INTERNATIONAL MIGRATION AND POPULATION CHANGES IN MOLDOVA

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ABSTRACT

The paper focuses on analyzing the implications of international migration on changes in the number and structure of the population in Moldova in the 2014-2020 period. The paper is based on revised data on the population with usual residence and international migration. The research methodology consists of estimating and analyzing specific indicators of migration and population change: emigration and immigration rates, gross and net migration rates, age-specific net migration rates by sex, population growth rate, and others.

Results show that the emigration rate during this period increased from 43 to 58 emigrants per 1000 population. The cumulative net migration is -221,3 thousand or -7,7% of the population of 2014. The mobility of Moldova's population is higher than the population mobility of Moscow or Luxembourg. The share of women involved in the migration process is lower than that of men. Youth (aged 20-34) make up a third of the annual flow of emigrants, while return migration increases at pre-retirement ages. At the same time, there is an increase in the number of children involved in international migration, which indicates the increase in families' migration for settlement. The population of Moldova decreased by -225,3 thousand in 2014-2020 or by -7.9%. The population growth rate varies between -0,7% and -1,8% annually. The paper concludes that the most important contribution to population decline is negative international migration. Population decline remains the biggest demographic challenge for Moldova.

Keywords: international migration, demographic processes, consequences of migration, population decline, Moldova.

Articolul se focusează pe analiza implicaţiilor migraţiei internaţionale asupra schimbărilor în numărul şi structura populaţiei în Moldova în perioada 2014-2020. Lucrarea are la bază datele revizuite ale populaţiei cu reşedinţa obişnuită şi a migraţiei internaţionale. Metodologia cercetării constă în estimarea şi analiza indicatorilor specifici ai intensifăţii migraţiei şi schimbării populaţiei: ratele de emigrare şi imigrare, rata migraţiei nete şi migraţiei brute, ratele specifice ale migraţiei nete, rata de creştere a populaţiei şi altele.

Rezultatele demonstrează că rata de emigrare în această perioadă a crescut de la 43 la 58 emigranţi per 1000 populaţie. Migraţia netă cumulată este de -221,3 mii persoane sau -7,7% din populaţia anului 2014. Nivelul de mobilitate al populaţiei Moldova este mai înalt şi decât nivelul de mobilitate al populaţiei din Moscova sau Luxembourg. Ponderea femeilor implicate în procesul migraţional este mai mică comparativ cu cea a bărbaţilor. Tinerii (20-34 de ani) constituie a treia parte din fluxurile anuale de emigranţi, în timp ce migraţia de revenire creşte la vârstele pre-pensionare. Totodată, este înregistrată creşterea copiilor implicaţi în migraţia internaţională ceea ce denotă intensificarea migraţiei familiilor cu stabilirea reşedinţei în străinătate. Populaţia Moldovei a scăzut cu -225,3 mii persoane în anii 2014-2020 sau cu -7,9%. Rata de scădere a

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populaţiei variază între 0,7-1,8% anual. Articolul concluzionează că cea mai importantă contribuţie în declinul populaţiei aparţine migraţiei internaţionale negative. Cea mai mare provocare demografică pentru Moldova rămâne a fi declinul populaţiei.

Cuvinte-cheie: *migraţia internaţională, procese demografice, consecinţele migraţiei, declinul populaţiei, Moldova.*

Статья посвящена анализу влияния международной миграции на изменения численности и структуры населения Молдовы в период 2014-2020 гг. Работа основана на пересмотренных данных о населении с постоянным местом жительства и международной миграции. Методология исследования заключается в оценке и анализе показателей интенсивности миграции и изменения численности населения: коэффициенты интенсивности эмиграции и иммиграции, коэффициенты миграционного оборота и чистой миграции, коэффициенты чистой миграции по возрасту и полу, темпов роста населения и других.

