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External Migration of the Working-Age Population in Times of Geopolitical Crisis: The Case of Almaty

Saule Sh. Sagandykova*[a], Galym B. Omarov[a], Timur V. Ananyev[a], Aigerim B. Balkenova[a]

[a] *International Information Technology University, 34/1 Manas St., Almaty, Kazakhstan*

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ABSTRACT

The research aims to identify changes in external migration of the working-age population of Almaty in the context of geopolitical instability, starting from 2022. The research methodology is based on a quantitative approach and employs the following analytical methods: descriptive statistics, comparative analysis of key indicators (number of arrivals, emigrants, share of migrants with higher education) before and after 2022, and difference-in-differences. The source database of research is analytical reports from international organisations (UNHCR, IOM, World Bank, OSCE) and official statistics from the Bureau of National Statistics of the Republic of Kazakhstan for 2000–2023, including dynamic tables on external migration by country, age, gender, and education. The findings show that since 2022, Almaty has transitioned from stable emigration to active immigration, primarily of skilled specialists from Russia. In 2023, the influx of migrants exceeded the outflow by 6.5 times, and their total number increased by 194.6% compared to the previous year. For the first time in 24 years, an influx of specialists with higher education was recorded, especially from Russia and the Baltic countries. More than 60% of immigrants had higher or secondary specialized education. The most significant increase was recorded among specialists in technical (27.5%), economic (19.3%) and pedagogical (17.8%) fields. The factors that contributed to this reversal are identified, including regional instability and the attractiveness of Almaty. The application of the results consists of substantiating recommendations for state migration policy: developing mechanisms for integrating skilled migrants, digital monitoring of flows, etc.

KEYWORDS: Economy, Urban Economy, Regional Strategy, Geopolitical Instability, Human Capital, External Migration, Preventive Migration

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*** Corresponding author: Sagandykova S.Sh.** – Cand. Sc. (Econ.), PhD, Associate Professor, International Information Technology University, 34/1 Manas St., Almaty, Kazakhstan, email: s.sagandykova@iitu.edu.kz

Внешняя миграция трудоспособного населения в период геополитического кризиса: на примере Алматы

Сагандыкова С.Ш. [a]*, Омаров Г.Б.[a], . Ананьев Т.В.[a], Балкенова А.Б.[a]

[a] *Международный университет информационных технологий, ул. Манаса 34/1, Алматы, Казахстан*

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АННОТАЦИЯ

Целью настоящего исследования является выявление изменений во внешней миграции трудоспособного населения г. Алматы в условиях геополитической нестабильности, начиная с 2022 г. Методология исследования основана на количественном подходе и использует следующие аналитические методы: описательная статистика, сравнительный анализ основных показателей (число прибывших, выбывших, доля мигрантов с высшим образованием) до и после 2022 г., а также метод разности разностей. Информационной базой исследования послужили аналитические отчеты международных организаций (УВКБ ООН, МОМ, Всемирный банк, ОБСЕ) и официальная статистика Бюро национальной статистики Республики Казахстан за 2000-2023 гг., включая динамические таблицы по внешней миграции в разрезе стран, возраста, пола и образования. Результаты исследования показали, что с 2022 г. в г. Алматы произошёл переход от стабильной эмиграции к активной иммиграции, главным образом квалифицированных специалистов из России. В 2023 г. число въезжающих мигрантов превысило отток в 6,5 раза, а общий объем прибытий увеличился на 194,6% по сравнению с предыдущим годом. Впервые за 24 года зафиксирован приток специалистов с высшим образованием, особенно из России и стран Балтии. Более 60% иммигрантов имели высшее или среднее специальное образование. Наибольший рост зафиксирован среди специалистов в технических (27,5%), экономических (19,3%) и педагогических (17,8%) сферах. Исследование определяет региональную нестабильность и растущую привлекательность Алматы как основные движущие факторы этого сдвига. Применение результатов заключается в обосновании рекомендаций для государственной миграционной политики: развитие механизмов интеграции квалифицированных мигрантов, цифровой мониторинг потоков и др.

КЛЮЧЕВЫЕ СЛОВА: экономика, городское хозяйство, региональная стратегия, геополитическая нестабильность, человеческий капитал, внешняя миграция, превентивная миграция

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*** Корреспондирующий автор: Сагандыкова С.Ш.** – к.э.н., PhD, ассоциированный профессор, Международный университет информационных технологий, ул. Манаса 43/1, Алматы, Казахстан, email: s.sagandykova@iitu.edu.kz

INTRODUCTION

According to the "Concept of migration policy of the Republic of Kazakhstan for 2023–2027", the priority task is to form high-quality human capital and attract skilled labour for sustainable economic development (Ministry of Labour and Social Protection of the Population of the Republic of Kazakhstan, 2023). At the same time, it is also essential to consider the evolving political stance of Kazakhstan toward migration policy. President K.-J. Tokayev instructed the Security Council to develop decisive measures against illegal migration and to tighten controls over labor migration in Kazakhstan (Akorda, 2025). This reflects increasing concern over unregulated migration flows and their potential implications for social stability, national security, and labor market competition. So, Kazakhstan's proactive stance on labor migration reflects its attempts to balance national security concerns with human capital inflows.

Modern challenges also form new requirements for the quality of human capital. Technological transformations and the increasing importance of knowledge transform the employment of migrants, changing the structure of demand for qualified personnel and the profile of competencies. In Kazakhstan the proportion of qualified specialists among emigrants remains high (Amrin et al., 2020). The outflow of personnel, especially young people with higher education, poses a threat to the sustainability of labor potential (Syzdykbekov, 2022). The stratification of youth employment and desire of young people for labor migration abroad for higher career and social standards outside the country affects the domestic labor market and demographic structure (Matzhanova et al., 2021). This requires active government intervention and the development of effective mechanisms for retaining and attracting professional resources.

At the same time, the labor market of Kazakhstan is replenished with immigrants from Central Asian countries, mainly with low qualifications. And external labor migration to Kazakhstan is formed under the influence of a combination of economic and non-economic factors (Rakhmetova & Syzdykbekov, 2024). In recent years, the Republic of Kazakhstan has been facing significant transformations in the structure of external migration, especially within the working-age population. These changes have become particularly acute against the backdrop of two large-scale external shocks: the COVID-19 pandemic (2020–2021) and the escalation of the Russia-Ukraine geopolitical crisis beginning in 2022. Kazakhstan, and especially its largest metropolis Almaty, is gradually turning from a country of labor outflow into a host country for skilled labor migrants from the CIS and other post-Soviet regions. So, in 2023, more than 5,800 external migrants arrived in Almaty, which is 37.2% of the total flow in the regions of the country (Bureau of National Statistics, 2024). With the onset of the 2022 geopolitical crisis, the structure and direction of external migration to Almaty changed dramatically: for the first time in the last 20 years, a stable positive migration balance was recorded in the working-age group.

Migration has a significant impact on economic activity, including unemployment and labor productivity (Iskakova et al., 2023). In the context of growing international tensions, migration is becoming not only a socio-economic, but also a politically determined phenomenon. Understanding the relationship between political decisions, especially military-political ones, and the characteristics of migration flows enables the formulation of more effective measures to manage human capital. The research aim is to identify changes in external migration of the working-age population of Almaty in the context of geopolitical instability, starting from 2022. Particular attention will be paid to the comparison of migration flows "before" and "after" the sharp geopolitical aggravation in Eastern Europe, based on the principles of cause-and-effect analysis. The focus is on shifts in the balance of migration flows, the structure of incoming migrants (by education, country of origin and professional specialization), as well as an assessment of the possible contribution of these processes to the development of a "smart city" and human capital management strategies.

Previous empirical studies in the Central Asian region have mainly focused on migrant-sending countries or migration to high-income countries. As a result, the role of middle-income cities as new centers of attraction for highly skilled labor in the context of the crisis remains underexplored. The research fills this critical gap in the migration literature. It highlights a relatively unexamined shift: the emergence of a politically stable, middle-income post-Soviet city as a new destination for skilled migrants.

LITERATURE REVIEW

There are several major schools of thought covering migration issues. Human capital theory considered the migration of skilled workers as a way of reproducing and building up knowledge, skills and labor potential in receiving regions (Becker, 1964). Regional labor mobility theory highlights the

significance of proximity and institutional familiarity in cross-border labor movements. It emphasizes spatial proximity, linguistic and cultural commonality, and reduced transaction costs when moving. The concept of preventive migration - migration driven by anticipated risks rather than direct threats - explains behavioral responses to geopolitical instability. The preventive migration model, which explains the movement of people in response to expected, rather than realized threats (e.g. mobilization, political persecution). A "push-pull" model classifies migration decisions based on push and pull factors, including security, living standards, and institutional stability. Gravity models are widely used in migration research to estimate bilateral flows, incorporating factors such as population size, distance, economic disparities, and institutional proximity (Beine et al., 2015a). Additionally, the comparative analysis of immigration policies, such as those compiled in the IMPALA (International Migration Policy and Law Analysis) database, offers valuable insights into how institutional frameworks shape migration patterns across countries (Beine et al., 2015b).

