Incoming and Outgoing Academic Mobility in Russia and Abroad: Main Trends, Administrative Challenges

Tamara K. Rostovskaya, Vera I. Skorobogatova, Elena E. Pismennaya and Vadim A. Bezverbny¹

Goal: The goal of research consists in identifying trends in academic mobility in Russia and abroad, primarily that of academic staff; contributing suggestions on improving the management of academic mobility processes.

Design/methodology/approach: The research uses methods of observation, comparative analysis, as well as statistical method and generalization method

Vera I. Skorobogatova

Elena E. Pismennaya

Vadim A. Bezverbny Institute of Socio-Political Research of the Federal Center of Theoretical and Applied Sociology of the Russian Academy of Sciences, Moscow, Russia e-mail: <u>vadim_ispr@mail.ru</u>

¹ Tamara K. Rostovskaya

Institute of Socio-Political Research of the Federal Center of Theoretical and Applied Sociology of the Russian Academy of Sciences, Moscow, Russia e-mail: rostovskaya.tamara@mail.ru

Institute of Socio-Political Research of the Federal Center of Theoretical and Applied Sociology of the Russian Academy of Sciences, Moscow, Russia e-mail: skorobogatova ve@mail.ru

Institute of Socio-Political Research of the Federal Center of Theoretical and Applied Sociology of the Russian Academy of Sciences, Moscow, Russia; Financial University under the Government of the Russian Federation, Moscow, Russian Federation e-mail: <u>nikitar@list.ru</u>

supported by the facts. A comparative analysis of statistical data is made; these data were taken from the publicly available reliable sources of the Organization for Economic Cooperation and Development, Human Resource Development Department of the Asia-Pacific and others.

Findings: It was found that the level of academic mobility rises with the rising level of education. The overall mobility of tertiary students - in particular, students and post-graduate students, is growing throughout the world. Mobile post-graduate students demonstrate better research results during training. Even short-term academic internships for post-graduate students contribute to the successful implementation of research projects at their host university and the spread of new knowledge in general. In general, academic mobility contributes to the accumulation of human and cultural scientific capital that makes a connection between research communities in different countries. Based on the research findings, it was found that no statistics are collected on the foreign academic mobility of post-graduate students and young researchers in Russia. Based on the analysis, it may be deduced that the scope of academic mobility is extremely small. European countries are the main countries of prevailing academic mobility.

Originality/value: Given the importance of participation in foreign academic mobility for the development of the competitiveness of national science in Russia, it appears that there is a need to monitor the foreign academic mobility of Russian post-graduate students and young researchers. The monitoring of foreign academic mobility of Russian post-graduate students and young researchers is a systematic observation of the status and conditions of training highly-qualified personnel in Russian educational establishments and scientific organizations, providing educational authorities of Russia with up-to-date information on the status of outgoing academic mobility necessary for analyzing and forecasting the development of the national education system and national labor market.

Key words: social administration, education, academic mobility, research students, postdocs, joint publications.

1. Introduction

The term "academic mobility" in this research is used to denote the author's definition according to which academic mobility is considered as "...a set of attitudes and readiness for movement (i.e. potential), as well as a territorial movement as such (that is, academic migration) for the purposes of studies, advanced professional training and academic activity of both students and higher-education teaching personnel in the education and science system" (Ryazantsev et al, 2019); depending on the direction of mobility flows, a distinction is made between incoming and outgoing academic mobility. The incoming academic mobility involves individual and/or group travels of students, post-graduate students, and academic staff of foreign educational establishments or scientific organizations, other foreign citizens for a certain period (up to one year) in an educational establishment or a scientific organization in another country, for educational or scientific purposes. The figure for the incoming academic mobility (number and share) is considered as an indicator of attractiveness of the national education system (Vodenko, 2019).

The outgoing academic mobility involves individual and/or group travels of students, post-graduate students, and academic staff to foreign educational establishments or scientific organizations for a certain period (up to one year) for educational or scientific purposes. The figure for the outgoing academic mobility (number and share) is considered as an indicator of the state of the national education system, including issues associated with the quality and accessibility of higher education in the country.

Individual academic mobility includes individual travels of students, postgraduate students, academic staff on their own initiative to other educational institutions or other organizations, as well as individual arrivals of students of some educational establishments to other foreign educational establishments or scientific organizations in order to implement individual educational trajectories, academic and research programs.