Результаты показывают, что уровень эмиграции за исследуемый период увеличился с 43 до 58 эмигрантов на 1000 населения. Кумулятивная чистая миграция составляет -221,3 тыс. человек или -7,7% от общего числа населения 2014 г. Уровень мобильности населения Молдовы выше, чем уровень мобильности населения Москвы или Люксембурга. Доля женщин, вовлеченных в миграционный процесс, ниже, чем доля мужчин. Молодое население (20-34 года) составляет треть годового потока эмигрантов, в то время как возвратная миграция увеличивается в пред-пенсионном возрасте. В то же время увеличилось количество детей, вовлеченных в международную миграцию, что свидетельствует об увеличении миграции семей с детьми на постоянное место жительства. Население Молдовы уменьшилось на - 225,3 тыс. человек в 2014-2020 гг. или на -7,9%. Темпы убыли населения колеблются в пределах 0,7–1,8% ежегодно. В статье делается вывод о том, что наиболее важным вкладом в убыль населения является отрицательная международная миграция. Самой большой демографической проблемой для Молдовы остается постоянная убыль населения.

Ключевые слова: *международная миграция, демографические процессы, последствия миграции, убыль населения, Молдова.*

INTRODUCTION

International estimates have shown that only European countries will have population declines by the second half of the 21st century. A UN projection based on the zero-migration scenario shows a dramatic decrease in Europe's population by -9% in 2050 and by -28.5% in 2100 (United Nations, n.d.). This decrease will be more significant in Bulgaria, Hungary, Poland, Romania, Moldova, Ukraine, Latvia, Lithuania, Croatia, Greece, Italy, Portugal, Serbia, Germany, mainly due to the low level of fertility, while for some post-Soviet countries, also due to the high level of mortality.

The attenuation of the population decline in the European space can only take place due to international migration. According to the medium projection scenario (which assumes that international migration remains at current values), population decline on the European continent will reach -5% by 2050 and -16% by 2100 (United Nations, n.d.). Maintaining current trends in international migration may stop the population decline in all Western and Northern European countries (except the Baltic States, which are characterized by high emigration rates and low immigration rates), but not in any country of Southern and Eastern Europe. We thus find that migration has already made an important contribution to increasing/decreasing the European population.

Moldova is part of the group of Eastern European countries, where the population dynamics are drastically affected by high population emigration rates and low immigration rates, but in the future, the population decline will continue at an even faster pace. Estimates by the Vienna Institute of Demography show that the relative decrease in the population of Moldova in the 2015-2050 period due to international migration will reach up to -31.4% (Scherbov et al., 2016). According to the

medium scenarios of the Centre for Demographic Research projection, the population of Moldova will drop -19,1 by 2035 (Gagauz et al., 2016) and -28,2% by 2040.

The most important contribution to the depopulation of Moldova is the increase in the last decades of long-term emigration, often characterized by a change of usual residence abroad. The ongoing migration from independence to the present has led to the formation of significant stocks of Moldovan citizens abroad encouraged by the unstable socio-economic and political situation, as well as the strengthening of social networks over time. Moldovan migrants prefer European countries, such as Russia, Italy, Spain, Portugal, the Czech Republic, Germany, France and the United Kingdom. Fewer may be found in Switzerland, the Netherlands, Belgium, Austria, Poland, Greece, Canada, and the USA.

The purpose of this paper is to analyze recent trends in international migration from Moldova and to estimate the consequences on the population dynamics and its characteristics. The scientific novelty lies in exploring new data on international migration, for the first time estimating some indicators of migration (gross migration rate, age-specific net migration rates), the analysis based on the dynamics of migration and impact on the population structure. We note that until 2019, the national statistical system did not have reliable official data on population migration.

LITERATURE REVIEW

The literature mentions that international migration is the third force capable of changing the population size specifying that, unlike fertility and mortality which have changed globally over time from high to low levels, international migration has been constantly expanding, with the number of global migrants increasing as the global population grows (National Research Council (U.S.) et al., 2000). Analyzing the impact of migration in Europe, Coleman (2008) argues that international migration influences the population size in most European countries, contributing to population growth in the Nordic countries, slowing population decline in the Southern countries and accelerating depopulation in Eastern countries. Conclusions expressed by Coleman in 2008 continue being supported by recent studies and projection (United Nations, n.d.) (Cangiano, 2019).

However, a much-debated aspect in the literature is not so much the impact of migration on the population dynamics, but rather on its age structure. Still at the end of the twentieth century, Blanchet (1989) examined the idea of using immigration as a tool for demographic control, but from the perspective of managing the age structure of the population, rather than the total number. And Coleman (2008) warns that even though migration contributes to the reduction of the average population age in host countries, it can only solve the problem of demographic ageing if foreign population inflows occur in large proportions and increase exponentially.

