ECONOMICS AND BUSINESS ADMINISTRATION FACULTY
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MASTER'S THESIS

Tarptautinės darbo jėgos migracijos poveikis ekonomikai (Ukrainos atvejis)	**Impact of international labor migration on the economy (case of Ukraine)**

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IOM – International Organization for Migration

GDP - Gross domestic product

GRP – Gross regional product

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INTRODUCTION

The velocity transformation of modern world economic integration processes to the phase of globalization enhances and complicates the external environment's influence on national financial systems, endangering their sustainability, development stability, and the full realization of economic potential. One of the significant factors of such an impact is the global migration processes that affect country's financial situation.

The relevance of the topic of this study is determined by the growth in the volume of international migrations (272 million, 3.5% of the world's population according to International Organisation for Migration (2019)); striking the scale of Ukraine's participation in global migration processes. With the changes that have occurred during the migration, the process began to raise questions requiring their global study and regulation to improve migration processes from development labor international migration largely depends on the state and development of the country, affecting its economic potential, in particular, the presence of acute problems of reproduction of internal labor potential.

The labor market is the main element of any economy, simultaneously represents a crucial area of social and political life in society. The primary source ensuring the well-being of the country's population is a developed labor market - it offers the people the opportunity to realize their professional knowledge and skills, and receiving material remuneration, respectively, the quality and amount of spent labor. For its part, the availability of the necessary labor resources, appropriate current and future needs of the state is one of the critical factors of the national economy's functioning and practical development.

Labor productivity growth accompanied by a weighted migration policy will help stabilize Ukraine's need for labor resources and high labor mobility of the population will provide a maximum territorial and structural balance of demand and supply of labor.

As well as remittances have a significant impact on the country's economy, labor migrants affecting the living standards of households use these money transfers and spend them in Ukraine. Cash remittances of Ukrainian migrants working in countries with high-income levels are becoming an increasingly important source of additional income for families of migrants. Taking into account the increase in total cash inflow, remittances are expected to be a potential source of financing the social and economic development of Ukraine as a whole.

Important theoretical and practical aspects of causes and effects of labor migration underlies research Ukrainian and foreign scientists. In particular Golikova&Dovgal (2014), Castles (2000) were engaged in theoretical research of the nature of migration. Hare (1999), Dorigo&Tobler (1983), Čiarnienė&Kumpikaitė (2011) have used push-pull approach to measure

migration the determinants of both out migration and return migration outcomes. The positive (Friedberg & Hunt, 1995) and negative (Fomishin, Rybchuk&Rumyantse, 2011) consequences of labor migration have been studied. Practical assessments of the impact of labor emigration were carried out by Zvirid (2010) - calculations of GDP losses due to emigration of the economically active population, Malinovskaya (2004) presented the concept of "external labor potential", determinants of the so-called "brain drain" from developing countries have been analyzed by Docquier, Lohest & Marfouk (2007), Meyer & Shera (2017) studied the impact of remittances on economic growth, both positive and negative consequences.

Quantitative data on international migration, including Ukrainian, are provided by various international organizations, such as the International Organization for Migration, The United Nations, as well as various ukrainian databases - State Statistics Service of Ukraine, National Bank of Ukraine.

However, despite the undeniable achievements of researchers, insufficiently studied remain the conceptual foundations and criteria approaches to forecasting the volume of labor migration and its impact on the economic component.

The **aim** of the master's thesis is to study the impact of labor emigration on the economy of Ukraine and to develop recommendations to improve the regulation of international labor migration.

Based on the purpose of the study, the following **tasks** were set in the work:

- explore the theoretical foundations of labor migration;
- identify the main causes and consequences of international labor migration;
- explore the development trends of the global labor market;
- analyze the socio-economic outcomes of labor migration in the world and Ukraine;
- to forecast labor migration in the context of globalization.

The **object** of the study is the process of international labor migration into the context of globalization of the world economy and current development trends in international economic relations.

The **subject** of the study are methodological and regulatory aspects of the impact of international labor migration for economic development of Ukraine.

Research methods. To solve the tasks, a theoretical analysis of the scientific literature, various articles and reports of international organizations was carried out. As well as were used various research methods, in particular, systematic analysis, graphical analysis for evaluation dynamics of international labor migration and, statistical analysis to calculate various indicators of labor emigration, correlation analysis to evaluate the impact of labour emigration on Ukrainian economy.

The structure of the thesis. The first chapter provides a theoretical analysis of the research aim, including an overview of the relevant scientific literature and previous studies on this topic, concerning critical concepts and features of the impact of labor emigration on the country's economy. The second chapter is devoted to the rationale and explanation of the research methodology, emphasizing quantitative research using two procedures. The third chapter introduces a specific analysis of the research results, which then a generalization of the research results follows.

1. THEORETICAL FOUNDATIONS OF INTERNATIONAL LABOR MIGRATION

International migration, as part of the overall migration process, is not a new phenomenon. Migration is a natural consequence of the development of integration processes, a necessary reasonable condition for the formation of a single international labor market. In the current conditions of globalization and internationalization, international labor migration is very influential in connection with the spread of information technology around the world, unification of requirements for applicants, standardization of the system of international education, the movement of foreign investment and financial flows in general, the activities of transnational corporations. In these conditions, the formation of the algorithm estimates of the magnitude of the impact and consequences for the country's economy of international labor migration are of great importance.

1.1. Definitions and types of international migration

International labor migration gained a significant impetus towards the end of XX - at the beginning of the XXI century and became one of the most manifestations of the process integration of national economies, increasing interconnectivity and interdependence between countries known in the scientific literature as globalization.

Modern literature has a lot of interpretations and classifications of the process of labor migration due to its complexity and ambiguity. Since the concept of "labor migration" has at the same time political, economic, cultural and social context, its definition cannot be unambiguous, primarily because of its nature origin. The development of a single categorically terminological apparatus in this direction is complicated by the presence of significant differences, related to real socio-economic functions labor migration processes.

The concept of a labor migrant is described by various scientists and international organizations for the study and regulation of migration processes. The definition migration comes from the Latin word «migration» - the relocation, movement of population, labor, capital from one country to another, as well as domestic - from one region to another (Dmutruk&Svetlova, 2016). The authors note that international migration as a component of the general process of migration is not a new phenomenon. It arose for various reasons - nomadic pastoralists, military and colonial conquests, natural disasters, geographical discoveries and the development of new living spaces.

«International migrants are persons who have lived outside their country of birth for at least one year» (Martin, 2013, p.2).

According to European Convention on the Legal Status of Migrant Workers (1977) the definition of a migrant worker is interpreted by the legal possibility of its employment in a particular region and means a national of one country who is allowed to stay in another country for paid work.

By definition of the Institute for Demography and Social Research The National Academy of Sciences of Ukraine (2010) under labor migration should be understood as moving in space that are carried out by individuals for the purpose of raising the standard of living based on more advantageous use of one's own workforce without changing your place of permanent residence. Researchers determine that labor migration can act as an early stage permanent migration and these processes should be considered as two varieties of one whole - migration mobility of the population and in contrast to stationary migration, this kind of migration is characterized by maintaining a constant connection migrant with his family both in informational and personal forms and in economic.

Migration, including its main drivers, cannot, in fact, be understood in simple terms, for example, taking into account only the mobility of an individual from, let’s say, point A (the country of origin) to point B (the destination country). Migration is a complex and multi-dimensional process, and is therefore neither a single event nor a one-way moment of travel (Carmel, Cerami&Papadoupulos, 2011)

Authors Golikova, Dovgal (2014) note international labor migration as displacement of able-bodied population from one country to another within the world labor market. It is, first of all, form of movement relative to the excess working population with one center to another. Scientists emphasize that migration as a process includes oppositely directed immigration and emigration flows. Immigration - entry of labor to the host country, the importing country of the workforce. Emigration - this is the departure of labor from the exporting country of labor. In addition to the two main interconnected flows, there is still re-emigration, or the return of migrants to their homeland for a permanent place of residence, as well as repatriation - forced return to the country of origin of citizens who had previously left it. The authors distinguish the following forms of migration:

1) internal – population movement within one country;

2) external – displacement of the population outside the borders of his country;

3) integration – population movement within states one integration association.

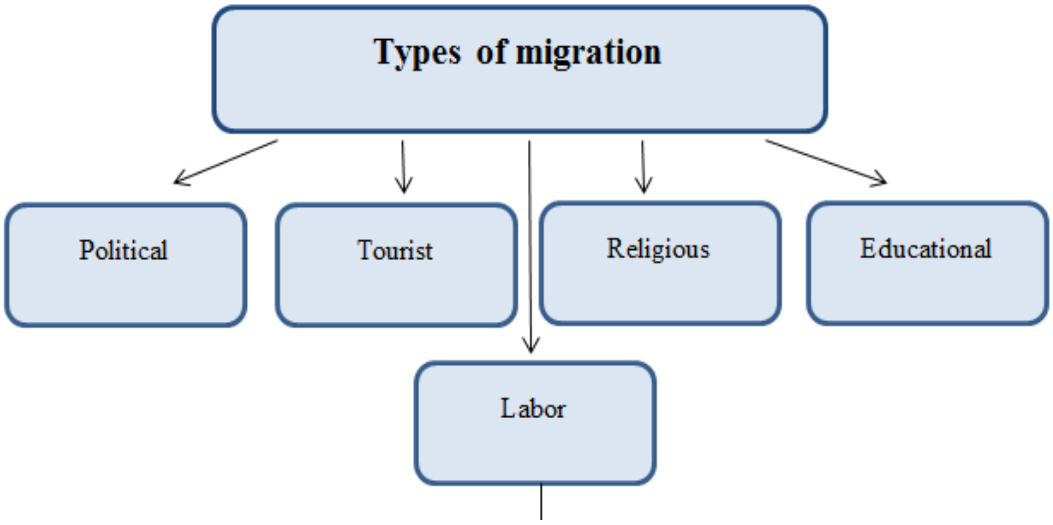
According to Castles (2000) migration means crossing the boundary of a political or administrative unit for a certain minimum period . Internal migration means moving from one

area (province, district or municipality) to another within the same country. International migration means crossing the frontiers which separate one of the world's approximately 200 states from another. Author divided international migrants into such categories: 1) temporary labor migrants; 2) highly-skilled and business migrants; 3) illegal migrants (also known as undocumented migrants or illegal migrants); 4) refugees; 5) asylum-seekers; 6) forced migration; 7) family members; 8) return migrants.

The concept of "labor migration" is closely related to economic migration. It is the resettlement of residents for socio-economic reasons as a result of deteriorating living and working conditions that lead to poverty and poverty of the masses at the same time causing mass stratification in society, which creates the basis for polarization and confrontation, conflict and controversy. By directions and directions, as well as by the categories of the population participating in it, economic migration is subdivided into subclasses or varieties. For example, seasonal or labor migration, aimed at improving living conditions through higher wages on a temporary or permanent basis hiring. An economy that dictates political decisions is at the heart of economic migration which can go from village to city, from district to regional center, from one state to another (Volosko, 2015).

With the development of international economic relations are spreading migration processes, a characteristic component of which is intellectual labor migration. It is an obstacle to the socio-economic development of the country, as the preservation of scientific and technical personnel is one of the most important factors in economic and social development (OECD, 2013).

The scientists Baranyk, Romanenko (2014) distinguish these types of migration shown in the figure below.



