы.

Ключевые слова: интеллектуальная миграция, «утечка мозгов», эмиграция высококвалифицированных специалистов, национальная безопасность, угрозы «утечки умов», регулирование оттока интеллектуального капитала.

Рис.: 1. Табл.: 1. Библ.: 10.

JEL Classification: F 22

Urgency of the research. The guarantee of the state national security at all times required a developed economy. Today, intellectual resources to a greater extent define the economic development of the country and the welfare of its citizens. It is highly-developed personality that becomes one of the most valuable national riches and a key resource for the development of economic system. In this regard, the developed countries not only create conditions for preservation and qualitative growth of their own intellectual capital, but also actively attract highly-skilled foreign professionals. In modern conditions there takes place a rapid development of such segment of labor market as market of research staff and highly-skilled

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professionals, accompanied by increase in their mobility, growth of intellectual migration and the emergence of such specific phenomenon as “brain drain”.

Target setting. The phenomenon of “brain drain” is typical for all countries, but especially for those that choose the path of changing social structure and economic reforms. As a result of transformation processes the economy is unable to provide appropriate employment opportunities for specialists with higher education. Ukraine, today becoming an active participant in international intellectual migration processes, is not an exception. However, Ukraine remains an exporter at the international market of intellectual labor, being a donor of highly-educated and highly-skilled employees. At the same time emigration of the most talented professionals hinders scientific-technical and socioeconomic development of the country, creates threats to individual and national security.

Actual scientific researches and issues analysis. Today, the phenomenon of “brain drain” is an extremely debatable topic that is of great interest for researchers and lively discussed by experts in different areas. The problem of international migration of skilled professionals was covered in many works of Ukrainian scientists, in particular: Y. Begay, E. Libanova, V. Nikolaevskyi, V. Omelianenko, N. Prohorenko and others.

Uninvestigated parts of general matters defining. However, a set of theoretical and practical issues associated with “brain drain” from Ukraine still requires investigation. Economic science has not yet developed a clear approach to determining the nature and consequences of the influence of “brain drain” on the level of security, as well as an adequate migration policy.

The research objective. The purpose of this article is to study theoretical aspects of “brain drain” process in terms of threats to national security and justification of practical recommendations for its regulation in Ukraine.

The statement of basic materials. “Brain drain” is one of the components of intellectual migration, which we consider as a two-way process that includes “brain inflow” (brain gain) and “brain outflow” (brain drain) [10].

The analyzed works of scientists-economists [1; 4; 5; 6; 8], related to this problem, indicate the difference in opinions as to which specialists should be included in the category of “brain”, and what types of migration should be attributed to “brain drain”. In our opinion, “brain drain” needs to be considered as the emigration of highly-skilled professionals, particularly scientific personnel, in order to obtain permanent residence or employment contracts, i.e. irreversible or long-term emigration of scientists and highly qualified specialists.

Since the beginning of market reforms in Ukraine’s economy there have been established strong trends of emigration of highly-skilled professionals. In the global market Ukraine serves mainly as a donor-country of highly-educated and qualified professionals. Unfortunately, available statistics of State Statistics Service of Ukraine do not reflect the real extent of “brain drain” abroad. As official information applies only to persons with scientific degree going abroad, we would focus on studying emigration of scientists.

Since independence, Ukraine has lost about a third of its scientific potential and continues to lose it. During 1991-1995 313 doctors of sciences already left Ukraine, out of which 105 persons moved to the USA, 34 to Israel, 115 to Russia, 10 to Germany and 9 to Poland. During 1996–2014 1781 scientists left Ukraine for permanent residence abroad, among which 1,436 candidates and 345 doctors of sciences [2]. This process was the most massive during 1996-2002. Since 2003 the intensity of emigration of scientists from Ukraine significantly decreased, minor fluctuations are observed.

Many of highly-educated Ukrainian specialists go to richer countries in search of better life and decent financial security. However, there are a lot of those who emigrate due to the

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desire for self-realization, improving skills and obtaining new experience. The long-term crisis of Ukrainian science, which is reflected in significant deterioration of its resource base, critically insufficient funding, and low wages of scientists, increases the desire of researchers for emigrating abroad.

However, E. Libanova, the Director of Institute for Demography and Social Studies, mentioned, that the trend of scientists and talented young people emigrating from Ukraine is extremely dangerous and defies Ukraine's national security [3].

