

**THE BRAIN DRAIN PHENOMENON IN ROMANIA.
MAGNITUDE, CHARACTERISTICS, IMPLICATIONS**

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Abstract.

The international migration of the highly skilled from Romania represents a human capital loss, especially in critical sectors such as education and health, and a threat to its economic development. In this paper we provide a quantitative assessment of the dimensions, characteristics, and implications of the emigration of skilled workers from Romania. The present work draws on a new database of 1514 Romanian immigrants from 52 destination countries, resulting from our 2010 online survey.

Keywords: *emigration, brain drain, Romania.*

JEL classification: *J61, O15*

1. Introduction

One major aspect of globalization is the migration of skilled workers from developing to developed countries. This is not a new phenomenon, but has now reached an unprecedented level as a result of a much faster rate of high skilled compared to low skilled migration.

Brain drain is part of a larger phenomenon, labor migration in general. In the market economies, resources naturally migrate to those locations where are best paid, usually towards developed countries. Migration is however

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selective, as the immigration policies of many developed countries such as Canada, USA, Australia, and EU countries (France, Ireland, and the United Kingdom) officially privilege qualified young adults. The magnitude of the phenomenon of brain drain over the last decades made it an international problem, affecting mainly the developing countries, where high skilled rates can reach even 50 percent of the total emigration.

Many theoretical and empirical studies addressed the determinants and effects of skilled labor migration, focusing on topics such as education investment in view of future migration, human capital loss and gain, the magnitude of the brain drain, temporary and return migration of skilled workers, remittances and their impact on the receiving country, the circulation of knowledge, etc. The mainstream of the migration literature has stressed that brain drain represents merely human capital loss (Beine, Docquier, and Rapoport 2001), producing only negative effects on the migrant sending country (Wong and Yip, 1999; Bhagwati and Wilson, 1989; Lucas, 2005), while another part of the literature has pointed to certain advantages on the long run, such as remittances sent by migrants to their countries of origin (Cinar and Docquier, 2004), benefits like extra knowledge and skills brought about by the returnees in the country of origin (Dos Santos and Postel-Vinay, 2003), increased trade by creation of new trade and business networks (Dustmann and Kirchkamp, 2002, Mesnard and Ravallion, 2001) enhanced foreign investment, etc. New concepts such as Brain Drain, Brain Gain, Brain Waste were introduced in the literature, emphasizing the importance and the complexity of this phenomenon, while a new field of research known as “new economics of the brain drain” (Docquier and Rapoport, 2004) has emerged.

Although the amplitude of the brain drain phenomenon reached alarming dimensions in some developing countries, the brain drain intensity or the skilled emigration rate, measured as the percentage of highly-educated migrants relative to the stock of highly-educated remaining in the sending country, seems to be stable as a result of improved educational attainment worldwide. Changes in both the brain drain magnitude and intensity were much stronger in Eastern Europe, where the fall of communism favored external movement and hence the appearance of a wave of emigration to Western Europe. The stock of emigrants from Eastern Europe nearly doubled over 1990-2000, while the share of skilled migrants, initially low, reached in 2000 the world average of over 35%. Nevertheless the skilled emigration rates, although

increasing for Eastern Europe, remained below the world average (4,5% against 5,4%) (Docquier and Rapoport, 2004).

The emigration topic is particularly important for Romania, as it is on the 5th place in the European top of emigration countries and a large part of the Romanian emigrants are highly skilled. Romanian emigration, notably migration for work, progressively extended under gradual removal of restrictions on the international circulation rights, being also favored by the emergence of multiple possibilities for information on jobs abroad. The number of Romanian immigrants reached almost three million in 2010, representing 13.1% of the population.

The reasons for emigration concern primarily the economic and social environment in Romania (the lack of opportunities, the political instability, the economic depression, the persistent corruption) compared to attractive prospects for improved living conditions, better education, diverse career opportunities, higher incomes, political stability, and a more stable economy in the developed receiving countries. In addition to this, there exist individual reasons such as: relatives and / or friends settled abroad, the inclination for adventure, career ambitions, job dissatisfaction, etc.