Any escalation in international security tensions tends to intensify migration processes. According to Kenkoh Nkiese and Kininla Wirba (2024), armed conflict can lead to loss of life, displacement of people, and human rights violations. While migration often occurs for various reasons, such as the search for food and shelter, armed conflicts also drive migration. Indeed, geopolitical crises and military conflicts result in the displacement of human capital in the form of refugees and migrants. According to the United Nations High Commissioner for Refugees, the reasons people move can be complex. Some of these individuals are refugees, while others are migrants, and conflating these two terms can be problematic. Generally, a migrant is someone who relocates not due to a direct threat of persecution or death but primarily to improve their life through employment opportunities, education, family reunification, or other reasons. Unlike refugees, who cannot safely return home, migrants do not face such barriers to return (UNHCR, 2022). In addition to these categories, migration can also include a category of the workforce driven by geopolitical crises and military conflicts of various scales. Such conflicts pose either a direct or indirect threat of persecution for refusing to participate in combat or the risk of death for those involved. This can be classified as preventive migration, triggered by negative expectations. In such cases, immigrants may not qualify for refugee status and the associated material and other support. They, like refugees, may also encounter obstacles when returning to their homeland. Preventive migration caused by military conflict is likely to be characterized by instability and temporary displacement, as the cessation of hostilities and conflict resolution may lead to return migration. According to Williams et al. (2021), the number of people who leave due to conflict and the number of people who remain outside their country because of conflict remain insufficiently studied. In the case of the Nepal conflict during the 1996–2006 period, it was revealed that the rate of outward migration actually decreased on average, primarily due to a prior decline in return migration, and the number of migrants outside the country only modestly increased during that period.

In conflict-adjacent regions, security risks, labour market conditions, and state policy are critical drivers of migration (Czaika & Reinprecht, 2023). Political systems and policy regimes are shown to significantly shape not only migration volume but also its demographic composition and temporal structure (Boucher & Gest, 2018). Migration driven by geopolitical conflict has been conceptualized as preventive migration, whereby individuals relocate not under immediate persecution but in anticipation of worsening conditions. According to Williams et al. (2021), conflict-induced migration disproportionately affects neighbouring stable regions. Moreover, the literature also addresses less-visible migration flows, including irregular migration and the role of enforcement or return policies (Dustmann et al., 2017). In this context, the literature emphasizes the growing role of international aid as a policy tool to manage emigration pressures, and development aid targeted at origin countries can affect migration intentions and patterns, although not always as intended (Clemens & Mendola, 2024).

The literature distinguishes economic migration from refugee flows, but also notes that hybrid forms exist, particularly when migration is driven by conflict avoidance rather than economic motives alone. So, economic or educational migration typically flows toward countries with higher levels of development and per capita income. However, a sharp increase in population inflows during a military conflict in a less developed country or one with a similar per capita income and development level typically indicates forced migration. Thus, Oshchepkov et al. (2023) analyzed the impact of the situation in Ukraine on migration flows in Central Asia (CA) and reached several conclusions. First, the conflict led to a significant increase in migration flows from Russia to Central Asia, particularly to Kazakhstan, both for tourism and resettlement purposes. The primary goal of emigrants was likely to avoid geopolitical risks, while the desire to change residence

or travel was merely a means to achieve this goal, as there were significantly fewer such individuals before 2022. Second, Russian relocants were predominantly highly qualified, which should bring substantial potential benefits to the economic and technological development of Central Asian countries. However, these optimistic conclusions may be premature. Accurately assessing benefits requires consideration of factors such as the likelihood of return migration after the geopolitical crisis ends, the quantitative ratio of local specialists to immigrant specialists, the employment rate of immigrants (especially concerning their experience and education), and whether immigrants plan to further emigrate to more developed countries. According to Matusevich (2024), the escalation of the situation may not bring benefits but problems for CA countries, particularly for Kazakhstan. Crisis-related risks remain a real possibility that could undermine the stability of Central Asia as a region. While several million labor migrants from Kyrgyzstan, Tajikistan, and Uzbekistan continue to live and work in Russia, many are beginning to look for alternative destinations. In Central Asia, Kazakhstan is emerging as a new hub for labor migration. The dual nature of migration as both an opportunity for human capital development and a risk for public governance complicates the policy response. The current migration trends should therefore be viewed in light of both geopolitical drivers and national-level regulatory frameworks.

Therefore, based on the above, this study proposes the following hypotheses:

H1: The geopolitical crisis in Eastern Europe in 2022 led to a structural reversal of external migration flows in Almaty, transforming the city from a net sender into a net receiver of working-age migrants, especially those with higher and vocational education.

H2: Political decisions and international conflicts can influence migration flows to third countries (for example, Kazakhstan) that are not parties to the conflict, creating an asymmetric redistribution of labor resources.

MATERIALS AND METHODS

The methodology of this study is based on a quantitative approach and employs the following analytical methods: descriptive statistics to identify the overall change in the migration balance and the distribution of migrants by country, age and education; comparative analysis of key indicators (number of arrivals, emigrants, share of migrants with higher education) before and after 2022; difference-in-differences estimation to test the hypothesis about the impact of the geopolitical crisis as an exogenous shock. In this context, the dynamics of migration flows in Almaty are compared with the control group (for example, another large city in Kazakhstan) before and after the crisis. Together, these methods provide the opportunity to both quantitatively assess migration changes and interpret them in terms of their socio-economic consequences for the city.

The analysis draws on data from analytical reports from international organizations (UNHCR, IOM, World Bank, OECD) and official statistics from the Bureau of National Statistics of the Republic of Kazakhstan for 2000-2023, including dynamic tables on external migration by country, age, gender, and education. The rationale for the time focus (2022-2023) is associated with the onset and development of the geopolitical crisis, which led to a sharp increase in migration inflow from neighboring countries, primarily Russia. The comparative period covers 2000-2021, characterized by stable negative migration dynamics (outflow of skilled personnel).

The study examines data across the following dimensions:

(1) Age: the working-age population is defined following the Labor Code of the Republic of Kazakhstan and the Law of the Republic of Kazakhstan on Pension Provision: 16-60.5 years for women and 16-63 years for men.

(2) Professional and educational background: migrants with higher and secondary specialized education are considered, in the following priority sectors: technical sciences, economics, pedagogy, IT and healthcare.

(3) Country of origin: CIS countries: Armenia, Azerbaijan, Belarus, Kyrgyzstan, Moldova, Russia, Tajikistan, Turkmenistan, Ukraine, Uzbekistan. Note: Ukraine and Moldova will de facto reduce their participation in CIS integration structures from 2023, which is essential for contextualizing migration decisions;

(4) Other countries (hereinafter – OC): all other countries with which Kazakhstan has recorded migration interactions, including the Baltic States (Lithuania, Latvia, and Estonia), along with Israel, Germany, Greece, China, and the United States.

This classification reflects the geopolitical specificity of the region and the historically established migration links between Kazakhstan and other post-Soviet states. Particular attention is given to Russia as the primary source of skilled migrants during the ongoing geopolitical crisis. This grouping enabled a more precise interpretation of structural changes in external migration and identification of differences in the composition and motivations of

migrants based on their countries of origin. Moreover, it allowed for comparison with broader international migration trends affecting middle-income countries.

In interpreting the results, the study considers distinctions in migrants' legal status, entry channels, and socioeconomic background across country groups. This approach enhances the robustness of conclusions regarding the inflow of human capital to Almaty in 2022–2023. The methodological framework and approach of this study also consider conceptual tensions in the literature, including differing classifications of skilled migration and the measurement of human capital quality, and address a notable gap in the literature concerning labor migration to middle-income cities such as Almaty, which are experiencing structural transformation due to geopolitical crises. This hybrid positioning of Almaty - as both sender and receiver of skilled labor - demanded an adapted methodological design that accounts for internal and external migration dynamics simultaneously.

