

A new wave of migration in Ukraine on the background of Russian invasion: dynamics, challenges and risks

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Abstract. The large-scale Russian military invasion of Ukraine in February 2022 led to a significant increase in the indicators of migration flows of the Ukrainian population, the absolute values of which increased by 10 or more times compared to previous periods. The authors evaluated the dynamics of indicators of population migration in the state, both internal and external, and found a number of similarities and differences between subsequent migration waves. Based on the study, the indicators of migration flows were grouped into three waves disaggregated by time. The first group is from the obtaining the country's independence to the first stage of the military invasion of Ukraine, as a period of peace in the state (1991–2014). The second one begins with Russian aggression (2014–2022) and the third group is a large-scale invasion of the Russian army into Ukraine (from 2022). The use of statistical and economic methods (scientific abstraction, analysis and synthesis, descriptive statistics' methods, econometric modelling, regression point and interval estimates) and SWOT analysis provided a basis for determining a number of challenges, threats and opportunities for the countries of origin and destination regarding the prospects for the development of migration processes.

Keywords: migration processes, IDPs, refugees, military invasion in Ukraine.

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1. INTRODUCTION

Since 2014, rapid migration processes have taken place in Ukraine, which are closely connected with the political processes and the military invasion of the Russian Federation into Ukraine. Migration flows from Ukraine to neighbouring countries: Poland, Slovakia, Germany and others became especially large on the background of open military invasion and direct military action after February 24, 2022. The aggression of the Russian military against the civilian population led to panic and need to evacuate people in many regions.

Starting from large-scale invasion, migration movements in Ukraine gained enormous momentum, which move in both internal and external directions. As of the 10 of October 2022, 6.2 mln. people have become IDPs of Ukraine, these people left their homes in the East and South of the country, where active military operations are currently underway¹. It should be noted that thanks to the successful advance of the Ukrainian army at the front, a large part of the territory has already been returned to the control of the Ukrainian authorities, which enabled some of the IDPs to return to their homes. At the same time, a significant part of the population was forced to leave their homes and flee abroad. According to the latest data of the UN International Migration Service, 8.0 mln. Ukrainian refugees temporarily live abroad today, so the scale of migration processes remains impressive². In fact, 35% of the country's population, or approximately one in three Ukrainians, has been forced to temporarily seek refuge in other regions or countries since the beginning of large-scale military operations in Ukraine in order to ensure safety of their families.

The purpose of the study is to assess the dynamics of indicators of migration flows of the population in the state, as for internal as well as external direction, to identify similarities and differences between subsequent migration waves (migration structure, dynamics, trends); to group the indicators of migration waves into disaggregated time periods; to use statistical and economical methods as a basis to define a number of challenges, threats and opportunities for countries of origin and destination concerning the perspectives of the migration processes development.

Analytical data were gathered throughout the implementation of the research project titled "New Wave of Migration Against the Background of the Russian Invasion of Ukraine: Social and Economic Consequences for Ukraine and Poland (2022) - Statistical Analysis and Prospects." (The Volkswagen Foundation, Grant Number: 9C 007).

2. LITERATURE REVIEW

The majority of scientific works on migration are related to the influencing factors of political, financial and social stability in the state (Klaus, 2003, Duszczyk, 2019, Bilan et al., 2019, Chugaievska et al., 2020). Complex evaluation of the influence of these factors is considered in studies of well-being, happiness and similar concepts reflecting the integrated pull-factors impact (Aliyev et al., 2021; Al-Srehan, 2020). Gebremedhin et al. (2013), Becker (2022) emphasize the importance of a country's political stability for sustainable economic growth. Regarding the flow of migrants in peace regions since the Second World War, most authors concluded the economic nature of migration, where the main factors that stimulate people to migrate are the search for new opportunities in other countries against the background of insufficient

¹IOM, Ukraine response operational update, 4-10 October, 2022, p. 1:
https://www.iom.int/sites/g/files/tmzbd486/files/situation_reports/file/IOM%20Ukraine%20Operational%20SitRep%20%2326_%204%20to%2010%20October%5dB46%5D.pdf

² The same source

income and low living standards in native country (Sekela & Khomra, 1997, Kupets, 2016, Fialkowska, 2019). Scientists have raised the issue of the need for state regulation in the host countries of the activities of such labor migrants, assigning a number of functions to social institutions regarding the regulation of their labor relations with employers, etc. (Duszczyk & Matuszczyk, 2018) including studies about refugees from Africa and Asia (Szulecka, 2013).

This military conflict began with a partial invasion of Eastern Ukraine and the seizure of Crimea (2014) and continues now in the centre of Europe as the large-scale invasion of Russian troops from February 24, 2022. Among the consideration of various aspects related to all branches of the economy, the authors highlight a number of international economic consequences addressing the issues of financial aid, refugees and migration flows. At the same time, Ravet et al. (2022) emphasize the need to strengthen innovation processes for the recovery of the Ukrainian economy and the reconstruction of destroyed by military attacks business entities of Ukraine: both with respect to business and infrastructure of cities and villages. Important and up-to-date mechanisms of postwar business recovery are highlighted by Samoliuk et al. (2023) with emphasis on a veteran business development support.

In modern economic works on the study of migration flows against the background of military conflicts, they are mostly devoted to the problems of refugees from the countries of the Middle East and Africa (Jolof & et al., 2022; Braithwaite et al., 2019; Hall, 2013; Padhikari, 2012; Greenhill, 2010). In relation to migration flows from Ukraine, in recent years, scientists have paid considerable attention to the issue of labour migration of the population (Libanova, 2018, 2019; Malynovska, 2016; Sadova, 2019). In this case, the migration flows had a hidden character, when a significant number of workers left in search of work in the countries of western Europe for several months, and then returned for a short break in accordance with the requirements of visa-free border crossing. Since 2014, when the Russian-Ukrainian war began, there has actually been a reorientation of the migration flow of Ukrainian citizens from the eastern direction (Russia) to the western direction - to EU countries. Although the number of Ukrainians leaving for the EU countries exceeded the number of those who left Russia for the first time in pre-war 2013 surpassed by times. Then, the tendency of trips abroad grew rapidly (Dobroczyk et al., 2017). When in 2016 Ukrainians left for neighbouring countries 24.7 million times, in 2019 – 27.2 times. According to the Ministry of Social Policy of Ukraine and the Analytical Portal Word and deed, there are up to 30 million crossings of the state border in the direction of other state a year, of which every 6–7th Ukrainian (i.e. from 2.5 to 4 million people) is looking for a work abroad, guided by seasonality. It is characteristic that only 40 to 60% of migrants return home, i.e. on average every second person³.

It should be noted that at some stages of migration waves there is a significant difference between the data of Ukrainian statistical services and international organizations regarding the size of population migration indicators. On the one hand, often these people are registered in Ukrainian data sources as tourists, persons with private or business affairs abroad. On the other hand, in European countries they are registered as labour migrants. Poznyak, & Malynovska (2015) mention challenges against the background of unregistered migration of Ukrainians and further lessons for Ukrainian migration services in the context of further European integration of Ukraine.

At the same time, the current rapid growth of the migration flow is due to the events of recent years, primarily aggression on the part of Russia, and the growing difference in wages, which is significantly higher in neighbouring countries than in Ukraine. For example, when in 2020 the average salary in Ukraine was 433 USD, in neighbouring EU countries: Hungary - 1363 USD, Poland - 1436 USD, Romania – 1271 USD,

³<https://www.slovoidilo.ua/2020/07/09/infografika/suspilstvo/skilky-lyudej-peretnulo-kordon-ukrayiny-kudy-najchastishe-yizdyat-ukrayinczi>

Slovakia – 1458 USD⁴. Rapid labour migration has become an extremely acute problem, especially in rural areas, it shapes the situation in regional labour markets, regulates the development of social and labour relations, employment, well-being, consumption, and processes of savings and reproduction (Chugaievska & Rusak, 2022). These differences can, however, be mitigated soon due to the migrants' impact on earnings in recipient countries (Kersan-Škabić et al., 2022).