In line with the global trends, the rates of emigration from Romania are varying territorially according to the level of development of the region of origin. Thus, statistics showed that the strongest emigration rates do not occur in poor regions (Oltenia, Moldova, Wallachia), but in the wealthy ones (Bucharest, Banat, Transylvania). At the regional level, there is a reduction in migration attractiveness of Italy and Hungary and increase in the number of departures to Spain, France and Canada. If in the 1990s, the emigrants often preferred countries where Romanians had their relatives already settled (mainly in Hungary, Germany, Austria) and where attracted by the American dream, or by the Western one (France, United Kingdom, Australia), while in the 2000s the work migration increased, many temporary emigrants heading to Italy and Spain.

Most of the Romanians living abroad (86.2%) have secondary education, while only 12.4% have higher education. A large part of Romanian higher educated migrants (44%) choose countries outside the European Union, such as Canada or the United States. Approximately one in five migrated despite having a job in Romania, which is indicative of labor dissatisfaction of skilled people. Canada in particular draws upper skilled workforce: almost 54% of those who emigrate to Canada have academic studies, followed by 50% of those

who head towards Switzerland and 46% in the case of UK. At the opposite pole are Turkey, Italy and Spain, countries which attracted fewer Romanian immigrants with university degrees. Only 13.1% of those working in Spain are university graduates, while in Italy the percentage reached 9.8%.

According to the National Bank of Romania data, since 2000 the remittances increased constantly, reaching a peak of 9.4 billion euros in 2008, but the total amount sent home by migrant workers fell to 4.5 billion euros in 2009 and in 2010, due to the economic crisis. The education level of the emigrant and the money transferred in Romania are negatively correlated: Romanian workers without higher education that are working abroad send home more money than college graduates, although the incomes obtained by the less skilled migrants are smaller.

There are relative few studies devoted to Romanian migration, brain drain and the corresponding economic effects: e.g. Constantin et al, 2004; Sandu et. al, 2004; Sandu, 2005 and 2010; Ghita et al, 2007; Silasi and Simina, 2008; Nicolae-Balan and Vasile, 2008; De Sousa, 2010; Soros Foundation Romania, 2011. We aim to contribute to the existing literature by providing a quantitative assessment of the dimensions, characteristics, and implications of the the migration of skilled workers from Romania, drawing on a new database of 1514 Romanian immigrants from 52 destination countries, that resulted from our 2010 online survey.

2. The analysis of brain drain phenomenon in Romania based on survey data

Understanding and measuring the brain drain characteristics require empirical analysis based on reliable data. Any attempt to measure migration related issues for Romania is marked by the shortage of official data, as Romanian statistics currently available refer exclusively to permanent emigration. More information on temporary migration came from the migration statistics of the main destination countries of Romanian migration, such as Spain, Italy, Germany, Canada, USA. Additional information has been provided by special surveys in countries hosting large Romanian communities (e.g. Soros Foundation, 2006 and 2011). Even combining all these data sources, it is difficult to draw a reliable picture of Romanian emigration, due to statistical shortcomings and measurement problems associated to temporary and illegal migration (Tompea, 2009).

In order to obtain the necessary data on Romanian emigration we conducted our own online survey that covered a period of almost five months:

between July 22nd and December 11th 2010. As it was started during the summer holidays, when the availability of respondents was low, most of the respondents completed the questionnaire in the autumn. The final database Romanian Emigration Study (henceforth RES), included information from 1514 respondents in 52 countries. Respondents were asked questions on a variety of topics covering a large research agenda: income, employment, remittances, regions of origin and destination, graduated studies both in Romania and in emigration country, length of migration and intention to return to Romania.

Due to limited financial resources and lack of data on spatial dispersion of Romanian immigrants, the research team turned to an online questionnaire, instead of face to face or postal survey methods. Moreover, the online format is the cheapest and quickest way to build an extensive, various and territorially dispersed database. The questionnaire employed in our survey accommodates a suite of 51 questions of various types: simple and multiple questions, questions with multiple listed answers, quantitative and qualitative questions, and also open ended questions that gave the respondents the opportunity to express freely their ideas.

