
ЕКОНОМІКА ПРАЦІ

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S. O. Polkovnychenko, Candidate of Economic Sciences, Associate Professor,
V. O. Kurochka, Student**ASSESSMENT OF THE SITUATION OF «BRAIN DRAIN» FROM UKRAINE
IN MODERN CONDITIONS**

Abstract. The essence of the concept of «brain drain» is disclosed in the article. The dynamics is investigated and the main trends of emigration of highly skilled professionals from Ukraine are determined in the context of geographical, sectoral and age-sex structure. The outflow of scientists outside Ukraine is considered as one of the main threats to national security. Public policy measures aimed at regulating «brain drain», relating to both restraint of young scientists going abroad and their return, are proposed.

Keywords: intellectual migration, «brain drain», emigration of highly skilled professionals, regulation of «brain drain».

S. O. Полковниченко, к. е. н., доцент,
V. O. Курочка, студент**ОЦІНКА СТАНУ «ВІДПЛИВУ УМІВ» З УКРАЇНИ В СУЧАСНИХ УМОВАХ**

Анотація. У статті розкрито сутність поняття «відплив умів». Досліджено динаміку та визначено основні тенденції еміграції висококваліфікованих фахівців з України з точки зору географічної, галузевої та статеві-вікової їх структури. Відплив учених за межі України розглянуто як одну з основних загроз національній безпеці. Запропоновано заходи державної політики, спрямовані на регулювання «відпливу умів», як для стримування виїзду молодих науковців за кордон, так і для повернення їх із-за кордону.

Ключові слова: інтелектуальна міграція, «відплив умів», еміграція висококваліфікованих фахівців, регулювання «відпливу умів».

S. A. Полковниченко, к. э. н., доцент,
V. A. Курочка, студент**ОЦЕНКА СОСТОЯНИЯ «УТЕЧКИ УМОВ» ИЗ УКРАИНЫ В СОВРЕМЕННЫХ УСЛОВИЯХ**

Аннотация. В статье раскрыта сущность понятия «утечка умов». Исследована динамика и определены основные тенденции эмиграции высококвалифицированных специалистов из Украины с точки зрения географической, отраслевой и половозрастной структуры. Отток ученых за пределы Украины рассмотрен как одна из основных угроз национальной безопасности. Предложены меры государственной политики, направленные на регулирование «утечки умов», как для сдерживания выезда молодых ученых за границу, так и для возврата их из-за границы.

Ключевые слова: интеллектуальная миграция, «утечка мозгов», эмиграция высококвалифицированных специалистов, регулирование «утечки умов».

Relevance of the research topic. International competitiveness of national economy and its modernization opportunities largely depend on the possession and proper management of intellectual capital. Highly qualified staff acquires key importance and becomes a constantly in demand production factor for a knowledge-based economy. 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

ЕКОНОМІКА ПРАЦІ

conditions there takes place a rapid development of such segment of labor market as market of research staff and highly-skilled professionals, accompanied by increase in their mobility, growth of intellectual migration and the emergence of such specific phenomenon as “brain drain”.

Statement of the problem. 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.

Analysis of recent researches and publications. 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 and foreign scientists, particularly, Y.Begay, E.Libanova, V. Nikolaevskiy, V.Omelianenko, N.Prohorenko and others. 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.

Statement of the objective. The purpose of this article is to study theoretical aspects of “brain drain” process and justification of practical recommendations for its regulation in Ukraine.

Presentation of the problem basics. Intellectual migration is a process complex in nature, manifestations and consequences. We support the point of view of those researchers who consider intellectual migration as a two-way process involving “brain inflow” (brain gain) and “brain outflow” (brain drain) [1]. Since Ukraine serves mainly as a donor country of highly-educated and skilled professionals, we will focus on interpretation of the term “brain drain”, which is similar to movement of capital going in one direction – from the country.

Researchers disagree as to which specialists should be included in the category of “brain”, and what types of migration should be attributed to “brain drain”. Some of them, along with scientists, engineers, programmers and other individuals with higher education, include middle technical and medical staff into the concept of “brain”, however, do not refer specialists of creative professions to them [2]. Others limit the composition of such migrants only to scientific personnel. Some would, by contrast, define “brain drain” as migration, primarily of intellectuals, creators and carriers of spiritual and cultural values [7]. There is also a point of view according to which intellectual migrants include all population with higher education.

