

**EMPLOYMENT AND UNEMPLOYMENT OF HIGHER EDUCATED PEOPLE IN
ROMANIA**

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Abstract

The aim of this paper is to analyze the employment and unemployment of higher educated people in Romania. For the empirical analysis we used aggregate data provided by the National Institute of Statistics Romania and Eurostat. Future study to estimate the effect of different variables on under-employment and unemployment of higher educated people, using econometric models will follow.

Index Terms – under-employment, unemployment, higher education

I. INTRODUCTION

A major economic consequence of under-employment and unemployment is the waste of a part of the labour force of a country, for which society already invested in education and professional training. All these costs will remain uncovered. Unemployment affects the entire economy, not just people affected by job loss. A significant percentage of people affected by unemployment have skills and experience that are no longer productively used in the economy (Malakwane, 2012, p. 9).

In the recent years, the apparently significant increase of the unemployment rate of higher educated labour force, under-employment and the magnitude of disparities between the acquired skills of higher educated graduates and the skills required by employers are topics that have received the attention of researchers (Weligamage and Siengthai, 2003, pp. 1-26; Koen, 2006; Pauw et al., 2008, pp. 45-57; Branson et al., 2009, pp. 1-68 Olowe, 2009, pp. 1-14, Farooq, 2011, pp. 531-553; Broecke, 2012, pp. 1-22, Van Broekhuizen, 2016). Relatively recent research shows that unemployment and under-employment are phenomena with devastating negative effects in the lives of graduates (Bai, 2006, pp. 128-144; Li et al., 2014, pp. 567-582).

According to Bartlett et al. (2016, p. 8), holding a higher education diploma generates advantages on the Western Balkans labour market. The average unemployment rate of the population with higher education is 16.2%, compared to 23.9% for the entire workforce. The authors point out, however, that the unemployment rate of fresh graduates entering the labour market is 37.1%, which suggests a difficult transition from the recent graduate status to

employment. In the Western Balkans region, there is an over-supply of higher education graduates in all areas, particularly in business administration and law. According to the authors of the study, the fastest growing sectors for higher education graduates are: the information sector, construction, finance and insurance, communications etc. Therefore, the insertion into the labour market of higher educated graduates and their subsequent trajectories is also influenced by their specialization. Depending on the education they belong to, the length of time to find a job according to their own aspirations is higher for some graduates than for others (Mncayi, 2016, pp. 67-83). Acquah (2009, pp. 27-44) and Walker (2015, pp. 1-20) show in their studies that, in the South African labour market, graduates of science and engineering have a high chance of find a job compared to graduates from the humanities.

Also, a series of recent studies argue that the training provided by higher education institutions has a strong theoretical character and neglects practical aspects related to the preparation of students for their future job; companies have unrealistic expectations about the practical skills that young graduates have (Dai et al., 2008, pp. 1-34; Griesel and Parker, 2009, pp. 1-36). Another potential augmenting factor in the unemployment of higher educated graduates is that they have high expectations and refuse job offers that are not in line with their own aspirations. The aim of this paper is to analyze the characteristics of employment and unemployment of higher educated people in Romania, using aggregate data provided by National Institute of Statistics Romania and Eurostat.

II. PRELIMINARY MACROECONOMIC STATISTICS USING AGGREGATE DATA

According to the data provided by the National Institute of Statistics, the employed population has steadily decreased since 1998 and so far, reaching 8,850,266 persons in the third quarter of 2017, amid the demographic decrease of the total population. Table 1 presents the dynamics of the occupied population with a long-term university education level and a short-term academic level for the period 2000-2010. For 2011 3rd quarter- 2017, the available aggregate data only describe the occupied population with a higher education, because the short-term education form ceased to exist (the registered dynamics is presented in Table 2).

