

Ministry of Education and Science of Ukraine
Black Sea Universities Network

ODESA NATIONAL UNIVERSITY OF TECHNOLOGY

International Competition of
Student Scientific Works

BLACK SEA SCIENCE 2022 PROCEEDINGS



ODESA, ONUT 2022

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BLACK SEA SCIENCE 2022

Proceedings

Odesa, ONUT 2022

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INTRODUCTION

International Competition of Student Scientific Works “Black Sea Science” has been held annually since 2018 at the initiative of Odesa National University of Technology (formerly Odesa National Academy of Food Technologies) with the support of the Ministry of Education and Science of Ukraine. It has been supported by Black Sea Universities Network (the Association of 110 higher education institutions from 12 countries of the Black Sea Region) since 2019, and by Iseki-FOOD Association (European Integrating Food Science and Engineering Knowledge into the Food Chain Association) since 2020.

The goal of the competition is to expand international relations and attract students to research activities. It is held in the following fields:

- Food science and technologies
- Economics and administration
- Information technologies, automation and robotics
- Power engineering and energy efficiency
- Ecology and environmental protection

The jury includes both Ukrainian and foreign scientists. In the 4 years that the competition has been held, the jury included scientists from universities of 24 countries: Angola, Azerbaijan, Benin, Bulgaria, China, Czech Republic, France, Georgia, Germany, Greece, Israel, Italy, Kazakhstan, Latvia, Lithuania, Moldova, Pakistan, Poland, Romania, Serbia, Slovakia, Switzerland, Turkey, USA.

At the same time, every year the geography has expanded and the number of foreign jury members has increased: from 46 jury members representing 25 universities from 12 countries in 2018, to 73 jury members of the 46 universities from 19 countries in 2022.

More than a thousand student research papers have been submitted to the competition from both Ukrainian and foreign institutions from 25 countries: China, Poland, Mexico, USA, France, Greece, Germany, Canada, Costa Rica, Brazil, India, Pakistan, Israel, Macedonia, Lithuania, Latvia, Slovakia, Romania, Kyrgyzstan, Kazakhstan, Bulgaria, Moldova, Georgia, Turkey, Serbia.

The interest of foreign students in the competition grew every year. In 2018, the students representing 15 institutions from 7 countries have submitted 33 works. In 2021 the number of submitted works increased to 73, authored by the students of 40 institutions from 18 countries.

The competition is held in two stages. In the first stage, student research papers are reviewed by members of the jury who are experts in the relevant fields. In the second stage of the competition, the winners of the first stage have the opportunity to present their work to a wide audience in person or online.

All participants of the competition and their scientific supervisors are awarded appropriate certificates, and the scientific works of the winners are included in the electronic proceedings of the competition. Every year the competition receives a large number of positive responses from Ukrainian and foreign colleagues with the desire to participate in the coming years.

2. ECONOMICS AND **ADMINISTRATION**

THE IMPACT OF UKRAINIAN MIGRATION ON THE ECONOMIC DEVELOPMENT OF UKRAINE AND POLAND

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Abstract. *The work is devoted to the study of the impact of migration processes of Ukrainians to Poland on the development of the two countries. Based on the study of scientific sources and the authors' own research, the reasons of Ukrainian migration on the Polish vector are summarized in the form of Ishikawa diagram. The current state of migration of Ukrainians to Poland is analyzed using official Polish statistics, sociological research, as well as a survey of Ukrainian migrants conducted by the authors. The impact of migration processes on the economic development of Ukraine and Poland has been assessed. Both positive and negative consequences for both countries are highlighted. Measures aimed at improving the regulation of migration processes to deter emigration and return of migrants, which are consolidated by the areas of change in the country, stimulating business, stimulating workers, are justified.*

Keywords: *migration, labor migration, educational migration, emigration of Ukrainians, economic development, Ukraine, Poland, migration policy.*

I. INTRODUCTION

One of the main trends and problems of Ukraine's progress in recent years is the emigration of the population, which has become significantly more relevant with the growing openness of society and deteriorating living conditions. The instability of the political and economic situation, the lack of faith in a better future of the country force Ukrainians to look for a better life abroad. Moreover, if earlier the outflow of intelligence dominated, today the emigration of workers has intensified. Among the countries to which Ukrainian citizens travel, a special place is occupied by Poland, which solves domestic economic problems at the expense of immigrants. As a result of external migration, Ukraine is losing its labor potential, and with it, opportunities for economic growth. At the same time, Poland receives labor resources for the progress of its own economy. In this regard, there is a need to assess the scale of Ukrainian migration and study its impact on the economic development of both countries.