Nevertheless, the simple attraction of migrants is not a mandatory condition for mitigating the challenges related to demographic aging, a more favorable solution is for immigrants to be highly qualified and employed into the labor market. However, research has shown that the share of immigrants employed in the host country is lower than the share of natives, especially immigrant women, and that the immigration of highly qualified population can better solve the tax problems of demographic aging (Zaiceva & Zimmermann, 2014).

At the same time, mass recruitment of migrant workers cannot make up for the long-term labor shortage. Russia is one of the countries in the world that has, for decades, used international labor migration as a tool to make up for the shortage of labor. However, after the entry of younger generations born in the 1990s into the working-age group, the size of the labor force in Russia has declined enormously and the flows of migrant workers can no longer prevent the deficit in the working-age population (Зиверт et al., 2011).

While migration can address the challenges of demographic aging and the labor market in host countries, then for donor countries is a force capable of causing population decline. This is the case of Moldova, but also of other ex-Soviet countries that have entered the process of population decline caused by mass migration and negative natural growth (Estonia, Latvia, Lithuania, Georgia and

Armenia). National estimates have shown that Moldova's population has declined by about 17-20% in the last three decades due to long-term emigration (Gagauz et al., 2016; Tabac & Gagauz, 2020). However, migration has affected not only the population but also its demographic characteristics due to the high share of the working-age population involved in the migration process. Migration has accelerated demographic aging observed in terms of demographic dependence indicators (Poalelungi & Mazur, 2017).

In the context of these, the biggest demographic challenges remain for the countries of origin which, due to the massive outflows, face the depletion of the economically productive population, the deformation of the age structure, the acceleration of the demographic ageing process and the future increase of the tax burden.

RESEARCH DATA AND METHODS

The intensification of migration flows from Moldova has also been a challenge for the national statistical system. Given increased emigration, it was difficult to measure the stocks of Moldovan emigrants abroad and to assess the demographic impact of migration. Along the way, there have been several attempts to estimate international migration (Poalelungi & Mazur, 2017; Tabac & Gagauz, 2020), but also the revision of the actual population of Moldova, which excludes the population that has left Moldova more than one year (Penina et al., 2015). Only in 2019, the national statistical organization implemented a new methodology for estimating annual migration flows according to international recommendations (United Nations, 1998) and the population with the usual residence. For this analysis the estimates of the National Bureau of Statistics with reference to migration flows and the population with usual residence for 2014-2020 were used.

The current measurement of emigration and immigration fully complies with international recommendations and is based on the concept of usual residence. According to the definitions, an emigrant is any person who lived in Moldova for a year before moving abroad for a period of at least one year. An immigrant is a person who has lived abroad for at least a year and returned to Moldova to stay here for a year. And because international recommendations suggest that temporary absences for purposes of recreation, holidays, business, medical treatment or religious pilgrimage are not considered, one-year periods have been set at 275 days out of the 365 calendar days. The period of 275 days is estimated cumulatively and does not represent the number of consecutive days during the year.

Among other things, current data allows for the estimation of immigrants-foreign nationals versus immigrants-citizens of the Republic of Moldova. The ratio of foreign immigrants in the annual immigrant flows varies between 40-60%, so we consider an important part of the immigration flows as return migration. This finding is also supported by the fact that there is an unknown number of Moldovan citizens who use only documents issued by foreign countries to cross the state border (the effect of dual citizenship).

Current data allowed the estimation for Moldova the indicator of age-specific net migration rates by sex, which demonstrates the migration intensity at different age and sex categories. In essence, this indicator shows the intensity of net migration in different categories of the population: children, youth, working-age population, and the elderly). New data also allow other international migration indicators to be determined - emigration and immigration rates, gross migration rate and net migration rate. At the same time, based on these data, the impact of migration on the population structure was estimated in terms of the main demographic indicators. Results are presented below.

MAIN RESULTS
Current migration trends

International migration from Moldova has been increasing during 2014-2019 (Table 1). With some insignificant fluctuations, the emigrant flows increased from 123,4 thousand in 2014 to 155,3 thousand in 2019, while the immigrant flows increased from 98,7 thousand in 2014 to 117,2 thousand in 2019. The emigration rate during this period is estimated between 43 and 58 emigrants per 1000

population, and the immigration rate between 34 and 44 immigrants per 1000 population. Most unfavorable is the negative net migration that, cumulated, for 2014-2019 represents -221,3 thousand in absolute values and 7,7% in relative values. Such proportions of migration from Moldova were only during 2007-2011 when emigration flows intensified under the influence of family reunification policies in European countries (Tabac & Gagauz, 2020).

