



Higher Education in Romania in the Context of Europe 2020

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Author's contribution

The sole author designed, analyzed and interpreted and prepared the manuscript.

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ABSTRACT

This paper offers a general view, supported by a critical analysis (factual and causal), of the effects noted in the field of higher education in Romania, in relation with the Europe 2020 Strategy. A short introductory paragraph is devoted to the initial conditions for the analysis, presenting a synopsis of the essence of the situation of higher education in Romania. Then, a first analysis perspective is tertiary education graduates' emigration. The absence of statistical data, according to age groups, made it necessary for us to use indirect assessment methods; the article includes an original assessment procedure in this respect. The second analysis perspective is employment reflecting acquired competences. The absence of statistical data required for a detailed analysis is compensated for by the use of general statistics on the labour force. A third perspective is an internationalization; the article also includes an exhaustive analysis (in relation to EU statistics) of higher education systems of EU member states, based on UNESCO statistics. The main conclusion of the article is that the indicator "Weight of the tertiary educated population in the 30-34 age group" would have attained in 2014 the level of 40%, set as an average target for EU member states for the year 2020, if Romania had not been confronted with the highly qualified young labour force emigration.

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1. INTRODUCTION

Starting from the reference objectives and values set for member states by the strategic document Europe 2020: Europe's Growth Strategy [1], as well as from statistical data available following launching strategy implementation, this paper offers a general view, supported by a critical analysis (factual and causal), of the effects noted in the field of higher education.

The paper is structured into four analysis sections and a conclusions section, the content of which is further briefly described.

The first section is devoted to the initial conditions for the analysis, presenting a synthetic overview of the situation of higher education in Romania.

The next section reviews available statistical data and significant trends in the field of higher education (age group 30-34), based on which an essential analysis of the way and extent to which the targets undertaken by Romania have been fulfilled, in keeping with Europe 2020 Strategy.

Then, the third section is focused on the analysis of the situation in Romania, from the emigration phenomenon standpoint, with a special emphasis on the assessment of emigration impact on the fulfillment of the indicators set in Europe 2020 Strategy, as well as on the relevant practical conclusions, both for the present and for the future action of decision-makers. To assess highly educated population emigration levels, an original calculation procedure, developed by the author, shall be introduced.

Further, the fourth section resumes the analysis of the situation in Romania, the analysis criterion being, this time, the population complementary to the emigrating one, respectively the tertiary educated population remaining at home. The focus of the analysis is subsumed to the requirement that higher education graduates be employed in keeping with acquired competences, thus contributing to a smart, sustainable and inclusive economic growth (according to Europe 2020 Strategy [1]). Though statistical data allowing for a detailed analysis are almost nonexistent, certain findings and conclusions relevant to the process of analysis were

highlighted by the authors, based on available general statistics on the labour force.

The fifth section deals with a factor considered by the European Union, together with the Bologna Process and the reform of higher education quality insurance system, the third factor of Europe 2020 Strategy: This is the internationalization in the field of higher education. A brief but exhaustive presentation includes defining notes, both in quantity and in quality, of the mentioned phenomenon.

The paper winds up with a conclusions section, which is interesting both for specialists involved in the study processes and phenomena described in the previous sections, and for decision-making factors or for the ones drafting various strategies and policies in the field of higher education and of labour force empowering.

2. BRIEF LOOK AT HIGHER EDUCATION FROM ROMANIA IN TERMS OF THE OBJECTIVES OF THE EUROPE 2020 STRATEGY

This brief introductory paragraph highlights a few essential elements of the current situation and trends in the domain of higher education in Romania, as they were pointed out following extensive analysis and strategic reports and documents published by the authorities that ensure coordination and monitoring in the field. We will mention, in this regard, the Ministry of national education and scientific research (documents: *Report on the State of higher education from Romania in 2014*, *The National Tertiary Education Strategy 2016-20*, [2,3]) and the Romanian Court of Accounts (*Performance Audit Report relating to the Objective of increasing the share of higher education graduates in the population aged 30 - 34 years, second half 2015* [4]).

Such elements have been taken into account in assessing the benchmarks (estimating the reference values) at the national level, for Romania, of the specific indicators set by the Europe 2020 strategy, and continue to have an impact, one way or another, on the achievement of the predicted values for these indicators.

These were precisely the elements that inspired the issues addressed in the article.

- a) As regards **the context of the educational sector**, *the Government's strategy* (National Reform Program) 2014, [5,2] to achieve the objectives of Europe 2020 (see also [6]) includes courses of action and measures relating to the education system. EU strategy 2020 focuses on goals relating to education and training, because of their influence on the economic growth. This influence is reflected in employment growth, productivity, skills training, and more. The objective EDUCATION - one of the five objectives set out in *the Europe 2020 Strategy* -refers to the level of studies and includes, as associated (sub)-objective, the increase in the percentage of persons aged between 30 and 40 years, with higher education from 31% up to at least 40% in the year 2020.

The Romanian Government approved the national value of the referred to benchmark to 26,7%, against 40% provided for at the EU-level.

