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DYNAMICS OF FEMALE PARTICIPATION IN HIGHER EDUCATION AND EMPLOYMENT – THE ABSORPTION INDEX

Abstract

In recent decades there is constant growth of female enrolment in the higher education in Europe, but it is generally observed that such trend is not reflected in the labour market. The goal of this paper is to present the Absorption Index (AI) as an indicator for dynamic comparison of female participation in tertiary education and their later participation in work force. The main purpose for introducing this indicator is to identify the countries with successful labour markets when it comes to the employment of women with tertiary education. The general conclusion is that the growth of female students is faster than employment growth and as a consequence there is increasing number of unemployed female with tertiary education in the labour market.

Key words: Female Tertiary Education, Employment, Absorption Index

JEL Classification: J21, I23

МЕРЕЊЕ ДИНАМИКЕ УЧЕШЋА ЖЕНА У ВИСОКОМ ОБРАЗОВАЊУ И ЗАПОСЛЕНОСТИ – ИНДЕКС АПСОРПЦИЈЕ²

Апстракт

Током претходне две деценије приметан је раст учешћа жена у високом образовању у Европи, али се такав тренд не огледа и на тржишту рада. Циљ овог рада је да се представи Индекс апсорпције (AI) као индикатор динамичног односа учешћа жена у високом образовању и њиховог каснијег учешће у радној снази. Главни разлог за увођење овог индикатора је потреба да се идентификују земље са ефикасним тржиштима рада када је у питању запошљавање жена са високим образовањем. Општи закључак рада је да је пораст учешћа студенткиња бржи од раста запослености и као последица тога долази до повећања броја незапослених жена са високим образовањем на тржишту рада.

Кључне речи: Жене, Високо образовање, Запосленост, Индекс апсорпције

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Introduction

Expansion in higher education (HE) and growth of students in recent years increased the importance of returns to education and labour market outcomes for working force with tertiary education. During difficult economic times, education represents good insurance against unemployment. In OECD countries 84% of population with tertiary education is employed (OECD, 2011), and employment rates are significantly higher for people with higher education in comparison with other categories.

From the gender point of view, during the past two decades we can notice the constant growth of female enrolment in the higher education in Europe. According to UNESCO (2010), the number of women enrolled in HE has grown approximately twice in comparison with male enrolment since 1970. In the EU27 the percentage of women among students has grown from 52,8% in the year 1998 to more than 55% in the 2012. Increased numbers of female students is explained by changes in gender equality legislation, good gender policies, and changes in socio-economic relations.

On the other hand, it is generally recognised that female over-representation in tertiary education is not reflected in the labour market. After graduation, young women are facing the significant barriers while entering the labour market. Is the dynamics of the female students followed by growth of participation of employed female work force with tertiary education? Are there significant differences among European countries in this field? How can we compare the dynamics of these two variables?

The goal of this paper is to present the Absorption Index (AI) as indicator for dynamic comparison of female participation in tertiary education and participation of females with tertiary education in employed work force across European countries. The main purpose of this indicator is to identify the countries with successful and less successful labour markets in the last decade when it comes to the employment of women with tertiary education. The next step in the analysis is to compare different occupations across countries from the aspect of female labour force with tertiary education. Higher participation of women in the tertiary education will have positive effects only if it is followed by compatible labour market outcomes, both in quantity and in structure.

In this paper we have constructed the Absorption index (AI) as the measure of successful transfer from higher education to employment for women. This methodology can give us the useful insights not only into efficiency of labour market but also into problem of gender equality. AI is a good indicator of the results of implemented labour market and gender policies during certain period of time and also a good tool for comparison of the labour and gender policies across countries or regions.

In the further research Absorption Index will be analyzed and explained through development of econometrical model.

The paper is organized as follows: after introduction, section 2 provides a brief description of contemporary scientific literature in the field of interest; section 3 explains the calculation methodology of Absorption index; section 4 is the overview of the results from our cross-country analysis; and finally section 5 contains the conclusions and recommendations considering female participation in labour market and future development of Absorption index.