Table 1. Dynamics of the employed population according to the level of education completed, for the period 2000-2010 (number of persons)

Level of education	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Long-term university	775679	803049	790391	749029	901530	932287	1031153	1073688	1157419	1192880	1218381
Short-term university	157635	150547	165985	211476	194642	205461	218878	204679	198257	180961	155537

*Source: NIS, Tempo-Online database

Table 2. Dynamics of the employed population with higher education, for 2011- 3rd quarter 2017 (number of persons)

Level of education	2011	2012	2013	2014	2015	2016	3 rd quarter 2017
Higher education	1475785	1527412	1560263	1588588	1724319	1735892	1792108

*Source: NIS, Tempo-Online database

Analyzing the data presented in Tables 1 and 2, we observe an increasing trend for the employed population with higher education during the analyzed period, although the employed population per total registered a decreasing trend. A potential explanation is related to the large number of students enrolled in a form of higher education, especially for the period 2000-2010. However, the employment of people with tertiary education (levels 5-8), expressed as a percentage of the total occupied population, is below the EU average and below the levels recorded for our neighbours Bulgaria and Hungary (Table 3).

Table 3. Dynamics of employed population with a tertiary educational level (levels 5-8), period 2000-2016, (%)

Country	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
EU	-	-	-	24.1	25.3	26.0	26.3	26.8	27.5	28.7	29.7
Romania	10.4	10.7	11.6(b)	11.3(b)	13.1	13.5	14.3	14.7	15.7	16.4	16.6(b)
Hungary	23.2	27.0(b)	26.3	26.2(b)	26.2	25.9	25.7(b)	25.6	25.7	26.5	27.4(b)
Bulgaria	23.2	27.0(b)	26.3	26.2	20.7	21.2	21.5	21.7	23.1	24.0	24.2
Country	2011	2012	2013	2014	2015	2016					
UE	30.5	31.6	32.6	33.2	34.0	34.6					
Romania	18.2	18.7	19.2	19.3	21.1	21.4					
Hungary	25.6	26.4	26.5	26.6	27.0	26.2					
Bulgaria	28.0(b)	28.6	30.2	31.7	32.3	32.5					

*Source: Eurostat. b-break in time

Table 4 presents the dynamics of the employed population depending on education and gender variable, for the period 2000-2010; Table 5 shows the dynamics of the employed population with a higher education according to the same variable, gender. We observe gender differences in aggregate data, differences that will be further investigated in a paper using econometric models.

Table 4. The dynamics of the employed population by education and gender, for the period 2000-2010 (number of persons)

Level of education	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Long-term university											
Masculin	429365 346315	436017 367032	426219 364172	394790 354239	486380 415150	496893 435394	542556 488597	570916 502772	608675 548743	607542 585337	623910 594470
Feminin											
Short-term university											
Masculin	90577 67058	86044 64503	93368 72617	115295 96180	96221 98421	101209 104252	112479 106399	100936 103743	96188 102068	84951 96010	71598 83939
Feminin											

*Source: NIS, Tempo-Online database

Table 5. Dynamics of the employed population with higher education, depending on the gender variable for 2011- 3rd quarter 2017 (number of persons)

Higher education	2011	2012	2013	2014	2015	2016	3 rd quarter 2017
Masculin	740540	758432	768814	787877	851818	853662	865876
Feminin	735245	768980	791449	800711	872501	882230	926233

*Source: NIS, Tempo-Online database

We will further analyze the dynamics of the employed population with a higher level of education, depending on the age variable. The evolution of the employed population with a higher education differentiated by age groups shows that it is similar to the evolution of the general indicator, the employed population (Tables 6 and 7).

Table 6. Dynamics of the employed population by education and age variable for the period 2000-2010 (number of persons)

Edu cation	Age	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Lon g- ter m uni	15-24	23914	25087	23722	22249	37636	29280	28533	34335	33225	40918	36492
	25-34	23757	254120	274138	26314	32718	33764	36739	42199	462007	455447	46379
	35-49	9	354455	330400	31088	35767	38111	41275	39151	423416	465225	48661
	50-54	3	95055	100473	99618	90569	10365	10508	11408	11987	117647	114128

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	55-59	45517	42648	40851	41485	49333	53202	68422	71741	85662	81296	84853
	60-64	16623	20038	17534	16806	20550	19756	31490	25162	28362	29817	24846
	65 și peste	7568	6228	4127	3897	5490	6208	8475	9070	7098	6049	4831
Short-term uni	15-24	8480	11036	13388	13460	16116	13196	10184	11742	13233	11439	11295
	25-34	43697	37391	52527	75793	72451	76616	79102	82175	77072	70166	55678
	35-49	70509	69210	65786	80312	68589	74419	76104	69301	67919	59988	59245
	50-54	19941	18769	22783	25181	22399	23454	24774	21018	19128	18541	13647
	55-59	9940	9475	8000	10361	11961	12610	17388	12517	13785	13490	9663
	60-64	2707	3078	2638	4484	2431	3473	7976	5412	5225	5743	4067
	65 și peste	2361	1588	863	1884	696	1692	3351	2514	1896	1594	1942