RESULTS

For more than 20 years, until 2022, Almaty was characterized by a "brain drain" to Western countries and Russia, with the outflow of highly qualified personnel abroad predominating over their inflow. The first group of periods – 2000–2002 and 2014–2021 – when the predominance of the outflow of the working-age population characterized external migration. The second group – 2003–2013 and 2022–2023 – when external migration had the opposite direction, meaning the inflow of the working-age population was greater than its outflow. When considering external migration of the working-age population as a whole - i.e., without distinguishing human capital but as labor migration - two groups of periods can be identified, opposite in their direction (Figure 1).

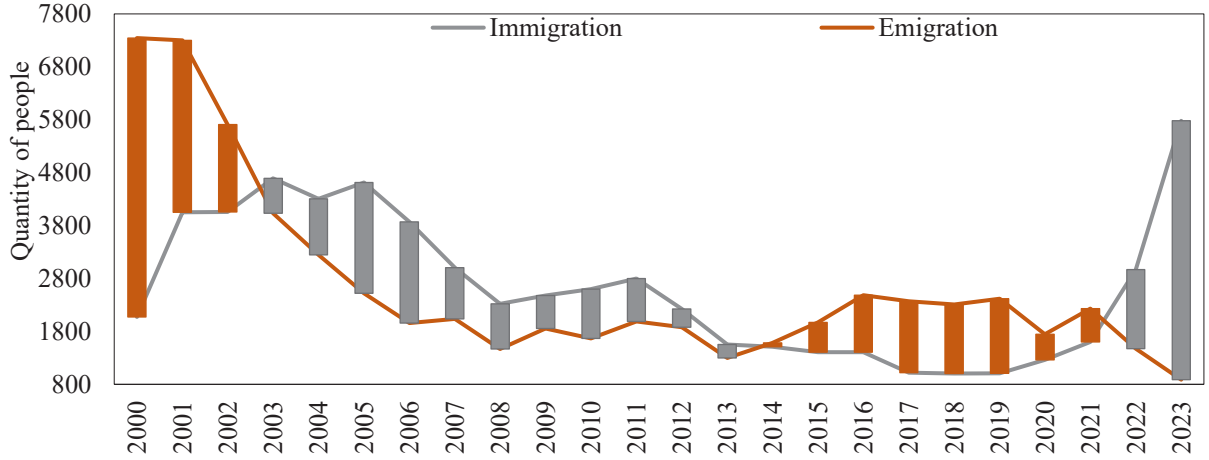


Figure 1. External migration across all flows of the working-age population in Almaty, persons

The identified alternating periods differ not only in direction but also in duration, volume, and the share of qualified specialists within them. Comparing the initial and final years of the period under review reveals asymmetry in the direction of migration processes. From 2000 to 2002, there was a sharp decline in emigration, which continued until 2008, against the backdrop of a sharp increase in immigration from 2000 to 2003. In 2000, the number of immigrants was 3.6 times lower than the number of emigrants leaving for various countries. The years 2022–2023 were characterized by a sharp increase in immigration and a decrease in emigration, reaching their highest and lowest levels, respectively, over the past 24 years. In 2023, the number of immigrants exceeded the number of emigrants by 6.5 times, with their total number increasing by 194.6% compared to the previous year.

The share of immigrants with higher education among the working-age population arriving in Almaty in 2022–2023 was 1.3 times lower than that of emigrants during this period (Figure 2).

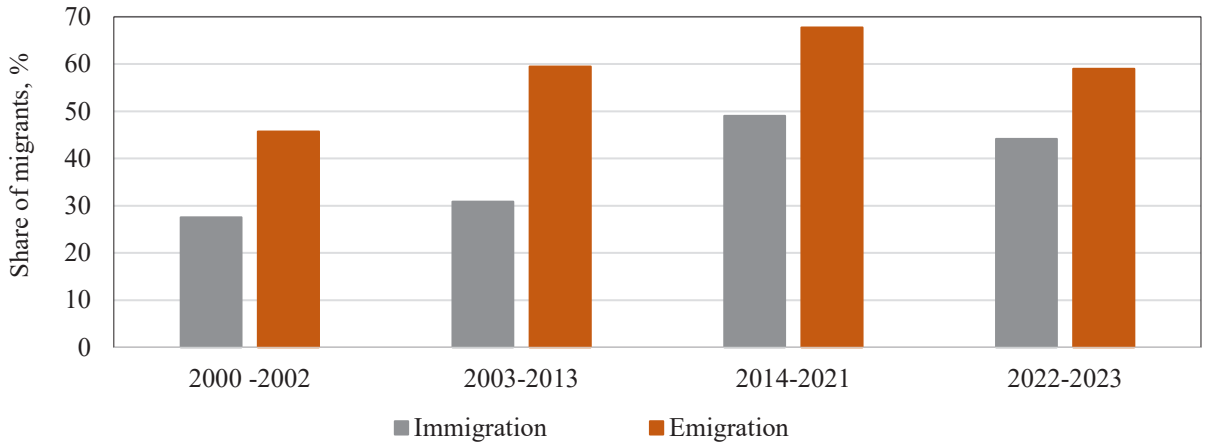


Figure 2. Share of migrants with higher education in the external migration of the working-age population, %

Period 2003–2013 mainly demonstrates a synchronous decline in migration processes: a reduction in both emigration and immigration. Over this 11-year period, the inflow of the workforce was 1.6 times higher than the outflow. The years 2013–2014 marked a turning point: the decline in the arrival of the working-age population continued, while emigration began to increase. Over the next 8 years, the outflow of labor force exceeded the inflow by an average of 1.8 times. The share of emigrants with higher education among the working-age population who left Almaty in 2003–2013 was almost twice as high as that of immigrants with higher education arriving in the city. In the following 2014–2021 period, this ratio decreas ed to 1.4 times. Overall, from 2000 to 2023, the share of individuals with higher education among the working-age population leaving the country has consistently exceeded the share of individuals with higher education arriving in the country. The changed trends in migration processes, namely the surge in arrivals and the sharp decline in emigration from Almaty over the past two years, can largely be explained by the geopolitical crisis of 2022. External migration data with CIS countries and OC confirm it.

External migration in the period from 2000 to 2023 developed in two directions, with CIS and OC, with the overwhelming majority of migration processes occurring with the CIS (Figure 3).

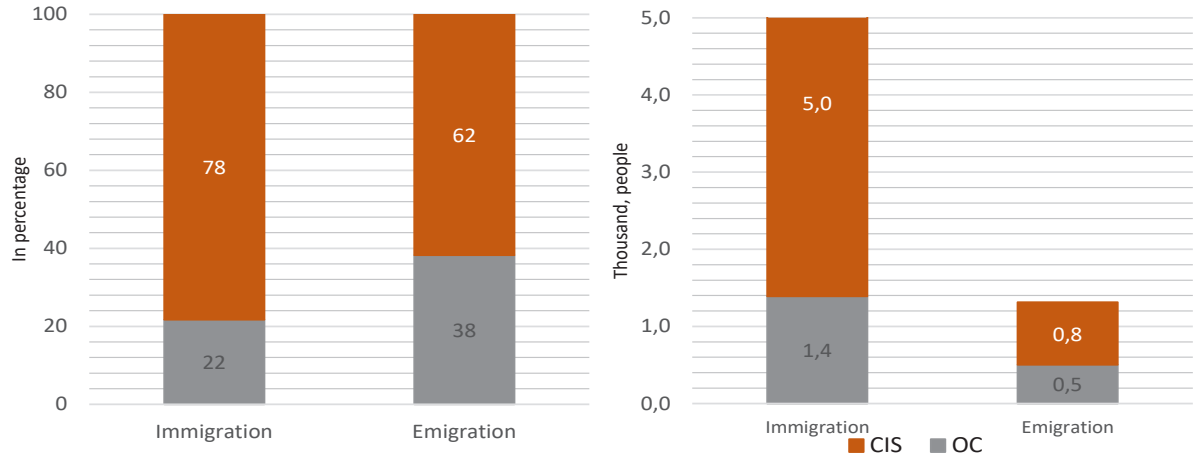


Figure 3. External migration by countries, 2023

According to 2023 data, more than 5,000 people arrived from the CIS this year, which is 3.5 times more than from OC and accounts for 78% of all arrivals. Regarding departures, emigrants preferred CIS countries, with their number being 1.6 times greater than those emigrating to OC. In 2023, the number of people who emigrated to the CIS exceeded 800.