The included training involves learning of the specified part of the main educational program by students, which leads to learning outcomes and is focused on the recognition of these outcomes (transfer credit of disciplines) in a foreign educational institution without awarding academic degrees of a partner university.

In addition, the implementation of educational and scientific goals, the ability to develop "soft skills" is an additional advantage of the participants of academic mobility: mobility provides them the opportunity to improve language skills, gain independence, confidence in their abilities.

In recommendations of the Committee of Ministers of the Council of Europe of 1995 (Principles for the formulation of policy on academic mobility in Europe, 1995), which are still relevant today, the basic principles of academic mobility development policy were formulated:

1. The term "academic mobility" implies the period of studies, teaching and/or research activities in a country which differs from the country of residence of a student or a member of academic staff. The period of studies must be timelimited; that said, provision is made for the return of the student or staff member to his or her home country upon completion of the specified period. The term "academic mobility" is not intended to mean migration from one country to another.

2. Academic mobility can be implemented within the framework of programs that were specially made for this purpose, as part of exchange agreements between the governments, higher educational institutions or their associations, as well as at the initiative of individual students and personnel.

3. Academic mobility must be an important area of focus according to the increase in competence of students and academic staff in their area of activity, must become an important tool for providing countries and institutions with current scientific knowledge, where such knowledge is comparatively less developed.

Mobility of students and members of academic staff must be motivated and encouraged.

The most popular forms of academic mobility of academic staff of higher education institutions "are as follows:

- lecturing, giving classes and consultations;

- participation in scholarly work within the framework of joint topics;

- participation in professional development programs;

- internships during research leaves;

- participation in conferences and seminars" (Grigashkina, 2015; Trostyanskaya, 2014).

It appears that academic mobility is an important factor in the formation of human capital, especially mobility of research students, post-graduate students, young scientists. Even short-term academic internships for post-graduate students contribute to the successful implementation of research projects at their host university and the spread of new knowledge in general. In general, academic mobility contributes to the accumulation of cultural scientific capital that makes a connection between research communities in different countries.

The research is aimed at making a comparative analysis of academic mobility in Russia and abroad, primarily that of academic staff; at the same time, the issues of identifying trends in academic mobility, assessing the presence and efficiency of implementation of institutional arrangements, and contributing suggestions on improving the management of academic mobility processes are solved.

2 Materials and Method

The research is supported by the analytical reports of UNESCO, Organization for Economic Cooperation and Development, studies of the working group on mobility of research scientists in the APEC countries (hereinafter referred to as the working group), established by the Asia-Pacific Economic Cooperation, information from the World Bank. In particular, the report presents statistical data published in annual analytical reports of the OECD "Education at a Glance" for 2016-2019, posted on the OECD website and are available to the public.

The materials of Russian researchers, such as Riazantsev, S.V. (2019), Rostovskaya, T.K. (2019), Trostyanskaya, I.B. (2014) et al were used. There is also a significant number of references to the works of foreign authors on the topic of academic and scientific mobility, such as Jacob, M. (2013); Meek, V.L. (2013); Van Noorden, R.(2012); Hawkins, J. (2012); Xu, J. (2012); Chellaraj, G. (2005); Maskus, K. (2005); Mattoo, A. (2005).

The research uses methods of observation, comparative analysis, as well as statistical method and generalization method supported by the facts.

3 Results

Academic mobility in all countries across the world has been rapidly developing and becomes an important factor in competitiveness and employment of graduates, in development of their career prospects. The main trends of incoming and outgoing academic mobility throughout the world that were identified in the course of research are presented below.

1. The level of academic mobility rises with the rising level of education. The overall mobility of tertiary students - in particular, students and post-graduate students, is growing throughout the world. We shall give consideration to the data on foreign students and post-graduate students involved in international research programs within the APEC countries, published within the framework of research of the working group on mobility of research scientists at all stages of their academic career in APEC countries (hereinafter referred to as the working group), established by the Asia-Pacific Economic Cooperation (APEC official website, 2017). In accordance with research findings prepared by the working group, the proportion of international students involved in international research projects in APEC countries is more than 19% of the total number of research students in five APEC countries, and this proportion is much higher than the overall proportion of international students at all higher education levels.