Against the background of the military aggression of the Russian army in Ukraine, a part of scientific works is devoted to the issues of internally displaced persons who suffered as a result of this aggression and were forced to change their place of residence, saving their own lives. Logvynova M. (2019) classifies IDPs of Ukraine as a category of forced migrants, emphasizes the urgent need of displaced persons for protection, ensuring rights and freedoms and solving their urgent priority problems, first and foremost the attention of local self-government bodies in Ukraine. She notes that IDPs are forced to leave their places of permanent residence as a result of the complication of the political, socio-economic, and environmental situation in a certain administrative-territorial unit of the state. A special role in scientific researches is given to the study of the standards of international law regarding displaced persons in the context of human rights, the implementation of a comparative analysis of the settlement of internally displaced persons in Ukraine and foreign countries, the procedural aspects of ensuring the rights and freedoms of internally displaced persons, study the issues of ensuring national security of Ukraine and European integration in the context internal migration processes (Putintsev & Pashchenko, 2018, Rogacha et al., 2017). Despite the complexity of problem of IDPs' support and social integration in new communities it is proved that the government assistance programs have a positive influence on economic growth due to the multiplier effect (Yurchyk et al., 2023). Although studying the problems of IDPs does not jeopardize the recovery of the national economy in the post-war period, these people will remain living in Ukraine, perhaps only in another region of the country. At the same time, the problems and intentions of emigrants cause many possible risks for the national economy after the end of the war, as among them there may be a certain part of migrants who will remain living in the host countries and will not be ready to return home. The situation is complicated in light of the fact that among the adult population of Ukrainian refugees 85% are women, including about 39% - women of productive age. This poses significant risks for the further demographic processes development⁵.

Since the full military invasion in Ukraine 24.02.2022 among the consideration of various aspects related to all branches of the economy, the authors emphasize on international economic consequences addressing the issues of financial aid, refugees and migration flows (Ravet et al., 2022). Gorodnichenko & Rohner, 2022, Gurny & Kaczmarczyk, 2023 raise the issue of the complex economic consequences that have a place in society during the Russian-Ukrainian war. At the same time, Ravet et al. (2022) emphasize the need to strengthen innovation processes for the recovery of the Ukrainian economy and the reconstruction of destroyed by military attacks business entities of Ukraine: both with respect to business and infrastructure of cities and villages.

⁴ <https://take-profit.org/statistics/wages/>

⁵ <https://data.unhcr.org/en/situations/ukraine>

3. DATA AND METHODOLOGY

a) Data

Considering social challenges, a significant part of the information was obtained from the data of the State Statistics Service of Ukraine and UNHCR International Organization for Migration (IOM). The authors selected data from World bank, State Statistics Service of Ukraine and IOM for comparison analysis of migration flows (1991-2022). It should be noted that starting from the date of the full-scale military invasion, the authors present the data of the third wave of the Ukrainian migration only from the IOM source, as the public statistical information in the country is closed during the continuation of the war. Data from IOM's flagship publications, the World Migration Reports, papers published in the Migration Research Series and IOM Migration Profiles were used for conducting the study. Information from the website of the Ministry of Social Policy of Ukraine⁶ was used to estimate the migration flows of Internally Displaced Persons (IDPs). When calculating the approximate values of the number of returns and departures of Ukrainians abroad, the authors used the data of the State Border Service of Ukraine, namely the monthly reports of the Service on the number of crossings of the State Border by Ukrainians on the website of Public News Portal⁷. The analytical part of the SWOT analysis was based on information from the International Labor Organization⁸ and World Migration Report 2022⁹. The results of sociological surveys of the Razumkov Center¹⁰, Ukrinform Internet Portal¹¹, NoBrainerData Analytical Center¹², Cedos Analytical Center¹³ and UNHCR¹⁴ were used to assess the sex-age composition, spheres of activity, financial, medical and psychological support, leaving conditions of Ukrainian forced migrants and their intentions to return home.

b) Methodology

The authors attach a special importance to the presence of methodological discrepancies between the data of Ukrainian migration statistics and international sources (World Bank, IOM). This difference is due to the fact that a part of Ukrainian migrants in recent years is outside the area of registration of migration processes in their country. In fact, when workers go to work in other countries and do not register with the Ukrainian Migration Service. As a result, they are counted as tourists at the border. On the other hand, such Ukrainian workers often open bank accounts at the place of their new job and, at the place of their new residence and enter the databases that form information about emigrants. Thus, there is a slight underestimation of the actual size of migration flows by Ukrainian migration statistics compared to international databases.

The authors single out three stages of the Ukrainian migration since the declaration of independence of Ukraine, each of which has its own characteristics and certain features. The first stage of the Ukrainian

⁶ <https://www.ioc.gov.ua/dashboardVpo/>

⁷ <https://suspilne.media/302050-stabilno-bilsa-kilkist-ukrainciv-povertaetsa-z-za-kordonu-aniz-viizdae-opendatabot/>

⁸ <https://ilostat.ilo.org/topics/unemployment-and-labour-underutilization/>

⁹ <https://publications.iom.int/books/world-migration-report-2022>

¹⁰ <https://razumkov.org.ua/napriamky/sotsiologichni-doslidzhennia/nastroi-ta-otsinky-ukrainskykh-bizhentsiv-lypen-serpen-2022p>

¹¹ <https://www.ukrinform.ua/rubric-diaspora/3542511-tretina-ukrainciv-aki-ratuutsa-vid-agresii-rf-planuut-zatrimatisa-v-polsi.html>

¹² <https://prm.ua/hirshe-za-holodomor-cherez-vtorhnennia-rf-ukraina-vtratyt-do-33-vidsotkiv-naseleennia-doslidzhennia-nobrainerdata/>

¹³ <https://cedos.org.ua/researches/vymushena-migracziya-i-vijna-v-ukrayini-24-bereznya-10-chervnya-2022/>

¹⁴ <https://data.unhcr.org/en/documents/details/97720>

migration [1991-2014) falls on peaceful times in the country. Its features are based on Neoclassical Migration Theory, which according to Haas (2010) suggests that labour markets and economies move toward equilibrium in the long run due to trade and regional differences in labour supply and demand. Migrants of that period moved from societies where labour was abundant and wages were low to societies where labour was scarce and wages were higher. Decisions to migrate had the economic features and were made at the individual level and considered that higher earnings in the long run at the place of migration offset the costs and risk of moving. At the same time, there were cases of New Economic Migration, which included the social dimension in the decision on migration.

Along with the two theories outlined above, for Ukrainian migration of the second stage [2014-2022) from the beginning of military aggression in the East of the country and the annexation of Crimea, it is gradually emphasizing the role of political stability factors. In this context, the Theory of Migration by Lee (1966) and Parkins (2010) on the Push and Pull Factors of migration process became the methodological basis. At this stage a slight increase in migration flows occurred only in the direction of internal migration, and the political stability in the region was the most important attractive factor in choosing a new place of residence. Thus, a significant number of Ukrainian families who fled from the Kremlin regime in the annexed Ukrainian territories chose the cities of the Central and Western parts of the country as their new residence.

The new migration wave of Ukrainian refugees began on February 24, 2022, with the beginning of the full-scale Russian invasion of Ukraine [2022-...). Only the Theory of Push and Pull factors became characteristic of this migration flow, when the main reason for leaving one's home was the danger to one's own life and the life of one's children. In this period, the Ukrainian migration get fetchers of forced actions. Millions of people were forced to leave their homes to save their lives and seek refuge in other regions of the country or abroad.

The working hypothesis of the study is that against the background of the revealed trend of growth of migration flows, both internal and external, a number of challenges and socio-economic consequences are created for the Ukrainian economy as well as for the host countries' economies. *The research questions are:*

Q1: If the result of negative changes in economy may be a stream of forced migration?

Q2: What risks to the country's economy against the background of projected migration flows can be used to develop recommendations for the national migration policy?

The assessment of internal and external migration flows of the population of Ukraine since the full-scale invasion in Ukraine in absolute form included the IDPs number indicator and net external migration indicator using the formulas 1-2:

$$N_{int i} = N_{l int i} - N_{r int i} \quad (1)$$

$$N_{ext i} = N_{l ext i} - N_{r ext i} \quad (2)$$

where: $N_{l int i}$ - the IDPs leavers in the i period of time;

$N_{r int i}$ - the IDPs returners in the i period of time;

$N_{l ext i}$ - the number of leavers o.e. Ukrainian forced emigrants in the i period of time;

$N_{r ext i}$ - the number of returners o.e. Ukrainian forced immigrants in the i period of time.