*Source: NIS, Tempo-Online database

Table 7. Dynamics of the employed population with higher education depending on the variable age, for the period 2011- 3rd quarter 2017 (number of persons)

Age	2011	2012	2013	2014	2015	2016	3 rd quarter 2017
15-24	53747	54109	49103	44507	43428	31276	49181
25-34	564290	573969	583719	600999	611195	584441	610968
35-49	585918	623204	653119	681241	791913	838210	838735
50-54	127424	125488	121339	110152	117614	113433	116567
55-59	101887	104318	107297	103553	106303	103178	111355
60-64	35233	38897	37445	39927	45599	54443	48326
65 și peste	7287	7428	8240	8209	8266	10911	16976

*Source: NIS, Tempo-Online database

Tables 8 and 9 show the dynamic of the higher educated employed, by urban or rural area of residence. We observe the same growing trend of the employed population, more pronounced in the urban environment, compared to the rural environment. The average residence variable, like the other variables previously analyzed, influences the absolute levels of the higher education occupied indicator.

Table 8. Dynamics of the employed population by education and area of residence, 2000-2010 (number of persons)

Education	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Long-term	697841	720680	708912	678983	820915	848361	944745	981601	1061934	1095236	1112004
university Urban	77838	82369	81479	70046	80615	83926	86408	92087	95485	97643	106377
Rural											
Short-term											
university Urban	129971	117939	133039	175760	161840	171900	178606	160980	152407	137512	117308
Rural	27664	32607	32945	35716	32802	33561	40272	43699	45849	43449	38229

*Source: NIS, Tempo-Online database

Table 9. Dynamics of the higher-educated employed population by residence variable, period 2011- 3rd quarter 2017 (number of persons)

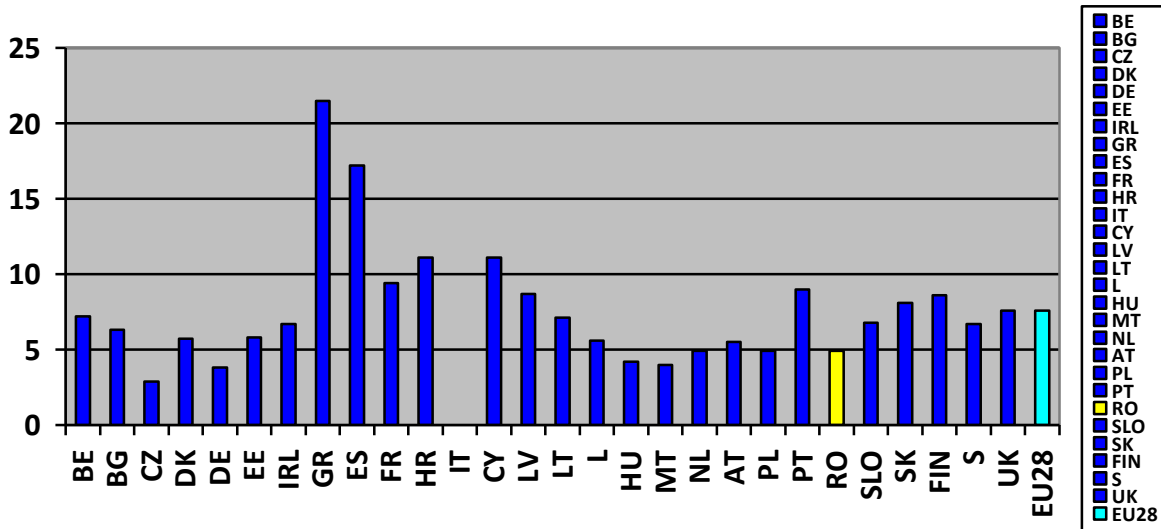
Urban/rural area	2011	2012	2013	2014	2015	2016	3 rd quarter 2017
Urban	1309565	1342186	1381053	1406674	1481576	1490388	1556642
Rural	166221	185226	179210	181915	242743	245504	235466