Table 1 – The proportion of international research students in APEC countries, in % (Education at a Glance, 2014)

APEC countries	The proportion of	The proportion of	
	international students	international research	
	among all students of	students among students	
	higher education	who participate in	
	institutions, in %	research programs, in %	
Australia	18	32	
Canada	8	24	
Japan	4	19	
New Zealand	16	41	
The United States of	4	29	
America			

2. According to experts, an increase in the number of indicators of "innovative role of students in the development of new and groundbreaking research" can be observed (Hawkins and Xu, 2012). Available data reveal that foreign research students add more variety to national research teams they join; besides, their presence contributes to cross-border cooperation in research activities, which results in the "multiplicative impact on innovations" and is manifested in the increased number of joint publications and citations. Moreover, academic mobility of students has beneficial effect on the increase in the number of patent applications in the corresponding host universities, while mobile post-graduate students demonstrate better research results during training (Chellaraj et al., 2005). Even short-term academic internships for post-graduate students contribute to the successful implementation of research projects at their host university and the spread of new knowledge in general. In general, academic mobility contributes to the accumulation of human and cultural scientific capital

that makes a connection between research communities in different countries (Jacob and Meek, 2013).

3. With the increase in overall mobility of research students, it was found that it varies depending on the selected speciality and study area. Thus, the global studies of seven thousand research students in technology fields demonstrated that the leading research universities in the United States managed to involve young researchers from other foreign universities for certain disciplines only. The statistical data on the number of research students in STEM (science, technology, engineering, mathematic) disciplines in the United States of America demonstrated that the number of doctoral degrees awarded to foreign nationals has increased from about one-fourth to more than one-half over the 1970 to 2010 period. (Van Noorden, 2012). According to experts, one of the reasons consists in the fact that highly-developed national industry in certain areas of economy acts as an alternative pull factor for young researchers (Furukawa et al., 2013). Similar trends can be observed in other foreign countries as well.

4. An important factor that contributes to the exchange of knowledge between national and international research teams, is the mobility of young researchers at early stages in their career. The beneficial effect of academic mobility at the beginning of academic career was observed in a large variety of researches in various countries. These include additional opportunities for further academic career advancement, the integration in international scientific schools and teams, the prospects for the extended participation in national and international research grant projects.

Researchers who are mobile early in their career, also claim the beneficial effect of mobility on the results of their research, research process as such, fostering research skills, developing international contacts and career advancement in future. For example, the research in the universities of Norway showed that 28% of post-doctoral students and 19% of masters of sciences were born abroad as compared to the 14% of professors (Nerdrum and Sarpebakken, 2006). According to Philip Altbach, the American expert in international education: "It is possible to

roughly determine the educational contributions of various mainly developing countries, the young natives of which study abroad, to the economy of host countries. Although not all of these students will remain there after graduation, the amounts are still significant. In addition to direct costs, host countries benefit from the enormous amount of intellectual capital – the most gifted young people from developing countries. At the same time, the losses for developing countries are enormous – for the academic field, in particular: gifted academic researchers and teachers, innovative ideas which could have emerged from foreign experience, practice of university management and much more" (Altbach, 2013).

Thus, the signs are becoming clear that academic mobility of young researchers, following the defense of a doctoral thesis, is crucial for making international research connections.

5. When we talk about mobility of young researchers early in their career, we cannot but make mention of the institute of post-doctoral program, which enjoys wide popularity in advanced foreign countries of Western Europe and America. The post-doctoral program (post-doctorate, postdoc) is created and functions for support and promotion of young scientists who have recently earned academic doctoral degrees of PhD, in the development of their academic career and research skills. Educational establishments and scientific organizations introduce such programs in order to develop projects which are managed directly in the organization. Financial conditions and terms of employment (two to three years on average) of post-doctoral students vary in different countries. They can be taken on the staff of the organization after they pass the competition to participate in the post-doctoral program.

Upon completion of their research activities, the postdocs often experience several years of fluctuating unemployment, consisting of short-term and temporary contracts, until they manage to find a stable employment. In a number of countries, if one does not go through the stage of the post-doctoral program and confirm their qualification with publications and research results, it is hard for young researchers to find employment in a scientific organization or a university. At this stage of the research career, young scientists are open to international mobility.

Obviously, such a willingness to move abroad among researchers at an early stage of academic career affects the extent of mobility and the structure of employment. An opinion poll held among 17 thousand researchers within the scope of the GlobSci project, showed that the number of international post-doctoral students increases the number of international teaching assistants, associate professor or full professors in 15 out of 16 countries under consideration, including APEC countries, such as Australia, Canada, Japan and the United States. The percentage of postdocs who are employed not in the countries of their origin, was also larger than the corresponding percentage of reputable and leading researchers, as is pointed out in the higher education research project MORE 2, which was also confirmed by other researches (Van Noorden, 2012, 328). Thus, the research concerned with reputable scientists in the field of natural and physicotechnical sciences in the Asia-Pacific demonstrated that 20.3% of researchers in the APEC countries earned their academic degrees abroad in other countries, but 60.2% of researchers in the APEC countries gained their academic experience when they were holding post-doctoral positions abroad; however, these proportions varied significantly between countries, as can be seen from Table 2.

