Issues Related to Brain Drain Phenomenon in Romania: Causes, Tendencies and Possible Solutions

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Abstract. This paper work deals with skilled migration from a developing country perspective; it contains aspects about the negative impact of professional outflows (often viewed as a national welfare loss); the authors answered to some questions related to what policies can be adopted to stem such movements from developing countries to developed countries; also, the main causes underlying Brain Drain’ dynamics and the consequences due to its development were mentioned. This topic was chosen because the phenomenon of Brain Drain had a dynamic evolution in the last years in Romania and the consequences of its development are ominous

Key words: brain drain, skilled migration;
JEL classification: O 15, J 24, I 129

1 Introduction

Today, we are witnessing what has become known as the globalization phenomenon (a modernization process of the economic and communication aspects at a global level). This phenomenon draws a new global revolution – the highly qualified work force is allured (and kept) where there are conditions for development. Thus, mankind becomes pragmatic, free and is building an open society, with young people settling down where they can fulfil and develop their personality.

The emigration represents one of the social processes that profoundly influences the current Romanian society; still, the specialized literature still doesn’t have the scientific papers that can render this phenomenon or that can adequately explain the “migration of intellect” (The word “migration” (according to the dictionary, mass movement […] from a territory to another, determined by economic, social, political or natural factors) is used incorrectly, with the mention that the experts who chose to go abroad fluctuate depending on their age or training level.). The brain exodus (the so-called “brain drain”) is considered an extremely important problem that numerous countries are facing, Romania being one of them.

2 Definition and classification

Brain drain or “human capital flight” is the migration phenomenon of the educated or talented people due to various reasons (conflicts, lack of opportunities, etc.). This term was used for the first time within the Royal Society of London with the purpose to describe the departure of scientists towards the United States of America and Canada at the beginning of the 1950’s. It’s important to mention that the exodus is voluntary, (often) stopped by the originating countries and encouraged by the welcoming countries.

In Romanian the term was translated in different ways, such as: “brain drain”, “brain exodus”, “brain migration”, “brain theft”, “intelligence theft”, “head hunting”, “proficiencies exodus”, “brain hemorrhage”, etc. It’s obvious that these translations were done under the influence of “frustrations” manifested by the countries that supply “brains”, highlighting the negative side of the phenomenon.

The migration of the individuals with high qualification can have different types. According to the Ministry of human resources development – the department of education – from India, the following types of experts’ migration have been identified:

- **brain overflow** – the overproduction of specialists. Because of the too abundant number
of specialists trained in a certain country or because the total number of well trained young people can’t be absorbed by the national economy, there is an overplus of experts that can become established on the external market, meaning through emigration. Among the countries facing this situation are: Columbia, India, Iran, Nigeria, Pakistan, Philippines and South Korea. This type of emigration is not considered harming for the originating country, but rather a solution for decreasing unemployment.

- **brain export** – the specialists’ export occurs when the “exporting” country receives for the well-trained youth certain amounts of money in the guise of taxes for periods of a few years or only once, at departure. It’s difficult to establish if this tax covers the schooling expenses of the experts and/or the potential earnings brought by them to the national economy during their professional lives. Barbados and Philippines deliberately prepare experts for export.

- **brain exchange** – the exchange of experts occurs when the loss of young gifted people is compensated by the import of experts from other countries. This trade can be conducted between a less developed country and a more developed one, or between two less developed countries; this way, there is a positive exchange of experience for both sides.

- **brain drain** – the phenomenon of expert migration from a less developed country to a more developed nation, without any compensation – is regarded as a vital loss of resources.

3 The current situation. The importance of the problem

Brain drain is considered an extremely important problem that Romania is facing. Most studies suggest that the phenomenon has two distinctive negative effects. On one hand, although for the world as a whole, it’s beneficial for the most intelligent people to exercise their abilities where they are receiving the highest reward, it’s important to mention that this is not true for the countries that lose an important part of their educated middle class. Besides losing the potential production, the fiscal loss caused by migration is also added; thus, the tax payers from the developing countries have paid for the education of those who are leaving, and the emigration leaves behind fewer workers that will pay for the costs of taking care of the elderly” (The Economist, Outward Bound - Special Report Emigration).

