The economic implications of international migration – an analysis of capital remittances applied to Romania

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Abstract

This paper aims to assess some of the positive and negative effects of international migration on Romania. In the first part, our study aims to statistically validate based on data on the economic and social reality of Romania between 2008 and 2015, the emigration reasons of 266 Romanians living abroad.

The second part of our article studies the effect of capital remittances on the well-known and applied law of Okun from two different perspectives: destination countries and origin countries.

Keywords: *International migration, emigrant, Okun's law, economic effects of migration, migration causes, questionnaire.*

JEL Classification: *F22, F24*

Introduction and literature review

In recent years, international migration has become a subject of interest for both the general public, who began to understand the effects of this phenomenon, as well as for the public institutions and State representatives, searching a more effective way to manage it.

Various studies have been conducted on the subject of international migration: Boyd (2003), Clark et al. (2007), Mayda (2010), Ortega and Peri (2012), Beine and Parsons (2014).

Assessing the migration takes into account the reasons for which a person decides to leave their home country. To support this, the international literature distinguishes between voluntary and involuntary migration and analyses separately migrant's most common drivers.

As defined by the International Organization for Migration, a refugee or asylum seeker is a person who leaves their home country because of serious dangers and applies for asylum in another state. A negative resolution to the refugee's asylum application will send him back home. According to the latest Eurostat reports, political conflicts in countries such as Syria, Afghanistan or Iraq have caused a significant increase in the asylum applications in Germany, Hungary, Sweden, Austria and Italy.

Involuntary migration was the subject of research for authors such as Oliver-Smith and Hansen (1982) and Richmond (1988), who analysed the political, environmental or social factors which determined the relocation of some countries populations, as well as the response of the states to the refugee problem (Khoo et al., 2008; Schaeffer, 2009).

Voluntary migration is determined mainly by economic and social decisions. In this respect, we distinguish between the economic migrant, whose main reason considered when leaving home country is related to an expected improvement in his own financial situation (i.e. financial and professional gains), and the social migrant, who is driven by the desire to improve his family's standard of living (education, health, political environment). The importance of economic and social factors in the context of international migration was carefully documented (Bauer and Zimmermann, 1999; Hatton and Williamson, 2002; Westmore, 2015).

EU countries also face the intra-Community migration, which is based on the principle of free movement and residence of EU population. The worsening of international migration towards EU countries over the last four years is explained by various causes. If we refer to the figures reported by Eurostat for 2014, of the 3.8 million people who moved to one of the 28 EU member states, only 1.6 million were citizens of third-countries, while the remaining immigrants were Europeans, driven by the desire of welfare, rather than the political and military conflicts in their home country, as for the others. Thus, when discussing about the causes of international migration, literature often refers to the gravity model that considers social, economic or political imbalances between the home country and the destination country (Cuaresma, Moser and Raggl, 2013).

Although the gravity model (Amiot, 2016) argues that international migration phenomenon is determined by a number of push factors in the home country as opposed to pull factors in the destination country, Eurostat data for 2014 shows that the same European countries which are very attractive for immigrants prove to be unattractive for its own citizens. Countries such as Germany (884.9 thousands), United Kingdom (632.0 thousands) and France (339.9 thousands) recorded the highest number of immigrants in 2014, followed by Spain (305.5 thousands) and Italy (277.6 thousands). Meanwhile, almost the same countries faced significant emigration, official data reporting a large number of people who left these countries: 400.4 thousands emigrants in Spain, 324.2 thousands in Germany and 319.1 thousands in United Kingdom.

Our research followed a qualitative, questionnaire-based approach, focusing on assessing the main reasons that led Romanians to leave their home country and their behaviour in terms of remittances transfer and spending of money when returning home.

In order to quantitatively validate the impact of capital remittances on the economy, we applied Okun's law on Gross Domestic Product (GDP) and unemployment rate and studied the relationship between these two factors.