Table 2 – The proportion of young scientists who held "post-doctoral" positions abroad, in % (Woolley et al., 2008)

Country	The proportion of academi	The proportion of young
	degrees earned abroad, %	scientists who held
		"post-doctoral" positions
		abroad, %
Australia	24.2	53.0
China	20.9	54.8

Japan	4.0	64.4
Korea	38.9	70.0
Taiwan	56.2	49.7

A large proportion of Japanese researchers holding foreign post-doctoral positions compared to a small proportion of those who earned their academic degrees abroad suggests a coherent strategy of holding post-doctoral positions in other countries with a view to gaining international experience.

The research has shown that post-doctoral positions held, i.e. practical work, had more impact on international ties and cooperation than received academic degrees.

A total of 95.3% of the total number of those who held post-doctoral positions abroad participated in the international research cooperation, which yielded tangible results, as well as publications. The authors of this research arrived at the conclusion that "post-doctoral positions are of higher value than earned academic degrees in the establishment of connections of social capital and further positively contribute to the transnational scientific and production activity, which is also an indicator of long-term relations of social capital established at the post-doctoral level" (Woolley, 2008).

6. The "brain drain" among young scientists and researchers in different countries has different indicators. The analysis of training of research students from six countries of the Southeast Asia showed that 60% to 90% of all young research students studied abroad, and the returning percentage varied significantly: from 35% in Vietnam to 93.2% in Thailand (Turpin et al., 2008). According to Philip Altbach, a member of the International Council under the Ministry of Education and Science of the Russian Federation, founder of the Center for International Higher Education at the Boston College: "Even in a globalized world, bringing the best scientists home is no easy task, and most of the initiated programs have failed. The truth consists in the fact that until conditions of scholarly work vary greatly from one country to another – as exemplified by

salary, conditions of scholarly work, academic culture and academic freedom — "the best and most intelligent of them" are unlikely to go back to their native land. It is unlikely that any sought-after scientists who are at the peak of their career, are employed by the best universities and are high-performing in their work will ever go back. The best solution — and that is a good alternative — is to connect with these academic "stars" and establish connections that will yield practical effect, which will not be detrimental to local academic culture or request impractical results" (Altbach, 2011).

7. According to the experts' findings, "the states which invest significant financial means in research and development are the most attractive to international post-graduate students. Thus, Switzerland, for example, is ahead of all the OECD countries in terms of the amount of finance that is annually allocated for research and development; approximately 13.6 thousand US dollars per student. As a result, Switzerland is only inferior to Luxembourg in terms of proportion of foreign nationals among post-graduate students. Mexico, Russia and Chile are at the opposite side of this list. These countries spend on research and development less than 2 thousand US dollars a year per student and host less than 5% of international post-graduate students" (Marconi, 2016, 9).

4 Discussion

The international statistics on academic mobility are published by two international organizations: UNESCO Institute for Statistics and Organization for Economic Cooperation and Development (OECD). In addition, the statistics on international academic mobility is collected by regional international organizations which focus on extension of regional educational and scientific mobility, for example, by the European Council and the Asia-Pacific Economic Cooperation (APEC) (Windebank et al., 2012).

The OECD statistics is published on an annual basis in the reports "Education at a glance". The statistical data on foreign students and post-graduate

students are presented in a separate Section, but these data only apply to incoming academic mobility by education levels in the OECD countries and their partners.

According to the report "Education at a glance" for 2019, in the OECD countries in 2017 international students accounted for 6% of the total number of tertiary students, and 26% of the total number of doctoral students.

Among all the OECD countries (Figure 1), the United States host the largest number of international students of master's programs and doctoral programs or equivalent programs in numerical terms (26% of the total number of students), followed by the United Kingdom (15%), France (10%), Germany (10%) and Australia (8%). The highest percentage of enrolments in doctoral programs in the OECD region can be observed in France, Luxembourg, the Netherlands, New Zealand, Switzerland and the United Kingdom, where 40% or more students of higher education institutions come from abroad. In Luxembourg and Switzerland, the number of international students of doctoral programs is actually higher than the number of national students (85% of students in Luxembourg and 55% of students in Switzerland come from abroad at this level) (Education at a Glance, 2019).