There is also no unity in determination of duration of migration of highly skilled professionals. While some researchers refer only irreversible emigration to obtain permanent residence to the concept of “brain drain”, others consider it necessary to take account of migration under employment contracts and education programmes as well [6].

We would consider “brain drain” as emigration of highly-skilled professionals, particularly scientific personnel, in order to obtain permanent residence or employment contracts, i.e. as irreversible or long-term emigration of scientists and highly-skilled specialists.

Since the beginning of market reforms in Ukraine’s economy there have been established strong trends of emigration of highly-skilled 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. From 1996 to 2013 1,732 scientists (Fig. 1) left Ukraine for permanent residence abroad, among which 1,394 candidates and 338 doctors of sciences.

This process was the most massive during 1996-2002, with the average outflow of one hundred and fifty scientists per year. Since 2003 the intensity of emigration of scientists from Ukraine signifi-

ЕКОНОМІКА ПРАЦІ

cantly decreased. In 2008 the least number of candidates of sciences and in 2013 doctors of sciences within the studied period moved abroad. Out of the total number of professionals who left the state in 2013, there were one doctor and 27 candidates of sciences, from which 13 persons had academic status – 10 associate professors and 3 senior researchers [3].

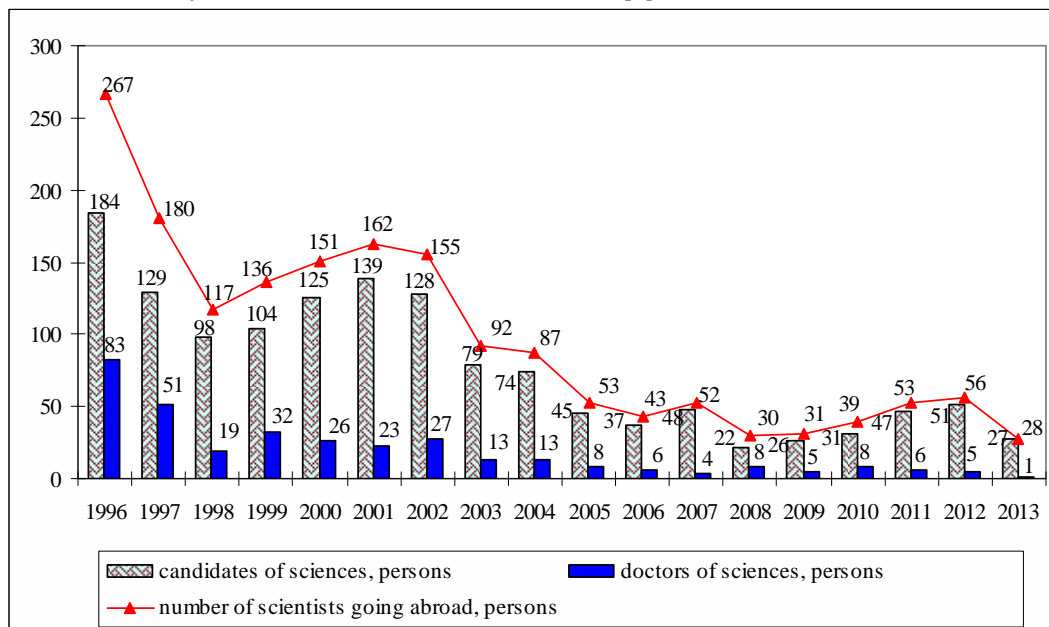


Fig.1. Number of emigrants from Ukraine with scientific degree during 1996-2013, persons
 Source: [3; 4; 5]

Men were more numerous to leave. For example, during 2007-2013 173 men went abroad, while only 116 women left in this period [5]. As for age structure of scientists-emigrants, by 1995 half of qualified researchers going abroad were under the age of 55; the age of the other half was within the range of 56 to 70 years. During 1998-2002 the average age of candidates of sciences, who emigrated, was 45.6 years, and of doctors of sciences – 54.7 years [3; 5]. However, while in 2007-2008 all doctors of sciences going abroad were in the age groups over 56 years, the majority of candidates of sciences were aged 31 to 50 years, being the most productive age for research activity. According to the data of 2007-2011 period, the highest number of scientists – 88 persons – left at the age of 30-40, 11 persons were aged less than 30 and 8 persons were aged over 70. The average age of professionals who went abroad in 2013, was 68 years for doctors and 42 years for candidates of sciences [3].