In migration with CIS countries, Russia has played a decisive role over the past 24 years. The correlation level between the arrival of the population from Russia and the total number of immigrants in Almaty during this period is positive and very high (r = 0.935). At the same time, the share of emigrants from Russia in the total number of immigrants has averaged almost 40%. The correlation level between the departure of the population from Almaty to Russia and the total number of people leaving Almaty for the CIS is also positive and extremely high (r = 0.999). On average, the share of those who emigrated to Russia from Almaty fluctuated around 94%. Migration with OC did not exhibit such clear correlation patterns. However, some countries stood out as leaders in migration flows. The largest number of immigrants to Almaty over the 24-year period came from China (9.4 thousand people). The leading country in emigration was Germany, with 7.6 thousand people leaving for there.

In 2022, a turning point occurred when the number of arrivals in Almaty exceeded the number of departures for the first time in 13 years (Figure 4).

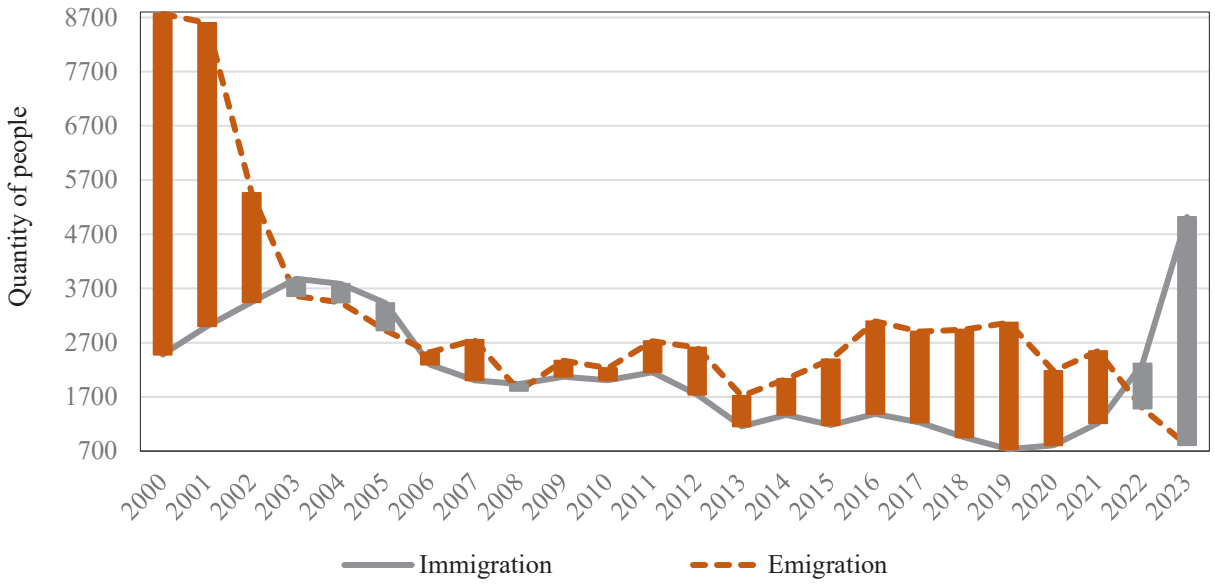


Figure 4. Migration with CIS countries, Almaty, persons

A significant part of this influx came from Russia. Compared to 2021, the number of immigrants from Russia increased by 6.8-fold in 2023. Russia's share in total immigration rose from 39% (the average for 2000–2021) to 61% (the average for 2022–2023). This increase amounted to 4,500 people relocating to Almaty over these two years. The second-largest source of immigrants to Almaty has been and remains Uzbekistan, but its share decreased from 33% to 13% over the same periods. The high share of immigrants from Uzbekistan was linked to the government program supporting "Oralmans" (as of January 1, 2021, the term "Oralman" in Kazakhstan's official documentation was replaced by "Kandas"). For example, in 2001, the quota for Oralmans was set at 600 people, but the total number of returnees exceeded this quota by 15-fold. In 2002, despite an increase in the quota to more than 2,000 families, the number of immigrants was nearly four times higher. Even in 2004, when the quota increased to 10,000 families, total immigration exceeded the quota by 86%. Uzbekistan was the top source of immigrants (United Nations Development Program (UNDP), 2001). Many Kandas sought to settle in Almaty. All CIS countries showed increased migration inflows to Almaty during the geopolitical crisis, especially from Central Asian countries (CA) and Ukraine. However, their numbers were significantly lower than those from Russia: Uzbekistan – 964 people, Kyrgyzstan – 831 people, Tajikistan – 472 people, Ukraine – 290 people.

The number of arrivals from other countries remains relatively low in absolute terms. Before the escalation of the geopolitical crisis, it fluctuated between 400–900 people. During the COVID-19 years (2019–2020), the excess of arrivals over departures was driven by migration from Afghanistan and South Korea, as well as a sharp increase in immi-

grants from China. In 2019, 356 people arrived from China, twice as many as the previous year. In 2020, the number of immigrants from China increased by nearly 100 (Figure 5).

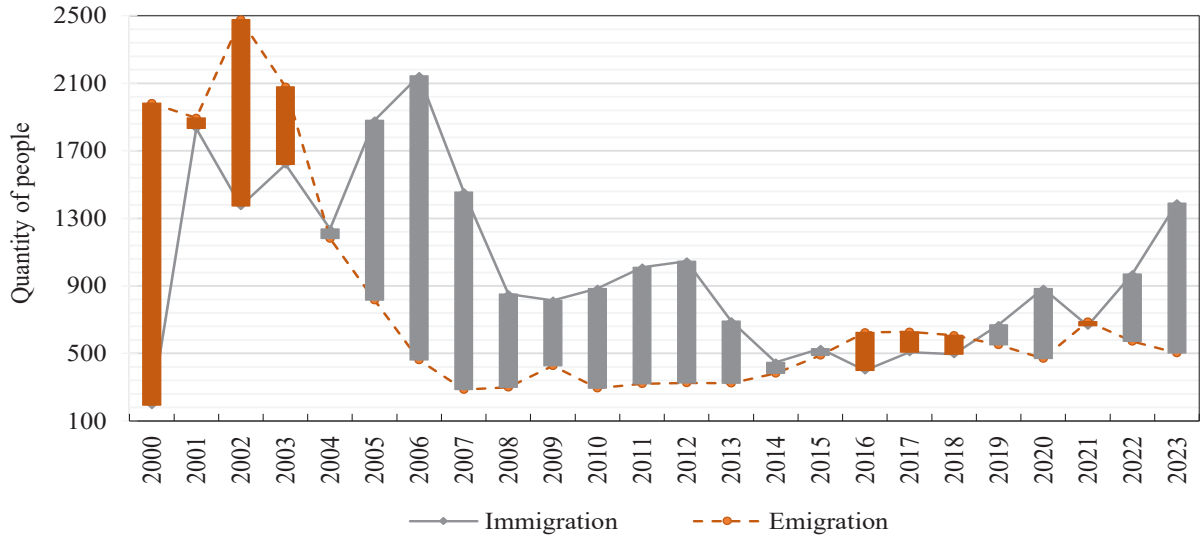


Figure 5. Migration to Almaty from other countries, persons

Before the crisis, the correlation between the number of immigrants from China and the total number of immigrants in Almaty was very high (r = 0.904). A total of 9,900 people moved (46% of all arrivals). Besides China, other significant countries of origin included: Turkey – 2,700 people, Mongolia – 700 people, and Germany – 900 people. In 2022–2023, the flow of immigrants from Turkey and China sharply declined. From Turkey, it amounted to only 5 people over two years. China reduced the number of immigrants to 24 people per year.

At the same time, the arrival of immigrants from the Baltic states began to increase. Their share in emigration from other countries to Almaty reached 43% (Figure 6).