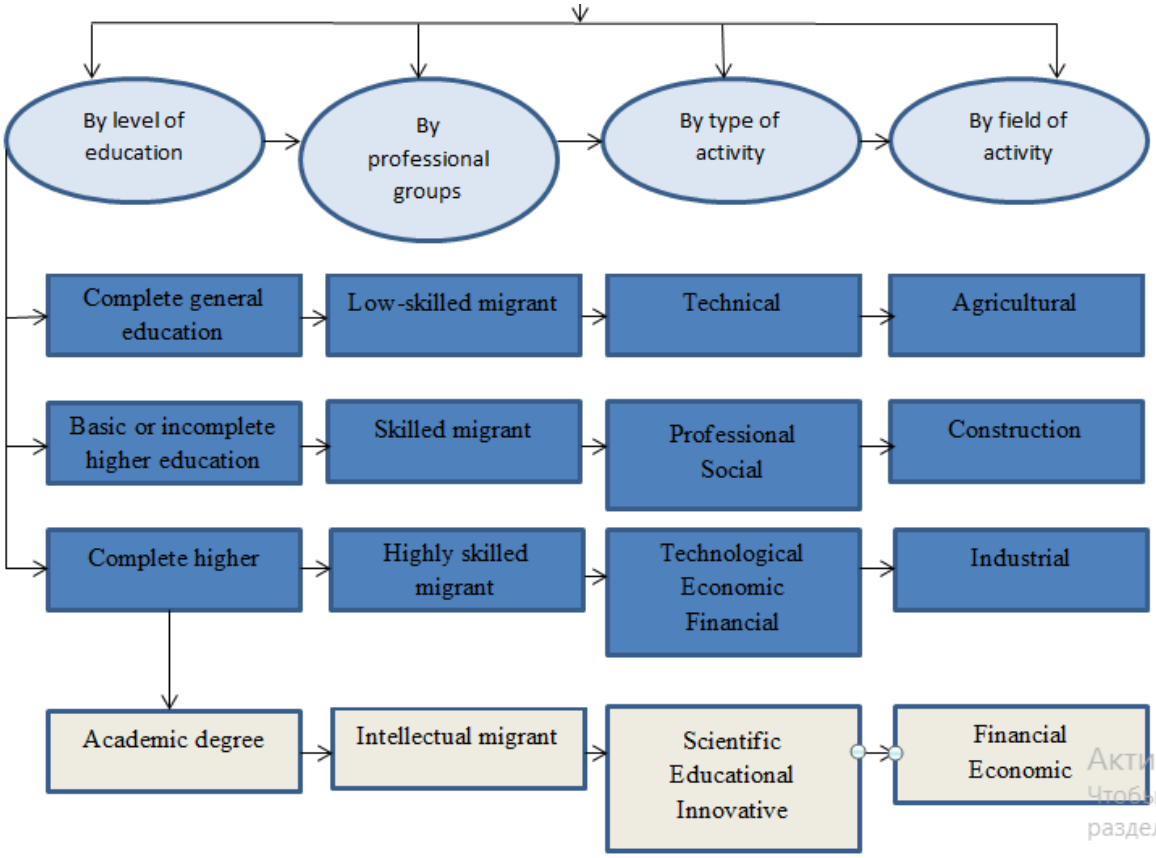


Figure 1.1 Classification of migration types.

Source: Baranyk&Romanenko, 2014.

The authors reveal some concepts from the figure:

1) skilled migrants are people who basically have a secondary technical or incomplete higher education, but do not have the ability (or desire) find a job in the country of residence, are capable of performing both mental and physical work in the social and construction fields;

2) highly skilled migrants are people who have a higher education, or a master's degree, or receive a scientific degree, have significant experience in a certain area, they occupy leading (managing) positions capable of performing highly qualified work in the technological, economic and financial spheres;

3) intellectual migrants are people with the academic degree or a candidate or doctor of science who travel abroad of their own free will or at the invitation of work mainly in highly intellectual areas: education, science, technology.

The scientists Pavlikha, Stepanyuk (2017) believe that educational migration is a socio-economic and demographic process, what is the frequency of stay changes is carried out by scientists, faculty structure, students and other persons inside the country and abroad for the purpose of temporary or permanent job changes, increase educational qualification level, conducting research, postgraduate education, internship and the like. According to Zhurakovska

(2014) educational migrations are smaller than other migration flows; they play an important role in socio-economic development in countries that host citizens abroad and those who send them. Educational migrants - foreign students, can be considered the most desirable category of migrants, since they are usually represented by the most gifted and motivated young people, who are ready to accept new knowledge and technologies. In addition, this category of foreigners receives education and qualifications in the host country, simplifies their further adaptation to the local labor market, and guarantees adaptation to the linguistic and cultural environment.

1.2. The causes and consequences of international labor migration

Over the past decade and a half, migration flows from developing to developed countries have been increasing. The phenomenon is just beginning to be understood, as cross-country data on international migration have only recently become available. Bilateral migration flows are negatively affected by migration costs, as captured by geographic or linguistic distance between countries, the absence of migration networks, or the stringency of border enforcement against illegal entry. Emigration rates are highest for developing countries at middle income levels and with higher population densities. In most developing countries, it is the more educated who have the highest likelihood of emigrating. The positive selection of emigrants in terms of schooling is due in part to differences in the reward to skill across countries (Gordon, 2010)

International migration is a direct manifestation the existence of the global labor market, which is developing as a result of uneven distribution of labor resources between countries. Hired employees involved to other countries where the demand for labor with appropriate level of education and with the necessary skills and professional competencies exceed the offer. When an employee cannot realize his potential, he seeks opportunities to move to another country where there is a free workplace corresponding to the level of his professional competencies. This phenomenon is called an outflow of personnel, when a country cannot provide appropriate jobs for workers in the national labor market.

International labor migration driven by domestic factors economic development of each individual country and external factors: the state of the international economy as a whole and the economic ties between countries. At certain times, the driving forces of international labor mobility can also be political, military, religious, national, cultural, family and other social factors, causes international labor migration can only be understood as specific set of named factors (Kozak, 2017). The author highlights as the main - economic causes of international labor migration associated with the scale, the pace and structure of capital accumulation:

1) differences in the rate of capital accumulation cause differences forces of attraction or repulsion of labor in various regions of the world farms ultimately determines the direction of movement this factor of production between countries;

2) the level and scale of capital accumulation cause direct influence on the level of employment of the working population and, therefore, the size relative overpopulation (unemployment), which is the main source of labor migration;

3) the pace and size of capital accumulation, in turn, to a certain extent depend on the level of migration. This dependence is that compared with low wages of immigrants and the ability to reduce wages domestic workers can reduce production costs and thereby increase capital accumulation. The same goal is achieved by organization of production in countries with cheap labor. Multinationals to accelerate capital accumulation use either the movement of labor to capital, or move their capital in labor-intensive regions;

4) the reason for moving the workforce is a change in the structure of needs and production caused by scientific and technological progress. Abbreviation production volume or elimination of some outdated industries is released a workforce seeking employment in other countries.

The reasons, peculiarities of movement and labor activity of migrants are analyzed in theories of labor migration, presented in Table 1.1.

Table 1.1

Theories of labor migration

Theory of migration	**The content of the theory**
Neoclassical economic theory	Labor migration is caused by regional differences in labor supply and demand. Regions with higher labor supply have low wages, while regions with limited labor supply are characterized by higher wages. The wage gap makes workers from low paid regions move to high paid ones. Economic growth and increasing emigration are gradually closing the wage gap, reducing incentives to migration.
The theory of human capital	Migration is a way of investing in human capital. Migration decisions are influenced by: 1) employment and wage rates in the home country country and potential country of destination; 2) age of migrant - period, during which the employee will be able to reap the benefits of the investment into their human capital realized in the form of migration; 3) costs relocation - to search for information, new job, transport, housing, learning or improving a foreign language, etc .; 4)

	psychological costs related to cultural differences in countries of destination and destination.
The push-pull theory	In labor-exporting countries, there are factors that push labor away: low wages and living standards, low economic opportunities, political repression, structural unemployment at the place of departure. Importing countries are affected by gravity: high demand for labor, broader economic opportunities, higher wages, political freedoms locally arrival.
New economic theory of migration	Migration decisions are made by interconnected groups of people (families or households) working together not only to maximize the expected benefits of migration, but also minimizing risk in case of failure (for example, in the labor market). Unlike individuals, households have the ability to manage risks at their own expense and at the same time rely on migrants' remittances.
The theory of segmented (double) the labor market	The main cause of migration is the decline in employment of national labor force in developed countries in non-prestigious and low-paid areas of work, which are becoming unattractive to the local population and may be employed by migrant workers. As a result, the labor market has two segments: 1) the national workforce - with stable employment and high wages, as a rule, in the sphere of production and services; 2) migrant workers with unstable employment, low pay and little prospects for professional growth, most often in the service sector.
Institutional theory	Migration policy and migration flows are affected by: degree integration of the country into the world economy; international activities and regional organizations (blocs, associations); agency development and all sorts of institutions that help get what's needed information and language support for immigrants.
The theory of world systems	International migration is derived from the expansion of the global market: the international flow of labor abide by the international flow of goods and capital. International migration is particularly characteristic of former colonial leaders and their colonies, something they have been promoting for a long time, established cultural, linguistic, administrative, investment, transport links. The main way to

	regulate migration is the adoption of immigration laws to regulate the management of international flows of capital and goods.
The theory of the world migration systems	The human potential of the world community has three zones, distinguished by geographical and cultural characteristics: 1) the main zone (core) of development with capital-intensive industries; 2) periphery with labor-intensive industries and subordinate status; 3) a hemisphere with both types of production. The location of a country in a particular area determines the degree of interdependence (independence) of countries.

Source: Shevchenko, Grytsenko&Kaminska, 2012.

Many scientists, such as, for example Hare (1999), Dorigo & Tobler (1983), Čiarnienė&Kumpikaitė (2011) have used push-pull approach to measure migration the determinants of both out migration and return migration outcomes in order to understand better the factors that motivate the current labor flows, in their works.

Kumpikaitė (2016) made a description in economic field of push and pull factors of migration, presented at the Figure 1.2 below.

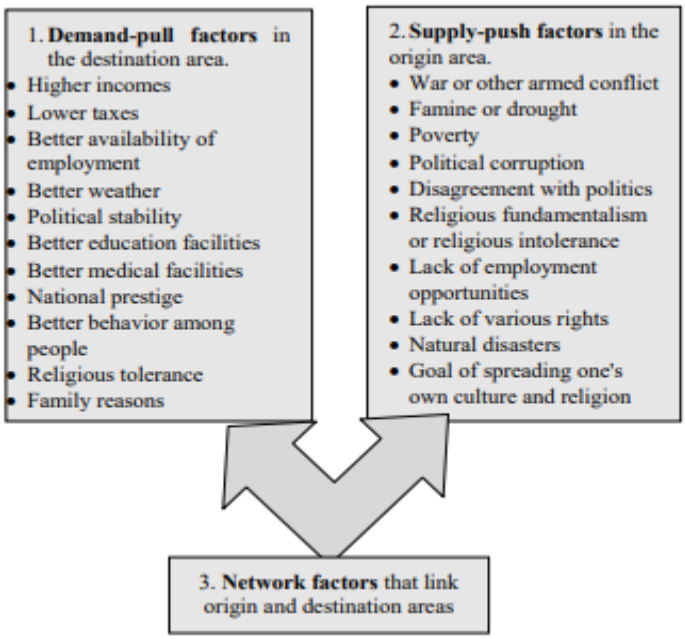


Figure 1.2. Reasons of migration.

Source: Kumpikaitė, 2016.

While the new era of migration points to the globalization of labor markets, it is also important to recognize that there has been a tendency for the flow of labor to become increasingly regionally concentrated. In many respects, labor is following the patterns of capital's globalization (Rosewarne, 2001).

According to the author Bortnik (2013) countries can be divided into three large groups. The first are countries (and they are, unfortunately, the vast majority of the planet) source of migration flows (legal and illegal migrants, labor migrants, refugees, asylum seekers, etc.). The second includes countries with high level of socio-economic development and material well-being. First of all, these are the countries of the European Union, the USA, Australia, Japan, Canada, etc., in scientific sources it's called recipients, there are countries mainly accepting migrants of different categories, not causing the emergence of such persons in its territory. Still others are countries that can simultaneously qualify as recipients for less affluent states and as suppliers of labor migrants for the developed countries.