For an analytical assessment of external and internal migration movements, the authors determined the relative coefficients of internal and net external migration intensity per 1,000 persons of the permanent population (formulas 3-4):

$$C_{int i} = \frac{N_{int i}}{P_i} * 1000 \quad (3)$$

$$C_{ext i} = \frac{N_{ext i}}{P_i} * 1000 \quad (4)$$

where: $N_{int i}$ - the number of internal migrants (IDPs) in the i period of time;

$N_{em i}$ - the number of immigrants in the i period of time;

$N_{im i}$ - the number of emigrants in the i period of time;

P_i - the number of present populations in the country in the i period of time.

The theory of forecasting became the methodological basis for building econometric models of coefficients of internal and external forced migration intensity (formulas 5-6):

$$C_{int}(t_i) = b_{0int} + b_{1int} * t_i + b_{2int} * t_i^2 \quad (5)$$

$$C_{ext}(t_i) = b_{0ext} + b_{1ext} * t_i + b_{2ext} * t_i^2 \quad (6)$$

where: b_{0int} and b_{0ext} - intercepts;

b_{1int} and b_{1ext} - partial regression coefficients, which represents the speed of growth (decreasing) internal and external migration coefficients respectively;

b_{2int} and b_{2ext} - partial regression coefficients of the 2nd order, which represents the acceleration of the growth (decrease) of internal or external migration coefficient respectively.

Student's statistical criterion is used to test the hypothesis that the average value of the sample calculated coefficient of intensity of internal and external migration flows is different from its actual average value. Statistical analysis of the built models made it possible to construct an interval estimate of the predicted values of the migration indicators. The forecasting of migration processes was assessed by both point assessment and interval assessment according to the following formula:

$$C_{int/ext(i)} - t_{cr}S_i < \tilde{C}_{int/ext(i)} < C_{int/ext(i)} + t_{cr}S_i \quad (7)$$

where: $C_{int/ext(i)}$ - these are point estimates of the predictive value of internal or net external migration coefficients intensity respectively;

t_{cr} - critical values according to statistical tables of Student's distribution:

$$t_{cr}(\alpha = 0,05; n = 8) = 2,31;$$

S_i - mean squared error of the forecast value of the indicator, which is calculated according to the formula:

$$S_i = \sqrt{1 + \frac{1}{n} + \frac{(t_i - \bar{t})^2}{\sum_{i=1}^n (t_i - \bar{t})^2}} \quad (8)$$

SWOT analysis includes the study of a number of challenges, advantages, opportunities, possible threats and risks for the Ukrainian economy. The study presents a matrix of SWOT analysis of the region (country) of departure. Based on the method of theoretical generalization, the authors formulated a number of proposals for solving the problems of the current Ukrainian migration crisis (Appendix 1, Table 1).

It should be noted that when drawing up plans for strategic economic planning against the background of such rapid migration flows and the ongoing war, other methods of analytical research could be used: in particular, PESTLE or PITA analysis. However, the authors chose the SWOT analysis, which made it possible to emphasize a number of risks for the further development and recovery of the Ukrainian economy along with the aggravation of demographic problems.

The authors are fully aware that this study has certain shortcomings and limitations. On the one hand, such rapid migration movements cannot be considered global. However, they create a broad perspective, as they affect the economies of refugee asylum countries, that is, virtually all EU member states. On the other hand, when assessing the trends of indicators of the intensity of internal and external migration flows, attention was rather paid to general trends. They can reveal in more detail the picture of the economic crisis in the country caused by this war.

4. DYNAMICS OF MIGRATION FLOWS OF UKRAINIAN POPULATION: INSIGHT INTO THE POLITICAL STABILITY FACTORS

Since the declaration of independence, the economic crisis 2014-... became the third in the country's history. The 1st crisis falls on the formation of statehood and the creation of national institutions in 1990-1999. The 1st crisis occurred when, against the background of global social upheavals and hyperinflation, the economy continued to fall, and in 1994 the annual GDP legacy was at its lowest value - 22.9%. The second Ukrainian economic crisis occurred in 2008-2009 and is connected with the global economic crisis. This stage was characterized by the devaluation of the national currency, a decrease in the real income of the population by almost 10%, and another drop in the annual GDP growth rate to -14.8%. Since 2014, with the beginning of political instability in Ukraine, the Russian invasion in the East and the annexation of Crimea. The country has been experiencing a 3-d deep economic crisis, which intensified in 2022 from the moment of the full-scale Russian military invasion (Table 1).

Table 1

Macroeconomic indices on the background of military invasion in Ukraine, 2014-2022

Indicators	2014	2015	2016	2017	2018	2019	2020	2021	2022	2022 (+/-) to	
										2014	2021
GDP annual growth, % ¹⁵	-10.1	-9.8	2.4	2.4	3.5	3.2	-3.8	3.4	-28.6	-18.5	-32.0
Inflation consumer prices index annual, % ¹⁶	12.1	48.7	13.9	14.4	11.0	7.9	2.7	9.4	20.2	8.1	10.8
Unemployment rate, % ¹⁷	9.3	9.1	9.3	9.5	8.8	8.2	9.5	9.8	25.5	16.2	15.7
Capital assets value, bln. USD ¹⁸	1156.6	349.9	320.0	284.3	353.3	370.4	392.3	404.9	321.1	-835.5	-83.8

Source: the results of authors' research on the data of World Bank, State Statistics Service of Ukraine and Ministry of Finance of Ukraine

As a result of the Ukrainian national property seized by the Russian Federation, the country's GDP decreased by 15%, the value of the main assets decreased by 3.3 times, the exchange rate of the national currency collapsed by more than 1.8 times, and the real household income decreased by 30%. These factors caused another increase in inflationary processes, when in 2014 the annual level of consumer inflation in Ukraine was 12.1%, and in 2015 it rose to 48.7%. The year of the full-scale war in Ukraine was another blow to its economy, when the annual GDP growth rate decreased by 28.6%, the inflation rate reached another anti-record 20.2%. The significant destruction in the infrastructure sector and the breakdown of economic ties led to a rapid increase in the unemployment rate to 25.5%. In fact, by the end of 2022, one in four adults became out of a job, with some businesses operating on the edge of survival, with employs only 2-3 days a week. It should be emphasized that against the background of such political instability, people's living standards have significantly deteriorated and their incomes have decreased. Hence this led to an increase in

¹⁵ <https://data.worldbank.org/indicator/NY.GDP.MKTP.KD.ZG?locations=UA>

¹⁶ <https://data.worldbank.org/indicator/FP.CPI.TOTL.ZG?locations=UA>

¹⁷ <https://data.worldbank.org/indicator/SL.UEM.TOTL.ZS?locations=UA>

¹⁸ https://ukrstat.gov.ua/operativ/operativ2020/ibd/voz/voz_u/arh_voz_u.htm

the migration rate. With the beginning of full-scale military operations in the country, the modern Ukrainian migration crisis became one of the largest in the world in the last 80 years since the Second World War.

When observing migration flows in Ukraine, it is advisable to distinguish the following 3 stages of migration waves. The first wave of migration occurred from 1991 to the beginning of 2014, when migration flows were not significant compared to the 3rd wave, the peaceful development of the national economy was attractive to immigrants, although intra-regional and inter-regional population migration took place. The second wave of migration coincides with the beginning of the Russian invasion of Ukraine, the seizure of Crimea and parts of Donbas, the beginning of military operations in the East of the country and falls on the years 2014-2022. This wave was characterized mainly by internal migration, when families from the occupied regions who disagreed with the position of the occupiers moved to other regions of the state, mostly to the western and central regions. The third wave of migration began from the moment of the large-scale invasion of Russian troops into Ukraine, when a large part of the population was forced to leave their homes and change their place of residence to those where safety for family members would be ensured. This process began on February 24, 2022 and continues to unfold in our presence.

Starting from the first years of independence in 1991 and until the beginning of the first stage of the military Russian invasion in Ukraine, no rapid growth of migration flows was observed, and the majority of the migrating population changed their place of residence within the country and accounted for up to 1.5% of the population (IDPs), and only 5-10% of the total migration flow was accounted for external migrants (emigrants and immigrants), who left the country or arrived in the country in search of a better life. If in 2002 the number of internal migrants in Ukraine was 717.5, then in 2014 it was 499.8, i.e. 30.3% less. Considering international migration, it is important to note that in peaceful Ukraine there was a tendency for increase in the number of immigrants whilst a number of emigrations decreased, that is, a much larger part of the migrating population intended to come to the country than to leave it. In particular, the net migration had negative values only in 2002-2004, when it increased from -33.8 to -7.6 thsnd people. The following values of the indicator of external migration growth were positive: from 14.2 in 2006 to 61.8 thsnd. people in 2012 (Figure 1). Although at the end of 2014, against the background of the beginning of the war in the East of Ukraine and the occupation of Crimea the flow of external migration decreased somewhat and the migration balance amounted to 21.1 thsnd. people.