The Romanian analysts preoccupied by the migration phenomenon of the educated individuals reached the following conclusions: “at the society’s level, the migration of the young Romanian researchers is an important problem. Migration represents a significant loss for the country, because of the intellectual, scientific and economic potential they have, and because of losing the investment put into their education” (Florian, 2004). Financially, for each emigrant who graduated from university, Romania losses approximately 50,000 dollars/person. This sum represents the cost of 16 to 20 years of schooling, money that can’t be recuperated by the Romanian society. Paradoxically, at the Government’s level, this subject doesn’t seem important, and when it’s found within the political oratory, it’s treated superficially and – most likely – is included in the general debate of the work force deficit.

According to the latest studies, Romania has given to the world a tribute of no less than 24,000 students – but it’s important to mention that this is only an estimate; unfortunately, the dimensions of the highly qualified work force migration of Romania is well known, which represents one of the main causes at the basis of identifying and implementing the adequate solutions for stopping this phenomenon.

4 Causes

At society’s level, the “brain exodus” represents a major problem. Migration is an important loss for the country because of the intellectual, scientific and economic potential that the youth has, but also because of losing the investment put into their education.

On the other hand, migration is a natural solution found by researchers in order to do their job, in the context of the serious problems faced by the Romanian researching community,
which is a direct result of bad management. Essentially, the differences of qualitative standards are mainly caused by investments, and before it’s too late, we must acknowledge that education is a long-term investment. Therefore, the following are worth mentioning:

- **Under financing**: in the year 2000 a percentage of 0.37 of GDP was allocated to research; in 2002, the state budget allotted only 0.21% of GDP, which, at that time and in comparison to the average of 0.75%, represented the lowest percentage in Europe. Currently, the percentage of GDP given to research is approximately 0.72% (this low level violates the legal stipulations regarding scientific research and technological development, which require a minim percentage of 0.8). Regarding investments, the foreseen percentage of the Gross Domestic Product for the year 2010 is 1%, and, by 2013, it will reach 1.5% - Table 1.

Table 1 - The percentages of GDP allocated to research in Romania

<table>
<thead>
<tr>
<th>Year</th>
<th>2000</th>
<th>2002</th>
<th>2004</th>
<th>2006</th>
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<tbody>
<tr>
<td>Percentage of GDP allocated to research</td>
<td>0.37</td>
<td>0.21</td>
<td>0.41</td>
<td>0.46</td>
</tr>
</tbody>
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<table>
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<tr>
<th>Year</th>
<th>2008</th>
<th>2010</th>
<th>2013</th>
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</thead>
<tbody>
<tr>
<td>Percentage of GDP allocated to research</td>
<td>0.72</td>
<td>1%</td>
<td>1.5%</td>
</tr>
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Source: elaborated by the author based on the references of the paper

These numbers can’t finance quality research and these types of conditions are not able to encourage the return home of young researchers. At the same time, it’s important to mention that research financing is often lacking transparency, which encourages corruption and the allotment of funds based on subjective criteria.

In October 2008, Călin Popescu Tăriceanu supported the initiative to grant research 3% of Gross Domestic Product (about 1 billion dollars), mentioning: “a performing education system, that will function like an engine, next to viable research, will become the guiding marks of the Romanian economy development”.

The data obtained from Eurostat - Statistical Office of the European Communities – proves that Romanian investments in research are much lower than politicians have declared. Thus, the countries that allocated the highest percentage of GDP to research were: Sweden (3.82%), Finland (3.45%), Germany (2.51%), Austria (2.45%) and Denmark (2.43%), on the opposite corner are: Slovakia (0.49%), Bulgaria (0.48%), Romania (0.46%) and Cyprus (0.42%) - Figure 1.

