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MACROECONOMIC MECHANISMS OF STATE REGULATION OF INTERNATIONAL MIGRATION IN THE REPUBLIC OF AZERBAIJAN

The article analyzes the mechanisms of regulation of international migration in the Republic of Azerbaijan using a comparative and analytical approach. It examines the theoretical foundations, international policy models, and Azerbaijan's institutional and legal frameworks for migration management. The study assesses the impact of macroeconomic factors on migration processes using statistical and econometric methods. The results provide valuable insights for improving migration policy and decision-making in Azerbaijan.

Keywords: migration; emigration; highly qualified personnel; immigration; brain drain; government regulation.

Demographic indicators such as birth rates, mortality rates, natural population growth, and international migration play a decisive role in shaping the size, structure, and future development of a population at both national and regional levels. The effects of these factors may be either positive or negative. Therefore, analyzing migration processes — particularly international migration — is of critical importance for understanding population formation and dynamics, as well as for assessing a country's labor resource potential.

The term migration originates from the Latin word *migratio*, meaning movement. In its broadest interpretation, migration refers to the spatial movement of

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populations across territories and regions that results in a change of permanent or temporary residence.

Population migration has an ancient historical background, dating back to the earliest stages of human societal development, notably the first major division of labor marked by the separation of animal husbandry from agriculture. Throughout history, the scale, intensity, forms, and consequences of migration have varied considerably across different periods. Despite this long history, systematic research on migration processes in our country, as well as in other post-Soviet republics, began only in the 1960s and 1970s. This delay was largely attributable to restrictions imposed since the 1930s on the study of demographic phenomena, including migration.

During this period, the concept of “population migration,” along with terms such as “unemployment” and other economic categories, was excluded from scholarly discourse and failed to gain recognition in economic literature. Notably, the term did not appear in the Great Soviet Encyclopedia published in the 1950s. Only from the 1960s onward did the concept of population migration begin to emerge in socio-economic and demographic studies. In the territory of the former USSR, including Azerbaijan, migration issues were increasingly examined by economists and geographers from the late 1960s through the early 1970s. They sought to explain the nature, forms, intensity, directions, and consequences of migration (Muradov, 2014).

Thus, the **purpose of this article** is to analyze current changes in the processes of international migration of the population of the Republic of Azerbaijan, to determine their socio-economic consequences.

Scholarly interpretations of migration vary. Some define it as the settlement of populations across territories, while others view it as a process or event of population redistribution within a given area. A further group distinguishes between population mobility and spatial distribution, conceptualizing migration as geographical mobility adopts a broad interpretation, defining migration as both migratory movement and related activities, while in a narrower sense it refers to individual relocation. Similarly, considers the migration process a component of overall migratory movement and activity.

Some scholars conceptualize migration as specific forms of population movement, including territorial, professional, sectoral, and social mobility. Equates population mobility with migration, while Sh. Muradov (2004) defines migration as movement from one locality to another. Migration may be understood through three dimensions: all population movements across regions; movements involving a change of residence, employment, or education, either permanently or temporarily; and movements resulting in territorial population differentiation. In general, migration is driven by various forces and motivations, which can be grouped into constant, relatively stable, and variable factors, the latter being linked to individuals' daily activities.

International migration is an unavoidable phenomenon with significant political, social, and economic implications in the contemporary world. Consequently, states seek to reduce its negative effects and enhance its benefits through migration regulation, which requires identifying and managing key migration determinants.

This study addresses four issues: the theoretical conceptualization of migration in economic literature and the distinctions among migration theories; the determinants of international migration and their variation across theories; the nature of migration regulation; and the impact of regulatory measures on migration determinants.

Although these issues are extensively discussed in economic literature, no consensus has been reached. This is largely due to limited migration data and the imperfection of existing theoretical models. Moreover, migration research is constrained by weak links between government migration policies, their underlying determinants, and academic analyses. A further challenge is the insufficient theoretical and methodological integration of economic factors with political, social, psychological, and demographic dimensions of migration. Given this context, we will attempt to conduct a comparative analysis of the existing responses to these questions (Aghayarova, 2021).

Migrants moving from their country of origin to a destination country encounter new cultural, social, and economic environments, making adaptation essential for secure living and effective employment. Migration generates both opportunities and challenges for the societies and economies of origin and destination countries, affecting population size, age and gender structure, national composition, and labor resources. The emigration of highly skilled workers negatively impacts the origin country's economy, while destination countries benefit from the acquisition of such human capital. At the same time, remittances sent by migrants contribute positively to living standards in the country of origin.