Three scenarios were developed and the progress of the indicator was estimated accordingly, as displayed in the following table:

The share of higher education graduates in the population of age 30 to 34 years (%)	2011	2013	2015	2020
Optimistic scenario	19.10	21.95	24.57	29.93
Realistic scenario	18.41	20.25	22.17	26.70
Pessimistic scenario	17.89	19.02	20.21	24.60

Level indicator proposed by Romania is well below the European average since the baseline from which to start was the lowest of all the EU States.

- a) As regards **substantiation and reporting** related to the objective under discussion, we want to point out a number of issues that may affect the truthfulness and usefulness of estimates and projections, and therefore the realism of programs and strategies developed on this basis. We will provide examples relative to the context of higher

education in Romania, but still valid - in our opinion - in other countries, which require special attention and even a reconsideration:

- (1) The background level (26,7%) - the level of substantiation was designed based on the financial resources expected to be allocated, not according to social needs. Thus, in *the interpretative and substantiation documents* the effective labor market demand for a tertiary level of education was not considered (and was not taken into account as well). On the contrary, it was "*the risk of non-correlation between the economic model adopted and the policies for the development of tertiary education*" which was considered, reversing in this way the order of priority.
- (2) Referring to the **substantiation of the indicator**, it has taken into account an allowance from the budget of 1% of GDP on higher education, although, after 2005, no data are presented which reflect the total level of expenditure involved, revealing whether an extra effort in this regard should be made or this budgetary effort could be reduced.
- (3) Share in GDP of higher education is very difficult to establish, because:
 - funding from the State budget is not made by transfer of funds, but on a contractual basis (in particular, contracts for basic funding, for additional funding and for supplemental funding concluded by each university with *the Ministry of national education and scientific research*);
 - State funding of higher education can be achieved on the basis of contracts but also by *the contribution of other ministries*, for those higher education institutions to train specialists according to the requirements of the respective ministries (e.g., *Ministry of health*, for the preparation of medical students);
 - the universities benefit from public funds based also on other types of contracts (e.g., scientific research contracts concluded with the interested ministry or other public institution);
 - all revenues from these contracts are recorded and reported as *income on your own*, so that there are not clear methodologies developed, allowing for the calculation of the total volume of

public funds intended for the financing of higher education.

- (4) The development of higher education system in disagreement with social needs, determined by the labor market, leads to socially unnecessary budget expenditure.

The *National Reform Program 2014* [2] stresses the need to take measures for the development of higher education according to the labor market needs. Moreover, it is claimed that the share of the population aged 30 - 34 with tertiary level education has seen a continuous growth in the past four years, "as a result of the measures for the adaptation of higher education to labour market needs".

This support statement is not based on a thorough analysis. A study in this direction should be based on the weighting of higher education graduates, which, in a relatively short period of time, were employed in the specialty they were prepared for.

Accelerated growth of the share of 30 - 34 year-old with tertiary level education in Romania began after 2003, following the entry in this age of a growing number of higher education graduates enrolled in tertiary education system after 1990, not because of the demands of the labor market, but of the scale taken by "higher education business" (enrollment in proportion as high school graduates in higher education has become very profitable for academics and entrepreneurs in the field).

It also can not be argued that higher education is adapted to the requirements of the national labour market in Romania, where faculties continue to operate preparing students for sectors in which market demand is void, because of the collapse of certain industries (transport or other sectors of the economy).

3. STATISTICAL DATA AND TRENDS IN THE FIELD OF HIGHER EDUCATION (AGE GROUP 30-34)

Given that Lisbon Strategy only partially attained its objectives and the economic crisis emerging in 2008 highlighted significant structural discrepancies in the European economy, it was necessary to draft a new strategy to direct

economic policies in the following millennium. On July 17th, the European Council adopted the document called Europe 2020: Europe's growth strategy [1] (further called Europe 2020 Strategy), which aims at supporting a smart, sustainable and inclusive economic growth.

Europe 2020 Strategy places at its core education development in general and higher education in particular. Thus, out of the eight (measurable) objectives set by this strategy, two explicitly refer to education, while two are related to it through their consequences (empowerment – employment potential and research – development – innovation). Furthermore, out of the seven major initiatives supporting Europe 2020 Strategy, three aim at education/research.

Higher education is seen as a factor generating knowledge, skills for new technologies implementation, empowerment, productivity and eventually, the welfare of nations. That is the reason why Europe 2020 Strategy proposes that EU member states develop their higher education systems, so that by 2020, the average weight (EU-28) of the highly educated population, within the 30-34 age group reaches 40%.

To reach this level, member states were invited to freely undertake targets to attain by the end of this decade. As to the "weight of tertiary educated population within the 30-34 age group", Romania pledged that by 2020, this weight would reach 26.7%. In keeping with the data published by Eurostat [7], the trend of this indicator until 2014 for EU member states has been ascending in the period 2000-2014: for the EU-28 states, on the average, from 22.4% to 34.9% (with a year 2020 target set to 40%), whilst for Romania from 8.9% to 25% (with 2020 target set to 26.7%).

The place of Romania among EU-28 member states, at the level of 2014, is shown in Fig. 1 (according to Eurostat [7]). Detailed data are given in [7].