According to the Institute of International Education (United States), the number of Russian citizens studying in bachelor's programs in American higher education institutions (*Undergraduate*) greatly exceeds the number of students in master's programs and doctoral programs (*Graduate*) (Table 3).

Table 3 – Dynamics of academic mobility of students and doctoral students from
Russia and the United States from 2015 till 2017, people (Open Doors, 2017)

Academic years	Russian holders of a	Russian holders of a	
	master's degree and	bachelor's degree	
	doctoral students	studying in the United	
	studying in the United	States, total number of	
	States, total number of	students	
	students		

2016/2017	1,925	2,345
2015/2016	1,975	2,321

It should be noted than in general the highest proportion of international students in American higher education institutions accounts for master's programs and doctoral programs. This trend does not apply to Russia however.

According to the Education at glance report for 2018, in 2016, the number of international students of master's programs was still growing. In general, in 2/3 of the OECD countries, the proportion of international holders of a master's degree is twice as high as the proportion of international holders of a bachelor's degree; in other words, one out of ten international students studies in the master's program. In some countries, for example, in Spain and Sweden, the proportion of international holders of a master's degree is even four times as high as the proportion of a bachelor's degree.

In all the OECD countries, except Australia, Germany, Hungary, Poland and Lithuania, the highest proportion of international students was registered in the doctoral program. However, the increase in the number of doctoral students is not uniform by countries. In the United States, the proportion of international doctoral students has reached 40% of the total number of international students in the country.

The number of doctoral students hosted by Iceland, Norway, Portugal, France and Sweden is three times as high as the number of holders of a master's degree hosted by these countries. This is also true for the doctoral programs in Columbia, Mexico and Chile, although the level of international mobility in higher education in these countries is usually low.

In Luxembourg and Switzerland, most students of programs of this level are international students. The proportion of international students of doctoral programs is also high (over 35%) in Belgium, France, the Netherlands, New Zealand and the United Kingdom. The proportion of international students of doctoral programs is 5% or less in Chile, Lithuania, Poland, Brazil, China, India, Israel, and the Russian Federation.

The higher proportion of international students in master's programs or doctoral programs is attributable to the fact that these are higher-level education programs and are supported by the latest advances in science or vocational practice (Figure 1). With the emergence of the knowledge economy and knowledge society, the field of research activities and employment with prestigious professions is becoming increasingly international, and the international experience is highly appreciated both in the area of science and for employment.

The attraction of international students to doctoral programs is particularly appealing to host countries due to their potential contribution to the research and development as students first, and as highly skilled immigrants in future.

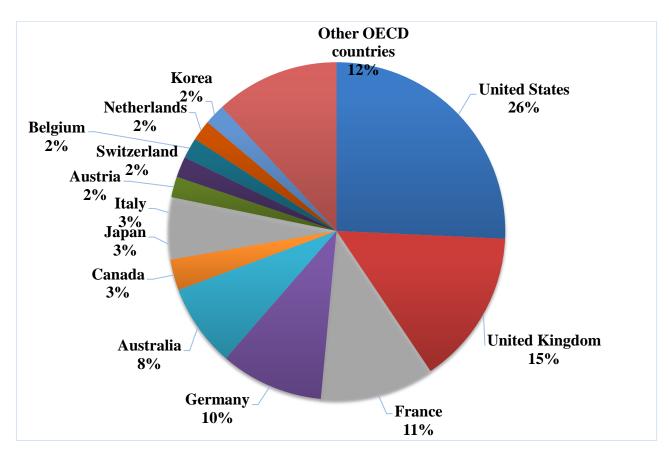


Figure 1. Distribution of overseas and international students in the OECD countries at the master's programs and doctoral programs by countries where education is received in 2016 (Education at a Glance, 2018).

A total number of about 1.3 million international students studied in master's programs and doctoral programs in the OECD countries. just over half (53%) of the total number of international students – students of master's programs and doctoral programs – study in the 22 countries of the European Union² and 25% of them are students from European countries (intra-European academic mobility). Almost 30% of the total number of international students come to study to the United States of America and Canada. 7% of international students from the North American countries come to Canada, while 3% of international students from the North American countries come to the United States. 6% of international students from the United States, 35% of the total number of international students account for the students from the People's Republic of China.