Following Azerbaijan's independence, migration patterns changed significantly. Between 1990 and 1994, immigration totaled 211,200 persons, while emigration reached 342,300, resulting in a negative migration balance of 131,100. During 1995–2007, immigration declined to 45,000, while emigration amounted to 101,200, producing a negative balance of 56,200. In contrast, during 2008–2022, immigration reached 38,700 and emigration fell to 17,700, leading to a positive migration balance of 21,000. In the period preceding independence and the early years thereafter, the sharp increase in emigration and the decline in immigration were mainly driven by political, national, and ethnic factors. In subsequent years, rising immigration and declining emigration reduced overall migration outflows and resulted in a positive migration balance after 2008. Political stabilization following Heydar Aliyev's return to power in 1993, the 1994 ceasefire with Armenia, the signing of the "Contract of the Century," and the restoration of economic relations contributed to sustained economic growth from the mid-1990s onward. In recent years, immigration and emigration trends have not been significantly affected by COVID-19 related restrictions.

Over the past decade, Azerbaijan's economic development has contributed to increased immigration. Unlike the 1990s, contemporary migration is largely free from political and ethnic motivations, with economic factors predominating. Although some immigrants are ethnic Azerbaijanis, their migration is driven primarily by economic considerations rather than ethnic identity, as many are well integrated into host societies abroad. Economic instability following the COVID-19 pandemic

and Russia's aggression against Ukraine, along with mobilization concerns, further intensified migration to Azerbaijan, attracting both Azerbaijanis and other ethnic groups. According to the State Migration Service of the Republic of Azerbaijan, the number of migrants entering the country in early 2021 approached 50,000.

The determinants of migration in Azerbaijan largely resemble those observed in other countries, though their relative importance varies over time. In the 1990s, emigration was primarily driven by political instability and declining living standards resulting from Armenia's aggression against Azerbaijan. Since 1994, however, political stability, sustained economic growth, the prevention of ethnic and religious conflicts, and the promotion of tolerance have substantially reduced migration pressures.

The development of a comprehensive legal framework for migration management, transparent procedures for labor migration, and the introduction of a "one-stop shop" system have also influenced migration dynamics. Nevertheless, a negative migration balance in recent years indicates that such trends cannot be addressed solely through direct state intervention. Excessive administrative regulation of migration may restrict freedom of movement and conflict with human rights principles. As a country pursuing globalization and democratic development, Azerbaijan upholds the right of its citizens to emigrate, provided they meet legal obligations at home and comply with the migration regulations of destination countries.

Studies show that Azerbaijan's migration regime is relatively permissive compared to developed countries, offering visa-free entry for many nationalities, simplified visa procedures for others, and streamlined work permit processes for labor migrants. Citizens of most former Soviet republics can stay visa-free for up to 90 days. Nevertheless, the country's persistent negative migration balance has prompted researchers to distinguish between primary and secondary migration determinants (Allahveranov, Guseynov, 2013; Wistrand et al., 2017; Yuksel et al., 2018; Çhudinovskikh et al., 2020)¹.

These studies highlight social instability and the prolonged conflict with Armenia as primary drivers of migration. Wistrand's ethnographic research emphasizes the social impacts of seasonal labor migration, while S. Yuksel et al., through econometric analysis (1995—2015), identify unemployment and low living standards as key determinants of emigration. O. Chudinovskikh et al. observe that in the early post-Soviet period, distinctions between temporary and permanent migration, as well as between legal and illegal employment, were unclear; subsequent governance and economic reforms increasingly structured migration processes. Although Azerbaijan has enacted over 20 migration-related laws in the past three decades, international evidence suggests that migration regulation is more impactful in developed countries. In developing nations, lower immigration flows reduce the effectiveness of direct regulation, while high, often unregulated emigration raises concerns about brain drain and its economic consequences.

¹ Migration Statistics in Azerbaijan Republic: Data Sources. Economic Commission for Europe, Conference of European Statisticians, Chisinau (Moldova, 10—12 September 2014). URL: <http://www.unece.org/index.php?id=33645>

These studies identify social instability and the prolonged conflict with Armenia as key drivers of migration. Wistrand's ethnographic work highlights the social effects of seasonal labor migration, while S. Yuksel et al. (1995—2015) show that unemployment and low living standards are major determinants of emigration. O. Chudinovskikh et al. note that early post-Soviet migration blurred the lines between temporary and permanent movement and between legal and illegal employment, though later governance and economic reforms increasingly structured these processes. Despite over 20 migration-related laws enacted in Azerbaijan over the past three decades, evidence indicates that migration regulation is more effective in developed countries. In developing nations, lower immigration flows limit regulatory impact, while high, often unregulated emigration raises concerns about brain drain and its economic effects.