1. Research methodology – the questionnaire-based approach

In order to qualitatively analyse the reasons for which Romanians are leaving their home country, as well as the capital remittances phenomenon, we conducted a questionnaire-based study.

The questionnaire was designed so as to determine whether there is a link between the migrant's destination country and their behaviour in terms of: capital remittances, how often they return home and the amount of money spent on their return.

Starting from the objectives set, we developed a set of 15 questions: part with single answer, part with multiple choice answers, as well as Likert questions.

The questionnaire was built using a free online tool and was distributed during 15 January and 15 March 2017, through social networks and e-mail, targeting the Romanians living in other countries.

After assessing the data quality and excluding the incomplete responses, a total number of 266 valid responses resulted, which were further analysed using the Microsoft Excel tool.

1.1. Hypothesis 1: Money and lack of jobs are the top reasons for emigration

Most respondents considered that the main reasons taken into account when leaving the country were represented by money (30%), career (22%), the political situation in the home country (15%), education (13%) and bringing the family together (9%).

Figure no. 1: The chart of responses for the question "Which were the main reasons due to which you decided to leave the country?"
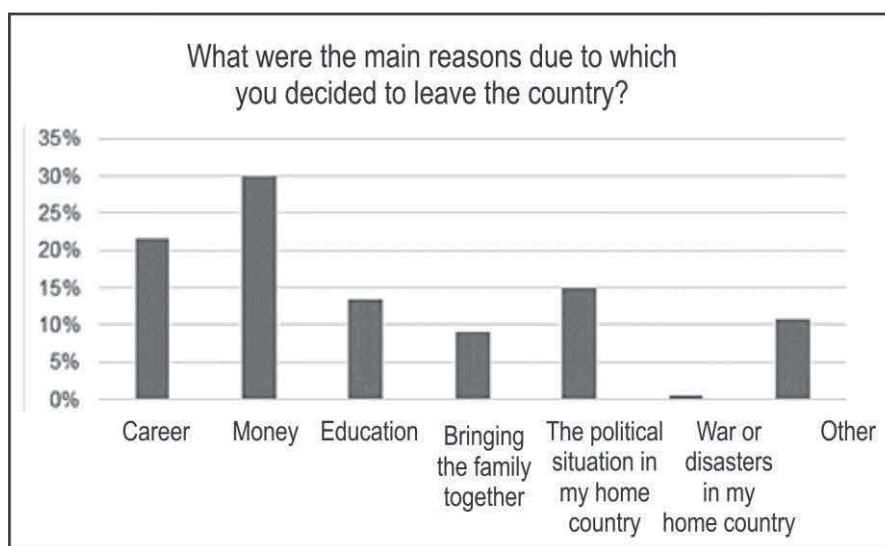
The data published by Eurostat and the Romanian Institute of Statistics revealed that information on the number of Romanian emigrants is limited to the period between 2008 and 2015. Based on the responses to the questionnaire, we created a regression in which we set as dependent variable the number of emigrants leaving Romania (variable y) and the following independent variables:

– Average net nominal monthly earnings in Romania, as proxy factor for "money" (variable x1);

– Unemployment rate for Romania, as proxy factor for "career" (variable x2);

– enrolment rate in education of the school population, as proxy factor for "education" (variable x3); and

– Income inequality index, as proxy factor for "political situation in the home country" (variable x4).

The regression equation resulted from analysing the afore-mentioned variables is the following:

$$y = 694857.15 - 500.02 \times x1 + 4223.27 \times x2 - 3798.21 \times x3 + 81469.64 \times x4 \qquad (1)$$

Table no. 1: Regression (1) statistics

Regression Statistics	
Multiple R	0.978297587
R Square	0.957066169
Adjusted R Square	0.899821062
Standard Error	14967.89442
Observations	8

The coefficient of determination R^2 of 95.7% indicate a strong correlation between the number of emigrants and the financial gains, career, political situation in the home country and education factors, and, also, the signs of the variables in the above equation intuitively predict the actual situation in Romania.