Under the law of Ukraine "On the Basics of National Security of Ukraine", national security is determined as the security of vital interests of man and citizen, society and state that upholds a sustainable development of society, timely identification, prevention and neutralization of real and potential threats to national interests in areas of ... migration policy, ... education and science, scientific-technical and innovation policy ... and other spheres of public administration in the event of negative tendencies towards creation of potential or real threats to national interests [7]. Threats to national security are current and potentially possible phenomena and factors that endanger the vital national interests of Ukraine.

Out of all the threats caused by "brain drain" the following ones are most clearly manifested in Ukraine (Fig.).

First, the emigration of professionals of higher qualification, including specialists-inventors, owners of intellectual property, shows the loss of significant part of the intellectual potential of the country that is the driving force of economic development. A decrease of the intellectual potential of society doesn't promote scientific and technological progress, leads to reduction in innovation developments that, in its turn, is reflected in decrease of key macroeconomic indicators and reinforces growing lag of Ukraine in technological development.

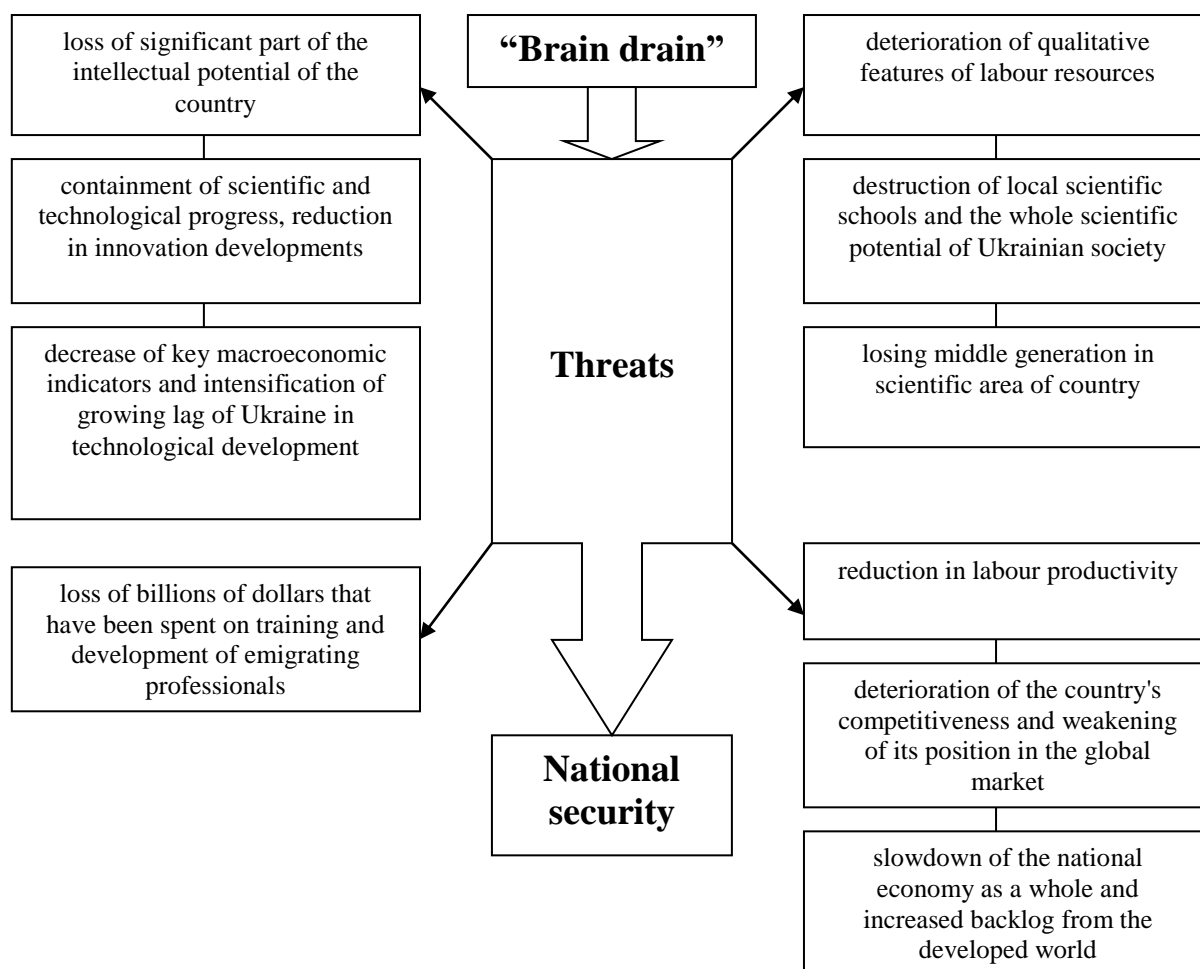


Fig. The main threats to the «brain drain» of national security of Ukraine

Source: compiled by authors.