II. LITERATURE ANALYSIS

2.1. Directions of research of the Ukrainian-Polish vector of migration by scientists of Ukraine

A review of the Ukrainian scientific literature showed that a lot of works have been devoted to the problems of Ukrainian migration in general, but not so many ones specifically to the Ukrainian-Polish direction. However, almost every author who studies the directions of migration of Ukrainians in general, emphasizes that the Polish

vector of migration of Ukrainians has become a priority in modern conditions [1-3].

In our opinion, the study of migration processes on the Ukrainian-Polish vector in the Ukrainian scientific literature can be divided into two periods: before 2016 and after. Until 2016, the authors mainly focused on the peculiarities of Ukrainian-Polish migration, the purpose of which was trade or employment, and migration was temporary, reverse, circular in nature, mainly in the western regions; highlighted the problems related to informal employment, social insurance, etc. [4]; analyzed indicators of labor migration, characterized the competitive advantages of Ukrainian labor migrants in Poland [5].

With the intensification of migration processes of Ukrainians to Poland after the introduction of the EU visa-free regime, research by scientists has been intensified. For example, R.L.Lupak and V.V.Polishchuk draw attention to key changes in the qualitative and structural characteristics of migration of Ukrainians to Poland, the growing scale of migration from Ukraine to Poland and its problematic aspects [6].

Most of the works by scientists are devoted to the dynamics and activation of migration flows, identifying the reasons, main trends and problems of migration in modern conditions, the study of new features and changes in the structural composition of migrants [7-9]. At the same time, scientists approach this problem from different angles. In particular, T.L. Nagornyak and Y.V. Pachos, identifying the reasons and identifying important trends, consider the migration of the Ukrainian population to Poland as a result of the implementation of state policy [10]. J. Turchyn, studying the current state of the Ukrainian-Polish migration vector, analyzed the impact of the coronavirus pandemic on the employment of Ukrainian labor migrants in Poland [11].

2.2. The contribution of Polish scientists to the study of the role of Ukrainian migrants in the Polish economy

If Ukrainian scholars consider the migration of Ukrainians to Poland mostly in the context of a general overview of migration processes [4], Polish scholars study this issue in much more detail.

Thus, back in 2015, Polish scientist D. Klimek published a monograph on identifying and assessing the economic role of labor migration from Ukraine to Poland from the point of view of Polish entrepreneurs, described its impact on the labor market and key economic indicators [12].

I.Chmielewska, G.Dobroczek, J.Puzynkiewicz analyzed the main aspects of the new wave of migration of Ukrainians to Poland, its reasons, main trends and consequences [13].

P.Strzelecki, J.Growie, R.Wyszyński on the basis of alternative statistics of the country and data collected in the process of surveying migrants, studied the contribution of Ukrainian immigrants to economic growth in Poland in 2013-2018. They have found out that the increase in migrants by 0.8 % per year leads to an increase in Poland's GDP by 0.5%, i.e. in 2013-2018 about 13% of Polish GDP was created by Ukrainian migrants [14].

J. Stepaniuk devoted her research to the situation of Ukrainian female migrants living in Poland, their integration into Polish society in the legal, institutional, economic, social and cultural dimensions [15].

However, despite increasing attention to the study of migration processes in both countries, the impact of migration on their economies remains insufficiently studied as of today.

III. OBJECT, SUBJECT, AND METHODS OF RESEARCH

The purpose of the study is to analyze the processes of migration of Ukrainians to Poland, to assess their impact on the development of the economies of Ukraine and Poland, and to justify ways to improve the regulation of migration processes.

To achieve this goal, the following tasks were set and solved:

- to summarize the reasons for the migration of Ukrainians to Poland;
- to analyze the current state of Ukrainian migration on the Polish vector;
- to assess the impact of migration processes on the economic development of Ukraine and Poland;
- to justify measures to improve the regulation of migration processes.

The object of the study is the migration processes of Ukrainians to Poland.

The subject of research is theoretical and practical aspects of the impact of Ukrainian migration on the economies of Ukraine and Poland.

To solve the tasks set, general and special research methods are used: system-structural analysis, comparative analysis (to assess the impact of migration processes on the economic development of Ukraine and Poland); generalization, classification and analogies (Ishikawa diagram) (to systematize the reasons of migration of Ukrainians to Poland); empirical and statistical analysis, quantitative and qualitative analysis (to study the current state of Ukrainian migration to Poland); survey (to identify the main trends of migration processes from Ukraine to Poland); graphical method (for visual presentation of statistical information); logical generalization (to justify measures to improve the regulation of migration processes).

The scientific novelty of the work lies in a systematic approach to assessing the impact of migration processes on the Ukrainian-Polish vector on the economies of both countries.

The theoretical value of this research is to summarize the directions of impact of Ukrainian migration on the economies of Ukraine and Poland, which can be used for further work in terms of specific calculations.