Almost 9% of all international students of master's programs and doctoral programs in the OECD countries come to study to Australia and New Zealand. Students from the Asia-Pacific Region constitute the vast majority (more than three fourths) of all international students in these two countries. Incoming mobility in Japan depends on the population of students from Asian countries even more, as more than 90% of international students come to study in master's programs and doctoral programs from other countries of this region.

Table 4 – The proportion of international students by higher education levels in 2016 (Education at a Glance, 2018)

The proportion of international or overseas students				The total	
by higher education levels				number of	
Total	internationa				
number	educatio	S	program	program	l students,

² Austria, Belgium, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Luxembourg, Netherlands, Poland, Portugal, Slovenia, Slovakia, Spain, Sweden and the United Kingdom.

	of	n	programs	S	S	thousand
	students	program				
	in higher	s with				
	educatio	short				
	n	period of				
		studies				
	(1)	(2)	(3)	(4)	(5)	(6)
		INT	ERNATION	NAL STUI	DENTS	
OECD						
Australia	17	9	14	46	34	336
Austria	16	1	18	20	28	70
Belgium ¹	12	7	9	20	44	61
Canada ²	12	10	10	18	32	189
Denmark	11	16	6	19	34	34
Estonia	7	5	-	10	12	3
Finland	8	a	5	12	21	23
France	10	5	7	13	40	245
Germany	8	0	5	13	9	245
Hungary	9	1	7	16	12	26
Iceland	7	25	4	9	36	1
Ireland	8	2	7	15	27	18
Japan	4	5	2	7	18	143
Latvia	8	2	6	16	11	6
Luxembour	47	9	27	73	85	3
g						
Mexico	Н	Н	Н	Н	Н	Н
Netherlands	11	1	9	17	40	90
New	20	27	16	26	48	54
Zealand						

Norway	4	1	2	7	22	11
Poland	3	0	3	4	2	5
Portugal	6	2	3	7	26	20
Slovenia	3	1	3	5	10	3
Spain ³	3	2	1	8	15	53
Sweden	7	0	2	11	35	28
Switzerland	18	0	10	29	55	52
United	18	4	14	36	43	432
Kingdom						
United	5	2	4	10	40	971
States						
Total for	6	3	4	12	26	3,520
the OECD						
countries						
Total for	9	4	7	13	23	1,585
the 22						
countries of						
the						
European						
Union						

Unfortunately, there are no global data on labor mobility of specialists who received postgraduate education; the only thing known is that cross-border mobility of post-doctoral students is very high. "According to the American higher education researcher Brendan Cantwell, professors and the leading researchers also aim for competition at the international level. The attraction of "the best and the most intelligent" postdocs to the participation in the research project currently implies selection from the global labor market. The professors in the OECD countries regularly employ postdocs all over the world. Some aspiring scientists from these countries are employed as postdocs in developing countries" (Cantwell, 2012).

At present, certain countries (and their number is still growing) collect data for tracking labor mobility of their graduates upon completion of their studies. These data provide a rough idea of the number of graduates who leave the country upon completion of their studies, how many of them go back after a certain period of time, and what qualifications they have. The report "Education at a glance" for 2018 presents the data on bachelor's degree graduates and master's degree graduates who left the country within three years from the moment of completion of their studies for the nine OECD countries in 2015³ (Figure 2).

In general, the graduates of the master's program are more likely to leave the country than the graduates of the bachelor's program. This practice is most common in New Zealand, where graduates prefer to work abroad with a view to gaining international experience after graduation; about 26% of graduates of the master's program and 23% of graduates of the bachelor's go back to their native land after about five years. For countries that have invested heavily in training their specialists in order to provide the national labor market with trained professionals, the return, preservation and retention of graduates is a problem of great concern. It can partly be solved through the immigration of international specialists.

³ No data were collected on mobility of post-graduate students and young researchers by the OECD

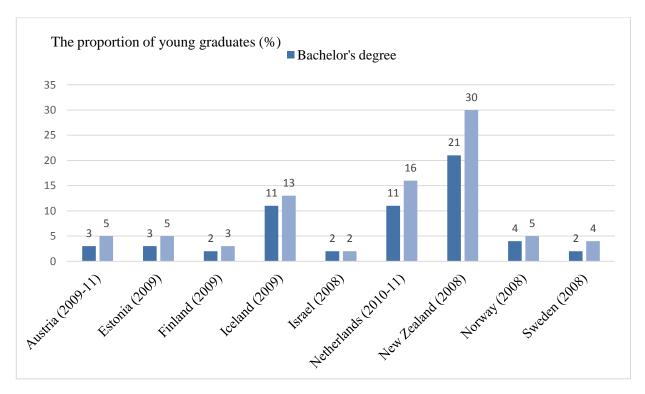


Figure 2. The proportion of graduates of the bachelor's program and graduates of the master's program who left the country within three years upon completion of their studies (Education at a Glance, 2016).