Table no. 2: Regression (1) results

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	694857.16	427221.64	1.63	0.20	-664752.78	2054467.09	-664752.78	2054467.09
Average net nominal monthly earnings	-500.03	95.73	-5.22	0.01	-804.68	-195.37	-804.68	-195.37
Unemployment rate	4223.28	6171.14	0.68	0.54	-15416.05	23862.61	-15416.05	23862.61
Enrolment rate in education of the school population	-3798.21	3355.95	-1.13	0.34	-14478.34	6881.91	-14478.34	6881.91
Income inequality index	81469.65	15201.59	5.36	0.01	33091.40	129847.89	33091.40	129847.89

2.2. Hypothesis 2: Money transfer methods don't significantly depend on the transfer cost

The Rivera-Batiz model (1982) analyses the migration effects on home countries and concludes that the home country's economy is affected by lower consumer opportunities of the migrant population. The model was extended by Djajic (1986) through adding the effect of capital remittances sent by migrants to their home country relatives to the model. The conclusion of the new model proposed by Djajic (1986) is that if remittances exceed a certain threshold, the remaining home country population will benefit due to increased consumption. According to a Worldbank study from 2004, remittances of migrants to their origin country have a significant effect on the economy of developing countries in Africa, Asia, Middle East and Latin America. Adams and Page 2005 used a statistical model based on migration data, remittances and the poor economic situation of the 71 developing countries to demonstrate the positive effect of international migration on these countries' economies.

Eurostat data for 2015 show a position change for the EU: if during the last years the EU countries faced a net outflow of capital, in 2015 the situation was reversed. In other words, foreign immigrants working in the EU transferred in 2015 around 20.4 billion euros to their home countries, while the amounts that entered the EU accounted for 21.1 billion euros, resulting in a positive net inflow of 0.7 billion euros. Romania is among the laggards in terms of the percentage of foreign citizens in the total population: only 0.4%, compared to countries such as Luxembourg (45.9%) and Liechtenstein (33.7%). This explains why the net balance of remittances transferred by population working abroad (i.e. capital transfers in the home country minus payments of foreigners working in one country towards another European country) is positive for countries like Romania, Poland, Serbia and Portugal and negative for western countries, much sought by intra-Community migrants, such as Germany, France and Italy.

Questionnaire results show that 72% of respondents frequently send money back to their home country, out of which 27% remit amounts monthly, 35% once every few months and 39% maximum 2 times a year.

The most common methods for transferring capital remittances to Romania are represented by: personally

when returning home, followed by Western Union and bank transfer to an account opened in Romania.