*Source: NIS, Tempo-Online database

People with a higher education (short and long-term university, including master, doctoral, post-doctoral and postgraduate studies), aged in between 15 and 64 years, were the most active in 2016, their work rate reaching 89, 0% (National Institute of Statistics, Labour Force, Employment and Unemployment, 2016, p. 29). The employment rate of the working-age population with a higher education was 86.2%, in the same year. Depending on the gender variable, the employment rate was 89.1% for men and 83.6% for women respectively, and according to the residence variable, the registered values of the unemployment rate were 86.6% for urban, respectively 84.1% for rural areas (National Institute of Statistics, Labour Force, Employment and Unemployment, 2016, p. 31).

The official recognition of unemployment in Romania is closely related to the entry into force of Law no. 1/1991, which regulated the social protection of the unemployed and their reintegration into the labour market. Due to the planned nature of the economic system, in the past the unemployment was non-existent or negligible. The first study in which unemployment was analyzed according to ILO standards, through household surveys, was conducted in Romania in 1994 (Bădulescu, 2006, p. 71). As with other countries in transition from the communist economy to the free, market economy, unemployment in Romania emerged as a natural consequence of industrial sector restructuring and the contraction of global labor demand (Kavkler et al. 2009, p. 84). According to data provided by Eurostat, the ILO unemployment rate for our country registered a peak of 8.3% in 2002 (annual data, Labor Force Survey - adjusted LFS series), with a stable evolution in the range of 6-7% , falling to 4.9% in 2017, below the EU28 average of 7.6% in the same year 2017 (Fig. 1). A percentage of 4.7% is communicated for 2017 3rd quarter, by the National Institute of Statistics too.

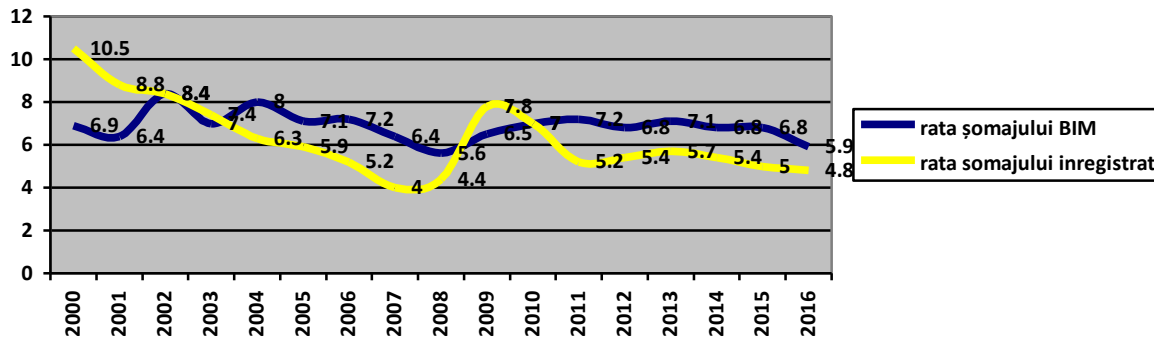
Figure 1. Harmonized unemployment rates in Romania and the EU27 countries, 2017 (adjusted LFS annual data)



*Source: Eurostat. For Belgium, we have an interruption in the time series, and for Italy we do not have the 2017 unemployment rate at the time of writing this study.

In addition to the ILO unemployment rate, we have the opportunity to analyze the particularities of unemployment also through the registered unemployment rate. The registered unemployment rate is calculated as the ratio between the absolute number of individuals registered as unemployed in the employment offices and the civil active population. Fig. 2 shows the dynamics of the ILO unemployment rate and the registered unemployment rate for the period 2000-2016.