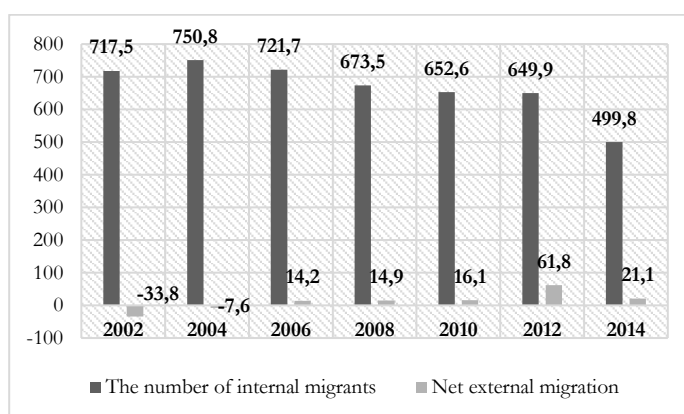


Figure 1. Dynamics of migration flow indicators of the Ukrainian population of the first wave of migration, 2002-2014, thsnd. pers.

Source: obtained and calculated according to the data of the State Statistics Service of Ukraine¹⁹

¹⁹ https://ukrstat.gov.ua/druk/publicat/kat_u/publnasel_u.htm

It should be mentioned that migration indicators depend closely on political stability and factors of economic growth in the country. In particular, the peak of the first wave (total migration balance of 743.2 thousand people) falls on the Orange Revolution (2004), which was peaceful in nature and somewhat reduced the migration attractiveness of the state and the pace of its economic growth (the GDP growth rate decreased from 11.8 % in 2004 to 7.6% in 2006). In 2004, a campaign of protests and rallies took place in Ukraine, organized and conducted by supporters of V. Yushchenko, as the main opposition candidate in the presidential elections in November-December 2004. These public protests arose as a result of a false announcement of The Central Election Commission of the previous election results, according to which his rival V. Yanukovych allegedly won. In fact, from this moment on, Ukrainians showed the whole world that they see their future in the European direction and reforming society, and not in the direction of cooperation with the Russian Federation.

The second migration wave is characterized by the beginning of military operations in the East of Ukraine, the partial occupation of Donbas and the seizure of Crimea (2014). In the midst of military actions in the country since 2014, a new category of population has appeared – IDPs who, because of the war, were forced to leave their homes and move to other regions. And again, the fact of influence of the political component on the extent of the migration flow is obvious. In particular, for the period 2012-2014, we observe a significant increase in the number of migrants, especially IDPs, when this indicator was 649.9 and 499.8 thousand people in 2012 and 2014, respectively. Such a significant number of IDPs is connected with the significant resistance of the Ukrainian society to the Russian occupying power in the captured territories. As for the directions of migration, such families mostly changed their places of residence to cities and villages in the central and south-eastern parts of Ukraine. According to the State Statistics Service of Ukraine in 2014, the net migration indicator had the largest negative values in the Donetsk and Luhansk regions (-10.7 and -8.1 thsnd. people). Due to the complete occupation of Crimea by the Russian Federation since 2013, there are no data on that region. In the territory under the control of the Ukrainian authorities, the net migration indicator had the highest values in 2014 in the Kyiv, Odesa and Kharkiv regions, where the value of the indicator was at the level of 11.1; 4.6 and 8.3 thousand people (Figure 2). At that time, external migration had not yet reached such a scale, because the invasion of Russian troops was not as large-scale as during the third wave of migration. The net migration flow curve in the positive part of the graph represents a clear trend of the dominance of internal migration flows over external ones in the first phase of the war.

Against the background of a large-scale invasion in Ukraine after 24.02.2022, the next wave of migration unfolded, when the migration flows significantly increased by many times (Figure 3). Starting from March 2022, there were a tendency in increase of the indicator of the net migration flow due to a significant increase in the size of internal as well as external migration flows. The peak of this migration wave falls on the April and May, 2022, when the large-scale military escalation throughout the territory of Ukraine became highly active. In particular, in May 2022 there was a 1st peak of the flow and the indicator of the net migration for IDPs increased to 8029.0 and the net external migration was -6561.6 thsnd. people respectively. Thus, the total height of the flow became 14,6 mln. people or 35.4% of present country population on the beginning of the war. Although the indicator of net international migration next month decreased the negative meaning from -6561.6 to -4810 thsnd. people, or by 26.7%.

It should be noted that in the summer months IOM registries a lot of returns for Ukrainian migrants, the wave of further migration of the population is closely related to the successes of the Ukrainian army in liberating Ukrainian lands. In particular, in the summer months, the number of IDPs who returned home was, respectively, 2378.0; 2091.7; and 2215.0 thsnd. people. With starting of colds and increasing terroristic attacks on infrastructure objects the height of the flow began again and on October, 10, 2022. So, this indicator became 14.2 mln. people, of which 43.7% (6243 thsnd. people) were IDPs, and the rest 56.3% (7985.2 thsnd. people) were Ukrainian emigrants who temporarily lived in other countries. According to

IOM data, starting from the end of November, 4.8 million Ukrainian refugees have already registered for temporary protection or similar national protection schemes in European countries²⁰.

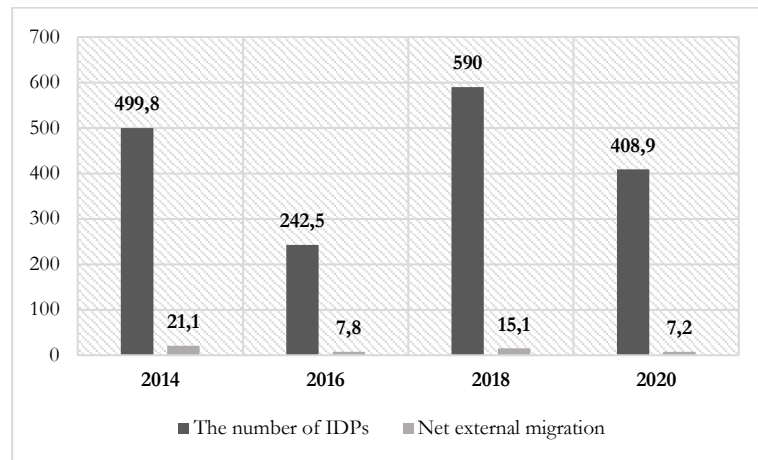


Figure 2. Dynamics of migration flow indicators of Ukrainian population in the second wave of migration, 2014-2020, thsnd. pers.

Source: obtained and calculated according to the data of the State Statistics Service of Ukraine²¹

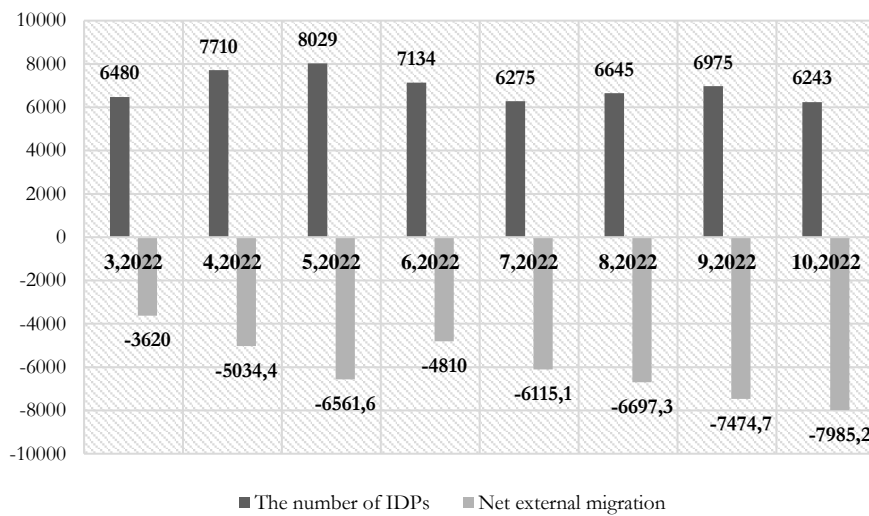


Figure 3. Dynamics of migration flow indicators of Ukrainian population due the third wave of migration, by months after 24.02.2022, thsnd. pers.