In keeping with the above-mentioned data, Romania used to be, relating to this Indicator monitored within Europe 2020 Strategy, in 2014, on the last but one place among EU member states. A special characteristic of Romania, individualizing it among these countries is the rapid increasing rhythm of the weight of tertiary educated population aged 30-34, out of the overall population of the same age, which tripled in the period 2000-2014.

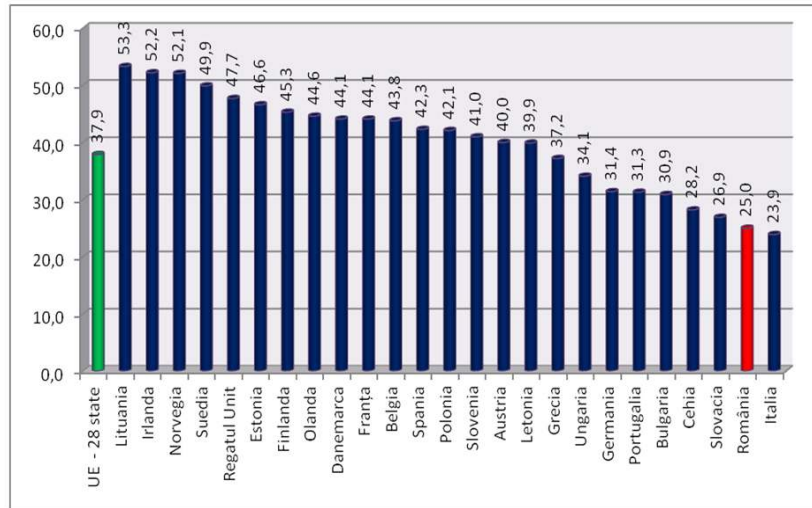


Fig. 1. Weight of tertiary educated population, aged 30-34 in Romania and in the other EU-28 member states, in 2014

4. AN ANALYSIS OF THE SITUATION IN ROMANIA. ASSESSMENTS AS TO HIGHLY EDUCATED POPULATION EMIGRATION

Considering the massive matriculation in the higher education system until 2012 (after this year, a decline is noted in undergraduates population), one would obviously wonder if the trend of the indicator under analysis was not significantly impacted by the migration of this population category. The investigation of this issue is extremely important, given that in the instance of a substantial emigration, Romania shall no more benefit from the contribution of the highly qualified labour force, though it spent significant resources (public and private) to train and educate it.

Since no statistical data was identified which would reflect emigration of the highly educated population according to age groups, we need to resort to indirect assessment methods.

Such a method, precise enough, starts from the distribution according to the age of higher education graduates in the period 1999 – 2012 (ISCED – 5A¹ and ISCED – 5B²). This distribution is published by EUROSTAT [8].

¹ ISCED – 5A: first stage of tertiary education: Syllabus, theoretical to a great extent, is meant to offer a qualification to enable access to several further research programmes and professions requiring higher competences.

Based on the EUROSTAT [8] data for Romania, one can compute the number of graduates which should be found, in a given year, in the 30-34 age group.

1. First, the statistical age data matrix is built, having as rows the age, and as columns the year, the entries showing the population of a certain age (21 years, 22, 23, and so on) in the corresponding year (1999, 2000, and so on).
2. The algorithm, then, essentially consists in applying a five - columns wide diagonal band over the matrix containing the age data and summing up the corresponding row entries in every column in the diagonal band.

For example, if one computes the number of graduates for the year 2012, in the 30-34 year population group, it shall be considered that this age group includes:

- 21-year-old graduates of the years 1999, 2000, 2001, 2002 and 2003;
- 22-year-old graduates of the years 2000, 2001, 2002, 2003 and 2004;
- -----
- 27-year-old graduates of the years 2005, 2006, 2007, 2008 and 2009;
- -----
- 34-year-old graduates of the year 2012.

² ISCED – 5B: first stage of tertiary education: Typically, shorter, more practical, technical, occupational, specific syllabus, oriented towards professional qualification.

The calculation procedure proposed by the author, for the year 2012 is illustrated graphically in Table 1, using data related to Romania. With respect to this table, the following must be taken into account:

- Because of space reasons, the table only shows columns for years starting with 2003; for a complete calculation, the interested reader has to add corresponding columns to the left of the matrix (in this case, four columns, i.e., years 1999, 2000, 2001 and 2002);

- The width of the diagonal band (five columns) is derived from the age interval 30 – 34 (this contains five years).

The number of higher education graduates, who should have been among the 30-34 year population of the years 2010, 2011, 2013 and 2014 was calculated in a similar way. Having the Eurostat statistics available relating to the 30-34 age group population, it was possible to establish the level of the indicator "Weight of tertiary educated population in the 30-34 age group" for 2010-2014, to compare it with the actual one, as reported in statistics situations.