The practical importance of the work is to substantiate the recommendations on curbing the migration of Ukrainians and their return to Ukraine.

IV. RESULTS

4.1. Reasons for the migration of Ukrainians to Poland

According to the World Migration Report 2022, in 2020 Ukraine was among the leading countries of emigration, ranking eighth, behind India, Mexico, the Russian Federation, China, Syria, Bangladesh and Pakistan. It is estimated that 5.5-6 million Ukrainians emigrated abroad. One of the most popular destinations for Ukrainians is Poland. Currently, 1.5 million people work there, constituting about 25% of the total number of Ukrainian emigrants [16].

Low living standards and wages, inability to find work, military conflict in eastern Ukraine, frustration with the country's economic policy, lack of security and

uncertainty about the future, desire to ensure a better future for their children, high dependence from foreign geopolitical players, corruption, etc. are among the reasons that motivate Ukrainians to emigrate.

In particular, Ukraine's GDP is still lower than in 2013. In particular, in 2020 Ukraine's GDP amounted to \$142.3 billion, while in 2013 it amounted to \$183.3 billion. At the end of 2020, the unemployment rate in Ukraine reached 10.1%, being the highest figure since 2014. The poverty rate in Ukraine is 23.3%, 8.8 million people are below the poverty line [17].

According to the annual Happiness Barometer in Ukraine survey conducted by the European Business Association, the majority of Ukrainians (51%) consider their own income level insufficient for a normal life, while less than half of the population (44%) are satisfied with their current job [18].

Assessments of the health care system are split: 58% of respondents are dissatisfied with the state of the system, while 42% assess domestic medicine as satisfactory or positive. Almost 52% of respondents were satisfied with the education system, while 48% mentioned they were completely or partially dissatisfied with it. 72% of respondents are dissatisfied with the security situation in the country and feel uncertain about their own future, 62% of respondents negatively assess the legal framework and regulation in the country [18].

At the same time, Poland today, unlike Ukraine, is a country characterized by general stability, higher living standards, higher wages, working conditions that meet European standards, a developed market, significant employment opportunities, better quality education, etc. Poland's economy has been growing dynamically since the early 2000s, with recent GDP growth of 4-5%. Unemployment before the COVID-19 pandemic was estimated at 5.5% [19].

According to the personnel portal grc.ua, the average salary offered in Poland is UAH 78,100. 50% of employers offer from UAH 44,100 to UAH 103,500; 29% of employers offer from 103,500 to 123,300 hryvnias; 21% of employers offer from UAH 123,300 [20].

Until 2013, Poland was an emigrant country. In particular, in 2002-2013, about 3% of the population (1.2 million people) left the country. Today, more than 2 million Poles work outside their country [21]. Every year, Poland loses qualified workers who go to work in the UK, Germany, the Netherlands, Norway, Belgium, and therefore is forced to liberalize the labor market to attract labor resources from other countries, including Ukraine.

To retain foreign workers whose families have stayed in Ukraine, Polish employers promote family reunification by assisting their members in employment and training.

In addition, Poland is a member of the European Union, and the introduction of a visa-free regime for Ukrainians has increased their emigration in this direction. Convenient geographical location, common border, common historical past, close culture, similar language – all this influences the choice of emigration direction of Ukrainian citizens.

Significant demand for labor from Polish employers allows Ukrainians to easily find jobs, quickly obtain residence permits and seasonal work.

The main reasons that force Ukrainian citizens to emigrate are shown in Fig.1.