Gross migration shows the level of population mobility, which in the case of Moldova has increased in recent years, from 222 thousand migrants involved in long-term migration in 2014 to 272.5 thousand migrants in 2019. Gross migration rate has increased from 77 to 101 international migrants per 1000 population. For comparison, the level of international mobility of the Moldovan population in 2019 is similar to that of the St. Petersburg region (103 migrants per 1000 population) and higher than the level of population mobility in Moscow city (44 migrants per 1000 population) (Shcherbakova, 2020). Compared to the migration trends in European countries in this period, the gross migration rate in Moldova is comparatively higher than the gross migration rate in Luxembourg – the country with the highest level of population mobility among all EU-28 states (Щербакова, 2020).

The share of women involved in the migration process is lower than that of men. The gender gap is greater for immigrant women than for emigrant women.

An obvious feature is the high proportion of youth involved in migration processes. With fluctuations in some years, young emigrants aged 20-34 make up a third of the annual emigrant flows, while another third belongs to adults aged 35-59. At the same time, we note that the share of adult immigrants (35-59 years) and elderly immigrants (60+ years) is comparatively higher than the share of adult and elderly emigrants. Considering that the immigrant flows is made up of a larger proportion of Moldovan citizens than of foreign nationals, such results tell us that there is an increase in return migration to pre-retirement ages.

Table 1

Demographic characteristics of migration flows in Moldova, 2014-2019

Indicators	2014	2015	2016	2017	2018	2019
emigrants, thousands	123,4	126,9	153,2	159,1	158,1	155,3
immigrants, thousands	98,7	105,6	107,2	109,7	116,4	117,2
gross migration, thousands	222,1	232,5	260,4	268,8	274,5	272,5
net migration, thousands	-24,7	-21,3	-45,9	-49,4	-41,8	-38,2
emigration rate, per 1000 population	43,0	44,6	54,2	57,2	57,9	57,8
immigration rate, per 1000 population	34,4	37,1	38,0	39,5	42,6	43,6
gross migration rate, per 1000 population	77,4	81,7	92,2	96,7	100,5	101,4
net migration rate, per 1000 population	-8,6	-7,5	-16,3	-17,8	-15,3	-14,2
% of emigrant women	46,7	45,8	43,4	43,0	45,5	47,0
% of immigrant women	41,7	42,7	42,9	43,0	43,7	44,9
sex ratio of emigrants, men per 100 women	114	118	131	133	120	113
sex ratio of immigrants, men per 100 women	140	134	133	132	129	123
emigrants by age group, %						
age 0-19	25,2	24,4	21,6	20,5	23,0	24,6
age 20-34	39,2	38,4	39,2	38,7	36,4	33,2
age 35-59	30,4	31,2	33,1	34,4	33,9	34,4
age 60+	5,3	6,0	6,0	6,4	6,7	7,8
immigrants by age group, %						
age 0-19	17,2	17,3	18,1	16,4	15,2	16,2
age 20-34	36,6	35,1	33,9	33,7	33,2	31,2
age 35-59	39,4	40,1	40,1	41,3	41,6	42,2
age 60+	6,8	7,5	7,9	8,6	10,0	10,4

Source: author's calculations based on NBS data

High youth migration is more evident when estimating the age specific net migration rates (Fig. 1), the indicator that demonstrates the migration intensity by different age groups and sexes (women-men, children, youth, adults and older people). The estimates show that the highest migration was between the ages of 20-29 and in the years 2016-2019. Other active age groups in international migration are youth aged 15-19 and children up to age 10.

In 2017, the net migration of men aged 20-24 was 56 men per 1000, while in the 25-29 age group it was 48 men per 1000. In the case of women, the net migration in the age group 20-24 was 43 women per 1000, while 32 women per 1000 were in the 25-29 age group. Emigration rates of youth decreased slightly by 2019, however, they remain at very high levels compared to other age groups. For example, 34 men per 1000 men in the age group 20-24 migrated on a long-term period in 2019, compared to 10 men per 1000 men aged 34-39. This trend is also observed among women.