Emigration processes covered the scientists, who were the core of research teams and ensured recreation of research schools, especially in the fields of technical, medical and physical and mathematical sciences. Therefore, losses from emigration of highly-qualified professionals should be considered not only with respect to the range of research and development activities they could have carried out, but destructive processes at the collective level such as interruption of academic training and recreation of research schools should also be taken into account.

Among the hundreds of scientists who left Ukraine in the years of 1996-2012 for permanent residence abroad, most of them were represented by biologists, physicists and mathematicians. Specifically, during this period 83 doctors and 267 candidates of physical and mathematical sciences, 66 doctors and 198 candidates of biological sciences, 50 doctors and 199 candidates of medical sciences, 88 doctors and 298 candidates of technical sciences moved from Ukraine. The least number of scientists who emigrated were representatives from such fields as geology (3 doctors and 9 candidates), psychology (3 doctors and 8 candidates), geography (3 doctors and 7 candidates), veterinary medicine (3 doctors and 7 candidates), sociology (1 doctor), national security (1 doctor) and politics (1 candidate) [3; 10].

ЕКОНОМІКА ПРАЦІ

The most popular countries, where Ukrainian scientists left for, were the USA, Russia, Israel and Germany (Fig. 2).

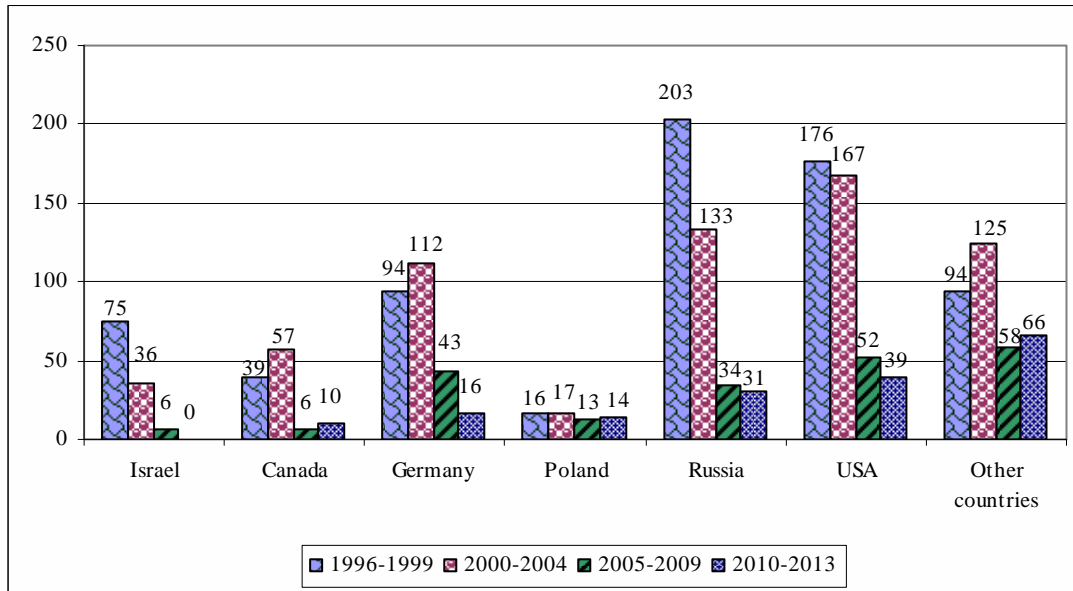


Fig.2. The main recipients of “brain drain” from Ukraine during 1996-2013, persons
Source: [3; 4; 5]

For the period of 1996-2013 25.1% of Ukrainian scientists moved to the USA, 23.2% – to Russia, 15.3% – to Germany, 6.8% – to Israel, 6.5% – to Canada, 3.5% – to Poland [3; 4; 5]. While in the 90-ies of XX century significant part of Ukrainian scientists settled in Israel and Canada, no scientist has left for Israel for the last four years.

In 2013 the main countries-recipients of highly-skilled professionals were European countries (10 specialists, among them – 6 moved to Germany), Russia (6), the USA and Canada (5) [3].