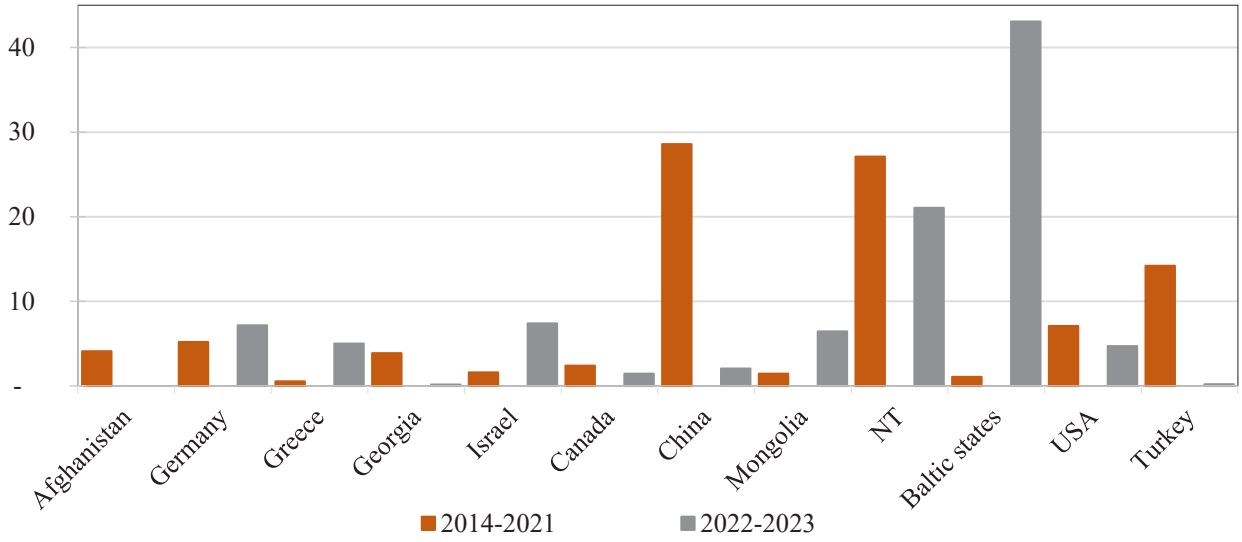


Figure 6. Share of migrants who immigrated to Almaty, in percentage

In the previous eight-year period, it averaged 1.1%. In absolute terms: 493 people arrived from Lithuania, 185 from Latvia, 339 from Estonia. The shares of immigrants from Israel, Greece, and Mongolia also increased. The inflow from Mongolia can, in particular, be explained by the presence of ethnic Kazakhs living there, who, upon moving to Kazakhstan, can obtain Kandas status, improving their economic situation.

Emigration from Almaty to other countries is primarily oriented toward developed countries in America, Europe, and Asia (Figure 7).

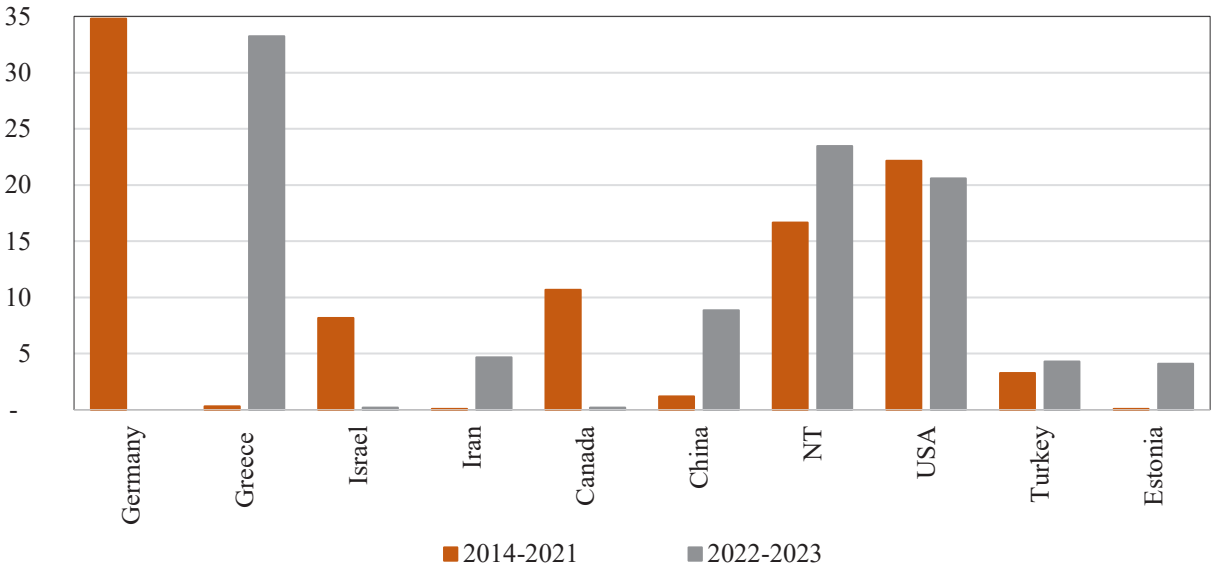


Figure 7. Share of migrants who emigrated from Almaty, in percentage

Emigrants preferred the USA and Turkey, and their shares remained largely unchanged. In 2022–2023, about 21% of emigrants moved to the USA, and 4% to Turkey. The Human Development Index of these countries is higher than that of Kazakhstan, and they remained attractive for the outflow of highly qualified specialists. A significant portion of emigrants (23%) did not specify their destination country. The share of emigrants from Almaty to Canada, Israel, and Germany approached zero. The geopolitical crisis caused a significant influx (over 1 million people) of Ukrainian refugees to Germany, creating difficulties for migration to this country from other regions (UNHCR Data Portal, 2023). The Arab-Israeli conflict, which began in 2020, reduced the attractiveness of emigration to Israel. The halted outflow of migrants to China in 2019–2021 resumed in 2022. Emigration to Greece increased from 0.2% to 33% (206 people in 2022, 151 people in 2023) and became a feature of this period. The reason for this was the relative ease of entry into Greece, regardless of nationality, for further movement within the European Union. For example, an investment of €250,000 already allows obtaining a residence permit in Greece. This was the minimum investment amount among EU residence permit programs. Thus, Greece, instead of Germany, became more attractive for relocation to Western Europe.

Changes in migration processes in 2022–2023 were characterized by an increase in the inflow of the workforce with higher education. In 2023, their arrival exceeded departure by 4.7-fold (Figure 8).

Since 2022, for the first time, it has become possible to talk about the end of the “brain drain” process, which had continued until 2021. The brain drain occurred even during the 2003–2013 period, when, as discussed earlier, the arrival of the working-age population numerically exceeded its departure. Over 22 years, the outflow of human capital exceeded its inflow, except for 2006, when the difference between departures and arrivals was only 90 people. After the start of the geopolitical crisis, the inflow of specialists with higher education not only began to grow rapidly, but there was also a parallel decrease in their outflow from Almaty. In 2022, the emigration of highly educated specialists decreased by 2 times compared to the previous year and continued to decline in 2023. 34% of all immigrants with higher education arriving in Kazakhstan settled in Almaty, and in 2023, their number reached 2,607 people. The departure of specialists with higher education decreased from 1,283 people in 2021 to 558 people in 2023, representing a reduction of more than half.

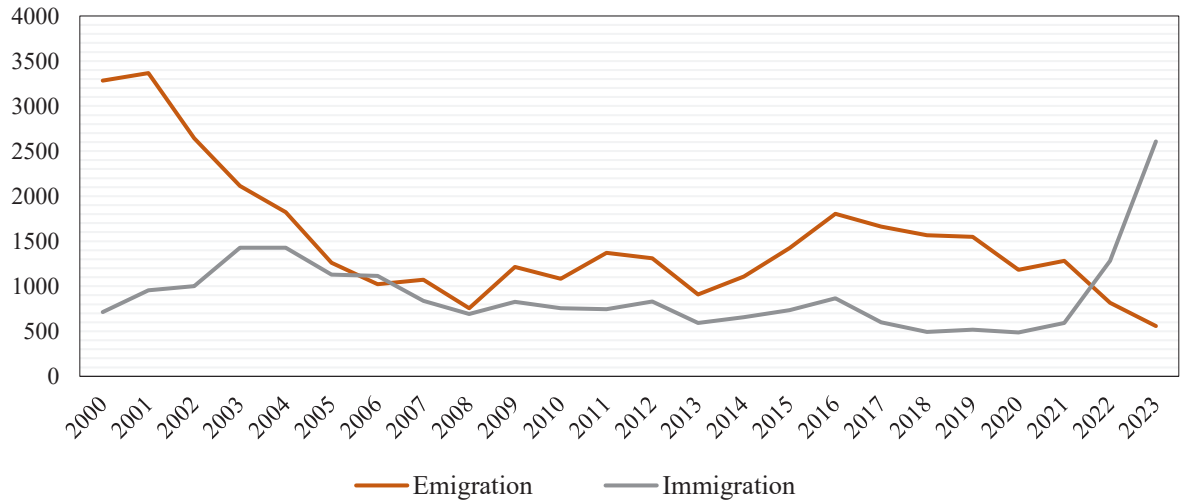


Figure 8. Migration of specialists with higher education, persons

The maximum difference between the departure and arrival of specialists with secondary vocational education in Almaty was observed in 2000, which, while sharply decreasing, persisted for 4 years. In the following years, despite fluctuations and the differing directions of these two indicators, the departure of specialists with secondary vocational education generally dominated. For the first time in 24 years, a significant positive gap was recorded in 2023, when arrivals exceeded departures by more than six times (Figure 9).