Widespread classification of migration factors depending on State capabilities to regulate their impact on migration processes: managed (factors-regulators) and uncontrollable (factors-conditions). There is also a third group not directly managed but indirectly regulated factors. They include differences in salary, establishment or cancellation of certain benefits, distribution capital investments, personnel and national policies. These factors may directly planned and changed by the state (Bubliy, 2013). By migrations, where the action is directed at regulated factors, they usually excrete:

1) legal factors - laws and other regulations which create the legal framework within which migration is regulated;

2) economic - this is mainly the financial costs of attraction, compensation for property losses and arrangement of migrants, they are included in budgetary and extrabudgetary funds;

3) organizational - structures involved within their competencies in the regulation of attraction, provision and maintenance migration flows;

4) outreach - monitoring - the movement of migratory flows, coverage of migration policy in the media, reference, methodological and normative literature (Bubliy, 2013).

Labor migration of the country's population directly or indirectly affects the economic development of the country, like any socio-economic phenomenon. The quantitative and qualitative composition of migrants directly affects the state of labor resources and the demographic situation, and the effects of population migration are assessed on both the disposal side and the arrival side.

Table 1.2. Positive impact of labor migration on the economies of host countries and countries of departure

Positive impact	
Groups of factors	**Countries of departure**
	Reducing the pressure of the excessive labor resources that are, and reducing

1	social tension in the country.
2	Replenishment of the income part of the balance of payments due to money transfers of own citizens working abroad.
3	Obtaining significant benefits due to the importation by emigrants of various kinds of material values: cash, cars, durable goods, and so on.
4	Obtaining a more qualified workforce that returns to their homeland and uses the knowledge, experience, monetary and material values to develop the country's economy.
Group of factors	**Host countries**
1	By attracting additional skilled labor, an increase in labor productivity and production efficiency in the country is stimulated.
2	Making savings on the costs of education and professional training.
3	Getting the opportunity to save by reducing the purchase of licenses, patents, know-how abroad and, accordingly, by selling them on the international market.
4	Improving the competitiveness of their goods due to lower production costs and due to the low price of foreign labor.
5	Stimulating own production and increasing employment due to additional demand for goods and services of the labor force.
6	The gain is due to the departure from the implementation of various kinds of social programs for foreign workers.
7	Improving the demographic situation in their country, reducing the overall level of aging of the population.

Source: Fomishin, Rybchuk&Rumyantse, 2011.

Host countries benefit greatly from the flow of labor migrants to their country, since migrants often close critical gaps in the labor market, create jobs as entrepreneurs, pay taxes and contributions on social security.

Countries of departure also benefit from labor migration. According to Kolesnikova, Camille, Kamasheva and Yue (2014) this is manifested in the form of the knowledge sharing, the capital inflow, the return of migrants, who have acquired new knowledge, the formation of international professional societies. That promotes turning problem of "brain drain" into "brain circulation", which contributes to social and economic development of the country. Departure of skilled workers can’t be considered as an expatriation of human capital, because it is also a source of knowledge and skills that can be used for the benefit of the country.

The authors Kovtun, Kutsik&Bashnyanin (2014) highlight the positive consequences of labor migration for the economies of countries that accept it: there is relief from foreign workers, structural, sectoral, and other changes in the national economy; immigration affects the rejuvenation of the nation; host countries save on costs that have been invested in the education and training of staff; the capacity of the domestic market increases due to increased demand for goods and services; foreign labor is paid, as a rule, lower than the national; immigrants improve the demographic situation, especially in industrialized countries.

Although migration has a number of undeniable advantages, it is also always close to threats as a result of labor movements and requiring measures to minimize the negative impact on the economy presented at Table 1.3.

Hernandez (2013) noted that outflow of skilled personnel not only leads to losses from investments not only in the human capital of the donor country, but also adds to the technological difference country development. As a rule, less developed countries buy in the absence of their own technologies and high-tech goods in more developed countries. With products made on the basis of purchased technology may be competitive in the national market of the country of purchase and at markets of even less developed countries. Usually for the duration of debugging production by the purchased technology, for the country-seller the corresponding production becomes technologically obsolete and uncompetitive since that time new developments appear.

Despite the undeniable benefits of migration, some migrants are the most vulnerable members of society. In the event of an economic downturn, labor migrants are the first to lose their jobs. Some work for lower wages, longer hours, and worse conditions than local workers. While migration often empowers opportunities, some migrants face human rights violations, abuse and discrimination. Migrants, especially women and children, can be victims of human trafficking and the horrific forms of exploitation that it entails (United Nations, 2017).

Table 1.3. Negative impact of labor migration on the economies of host countries and countries of departure

Negative impact	
Group of factors	**Countries of departure**
1	The loss of the (usually the best) part of their work force, since most skilled workers leave the country. Developing countries are particularly affected, because they are losing the most necessary personnel for the development of which quite a lot of money had previously been spent.
2	As a result of constantly increasing emigration, the so-called "effect of faith"

	in the development of the economies of one's own country disappears, which ultimately leads to a decrease in the level of investment in the economy of this country.
3	As a result of the outflow of brains beyond national borders, the rather strong positions of competitors in international trade are strengthened.
4	Lack of receipt of a certain part of national income and tax revenue in the budget.
Group of factors	**Host countries**
1	Getting additional competition in the market, which leads to an increase in unemployment.
2	Obtaining elements of social tension in society in the form of conflicts on national and religious grounds, as well as an increase in crime.

Source: Fomishin, Rybchuk&Rumyantse, 2011.

On the other hand, the scientists Friedberg & Hunt (1995) argue, despite the widespread belief that immigrants have a great negative impact on indigenous wages and employment opportunities, the literature on this issue has little support for this conclusion; economic theory is ambiguous, and empirical assessments in different settings and using various approaches have shown that the impact of immigration on indigenous labor market outcomes are low.

In general, the migrant population risks higher levels of economic and social vulnerability than other social groups within the host society. This vulnerability presented as an index of labor precariousness that integrates chances for unionization, lack of health insurances paid by employers, lack of pensions or retirement benefits, and part-time work (Puentes, Canales, Rodríguez, Delgado-Wise and Castles, 2010).

Aswell, scientists De Haas (2010) and Niimi, Ozden&Schiff (2010) were studying the effects of labor migration on the economies citizens of a retiring country and citizens of the country of arrival, where the latter paid more attention to highly skilled migrants.

As can be seen from the literature provided, migration is a rather complex process that affects all spheres of life of both citizens of a retiring country and citizens of the country of arrival. Labor migration is divided into many categories and factors, is being studied by different scientists from various fields of science. The impact of labor migration can be either positive or negative, the most negative impact of intellectual migration, the so-called brain drain.

1.3. Overview of World and Ukrainian labor migration

According to the latest statement of the International Organization for Migration (2019), the number of international migrants in the world in 2019: 272 million (3.5% of the world's population) • 52 percent of international migrants were men; 48 percent were women. • 74 percent of all international migrants were of working age (20–64 years).

Table 1.4

Comparative analysis of migration processes over the past 20 years

	2000 year	**2020 year**
Number of international migrants	150 million	272 million
Proportion of world population who are migrants	2.8%	3.5%
Proportion of female international migrants	47.5%	47.9%
Proportion of international migrants who are children	16.0%	13.9%
Region with the highest proportion of international migrants	Oceania	Oceania
Country with the highest proportion of international migrants	United Arab Emirates	United Arab Emirates
Number of migrant workers	-	164 million
Global international remittances (USD)	126 billion	689 billion
Number of refugees	14 million	25.9 million
Number of internally displaced persons	21 million	41.3 million
Number of stateless persons	-	3.9 million

Source: International Organization for Migration, 2019.

Table 1.4, shows that the number of international migrants over the past 20 years has increased by 122 million. Unfortunately, data for 2000 on the number of labor migrants is not available, but given the fact that remittances have increased by 563 billion and the total number of migrants, labor migration is increasing every year.

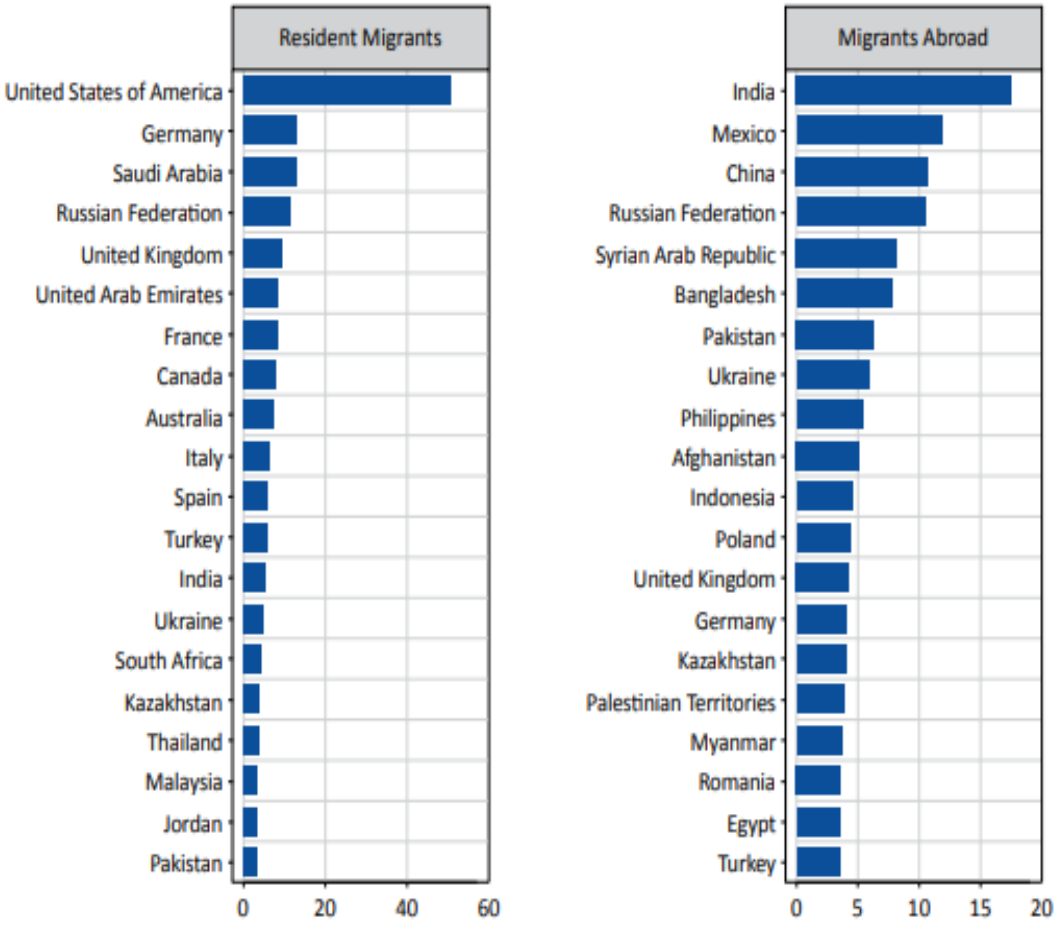


Figure 1.3. Main destinations (left) and origins (right) of international migrants in 2019 (in millions).

Source: International Organization for Migration, 2019.

Most migrants come from India, Mexico, China, and the Russian Federation. It should be noted that, as with countries of destination, the number of countries receiving the main flows of migrants are very limited. In 2019, two thirds (67%) of all international migrants lived only in 20 countries of the world. The largest number of international migrants lived in the USA, Germany, Saudi Arabia, Russian Federation, and The United Kingdom.

Table 1.5

Top 10 countries receiving/sending remittances in 2018

Migrant remittance outflows (US$ billion)	**Migrant remittance inflows (US$ billion)**
United States - 68 472	India – 78609
Saudi Arabia – 33613	China – 67414
Switzerland – 26740	Mexico – 35562
Germany – 25404	Philippines – 33809
Russian Federation - 21833	France – 27011

China – 16548	Egypt, Arab Rep – 25516
France – 15179	Nigeria – 24356
Kuwait – 14347	Pakistan – 21022
Luxembourg – 13737	Germany – 18035
Korea, Rep. – 13409	Vietnam – 16000

Source: The World Bank, 2019.