Second, the emigration of qualified professionals significantly deteriorates qualitative features of labour resources and is perceived as a serious threat to the scientific future of the state. Since the most efficient specialists, especially in technical, medical and physico-mathematical sciences, which formed the core research teams and ensured the reproduction of scientific schools, left Ukraine, and today young scientists also emigrate, there is a destruction of local scientific schools and the whole scientific potential of Ukrainian society that will be extremely difficult to recover in the future, if not impossible. Termination of academic personnel training and reproduction of scientific schools creates the threat of losing the middle generation in scientific area of our country. Besides, today there is a sharp decrease of the attractiveness of scientific activity in the minds of young people. The best graduates do not work in this area.

Third, Ukraine is losing billions of US dollars that have been spent on training and development of emigrating professionals. The cost for government and family for preparation of a scientist up to his working age is \$ 800 thousand, and of a specialist with higher education – \$ 600 thousand. Under this approach the estimated loss of Ukraine from emigration of scientists only amounts to about \$ 36 billion, however, this method does not consider a potential value of what they could have produced or invented [6]. And according to international estimates, 15–20 years and an average of 1.5-2.0 million US dollars are required

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for the preparation of one doctor of science [9]. This means that every highly qualified labour migrant enriches the country of his new stay for that amount.

Fourth, the level of labour productivity is reducing due to the outflow of highly qualified professionals, which leads to deterioration of the country's competitiveness and weakening of its position in the global market; the decline in the intellectual level of the population is strengthening, the possibility of degradation of the future generation, which subsequently there will be nobody to teach, is increasing; the pace of development of some sectors of the national economy is slowing down, the priorities for scientific and technological development of society are being lost, the development of the national economy as a whole is slowing down, backlog from the developed countries is increasing.

The authors conducted express opinion poll among the students from IV-level accredited universities of Chernihiv (150 respondents) as potential emigrants within the research in the 2015-2016 academic year. Students of the first, third and fifth courses (50 people per course) were involved in the opinion poll. The answers were received from 63 males and 87 females. The age of the respondents was from 17 to 26 years. The main results are shown in the table.

Table

The results of express opinion poll among the students from IV-level accredited universities of Chernihiv

Question	Answers		
	1 course	3 course	5 course
1	2	3	4
1. Do You know what "brain drain" is?	Yes – 88% No – 12%	Yes – 100% No – 0%	Yes – 100% No – 0%
2. Do You agree that "brain drain" is a problem?	Yes – 76% No – 4% It's hard to say – 20%	Yes – 92% No – 0% It's hard to say – 8%	Yes – 94% No – 0% It's hard to say – 6%
3. How do You personally feel about the fact that qualified professionals are going abroad?	Positive – 12% Negative – 35% Neutral – 38% It's hard to say – 15%	Positive – 10% Negative – 44% Neutral – 40% It's hard to say – 6%	Positive – 2% Negative – 62% Neutral – 24% It's hard to say – 12%
4. Do You personally consider going abroad for further education or work?	Yes – 54% Possible – 28% No – 12% It's hard to say – 6%	Yes – 62% Possible – 26% No – 10% It's hard to say – 2%	Yes – 76% Possible – 12% No – 8% It's hard to say – 4%
5. In Your opinion, what is the motive of your desire to go abroad? (those answered who chose "Yes" in the question No.4)	To improve the financial situation – 48% To improve their professional skills – 6% To arrange a personal life – 14% The opportunity to realize their dreams – 12% Other (travel) – 20%	To improve the financial situation – 44% To improve their professional skills – 14% To arrange a personal life – 12% The opportunity to realize their dreams – 14% Other (travel) – 16%	To improve the financial situation – 34% To improve their professional skills – 28% To arrange a personal life – 4% The opportunity to realize their dreams – 16% Other (travel) – 18%
6. Do you plan to return to Ukraine after studying and working abroad? (those answered who chose "Yes" in the question No.4)	Yes – 46% No – 52% It's hard to say – 2%	Yes – 38% No – 54% It's hard to say – 8%	Yes – 24% No – 56% It's hard to say – 20%
7. How do You think, is it realistic for You personally to find a job abroad according to obtained specialization?	Yes – 22% No – 38% Possible – 40%	Yes – 26% No – 32% Possible – 42%	Yes – 46% No – 26% Possible – 28%