Figure 1. Percentages of GDP allocated to research on the globe

Source: elaborated by the author

Romania allocated 444 million euros for research in 2006, compared to 486 million euros allotted by Slovenia, 900 million by Hungary, 1,761 billion euros by Czech Republic and 1,513 billion euros by Poland.

- **Subjective assessment**: the fundamental problem of Romanian research is the subjective assessment of the research’s results, of the scientists and of the research institutions; if the results are objective, the results of the Romanian science could increase “dramatically”.

- **The low quality of the education process**: The fact that one of the premises of the brain exodus could be the low quality of the education process shouldn’t be neglected; Romania doesn’t have any universities in top 500.

Generally, our country losses points regarding innovation and international competitiveness, and the international competition for attracting “gifted” young people is becoming more intense because the other competitors want to develop their economy based on knowledge.

As a conclusion, on one side we have the existence of an environment that gives talented
young people the guarantee of a quality educational process and of the international acknowledgement of the obtained qualifications, and, on the other side, the perspective of the higher material stimulants and the promotion of the most competent in the education and research institutes or in the powerful multinational companies. Of course, the receiving countries benefit from the capitalization effect of these foreign “talents”. In case they don’t return to their originating countries, the “brain drain” signifies the waste of added value potential that the developing country could have gotten involved for the society’s development: this constituted contribution would be significantly superior to the one involved by the rest of the population that doesn’t have a higher education.

- **Tax exempts, scholarships and a decent living.** Another aspect that is worth mentioning is the reality that even countries used to discourage the immigrants flow are indulgent towards brain migration, many of them are offering tax exempts and fast granted visas in order to be competitive on the global market1.

- **Other obstacles.** At the same time, the performance of really valuable students of being accepted by an university is blocked (as was in the past) by numerous factors, among which the low remuneration level, the difficulty in finding a decent home, the blocking of existent positions (for ensuring more didactic norms – adjusting the salary of the current staff).

Thus, the exodus of young values is not accidental: the remuneration is certainly a fundamental aspect, but it is closely related by the other mentioned factors. The lack of a teacher role model, both morally and professionally, determines the young people who are aware of their own intellectual value to emigrate in order to become real professionals.

From many points of view their desire to study at foreign universities is more than understandable, as long as their stay is accompanied not only by good living conditions, but also by a really good knowledge base.

### 5 Solutions

The solutions to counterbalance the migration of the most valuable people, by encouraging them to stay in their country or by motivating them to come back to Romania, must try to remove the causes that determine migration. Therefore, the assessment of the scientific activities must be done strictly based on the scientific performance, just like it is appreciated internationally. Implicitly, giving up publishing in the Romanian scientific magazines that are not internationally acknowledged, as well as ensuring the transparency of the research financing process are also imposed. At the same time, it’s necessary to improve the financing of research, by increasing the percentage of GDP allocated from the state budget according to the minimum value stipulated by the law of 0.8%.

These measures could lead to increasing the Romanian scientific potential, and then to turning it into account by developing the high-tech industries, with added value; it could play an important role in the economic healing of the country.

The main factors that allow Romania to become innovating are also worth mentioning. They take into consideration the following:

- The consistent investment in education, in general, and in higher-education, in particular;
- A quality information and technological base;
- High levels of governmental expenses associated with research and development;
- Efficient laws for the protection of intellectual property that will support the research-development activity.

Romania’s accession to the European Union regarding the human factor is done only at a certain level of professionalism, of spiritual, cultural and economic evolution, being continuously adaptable to a new economic environment, internationally integrated, to an integrated world, a world that is unique and needs unique people.

This requires capturing all the spiritual, cultural, social and human values, which increases the importance of the national particularity and effort needed to integrate, increasing the role of

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1 New York Times
the vernacular values and their compatibility with the globalization principles. According to Răzvan Florian, member of the Ad Astra Romanian Researchers Association, the special facilities given for motivating the researchers to return from abroad, such as scholarships and special funds, would only encourage corruption in the current context. Another solution (already adopted, but not sufficiently known) could be to create a program of governmental scholarships that will finance the schooling of candidates at prestigious universities from abroad, with the requirement that the students will return to Romania and work three to five years in state institutions in a management position. But nobody acknowledges the fact that it’s impossible to guarantee such a job position, and this way the brain exodus is again encouraged by a bitter taste that the student will feel when he will face reality.