Migration policy of Ukraine began its formation after independence in 1990. First regulatory document on the construction of migration policy can be considered the Declaration on state sovereignty, section IV of which states that the state regulates migration processes, and also takes measures to defend the interests of citizens who are abroad (Declaration on State Sovereignty of Ukraine dated July 16, 1990).

It is impossible to talk about migration outside the political context. The annexation of Crimea in 2014 and the military conflict in the east had a tremendous impact on the migration of the population as a whole and labor migration in particular. As well as the influence of visa-free regime with the European Union in 2017.

Ukraine is an active participant in international migration processes. Comprehensive study conducted by the State Statistics Service of Ukraine in 2018 identified the current population as of January 1, 2019 is 42.2 million people (excluding the temporarily occupied territory of the Autonomous Republic of Crimea and the city of Sevastopol) and estimates migration flows at 1.3 million people. Analyzing the scale external labor migration in Ukraine, it should be noted that official statistics registering the number of migrants does not fully reflect the true scale migration movement of the population of Ukraine. The reason for this phenomenon may be, with, on the one hand, illegal border crossing and unofficial employment migrants, and on the other - the seasonality of population migration or its temporary nature, respectively to this, migrants are not removed from registration at the place of permanent residence but does not fall into the official statistics of external migration volumes. As well as a methodological approach to the calculation of international migrants in the State Statistics of Ukraine - only those migrants who crossed the border in a given year are taken into account, excluding significant diasporas of Ukrainians around the world in the total number of migrants. as those who did not enter / leave the territory of Ukraine in the year under review.

The United Nations Department of Economic and Social Affairs has published an annual report on migration processes in the world, including Ukraine. Statistics on Ukrainian emigration for the last 29 years presented in Table 1.6.

Table 1.6

Main indicators of Ukrainian emigration

	1990	1995	2000	2005	2010	2015	2019
International emigrants (thousands)	6 892.9	6 172.3	5 527.1	5 050.3	4 818.8	4 915.1	4 964.3
International emigrants as a share of total population (percentage)	13.4	12.1	11.3	10.8	10.5	10.9	11.3
Refugees (thousands)	..	5.2	3.0	4.0	6.0	9.8	9.4
Refugees as a share of international emigrants (percentage)	..	0.1	0.1	0.1	0.1	0.2	0.2
Females among international emigrants (percentage)	57.2	57.2	57.1	57.1	57.0	57.0	57.0
Emigrants originating from the same SDG region (percentage)	87.4	85.5	83.0	83.0	83.0	83.0	83.0
The average age of Ukrainians living outside the country (years)	43.2	43.2	46.9	46.9	50.1	50.1	49.1
International emigrants by age group (percentage):							
0-19	13.9	13.9	9.5	9.5	5.7	5.7	6,3
20-64	69.4	69.4	71.5	71.5	73.6	73.6	73.2
65+	16.6	16.6	19.0	19.0	20.7	20.7	20.5

Source: The United Nations, 2019.

Notes: Estimates of the migrant stock were based on the foreign-born population. Data on refugees include asylum-seekers. For migrants originating from the same SDG region, data refer to known origins only. Including Crimea.

As can be seen from Table 1.6, the number of Ukrainian emigrants in 1990 was 6892.9 thousand worldwide, and by 2019 it decreased to 4964.3 thousand. The share of international emigrants in the total population (in percent) has decreased by 2.1 percent over the past 29 years. In the age group, the largest number of emigrants falls on the working age from 20 to 64, since one of the main reason for moving is labor activity.

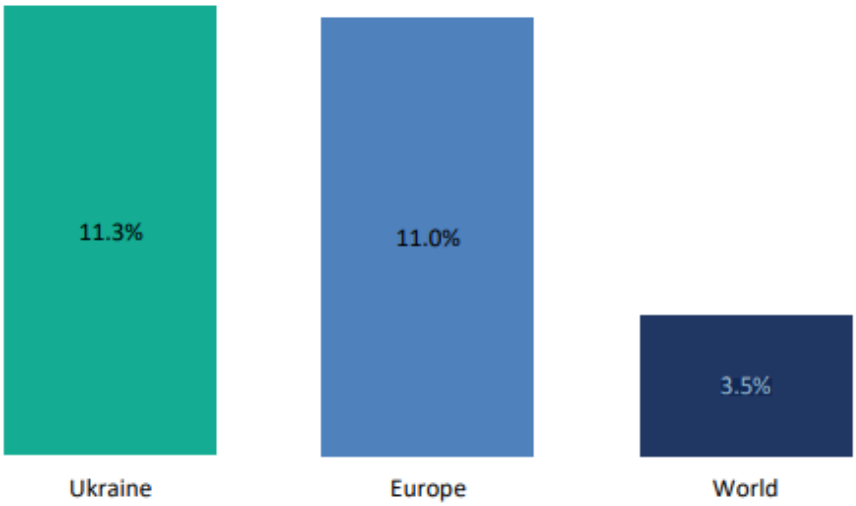


Figure 1.4. International emigrants as a share of total population, 2019 (percentage).

Source: The United Nations, 2019.

According to Figure 1.5, among international emigration, the number of female emigrants exceeds the number of male emigrants. The highest percentage of emigrants is among women aged 50 to 54, as well as among men. The second place is taken by men and women aged 45 to 49 years.

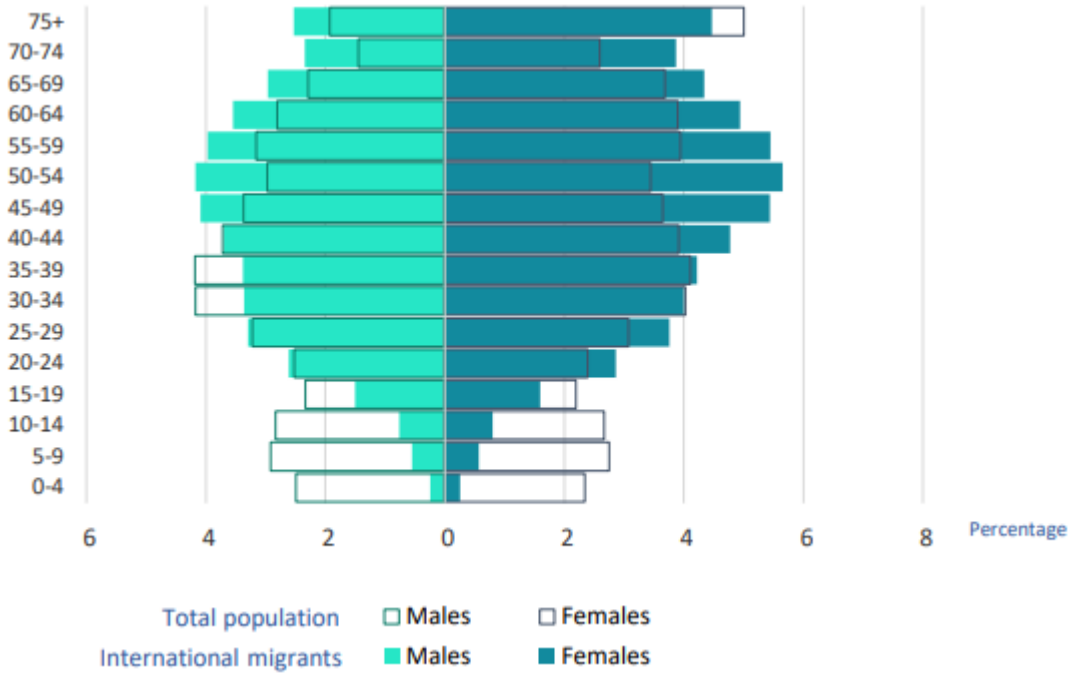


Figure 1.5. Age and sex distribution of international emigrants and of the total population in Ukraine, 2019 (percentage).

Source: The United Nations, 2019.

External migration in Ukraine has a long history. During the years of the first wave of emigration (1880-1914), Ukrainians left to Canada, Brazil, Argentina. During the second wave of migrations from Ukraine (1917-1939), emigrants left mainly to Canada, Argentina, European

countries, the USA, and Brazil. The third wave of emigration (end of World War II - post-war period) characterized by the outflow of the population to Canada, France, Great Britain, Belgium, the Netherlands, Brazil, and Argentina. At the beginning of the fourth wave of emigration (from 1980 to the present day), the population moved to Canada, at the present stage, the main countries of destination are presented in Figure 1.6.

Poland's entry into the list of the main countries of destination for labor migrants from Ukraine was facilitated by the introduction in Poland in 2008 of a procedure according to which Ukrainians can work for 6 months during a calendar year without a work permit and only at the request of an employer registered with local authorities. The military conflict in 2014 amplified this effect and ranked Poland on the first place as the most attractive country for labor migration for Ukrainians, which moved Russia to second place.

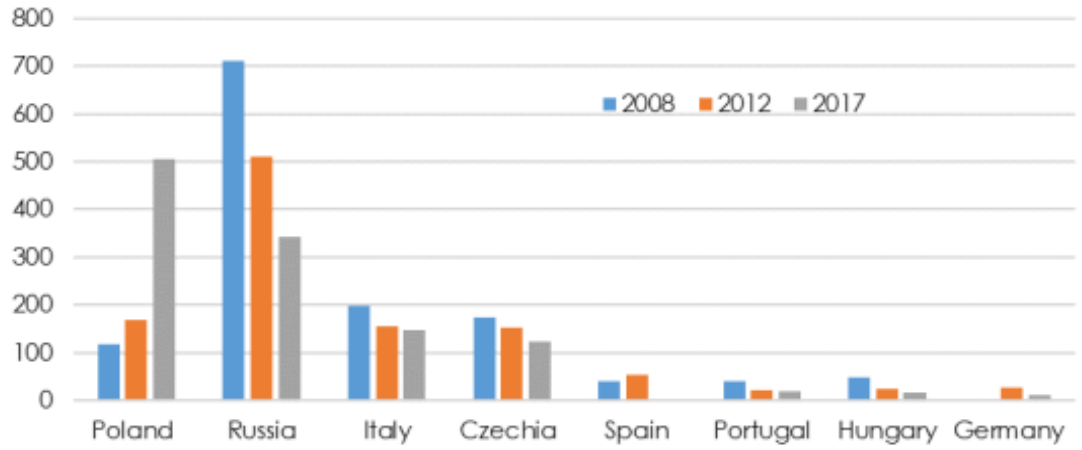


Figure 1.6. The most attractive countries for labor emigration from Ukraine.

Source: State Statistics Service of Ukraine, 2018.

The sectors of employment of Ukrainian migrant workers, shown in Figure 1.7, are mainly related to construction and household, as well as services and agriculture.

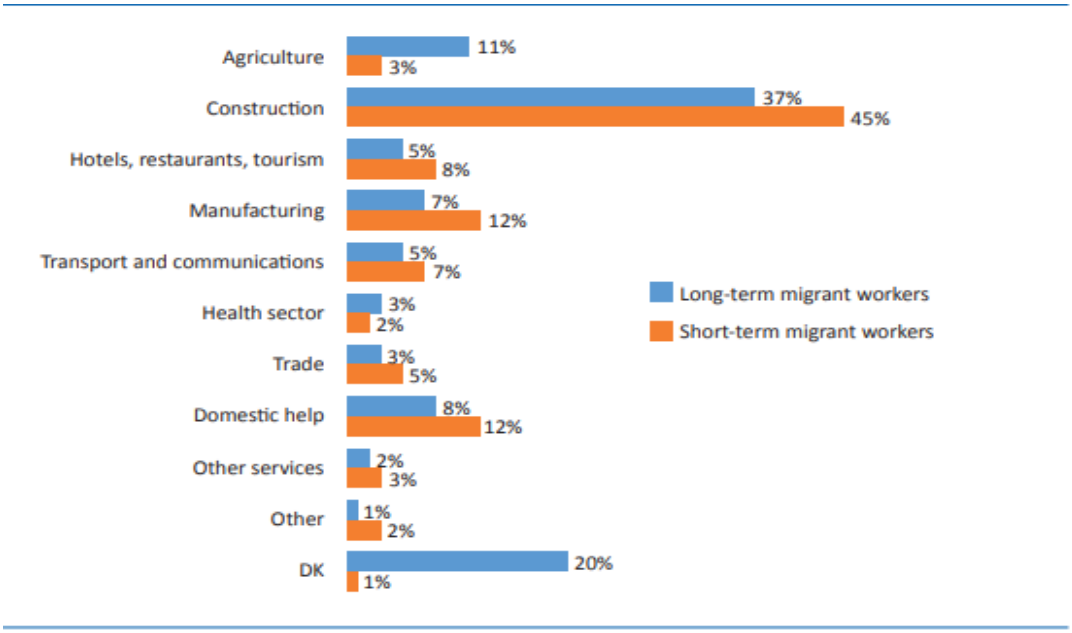


Figure 1.7. Sectors of employment of the Ukrainian migrant workers abroad, 2014-2015.