An even more worrying trend observed in 2018-2019 is the increase in the ratio of children involved in international migration. The net migration rate of boys aged 0-4 was 32-35 boys per 1000, and at the age of 5-9, it was 27 per 1000. The net migration rate of girls aged 0-4 was 33-37 girls per 1000, and at the age of 5-9, it was 25-29 girls per 1000. Since children cannot migrate without their parents, we consider that these data tell us about the intensification of families' migration for settlement which was already demonstrated in other works.

While children and youth migrate from Moldova, adults and the older people tend to return to Moldova. In the years 2014-2015, there was a positive net migration for men in age groups 40-69 and for women in age groups 45-69. Starting with 2016, the age of positive net migration increases from age 50+ for both sexes, with some insignificant variations.
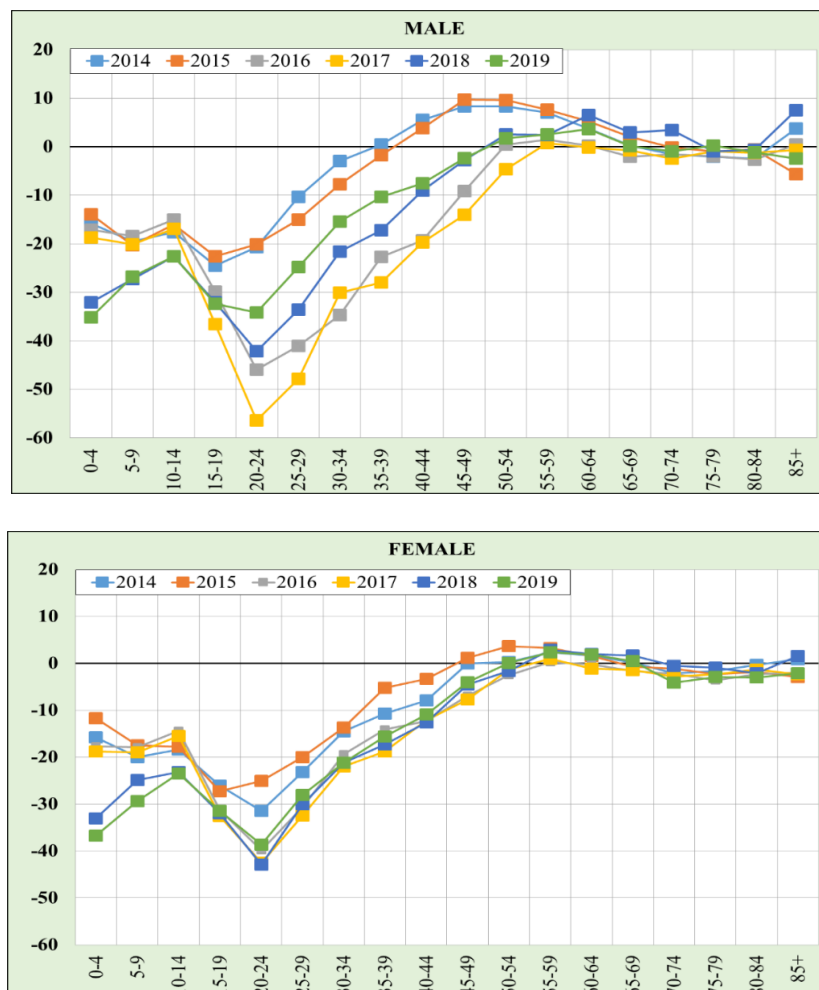

Figure 1. Age-specific net migration rate by sex, 2014-2019, per 1000 population
Source: author's calculations based on NBS data

EFFECTS OF MIGRATION ON POPULATION CHANGE

Migration has major consequences on Moldova's population dynamics and composition. First, international migration leads to a fast-paced decrease in the population of Moldova. In the 2014-2019 period, the population decreased by 7.9% (or -225.3 thousand). The population decline is largely due to negative international migration (7.7%) and only slightly due to the negative natural decrease (-0,14%, which increased due to the Covid-19 pandemic). The population growth rate varies between -0,7% and -1,8% annually (Table 2).