Regarding the return of researchers to their originating country, it would also be ideal:

- To stimulate scientific excellence within Romanian research, by ensuring adequate conditions for Romanian researchers who work abroad, who have international experience and significant results and want to come back to research institutions in Romania;
- To stimulate the capitalization of the scientific talent within our country, of the scientific connections and the experience gathered in the international scientific environment by established Romanian researchers, who want to create their own research group in Romania.

The return of the “brains” and, at the same time, the measures that should be implemented to stimulate it requires the making of an essential distinction between the factors that are elements of satisfaction for those who are abroad: there is a highly qualified labour force that leaves in order to increase their incomes, but there is also a category that, besides the material benefits, targets other opportunities:

“It’s difficult to explain to a governing body that I would return to Romania not necessarily for high remuneration, but rather for the insurance that my children could go to school in a safe environment, that they have the chance to receive an education that will connect them with the labour market, but will also give them a minimum civic sense, among other social skills” (J.A.D., 31 years old, Clermont-Ferrand, France)

At the same time, it’s necessary to have macroeconomic policies and policies to fight crime, corruption and illiteracy, etc.

Even if it seems like an avant-garde measure, some authors think we should support the departure of researchers to a foreign institution, because only this way they can train at a high and competitive level with other countries – including with other competitors. The biggest problem it’s the fact that we remember them only once or twice a year – when we read in foreign magazines about their performance.

The Ministry of Education, Research and Innovation must provide clear and relevant solutions to the young people who studied abroad and want to return to Romania. Aside the Ministry, the universities should also have the obligation to maintain contact with them, but the “sparkling” profit that arises when new students arrive, issuing diplomas, certificates and many other irregularities that live within the Romanian higher-education practically “choke” any fair and real development of Romania: “50 years ago, the communists have starved the intellectuals in prisons. Today, the political class manages the same performance while we are free”. (Tudor Ionel Oprea)

Therefore, we are witnessing a “cruel reality” that shows no signs of recovery and is easily and surely transforming into a black hole of the Romanian system.

The measures that could be implemented with the purpose to develop the relationships with the scientific diaspora are also worth mentioning. The most plausible is the collaboration of the diaspora intellectuals for projects that take place in their originating countries, but also the exchange of experience at conferences, symposiums and other scientific events where experts from abroad and from Romania are participating. Regarding the method and possibility to transform the Brain Drain phenomenon into a real advantage for Romania, this will be analyzed in a different chapter, which will be presented next.
6 Brain Drain – Brain Regain programmes

Started as a migration flight during Second World War, the migration of the gifted minds, known under the name of “brain drain”, grew significantly because of globalization. The term brain drain started to be replaced by brain circulation and, ultimately, by brain gain in the countries that capitalize these opportunities. In recent years, Romania has taken steps to acknowledge this chance, especially because the losses determined by migration are high. Acad. Ionel Haiduc, president of the Romanian Academy, presented the solutions of this unstoppable phenomenon and showed how the loss can become a gain: “a first option is the non-intervention of the government, who can’t control this process; this idea is supported only by the benefiting countries. Another solution targets measures to reduce migration, by making it more difficult to leave the country and through stimulating measures to regain the human capital. The third solution refers to compensatory measures that the benefiting countries should pay to the originating countries of these specialists. The fourth option, and the most realistic one, is the Diaspora option, which targets the collaboration between the experts in the originating country and the ones abroad who are willing to collaborate and to support the creation of networks in various fields and to support the originating country for the involvement in international projects. According to this conception, the migration of experts is no longer necessarily a loss (brain drain), but can be transformed in a gain (brain gain) for the originating country. In this manner are created integrated networks that provide the chance to transfer knowledge. Currently, 40 countries implement with success this plan”.

