"PROPORTIONAL BRAIN FLOW" IN THE CONTEXT OF DIGITAL GLOBALIZATION

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Abstract. The article analyzes the transformations of intellectual migration in the context of digital globalization. It is shown that the spread of remote employment and digital platforms leads to the emergence of new forms of cross border use of human capital that do not fit within traditional concepts. The author proposes the concept of "proportional brain flow to the donor country" (PBF), which makes it possible to measure hidden losses of intellectual potential when specialists are remotely employed by foreign companies. Particular attention is given to the countries of Central Asia and Uzbekistan, where digital employment is expanding rapidly. The article substantiates directions of state policy aimed at stimulating hybrid transnational employment and involving the intellectual labour of specialists in the development of the national knowledge economy.

Keywords: *digital globalization, brain drain, telemigration, remote employment, intellectual migration, human capital, knowledge economy, PBF, Central Asia, Uzbekistan.*

Annotatsiya. Maqolada raqamli globallashuv sharoitida intellektual migratsiyaning transformatsiyalari tahlil qilinadi. Masofaviy bandlik va raqamli platformalarning kengayishi inson kapitalidan transchegaraviy foydalanishning an'anaviy tushunchalarga to'liq mos kelmaydigan yangi shakllarini yuzaga keltirayotgani ko'rsatib beriladi. Muallif "Donor mamlakatga proporsional intellektual oqim" (PBF) konsepsiyasini taklif etadi. Ushbu konsepsiya mutaxassislar xorijiy

kompaniyalarda masofadan ishlaganda intellektual salohiyatning yashirin yo‘qotishlarini o‘lchash imkonini beradi. Maqolada raqamli bandlik jadal kengayib borayotgan Markaziy Osiyo mamlakatlari va O‘zbekistonga alohida e’tibor qaratiladi. Shuningdek, gibrid transmilliy bandlikni rag‘batlantirish hamda mutaxassislarning intellektual mehnatini milliy bilimlar iqtisodiyotini rivojlantirishga jalb etishga qaratilgan davlat siyosati yo‘nalishlari asoslab beriladi.

Kalit so‘zlar: *raqamli globallashuv, “aql oqimi”, telemigratsiya, masofaviy bandlik, intellektual migratsiya, inson kapitali, bilimlar iqtisodiyoti, PBF, Markaziy Osiyo, O‘zbekiston.*

Introduction

The digital transformation of the global economy generates fundamentally new forms of cross border movement of human capital. In the concept of the “globotics upheaval”, R. Baldwin shows that the new wave of globalization is determined not so much by the movement of goods and capital, but by the cross border use of intellectual labour through digital platforms [1]. The central concept of this approach is “telemigration”, or the remote performance of highly qualified work for foreign employers without the physical relocation of the specialist.

This transformation, in our view, calls into question the traditional theoretical frameworks for analysing labour migration. Classical concepts of “brain drain”, “brain gain”, and “brain circulation” were formed under conditions in which the movement of a specialist implied his or her physical emigration [2]. In the era of the digital economy these concepts require fundamental reconsideration.

From a historical perspective it should be emphasized that the countries of Central Asia possess extensive experience of interaction with various models of knowledge migration. For centuries the territory of contemporary Central Asia served as a nodal centre of transcontinental exchange of scientific ideas. However, the digital revolution creates a qualitatively new situation in which the intellectual potential of

citizens can be integrated into the economy of another state without any visible forms of migration.

Main part

In order to adequately describe contemporary forms of transnational intellectual employment, we propose introducing theoretical distinctions that go beyond the classical dichotomy “emigrated or remained”. The first form, physical brain drain, presupposes the relocation of a specialist to another country with a complete exit from the national system of knowledge production. This is the traditional object of state policies aimed at talent retention.

The second form, remote brain drain, occurs when a specialist in fact continues to live in the country of origin, but his or her intellectual labour and economic value are fully integrated into the economy of another state. In our opinion this phenomenon will become the dominant form of intellectual migration in the countries of Central Asia in the medium term under conditions of digitalization.

Therefore, proceeding from the interests of Uzbekistan, we consider it important to pay greater attention to the third form, namely hybrid transnational employment. This form is characterized by the simultaneous work of a specialist for national and foreign employers in different proportions. It is precisely this form that opens the greatest opportunities for state policy.

On the basis of these distinctions we propose introducing the author’s term “proportional brain flow to the donor country”, or the PBF indicator. By this we mean the difference between the share of intellectual labour of specialists who are physically located in the country of origin but work for the economy of another state through digital channels, and the share that these specialists contribute to the development of the national knowledge economy. The higher the value of PBF, the greater the hidden losses of the intellectual potential of the country, and vice versa.

The countries of Central Asia demonstrate a rapid expansion of digital employment in the fields of programming, data analytics, design, scientific research and consulting. Uzbekistan is among the fastest growing markets of remote labour in the region [3]. As a result, a new model of transnational labour is increasingly emerging, in which the intellectual resources of the region are integrated into global chains of knowledge production while physically remaining in their countries of origin.