Figure 2. Comparative evolution of ILO unemployment rate and registered unemployment rate, 2000-2016



*Source: INS, Tempo-Online database

Analyzing Fig. 2, we note that the registered unemployment rate shows a constant decrease for the period 2000-2007, after which the trend is increasing for 2008-2011, and then its evolution is stable. The ILO unemployment rate is fluctuating, with significant increases in 2002 (the highest level, 8.4%), 2004, 2011 and 2012. Both unemployment rates show sharp increases in between 2008 and 2011 as the crisis begin, our country registering one of the highest rising unemployment rates in the EU (5th place, according to The Money Channel, 2010). As far as the unemployment of people with a higher education level is concerned, in 2016 the ILO unemployment rate for them was 3.1% (3.1% male, 3.2% women, 3.1% urban, 3.6% (National Institute of Statistics, Labor Force, Employment and Unemployment, 2016, p. 40). Table 10 shows the dynamics of the ILO unemployment rate for people with higher education for the period 2000-2016, for Romania, Bulgaria, Hungary and the EU28. The unemployment rate of people with higher education is lower than that registered for the EU28 for the whole period 2005-2016, but higher than that registered by Hungary (2000-2016). In conjunction with the fact that the general unemployment rate for Hungary for the analyzed period is higher than the unemployment rate registered for our country, we can conclude that higher education gives a comparative advantage to individuals, but not to the expected level.

Table 10. Evolution of ILO unemployment rate of persons with a tertiary educational level (levels 5-8), 2000-2016, (%)

Country	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
EU	-	-	-	-	-	5.0	4.5	4	3.8	4.9	5.4
Romania	3.6	4.0	4.7(b)	3.7(b)	3.8	3.9	3.8	2.9	2.7	4.3	4.8(b)
Hungary	1.6	1.4(b)	1.9	1.7	2.3	2.7	2.6	2.8	2.7	3.9	4.6
Bulgaria	7.3	9.2(b)	8.5	6.8	5.7	4.3	4.0	2.4	2.3	2.9	4.6(b)
Country	2011	2012	2013	2014	2015	2016					
EU	5.5	6.1	6.4	6.1	5.6	5.1					
Romania	4.7	5.1	5.4	5.8	4.1	3.1					
Hungary	4.3	4.5	3.9	3.1	2.4	1.8					
Bulgaria	5.1(b)	5.8	6.4	5.1	4.0	3.4					

*Source: Eurostat. b-break in time

The evolution of the number of ILO unemployed with higher education is presented in Table 11. We observe that the number of short-term and long-term graduates has risen sharply in 2009 and 2010 (almost doubled), a negative consequence of the economic crisis. From the data analysis, we also notice that gender is a variable that influences the incidence of unemployment among people with higher education, which will be analyzed later in a future paper, using econometric models. Table 12 shows the dynamics of ILO unemployed with a higher education level in 2010-2017 3rd quarter. Analyzing the data, we see the continuation of an upward trend until 2014, after which the number of unemployed with higher education drops to the end of the analyzed period.

Table 11. The dynamics of the number of ILO unemployed with a higher education level, in the period 2000-2010, per total and according to the gender variable (number of persons)

Education		2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Long-term university	Total	27552	31720	37975	28578	32791	33275	34982	29548	28495	46392	58214
	Masculin	16647	16108	17470	16289	14430	15979	15711	15229	14945	25115	31118
	Feminin	10905	15612	20505	12289	18360	17297	19271	14319	13550	21277	27096
Short-term university	Total	6597	6770	8682	8658	8416	9088	10909	6965	5916	10971	11413
	Masculin	2196	3409	4779	4786	3909	4876	5051	3213	2940	4549	3845
	Feminin	4401	3361	3902	3872	4506	4212	5858	3752	2976	6422	7568

*Source: INS, Tempo-Online database

Table 12. The dynamics of ILO unemployed with a higher education level, during the period 2010-2017, third quarter, per total and according to the gender variable (number of persons)

Higher educated ILO unemployed	2011	2012	2013	2014	2015	2016	3 rd quarter 2017
Total	73387	82065	89221	98340	73952	56021	40679
Masculin	33818	38207	41789	48215	34263	27269	24200
Feminin	39569	43859	47431	50124	39689	28752	16479

*Source: INS, Tempo-Online database

The dynamics of the absolute number of ILO unemployed with higher education by age variable is presented in Tables 13 and 14. We note that the age group 15-24 is the most disadvantaged, registering substantial increases for the entire period under review. Age is obviously a variable that influences the incidence of unemployment, an effect to be explored later in depth.