Source: obtained and calculated according to the data of IOM²²

²⁰ <https://data.unhcr.org/en/situations/ukraine>

²¹ https://ukrstat.gov.ua/druk/publicat/kat_u/publnasel_u.htm

²² https://www.iom.int/search?keywords=Ukraine®ion_country=&created=All

5. ANALYTICAL ASSESSMENT OF THE MIGRATION INTENSITY OF THE POPULATION: INTERNAL AND EXTERNAL MIGRATION IN THE CONTEXT OF STRUCTURAL CHANGES

Estimating the size and intensity of migration flows involves determining the net migration indicator per 1,000 people. This indicator also reflects the ratio between the number of immigrants and emigrants, and also characterizes the degree of migratory activity of the population. In particular, for IDPs in the first migration wave, the value of this coefficient is observed from 14.8 in 2002 to 11.0 in 2014 (Table 2). As for international migrants, this indicator has a clear upward trend from -0.7 in 2002 to 0.5 at the end of the wave, i.e. more by 1.2 points. It is characteristic that the obtained values of the coefficient of migration intensity for international migrations are very close to the analytical estimates of the IOM.

Table 2

The intensity of the first wave Ukrainian migration flow, 2002-2014, thsnd. pers.

Indicator	2002	2004	2006	2008	2010	2012	2014	2014 to 2002, %
<i>Indicators of internal migration</i>								
The number of internal migrants	717.5	750.8	721.7	673.5	652.6	649.9	499.8	69.7
Coefficient of net internal migration intensity per 1 thsnd. pers. of the present population	14.8	15.8	15.4	14.5	14.2	14.2	11.0	×
<i>Indicators of external migration</i>								
The number of immigrants	42.5	38.6	44.2	37.3	30.8	76.4	42.7	100.5
The number of emigrants	76.3	46.2	30.0	22.4	14.7	14.5	21.6	28.3
Net external migration	-33.8	-7.6	14.2	14.9	16.1	61.8	21.1	×
Coefficient of net external migration intensity per 1 thsnd. pers. of the present population	-0.7	-0.2	0.3	0.3	0.4	1.4	0.5	×
Coefficient of net external migration intensity, data by IMO	-0.8	-0.2	0.3	0.4	0.2	1.5	-1.5	×

Source: obtained and calculated according to the data of State Statistics Service of Ukraine²³ and IOM²⁴

The second migration wave is characterized by a relative decrease in indicators of international migration activity. This means that despite the start of the war in 2014, a larger number of the population wanted to find their new home in Ukraine compared to the number of emigrants. In this period, the coefficient of migration intensity of international migrations decreased from 0.5 in 2014 to 0.2 points in 2020 (Table 3). The estimated values of indicators of migration flows at the end of 2022 differ from their analogues in previous years, though.

International migrations of this period were mainly economic in nature, people changed their place of residence in order to find a better job and greater wealth. One of the reasons for the labor migration of Ukrainians was their unsatisfactory financial situation and high poverty rates. According to the IMF data, a significant share of the population lives below the poverty line and Ukraine has been one of the poorest countries in Europe for several last years. While according to the IMO report, even before the war, Ukraine was defined the poorest country in Europe both in terms of gross product per capita and in the rating with the lowest salary. Moreover, it should be noted that labor migration in Ukraine had a shadow character and was insufficiently reflected by official national institutions. For IDPs, during the second wave of migration,

²³ https://ukrstat.gov.ua/druk/publicat/kat_u/publnasel_u.htm

²⁴ <https://publications.iom.int/books/world-migration-report-2022>

a decrease the coefficient of migration activity was also observed, from 11.0 in 2014 to 9.8 in 2020, i.e., a decrease of 1.2 points. It is necessary to pay attention to the significant closeness of the calculated values by the authors for the indicator of net international migration and the corresponding analytical values of the IOM.

Table 3

The intensity of the second wave Ukrainian migration flow, 2014-2022, thsnd. pers.

Indicator	2014	2016	2018	2020	2022 ²⁵	2022 to 2014, %
<i>Indicators of internal migration</i>						
The number of IDPs	499.8	242.5	590.0	408.9	6232.7	1,247.0
Coefficient of internal migration intensity per 1 thsnd. pers. of the present population	11.0	5.7	13.9	9.8	151.4	×
<i>Indicators of external migration</i>						
The number of immigrants	42.7	14.3	39.3	26.4	2,609.2	6,110.5
The number of emigrants	21.6	6.5	24.3	19.1	12,419.4	57,497.2
Net external migration	21.1	7.8	15.1	7.2	-9,810.2	×
Coefficient of net external migration intensity per 1 thsnd. persons of the present population	0.5	0.2	0.4	0.2	-238.3	×
Net migration, data by IMO	-1.5	-1.2	-0.7	0.0	× ²⁶	×

Source: obtained and calculated according to the data of the State Statistics Service of Ukraine²⁷ and IOM²⁸

The beginning of the third wave of migration is characterized by a rapid growth of the migration intensity indicator in several times compared to the previous waves. In particular, when in previous periods this indicator for IDPs amounted to no more than 13 points, then since the beginning of the large-scale invasion in March and April, 2022, its peak values are observed: 187.3 and 195.0 points. Undoubtedly, this indicator has a slight upward trend in dynamics and in October 2022 at the end of the 8th month of the war it rose to the value of 158.9 points, but this value is 14.4 times more than the average value of the previous wave (Table 4).

It should be noted that the indicator of international migration intensity has become extremely large since the beginning of the 2nd phase of the war. But with underlying success of Ukrainian army and of a slight improvement in the situation with the population that returned from abroad to their homes, the analyzed indicator of migration activity at the end of the 8th month of the war was -194.0 points, which is 2.2 times higher than the value of the similar indicator at the beginning of the migration wave.

Regarding the directions of the new wave of Ukrainian migrants' relocation, it should be noted that now the issue of safety of family members took first place in terms of the degree of importance when choosing the direction of relocation; the issue of financial costs of relocation recedes into the background. According to the IOM data, as of the end of October 2022, 6,2 million Ukrainians are interior migrants. The biggest part of them moved to the Central part of Ukraine and Kyiv region (1.8 mln. people, 27%) as well as to Eastern part (1,6 mln. people, 25%) (Figure 4). It should be noted that the significant number of migrants moved to the capital of Ukraine Kyiv and its region (1.3 mln. people, 21%), as the situation in this region is highly controlled by Ukrainian Military Forces and IDPs have better opportunities for employment

²⁵ Forecast values of indicators of migration movements in 2022 were calculated by the authors on the basis of the research outlined in point 3

²⁶ At the time of the research, there were no forecast values of the migration balance coefficient for 2022

²⁷ https://ukrstat.gov.ua/druk/publicat/kat_u/publnasel_u.htm

²⁸ <https://publications.iom.int/books/world-migration-report-2022>

there. High indicators of the number of displaced persons in the Eastern regions of the country are connected with the urgent need to evacuate people from the zone of active military operations (Kharkiv, Kherson, Luhansk, Donetsk, Zaporizhia, Dnipropetrovsk and Mykolaiv regions).

Table 4

The intensity of Ukrainian forced migration flow after 24.02.2022, thsnd. pers.

Indicator	The date of IOM report							
	25 March	21 April	19 May	10 June	12-18 July	09-15 August	06-12 September	10 October
<i>Indicators of internal migration</i>								
The number of IDPs	6,480.0	7,710.0	8,029.0	7,134.0	6,275.0	6,645.0	6,975.0	6,243.0
Coefficient of net internal migration intensity per 1 thsnd. pers. of the present population	157.4	187.3	195.0	173.3	152.4	161.4	169.4	158.9
<i>Indicators of external migration</i>								
Net external migration	-3,620.0	-5,034.4	-6,561.6	-4,810.0	-6,115.1	-6,697.3	-7,474.7	-7,985.2
Coefficient of net external migration intensity per 1 thsnd. pers. of the present population	-87.9	-122.3	-159.4	-116.8	-148.5	-162.7	-181.6	-194.0

Source: obtained and calculated according to the data of IMO²⁹

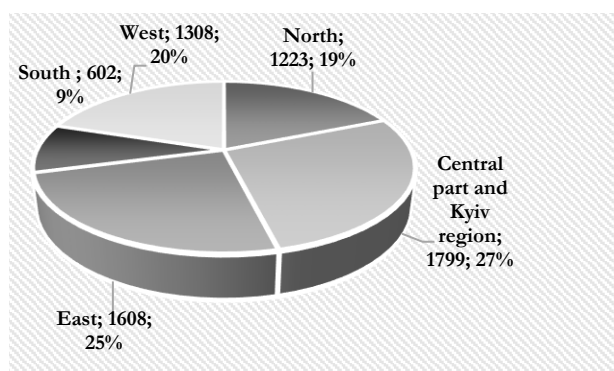


Figure 4. Regional distribution of IDPs in Ukraine, 28 October 2022, thsnd. pers.