Source: International Organization for Migration, 2016.

According to the State Statistics of Ukraine in 2018, the level of education of migrant workers is mostly average (64%), the share of persons with full, as well as basic and incomplete is higher education is 33.5% compared to the same study in 2012, when the level of education was 30.5%, so the share increased by 3%.

Most immigrants to Ukraine are from the following countries: Russia (about 3.4 million); Kazakhstan, Belarus and Uzbekistan (about 250 thousand); as well as Moldova (about 200 thousand) in 2019, as shown in Figure 1.8.

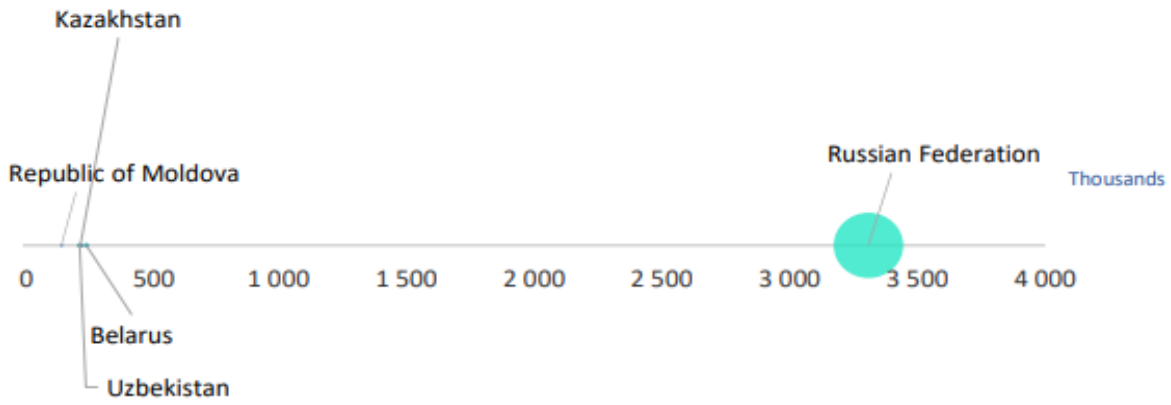


Figure 1.8. Number of international migrants in Ukraine by top countries of origin, 2019.

Source: The United Nations, 2019.

1.4. The framework for analyzing the impact of labor migration on the economy

The discussions on migration and development are not a new phenomenon, but with the changes that have taken place worldwide, there has been an increasing interest in reconsidering empirical research in order to get a more realistic picture. Over the past decade, the study of the relationship between migration and development was initially focused on its outcomes within the society of origin of the migrants viewed through the decision-makers and scholars. Migration has significant economic implications for countries of origin, some of which are positive and others alarming.

Quite a lot of Ukrainian and foreign scientists have been studying the impact of labor emigration on the country's economy. Among them Malinovskaya (2004) presented the concept of “external labor potential”, which was introduced into scientific circulation, which can be understood as part of the population’s potential, realized outside countries. Labor migration is an

important factor in realizing the labor potential of the population. For countries of mass labor emigration, which include Ukraine, of great importance is the assessment of indicators of labor migration potential.

Zvirid (2010) provided a methodology for calculating GDP losses due to emigration of part of the working-age population providing quantitative indicators of the negative impact of labor emigration on the Ukrainian economy. While Burkina&Sapun (2017) were engaged in a theoretical study of the massive outflow of the economically active population of the country, on the basis of which measures were developed to improve the socio-economic situation.

With this purpose determinants of the so-called “brain drain” from developing countries have been analyzed by Docquier, Lohest & Marfouk (2007). The analysis begins with a simple decomposition of the brain drain into two multiplicative components: the level of openness of the sending countries and educational gap (measured by the educational level of emigrants compared to the natives). Regression models were used by scholars to define the determinants these components explain the cross-country differences in the migration of skilled workers.

As well as previous researchers, Mishra (2007) has dealt with the issue of quantifying the magnitude and nature of migration flows, studied their costs and benefits. In his work, was primarily focused on quantitative assessment of the impact of emigration of qualified personnel on the welfare of the country of origin, taking into account externalities, costs and education subsidies. First, a quantitative assessment of the welfare loss due to labor movement was carried out, measuring the externalities to highly skilled emigration; and finally, the calculation of the cost of training for skilled migrants.

Meyer & Shera (2017) studied the impact of remittances on economic growth, both positive and negative consequences. In their research scholars investigated economic growth in developing economies and the reasons why some countries reflect strong economic growth comparing to others.

Conclusions for the first chapter

Summing up the results of studying the scientific literature, we can say that labor migration is a rather complex process that affects many aspects of a person's life, from a small household to international influence.

Many researchers and international organizations give their designation of what labor migration and migration in general, if generalize it is a movement from one place of residence to another for economic, social, environmental benefits. Scientists also give a variety of classifications of migration, starting from the time spent abroad (in time of duration) and ending

with species (labor, educational, political, tourist, religious and so on). It is determined that the intensification of migration processes in world space contributes to the growth of international capital flows, the functioning of transnational corporations, demographic crisis in developed countries.

The paper grouped the positive and negative effects of labor migration frames. It is determined that both the countries of departure and the countries of arrival of labor migrants receive benefits and suffer losses from migration population at the same time. Host countries benefit greatly from the flow of labor migrants to their country, since migrants close critical gaps in the labor market, create jobs, pay taxes and contributions on social security. Countries of departure benefit from labor migration, manifested in the form of the knowledge sharing, the capital inflow, the return of migrants, who have acquired new knowledge, the formation of international professional societies. That promotes turning problem of "brain drain" into "brain circulation", which contributes to social and economic development of the country. Although migration has a number of undeniable advantages there are also negative effects. For host countries these include additional competition on the national market, the growth of conflicts on national and religious grounds. For countries of departure these are the loss of the part of the work force, especially high-skilled personnel, so called brain drain leading to stronger competitors in the global market.

Quantitative indicators of labor migration have been identified both at the international level and in the context of Ukraine.

The theoretical aspects of the impact of international labor migration on the country's economy are analyzed and the methodological foundations of the study of international migration are considered. It is determined that the quantitative assessment of the impact of international labor migration is carried out through selective sociological research and methods of mathematical modeling of migration processes.

2. METHODOLOGY FOR STUDYING THE IMPACT OF LABOR EMIGRATION ON THE ECONOMY

This chapter describes the methodological approaches chosen for empirical research in accordance with the purpose and objectives of the study, as well as the procedures for collecting and analyzing data are described below. Furthermore substantiated and explained the problems and approaches to assessing the impact of labor emigration on the country's economy as a whole and its individual subjects.

2.1. Approach to estimating GDP losses from labor emigration

Quantitative methods allow to distinguish patterns of the phenomenon and display common features, while quality methods allow to implement structural description and explain the dynamics of the process. Quantitative methods of studying the dynamics of migration shifts cover the processing of statistical information and are based on the calculation of various deterministic indicators (Slyusarevsky&Blinova, 2013); since the study includes the analysis of a large amount of statistical data, the quantitative analysis was chosen as the most appropriate.

The content of the category "economic potential countries" disclose using the specific characteristics of its constituent elements, including production potential, natural resource, financial, scientific, technical and technological, information, export, labor. The labor potential of the country is characterized by the quantity and quality of the labor force, taking into account the possibility of their increase at the current level of development of science and technology.

Since labor emigration is associated with the departure of the able-bodied population outside the country, precisely because of changes in quantitative and qualitative characteristics of the labor potential of society, in particular the impact on the professional structure able-bodied population, its age, and gender composition, and it influences the economic potential of the country as a whole.

The following methodology for quantifying the impact of labor migration on economic potential of the country was taken as a basis in my research by Zvirid (2010), which is used to update the research based on new statistics. Using the proposed approach, it was possible to estimate the losses of gross regional product as the result of labor emigration, which permitted to estimate the amount of lost regional product resulting from the emigration of a significant number of population of working age. This assessment allowed comparing the economic

benefits and losses from the involvement of able-bodied people in migration processes in different regions and across the country.

To determine the impact of labor migration on the economy of the region (country), it is necessary to calculate the GDP losses, since part of the working population does not participate in its formation through travelling outside their own country. These losses can calculate by the formula (Zvirid, 2010):

$$Ws_{(GDP,M)} = GDP/S_1 * S_m, \quad (2.1),$$

- where - $Ws_{(GDP,M)}$ - the loss of GDP from labor migration;
- GDP - gross domestic product produced for the relevant period;
- S_l - - the average amount employed population for the corresponding period;
- S_m - the average amount labor migrants for the corresponding period.

Using the relevant official statistics (i.e. gross regional product (hereinafter - GRP), the number of employees in the relevant areas and the number of persons who are temporarily worked abroad, losses from labor migration were calculated.

The author has already analyzed the GDP losses from labor emigration on the example of 7 western regions of Ukraine for 2006-2008, which are considered the largest suppliers of labor emigrants due to their geographical location, bordering Poland, Hungary, Romania. Since in my study the results for the country as a whole are more interesting, and not only for its regions, calculations were made for seven regions in order to compare my results with the results of Zvirid and analyze how the statistics changed for the selected period. My addition to Zvirid's research is the calculation of GDP losses for the entire country.

2.2. Approach to estimating the impact of remittances on GDP

Labor migration is carried out mainly to replenish the budgets of individual families. Remittances and foreign exchange that immigrants themselves import home, have a significant impact on the social and economic development of the both donor country and the recipient country, and the world community as a whole.

To investigate the correlation between the growth rate of remittances and GDP growth for the corresponding period, the calculations were carried out using the Pearson correlation coefficient.

«Correlation is a measure of a monotonic association between 2 variables; a monotonic relationship between 2 variables is a one in which either (1) as the value of 1 variable increases, so does the value of the other variable; or (2) as the value of 1 variable increases, the other variable value decreases» (Schober, Boer & Schwarte, 2018, p.1). A linear relationship between

two variables is a particular matter of a monotonic relationship. Frequently, the term "correlation" is used in the context of this linear relationship between two continuous random variables, known as Pearson's product-moment correlation, which is usually abbreviated as "r" (Rodgers&Nicewander, 1988; Speed, 2011).

The degree to which a change in one continuous variable is related to a change in another continuous variable can be mathematically described in terms of covariance of variables. Covariance is similar to variance, but while conflict describes one variable's variability, covariance is a measure of how two variables change together. The covariance depends on the scale of the measurement of the variables and its absolute value cannot be easily interpreted or compared between studies. To to facilitate interpretation, Pearson's correlation coefficient is commonly used. This coefficient is a dimensionless measure covariance, which is scaled to range from -1 to +1 (Wackerly, Mendenhall&Scheaffer, 2008).

A subsequent equation is used to calculate the correlation of Pearson's coefficient between two variables (Adler&Parmryd, 2010):

$$r_{xy} = \frac{\sum(x_i-\bar{x})*(y_i-\bar{y})}{\sqrt{\sum(x_i-\bar{x})^2*\sum(y_i-\bar{y})^2}}, \qquad (2.2),$$

Where - x_i is the value of the variable X;

- y_i - the value of the variable Y;

- x – average arithmetic for variable X;

- y is the arithmetic mean of the variable Y.