Table 13. The dynamics of the number of ILO unemployed according to the graduated higher education and the age variable, for the period 2000-2010 (number of persons)

Educati on	Age	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Long- term univers ity	15-24	4478	8511	9965	7859	10409	9282	10198	8495	9517	11529	13003
	25-34	13994	13198	17770	12639	14323	16163	14707	11494	12179	22950	30534
	35-49	7818	8127	8188	5493	5980	5370	6553	6597	4132	7876	10699
	>50	1262	1883	2051	2588	2079	2460	3524	2962	2667	4037	3977
Short- term univers ity	15-24	2365	1571	2418	1328	2959	2230	3325	2169	1684	4342	5452
	25-34	1669	2047	3726	4931	3397	4154	5102	3077	2226	3321	4560
	35-49	1624	2335	2061	1247	1706	2112	1786	940	1057	1018	808
	>50	939	817	477	1152	353	591	695	779	949	2291	593

*Source: INS, Tempo-Online database

Table 14. Dynamics of ILO unemployed with higher education by age variable for 2011-3rd quarter III 2017 (number of persons)

Age	2011	2012	2013	2014	2015	2016	3 rd quarter 2017
15-24	21198	19626	22345	22153	13093	9171	5928
25-34	32458	39505	44087	50790	38437	26942	20727
35-49	13547	16076	16000	19545	16826	15419	8143
>50	6183	6858	6789	5851	5596	4490	5882

*Source: NIS, Tempo-Online database

Tables 15 and 16 show the dynamics of the absolute number of unemployed with higher education depending on the average residence variable. Unemployment in Romania is predominantly urban, and the data show a clear effect of the average residence variability on the unemployment rate. The number of unemployed with higher education in the urban area registered significant increases in the period 2000-2014. The number of unemployed with higher education in rural areas fluctuated, but the changes are much lower compared to the urban environment.

Table 15. Dynamics of BIM unemployed with a higher education level, 2000-2010, depending on the average residence variable (number of persons)

Nivel de instruire		2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Universitar de lungă durată	Urban	23568	29158	34301	24610	29227	30159	31994	25017	24420	40444	53218
	Rural	3984	2562	3674	3967	3563	3116	2988	4531	4075	5948	4996
Universitar de scurtă durată	Urban	6385	6501	7829	7883	6682	7184	8811	5793	4736	9248	8808
	Rural	212	269	852	775	1734	1904	2098	1172	1180	1724	2605

*Source: NIS, Tempo-Online database

Table 16. Dynamics of the absolute number of ILO unemployed with higher education, 2011-2017 period III (number of persons)

Higher educated ILO unemployed	2011	2012	2013	2014	2015	2016	3 rd quarter 2017
Urban	62331	77280	84774	60427	46983	32984	62331
Rural	11056	11941	13565	13525	9038	7695	11056

*Source: NIS, Tempo-Online database

The average duration of unemployment in Romania was about 10 months, for the period 2005-2009, our country occupying the 8th position in the EU (according to the European Commission's analysis in 2009). In the period 2008-2010, the average duration of registered unemployment was 240.34 days, ie approximately 8 months (Dănașcă, 2013, p. 60). 14.6 months was the average duration of unemployment in 2016 and 13.6 months in 2015 respectively (INS, Labor Force, Employment and Unemployment, 2016, p. 41). The average length of unemployment registered for persons with higher education was 189.37 days in 2008-2010 (6.3 months), with a standard deviation of 138.53 and a modal value of 184 days (Dănașcă, 2012, p. 9). In 2016, 21,637 persons with higher education had a duration of unemployment under 6 months, 9,094 persons had a duration of unemployment between 6 and 11 months, 12,122 persons had a duration of unemployment between 12 and 23 months, respectively 13,179 persons had a duration of unemployment of 24 months and over (NIS, Labour Force, Employment and Unemployment, 2016, p. 194). A total of 10,450 men with higher education were in short-term unemployment (under 6 months), compared to 11,187 women with higher education. Unfortunately, we do not have data on the absolute number of men and women in long-term unemployment. A total of 17,289 urban graduates have been unemployed for less than 6 months, 7,349 people with higher education in the urban area have been unemployed for a period of 6 months to 11 months, 11,084 persons have been unemployed for a period of 12 months to 23 months and 11,263 persons with higher education were in long-term unemployment, over 24 months (NIS, Labour Force, Occupation and Unemployment, 2016, p. 195). For rural areas, we do not have data available. The aggregate data analyzed to this point suggest that education is an important factor influencing the incidence of unemployment and its duration, and the gender, age and residence environment are variables that determine differences between subjects belonging to the same educational group. An econometric analysis that will follow in the next research reports will estimate the quantified effect of the variable educational level on the incidence and duration of unemployment in our country as well as the statistical significance of the obtained results.