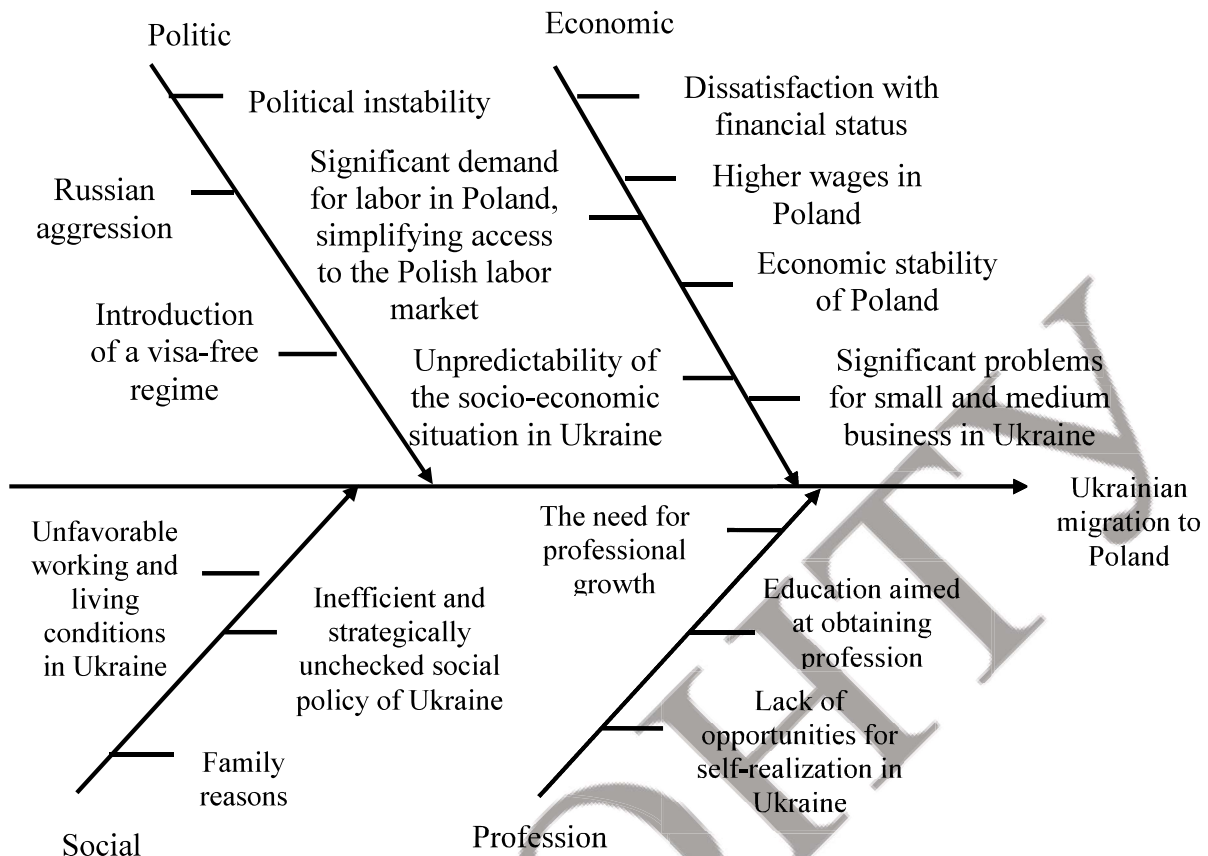


Fig. 1. Reasons for migration of Ukrainians to Poland

Source: formed by authors based on scientific sources and their own research

4.2. Analysis of the current state of Ukrainian migration to Poland

According to the official Polish statistics for 1992-2020, 22,229 Ukrainians emigrated to Poland, given 40% of them did it in 2016-2020 (Fig. 2).



2015* – lack of data

Fig.2. Migration of population for permanent residence to Poland from Ukraine in 1992-2020

Source: compiled by authors based on [22]

As of the end of 2021 the number of Ukrainian citizens with a valid residence permit in Poland exceeded 300,000. About 60% of them were people aged 18 to 40,

children and adolescents under the age of 18 accounted for about 12%, and people over 40 – about 28%. Ukrainians make up almost 57% of all foreigners who have settled in Poland [24].

Most Ukrainians settle in regions with large urban centers that offer job or study opportunities. Thus, in 2016-2020, about 80% of Ukrainians who moved to Poland for permanent residence lived in urban areas. More than 55% of those who emigrated are women [23].

As part of the study, the authors conducted a survey of Ukrainian migrants on the basis of the questionnaire distributed through social networks which is not representative. The survey involved 88 persons, of whom 36 were men (40.9%) and 52 (59.1%) were women. The most active in the survey were respondents aged 19 to 25 (64.7%). Persons aged 26-35 and 36-45 accounted for 14.7% per each group, aged 46-60 - for 5.9%. 35.3% of respondents have higher education; 44.1% – incomplete higher education, 17.6% – vocational education, 2.9% – complete general secondary education. The majority of respondents got their education in Ukraine (61.4%), the other 39.6% – in Poland. 61.3% of respondents named education as the reason for migrating to Poland, the rest came to Poland to earn money. Moreover, 23.5% of respondents just study only, 37.8% study and work. The answers to the question “What did not suit you in Ukraine?” were distributed as follows (several options could be chosen): a) wages (65.7%); b) lack of work (34.3%); c) education (48.6%); d) quality of life (71.4%); e) culture (17.1%); f) political situation (57.1%); g) personal problems (14.3%).

When analyzing the state of migration processes in the Ukrainian-Polish direction, it is important to pay attention to two aspects: migration for employment and educational migration.

Since 2014, there has been a significant increase in Ukrainian migration, which is mostly related to the desire to work in Poland. Almost 84% of Ukrainian citizens have a temporary residence permit, which can be valid for no more than 3 years. The vast majority of them are issued in connection with employment – 77% of cases. The next most common goals of staying in Poland are family issues – 12% and education – 2% [24].