Table 1. Higher education graduates aged 30-34 in 2012

Age (years)	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
21 years	2.913									
22 years	12.872	13.029								
23 years	23.040	25.781	23.538							
24 years	20.085	21.333	22.009	21.428						
25 years	12.732	13.537	12.888	12.791	13.448					
26 years		8.615	8.128	8675	8.770	13.313				
27 years			6.160	6104	6.021	10.345	10.812			
28 years				4.555	5.537	9.067	9.080	6.272		
29 years					4.972	7.669	8.306	5.549	6.166	
30 years						2.828	↓	↓	↓	↓
31 years							6.224	↓	↓	↓
32 years								8.394		↓
33 years									8.767	
34 years										7.084
Total	71.642	82.295	72.723	53.553	38.748	43.222	34.422	20.215	14.933	7.084

Source: see [8]

) Grand total (the year 2012) = 535,804 (Grand total represents the sum of all column totals. Here it includes also the contribution of years 1999 to 2002, not shown in the table.)

) Note: Age group 30 - 34 was divided into equal parts, per years

The results are synthetically rendered in Table 2. The considerable gap between the calculated level and the recorded one of the "Weight of tertiary educated population in the 30-34 age group" is due to the significant emigration of tertiary educated young population, as resulting from Table 2, obtained based on the computations made by the authors. Had it not been for this tertiary-educated person emigration, Romania would have exceeded, as early as 2014, the 40% target set by Europe 2020 Strategy as the EU-28 average.

In absolute terms, in the period 1997 – 2014, some 230 thousand highly educated young persons left the country. In the latest 5 years (2010 – 2014), an annual average of 10 thousand tertiary educated young people has been recorded, with a downward trend during the last year (about 3 thousand people).

The migration of highly qualified young people to EU member states results in that Romania's efforts to provide higher training to the young population being annihilated to a great extent, since Romania is spending considerable amounts, from public and private sources, for

higher education, for the benefit of other countries, thus "subsidizing" the higher qualification of European labour force. The situation is similar in all EU emerging countries. The major disadvantage also results from the fact that Romania does not absorb European funds and neither does it develop the economy in order to mitigate highly educated labour force emigration.

In conclusion, Romania is not characterized by an undeveloped higher education system, as could be inferred upon a superficial look at Eurostat data [7,8], and Fig. 1, but it is a country having an underdeveloped economy, which cannot attract highly qualified labour force. Given the above, it may be concluded that Romania *internalizes the costs involved by labour force training and education* and *externalizes the benefits* of using it.

However, what happens with higher education graduates, who remained in the country is yet another important issue from the perspective of Romania adhering to Europe 2020 Strategy. This issue is tackled in the following section of this article.

Table 2. Graduates which should have been in the 30-34 population group in Romania in the period 2010-2014

Indicators	2010	2011	2012	2013	2014
Calculated number of graduates which should have been in the 30-34 population group	463,904	503,935	535,804	557,129	573,972
The 30-34 age group population, in keeping with the Eurostat data	1,534,159	1,531,331	1,514,330	1,456,827	1,392,326
Calculated weight of tertiary educated population in the 30-34 age group %	30.2	32.9	35.4	38.2	41.2
Recorded weight (Eurostat) of the tertiary educated population in the 30-34 age group %	18.3	20.3	21.7	22.9	25.0
Gaps	11.9	12.6	13.7	15.3	15.4
Graduates which can no more be found in the 30-34 active population group in Romania	182,904	193,635	210,304	227,229	230,372

Source: Computations made by the author, based on Eurostat data [7,8].

Notes

) The values calculated in comparison to the actual figures (statistically recorded) of the tertiary educated population weight in the 30-34 age group

) **Data in row 2: [ec.europa.eu/eurostat/data/database/base de données/demografie et migration/population/population au 1^{er} janvier par groupe d'age et sexe](http://ec.europa.eu/eurostat/data/database/base%20de%20donn%C3%A9es/demografie%20et%20migration/population/population%20au%201%20er%20janvier%20par%20groupe%20d'age%20et%20sexe)

***) **Data in row 4:** [ec.europa.eu/eurostat/data/database/base de données/jeunesse/education et formation des jeunes/population agee 30-34 ans ayant au moins un niveau d'etudes secondaires superieur par sexe](http://ec.europa.eu/eurostat/data/database/base%20de%20donnees/jeunesse/education%20et%20formation%20des%20jeunes/population%20agee%2030-34%20ans%20ayant%20au%20moins%20un%20niveau%20d'etudes%20secondaires%20superieur%20par%20sexe)

5. ANALYSIS OF THE SITUATION CHARACTERISTIC TO ROMANIA. ASSESSMENTS REGARDING THE TERTIARY EDUCATED POPULATION REMAINING IN THE COUNTRY

According to Europe 2020 Strategy [1], higher education graduates are supposed to seek employment in keeping with acquired competences, thus contributing to a smart, sustainable and inclusive economic growth. Though statistical data allowing such a detailed analysis is almost nonexistent, certain important issues can nevertheless be inferred based on *general statistics relating to the labour force*.

