

# The geographical network of international migration

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[journals.sagepub.com/home/epn](https://journals.sagepub.com/home/epn)**Aron Kincses**

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**Géza Tóth** University of Miskolc, Hungarian Central Statistical Office, Miskolc,  
Hungary**Abstract**

International migration offers a new field in which the results of network theory can be harvested. Through the migration countries' networks (from where and to where migrants move), we have provided some of the most important tangible outcomes of network analysis in migration statistics.

The results of this research establish that there are hubs of international migration. Global migration destinations draw international migrants from greater distances. Migration connectivity between countries is constantly increasing. At the same time, most countries have few connections with other countries through migration, while a few have many connections. This network is interconnected by hubs with multiple connectivity capabilities.

**Keywords**

International migration, network theory, regional science

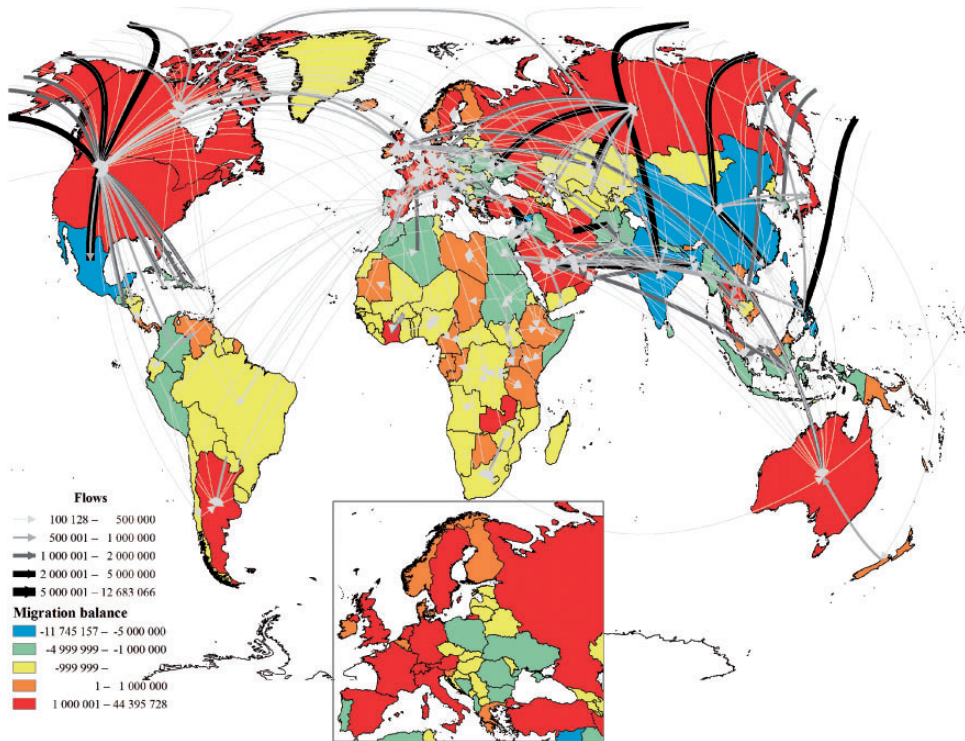
Migration shows a strong territorial concentration (Hatton and Williamson, 2005), with 80% of migrants living in 14% of the countries in 2017 and one-half of the world's migrant population in nine countries (United Nations, 2017). In international migration, there are centres, global migration destinations, that attract migrants from a greater distance. In these hubs, the foreign-born population is diversified according to country of birth.

The central role of the USA is illustrated by the fact that in 2017, it had over one million residents originally from China, the Dominican Republic, South Korea, India, Cuba, the Philippines, El Salvador, Puerto Rico, Mexico and Vietnam. Usually, international

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**Figure 1.** Relationship between the source and target areas of international migration, 2017. The analyses are based on the United Nations Migration Database (United Nations, 2017), part of foreign-born population.

migration moves towards richer regions. Some of these relationships can be traced back to colonial times (Adeyanju and Oriola, 2011), while in other cases, war zones act as the principal reason (Conte and Migali, 2019). The latter migrations are on average shorter in length, while the former cover longer distances.

The USA is known as a host country of migration, with a foreign-born population comprising individuals from 150 different countries, but there are people who were born in the USA who live in more than 162 countries. Large host countries are often large migrant senders as well, including Germany, the USA, Canada, France and the UK. This phenomenon can be partly explained by the migration of the elderly (the main motivating factors in this instance are better utilisation of the purchasing power of pensions, recreation opportunities or the search for a more favourable climate (Warnes, 2009)) and partly by the return migration of descendants of former immigrants (Gmelch, 1980). This highlights the fact that migration is not a one-way process in the era of globalisation.

Migration connectivity between countries is constantly increasing. At the same time, in this network, most countries have few connections with other countries through migration, while a few have many connections. The network is interconnected by these multiple connection hubs. Therefore, there is no average or typical migration country.

In the globalised world, various activities (internet, business, migration, etc.) are arranged into networks (with scale-free topology (Barabási, 2016)), and different observable phenomena take place along these frameworks. We should progress from traditional thinking and traditional distributions. The meaning of ‘average’ has gradually lost its importance; there

are no longer average companies or average migration countries (just tiny or arbitrarily large ones). We should focus on the hubs and networks behind the numbers if we wish to understand the globalised issues. The complex systems and their collective behaviour cannot be soundly recognised from the knowledge of the system's components alone. A global perspective is crucial to gain an understanding of the full picture.

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