Figure no. 2: The chart of responses for the question „ Please note with grades from 1 to 5 (1 - least frequent, 5 - most often) the ways used to send money to relatives / friends in your home country"
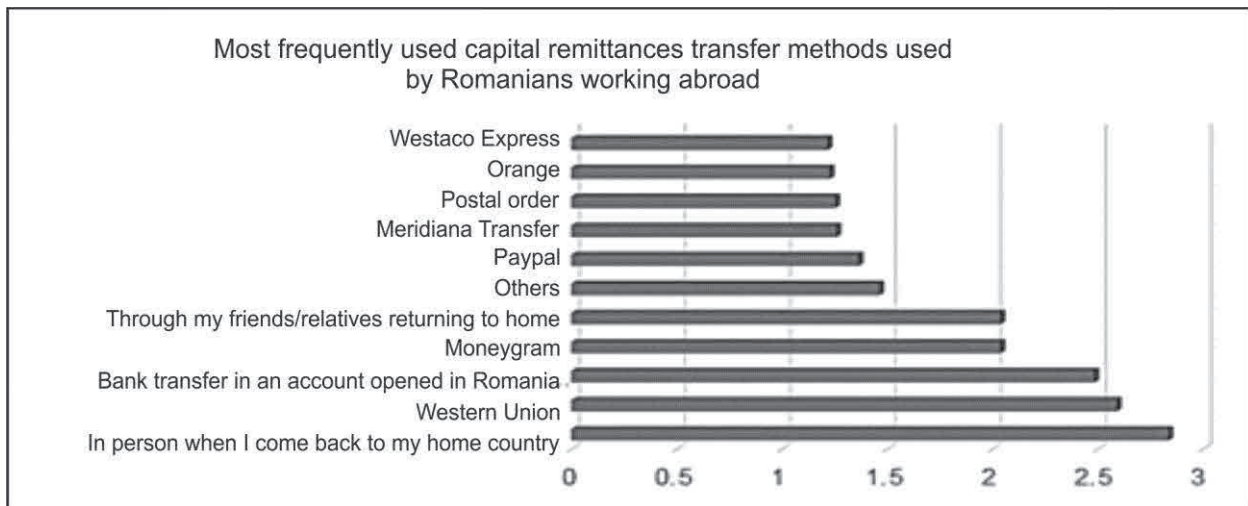
However, if we focus on the question regarding the reasons of choosing one transfer method or another, the study reveals that top results include reasons related to

the ease with which relatives and friends have access to money and speed of transfer, while only on the third place on the respondents' list is the transfer cost.

Figure no. 3: The chart of responses for the question „What are the main reasons for choosing a money transfer method over another?"
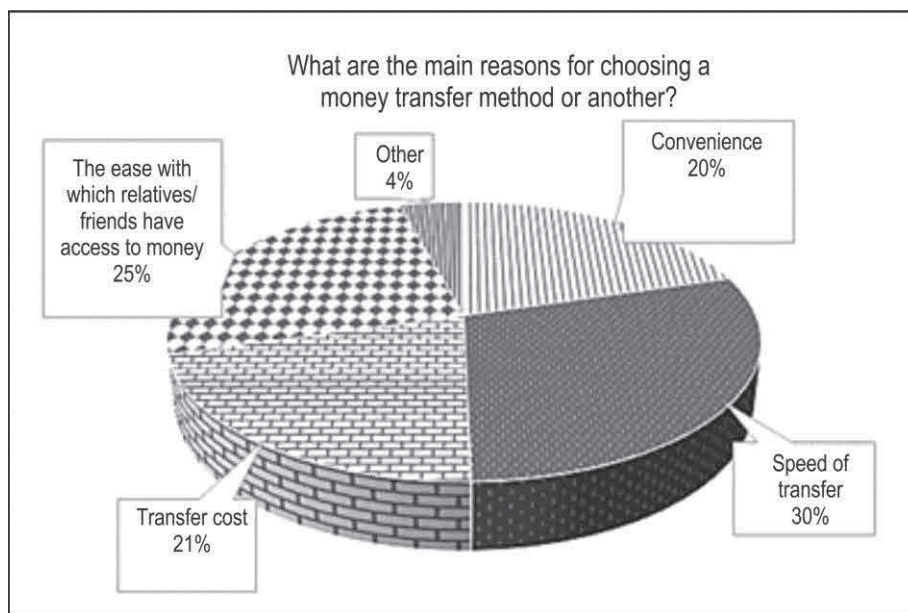
2.3. Hypothesis 3: The amount of money spent when returning home depends on the destination country of the sender

We further looked into the responses related to the frequency of returning to Romania and the length and scope of holidays spent in their home country.

The question on frequency of Romanians returning home shows that 34% of respondents return home less frequently than annually, 30% return at least once a year, 22% two times a year, while the rest return at least every three months. However, by correlating the responses with the respondents distribution into destination countries, the results are intuitive given that 34% of respondents are established in the USA, 17% in Ireland, 7% in

Germany, as well as in Lithuania, followed by the UK, France, Poland and others.