In this study, X is the gross domestic product at current prices, Y is the remittances of emigrants from abroad.

Approach to interpretation of the correlation coefficient is presented in Table 2.1.

Table 2.1

Interpretation of the correlation coefficient

Absolute Magnitude of the Observed Correlation Coefficient	Interpretation
0.00–0.10	Negligible correlation
0.10–0.39	Weak correlation
0.40–0.69	Moderate correlation
0.70–0.89	Strong correlation
0.90–1.00	Very strong correlation

Source: Schober, Boer & Schwarte, 2018.

2.3. Data collection

In this study, I analyzed the impact of emigration on the Ukrainian economy from 2006 to 2018. This time interval was associated with the calculation of the first methodology for estimating GDP losses due to labor emigration, since it is based on the already available results for 2006-2008, which are compared with the new results for subsequent years. As well as the final data on the Gross Regional Product indicators for 2019 will be published in the third decade of March 2021, so it is impossible to calculate the GDP losses from labor migration in 2019.

As a consequence, emigrants who moved a long time ago and do not support or have a sluggish current economic communication with Ukraine will not be considered in this study, such as, for example, various Ukrainian diasporas around the world. Attention is drawn primarily to those Ukrainians who currently maintain contacts with Ukrainian economy. Since the goals and objectives of this study are most suitable for a quantitative research method (what was described above), within the framework of this method, factual information was taken by collecting data from existing information sources.

There are several reasons for using secondary data analysis (Dale et al., 1988; Bryman, 2012):

- first of all saving time and money, since the necessary data has already been collected and made available for access;

- secondly, the quality of the data, as sampling procedures are quite strict;

- thirdly, the scope of such surveys is often at the national level, and the questions themselves cover a wide range of criteria.

Basic sources of government data for internal and for international migrants are of two types - population register and population census. Other sources of international migration data include such types as entry/border statistics, visa data dedicated, placement and departure, caste foreigners, statistics of work permits, statistics about naturalization and registration of foreigner status and visa over-stayers, and finally, data on refugees and asylum seekers (Bilsborrow et al., 1997; White, 2016).

Major sources of data in this study are primarily State Statistics Service of Ukraine (Ukrstat) and the database of the National Bank of Ukraine.

Various international databases such as International Organization for Migration (IOM), The World Bank, European Union Labor Force Survey (EU LFS) and in addition to Ukrainian labor migration, Statistics Poland and Federal State Statistics Service of Russia (Rosstat) were used in section 1.3. for graphical analysis of international and Ukrainian migration.

Conclusions for the second chapter

For countries such as Ukraine, where there is massive labor emigration, it is of great importance to assess potential indicators of labor migration, as well as to consider the impact of remittances on economic growth.

In this paper, two methods of studying the impact of labor migration on the country's economy were considered. More precisely, the methodology for calculating GDP losses as a result of labor emigration and its influence on the labor market, as well as calculating the correlation between remittances of labor migrants and GDP.

The main sources of data are State Statistics of Ukraine and National Bank of Ukraine, as well as statistics of the most attractive countries for Ukrainian emigration and reports from various international organizations.

3. EMPIRICAL RESULTS OF A STUDY OF THE IMPACT OF EMIGRATION ON THE UKRAINIAN ECONOMY

The empirical research conducted in this study has two components. First, an analysis of the GDP losses due to labor emigration is carried out. Secondly, a correlation-regression analysis of the relationship of such economic indicators as GDP and remittances is performed. In the end, a comparison was made between the results of the two approaches mentioned above.

3.1. GDP losses from labor emigration

Labor migration is the migration of carriers of a working strength on a permanent or temporary basis, due to their desire to more profitably realize their ability to work. Like any economic phenomenon, labor migration is a determining factor that has various consequences, manifested in both exporting countries and importing countries. For exporting countries, these are losses of gross domestic product as a result of emigration of the able-bodied population, presented in Table 3.1.

All statistical data for calculating this indicator are placed in Annex 1. Since the national currency of Ukraine is the hryvnia (UAH), all calculations were converted into US dollars according to the average dollar exchange rate in the calculated year (also found in Annex 1).

Table 3.1

Losses of GDP from labor emigration from 2006 to 2018, millions of US dollars

Regions/ years	*Volynskyi region*	*Zakarpatskyi region*	*IvanoFrankivskyi region*	*Lvivskyi region*	*Rivnenskyi region*	*Ternopilskyi region*	*Chernivetskyi region*	Total by country
2006	0,03	0,94	0,45	-	0,09	0,02	-	145,23
2007	0,71	1,96	0,34	0,03	0,98	0,02	-	189,69
2008	1,87	1,09	0,99	2,51	0,52	0,64	0,37	160,74
2009	1,60	1,47	1,65	2,70	1,68	1,12	0,63	114,48
2010	1,57	1,32	2,08	2,76	1,16	1,24	0,76	99,24
2011	1,45	1,55	2,50	3,33	1,21	1,69	1,01	116,82
2012	1,48	2,39	2,83	3,33	1,14	1,62	0,09	130,08
2013	0,98	2,99	4,92	5,78	1,09	0,89	1,48	206,96
2014	1,38	3,19	2,45	4,58	1,64	1,36	1,08	136,44
2015	0,83	3,26	2,23	2,49	0,96	0,79	0,74	99,58
2016	0,30	1,19	0,40	2,97	0,37	0,23	0,27	36,02
2017	0,76	1,52	2,42	3,52	2,77	0,67	0,36	138,92
2018	3,59	2,31	5,15	7,11	5,29	2,61	1,56	191,92

Source: made by the author on the basis of own calculations.

Notes: Since 2014, statistics excluding the temporarily occupied territory of the Autonomous Republic of Crimea and the city of Sevastopol. Since 2015, statistics excluding the temporarily occupied territory of the Autonomous Republic of Crimea, Sevastopol and part of the anti-terrorist operation zone.

In total, Ukraine has 24 regions, 1 autonomous republic (AR Crimea) and 2 cities with special status: Kyiv and Sevastopol. Scientists Zvirid (2010) calculated the GDP losses only for the so-called Western region (which include 7 regions of Ukraine presented in Table 3.1). An addition to this study made by me, calculate the GDP losses not only for individual regions, but for all the country as a whole.

Since the medology of Zvirid (2010) was taken as a basis to track the dynamics of the indicator, it has already been calculated by the author by region from 2006 to 2008. All calculations since 2009 by regions and for the country as a whole were carried out by me.

The data in the Figure 3.1 shows that the losses of GDP from labor emigration for the analyzed period for Western region are constantly growing. According to only official statistics on labor migrants in 2006, losses amounted to 1,53 millions US dollars of GDP, and in 2018 this amount already increased to 27,63 millions US dollars; the number has growthed 18 times over the past 13 years for Western region.

Lvivskyi region is leading in this indicator in 2018 (7,11 millions US dollars), replacing Zakarpatskyi region in 2006 (0,94 millions US dollars). Rivnenskyi region is in the second place (5,29 millions US dollars) and Chernivetskyi region suffered the least in 2018 (1,56 millions US dollars).

Further, for a better assimilation of the calculation results, the data are presented in the form of figures.

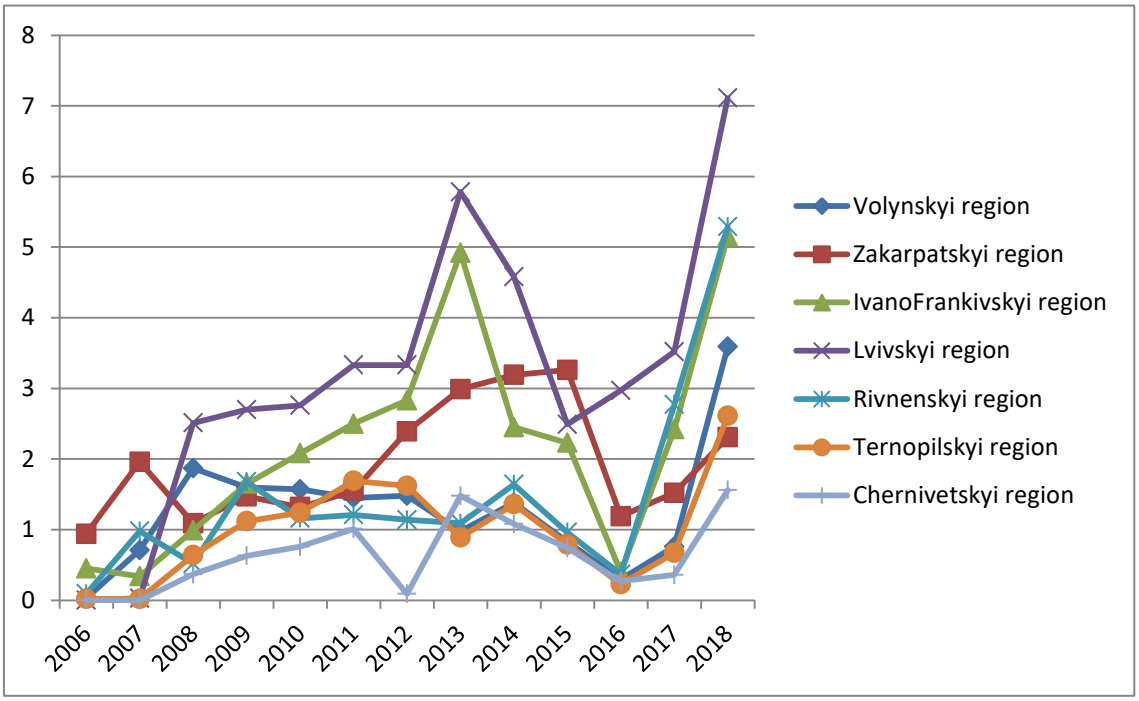


Figure 3.1. Losses of GDP from labor migration by 7 regions in USD million.

Source: made by the author.

24% of labor migrants in the 2018 were from the West of Ukraine, although only 22% of the country's population lives in this region. Much more, the trend towards migration in the region is not a new phenomenon. The West remains a relatively poor region, producing only 14% of Ukraine's GDP in 2018.

Damage from the loss of GDP for the whole country in 2018 was 191,92 millions US dollars, which is 46,69 millions US dollars more than in 2006. Undoubtedly, this figure is gradually but increasing.

The largest GDP losses in 2013 were caused not so much by the large number of labor migrants as by the high GDP in the country in the period under review - USD 206,96 million and, accordingly, the highest GDP per capita, which had a direct proportional relationship with the losses of GDP.

As a consequence of the annexation of Crimea and military actions in the East in 2014-2015 there was a flow of not only internal but also external forced migration.

Undoubtedly, one of the main points of growth of labor emigration is the conclusion of a visa-free agreement between Ukraine and the European Union. This status allows Ukrainian citizens to freely cross the European Union countries' interstate borders without first applying to the embassy for permission, starting 2017.