The number of Ukrainians who received a work permit in Poland has been growing from year to year, with the exception of COVID-19 year of 2020 (Fig. 3). By the way, men get more permits. While before year 2020 the highest number of permits were issued for visas for 3 months to 1 year, in 2020 it was for visas for more than 2 years.

As a rule, Ukrainians in Poland work in areas that are not very attractive for Polish workers, in particular: agricultural sector, services, industry, hotel and restaurant business, where wages are not very high [19]. 50% of Ukrainian migrant workers are employed in manufacturing, 17-18% - in services or construction, 10% – in agriculture [25].

Among the respondents we surveyed who came for employment, 60% have a permanent job, 20% work under a fixed-term contract, 4% are seasonal workers; 8% work on a case-by-case basis and 8% were unemployed at the time of the survey. 45.8% of persons work in the specialty, 50% – no; and 4.2% are looking for a job in their

specialty. 32% of respondents have been working for less than a year; 48% for 1-3 years; 16% for 3-5 years and 4% for 5-10 years. 60% receive the same salary as local workers; 60% experience competition from local workers; others responded that local workers do not have such kind of job. 68% feel stable at work and do not feel threat of dismissal. 52% are satisfied with their work in Poland, 28% are partially satisfied, others are either dissatisfied or waiting for something better. 68% of respondents would advise their compatriots to come to work in Poland.

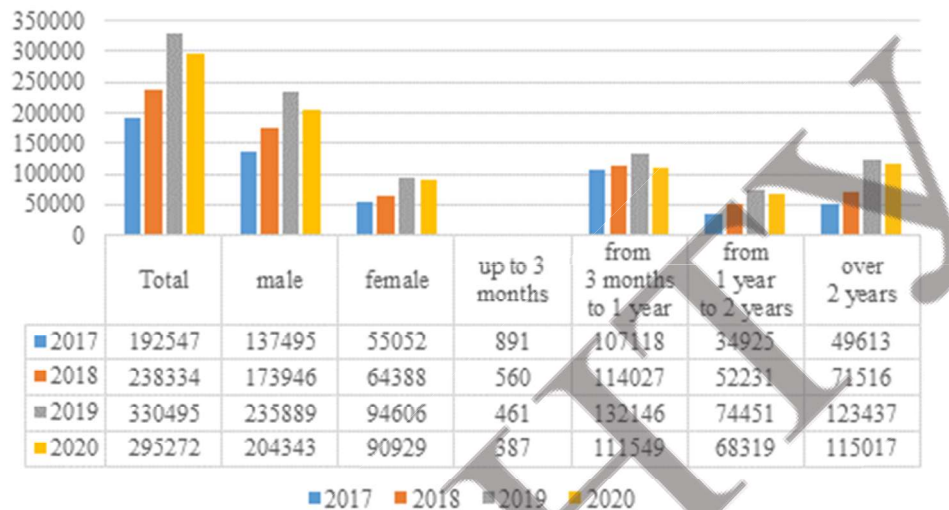


Fig.3. Foreigners who received work permit in Poland from Ukraine in 2017-2020

Source: compiled by authors based on [23]

Ukrainian migration has significantly rejuvenated, with the average age of a worker being 34.5 years [25]. According to the study conducted by the Polish company for employment of foreigners EastWestLink (EWL SA), the largest share of labor migrants from Ukraine is the age group of 26-35 years, however, the youngest age group of 18-25 years is growing dynamically [26].

Among Ukrainian migrants in Poland, men predominate (60%), however, recently the share of women has increased (up to 40%). 36% of workers have higher education, another 41% have vocational or secondary education. Every fifth Ukrainian had held a managerial position in his homeland. Most migrants (60%) come from the central and eastern regions, while just a few years ago mostly Ukrainians from the western regions went to Poland. According to the poll, only 30% of Ukrainian labor migrants intend to return to Ukraine. The rest plan to continue working in Poland or are going to earn money in other EU countries [25].

In addition to labor, the educational migration of Ukrainians to Poland has also intensified. Almost half of all foreigners studying in Poland are from Ukraine [27]. This is facilitated by territorial proximity, low language barrier, low tuition fees, availability of preferential educational programs, recognition of Polish diplomas in Europe, etc. It is also the result of Poland's efforts to develop the system of providing educational services to foreigners. In 2020, 38,261 Ukrainian students studied in Poland, which is 8% more than in 2016, but slightly less than in 2018 and 2019. Most first-year students in the study period fell on year 2019 (Fig. 4).