Source: generated by the authors on the basis of IOM³⁰ and Ministry of Social Policy of Ukraine³¹ data

In the context of the geographical distribution of external flows of Ukrainian emigrants, it is worth mentioning that among the countries of the western direction, the majority of them, as of November 2022, temporarily live in Poland, Germany, Czech, Italy and Spain (1507.9; 1021.7; 464.9; 165.0 and 155.5 thousand people, respectively, or 18.8%; 12.8%; 5.8%; 2.1 and 2.0% of the total structure). A significant

²⁹https://www.iom.int/search?keywords=Ukraine®ion_country=&created=All and <https://displacement.iom.int/reports/zvit-pro-vnutrishne-peremischennya-v-ukraini-opituvannya-zagalnogo-raund-10-27-zhovtnya?close=true>

³⁰ <https://displacement.iom.int/responses/ukraine-response>

³¹ <https://www.msp.gov.ua/>

number of Ukrainians currently live in the Russian Federation, which, according to the IOM³², amounts to 2 852.4 thsnd. people. Authors visions are that among these persons there is a significant share of captured and forcibly deported people. It should also be emphasized that a number of families who left their homes in the East of the country often made the decision to leave when their region was occupied by the Russian army. Also, many families with permanent residence in the East of Ukraine have relatives and close people in the RF, who could invite them during the period of large-scale military aggression in Ukraine. But according to the Cedos Analytical Center, a most part of Ukrainian migrants was forcibly deported to the Russian Federation, they are often held in "filtration camps in inhumane conditions, interrogated, and forced to hard labor"³³. In fact, by launching a full escalated war against Ukraine, the Russian Federation not only destroys its territory and infrastructure, but also destroys and steals the most important value - its people.

6. POSSIBLE DEVELOPMENT SCENARIOS, CHALLENGES, OPPORTUNITIES AND RISKS

Against the backdrop of the tragic and uncertain situation created by military escalation in Ukraine, many questions arise in society. How long will the war last? How many Ukrainians will be able to return home and when? What proportion of them plans to stay in their new place of residence? According to forecasts of specialists of the Institute of Demography and Social Research of the National Academy of Sciences of Ukraine, as a result of the war and depending on its duration, the population of Ukraine after the end of the war may decrease by 24–33% ³⁴. Confirmation of this threat is the decrease in the numbers of those who live and work in Ukraine already now: since the beginning of the Russian aggression, the population has decreased by 6.7 million. In addition, the sex-age structure of Ukrainian society is changing - the share of youth under 20 and the share of persons of productive age. Over time, this may lead to a narrowing of the demographic base of population reproduction in Ukraine. It should be noted that the full-scale war and its negative consequences have significantly deepened the demographic problems that have accumulated over the past 30 years and are a serious challenge for the Ukrainian state. Some Ukrainian demographers already call this current flow of emigration the "second Ukrainian holocaust" (Guzman, 2022, Gorodnichenko & Rohner, 2022) and consider a number of severe economic consequences for the further recovery of the country because of the significant loss of a large number of labour resources. Specialists of the NoBrainerData Analytical Center opine the possible consequences of the Russian invasion of Ukraine, when it may lose up to 33% of the population, as "Worse than the Holocaust"³⁵.

According to the Razumkov Social Research Center, migrants from Ukraine are mainly people of working age: 42% aged 30-39, 40-49 years old - 29%, with higher or incomplete higher education (83%), of which 40% are highly qualified specialists, including 12% - skilled workers, 14% - persons holding managerial positions in divisions, 14% - entrepreneurs (survey date: July-August, 2022) ³⁶. The fact of a high share of the working population among forced migrants creates additional risks for the further development and recovery of the Ukrainian national economy, which significantly changes the structure of the population in terms of forms of employment. On the other hand, significant changes are also taking place in the age groups of the population. According to the sociological research of the Ukrinform Internet portal, 37% of

³² <https://data.unhcr.org/en/situations/ukraine>

³³ <https://cedos.org.ua/researches/vymushena-migracziya-i-vijna-v-ukrayini-24-bereznya-10-cherwnya-2022/>

³⁴ https://lb.ua/economics/2022/09/22/530166_povernuti_vtrachene_chim_ukraini.html

³⁵ <https://prm.ua/hirshe-za-holodomor-cherz-vtorhnennia-rf-ukraina-vtratyt-do-33-vidsotkiv-naseleennia-doslidzhennia-nobrainerddata/>

³⁶ <https://razumkov.org.ua/napriamky/sotsiologichni-doslidzhennia/nastroi-ta-otsinky-ukrainskykh-bizhentsiv-lypen-serpen-2022p>

Ukrainian refugee women left abroad with one child, 22% with two, 4% with three or more children, and 37% without children (survey date: August, 2022) ³⁷. Thus, according to approximate authors calculations, it turns out that among modern Ukrainian forced migrants, about 50-55% are children. And such changes in the age groups of the population create risks of deepening and aggravating the already existing demographic crisis in the state. To calculate econometric models for forecasting the intensity of internal and external migration flows, actual data from monthly reports of the IOM for the first 8 months of the war were used, i.e., the volume of observations was N=8. Authors evaluated a 2-d order polynomial lines for econometric models of internal and net external migration intensity coefficients. The sample size consisted of data for the first 8 months of the war (t=1, ..., 8), the level of probability: p value < 0.5. In particular, for the case of internal migration intensity model, the coefficient of determination is 0.204, but as for net external migration coefficient - 0.794 (Figure 5).

Internal case of migration:

Model Summary				
R	R Square	Adjusted R Square	Std. Error of the Estimate	
,451	,204	-,115	16,026	

The independent variable is VAR00001.

ANOVA					
	Sum of Squares	df	Mean Square	F	Sig.
Regression	328,726	2	164,363	,640	,56
Residual	1284,149	5	256,830		
Total	1612,875	7			

The independent variable is VAR00001.

External case of migration:

Model Summary				
R	R Square	Adjusted R Square	Std. Error of the Estimate	
,891	,794	,712	19,086	

The independent variable is VAR00001.

ANOVA					
	Sum of Squares	df	Mean Square	F	Sig.
Regression	7022,143	2	3511,071	9,639	,01
Residual	1821,357	5	364,271		
Total	8843,500	7			

The independent variable is VAR00001.

Figure 5. Descriptive Statistics and Dispersive Analysis of econometric models of internal and net external migration intensity coefficients

Sources: calculated in the SPSS software (decimal commas are used in SPSS software)

ANOVA analysis provides a measure of the consistency of this trend over time and the degree of variance decomposition according to common and random factors' influence. As for internal migration, there is a high risk of random risk factors affecting the general trend of the migration movement of forced migrants. In particular, 79.7% of the total distribution of variance falls on such random factors and only 20.3% - on factors included in this econometric model. Regarding the assessment of external migration, it should be noted here that this trend has an obviously statistical regularity and only 20.6% of the total distribution of variance occurs due to such random risk factors. Therefore, the second econometric model in this case is more statistically significant. Regression analysis for both the model of the internal flow of forced migration and the external flow is presented in Figure 6 (formulas 9-10).

³⁷<https://www.ukrinform.ua/rubric-diaspora/3542511-tretina-ukrainciv-aki-ratuutsa-vid-agresii-rf-planuut-zatrimatisa-v-polsi.html>

Internal case of migration:

	Coefficients				
	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
VAR00001	4,327	11,399	,698	,380	,720
VAR00001 ** 2	-,744	1,236	-,107	-,602	,574
(Constant)	168,625	22,358		7,542	,001

External case of migration:

	Coefficients				
	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
VAR00001	-13,893	13,576	-,957	-1,023	,353
VAR00001 ** 2	,107	1,473	,068	,073	,945
(Constant)	-86,964	26,628		-3,266	,022

Figure 6. Regression estimates of the internal and net external migration intensity coefficients econometric models

Sources: calculated in the SPSS software (decimal commas are used in SPSS software)

$$C_{int}(t_i) = 168.625 - 4.327 * t_i + 4.327 * t_i^2 \quad (9)$$

$$C_{ext}(t_i) = -86.964 - 13.893 * t_i + 0.107 * t_i^2 \quad (10)$$

Student's statistical criterion approved to test the hypothesis that the average values of the sample calculated coefficient of intensity of internal and external migration flows are similar to its actual average values. Statistical analysis of the built models made it possible to construct an interval estimate of the predicted values of the migration indicators.