The questionnaire included general information: personal attributes (age, gender, religion), duration of migration; geographic information: Romanian county of origin, destination country and region; family: total number of children and number of children under 18, the number of family members living in the immigration country; education: last graduated studies in Romania, studies in the emigration country; professional status: profession, current occupation, economic sector of the first job abroad, current economic sector of activity; employment and earnings: monthly earnings for the first job abroad, current monthly earnings; remittances: remittent or not, top three reasons to remit, annual remitted amount; return intention and reasons.

The tertiary education graduates represent 64.4% of the total number of emigrants registered in the RES database, around twice the figures reported by other studies. This discrepancy is a consequence of the online filling of questionnaires, which determined a higher proportion of responses from educated persons, which have current access to the Internet. As a consequence, this database enables a more profound study of the emigrants with higher education, which are better represented in this study.

The distribution of emigrants in the RES database after the last graduated studies in Romania is illustrated in Figure 1. In accordance to the common practice in the brain drain literature, we included the following

education levels in the brain drain category: short-term tertiary education (college), long-term tertiary education, master, and doctoral studies.

Out of the total number of emigrants included in the database, 54% received additional training / qualifications abroad, which indicates a high level of human capital gains from migration.

The variation in the number of emigrants with higher education, compared to those who received only primary and secondary education over the 1950-2010 period (Figure 2) indicates strong differentiation of the dynamics of these two categories of respondents since 2004. The year 2004 marked the beginning of a period of faster growth in the emigration of highly qualified persons.

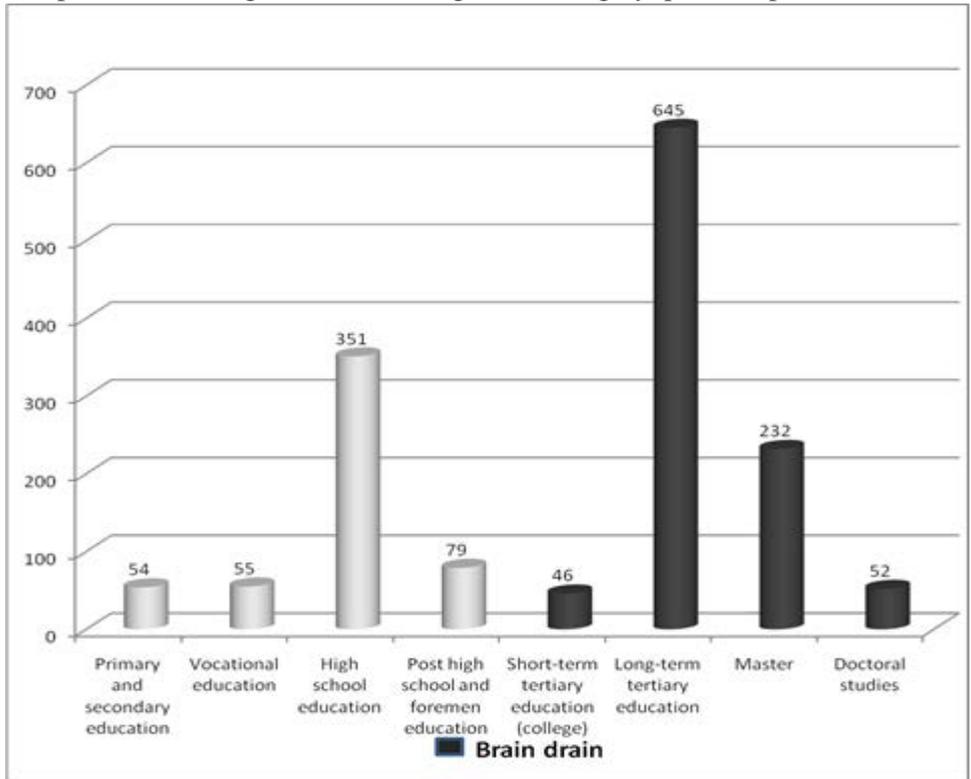


Figure 1. Distribution of emigrants in the RES database after the last graduated studies in Romania