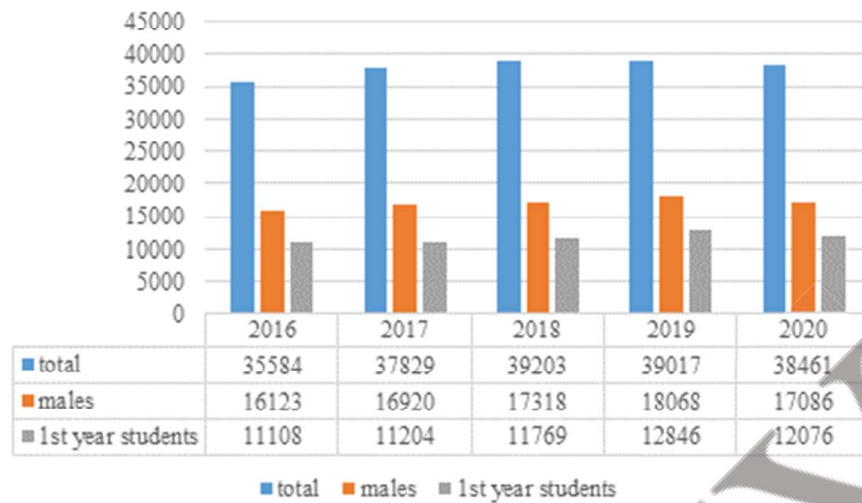


Fig.4. Foreigners studying in Poland from Ukraine in 2017-2020
 Source: compiled by authors based on [23]

Among the respondents, the choice of Poland where to receive education was due to various reasons (several options could be chosen). 47.4% went to study by the parents’ advice, 26.3% by friends’ advice; 15.8% have Polish roots; 10.5% got interested by advertising of a Polish university; 68.4% wish to receive a diploma recognized by Europe; 57.9% hope for greater employment opportunities in Europe. 45% of respondents are satisfied with the quality of education in Polish universities, 25% are partially satisfied. However, 57% advised their compatriots to come to Poland to study.

According to the results of the research, only 2% to 16% of Ukrainian students studying in Poland plan to return to Ukraine [28]. Among our respondents there were more such students (28.6%). Another 22.9% said they would return if the situation in Ukraine improved. However, in general, the transformation of educational migration into permanent migration is a significant threat to Ukraine.

4.3. Assessment of impact of migration processes on the economic development of Ukraine and Poland

Population migration has a significant impact on all aspects of society: economy, social sphere, politics, demographic processes, etc.

We shall consider the effects of Ukrainian emigration on the economy of both Ukraine and Poland.

Ukraine is a donor to the progress of the Polish economy, but its economy suffers from critical negative consequences, as due to migration not only surplus labor is lost, but also labor needed for effective economic progress. In particular, the departure of qualified specialists leads to a shortage of workers in some industries and regions, is an obstacle to the creation of new jobs in Ukraine. Thus, today Ukraine needs skilled workers with tools, specialists in maintenance, operation and control of technological equipment, assembly of equipment and machinery, etc. According to NBU experts, construction, industry, agriculture, transport and communications suffer most from outflow of labor resources [29].

Losses for economic progress are both direct – underpaid taxes and social security contributions, and indirect – inefficient use of state and local budgets (spent on training), reduction of the quality of services provided to the population of Ukraine [8].

There is a high probability of failure to return of highly qualified migrants and young professionals. This negatively affects the age and educational structure of the workforce and restrains economic growth. Migrants’ earnings directed for consumption provoke prices increase, inflation, and import increase. In addition, labor migration has a negative impact on family relationships, raising children, birth rates, which also negatively affects the progress of the country’s economy.

Significant problems from educational migration to Poland are experienced by Ukrainian higher education institutions, which are losing potential students.

At the same time, external migration has not only negative consequences. First of all, labor migration contributes to the well-being of many families, ensures additional foreign currency transfers to the state, is a source of new knowledge and experience that can contribute to the progress of the country.

In recent years, labor migrants have transferred the most money to Ukraine from Poland. The dynamics of money transfers from Poland to Ukraine in 2014-2021 (Fig.5) shows an annual transfer of funds in excess of \$3 billion, starting from 2017, and more than \$4 billion for the three quarters of 2021.



Fig.5. Dynamics of money transfers from Poland to Ukraine in 2014-2021, million dollars

Source: compiled by authors based on [30]

Among the respondents we surveyed, 32% also send funds to Ukraine. 50% of them send from \$100 to \$300 monthly; 20% – from \$350 to \$700; 10% – from \$750 to \$1,000 and another 10% – more than \$1,000.

Migrants’ money transfers have a positive effect on macroeconomic stability, cash foreign exchange market and progress of the financial and banking system, and create incentives to maintain the state of the economy. In particular, money transfers are received in foreign currency which is sold, strengthening the national currency. In

addition, the expenditure of funds from money transfers in Ukraine stimulates domestic consumption and, respectively, production, which, in turn, contributes to the creation of new jobs. Goods and services purchased for the transfers contribute to the growth of inflow from VAT, excises taxes and duties.