One of the transformation programmes of “drain” to “gain” started since august 1997 and was supported by the CSC members who were working on their doctorate and post-doctorate abroad (USA, the Netherlands, Singapore) and was publicly launched through the radio station România Cultural during a series of five shows of one hour. The program addressed the issue of earning back our values (Brain Regain) and started from a relatively simple truth: “If Brain Drain can’t be stopped, then Brain Regain can be built!” and was supposed to be continued through various macro-projects. This way, it represented a permanent source of open projects, which invite to:

- Creating the local institutional and financial framework, destined to bring back the young people who studied abroad (master, doctorate, post-doctorate);
- Research the impact of restructuring and importing managerial culture over the value scale at national level;
- Identify the chances to start the Brain Drain – Brain Regain cycle, which is capable to self-finance and to allow the fast quality increase of the labour force at global level, at the same time with increasing the chances for international collaboration by guaranteeing the quality of the human resource by the partner who insured the training in the Brain-Drain phase;
- Maintaining the connection between Romanians all over the world by creating virtual environments where they can participate at joint projects.

Because Brain Drain represents a phenomenon that grew with the globalization of economy and of certain parts of culture, it can have good or bad consequences, but this depends only on how we can relate to this phenomenon and to its size; the first step is not to remain indifferent. Another program desired to be implemented is presented in the article “Aeroplane of Developing Romania” (Figure 2) by Florin Colceag, the president of EDUCATE (The Romanian Consortium for the Education of Gifted and Talented Children and Youth) and IRSCA Gifted Education (http://www.supradotati.ro).

“The sustainable development programmes [...] will be designed to respond to crises management by stimulating the competencies market [...]”
“[...] The need for brain regain is evident in Romania in its post-accession rehabilitation period. This process will have a natural evolution on long term because of the actions of the market rules, but shaping its phases can accelerate it, so that it will generate bigger earnings at shorter periods of time. The key component that will accelerate this process of strategic importance is the transformation of the education system in Romania [...]. In the first phase, the “Brain Regain” programme will impact the Romanian citizens who studied abroad and who want to take advantage of the opportunity to participate to Romania’s reconstruction”.

The personality profile of the people wanted to get involved in this first stage requires creative and strategic intelligence, adaptability to unexpected conditions and targets the capacity of the individual for team work and, at the same time, it requires the perception of the complexity and dynamics of the macro-political-economic-social phenomena, as well as a global perspective over the situation. The target is to implement solutions whose finality will lead to the existence of an extended dialog and collaboration area between the Diaspora and our country, thus allowing the building of partnership networks, exchanges of experience, transfer of new technologies and know-how. At the same time, the people actively involved within this programme and focused especially on crisis management and policy-marketing have to get access to the “entry gates” into the political environment, having the role to supply solutions visible at the level of local and/or national public policies.

“Brain Regain programme will be rounded by a change of vision towards development, sustained by new specific laws”. In order to achieve this programme it’s necessary to have “a work philosophy and participation of a multitude of organizations capable to take over and to develop programme components”. Also, it’s expected that the programme will be successful soon (approximately one year) for some of the strategic brains that came for the message “We have a country to build!” and in approximately five years for everybody else. Thus, “in the hand of the presidential institution may lay the instrument to change the rules of the game by fostering new types of compensation programmes to solve the current crisis” (Colceag F.).

7 Study regarding the trends of Brain Drain phenomenon among graduates

7.1. Methodology

The direct beneficiaries of the “1 Decembrie 1918” University of Alba Iulia answered to a questionnaire in order to anticipate the manifestation level of the Brain Drain phenomenon and the future plans of graduated students in 2010. A sample of 242 persons was calculated; the questionnaire was applied to students of the Science Faculty, who graduated: Management Accounting and Informatics, Business Administration and Marketing, Business administration in Trade, Tourism and
For the sample calculation we used the fixed stratified sampling method, with restrictions, which is done by dividing the community into groups/strata according to certain criteria and by extracting observation units for the sample – in this case, the sample consists only of subjects who had an attendance over 80% at lectures and seminars.