An analysis of the overall data shown in Table 3 allows highlighting certain general conclusions, relevant to the issues under analysis:

- (a) in the period 2009-2013, an increase was recorded of the active population (working age population) with higher education – by 310 thousand persons, the main weight being related to 25-34 age groups (113 thousand persons) and 35-44 one (138 thousand);
- (b) at the same time, the active population below 25 years remained relatively constant;
- (c) a simple deduction operated over the items included in subparagraphs (a) and (b) above, shows that the number of higher education graduates, *recent graduates*, belonging to the 25 year age group did not exceed the number of tertiary-educated persons which passed in the 25-34 age group, the increase of which (shown under item (a)) was mainly supported by graduates who completed their university studies after 25 years;
- (d) an evolution contrast may also be noticed: in absolute terms, there are increases, but in relative terms (expressed by activity rates) the trend is descending, being more emphasized in the age group under 25;
- (e) the note can be taken of a disturbing fact, namely that activity rates constantly go down at the level of young, but mature age groups of 25-34 and 35-45;
- (f) as an immediate, logic argument, the reduction of activity rates for highly educated persons is due to the *increase of the economically inactive population*. The normal phenomenon becomes much more alarming since the factor generating it is the tertiary educated population (simply

because, from the very beginning, the investment in higher education is devoid of economic finality, thus triggering consequences on a much wider scale);

- (g) *the inactive highly educated population* constantly went up in the period 2009-2013 (by 94 thousand persons) and this increase was due, almost integrally, to the population under 44 years becoming inactive, that is the *young* tertiary educated population, as it can be calculated from the table³. If in the instance of this age group one can find certain explanations, though partial ones (further studies or postponing starting activity), as concerns the increase of inactivity rates in the 35 – 44 age group there are no available explanations relating to specialised studies (for this reason, we shall only highlight this fact, with no further comments).

We shall further approach another perspective of the analysis, namely the significant developments among the highly educated active population, made of the employed and unemployed population. The data in Table 4 shall be used as a data pool.

The analysis we propose reflects the following significant aspects and developments.

- (a) Even in the context in which economic growth resumed its positive trend after 2011, the number of BIM⁴ highly educated unemployed recorded a growing trend (as a result of and similar in point of evolution with the inactivity rate of this category of the population). Reasoning: in 2009, a year of economic crisis, the number of highly educated unemployed was 65 thousand, while in 2013, a year of economic growth, this number reached 104 thousand persons.

What we would like to highlight is though that this increase is almost entirely due to unemployment among the 25-44 age group of the highly educated population.

³ The calculation is as follows: 259 (data as of 2013) -165 (data as of 2009) = 94, of which the young population (under 44 years) = (61+64+19 which is the data as of 2013) - (22+27+8 which is the data as of 2009) = 87.

⁴ BIM unemployed (indicator used by the Labour International Office) = persons aged 15-74, simultaneously fulfilling three conditions: (1) do not have a work place, (2) are available to start work within the next two weeks, and (3) were actively looking for a job anytime within the latest four weeks.

(b) The upward trend of unemployment among the highly educated population is also reflected in the increase of unemployment rates, which reached very high levels among the age group under 25 years (25.9% in 2009 and 32.1% in 2013). As expected, unemployment rates also went up for age groups 25-34 and 35-44 (though with significantly lower values). The first explanation of this fact could be that the upward going trend of unemployment rate among highly educated young population may be a symptom of the relative saturation of the labour force market with this category of population.

We shall further refine this analysis on the basis of data in Table 5, briefly approaching certain structural issues as well. Respectively, we shall consider the fact that on the background represented by unemployment increase among the highly educated population, certain structural tendencies may also be noticed, as reflected in: (a) unemployment increase among the population which never worked, made of higher education graduates and (b) increase of long-term unemployment.

We reckon this trend may highlight a change in the labour force demand structure.

In 2009, a year of economic recession, the unemployment rate of the tertiary educated population who never worked represented 46%⁵ of the overall unemployment rate, while the situation developed so that in 2013, a year of economic growth, this population reached 52%. (Furthermore, if in 2009 unemployment of over six months represented 55% of the overall unemployment for tertiary educated population, in the year 2013 this proportion reached 60%). Both situations indicate an increasing difficulty in integrating and to re-integrate labour force.

In terms of quantity, in the period 2009 – 2013 the tertiary educated, working age population, inactive economically or unemployed figures have increased from 230 thousand people to 363 thousand people, respectively by 133 thousand people.

The most significant thing, though, in our opinion, is the fact that over 93% of the mentioned increase is due to the increase of inactivity or unemployment in the 22-44 age group and *this diminishing of the highly qualified labour*

resources, mostly young ones, by 133 thousand persons in only four years is alarming.

It is obvious that, in case the identified trends are confirmed and consolidated, then the causes need to be investigated. By a first approximation, these may be due to both Europe 2020 Strategy not being adapted to the labour force evolution and to economic and social factors. Mention shall also be made that all these losses add to those generated by emigration (a subject dealt with in the previous section).

Besides inactivity and unemployment of highly educated labour force, there also exists the so-called under-occupation phenomenon, defined in this study as the discrepancy between the qualification acquired during higher education and the characteristics of the job found on the labour market.

In keeping with the "National Survey monitoring higher education graduates insertion on the labour market", established under the aegis of the National Council for Higher Education Financing (CNFIS) [9], some 22 – 32% of graduates had jobs unrelated to the domain they studied and graduated, while 32.9-43.1% worked in domains which also required additional related knowledge and skills (see Table 6).