III. Conclusion

The aim of this paper was to analyze the characteristics of employment and unemployment of higher educated people in Romania. We used aggregate data provided by National Institute of

Statistics Romania and Eurostat. The aggregate data show a sharp decline in the employed population of Romania since 1998, amid the demographic decrease of the country's total population. In contrast, the data show an increasing trend for the employed population with higher education during the analyzed period, probably due to the large number of students enrolled in a form of higher education in 2000-2010. However, we point out that the share of the employed population with a higher education level in the total employed population was for Romania below the EU average and below the levels for the neighbouring countries, Bulgaria and Hungary.

The analysis of the aggregate data dynamics describing the employed population by education and gender for the 2000-2007 shows clear gender differences, the empirical analysis suggesting potential gender disparities in terms of employment workforce with higher education. We observed the same thing by analyzing the dynamics of aggregate data of the employed population with a higher education, dynamically analyzed according to the age variable and by the urban/ rural variable. The evolutions recorded for the analyzed period suggest that both the age and the environment of residence variables influence the employment rate of the population with higher education. We can conclude that gender, age and residence variables are determinants of higher education employment. Unfortunately, the aggregate data provided by the National Institute of Statistics did not allow us to analyze the dynamics of the employed population with higher education and other variables such as region, civil status, health status, previous work experience etc. In a future paper, we will analyze the effect of these variables (and others) on the (re) employment probability of registered unemployed individuals during the period 2014-2017. The dynamic analysis of the aggregate data also revealed a decreasing trend of the employed population with higher education, which also performs secondary activity, for the period 2002-2017. The downward trend of this indicator was due to higher salaries of people with higher education, the diminishing of the available jobs after the economic crisis, the economic situation, and the changes to the labour legislation. Higher educated individuals aged in between 21 and 64 years were, according to NIS, the most active category in 2016, with their activity rate reaching 89% this year. The male employment rate was 5.5%, higher than the female employment rate in 2016, which reinforces the conclusion that there are gender disparities in terms of employment for the Romanian higher educated population.

According to data published by Eurostat, the ILO unemployment rate for our country was 4.9% in 2017, below the EU27 average. The unemployment rate is low compared to the situation of other countries, but we must take into account the high external migration rate registered for Romania. The ILO unemployment rate registered for the population with higher education was 3.1% in 2016, below the EU27 average and below the rates for Bulgaria and Hungary in the same year. Of course, we underline again that, in appreciating this level of the unemployment rate of the population with higher education, we must take into account the high level of migration of the highly qualified labour force from our country to Western Europe, US or Canada. Analyzing the dynamics of the absolute number of unemployed graduates shows that

it has increased sharply in 2009 and 2010, due to the economic crisis. The analysis of the dynamics of the absolute number of unemployed with higher education depending on the gender variable again reveals clear differences between men and women in the analyzed period. In a future paper we will analyze these gender differences using duration models and specific tests. In a study published in 2012, we highlighted the existence of statistically significant gender disparities for both Romania and Hungary, concerning the duration of unemployment, unemployment outflows and the probability of (re) employing women and men with higher education. For both countries, Romania and Hungary, higher education leads to a reduction in gender disparities in terms of duration of unemployment and probability of (re) hiring.

Also, the analysis revealed clear differences determined by the age variable. The 15-24 age group is the most disadvantaged, the absolute number of ILO unemployed with this age, graduates of higher education registering significant increases for the entire period under review. Age is clearly a determining factor in the incidence, duration of unemployment and the re-employment probability.

Another conclusion of the aggregate data analysis presented in this paper is that unemployment in Romania is predominantly urban, and the unemployment of the population with higher education follows this evolution. The number of higher educated unemployed in the urban area registered significant increases in the period 2000-2014. The number of unemployed with higher education in rural areas fluctuated, but the changes are much lower compared to the urban area. The residence variable is also a factor influencing the incidence, duration of unemployment and the probability of (re) employment and its effect will be carefully analyzed using econometric models in a future article.

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