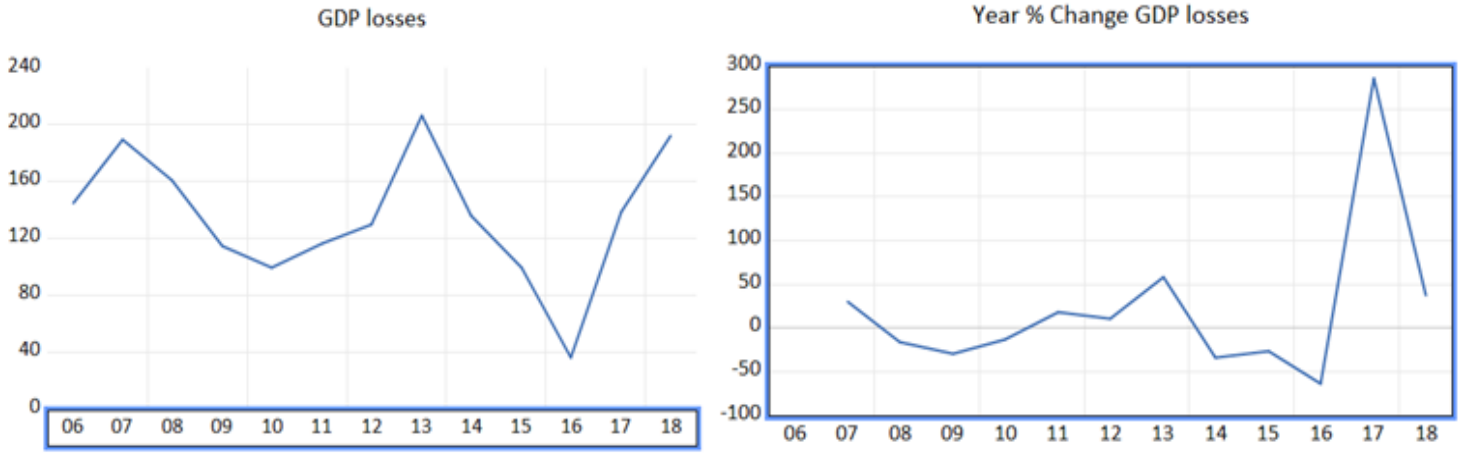


Figure 3.2. Linear graph of GDP loss in millions of US dollars and annual percentage change.

Source: made by the author.

But these amounts are much higher, since the number of unofficial labor migrants is not taken into account. As well as not concidered that the region is losing a significant part of labor

resources and labor potential (since a significant part of young people over time travels outside Ukraine to their parents). Moreover, labor emigration causes the effect of "aging" in the age structure of the region's population, and how a consequence, the coefficient of a demographic burden on the working-age population increases.

Nevertheless, to assess the complete picture of what is happening, it is also worth considering the receipt of additional foreign currency from labor emigrants in the form of remittances, which in turn leads to an increase in sufficient demand and stimulation of production.

3.2. Impact of remittances on GDP

Labor migration has the potential to serve as an engine of growth and development for all parties involved in this process - host countries and countries of origin of migrants, as well as for workers themselves. In host countries, this reduces the average age of the labor force, promotes the development of entrepreneurship, supports retirement programs, and supplies talent for emerging high-tech industries. In developing regions, from which the labor force mainly originates, positive effects of migration displayed in the flow of remittances, investments, technologies, and scarce skills, return home when migrants return.

Cash receipts from labor migrants can have a positive effect on macroeconomic growth. Interstate regressions show that remittances can have a positive, albeit comparatively limited, the effect on long-term dynamics of economic growth. In addition, cash receipts help to reduce poverty among the poorest households.

Determine the presence of a correlation between the growth rates remittances and GDP growth of the corresponding period using calculating the Pearson correlation coefficient. For implementation of correlation analysis, calculations of two statistical indicators (remittances and GDP) are presented in table. 3.2.

Table 3.2

Variables for estimating the impact of remittances on GDP

i	Years	Remittances (y), million of US dollars	Remittances, % of GDP	GDP (x), million of US dollars	$x_{av.} - x_i$	$y_{av.} - y_{i.}$
1	2006	829	0,8	107753	23856	5909,5
2	2007	4922	3,5	142719	-11110	1816,5
3	2008	6177	4,1	150485	-18876	561,5
4	2009	5370	4,6	117096	14513	1368,5
5	2010	5862	4,3	137034	-5425	876,5
6	2011	7019	4,3	162760	-31151	-280,5
7	2012	7526	4,1	182387	-50778	-787,5

8	2013	8537	4,5	190332	-58723	-1798,5
9	2014	6489	5,7	114167	17442	249,5
10	2015	6959	9,1	76482	55127	-220,5
11	2016	7535	8,3	90698	40911	-796,5
12	2017	9264	8,4	110925	20684	-2525,5
13	2018	11111	8,7	128079	3530	-4372,5
Total	-	87600	-	1710917	-	-

Source: made on the basis of Ukrstar, NBU and own calcultions.

Notes: Since 2014, statistics excluding the temporarily occupied territory of the Autonomous Republic of Crimea and the city of Sevastopol. Since 2015, statistics excluding the temporarily occupied territory of the Autonomous Republic of Crimea, Sevastopol and part of the anti-terrorist operation zone.

Calculate the arithmetic mean for X and Y, equal to:

X = 1710917/ 13 = 131609 millions of US dollars;

Y = 87600 / 13 = 6738,5 millions of US dollars.

In order to constitute a causal relationship between monetary translations and their impact on the domestic economy, built an auxiliary table for calculating the Pearson correlation coefficient (Table 3.3).

Table 3.3

Auxiliary table for calculating the Pearson correlation coefficient

i	$(x_{av.} - x_i)^2$	$(y_{av.} - y_{i.})^2$	$(x_{av.} - x_i)*(y_{av.} - y_{i.})$
1	569108736	34922190,3	140977032
2	-123432100	3299672,3	-20181315
3	-356303376	315282,3	-10598874
4	210627169	1872792,3	19861040,5
5	-29419776	768252,3	-4755012,5
6	-970384801	-78680,3	8737855,5
7	-2578405284	-617010,3	39987675
8	-3448390729	3234602,3	105613315,5
9	304223364	62250,3	4351779
10	3038986129	-48620,3	-12155503,5
11	1673709921	-634412,3	-32585611,5
12	427827856	-6378150,3	-52237442
13	12460900	-19118756,3	-15434925
Total	1269391991	17599412,3	171580014

Source: made on the basis of own calcultions.

Substituted the obtained values into the formula for the Pearson correlation coefficient:

$$r_{xy} = \frac{171580014}{\sqrt{1269391991 * 17599412,3}} = 0,1732$$

Thus, in accordance with the table of values of the coefficient correlation (Table 2.1), it can be stated that the linear Pearson correlation coefficient r = 0,1732 indicates that this is a weak positive correlation.

This study denotes that the relationship between the growth rate of cash remittances and GDP growth is not clear enough, indicating a fuzzy causal relationship between remittances and their impact on the studied macroeconomic parameters.

Despite the fact that no strong impact of remittances on GDP was found, remittances can partially offset the loss of GDP, as well as through the multiplier effect they bring; the impact of migration and remittances on investment, leading to increased productivity in the domestic market, a reduction in poverty, and the promotion of education and the necessary skills that are stimulated by the opportunity to apply them abroad.

3.3. Comparison of GDP Losses with Remittances

Comparing GDP losses from labor emigration of the working population and remittances from abroad, the latter significantly exceed the losses. In 2006, the difference amounted to USD 684 million, and in 2018 - USD 10.919 million, it follows that Ukraine benefits much more from labor emigration of the country's population than it loses.

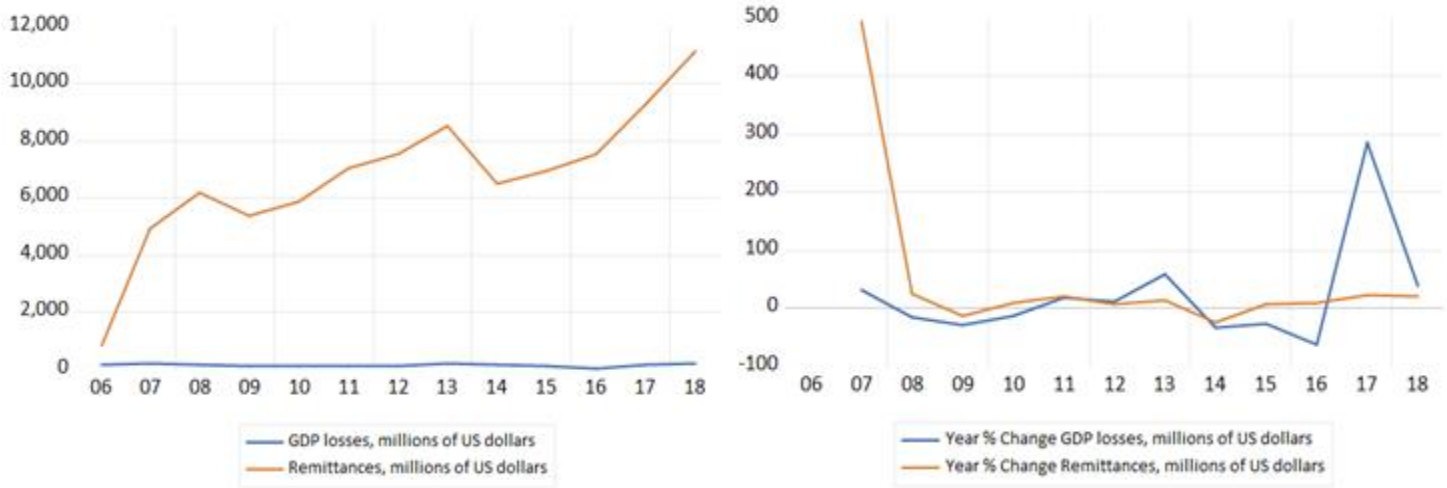


Figure 3.3. Linear graph of GDP losses and remittances in US dollars and its annual percentage change.

Source: made by the author.

Nevertheless, should be taken into account the fact that the real number of Ukrainian workers abroad is higher since, according to the methodology of the State Statistics of Ukraine, external labor migrants include citizens of Ukraine of working age who were engaged in paid economic activities in other countries on a permanent, seasonal or temporary basis. However, as well as the issue of the financial consequences of labor emigration from Ukraine at the state level, it is not fully investigated, and therefore it is extremely difficult to determine the exact amount of funds that are imported into Ukraine by migrants.

Conclusions for the third chapter

An analysis of the impact of labor emigration on the Ukrainian economy was carried out, which revealed losses in monetary terms from GDP, since part of the working-age population realizes its potential abroad. A correlation analysis of the impact of remittances on GDP was also carried out, which found a weak positive correlation. Nonetheless, remittances by labor migrants significantly exceed GDP losses.

Remittances have significant funding potential economic and human development of countries to overcome poverty, form an additional source of public investment, reduce risks during crises, and finance infrastructure development. In this regard, the development of tools comes to the fore management of money transfers and their intended use.

The earnings of migrants are often used ineffectively and "drain" into the shadow economy. A significant part of them remains in the countries of employment. Due to distrust of Ukrainian financial institutions and the Ukrainian government as a guarantor of citizens' property, some migrants make savings, buy real estate, start a business not at home but in the host countries.

To use the positive potential of such a transfers, it is necessary to create favorable conditions for this. At the same time, there is no clear remittance policy in Ukraine.

CONCLUSION

The work analyzed the theoretical aspects of the causes and consequences of labor migration both in Ukraine and in the world, as well as approaches to studying the impact of migration on the economy of countries of departure and arrival of labor migrants.

Socio-economic consequences of emigration of labor potential differ depending on the quantitative and qualitative composition of migration flows. The positive effect of migration is manifested in the form of knowledge exchange, capital inflows to the country of destination, the formation of international professional communities, reducing tensions in the country of departure's labor market, and increasing welfare of families of labor migrants.

A key factor is influencing labor emigration on countries' socio-economic development, remittances from workers. But the outflow of able-bodied people viewed as a loss of investment in human capital for the donor country and added to growing difference in the technological development of nations.

To achieve the main goal of this investigation - to study the impact of labor emigration on the Ukrainian economy, two approaches to the analysis of this issue were identified. Despite the significant negative consequences of labor emigration, identified in the study of GDP losses due to the loss of part of the labor force and human capital, it can be argued that the positive effects of this process can balance these losses.

First of all, this concerns remittances, and the multiplier effect they bring, the impact of migration and remittances on investment, which leads to increased productivity in the national markets of the countries of origin of migrants, a reduction in poverty, as well as the promotion of education and the necessary skills, which are stimulated by the possibility of applying them abroad, as well as through direct investment by migrants in the education systems of the countries of origin.

Although no strong correlational relationship was found between remittances and a country's GDP in the second study. But remittances significantly exceed the GDP losses due to the outflow of the able-bodied population, which indicates the positive impact of labor emigration on the Ukrainian economy.