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1	2	3	4
8. Which countries, in Your opinion, are the most attractive for emigration?	USA – 16% Germany – 58% UK – 8% France – 12% Other (specify country) – 6%	USA – 26% Germany – 40% UK – 12% France – 18% Other (specify country) – 4%	USA – 30% Germany – 34% UK – 22% France – 12% Other (specify country) – 2%
9. Do You think the emigration of specialists abroad is dangerous for Ukraine?	Yes – 62% No – 8% It's hard to say – 30%	Yes – 72% No – 4% It's hard to say – 24%	Yes – 94% No – 0% It's hard to say – 6%

Source: compiled by the authors.

Opinion poll indicates the presence of intentions to emigrate to other countries among many young educated Ukrainians (64 %). This trend can be already traced starting from the first year of study. With each following year of study more students tend to aim to leave Ukraine in search of opportunities to realize their potential in chosen profession, for it is hard to find jobs by profession for young specialists inside this country.

Most of the individuals, who want to leave the country, are eager to get to Germany (44 %), USA (24 %), France (14 %), the UK (14 %). Among the other countries Poland, Denmark, China, Singapore were mentioned. Only 36 % of those respondents, who want to leave, plan to return home. The most common motive for migration among the respondents is the improvement of their financial situation (42 %). Other potential labor migrants aim to improve their professional skills (16 %) and to realize their dreams (14 %). At the same time, 76 % of the respondents believe that the emigration of highly qualified professionals is dangerous for Ukraine.

Of course, this study can not show the whole problem, but it clearly proves the trend for emigration of young specialists.

Today Ukrainian policy in the area of intellectual migration is fragmentary and represents a set of disparate measures, hardly united by a common idea, goals and objectives. In addition, it is not conceptually, organizationally or legally framed.

Now you cannot close the possibility of highly qualified specialists going abroad, by explaining the necessity to respect national interests. So the state should comprehensively approach the regulation of the process of intellectual capital outflow, create the proper conditions for fruitful research activity primarily of the most gifted scientists, and develop and implement the mechanism of return of migrants to their homeland, i.e. turn irreversible emigration into temporary.

In this regard, the state should adopt the measures for deterring young scientists from going abroad, as well as for their return from abroad. First of all, it is important to change the attitude of the state towards science that will allow us to focus efforts on finding ways to improve the level of science funding to European standards, and accordingly: increase the prestige and wages of scientists; improve the living standards of scientists and their social security; improve resource base of science; provide scientists with modern equipment and materials for research; create favourable working conditions; provide full opportunities for realization of creative potential of scientists.

Training and obtaining experience by domestic professionals abroad, however, with subsequent return to this country, can be one of the ways of resolving the problem of «brain drain». In order to avoid degradation of future generation we should expand cooperation with our scientists working abroad. «Brain drain» should not be loss-making, but profitable for the state, at least paying its way.

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Conclusions. Thus, the donor country, having spent significant funds on training scientists and specialists, loses the majority of them that reduces the level of its national security. Emigration of highly-skilled labor from Ukraine is one of the major potential or real threats in scientific and technological areas of national security, as parameters of human resources potential of science and education have a decisive influence on the speed of socio-economic development, international competitiveness of the country and its position on the global market. “Brain drain” inflicts substantial economic, social, cultural and political damage to the country, hinders the innovative development of the economy, causing the decline of domestic science and lack of skilled specialists, who can become leading professionals in management and production.

Resolving the problem of «brain drain» at the present stage of economic development of Ukraine requires active development of motivation and creating conditions to attract young people to scientific activity, which requires increased funding, development of new industries, establishment of new technology centers, strengthening of participation of state institutions in the organization and regulation of international migration outflows.

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