Statistical data highlighting a significant degree of highly educated labour force employment (see Table 6) hide, as a matter of fact, an employment not correlated with the graduate studies. Higher education graduates would sooner take the jobs they find and subsequently, specialize on the job, in the absence of a correlation between university studies offers and the demand structure on the labour market we witness an under-occupation of the higher educated labour force and an increase of educational costs to acquire the specialization called for.

We shall close this section with a third analysis, from the perspective of the congruence between the specialization involved by the job and the one obtained on graduation (adequacy of studies to the job).

The reasons invoked by graduates for having a job in a specialty differing from the studied one are mostly relating to the lack of availability of a position in the field of specialization. According to the data in Table 7, almost 80% of graduates working in a different domain invoke this reason, the other reasons having a marginal influence on the decision to get a certain job.

⁵ Resulting from the computation: $[30 / (30 + 35)] \times 100$.

Table 3. Tertiary educated working-age population, active or inactive, and the activity and inactivity rates – in the period 2009 – 2013

Category of persons / Year	2009	2010	2011	2012	2013
Active population (thousand persons)					
15-64 years	1486	1557	1685	1751	1796
Under 25 years	79	81	87	81	78
25 – 34 years	616	645	697	716	729
35 – 44 years	393	438	490	532	538
Inactive population (thousand persons)					
15-64 years	165	211	239	261	259
Under 25 years	22	43	54	62	61
25 – 34 years	27	43	49	62	64
35 – 44 years	8	11	14	16	19
Activity rate (%)					
15-64 years	90.0	88.1	87.6	87.0	87.4
Under 25 years	78.2	65.3	61.7	56.6	56.1
25 – 34 years	95.8	93.8	93.4	92.0	91.9
35 – 44 years	98.0	97.6	97.2	97.1	96.6
Inactivity rate (%)					
15-64 years	10.0	11.9	12.4	13.0	12.6
Under 25 years	21.8	34.7	38.3	43.4	43.9
25 – 34 years	4.2	6.2	6.6	8.0	8.1
35 – 44 years	2.0	2.4	2.8	2.9	3.4

Source: [10]

⁾ Note. The overall population was calculated by summing up the active population and inactive population, from the economic point of view

Table 4. The highly educated population at the employment or unemployment age and the employment and unemployment rates, in the period 2009-2013

	2009	2010	2011	2012	2013
Employed population (thousand persons)					
15-64 years	1421	1474	1598	1653	1692
Under 25 years	59	57	61	57	53
25 – 34 years	586	601	657	665	674
35 – 44 years	386	428	478	517	525
Unemployed BIM					
15-64 years	65	84	87	98	104
Under 25 years	20	23	25	24	26
25 – 34 years	30	44	41	51	55
35 – 44 years	7	10	12	14	13
Employment rate (%)					
15-64 years	95.6	94.7	94.8	94.4	94.2
Under 25 years	74.7	70.3	70.1	70.4	67.9
25 – 34 years	95.1	93.2	94.3	92.9	92.5
35 – 44 years	98.2	97.7	97.6	97.4	97.6
Unemployment rate (%)					
15-64 years	4.4	5.3	5.2	5.6	5.8
Under 25 years	25.3	29.7	29.9	29.6	32.1
25 – 34 years	4.9	6.8	5.7	7.1	7.5
35 – 44 years	1.8	2.3	2.4	2.6	2.4

Source: [10]

⁾ Note. The employment rate was calculated in relation to active population and not in relation to overall population

Table 5. Highly educated unemployed according to work experience and unemployment duration (in thousands)

Unemployed category / Year	2009	2010	2011	2012	2013
BIM unemployed	65	84	87	98	104
Work experience					
Who never worked	30	42	47	51	54
Who worked	35	42	40	47	50
Unemployment duration					
Under 6 months	36	37	32	37	42
6 – 11 months	14	23	17	18	16
12 – 23 months	10	19	27	27	28
Over 23 months	5	5	11	6	18

Source: [10]

Table 6. Adequacy of job as of the moment the survey was made (2010, 2011) (% of the answers)

What is the study field you consider the most adequate to the position you hold	Class			
	2005	2006	2009	2010
The field studied	34.9	34.7	34.5	35.2
The field studied and an additional one	43.1	41.4	38.9	32.9
A totally different field than the one studied	15.6	18.4	16.2	20.0
No field	6.4	5.5	10.4	11.9

Source: [9]

Table 7. Reasons why people do not work in the field they graduated (in keeping with the statements of graduates not working in the studied field)

No.	Reason	Percent
1	I did not find a job in this specialization	78%
2	I found a better-paid job	17%
3	I found a job involving a more relaxed schedule	3%
4	I found a job in the field I wanted to work in	5%
5	It was difficult to combine work schedule and family life	1%
6	I enrolled in a master's/doctor's degree program	2%
7	I could derive no satisfaction from the job	4%
8	I had no chance to be promoted	2%
9	I was laid off	2%
	Total	114%

Source: [11]

^{*)} Note: Total answers go beyond 100% because some of the respondents ticked two or more cases

As pointed out by the note to the Table 7, the total exceeds 100% because some of the criteria included in the questionnaires are not fully disjoint, being compatible and allowing multiple answers; for example, the reason no. 3 is compatible with reason no. 5, reason 3 with 6, reason 7 with 8, reason 4 with 2.