In Azerbaijan, highly skilled emigrants mostly relocate to developed countries like the U.S. and EU nations, which can negatively affect the national economy, while low-skilled labor migrants generally move to Russia, Kazakhstan, Turkey, and Belarus, potentially generating economic benefits. Accordingly, migration policy could focus on attracting highly skilled professionals and restricting low-skilled labor immigration, though implementing such targeted measures requires rigorous quantitative analysis to ensure their effectiveness.

In general, the impact of state migration regulation measures on the country, as well as on the flow or volume of migrants from the country, is significant. We can express this in the form of a regression equation:

$$Y_t = \beta_0 + \sum \beta_j \cdot X_{j,t} + \varepsilon_t. \quad (1)$$

Here, equation (1) expresses the relationship between Y_t — the migration indicator and X_t — the economic development indicator. For X_t , we can consider the volume of Gross Domestic Product (GDP_t), the annual change in GDP (ΔGDP_t), or GDP per capita ($GDPPC_t$), and so on. Y_t can be defined as: a) the emigration flow of individuals with higher education ($EMEF_t$); b) the immigration flow of individuals with higher education ($IMEF_t$); c) the flow of other emigrating labor migrants (EMF_t); d) the number of other immigrating labor migrants (EMS_t). It is worth noting that the hypothesis $H_0 \beta_{j=0}$ is currently being examined.

In model (1), it is important to include other indicators that influence migration. For example, the unemployment rate in the country ($UNEMP_t$), the ratio of the average wage to the minimum wage ($waget$), the amount of funding allocated for science ($R\&D_t$), healthcare expenditures in the country ($HEXP_t$), and education. We can construct an empirical model of the relationship between migration indicators and macroeconomic indicators in the multivariate regression equation (1), incorporating the indicators of government expenditure (EDU_t). It is worth noting that some researchers also add the level of globalization of both the sending and receiving countries as factors that affect migration. For example, M. Gulyaliev (2018) considers that one of the important factors influencing migration is the level of globalization of countries. Through empirical assessments, he demonstrates that the patterns of emigration and immigration in Azerbaijan differ from

Multivariate regression relationship between Migration Indicators and Certain Macroeconomic Indicators in Azerbaijan

Indicators	EMEF _t	IMEF _t	EMF _t	IMF _t
r^2	0,936738	0,837509	0,972468	0,630376
Number of observations	20	20	20	20
β_0				
Coefficient	-572,728	-128,807	-1408	-856,208
Standard error	249,6358	65,21226	4479,855	4567,688
t -statistic	-2,29425	-1,97519	-0,3143	-0,18745
p -price	0,039073	0,069871	0,758283	0,854203
$\beta_1(EMP_t)$				
Coefficient	0,799529	0,358838	16,27688	18,215
Standard error	0,451257	0,117882	8,098064	8,256837
t -statistic	1,771781	3,044054	2,009972	2,206051
p -price	0,099854	0,009407	0,065657	0,045984
$\beta_2(UNEMP_t)$				
Coefficient	1,248299	0,069184	23,887	0,251213
Standard error	0,255014	0,066617	4,57637	4,666095
t -статистика	4,895023	1,038524	5,219639	0,053838
p -price	0,000293	0,317957	0,000165	0,957883
$\beta_3(EMP_t)$				
Coefficient	-1,07033	-0,47259	-24,401	-25,0374
Standard error	0,655675	0,171282	11,76645	11,99715
t -statistic	-1,6324	-2,75915	-2,07377	-2,08695
p -price	0,126569	0,016251	0,058529	0,057149
$\beta_4(R\&D_t)$				
Coefficient	-1,18238	0,052394	-71,5596	-3,3224
Standard error	1,262141	0,329708	22,64983	23,0939
t -statistic	-0,93681	0,15891	-3,15939	-0,14386
p -price	0,365936	0,876182	0,007534	0,887814
$\beta_5(HEXP_t)$				
Coefficient	-0,11439	-0,10867	1,538666	-7,72257
Standard error	0,26255	0,068586	4,711603	4,80398
t -statistic	-0,4357	-1,58444	0,32657	-1,60754
p -price	0,670199	0,137108	0,749192	0,131942
$\beta_6(EDU_t)$				
Coefficient	0,118759	0,017864	3,581534	1,776647
Standard error	0,082341	0,02151	1,477658	1,50663
t -statistic	1,442282	0,830504	2,42379	1,17922
p -price	0,17288	0,421245	0,030686	0,259443
F -significance	3,02E — 05	0,006795	1,73E — 07	0,27632

Source: assessed by the author based on: State Statistical Committee of the Republic of Azerbaijan. Demographic Indicators of the Statistical Compilation of Azerbaijan. Baku, 2024. URL: <https://documents.worldbank.org/en/publication/documents-reports/documentdetail/099101824180532047>

migration processes in other countries due to certain characteristics. While the GDP per capita, taking into account emigration flows, the level of GDP, and the share of wage workers in the total number of jobs are somewhat dependent on the globalization index, the dependence on the level of economic freedom is stronger.