The questions formulated and used in this questionnaire are closed, with multiple answers or follow the funnel principle (from general to particular). The self-recording method (handing the questionnaire to be filled by the respondents) is also used. After the data analysis and the quantification of the responses regarding the prediction of the degree of manifestation of the Brain Drain phenomenon in the future, the findings will be written for each chart in order to facilitate their understanding and interpretation.

### 7.2. Case study

Regarding the importance attached to aspects of the everyday life of students, it was shown that family comes first (in 83% of all the interviewed students), followed closely by education (79%) and then followed by relationships with friends and acquaintances (“TeamWork” NGO) (Fig. 3).

![Figure 3: The structure of the received answers depending on the importance granted to aspects of a student’s everyday life](image)

According to the received answers, the United States of America is holding the first position regarding the country they would choose as destination (33%), followed closely by Great Britain (21%) and France (14%). On the other side are Switzerland, the Netherlands and the Scandinavian countries (each with 2%) – Fig. 5.

![Figure 5: Destinations](image)

Most questioned students seem to think they can’t have a career in Romania; 33% think that even if the chances are limited, they will succeed, while only 21% consider they can have a career in their own country (Fig. 6).
The answers received to the question: “What would you choose in case you received a scholarship abroad?” were structured as follows: most of the students who think they can have a career in Romania (52%) think they will be working abroad for a period, and return after, while the majority (43%) of those who think it’s impossible to have a career here, would choose to stay abroad for good if the opportunity arises (Fig. 7).

In case they would be offered the same job in an appealing field – here, or abroad – most students would choose to stay in Romania, with the condition to have the same salary as overseas (40%), followed closely by those who would choose the job abroad (38%) – Fig. 8. According to the received answers, most students think they would have better living conditions abroad (74%) than in Romania, 16% think it would be similar, while 9% consider they would have lived in worse conditions overseas than at home.

According to the received answers, the main reason why graduates choose to leave the country are the career opportunities (43%) and the high living standards from abroad (32%), followed by the received salary. The least important reasons are the political climate in Romania and the low quality of the education system (Fig. 9).
After analyzing the answers, in the opinion of the students, the main measures for stopping the Brain Drain phenomenon are improving research (38%) and the implementation of efficient laws of protection for intellectual propriety (26%). In the students’ opinion, stimulating the capitalization of the scientific talent in our country (37%) and of the scientific excellence in Romanian research (33%) are the main measures needed to be taken to stimulate the return of Romanian researchers from abroad (Fig. 10).

**Figure 10: Necessary measures to stimulate the return of Romanian researchers from abroad**

8 Conclusions

This topic is not one over which to pass easily, perhaps it should be the object of a separate agenda within the post-accession strategy of Romania, citing a double necessity to maximize the support for the access of Romanian citizens in foreign institutes of higher education and capitalizing within our borders the training received here.

In the *National Research Strategy* for 2007-2013, Romania has targeted to achieve within the international classifications a suitable position for its political and economic importance at global level and adequate to the cognitive and creative necessities of a society based on knowledge. Since the research-funding situation has improved significantly in recent years, it could motivate researchers established abroad to return to Romania. Of note, however, is that the education and research systems in Romania are still in the transition process; so scientists returning from overseas “[…] may experience some inconsistencies between the Romanian higher education systems and the Western ones; these difficulties inherent in a transition society are not insurmountable, overcoming them with success largely depends on everyone’s motivation and determination to help promote the Romanian scientific society”

It is important to mention the fact that the return home of some of the experienced Romanian researchers from abroad would lead to increased competitiveness for financing and recruiting the best scientists and thus promote the Romanian and European scientific excellence. The current policy of the European Community gives special attention to stopping the “brain drain” for the European Union to become the most dynamic and competitive knowledge economy in the world by promoting “the knowledge triangle” – research, education and innovation.

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