A sociological analysis of this process requires answers to several key questions. First, how does the structure of the intellectual employment of youth transform? A characteristic shift can be observed when young specialists in IT, mathematics and engineering increasingly orient themselves toward the foreign market as the main source of income already during the stage of education. This forms a stable professional identity oriented toward external clients rather than national institutions.

Second, it is necessary to identify which social groups are most actively involved in remote work for foreign companies. In our view these are primarily young people aged from twenty to thirty five with higher technical education and professional level knowledge of the English language, that is, precisely the category of specialists whose training is the most resource intensive for the national education systems of Central Asia.

Third, the question of consequences for the national knowledge economy is of fundamental importance. It is important to understand that Uzbekistan bears all the costs of training a specialist, while the main economic value of his or her labour is created in favour of foreign companies. At the same time standard statistical methods outside the framework of PBF do not capture this outflow, since the specialist formally remains a resident of the country.

The transformation of the professional identity of specialists constitutes the fourth key aspect. A long term orientation toward foreign clients, work in international teams, and adaptation to the corporate standards of foreign companies gradually

weaken the professional and institutional ties of specialists with the national scientific and educational environment.

Under such conditions traditional measures against brain drain that are oriented exclusively toward preventing physical emigration are increasingly losing their effectiveness. A specialist who receives income from foreign companies remotely formally remains in the country, but his or her intellectual contribution to the national economy may be minimal.

The author's concept of "proportional brain flow to the donor country" proposes a different logic of state policy. It is important to approach the issue dialectically, when instead of creating barriers to the international employment of specialists there is stimulation of the partial localization of their intellectual activity within the national economy. The practical implementation of this approach involves several directions.

First, tax and institutional incentives for additional work of specialists in national projects. Specialists whose main place of employment is connected with foreign companies may receive tax preferences if they simultaneously participate in national research or innovation projects. Such a mechanism transforms hybrid employment from a threat into a resource.

Second, the development of research centres and technological clusters. This presupposes orientation toward the creation of an attractive national innovation infrastructure that forms such an environment in which part of the intellectual products of specialists are created and commercialized within the country, in our case in Uzbekistan.

Within the framework of the proposed PBF model it is advisable to provide a system of institutional and economic incentives for national specialists who conduct professional activity remotely on international markets. In particular, products, developments and intellectual results of labour created with their participation should

receive additional preferences during implementation and commercialization within the territory of Uzbekistan.

At the same time it is important to form mechanisms of financial support aimed at transforming their accumulated professional experience into national entrepreneurial potential. In this regard it is advisable to provide programmes of concessional long term loans for specialists working in the global remote labour market in order to create their own innovative enterprises, start ups and research projects within the country. The implementation of such measures will make it possible not only to increase the level of involvement of national human capital in the development of the internal knowledge economy, but also to ensure more effective integration of international professional experience into the national innovation ecosystem.

All this forms the author's concept of "hybrid resistance" to brain drain, which ensures a gradual increase in the share of PBF. The effectiveness of these mechanisms is determined by their ability to integrate into already established practices of digital employment without creating administrative barriers. Among the specific instruments it is possible to highlight platforms for placing state technical orders accessible to specialists working remotely, programmes of accreditation of freelancers within national technological platforms with privileged access to state grants, and the creation of national digital professional networks integrating specialists with foreign employment into the national professional community.

Third, international experience demonstrates that even in cases of long term residence abroad or long term work for foreign companies many scientists and specialists preserve professional and cultural ties with their home country [4]. Under conditions of digitalization the realization of this potential becomes significantly easier.

A principal direction, particularly for Uzbekistan, is the creation of institutional conditions for the transfer of experience by specialists at the final stage of their careers. Specialists who have worked for a long time for foreign companies both online and

offline possess unique competence combining international professional standards and an understanding of the local context. After the completion of their main professional period such specialists may become a valuable resource for national universities and research centres.

For the realization of this potential, programmes of academic mobility for representatives of the diaspora and specialists with foreign employment are promising, as well as the invitation of practitioners for teaching specialized courses and academic supervision, and the creation of mentorship platforms connecting experienced specialists with international experience with students and young researchers of Uzbekistan. Such an approach allows the accumulated international experience to be transformed into a resource for the formation of a new generation of national specialists.

Conclusion

The problem of managing intellectual resources is directly connected with the foreign policy priorities of Uzbekistan identified by President Sh. M. Mirziyoyev. First of all this concerns the strategic role of human capital in ensuring the international competitiveness of the country. In the context of intensifying global competition for talent, the formation of an effective policy for managing intellectual resources becomes one of the key factors of national development [5].

Digital globalization forms a new type of transnational redistribution of knowledge in which physical borders lose their former significance. For Uzbekistan the strategic task is not only to retain specialists within the country but also to create institutional conditions under which the intellectual potential of citizens will work to a greater extent for the development of the national economy and science regardless of the geography of their employment. In this regard the concept of “proportional brain flow to the donor country” introduced in this article makes it possible to operationalize

this phenomenon and to propose concrete instruments for its measurement and regulation.

For the countries of Central Asia the management of intellectual resources under conditions of digital globalization is a strategic priority. The transition from a policy of retention to a policy of "proportional flow" opens opportunities for transforming the challenges of migration into a resource for national development.

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