The authors calculated the forecasting values of the internal and net external migration intensity coefficients for the next 4 months of the war until the end of the first year of the war (Table 5). The results of the calculations show that if the trend of changing the magnitude of the phenomenon is maintained with a high probability, the coefficient of net of external migration for the above periods will be (-241.0) and (-245.5) till the end of the 1-st year of the war. That is, about 24% of the existing population of the country may remain living abroad in the near future in search of temporary shelter from the war. In the case of the flow of internally displaced people, this interval is from 110.3 to 115.7, although there remains a very large risk of random war factors.

Table 5

Interval estimates of net internal and external migration intensity coefficients

Period of forecasting	Estimated data of forecasting		Average quadratic forecast error	Forecasting interval of internal migration coefficient		Forecasting interval of net external migration coefficient	
	internal migration coefficient	external migration coefficient		min	max	min	max
9	147.3	-203.3	1.104	144.8	149.9	-205.9	-200.8
10	137.4	-215.2	1.125	134.8	140.0	-217.8	-212.6
11	126.0	-226.8	1.149	123.3	128.6	-229.5	-224.2
12	113.0	-238.3	1.177	110.3	115.7	-241.0	-235.5

Source: the results of authors' research

Thus, the forecast data of the indicators of migration movements calculated by the authors are fully consistent with the forecasts of specialists of the Institute of Demography and Social Research of the National Academy of Sciences of Ukraine³⁸. It should be noted that such rapid demographic changes may lead to the emergence of new economic challenges and risks both for the region which the migrants leave

³⁸ https://lb.ua/economics/2022/09/22/530166_povernuti_vtrachene_chim_ukraini.htm

and for the host region (country). In the context of studying such modern challenges, the authors conducted a SWOT analysis of new opportunities, challenges and risks of these regions. Obviously, this will be caused by significant destructive processes in the objects of the Ukrainian infrastructure, which may lead to the impossibility of providing proper conditions for the population (heating, electricity, water) in some regions of the country, where attacks by Russian missiles continue.

In the context of studying such modern challenges, the authors conducted a SWOT analysis of new opportunities, challenges and risks of host regions (Appendix 1, Figure 1). It is obvious that along with the availability of new opportunities for the host regions, new risks also appear. At the same time, as in the case of Ukraine (as a region from which the outflow of young working population and children continues), the main part of the matrix is represented by challenges and threats at both the micro and macro levels. New opportunities at the micro level to fill vacant jobs, create prerequisites for the development of small and medium-sized businesses, as well as spheres of services, creation of new demand on the market of goods and services, increase in the revenue part of the budget due to additional tax revenues - all this provides additional opportunities for the economic growth of the region at the macro level. The biggest advantages at the macro level should be seen as the following: solving demographic problems and increasing potential opportunities for rapid economic growth in the future (Figure 7).

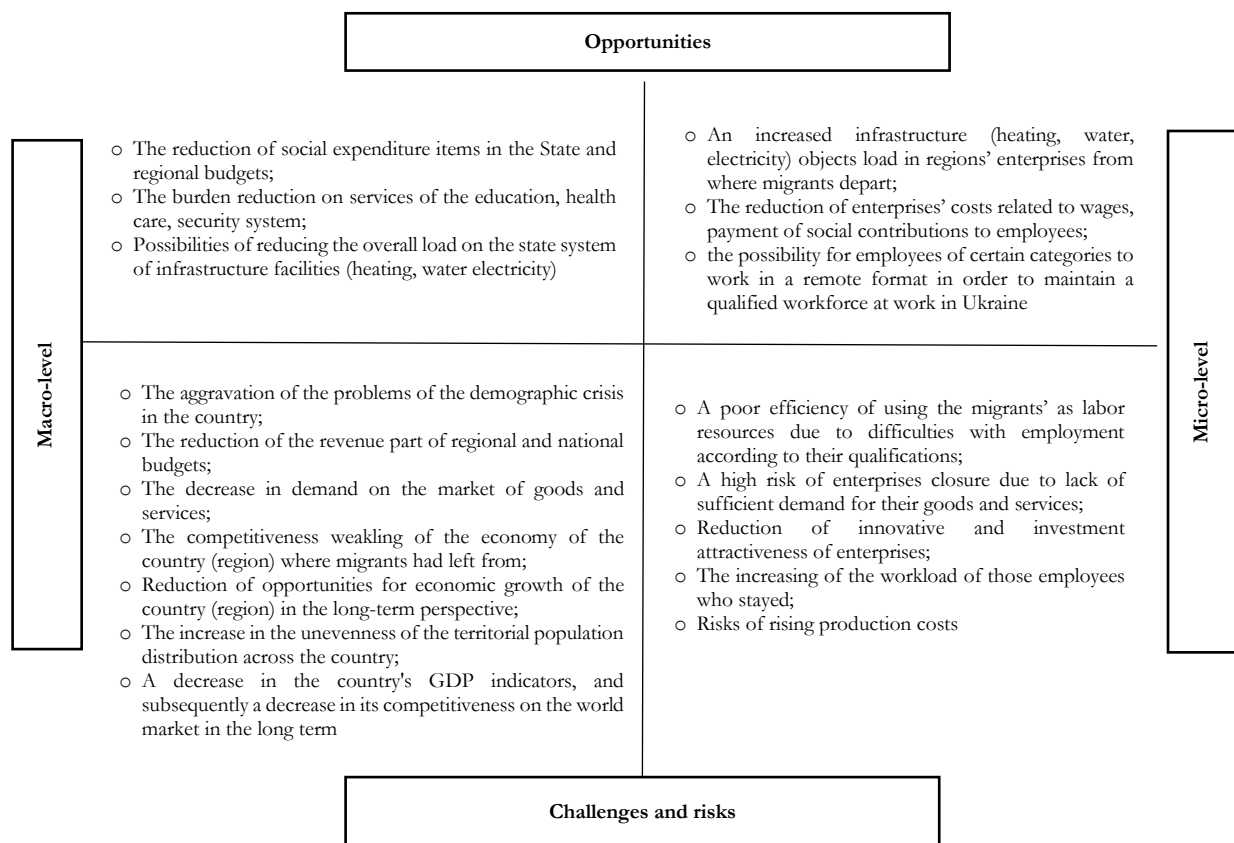


Figure 7. SWOT-analysis of new opportunities, challenges and risks for Ukraine's (departure region) entities on the macro- and micro-levels

Source: the results of authors' research

As for the assessment of the SWOT analysis matrix for Ukraine, as a region from which people leave, it should be emphasized that among the most significant opportunities at the micro and macro level are the reduction of the load on infrastructure facilities and the reduction wage costs at local enterprises. At the

same time, huge challenges and obstacles are emerging, especially at the macro level. Among them: the decrease in demand on the commodity markets of products and services, the weakening of the competitiveness of the domestic economy, and the decrease in gross product indicators against the background of worsening of demographic problems.

In order to solve such extremely difficult challenges, the country's government faces a number of important tasks: the return of Ukrainian refugees' home after the end of the war, their interest in living in their native country and their work for their native economy. The key priorities of the Government's work are the stabilization and restoration of the economy, the development of the labor market, as well as the creation of new jobs. A number of new governments programmes should be aimed at providing lending preferences for small and medium-sized businesses, relocation of enterprises from dangerous areas to relatively safe ones, grant support for the development of entrepreneurship, creation of mechanisms for increasing the innovation and investment attractiveness of the regions, which in the long run will lead to the creation of new enterprises, and therefore new jobs, etc.

7. DISCUSSION AND CONCLUSIONS

The large-scale Russian invasion of the territory of Ukraine led to mass migration processes of the Ukrainian population, who, as a result of active hostilities, were forced to leave their homes and seek refuge in other regions of the state or other countries. According the data of IOM by October 10, 2022, 6.2 mln. people are Internally Displaced Persons (IDPs) of Ukraine and 8.0 mln. Ukrainian refugees temporarily live abroad today. So, nearly 35% of the country's population, or approximately one in three Ukrainians, has been forced to temporarily seek refuge in other regions or countries since February 24, 2022 in order to ensure the safety of their family members.