Thus, according to figures from the OECD statistics, it is not possible to determine the figures of academic mobility of Russian post-graduate students in various countries of the world. Furthermore, similar to the UNESCO statistics, the OECD does not collect and publish any data on academic mobility of young researchers.

In general, the largest host countries (the United States, the United Kingdom, Germany, China and France) are characterized by the balanced mobility both to foreign countries (incoming mobility), and from the native country (outgoing). Other major host countries demonstrate mobility in a certain area: for example, these are Australia and Switzerland, where incoming mobility is dominant at the level of 54%, or Italy, which is characterized by the dominant outgoing academic and research mobility (57%).

One perceptible change in international academic mobility is a significant increase in the flows of academic and research mobility from the United States to Australia. Mobility from China to the United States increased as well, while mobility in the opposite direction slightly decreased.

In general, there is not enough statistical and analytical data on mobility of students, young researchers, and academic researchers early in their career of research scientists at all stages of their career is lacking. In this regard, the creation of working groups within the interregional communities, for example, the Asia-Pacific Economic Cooperation for mobility of research scientists in APEC countries, can be extremely in demand.

5 Conclusion

The analysis has shown that host countries are heavily motivated to invest in the later stages of education, especially at the level of the doctoral program, since the graduates at this level make a significant contribution to research, development and innovations, as well as to solving social and economic problems of the country.

This trend does not apply to Russia however. Given the task set in the Edict of the President of the Russian Federation No. 204 of May 7, 2018 "On national goals and strategic development objectives of the Russian Federation until 2024" of the at least twofold increase in the number of foreign nationals who study in higher educational institutions and scientific organizations, as well as the implementation of a set of measures aimed at employment of the best graduates in the Russian Federation, it is necessary to develop a set of measures to attract international students to study in post-graduate programs and promote employment of the best graduates and post-graduate students within the framework of the federal project "Education Export", including making provisions for the liberalization of migration legislation for young researchers and scientists.

A small amount of data on academic mobility once again demonstrates that today, the mobility of Russian post-graduate students, researchers and scientists in Russia is not consistent in nature. This is due to a wide variety of factors, primarily financial and organizational factors. On the one hand, Russian higher education institutions are not able to send their academic staff abroad for lengthy periods due to the decreased number of higher-education teaching personnel in all Russian higher education institutions in general and increased academic workload on those who stay. On the other hand, academic staff that can be in demand, have no adequate competence in languages for teaching in foreign languages in foreign universities.

The above examples showed that international cooperation, especially cooperative effort in research projects, have a significant impact on the formation of a young scientist, develop his/her scientific potential, bring him/her to positive scientific results. At the same time, the financing of academic mobility of academic staff is also a great obstacle for the development of academic mobility in general due to the lack of national programs for the support of academic mobility.

Based on the research findings, it was found that no statistics are collected on the foreign academic mobility of post-graduate students and young researchers in Russia. Based on the analysis, it may be deduced that the scope of academic mobility is extremely small. European countries are the main countries of prevailing academic mobility. The main sources of financing are as follows: financial means of international organizations supporting mobility, private charitable foundations, financial means of mobility participants. This situation leads to the low publication activity of Russian scientists and researchers, low citation ratios and involvement of Russian researchers and scientists in international projects.

Given the importance of participation in foreign academic mobility for the development of the competitiveness of national science, it appears that there is a need to monitor the foreign academic mobility of Russian post-graduate students and young researchers. The monitoring of foreign academic mobility of Russian post-graduate students and young researchers is a systematic observation of the status and conditions of training highly-qualified personnel in Russian educational establishments and scientific organizations, providing educational authorities of Russia with up-to-date information on the status of outgoing academic mobility necessary for analyzing and forecasting the development of the national education system and national labor market.

6 Acknowledgements

The research was conducted with the support of RFBR (project No. 18-29-15043) "Academic mobility of young Russian scientists in the context of international cooperation in the areas of science and technology: forms, trends, approaches to regulation (From the "brain drain" model to the "brain circulation" model)".