Despite reduction in the number of Ukrainian scientists-emigrants, emigration of specialists to the USA remains consistently high; this is fairly due to numerous scholarship programmes that enable young scientists move to the United States. Thus, during 1992-2013 800 Ukrainian scientists participated in the Fulbright Scholarship programme. Half of them were engaged in research activities, 22% represented by students who studied under graduate programs, and 28% were members of Faculty Programs [10].

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 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.

The feature of modern emigration of highly-skilled Ukrainian professionals lies in the fact that these are persons of high professional motivation, who prefer opportunities of professional realization and meeting professional expectations and requirements to geographical factor in application of their knowledge [9]. In this regard, one may hope that the community of highly-skilled emigrants is not completely lost for Ukraine, and their intellectual potential in certain circumstances could work for the welfare of the Motherland.

Raw materials export-oriented structure of Ukrainian economy, active penetration of imported high-tech products into the national market, underdevelopment of the domestic market of high technologies, unwillingness of private sector to invest in expensive and long-term research projects create favorable conditions for emigration of highly-skilled professionals. We lose not only capital, which is, in-

ЕКОНОМІКА ПРАЦІ

cientally, more than one billion US dollars per year, but also the opportunity for adequate scientific and technological development.

The outflow of scientists, professionals, and skilled labor from Ukraine is considered as 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.

Since the most capable specialists and young scientists leave Ukraine, there is a risk of losing the middle generation in scientific field of our country. Besides, Ukraine is losing billions of dollars spent on training and development of these 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 [8].

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.

The state should comprehensively approach the regulation of the process of intellectual capital outflow, create the proper conditions for fruitful research activity primarily of elite, 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 must adopt the measures for deterring young scientists from going abroad, as well as for return them from abroad (Fig. 3).

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.

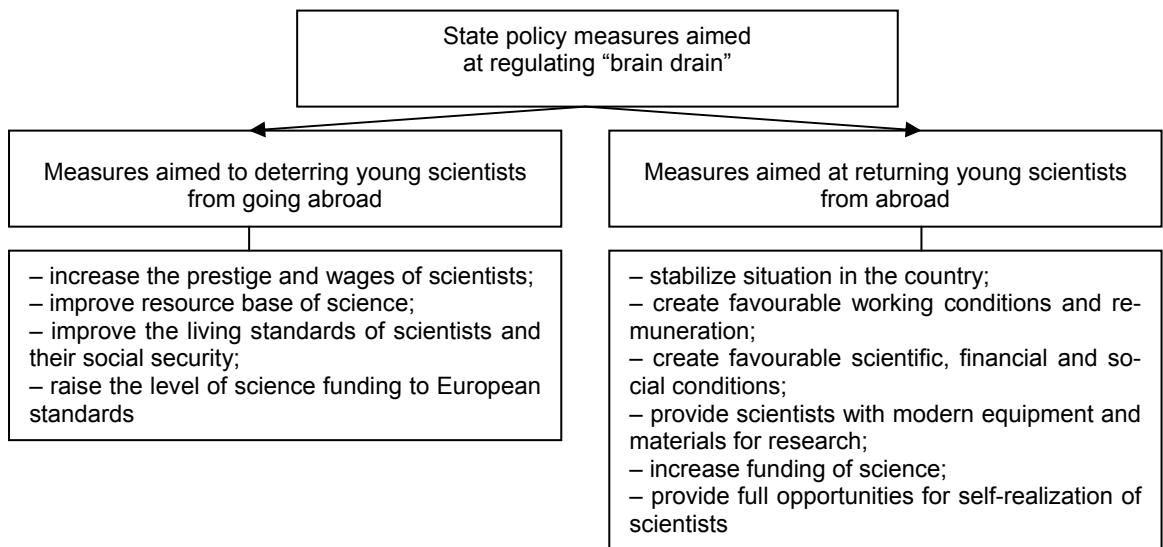


Fig. 3. State policy measures aimed at regulating “brain drain”
 Source: compiled by authors

Conclusions. Thus, emigration of highly-skilled professionals from Ukraine for permanent residence abroad is still continuing, although the intensity of these processes is currently much lower than in the previous decade. “Brain drain” inflicts substantial economic, social, cultural and political damage to the country, causing the decline of domestic science and lack of skilled specialists, who can become leading professionals in management and production, in dire need of whom our country is.

ЕКОНОМІКА ПРАЦІ

Resolving the problem of "brain drain" at the present stage of economic development of Ukraine requires both funding and participation of state institutions in the organization and regulation of international migration outflows, including young people.

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