Source: processed by authors based on RES database

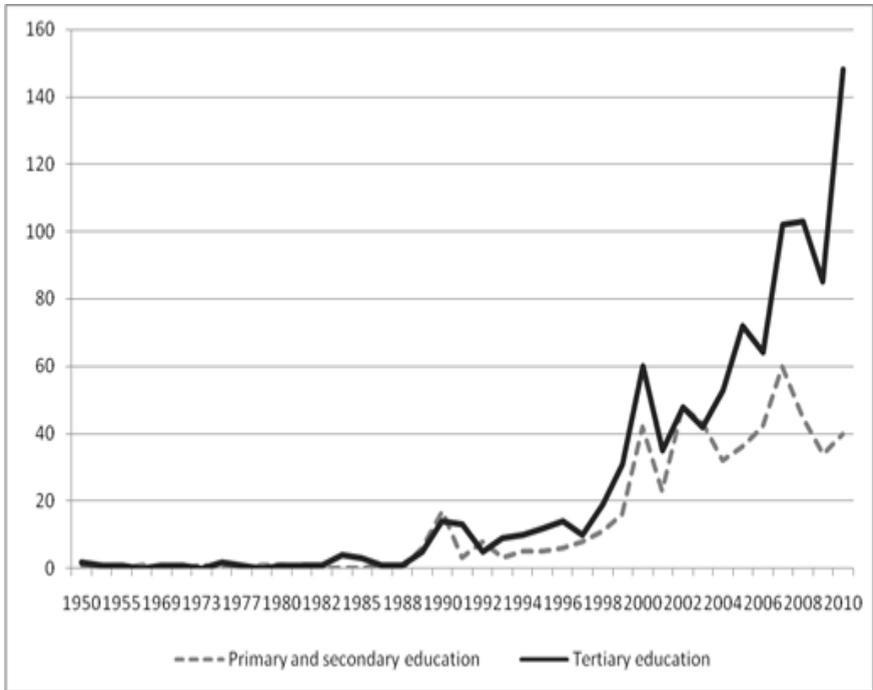


Figure 2. Distribution of emigrants by education level and by year of departure from Romania

Source: processed by authors based on RES database

Both categories of respondents indicated "a better life expectancy" as the main reason for leaving Romania (Table 3), but the frequency of this response was much higher for the migrants with primary and secondary education (over 78%).

On the second place is situated the dissatisfaction about the current conditions in the country (this reason received approximately equal weights, of over 60%, for both groups of emigrants), while the the perspective of higher earnings abroad appears only on the third place, with a significantly lower frequency compared to the previous two motives for emigration.

It is noteworthy the greater importance it has for the emigrants with tertiary education the desire for personal development, while the emigrants with primary and secondary education are to a greater extent motivated by the failure

to find a satisfying job and the desire to rejoin their relatives and friends settled abroad.

Table 3. The main reasons for leaving Romania (%) as indicated by the emigrants in the RES database

	Primary and secondary education	Tertiary education
Hoping for a better life	78.48	68.21
I'm tired of conditions offered to me in the country	65.86	63.08
The opportunity to earn larger amounts of money	47.31	41.23
The opportunity to go into another country	31.54	41.23
The desire to assert myself at international level	14.47	33.03
I couldn't find a job in the country	18.37	13.64
Opportunity to join friends/relatives settled abroad	15.40	10.97
Opportunity to start a new business	9.83	6.26

Source: processed by authors based on RES database

There is a clear distinction between the two categories of emigrants as regards the distribution by income (Table 4). The incomes are significantly bigger for emigrants with university education, both at the first job held abroad, as well as currently. Thus, over 60% of the emigrants with primary and secondary education, but only 38% of those with higher education have obtained less than \$ 1,500 as monthly income in their first employment abroad.