Labor migration also reduces tensions in the labor market, reduces unemployment rate, as some people leave the country and some live on the accumulated funds of migrant workers. In the absence of external labor migration, the unemployment rate in Ukraine in different years would be 1.5-2 times higher than the actual figures [31].

Regarding the impact on the progress of the Polish economy, it should be noted that it is due to Ukrainians that the Polish economy satisfies the demand for labor. Ukrainian migration is a resource for leveling the labor market deficit in Poland.

According to the Central Statistical Office of Poland, until 2014 the impact of immigration on GDP growth in the Republic of Poland remained insignificant (below 0.1%), but during 2014-2019 Ukrainian labor migrants increased Poland's GDP by an average of 0.3-0.9% annually [11].

According to economists from the National Bank of Poland, 11% growth in Polish GDP in 2014-2018 is due to workers from abroad, mostly from Ukraine. Unless the massive flow of immigrants from Ukraine into the Polish labor market, this growth would have been much smaller [8].

The progress of such areas as industry, hotels and restaurants, administration, health care, social assistance, construction, agriculture, etc. is largely supported by Ukrainian migrants.

Ukrainian migrants not only create Poland's GDP, but also pay taxes, buy goods and services on the Polish market, which contributes to economic progress. In addition, Ukrainians create and develop their own business in Poland.

Due to involvement of Ukrainians in Polish universities, the progress of educational institutions is supported, the system of higher education is maintained and developed, which experienced a shortage of applicants due to the demographic crisis and the departure of young people abroad.

Due to Ukrainian graduates from Polish higher education institutions, the country has the opportunity to replenish the country's labor and intellectual resources, as after graduation they can stay in the country for a year to look for a job.

The coronavirus pandemic and lockdown in March-April 2020 created a number of problems for Polish employers and, consequently, for the progress of the country's economy. However, due to the interaction of business with the government, the problem was resolved quickly.

Of course, the immigration of Ukrainians to Poland has not only a positive effect. As Ukrainian workers agree to work for lower wages than Poles, it causes stagnation of their level and increases the likelihood of unemployment.

The impact of Ukrainian migration on the economies of Ukraine and Poland is shown in Table 1.

Table 1. The impact of Ukrainian migration on the economies of Ukraine and Poland

| Ukraine | | Poland | |
|---|---|--|--|
| Positive impact | Negative impact | Positive impact | Negative impact |
| increase of money transfers from migrant workers | reduction of the production pace in the country | GDP growth, acceleration of economic development | competition with the local population is intensifying |
| reduction of unemployment in the domestic market | “Rise in price” of the domestic labor | vacancies are filling | the probability of unemployment rate growth increases |
| return of part of the workforce with new knowledge and experience | sectoral asymmetries of the labor market, change of the balance of highly qualified and low qualified personnel | migrants do not need training | conflicts, cross-cultural misunderstandings may arise |
| | additional state expenditures for the training of new specialists | reduction of the average market rates of wages | risk of illegal migration increases |
| | there is an “aging” of the nation; the need to import labor resources from abroad | stimulation of consumer demand | local labor force start looking for work in another country, market asymmetry arises |
| | lack of inflow to pension and social funds | | |

Source: formed by authors

4.4. Directions for improving the regulation of migration processes

The intensification of migration processes in recent years requires special attention of the government of Ukraine and its structures. It is necessary to formulate migration policy in such a way that the knowledge and experience of citizens contribute to the development of their country foremost.

Despite the existence of the Strategy on State Migration Policy of Ukraine for the period up to 2025 [32] and the action plan for its implementation, no significant progress has been made in improving the situation. Some fragmentary government initiatives (for example, the possibility of receiving 5,000 euros from the state to start a business by those who return to Ukraine) did not have the expected effect. According to official statistics, volumes of labor migration in 2021 recovered quickly and exceeded the pre-COVID levels. In the first half of 2021, more than 400,000 employment visas to Poland were issued, and in the whole 2020 only 500,000 ones [20].

Since most Ukrainians go to Poland, the Ukrainian authorities need to pay attention to this direction of movement first.

The development and adoption of comprehensive decisions aimed at eliminating and preventing the reasons of migration requires the joint efforts of all professionals from government institutions, NGOs, self-government bodies, researchers working in this field, migrating, maintaining contacts with migrants, etc.

In our opinion, it is important to form an effective system of motivation aimed, on the one hand, at curbing the migration of Ukrainians, and, on the other hand, at the return of migrants to Ukraine. However, such a system can work only if there is strong socio-economic development of the country. Therefore, today it is necessary to maintain a circular model of migration with the hope of migrants return.

The table 2 presents the main ways to curb migration processes and return migrants.