The first and second migration waves are characterized by significant internal migration indicators, which averaged to 667 and 435 thsnd. people, respectively. While the indicators of external migration had 50 times smaller values and averaged to 13 thsnd. people in each wave. In addition, social tension was not felt in society, since even with the beginning of the first military escalations, the number of migrants in the country exceeded the number of emigrants and the net external migration indicator had a positive value.

However, with the beginning of the full-scale Russian invasion, the size of the indicators of migration processes, both in the internal and external direction, increased by 10 times or more. In order to study the structural changes in migration, the authors considered the coefficient of net migration per 1,000 people of the population, the peak of which falls on May 2022 (195 and 159 points, respectively, for the internal and external migration flow).

The geographic distribution of the migratory population was used to group migrating persons by regions of resettlement. It was found that the majority of IDPs currently live in the Central part of Ukraine and the capital city of Kyiv (27% or 1,799 thousand people), where there is currently a greater job opportunity and the situation with military attacks is sufficiently controlled. As for the directions of external migration of Ukrainian refugees, the vast majority of them temporarily live in Poland, Germany, Check, Italy and Spain (1507.9; 1021.7; 464.9; 165.0 and 155.5 thousand people, respectively, or 18.8%; 12.8%; 5.8%; 2.1 and 2.0% of the total structure). The problem of forced deportation of people to the Russian Federation, where there are currently about 3 million Ukrainians, remains a great tragedy of a national scale.

Based on the method of point and interval forecast estimates, the authors determined the tendency of migration flows of the Ukrainian population under optimistic and pessimistic scenarios in the situation of large-scale escalation. On the base of the SWOT analysis, a number of challenges and risks for Ukrainian economy and economies of the host countries are considered on the macro and microlevels.

In this way, the formulated short-term and medium-term provide grounds for identifying a number of challenges of the demographic situation in Ukraine for the long term. The decrease in the share of the working-age population and the increase in the share of the pensionable-age population lead to additional burdens on the state budget, which already bears significant costs against the background of the war. The lack of labour resources in the economy of the state leads to a further decrease in GDP, which has already decreased by a third against the background of military attacks and destruction. A decrease in the share of children in society can lead to a decrease in the number of labour resources in the future, which can also become a negative factor. The above-mentioned risks and challenges can become an impetus for the formation of a national migration policy after the end of the war. It remains to be hoped for the effect of the return of a large part of forced migrants after the end of the war and a series of government economic reforms to involve them in the reconstruction of the country resources in the economy of the state leads to a further decrease in GDP, which has already decreased by a third against the background of military attacks and destruction. A decrease in the share of children in society can lead to a decrease in the number of labour resources in the future, which can also become a negative factor. The above-mentioned risks and challenges can become an impetus for the formation of a national migration policy after the end of the war. It remains to be hoped for the effect of the return of a large part of forced migrants after the end of the war and a series of government economic reforms to involve them in the reconstruction of the country.

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The return of people should become a priority task for all branches of the government as soon as Ukraine wins its victory in this war. Creation of favourable conditions for conducting small and medium-sized businesses, starting new enterprises and reconstruction of destroyed business entities with new jobs, improving the innovation and investment climate in the regions, accepting a number of additional social benefits for young families and for families with children - these are the basic decisions for the management to be made regarding the return of Ukrainian refugees back home and the reconstruction of the national economy.

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Appendix 1: Theoretical and practical approaches of studies regarding the application of SWOT analysis in the investigation of risks to the Ukrainian national economy and host countries' economies against the background of war in Ukraine

The authors investigated the theoretical approaches of modern economic research regarding the emergence of challenges for the national economy of a country where mass migration movements are taking place against the background of a military conflict (Table 1). Based on the application of SWOT analysis, a number of challenges, advantages, opportunities, possible threats and risks for the host countries' economies against the background of the continuation of the war were investigated (Figure 1). A matrixes of SWOT analysis of the economy of the destination country are presented.

Table 1

Theoretical approaches of scientific studies regarding the application of SWOT analysis in the investigation of a number of risks to the national economies against the background of military conflicts

The features the national economy development	Holzmann, Munz, 2004	Vietti F., Scribner T. (2013)	Şahin, 2016	Vega-Munoz, Gonzalez-Gomez-del-Mono, Espinosa-Cristia, 2021	Duszczuk, Kaczmarczyk, 2022
<i>Strengths:</i>			The burden reduction on services of the education, health care, security system.		The burden reduction on services of the education, health care, security system.
<i>Weaknesses:</i>	The aggravation of the problems of the demographic crisis in the country; The competitiveness weakling of the economy on the background of brain drain from the country where migrants had left from.	The aggravation of the problems of the demographic crisis in the country; Risk of social instability due to low standard of living and dangerous political situation in the country of departure.	Risk of social instability due to low standard of living and dangerous political situation in the country of departure.	Weakening of the national economy due to brain drain from the countries of departure of migrants; Reduction of innovative and investment attractiveness of the regions.	
<i>Opportunities:</i>	–	–	–	–	–
<i>Threats and risks:</i>	A high risk for national economy due flow out the labor resources.		The risk of disrupting the labor balance in the economy of the departing country due to the high proportion of young people among migrants.	The reduction of the revenue part of regional and national budgets.	A high risk for national economy due flow out the labor resources.

Source: the results of authors' research

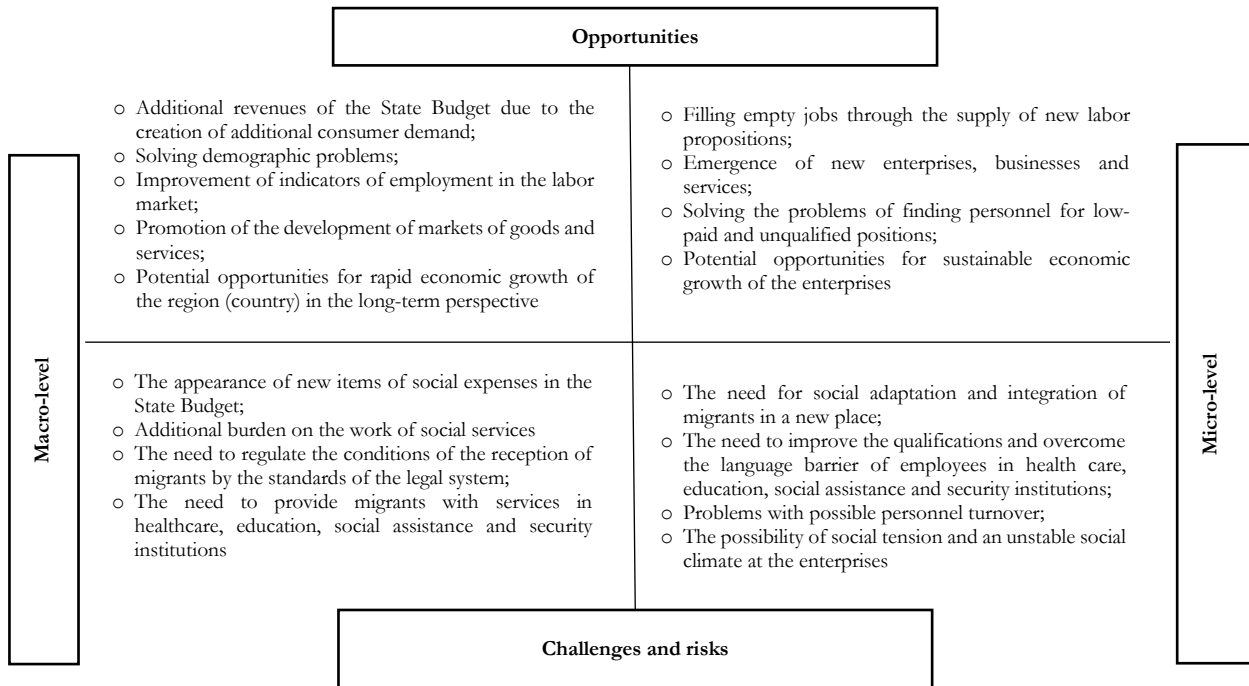


Figure 1. SWOT-analysis of new opportunities, challenges and risks for host region’s (country) entities on the macro- and micro-levels

Source: the results of authors’ research