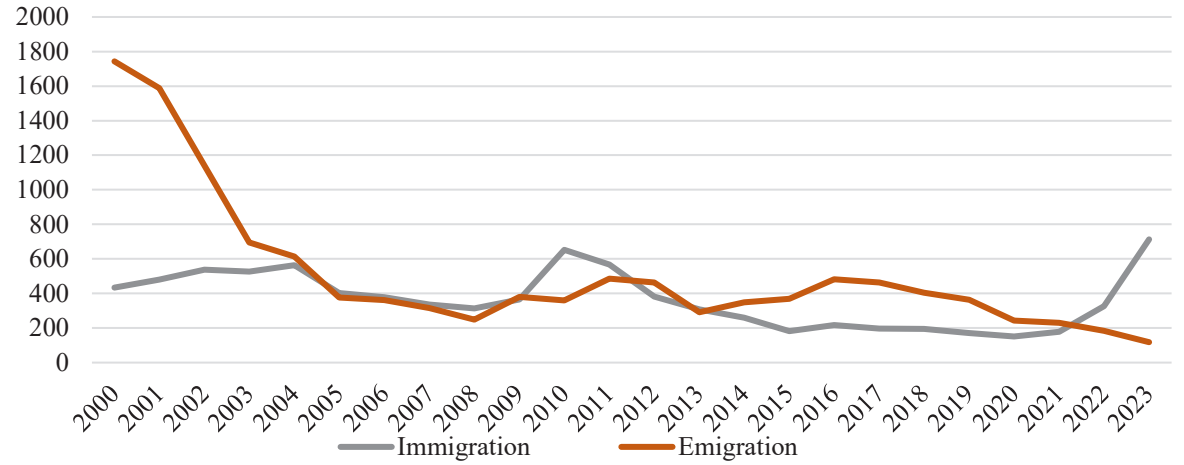


Figure 9. Migration of specialists with secondary vocational education, persons

The arrival of specialists with secondary vocational education was uneven. Two periods of noticeable growth can be identified. The first, from 2008 to 2010, coincided with the global economic crisis, which led to an inflow of immigrants to Almaty from the Caucasus (Armenia, Azerbaijan) and Central Asia (Uzbekistan, Kyrgyzstan, Tajikistan). Ethnic Kazakhs had the opportunity to obtain Kandas status, which provided them with certain financial and other advantages. The share of specialists with secondary vocational education among the working-age population that immigrated to Almaty reached 25% in 2010. Having peaked in 2010, the inflow of immigrants began to decline until 2022, the beginning of the geopolitical crisis. The outflow of specialists with secondary vocational education, which started in 2000, gradually decreased until the global economic crisis of 2008. The year 2009 be-

came a turning point for those seeking better living conditions and economic improvement, as an increase in the departure of specialists from Almaty was observed until 2012. However, this surge was insignificant, unstable, and short-lived. Since 2016, a stable trend of decreasing departures has been established, with 2023 showing a reduction of almost half compared to 2021.

From 2022 to 2023, there was a predominance of immigrants over emigrants across all specialities: economic, architectural and construction, agricultural, medical, legal, technical, pedagogical, and others (Appendix 1).

Before the onset of the current geopolitical crisis, the opposite situation prevailed. Across all specialities, there was a clear increase in arrivals and a reduction in departures, leading to a gap between these indicators in the opposite direction compared to the early 2000s. The only exception is the migration of specialists with medical education. In 2001, more than 750 specialists with medical education arrived in Almaty, which was 4.6 times higher than their departure. This is partly explained by the difficulties in securing employment in this field abroad. From 2000 to 2021, 1.7 times more specialists left the country than arrived. However, in 2022–2023, nearly three times more specialists arrived than departed, totalling almost 5,000 people.

A significant part of specialists who arrived in Almaty (36%) in 2022–2023 belonged to the "Other" education category. The share of technical specialists was 21%, economists – 18%, and pedagogical workers – 8%. Lawyers, medical professionals, and individuals with architectural and construction education each accounted for 5%, while the smallest share belonged to migrants with agricultural education – 2%. When considering the departure of specialists, the share of those with "Other" education reached 53%, while architectural and construction education accounted for 7%. The shares of economists and technical specialists were 17% and 12%, respectively. The emigration of individuals with agricultural education was nearly zero (5 people), while the remaining three specialities together made up 11%.

Thus, in 2022–2023, for the first time in 20 years, a positive migration balance was recorded: in 2023, the number of arriving migrants exceeded the number of departing migrants by 6.5 times. It allows to confirm hypothesis H1 about the structural reversal of migration flows, which transformed Almaty from a donor to a recipient of labor. The difference-in-differences method was used to compare the migration dynamics in Almaty before and after 2022 with the dynamics in similar cities in Kazakhstan that are not so attractive for highly skilled migrants (for example, Taraz or Oral). While the migration balance in these cities changed insignificantly, in Almaty, the increase was disproportionately high. The sharp increase in migration from Russia is especially noticeable, with its share in the number of arrivals increasing from 39% (the average for 2000–2021) to 61% in 2023. At the same time, there has been a decrease in emigration from Almaty, including to traditional destinations - Russia, Germany, and Canada. Hypothesis H1 is also confirmed by the fact that, along with quantitative growth, there is a change in the quality of the migration flow. Arrivals were dominated by individuals with higher and secondary specialized education. Significant growth was recorded among specialists in the fields of economics, information technology, pedagogy, and medicine, indicating the potential for an increase in the city's human capital.

The results of the study also confirm hypothesis H2. Since 2022, there has been a significant increase in the influx of able-bodied migrants to Almaty, including highly qualified specialists. The main flow came from Russia, a country at the epicentre of a geopolitical crisis, while Kazakhstan is not directly involved in it. The following facts show the following: the share of arrivals from Russia increased from 39% (average for 2000–2021) to 61% in 2023; the total number of migrant arrivals in 2023 increased by 194.6% compared to the previous year. The increase in the number of arrivals with higher and professional education is observed primarily among specialists in the fields of economics, IT, education and healthcare; the outflow of such specialists, on the contrary, decreased sharply, which created a one-sided redistribution of labour resources in favour of Almaty. Based on the above, it follows that the geopolitical crisis outside Kazakhstan caused the movement of human capital to a country that is not a party to the conflict, which confirms the thesis of an asymmetric redistribution of labor resources.

CONCLUSION

The research aimed to identify changes in external migration of the working-age population of Almaty in the context of geopolitical instability, starting from 2022. According to the findings, the geopolitical crisis in Eastern Europe in 2022 led to a structural reversal of external migration flows in Almaty, transforming the city from a net sender into a net receiver of working-age migrants, especially those with higher and vocational education. The results show that political decisions and international conflicts can influence migration flows to

third countries (for example, Kazakhstan) that are not parties to the conflict, creating an asymmetric redistribution of labor resources. The following conclusions can be drawn from the research.

Firstly, external labor migration over 24 years illustrates a gradual decline in the waves of labor resources arriving in Almaty, which hit rock bottom before the COVID-19 pandemic (2017-2019). During the pandemic, the increase in arrivals was primarily due to immigration from China, where a surge in the disease was detected. Significant growth resumed only in 2022 following the geopolitical crisis. Almaty turned out to be sensitive to the external political and pandemic-related issues of its neighboring countries as Russia and China. The outflow of the working-age population from Kazakhstan over the 24 years had, like the arrivals, an overall tendency to decrease with alternating periods of rise and fall in specific years. The peak outflow occurred in 2000-2001, and in 2023, the number of working-age people who left was 888 - more than 8 times lower than at the start of the 2000s.

Secondly, a crucial element of labor migration is its human capital, i.e., specialists with higher and vocational education. Before the geopolitical crisis, the share of specialists with higher education arriving in Almaty was lower than the proportion of highly educated individuals leaving the city. This trend continued into 2022-2023. However, the numerical predominance of incoming specialists with higher education over those leaving the town suggests positive changes in migration patterns in those years.

Thirdly, Russia is the primary source of immigrants from the CIS, significantly increasing the number and share of migrants from this region during the geopolitical crisis. Other countries accounted for a very small percentage. A feature of the period after 2021 was the first increase in immigration from the Baltic States (Lithuania, Latvia, and Estonia) in 24 years. Israel, Greece, and Germany also contributed immigrants, but their share was considerably smaller compared to the Baltics. In terms of emigration, Almaty residents preferred countries outside the CIS, particularly China and Greece, during the current geopolitical crisis. Emigration to the United States remained at previous levels, while departures to Germany, Canada, and Israel almost stopped or reached a minimum.