Current incomes are higher for both categories of emigrants: only 40% of migrants with primary and secondary education, and only 20% of those with higher education earn now less than \$ 1,500 per month. Differences between the two categories of respondents are even more pronounced for higher categories of income, the tertiary educated emigrants making much bigger earnings.

Table 4. Emigrants' monthly income distribution

	Net monthly income (\$)			
	First job abroad		Currently	
	Primary and secondary education	Tertiary education	Primary and secondary education	Tertiary education
Under 500 \$	11.7%	4.6%	9.3%	4.2%
500 - 999 \$	24.5%	13.2%	13.2%	5.9%
1.000 - 1.499 \$	25.6%	19.7%	18.7%	9.7%
1.500 – 1.999 \$	16.7%	17.3%	17.8%	12.5%
2.000 – 2.499 \$	7.2%	10.4%	13.7%	11.8%
2.500 – 2.999 \$	4.3%	9.5%	8.0%	8.7%
3.000 – 3.499 \$	3.5%	7.3%	6.3%	10.8%
3.500 - 3.999 \$	1.5%	3.8%	3.0%	8.2%
4.000 - 4.499 \$	0.6%	2.8%	1.5%	4.0%
4.500 - 4.999 \$	0.7%	1.4%	2.0%	3.7%
Over 5.000 \$	3.7%	9.9%	6.5%	20.4%

Source: processed by authors based on RES database

The ratio of emigrants with tertiary education relative to total emigration is usually high for the developed counties of Romania: Bucharest Municipality (81%), Timis (68%), Sibiu (76%), Iași (66%), Cluj (61%), etc. The percentage of tertiary education emigrants coming from less developed zones is considerably lower, for instance 31% in Bistrița-Nasaud and 30% in Salaj.

With regard to attractiveness of different countries of destination, Romanian emigrants with primary and secondary education are heading mainly to Italy, Spain and Germany, while Romanian emigrants with university education prefer Canada, U.S., France and the UK (Figure 3).

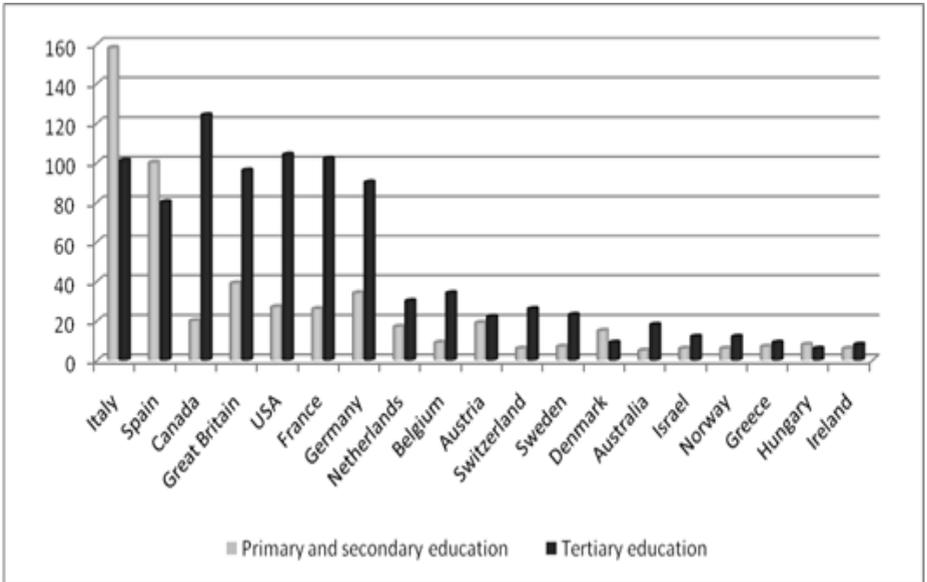


Figure 3. Distribution of the emigrants in the RES database by country of destination

Source: processed by authors based on RES database

Comparing the distributions of the two categories of emigrants by their employment status (Figure 4) we notice that the emigrants with tertiary education have preponderantly a permanent employee status (60%) compared to a lower share for Romanian emigrants with primary and secondary education (47%), which gives the former a greater professional and financial stability.