References

- Chellaraj, G. Maskus, K. & Mattoo, A. (2005) The Contribution of Skilled Immigration and International Graduate Students to US Innovation. *World Bank Policy Research Working Paper*. URL: <u>http://elibrary.worldbank.org/doi/book/10.1596/1813-9450-</u> 3588?chapterTab=false
- Education at a Glance 2014: OECD INDICATORS. OECD Publishing. 2014. Paris.
- Education at a Glance 2016: OECD INDICATORS. OECD Publishing. 2016. Paris.
- Education at a Glance 2018: OECD INDICATORS. OECD Publishing. 2018. Paris.
- Education at a Glance 2019: OECD INDICATORS. OECD Publishing. 2019. Paris.
- Furukawa, T., Shirakawa, N. & Okuwada, K. (2013) An empirical study of graduate student mobility underpinning research universities. *Higher Education*, 66: 17-37.

- Hawkins, J. & Xu, J. (2012) Mobility, migration and the road to the innovative university: implications for the Asia-Pacific region. *Journal of Asian Public Policy*, 5(3), 262-272.
- 8. Jacob, M. & Meek, V.L. (2013) Scientific mobility and international research networks: trends and policy tools for promoting research excellence and capacity building. *Studies in Higher Education*, *38*(*3*): *331-344*.
- Konstantin V. Vodenko (2019). Problems and Perspectives of State Regulation of System of Education in the Context of Provision of Russia's National Security. *International Journal of Educational Management, 33* (3), 462-469.
- Nerdrum, L. & Sarpebakken, B. (2006) Mobility of foreign researchers in Norway. *Science and Public Policy*, 33(3): 217–229.
- 11.Open Doors: Report on International Educational Exchange, published annually by IIE with support from the US Department of State's Bureau of Educational and Cultural Affairs (2017). URL: https://www.iie.org/Research-and-Insights/Open-Doors/Data/International-Students/Places-of-Origin
- 12.Ryazantsev, S.V., Rostovskaya, T.K., Skorobgatova, V.I., Bezverbny, V.A. (2019) International academic mobility in Russia: Trends, types, state stimulation. *Economy of Region*, 15(2), 420-435.
- 13. Turpin, T., Woolley, R., Marceau, J. & Hill, S. (2008) Conduits of Knowledge in The Asia Pacific. *Asian Population Studies*, *4*(*3*): 247-265.
- 14. Van Noorden, R. (2012) Science on the move. Nature, 490 (7420): 326-329.
- 15.Windebank, J.E., Williams, C.C., Nadin, S. and Rodgers, P. (2012). Evaluating the participation of students in the informal economy: some lessons from a European survey. *Journal of Economy and its Applications*, 2(1) 51-65.
- 16.Woolley, R., Turpin, T., Marceau, J. & Hill, S. (2008) Mobility Matters: Research Training and Network Building In Science. *Comparative Technology Transfer And Society*, 6 (3): 159-186.

- 17.Brendan Cantwell. Postdocs and the Internationalization of Academic Labor: (2012). *Mezhdunarodnoe Obrazovanie*, 69. URL: http://ihe.nkaoko.kz/
- 18.Grigashkina, S., Bugrova, S., (2015) Academic mobility in a higher education institution. Upravlenie Ekonomicheskimi Sistemami, 4. URL: <u>http://uecs.ru/uecs-76-762015</u>
- 19.Marconi, G. International master's students and post-graduate students: what statistics tell us (2016). *International Higher Education*, *13*, *23-45*.
- 20.APEC official website. URL: <u>https://www.apec.org/Publications/2017/03/Researcher-Mobility-Workshop-</u> <u>Report-Researcher-mobility-among-APEC-economies</u>
- 21.Appendix to Recommendation on academic mobility No. R (95) 8 of the Committee of Ministers of the Council of Europe to the member states. Strasbourg, March 2, 1995. Principles for the formulation of policy on academic mobility in Europe. URL: http://www.lexed.ru/mpravo/razdel4/?doc14.html
- 22.Trostyanskaya, I. (2014) Programs of academic mobility of academic staff of universities participating in 5-100 Project. Methodological issues of the implementation of 5-100 Project by university rankings / Under the editorship of Sherega, F.E. and Aref'ev, A.L. M: Center for Sociological Research.
- 23.Philip Altbach. Brain Drain or Brain Exchange? (2013) *Mezhdunarodnoe Obrazovanie*, 72. URL: <u>http://ihe.nkaoko.kz/</u>