Table 2. The main ways to improve policies to curb migration and return migrants

| Directions of improvement | Ways of improvement |
|---|---|
| changes in the state | <ul style="list-style-type: none"> – stabilization of the situation in the country, cessation of military conflict; – reducing the level of corruption in state authorities; – real reform of the economy, its restructuring; – stimulating the transition to high-tech production by supporting relevant industries and training the necessary staff; – increasing the level of investment attractiveness of Ukraine; – ensuring high rates of economic growth and stimulating wage increases in line with economic growth rates, – creation of targeted programs for the development of the country and business; – creation of a capacious and attractive internal labor market; – creation of additional jobs; – increasing living standards; – introduction of an effective monitoring system for migrants working in Poland officially and informally; – termination of companies activities that promote illegal employment; – support of Ukrainian higher education institutions for the preservation of scientists and students; – development of legislation on the mechanism of payment of pension savings of migrant workers; |
| stimulating business development | <ul style="list-style-type: none"> – reducing the tax burden for small and medium-sized businesses; – improving the conditions for doing business through the creation of favorable conditions for investment; – creating incentives to start your own business in Ukraine; – further implementation of corporate social responsibility practices, – reduction of the amount of payment of social contributions of employers; – increasing the share of labor in the cost of production; – creating attractive working conditions and wages; – providing benefits to entrepreneurs for business development; – attracting migrants to invest in starting their own business through the provision of benefits |
| incentives for employees | <ul style="list-style-type: none"> – ensuring «white» wages, social packages; – improving the welfare of citizens; – increasing the level of employment; – improving the social security of the population; – compliance by employers with current legislation on social protection of employees; – providing social guarantees for migrant workers; – formation of self-employment culture, – increase of financial literacy |

Source: formed by authors

It is important to create a special center in the country that would work with people who have gone abroad to earn money and want to return home.

With the passivity of the Ukrainian government, Poland is actively working to attract Ukrainian migrants on the basis of a smart policy. There was no mass outflow of Ukrainian workers back home, even during the quarantine period. The Polish authorities responded quickly to business appeals, extending the legality of visas. Dismissed workers in industrial production and restaurant and hotel business quickly became involved in logistics and e-commerce [19].

At the end of 2021, the Polish Sejm amended the laws and made it easier for migrant workers to stay and work in the country. Changing the nature and length of stay of migrant workers from the short to medium and long term will further increase the flow of migrants from Ukraine.

Moreover, special programs have been developed in Poland to support the opening of business by Ukrainians, the purchase and construction of housing in Poland, the promotion of family employment. Such a policy poses a threat to Ukraine's national security, requiring the state to reconsider its own state policy as soon as possible.

In our opinion, Poland needs to work not only to attract foreign workers, but also to preserve its own human capital, creating conditions to reduce the outflow of labor resources to other countries in order to protect national identity.

V. CONCLUSIONS

Based on the conducted study, the following conclusions can be made.

1. The reasons for the migration of Ukrainians to Poland can be classified by economic, political, social and professional aspects. Dissatisfaction with the economic and political situation in the country, the level of material security, social protection, lack of favorable conditions and opportunities for personal development and self-realization force many citizens of Ukraine to migrate to Poland. Poland, on the other hand, with much higher living standards, a stable political and economic situation, creates all the conditions for attracting Ukrainians.

2. Based on the analysis of the current state of migration processes in the Ukrainian-Polish direction, two main aspects of migration are identified: migration with the purpose of employment and education. The number of Ukrainians obtaining a work permit in Poland is growing every year. Ukrainian migrants work in various spheres of the Polish economy. Ukrainian migration has significantly rejuvenated. The popularity of Polish universities among Ukrainian graduates is growing. The share of people who want to integrate into Polish society is increasing.

3. Ukrainian migration to Poland has ambiguous effects on the economies of both countries. Positive impact for Ukraine is an increase in money transfers, reduction of unemployment, return of part of the labor force with new knowledge and experience; while positive income for Poland is GDP growth, acceleration of economic development, filling vacancies, stimulation of consumer demand, reduction of the average market rates of wages, supporting the development of educational institutions. Ukrainian economy is negatively affected in the form of a slowdown in economic development, loss of valuable labor potential, sectoral asymmetries in the labor market, additional government spending on training new professionals, etc.; while in the Polish

economy, the probability of unemployment rate growth increases, competition increases between migrants and the local population, who start looking for work in another country, conflicts may arise, etc.

4. Migration of Ukrainians to Poland is a complex problem that needs to be urgently addressed. It is important to unite the efforts of all professionals from government institutions, NGOs, local governments and scholars working in this field to curb the flow of migration, especially among young people, and to ensure return of migrants. These problems can be solved only through high living standards and decent working conditions at enterprises, secured due to active economic reforms, support for small and medium-sized businesses, increase of incentives for employment at home and more.

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