The RES data confirm the results of other studies that have found the qualification level of the emigrants to be in an inverse relationship to the propensity to remit (Table 5). The differences in the remitting behaviour of the two categories of emigrants are however low: in both groups of emigrants those who send money Romania are currently holding a share of over 50%.

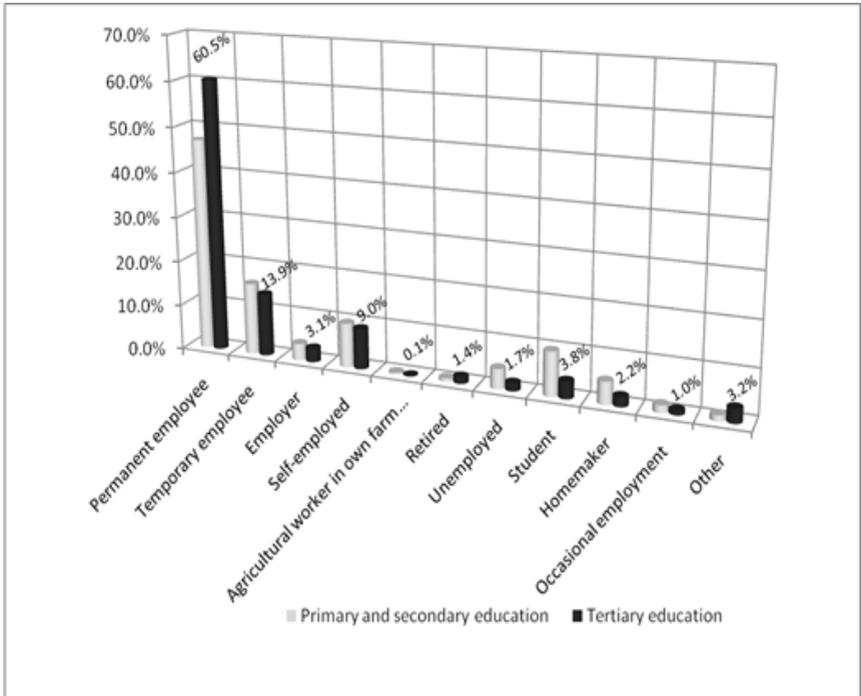


Figure 4. Distribution of the emigrants in the RES database by occupation

Source: processed by authors based on RES database

Table 5. Distribution of annual remittances by category of emigrants

Annual remittances (U.S. \$)	Number of emigrants with:	
	Primary and secondary education	Tertiary education
no remittances	229	462
10-500	106	110
501-1000	47	88
1001-2000	42	85
2001-5000	57	122

5001-10000	38	56
10001-20000	15	26
20001-50000	3	15
50001-200000	2	11
Total	539	975

Source: processed by authors based on RES database

As indicated by the data in Table 6, for all the emigrants, regardless their education, the family is the main recipient of remittances sent in the country of origin. However, the emigrants with primary and secondary education indicated in a higher proportion the family needs as their main motivation to remit, compared to those who have higher education.

The decision to send money in the country largely depends on the migrant's family situation, and the presence of children in Romania is providing a strong motivation to remit. Since the Romanian emigrants with primary and secondary education have on average more children than the emigrants with tertiary education this may be an explanation of the difference between the two groups in their propensity to sent money to their family in Romania. Investments, savings, the purchase of long-term assets, including housing, represent much less important reasons to remit. The frequencies of these motivations to remit do not differ significantly between the emigrants with tertiary education and those with primary and secondary education.