If the period from 2000 to 2021 could be characterised as a "brain drain" from Almaty, then in 2022–2023, migration flows across the seven key professional fields showed a positive balance between arrivals and departures, marking a radical shift in direction. These changes are positive. However, given that they are more dependent on external than internal factors, questions remain about the future duration and stability of these changes. Changes in the external environment -such as global economic and geopolitical crises, pandemics, and military conflicts - are often uncontrollable both in duration and direction. Therefore, internal capacities must be mobilized to strengthen the positive and mitigate the negative consequences of external labor migration. It is essential to support the established trends of human capital inflow in recent years to create Almaty as a "smart city". To maintain these positive processes in the long term, domestic policy should be adapted to effectively encourage the immigration of highly qualified specialists from the CIS and other countries.

AUTHOR CONTRIBUTIONS

Conceptualization and theory: SS, GO, TA and AB; research design: NK and ES; data collection: SS, GO, TA and AB; analysis and interpretation: SS and GO; writing draft preparation: SS, GO, TA and AB; supervision: GO; correction of article: SS, GO, TA and AB; proofread and final approval of article: SS. All authors have read and agreed to the published version of the manuscript.

REFERENCES

Akorda. (2025). Glava gosudarstva provel zasedanie Soveta Bezopasnosti 2 iyulya 2025 goda [The Head of State held a meeting of the Security Council on July 2, 2025]. Retrieved August 07, 2025 from https://www.akorda.kz/ru/glava-gosudarstva-provel-zasedanie-soveta-bezopasnosti-265350

Amrin, A. K., Kaliyeva, S. A., & Alzhanova, F. G. (2020). Migration processes in Kazakhstan in the context of the formation of the Silk Road Economic Belt. *Journal of Population and Social Studies, 28*(2), 156–174. https://doi.org/10.25133/jpssv28n2.011

Becker, G. S. (1964). *Human capital: A theoretical and empirical analysis, with special reference to education.* University of Chicago Press, Chicago.

Beine, M., Bertoli, S., & Fernández-Huertas Moraga, J. (2015a). A practitioner's guide to gravity models of international migration. *The World Economy, 41*(4), 496-512. https://doi.org/10.1111/twec.12265

Beine, M., Boucher, A., Burgoon, B., Crock, M., Gest, J., Hiscox, M., McGovern, P., Rapoport, H., Schaper, J., & Thielemann, E. (2015b). Comparing immigration policies: An overview from the IMPALA database. *International Migration Review, 50*(4), 827–863. https://doi.org/10.1111/imre.12169

Boucher, A. K., & Gest, J. (2018). *Crossroads: Comparative immigration regimes in a world of demographic change*. Cambridge University Press.

Clemens, M.A., & Mendola M. (2024). Migration from developing countries: Selection, income elasticity, and Simpson's paradox. *Journal of Development Economics, 171*, 103359. https://doi.org/10.1016/j.jdeveco.2024.103359

Czaika, M., & Reinprecht, C. (2023). Drivers of migration: A global review. *International Migration Review, 57*(1), 5–36. https://doi.org/10.5281/zenodo.8183340

Dustmann, C., Fasani, F., & Speciale, B. (2017). Illegal migration and returns. *Journal of the European Economic Association, 15*(3), 654–691. https://doi.org/10.1093/jeea/jvw017

International Organization for Migration. (2024). *World migration report 2024*. Retrieved August 07, 2025 from https://worldmigrationreport.iom.int/msite/wmr-2024-interactive/

Iskakova, D., Kurmanalina, A., Iskakova, D., Serikbayeva, S., & Ibrasheva, A. (2023). Migration impact on the labour market and economic activity of Kazakhstan. *Eurasian Journal of Economic and Business Studies, 67*(3), 149–162. https://doi.org/10.47703/ejebs.v3i67.317

Nkiese, J. K., & Wirba, S. K. (2024). Perspective chapter: Armed conflict and its impact on human migration – The healthcare perspective. In A. Michaud (Ed*.), Global health security: Contemporary considerations and developments*. IntechOpen. https://doi.org/10.5772/intechopen.112791

Matzhanova, I., Simtikov, Z., Kairbekova, A., & Matzhanova, K. (2021). Stratification of youth employment and departure abroad with the purpose of work: Kazakhstan and neighboring countries. *Journal of Ethnic and Cultural Studies, 8*(3), 95–112. https://doi.org/10.29333/ejecs/792

Matusevich, Y. (2024). *Impacts of Russia's war in Ukraine on migration in Central Asia*. Prague Process. Retrieved August 07, 2025 from https://www.pragueprocess.eu/en/news-events/news/975-impacts-of-russias-war-in-ukraine-on-migration-in-central-asia

Ministry of Labor and Social Protection of the Population of the Republic of Kazakhstan. (2023). *Concept of Migration Policy of the Republic of Kazakhstan for 2023–2027*. Retrieved August 07, 2025 from https://www.gov.kz/memleket/entities/enbek/documents/details/383914?lang=ru

Bureau of National statistics of the Agency for Strategic planning and reforms of the Republic of Kazakhstan. (n.d.). *Gross enrollment in higher education.* Retrieved August 07, 2025 from https://stat.gov.kz/ru/industries/social-statistics/stat-edu-science-inno/dynamic-tables/

Oshchepkov, A., Tilekeyev, K., & Gerry, C. (2023). *The impact of the war in Ukraine on migration flows in Central Asia.* University of Central Asia. Retrieved August 07, 2025 from https://ucentralasia.org/media/ygkl23rh/pbmigration-flow-change-in-central-asia-ru.pdf

Polozhenie oralmanov v Kazakhstane [The status of Oralman in Kazakhstan]. (2001). *United Nations Development Programme (UNDP)*. Retrieved August 07, 2025 from https://www.undp.org/sites/g/files/zskgke326/files/migration/kz/7023-21565.pdf

Rakhmetova, A., & Syzdykbekov, E. (2024). Sovremennye tendentsii vneshney trudovoy migratsii v Kazakhstane [Current trends in external labor migration in Kazakhstan]. *Memlekettik Audit – State Audit, 64*(3), 52–63. https://doi.org/10.55871/2072-9847-2024-64-3-52-63 (in Russ)

Sagandykova, S. Sh., Omarov, G. B., Ananyev, T. V., & Balkenova, A. B. (2023). "Smart city" and "brain drain" (on the example of Almaty). *Economy of Central Asia, 7*(2), 151–170. https://doi.org/10.18334/asia.7.2.117607 (in Russ)

Syzdykbekov, Y. S. (2022). External labor migration as a factor in the development of the labor market in the Republic of Kazakhstan. *Bulletin of Karaganda University. Economy Series, 108*(4), 227–234. https://doi.org/10.31489/2022Ec4/227-234

UNHCR. (2022). *What is the difference between a refugee and a migrant? Retrieved* August 07, 2025 from https://www.unrefugees.org/news/what-is-the-difference-between-a-refugee-and-a-migrant/

UNHCR. (2023). *Refugee data finder – Key indicators*. Retrieved August 07, 2025 from https://www.unhcr.org/refugee-statistics

Ukraine refugee situation. (2023). *UNHCR Data Portal*. Retrieved August 07, 2025 from https://data.unhcr.org/en/situations/ukraine

Williams, N. E., O'Brien, M. L., & Yao, X. (2021). How armed conflict influences migration. *Population and Development Review, 47*(4), 1001–1030. https://doi.org/10.1111/padr.12408

World Bank. (2022). *Migration and Development Brief 37*. Retrieved August 07, 2025 from https://documents1.worldbank.org/curated/en/099818008142419054/pdf/IDU12966350716a711437b1850019065d7f1eda1.pdf

Information about the authors

*** Saule Sh. Sagandykova** – Cand. Sc. (Econ.), PhD (University of Stavanger), Associate Professor, International Information Technology University, Almaty, Kazakhstan, email: s.sagandykova@iitu.edu.kz, ORCID ID: https://orcid.org/0000-0001-7148-5576

Galym B. Omarov - Cand. Sc. (Econ.), PhD (Kazakh State Academy of Management), Associate Professor, International Information Technology University, Almaty, Kazakhstan, email: g.omarov@iitu.edu.kz, ORCID ID: https://orcid.org/0000-0002-8241-9854

Timur V. Ananyev - MBA (University of Nottingham, United Kingdom), Senior Lecturer, International Information Technologies University, Almaty, Kazakhstan, email: t.ananyev@iitu.edu.kz,
ORCID ID:https://orcid.org/0000-0002-9914-6995