6. INTERNATIONALIZATION IN HIGHER EDUCATION AND IMPLICATIONS FOR EUROPE 2020 STRATEGY

The European Union considers that, together with the Bologna Process and the reforming of

the higher education quality insurance system, internationalization is the third factor generating deep changes in the European higher education system, with major facets in the Europe 2020 Strategy [1] implementation. As a matter of fact, the EU proposed that by 2020, the number of students conducting internships abroad reaches 20% of the overall national students. The prerequisite behind this objective consists in the fact that national students who studied or had internships abroad acquire new skills and experience, which they turn to account when returning to the countries of origin, thus contribution to a smart, sustainable and inclusive

economic growth, both at national level and at the level of the overall European Community.

The trends of the number of EU member states national students studying in the EU, EEE (European Economic Environment) and in candidate countries are indicated by the data included in [4]. Thus, the number of EU member states students pursuing studies in the EU, the European Education Environment (EEE) and the candidate countries almost doubled in 2001-2012, reaching 663.7 thousand mobile students, which represents 3.5% of the national students enrolled in higher education systems.

As expected, the most spectacular increase in international students numbers took place in Central and Eastern Europe, which considered the possibility to study abroad an opportunity to train national students in performing Western Europe universities: Lithuania (5.5 times), Latvia (5.2 times), Slovakia (4.2 times), Romania (3.5 times), Czech Republic (3.4 times), Poland (2.7 times), Estonia (2.5 times). Nevertheless, in absolute figures, from among these countries, only Poland, Romania and Slovakia have a rather significant contribution to the number of international students in the European Higher Education Area (EHEA). The percent of undergraduates pursuing studies in the EU, EEE and candidate countries from the overall number of national undergraduates reached significant levels in these countries: Slovakia (14.3%), Romania (5.2%), Poland (2.1%).

The rapid increase of Romanian undergraduates number going to study abroad would be beneficial for Romania if the latter returned home after graduation. Unfortunately, there is no statistical data available to highlight the percent of higher education graduates who return to work in Romania. It is very probable that this proportion is very small since the reason behind studying abroad is obtaining a diploma from a prestigious university, which would guarantee a job in a developed country. In this context, Romania is again losing competences. The gaps between development levels will favor this process for a long time.

Given that EUROSTAT statistics only provide data relating to outgoing flows, it is only possible to make an exhaustive analysis of EU member states higher education systems based on UNESCO statistics [12], which also provide data on incoming flows.

Table 8 shows the incoming and outgoing flows at the level of the year 2012.

In keeping with data provided by Global Education Digest of 2012 [11], students coming to EU member states, both outside it and from within were over 1.4 million. The same year, the number of undergraduates from member states who left to study in other EU countries and from other countries is 650 thousand. This means that the EU is a net education provider.

Focusing the analysis towards "from within the EU" highlights a variety of situations characterizing member states.

1. The United Kingdom of Great Britain is one of the largest international education providers, together with the United States. In 2012, the British education system counted 416.9 thousand foreign students enrolled, while national students who left to other countries to study were a little over 27 thousand. This means that Great Britain had a net international students flow of about 400 thousand. Even though tuition fees are very high in this country, the acknowledged performance of British universities attracts a large number of foreign students. As a matter of fact, as we shall show in the following section, the United Kingdom of Great Britain is listed with 6 universities in the first 50 and with 9 universities in the first 100, in Top 500 Shanghai.
2. The second important net European education provider is France, which attracted in 2012 almost 240 thousand foreign students, while only 84 thousand French students were studying abroad. The performance of French universities is a key factor accounting for international students flows. Two of the French Universities are among the first 50 world universities and 4 among the first 100 (Top Shanghai).
3. A special situation among European higher education net providers is that of Germany. The international students incoming/outgoing flows set to/from the German higher education are rather close. That means that Germany stimulates both incoming to its higher education system and outgoing to other states for study. The policy is extremely beneficial, since German students trained in other educational systems bring added value to the German economy, as in the instance of the other two countries, 4 German universities are among the first 100 universities in the world (Top Shanghai).

4. Though at a different scale, in comparison to the three countries above, mention shall also be made of the following EU member countries as net education providers: Italy, Austria, Netherlands, Spain, Belgium and Denmark. Among these, Netherlands has 4 universities in the top 100 and Belgium 2 (Top Shanghai).

of these countries. These countries, among which Romania, participate in the international students market firstly as providers of students and only secondly as higher education services providers. In the instance of Romania, this position precipitates the decline in matriculation in the Romanian higher education lately (see also Section 4).

With respect to the above, see also the chart included in [11] by UNESCO Institute of Statistics.

The percent of Romanian undergraduates getting training and education abroad is still low, but going up: 2.1% in 2013, as compared to 0.7 in 2000. Almost half of the Romanian students who left to study abroad chose as destination countries having among the best higher education systems (the United Kingdom of Great Britain, USA, France, and Germany), as it can be seen from Table 10.