Studies conducted across different countries show that economic and social factors have a dominant influence on migration processes, while other factors such as technology, physical capital, and labor force also significantly impact economic development. As mentioned earlier, the emigration of highly qualified personnel can negatively affect GDP, while their immigration can have a positive effect. In other words, economic development can influence migration, and migration can in turn impact economic development, creating a mutual causal relationship. Therefore, we can express the mutual (bidirectional) relationship between these indicators through equation (2):

$$\begin{cases} Y_t = \alpha_0 + \sum \alpha_j \cdot Y_{t-j} + \sum \beta_j \cdot X_{t-j} + \varepsilon_t \\ X_t = \alpha_0 + \sum \alpha_j \cdot X_{t-j} + \sum \beta_j \cdot Y_{t-j} + u_t \end{cases} \quad (2)$$

Equation (2) essentially expresses the Granger causality relationship between Y_t , the migration indicator, and X_t , the indicators of economic development.

When making calculations, certain assumptions must be made. Thus, to estimate the number of highly educated emigrants or immigrants, we will assume that primarily highly educated or highly skilled personnel emigrate to developed countries. For analytical purposes, migrants moving to or from other countries — including post-Soviet states (excluding the Baltic countries) — will not be classified as highly educated. While this assumption may distort data, it allows for distinguishing “brain drain” from general migration. Emigrants to the USA, UK, Germany, Israel, the Baltic states, Poland, and Greece will be considered contributors to brain drain, as they generally require proficiency in English, whereas knowledge of Russian suffices for most other post-Soviet destinations. These migrants are assumed to be highly skilled, reflecting the language requirements and complexities of migration to developed and European countries.

In calculations, rather than using the standard unemployment rate, we will sum individuals classified as unemployed with those not receiving wages and considered self-employed. This adjustment accounts for the significant portion of labor migrants engaged in seasonal or rural self-employment who migrate out of necessity to find work (Table).

CONCLUSION

According to the models presented in table, the emigration of highly qualified personnel from Azerbaijan is significantly influenced by only one of the examined indicators: the number of unemployed individuals in the country. The findings demonstrate that an increase in unemployment corresponds with a rise in the emigration of highly qualified professionals. Conversely, an increase in the employed population is associated with a growth in the inflow of highly qualified immigrants.

Furthermore, three factors exert a significant influence on the outflow of low-skilled labor migrants from the country: the level of unemployment, the funding allocated to scientific research, and expenditures on education. As unemployment increases, the number of labor migrants leaving the country rises. Notably, funding for scientific research exhibits a negative effect on labor migration, indicating an inverse relationship between science expenditures and the emigration of labor. In contrast, there is a positive correlation between education expenditures and labor migration. This suggests that improvements in the education system, when combined with a high unemployment rate, contribute to an increase in the emigration of educated individuals. While the development of education is essential, it is even more critical to implement measures that effectively integrate educated personnel into the domestic economy.

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МАКРОЕКОНОМІЧНІ МЕХАНІЗМИ
ДЕРЖАВНОГО РЕГУЛЮВАННЯ МІЖНАРОДНОЇ
МІГРАЦІЇ В АЗЕРБАЙДЖАНСЬКІЙ РЕСПУБЛІЦІ

Проведено комплексне дослідження і науковий аналіз основних характеристик механізмів регулювання міжнародної міграції в Азербайджанській Республіці з використанням порівняльно-аналітичного підходу. Наукова і практична значущість праці полягає в оцінюванні більш ефективної реалізації ключових переваг, які створюють для соціально-економічного розвитку країни процеси міжнародної міграції.

Поряд з проведеним поглибленим аналізом теоретичних і методологічних засад регулювання міжнародної міграції, увагу зосереджено на порівняльному розгляді міграційної політики й практики управління, сформованих у рамках моделей економічного розвитку різних країн. Водночас детально проаналізовано інституційні механізми, нормативно-правову базу та інструменти державного регулювання для управління процесами міжнародної міграції в Азербайджанській Республіці.

Для оцінювання впливу макроекономічних факторів на процеси міжнародної міграції використано методи статистичного аналізу і узагальнення, а також регресійну та економетричну методики оцінювання. На основі проведеного емпіричного аналізу узагальнено й оцінено сучасний стан змін, що відбуваються в процесах міжнародної міграції в Азербайджанській Республіці, систематизовано його характеристики. Відповідно, отримані результати мають істотне значення для вдосконалення процесів ухвалення рішень у сфері регулювання міжнародної міграції.

Ключові слова: міграція; еміграція; висококваліфіковані кадри; імміграція; вплив мізків; державне регулювання.

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