Regarding the length of time spent in Romania by the EU workers, about half of the respondents stated that they spend two weeks with their loved ones, one quarter spend more than a month, while the rest spend less than two weeks at home.

The amount of money spent in Romania during their short-term returns are between 100 euros (in case of 3% of the respondents) and 2,000 euros (in case of 31% of the respondents), but we did not manage to find a correlation between the destination country and the volume of amounts spent on their short-term returns. Thus, we can conclude that the amount of money spent when returning home varies based on social and behavioural variables, rather than the destination country.

Figure no. 4: The chart of responses to the question „On average, how much money do you spend when returning to your home country?"
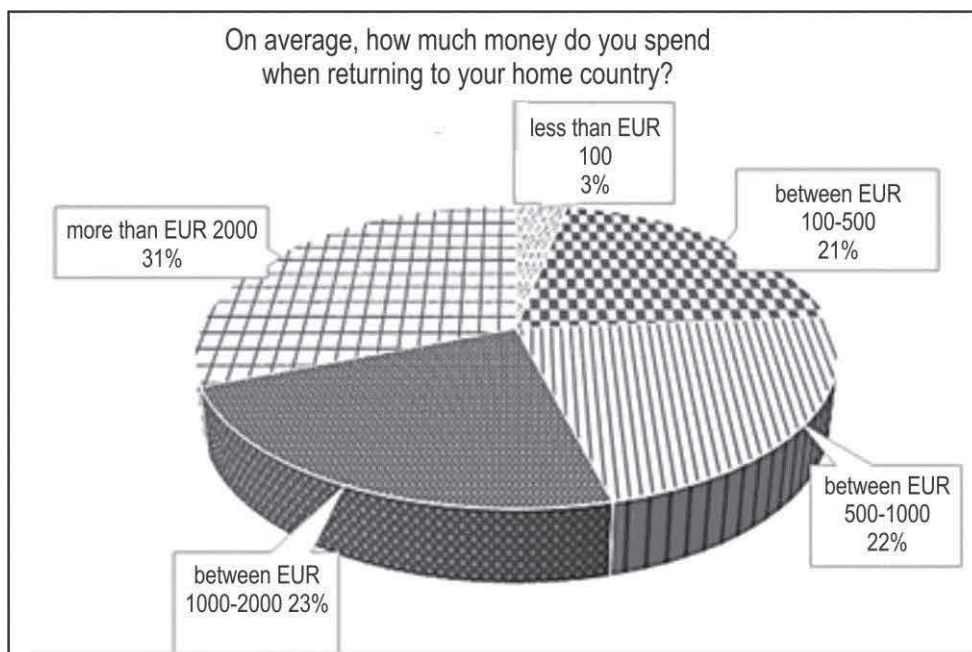
The categories of products and services on which Romanians spend money when returning home were also analysed. Results showed that approximately one third of the respondents choose to spend their money on leisure (parties, holidays), 19% on domestic consumption products (food, supplies, etc.), 13% on health (medical and dental treatments), 13% on clothing

and personal care products, 11% on construction or repairs to house, followed, by appliances, investments (bank accounts and bank deposits, real estate or financial investments), agriculture and others.

As such, the hypothesis that the amount of money spent by Romanians upon their short-term return home depends on the destination country was rejected, as