5. Romania, as most Central and Eastern countries, has negative net international students flows (see Table 9). This means that the number of students leaving to study abroad is higher than the number of students coming to study at the universities

Table 8. Participation of EU member states in the international students flows, in 2012

EU-28 countries	Students		Net flow	EU-28 countries	Students		Net flow
	Going in	Going out			Going in	Going out	
United Kingdom	416.693	27.377	389.316	Hungary	20.694	8.515	12.179
France	239.344	84.059	155.288	Romania	17.219	31.109	-13.890
Germany	196.619	119.123	77.496	Portugal	14.541	9.525	5.016
Italy	77.732	47.998	29.734	Bulgaria	11.594	24.625	-13.031
Austria	70.852	15.632	55.220	Ireland	11.100	16.602	5.202
Netherlands	68.943	13.035	55.908	Slovakia	10.103	33.105	-23.002
Spain	56.358	28.640	27.718	Cyprus	7.454	26.233	-18.779
Belgium	48.748	16.336	32.412	Lithuania	3.915	11.898	-7.983
Czech Republic	40.138	12.520	27.618	Latvia	3.505	6.284	-2.779
Denmark	29.480	5.254	24.226	Slovenia	2.563	2.695	-132
Greece	29.012	34.029	-5.017	Luxembourg	2.468	8.950	-6.482
Poland	27.770	23.044	4.726	Estonia	1.878	4.172	-2.294
Sweden	25.437	17.685	7.742	Croatia	842	8.617	-7.775
Finland	21.859	8.261	13.598	Malta	591	1.938	-1.347

Source: [12]

Table 9. Romania's participation in the international students markets in the period 2000-2013

Years / indicators	Romanian students studying abroad	Foreign students studying in Romania	Incoming/ outgoing students net flow	Gross mobility rate towards abroad (%)			Gross studies rate abroad (%)
				All regions	Western Europe and the USA	Central and Eastern Europe	
2000	12,540	12,591	51	2.8	2.1	0.6	0.7
2005	20,315	10,812	-95,503	2.7	2.2	0.5	1.2
2008	22,682	13,857	-8,825	2.1	1.7	0.4	1.3
2010	25,627	13,459	-12,168	2.6	2.3	0.3	1.5
2011	28,534	16,075	-12,459	3.3	3.0	0.3	1.7
2012	31,888	17,219	-14,669	-	-	-	2.0
2013	31,109	-	-	-	-	-	2.1

Source: [11]

Table 10. Main flows of students incoming to and outgoing from Romania, in 2012

Countries of origin of foreign students coming to Romania	Number of students	Countries of destination for Romanian students	Number of students
Total	12,858	Total	30,311
The Republic of Moldavia	5,502	United Kingdom	6,640
Tunisia	1,233	Italy	5,713
Total, of which:	12,858	Total, of which:	30,311
Israel	939	France	3,517
Greece	835	Germany	2,808
Italy	715	Hungary	2,308
France	697	Denmark	2,016
Sweden	413	Spain	1,776
Morocco	408	Austria	1,481
Germany	388	United States	1,397
Serbia	375	Netherlands	1,036
Turkey	389	Belgium	491
Jordan	258	The Republic of Moldavia	336
Bulgaria	257	Greece	305
Ukraine	228	Sweden	255
The Syrian Arab Republic	221	Switzerland	232

Source: [11]

⁾ Note: The total number does not refer exclusively to the countries in the table, which lists selectively the countries with the highest number of students. Practically, there are many countries with lower numbers of students, irrelevant for our example

Most of the foreign students enrolled in Romanian universities are, as a general rule, Romanian ethnics from neighboring states: Republic of Moldavia, Serbia, Bulgaria and Ukraine, while only 2,213 students from Italy, France, Sweden and Germany came to study here.

7. CONCLUSION

Europe 2020 Strategy was adopted in 2010, and it aims at supporting a smart, sustainable and inclusive economic growth. This strategy considers higher education a factor generating knowledge, competences enabling application of new technologies, of empowerment (an increase of the potential to get employed), productivity and eventually welfare of nations. The indicator "Weight of tertiary educated population in the 30-34 age group" monitored within the framework of Europe 2020 Strategy would have reached in 2014 the 40% level, set as an average target for EU member states by 2020 if Romania had not been confronted with highly educated young labour force emigration. In this context, Romania internalizes the costs involved by training and education of labour force and externalizes the benefits of its use for a smart, sustainable and inclusive economic growth.

In the period 2009-2013, the tertiary educated working-age population, inactive economically or unemployed, increased from 230 thousand persons to 363 thousand persons, that is to 133 thousand persons. Over 93% of this increase was recorded in the 25-44 age group. The diminishing of the highly educated labour force, mainly young, by 133 thousand persons in only 4 years, represents a loss for the national economy, which only adds to the one triggered by emigration. Furthermore, the loss is deepened also by the under-use of the highly educated labour force. Almost 32% of higher education graduates work in domains other than the ones in which they specialized during academic studies.

Romania is a student provider on the international students market, while developed countries are net higher education services providers. If in 2000 almost 11 thousand Romanian students were abroad to study, in 2012, their number was over 37 thousand. As a rule, students who graduate abroad do not return to integrate the Romania economy. This is yet another instance in which Romania loses highly educated labour force. Specialists call this process "brain drain".

COMPETING INTERESTS

Author has declared that no competing interests exist.

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