Aigerim B. Balkenova – MSc (University of Warwick, United Kingdom), Senior Lecturer, International Information Technologies University, Almaty, Kazakhstan, email: a.balkenova@iitu.edu.kz, ORCID ID: https://orcid.org/0009-0006-5956-3280

Авторлар туралы мәліметтер

***Сағандықова С. Ш. –** э.ғ.к., PhD (University of Stavanger), қауымдастырылған профессор, Халықаралық ақпараттық технологиялар университеті, Алматы, Қазақстан, email: s.sagandykova@iitu.edu.kz, ORCID ID: https://orcid.org/0000-0001-7148-5576

Омаров Ғ.Б. – э.ғ.к., PhD (Қазақ мемлекеттік басқару академиясы), қауымдастырылған профессор, Халықаралық ақпараттық технологиялар университеті, Алматы, Қазақстан, email: g.omarov@iitu.edu.kz, ORCID ID: https://orcid.org/0000-0002-8241-9854

Ананьев Т.В. – MBA (Ноттингем университеті, Ұлыбритания), аға оқытушы, Халықаралық ақпараттық технологиялар университеті, Алматы, Қазақстан, email: t.ananyev@iitu.edu.kz, ORCID ID: https://orcid.org/0000-0002-9914-6995

Балкенова А.Б. – магистр (Уорик университеті, Ұлыбритания), аға оқытушы, Халықаралық ақпараттық технологиялар университеті, Алматы, Қазақстан, email: a.balkenova@iitu.edu.kz, ORCID ID: https://orcid.org/0009-0006-5956-3280

Сведения об авторах

***Сагандыкова С. Ш. –** к.э.н., PhD (University of Stavanger), ассоциированный профессор, Международный университет информационных технологий, Алматы, Казахстан, email: s.sagandykova@iitu.edu.kz, ORCID ID: https://orcid.org/0000-0001-7148-5576

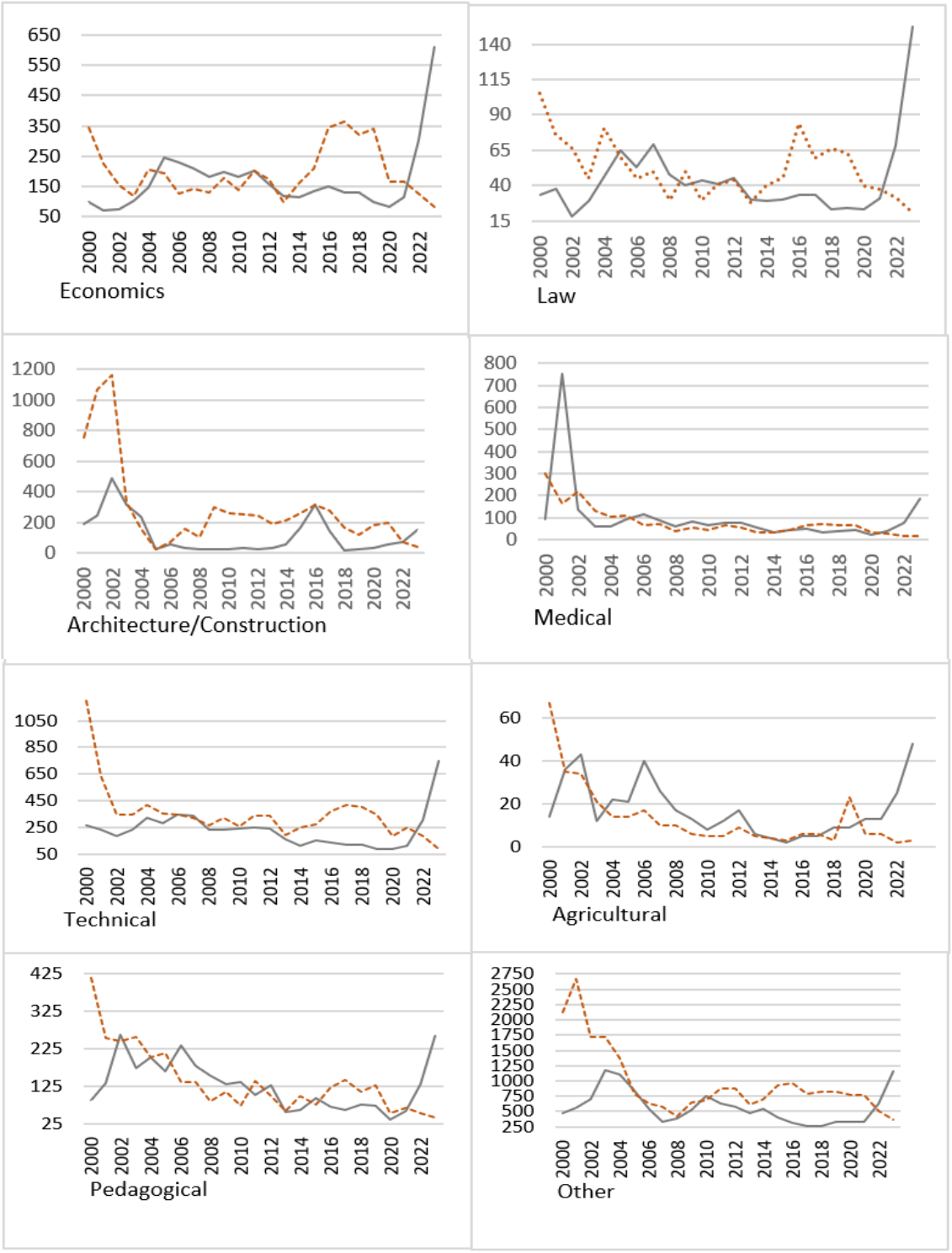
Омаров Г. Б. – к.э.н., PhD (Казахская государственная академия управления), ассоциированный профессор, Международный университет информационных технологий, Алматы, Казахстан, email: g.omarov@iitu.edu.kz, ORCID ID: https://orcid.org/0000-0002-8241-9854

Ананьев Т. В. – MBA (University of Nottingham, United Kingdom), старший преподователь, Международный университет информационных технологий, Алматы, Казахстан, email: t.ananyev@iitu.edu.kz, ORCID ID:https://orcid.org/0000-0002-9914-6995

Балкенова А. Б. – магистр (University of Warwick, United Kingdom), старший преподаватель, Международный университет информационных технологий, Алматы, Казахстан, email: a.balkenova@iitu.edu.kz, ORCID ID: https://orcid.org/0009-0006-5956-3280

Appendix 1

External migration of specialists by education, persons



Приложение 1

Основные показатели развития цифровизации в Узбекистан за 2015-2023 гг.
Key indicators of digitalization development in Uzbekistan for 2015-2023

№	Показатель	2015	2016	2017	2018	2019	2020	2021	2022	2023	2023/ 2015, в %
1	Количество абонентов широкополосного доступа к сети Интернет (тыс.)	466,3	511,5	498,5	622,2	725,4	1080	1457,5	1840,3	2221,2	376,35
2	Доля предприятий и организаций, имеющих доступ к сети Интернет, %	21,6	25,9	27,2	27,5	26,2	18,2	17,5	22,3	19,9	-7,87
3	Количество абонентов, подключенных к сети Интернет через мобильную связь (тыс.)	7793,7	9022,9	10258,8	12668,6	15651,2	17946,5	20991,8	24017,6	27087,3	247,55
4	Количество абонентов широкополосного доступа к сети Интернет (тыс.)	466,3	511,5	498,5	622,2	725,4	1080	1457,5	1840,3	2221,2	376,35
5	Число абонентов, подключенных к сети Интернет, юридические лица (тыс.)	265,5	347,8	403,7	438,4	635,4	739,7	875	1555,7	1894,3	613,48
6	Сведения о наличии персональных компьютеров (без учета серверов) на предприятиях и в организациях (единиц)	734569	800767	853825	929900	1012726	1014686	1106143	1187725	1244050	69,36
7	Доля предприятий и организаций, имеющих персональные компьютеры (в %)	44,2	50	50	55,2	57,7	49,3	46,3	40,7	37,1	-16,06
8	Количество компьютеров, подключенных к локальной вычислительной сети на предприятиях и в организациях (шт.)	287362	325466	364378	401494	416870	376538	421560	568589	593372	106,49
9	Количество компьютеров, подключенных к сети Интернет на предприятиях и в организациях (шт.)	223907	271357	310459	358003	413417	441913	538933	667842	727999	225,13
10	Численность работников в юридических лицах, осуществляющих деятельность в сфере ИКТ (чел)	33413	34478	37958	40248	47697	50157	53782	60462	71627	114,37

Примечание: составлено авторами на основе источника National Statistics Committee (2023)