3. Migration effects on unemployment rate changes

Economic history showed that there is a link between a country's economic growth and the unemployment rate of that country. Such a relationship was measured by the economist Arthur Okun for the first time in 1962, who analysed the relationship between the gross domestic product (GDP) of the United States and the unemployment rate recorded between 1948 and 1960, concluding that an average increase of 1% in the GDP generated a decrease of 0.4% in the unemployment rate. The equation describing Okun's Law is:

$$\Delta UN = 1.4 - 0.4 \times \Delta GDP \qquad (2)$$

After 1970, many economists have studied the validity of the above equation for various countries and time frames: Moosa (1997), Lee (2000), Harris and Silverstone (2001), Sögner and Stiassny (2002), Moazzami and Dadgostar (2011), including its applicability to the Romanian environment: Caraiani (2006), Turturean (2007), Dinu, Marinas, Socol and Socol (2011). Studies have shown that the basic principles of Okun's Law (i.e. that a change in the economic potential of the country will cause a change in the opposite direction in the

unemployment rate), are valid for most countries and most time frames. However, differences in Okun's coefficient calculated value can be influenced by many factors, including the migration recorded in the analysed country.

Our starting hypothesis was that Okun's Law is applicable to Romania as well, but the relationship between the two variables (GDP and unemployment rate) is weaker in countries facing a significant level of emigration, as opposed to those receiving a large influx of immigrants. Thus, we calculated and analysed the relationship between GDP growth and the change in the unemployment rate for 5 countries: Romania, Bulgaria and Spain, countries that are experiencing a population outflow, on one hand, and Italy and Germany, favourite destinations of immigrants, on the other hand.

We started from the following equation:

$$y - y^* = \alpha \times (u - u^*) \qquad (3)$$

where y - y * represents the difference between the real GDP and the potential GDP of one country (i.e. GDP from which we eliminated the cyclic component by applying the Hodrick-Prescott - "HP" filter), and u - u* represents the difference between unemployment and natural unemployment (i.e. the sum of the frictional and structural unemployment).

Based on data published by Eurostat, we determined Okun's equation valid in the period under review:

Table 3: Application of Okun's Law on analysed countries					
Country	Migration flow	Assessed time frame	Okun's equation	R²	GDP growth level that would result in a constant unemployment rate
Romania	emigration	1996 - 2016	- 0.0948x + 0.252	34.01%	2.66%
Spain	emigration	1995 - 2016	- 0.8765x + 1.4627	70.92%	1.67%
Bulgaria	emigration	1996 - 2016	- 0.452x + 0.8066	32.69%	1.78%
Italy	immigration	1995 - 2015	- 0.313x + 0.1774	54.37%	0.57%
Germany	immigration	1991 - 2016	- 0.2176x + 0.2156	25.76%	0.99%

Figure no. 5: Okun's Law applied to Romania on 1996 – 2016 time frame
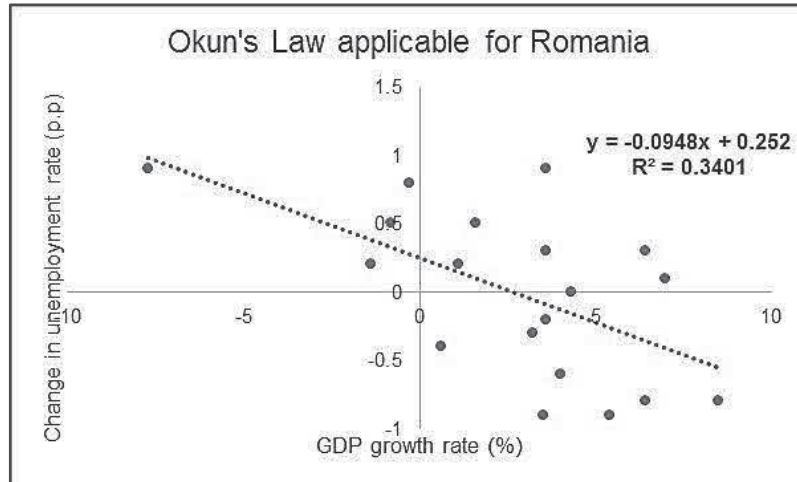
Based on the above analysis, we noted that for Romania, an increase of 2.66% per year in the GDP would keep the unemployment rate constant, while in the case of Italy for example, a smaller increase of only 0.99% would be sufficient to keep the unemployment rate at the same level as the previous year. In other words, economies experiencing a net outflow of migrants, require a higher increase in GDP in order to determine a noticeable fall in the unemployment rate. This is mainly explained by two aspects:

− In countries such as Romania, Spain, Bulgaria (countries with massive emigration), part of the active population recorded among the unemployed, decides to leave the country, but these people are still officially reported in the unemployment statistics. Even if the GDP goes up, the decrease in the unemployment rate isn't so significant, because the data on which it is based still includes records of some emigrants; and

− Part of the GDP growth is due to a high volume of capital remittances transferred by emigrants, therefore as the increase cannot be associated with the creation of new opportunities in the local market, it would not affect the unemployment rate.

On the other hand, we observe that for countries that do not face such a massive outflow of working population, such as Italy, Okun's relationship is more visible:

Figure no. 6: Unemployment rate changes in Italy based on Okun's Law
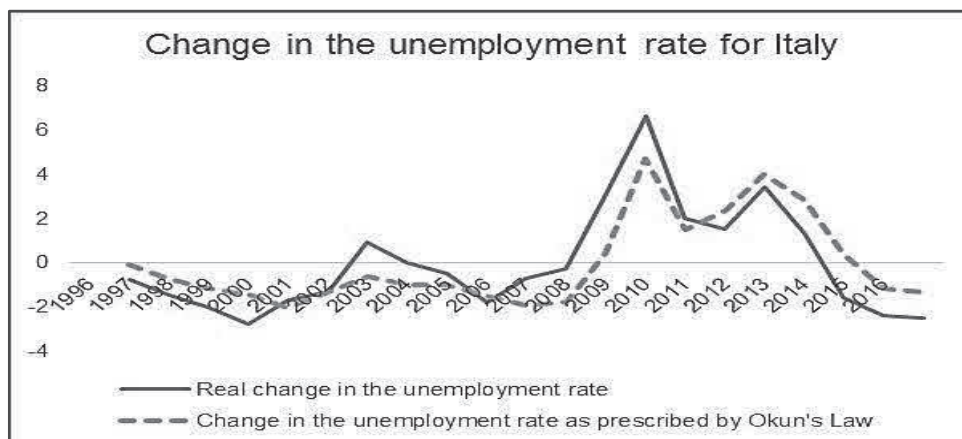
Conclusions

An in-depth analysis on a subject as complex as international migration should start with an understanding of the reasons people have for leaving their home country and should continue with the study of its effects, which are already visible at social, economic and political levels.

When focusing on the causes of migration, our questionnaire showed that the reasons of Romanians, in particular, and, migrants, in general, are closely connected with the economic, political and social situation from their home countries. Thus, using only four proxy variables in order to illustrate the reality of Romanian economy, we showed that there is a close relationship between four variables: the unemployment rate, the average net nominal monthly earnings in Romania, the income inequality index and the degree of inclusion in education of the school population, and number of emigrants from Romania between 2008 and 2015. This analysis can be further extended through introduction of other independent variables into the model and by thoroughly studying the influence of each factor on the volume of net emigration from Romania.

In terms of economic effects of the migration, we applied a well-known and widely used economic model, namely Okun's Law, on data regarding the change in the GDP and change in the unemployment rate for five states: three of them with a net outflow of migrants (Romania, Bulgaria and Spain) and two of them with a net inflow of migrants (Italy and Germany). The results indicate that the change in the unemployment rate is more sensitive to changes in the GDP in countries such as Italy or Germany, as benchmarks for destination countries, while the change is more difficult to be observed in countries such as Romania, Bulgaria or Spain, as home countries. This is explained mainly by the impact of capital remittances on the economy of the origin country.

Thus, our quantitative and qualitative research revealed the increasing impact of international migration on countries, both from an economic perspective and a social one. Understanding the causes and effects of this phenomenon will allow states to learn to effectively manage migration and be able to benefit from its positive effects.

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