Table 6. Reasons for emigrants to send money to relatives/friends in Romania

	Primary and secondary education	Tertiary education
current family needs	70.97%	65.63%
investments / acquisitions of long-term assets	6.13%	7.23%
deposit / savings	4.84%	5.08%
build a house	4.19%	4.30%
loans payment	7.74%	8.98%
other	6.13%	8.79%
Total	100%	100%

Source: processed by authors based on RES database

A number of 499 persons (including 281 with university education) out of the total 1514 in the RES database said they plan to return to Romania. When asked "Over how many years are you going to return in Romania?" only 17% of the emigrants with primary and secondary education and only 12.5% of those with tertiary education indicated a period of less than one year (Table 7).

Most of the emigrants with university education (approx. 28%) expect to return home in 1 to 3 years, while for the emigrants having less than college education the most frequent answer was 3 to 5 years. The lower earnings of the primary and secondary education emigrants, compared to those with tertiary education, may motivate them to stay longer abroad in order to save the desired amount of money. Nevertheless, the differences between the two groups disappear at the upper end of the time distribution: about 20% of the emigrants from both categories are considering necessary a long time horizon (over 10 years) for carrying out the intention to return in Romania.

Table 7. When do emigrants intend to return to Romania

	Primary and secondary education	Tertiary education
Less than one year	17.0%	12.5%
1 to 3 years	21.6%	27.8%
3 to 5 years	22.0%	19.2%
5 to 10 years	19.3%	21.0%
More than 10 years	20.2%	19.6%
Total	100.0%	100.0%

Source: processed by authors based on RES database

There are no significant differences between the two categories of respondents as regards their motives to return to Romania (Table 8). All put on the first two places, with a very high frequency, their longing for family and country. Economic and social reasons related to the difficulty of integration in their adopted country were indicated with much lower frequency.

Table 8. The top three reasons for returning to Romania

	Primary and secondary education	Tertiary education
My family needs me	29.9%	31.1%
I miss Romania and the loved ones	40.3%	38.2%
The economic crisis in the country of emigration	4.3%	5.3%
I have no friends / I do not feel included in local society	8.4%	11.1%
Hostile attitude of local population towards immigrants	11.1%	7.4%
Dissatisfied with current job / no job appropriate to my calification	6.1%	7.0%

Source: processed by authors based on RES database

3. Final remarks

This paper has attempted to identify the main characteristics of the Romanian emigrants with tertiary education (as a measure of brain drain) relative to the emigrants having only primary and secondary education. We used the database resulting from our online survey conducted from August to December 2010, allowing us to capture recent trends, in the context of the persisting global economic crisis.

Our research brought about potentially useful information for decision makers, as understanding the drivers of emigration and the main reasons behind the return decisions may help them design the best suited migration policies. There were many discussions lately on the policy measures needed to encourage the return in the country of the educated youth, which would bring potential benefits to the human capital of Romania due to additional education and experience they have accumulated in the period of stay abroad (brain gain). Among the measures that the Romanian state might consider are: to inform the specialists abroad on career opportunities existing in the country, to support the reintegration of the returnees in the Romanian society, to provide facilities for those who return with the purpose to start a business, to modernize the infrastructure in education and research, etc.

Even more efficient may be the measures aiming to stimulate economic growth by fostering the top areas of development, to support national research, development and innovation, to improve the current educational system through measures that involve the personalities which have demonstrated professional success, to create a scientific and moral meritocracy in the universities of the country, to promote international scientific merit, to improve the research funding system, with emphasis on reducing bureaucracy, etc.

These lines of action are conditioned to a large extent by the availability of financial resources to support recovery measures and to assist the reintegration of the young professionals returning to Romania. Under current conditions of economic crisis and budgetary constraints, the government cannot be expected to allocate more money, but may at least design and implement long-term development strategies, and should involve private companies that may benefit from the experience gained by young people skilled abroad. In addition, it is noteworthy that these strategies are not limited to money, as the creation of career development opportunities in Romania, the containment of bureaucracy, and the development of a system based on meritocracy are important as well.

The picture of the Romanian skilled emigration is complex and changeable in the current volatile economic conditions, making it difficult to draw a durable image. Therefore more research will be needed and we intend to continue this work in the more stable post-crisis environment.

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