Secondly, international migration causes rapid changes in population composition. High rates of negative migration among the young population cause depletion of the working age and reproductive population and accelerate the demographic ageing in Moldova. The mean age of the population increased by 1,8 years in the period 2014-2020. If the share of the population under 18 years registers stable values in the analyzed period, then the share of youth (18-34 years old) shows a decrease of 4,6 thousand. Despite the fact that Moldova is going through a period of demographic dividend (Gagauz et al., 2016), the size of the working age population remains stable (in the absence of emigration, the number of working age population would continue to grow). At the same time, there is an increase in the older aged 60 and over, as well as the aged 65 and over. The dependency ratio in 2020 is 49 of dependents to 100 working-age population, increasing by 9 dependents more than in 2014.

Table 2

Some demographic characteristics and indicators of the population of Moldova, 2014-2019

	2014	*2015*	*2016*	*2017*	*2018*	*2019*	*2020*
total population, thousands	2869,2	2844,7	2824,4	2780,0	2730,4	2686,1	2643,9
population growth rate, %	-	-0,9%	-0,7%	-1,6%	-1,8%	-1,6%	-1,6%
natural growth, thousands	1,2	0,7	1,2	-0,4	-2,7	-4,0	-9,9
migration growth, thousands	-24,7	-21,3	-45,9	-49,4	-41,8	-38,2	n/d
mean age, years	36,9	37,1	37,3	37,6	37,9	38,3	38,7
% under 18	21,7	21,5	21,4	21,7	21,9	21,8	21,7
% 18-34	27,3	26,9	26,4	25,5	24,5	23,6	22,7
% 35-59	33,5	33,5	33,6	33,6	33,6	33,8	33,9
% 60+	17,5	18,1	18,5	19,2	20,0	20,8	21,7
% 65+	10,9	11,5	12,0	12,6	13,2	13,8	14,4
gender ratio, men to 100 women	92	93	93	92	91	91	91
dependency ratio	40	42	43	45	47	48	49

Source: author's calculations based on NBS data
Note: The dependency rate is estimated as the ratio between children (0-14) and older people (65+) in the working-age population (age 15-64).

CONCLUSIONS AND DISCUSSIONS

Migration exchanges between Moldova and the rest of the world were possible only three decades ago, with the break-up of the Soviet bloc and independence. Emigration rates have been extremely high throughout the independence period, and net migration was negative, cumulating, according to estimates by the Center for demographic research, over 1 million citizens who emigrated permanently or for a long-term period.

This paper provides evidence that international migration continues to be particularly high and negatively affects the dynamics and composition of Moldova's population. The current migration trends are as follows: the international mobility of the population is one of the highest in the world, the migration of youth is constantly increasing and so is the migration of families with children, at the same time, there is an increase in the return migrants close to retirement age. According to results, about 98% of the population decline in the analyzed period is due to international migration, the total decrease caused by migration being 7.7%. Massive youth migration accelerate the demographic aging: the lack of youth increases the proportion of older aged 60 and over and the demographic burden. In addition, the emigration of the working-age population inevitably leads to a depletion of the labor force and an increase in the deficit in the internal labor market.

The high migration, especially of young people, indicates (probably the most important thing) that the population is discouraged about social opportunities at home, opportunities for the professional ascent, employment and earning a decent income, of low life quality, etc. At the same time, Moldova is inevitably in a process of competitiveness with the destination countries which, due to the high level of socio-economic development, are attractive for talented and smart youth. Contemporary literature argues that migration does not decrease until the country of origin reaches a comfortable (though not necessarily equal) standard of living compared to that of the destination country.

Return migrants of pre-retirement and retirement age represent the population involved in labor migration many years and who return to Moldova due to old age. In most cases, the government will have to cover their social protection needs. Some of them may receive an old-age pension paid by the host country; others may have financial accumulations as a guarantor for a decent life in Moldova. However, the proportion of insured persons does not appear significant.

Perhaps the biggest demographic challenge for Moldova remains the decline in human capital. Not only is the population declining, but the process of reducing the economically active and reproductive population by migration is also in swing. The results of scientific research have long signaled the intensification of migration in the working-age population, and demographic projection show that current migration trends will lead to a deterioration in the population's composition. Finally, there is an urgent need to build a demographic perspective for Moldova in migration policies, which in turn are strongly influenced by the geopolitical and economic system.

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