Under such conditions and taking into account the world experience in this area, it seems expedient to develop and introduce measures aimed at encouraging transfers of funds earned by citizens abroad to their homeland, their effective use:

- using part of the transfers for the economic development of the country;
- stimulating the transfer through official channels;

- influencing consumption patterns;

- insuring future transfers.

This study is based on existing statistics and shows the current impact of labor emigration. For further research, it is possible to predict and model the scale of labor emigration to improve the state strategy for regulating international migration, as well as to anticipate future negative / positive consequences of emigration on the economy of Ukraine.

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DARBO JĖGOS TARPTAUTINĖS MIGRACIJOS POVEIKIS EKONOMIKAI (UKRAINOS ATVEJIS)

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SANTRAUKA

57 puslapis, 10 lentelių, 11 paveikslų, 60 šaltinių nuorodos.

Trumpas darbo aprašymas. Spartus šiuolaikinio pasaulio ekonominės integracijos procesų perėjimas į globalizacijos fazę intensyvėja ir komplikuoja išorinės aplinkos įtaką nacionalinėms ekonominėms sistemoms, keliant pavojų jų tvarumui, vystymosi stabilumui ir visiškam ekonominio potencialo realizavimui. Vienas iš reikšmingų tokio pasaulinio migracijos proceso, kuriame dalyvauti privaloma, įtakos veiksnių yra poveikis šalių ekonominei padėčiai. Šio tyrimo temos aktualumą lemia tarptautinės migracijos srautų augimas; itin didelis Ukrainos dalyvavimo globaliuose migracijos procesuose mastas, taip pat sumažėjęs jos ekonominis potencialas, visų pirma, dėl susidariusių opių vidaus darbo jėgos potencialo atkūrimo problemų.

Pagrindinis šio magistro darbo tikslas yra ištirti darbo jėgos emigracijos poveikį Ukrainos ekonomikai ir parengti rekomendacijas, kaip pagerinti tarptautinės darbo jėgos migracijos reguliavimą.

Darbe taikomi metodai. Atlikta mokslinės literatūros, įvairių straipsnių ir tarptautinių organizacijų pranešimų teorinė analizė. Taip pat buvo naudojami įvairūs tyrimo metodai, visų pirma, sisteminė analizė, grafinė analizė tarptautinės darbo jėgos migracijos dinamikai įvertinti ir statistinė analizė įvairiems darbo jėgos emigracijos rodikliams apskaičiuoti bei koreliacinė analizė, siekiant įvertinti darbo jėgos emigracijos poveikį Ukrainos ekonomikai.

Pagrindinė išvada. Darbe išanalizuoti teoriniai darbo migracijos priežasčių ir pasekmių aspektai tiek Ukrainoje, tiek pasaulyje, taip pat metodai, kaip tirti migracijos įtaką šalių, iš kurių darbo jėgos migrantai išvyksta ir į kurias atvyksta, ekonomikai. Norint pasiekti pagrindinį šio tyrimo tikslą – ištirti darbo jėgos emigracijos poveikį Ukrainos ekonomikai, buvo identifikuoti du šio klausimo analizės metodai. Nepaisant reikšmingų neigiamų darbo jėgos emigracijos

padarinių, nustatytų atliekant BVP nuostolių dėl darbo jėgos ir žmogiškojo kapitalo dalies praradimo tyrimą, galima teigti, kad teigiamas šio proceso poveikis gali subalansuoti šiuos nuostolius.

IMPACT OF INTERNATIONAL LABOR MIGRATION ON THE ECONOMY (CASE OF UKRAINE)

Maryna Omelchenko

Master Thesis

Global Business and Economics Programme

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SUMMARY

57 pages, 10 tables, 11 figures, 60 references.

Short description of the thesis. The rapid transition of modern world economic integration processes into the phase of globalization intensifies and complicates the external environment's influence on national economic systems, endangering the provision of their sustainability, development stability, and the full realization of economic potential. One of the significant factors of such an impact of the world migration processes, participation in which is mandatory, affects countries' economic situation. The relevance of the topic of this study is determined by the growth in the volume of international migrations; striking the scale of Ukraine's participation in global migration processes, as well as a decrease in its economic potential, in particular, the presence of acute problems of reproduction of the domestic labor potential.

The main purpose of this master thesis is to study the impact of labor emigration on the economy of Ukraine and to develop recommendations to improve the regulation of international labor migration.

Methods applied in the thesis. A theoretical analysis of the scientific literature, various articles and reports of international organizations was carried out. As well as were used various research methods, in particular, systematic analysis, graphical analysis for evaluation dynamics of international labor migration and, statistical analysis to calculate various indicators of labor emigration, correlation analysis to evaluate the impact of labour emigration on Ukrainian economy.

Main conclusion. The work analyzed the theoretical aspects of the causes and consequences of labor migration both in Ukraine and in the world, as well as approaches to

studying the impact of migration on the economy of countries of departure and arrival of labor migrants. To achieve the main goal of this investigation - to study the impact of labor emigration on the Ukrainian economy, two approaches to the analysis of this issue were identified. Despite the significant negative consequences of labor emigration, identified in the study of GDP losses due to the loss of part of the labor force and human capital, it can be argued that the positive effects of this process can balance these losses.

ANNEXES

Annex 1. Variables for estimating GDP losses

Table 1.1

Gross regional product in actual prices, million uah

Regions /years	*Volynskyi region*	*Zakarpatskyi region*	*IvanoFrankivskyi region*	*Lvivskyi region*	*Rivnenskyi region*	*Ternopilskyi region*	*Chernivetskyi region*	Total by country
2006	-	-	-	-	-	-	-	544153
2007	-	-	-	-	-	-	-	720731
2008	-	-	-	-	-	-	-	948056
2009	12225	12542	17241	35955	13469	11173	8484	913345
2010	14429	15299	20446	41655	15882	12726	9892	1082569
2011	17637	18054	26752	52103	19302	16294	11969	1302079
2012	20005	21404	32286	61962	21795	17957	13166	1459096
2013	20622	21400	33196	63329	22004	18085	13757	1522657
2014	24195	24120	37643	72923	28724	21676	15049	1586915
2015	31688	28952	45854	94690	35252	26656	18506	1988544
2016	35744	32390	51404	114842	39469	31072	21239	2385367
2017	51972	43043	63850	147404	48836	40747	28591	2983882
2018	60448	52445	78443	177243	56842	49133	33903	3560596

Source: made by the author on the basis of Ukrstat

Notes: Since 2014, statistics excluding the temporarily occupied territory of the Autonomous Republic of Crimea and the city of Sevastopol. Since 2015, statistics excluding the temporarily occupied territory of the Autonomous Republic of Crimea, Sevastopol and part of the anti-terrorist operation zone.

Table 1.2

Average number of labor migrants, persons

Regions /years	*Volynskyi region*	*Zakarpatskyi region*	*IvanoFrankivskyi region*	*Lvivskyi region*	*Rivnenskyi region*	*Ternopilskyi region*	*Chernivetskyi region*	Total by country
2006	-	-	-	-	-	-	-	29982
2007	-	-	-	-	-	-	-	29669
2008	-	-	-	-	-	-	-	22402
2009	437	480	392	636	448	329	219	19740
2010	372	362	426	574	273	332	233	14677
2011	289	360	396	563	246	361	258	14588
2012	261	475	384	473	206	318	219	14517
2013	169	604	667	806	196	174	336	22187
2014	326	959	495	907	378	364	371	21599
2015	272	1519	707	713	346	312	382	21409
2016	85	489	115	712	117	80	125	6465
2017	144	471	571	675	702	177	128	20234

2018	614	615	1032	1184	1227	607	489	24252

Source: made by the author on the basis of Ukrstat

Notes: Since 2014, statistics excluding the temporarily occupied territory of the Autonomous Republic of Crimea and the city of Sevastopol. Since 2015, statistics excluding the temporarily occupied territory of the Autonomous Republic of Crimea, Sevastopol and part of the anti-terrorist operation zone.

Table 1.3

Number of employed population aged 15-70, thousand people

Regions/years	*Volynskyi region*	*Zakarpatskyi region*	*IvanoFrankivskyi region*	*Lvivskyi region*	*Rivnenskyi region*	*Ternopilskyi region*	*Chernivetskyi region*	Total by country
2006	-	-	-	-	-	-	-	22245,4
2007	-	-	-	-	-	-	-	22322,3
2008	-	-	-	-	-	-	-	20972,3
2009	428,0	524,7	526,3	1085,0	461,5	422,1	376,3	20191,5
2010	433,6	531,8	530,3	1096,7	471,2	431,3	382,4	20266,0
2011	440,1	522,7	529,7	1100,7	489,2	433,6	385,4	20324,2
2012	442,8	530,8	548,5	1099,9	492,5	439,4	387,2	20354,3
2013	445,7	541,2	562,7	1104,7	494,9	442,9	391,6	20404,1
2014	410,5	521,4	547,8	1038,2	476,0	416,0	370,6	18073,3
2015	397,3	519,3	558,3	1042,0	487,7	406,2	367,2	16443,2
2016	382,1	505,5	556,9	1047,0	474,2	407,6	376,1	16276,9
2017	366,0	496,3	559,0	1050,8	460,2	399,1	379,3	16156,4
2018	371,1	502,4	565,8	1061,2	473,6	410,8	382,9	16360,9

Source: made by the author on the basis of Ukrstat

Notes: Since 2014, statistics excluding the temporarily occupied territory of the Autonomous Republic of Crimea and the city of Sevastopol. Since 2015, statistics excluding the temporarily occupied territory of the Autonomous Republic of Crimea, Sevastopol and part of the anti-terrorist operation zone.

Table 1.4

Losses of GDP from labor emigration from 2006 to 2018, million uah

Regions/years	*Volynskyi region*	*Zakarpatskyi region*	*IvanoFrankivskyi region*	*Lvivskyi region*	*Rivnenskyi region*	*Ternopilskyi region*	*Chernivetskyi region*	Total by country
2006	0,14	4,75	2,27	-	0,49	0,11	-	733,40
2007	3,57	9,88	1,71	0,16	4,93	0,09	-	957,94
2008	11,80	6,89	6,27	15,84	3,29	4,05	2,30	1012,69
2009	12,48	11,47	12,84	21,08	13,07	8,71	4,94	892,92
2010	12,38	10,41	16,42	21,80	9,20	9,79	6,03	784,02
2011	11,58	12,43	19,99	26,65	9,71	13,57	8,01	934,59
2012	11,79	19,15	22,60	26,65	9,12	12,99	7,45	1040,65
2013	7,82	23,88	39,35	46,21	8,71	7,11	11,80	1655,71
2014	19,21	44,36	34,01	63,71	22,81	18,97	15,07	1896,49
2015	21,69	84,69	58,07	64,79	25,01	20,47	19,25	2589,08
2016	7,95	31,33	10,61	78,09	9,74	6,09	7,06	947,44
2017	20,45	40,85	65,22	94,69	74,49	18,07	9,65	3736,96
2018	100,01	64,19	143,08	197,75	147,27	72,59	43,29	5277,92

Source: made by the author on the basis of own calculations, with the exception of 7 regions for 2006-2008 taken from Zvirid (2010)

Notes: Since 2014, statistics excluding the temporarily occupied territory of the Autonomous Republic of Crimea and the city of Sevastopol. Since 2015, statistics excluding the temporarily occupied territory of the Autonomous Republic of Crimea, Sevastopol and part of the anti-terrorist operation zone.

Table 1.5

Average US dollar exchange rate at the National Bank of Ukraine from 2006 to 2018

Years	Average exchange rate per 1 US dollar
2006	5,05
2007	5,05
2008	6,3
2009	7,8
2010	7,9
2011	8,0
2012	8,0
2013	8,0
2014	13,9
2015	26
2016	26,3
2017	26,9
2018	27,8

Source: made on the basis of an electronic resource https://index.minfin.com.ua/