Literature Review

Majority of researchers in the field of labour market and gender equality argue or at least imply the strong relationship between educational level attained and labour

market outcomes, especially in the case of female work force (Addabbo and Favaro (2009), Baleer et al. (2009), Leschke and Jepsen (2009), Bell and Blanchflower (2010), Bicakova (2010), Devedžić (2007), Dimova et al. (2011), Jutting et al. (2010), Gati and Robert (2011), Leuze and Ruston (2009), Said (2012), etc.).

Many authors share the opinion that higher educational level is contributing to better position of women not only in the labour market but also in the family and society as a whole (Addabbo and Favaro (2009), Devedžić (2007), Branisa et al. (2009), etc.).

Addabbo and Favaro, while analyzing the situation in Italy considering the women's labour force participation, are stressing that "Descriptive statistics show a lower presence of women not in the labour force amongst highly educated women. Inactivity goes from 69% for women without any education or with elementary schooling to 22% of those with at least a university degree." (Addabbo & Favaro, 2009, p. 9). Additionally, woman's level of education is contributing towards empowerment in the bargaining over unpaid work inside families.

Analyzing the labour force participation in the Euro area, the conclusion from Baleer et al. (2009, p. 10) is "That data shows that more educated workers tend to have higher participation rates and that an increase in overall educational attainment over time has coincided with an increase in participation rates, particularly for women."

The similar conclusion we can find in the Leschke and Jepsen (2009, p. 7): "There are strong differences in employment rates regarding education levels and it is particularly noteworthy that women with the highest educational level have far higher employment rates in all countries than those with low education levels."

Development of labour market in Europe is going towards implementation of flexibility and transitional labour markets as "organisational bridges that facilitate and secure transitions between different forms of employment, working-time arrangements and private activities such as childcare or education, in a way that avoids enduring substandard employment or social exclusion." (Leschke & Jepsen, 2009, p. 5). More educated people will be able to feel more benefits from transitional labour market in comparison with others. People with tertiary education will have larger probability of obtaining better employment outcomes through enhanced flexibility and socially insured transitions among different areas, such as employment, unemployment, and retirement. This is why higher education is especially important for the female working force.

Gati and Robert (2011) investigated labour market entry for faculty graduates in Hungary, Poland and Slovenia and the focus of their work was on gender differences. On the basis of presented results, they have concluded that risk of unemployment is larger for women: "For unemployment, at observed level women are definitely disadvantaged and experience unemployment in all three countries more frequently as compared to men."

Bell and Blanchflower (2010), in the case of USA and UK, are confirming that unemployment is higher for the less educated people in all age groups and in all countries and "improvement in qualifications is more concentrated among females than males". Also, these authors are stressing the negative consequences of unemployment for young people at the beginning of their careers.

Leuze and Ruston (2009) in their research of professional career trajectories in Germany, stated that "occupational sex segregation is a persistent source of social inequalities" and "increasing participation of women in tertiary education and rising female employment rates, however, have given hope that gender inequalities will decline as a result of growing female opportunities for high skill employment...". The main conclusion of their work is that labour market, especially in the case of private sector, offers more typically career perspectives for males, and "optimistic claims that equality in tertiary graduation rates among men and women leads to gender equality in the labour market cannot be confirmed.".

When it comes to the distribution of age and education, Bicakova (2010), in her analysis of gender unemployment gaps in eight new EU member states from Eastern Europe on the basis of LFS data, confirmed that “women have more favourable distribution of age and education in the labour force than man”. According to Bicakova, only in Czech Republic and Slovakia women are on average less educated than men, but even in these two countries in youngest cohorts we can notice the better position of young females.

Scientific Methods

The education and employment data of female labour force with tertiary education were collected from Eurostat database, from 1998 to 2012. The analysis was conducted on the data sets for 33 European countries and sets of average scores for EU27 and each country. We have gathered data for females currently enrolled in tertiary education and data about employed women aged 25-29 years with educational level 5 and 6 according to ISCED97 (International Standard Classification of Education).

The first step is to calculate the average growth rate of female tertiary education participation for each country. The average growth rate will be calculated as geometric mean on the basis of the following formula:

$$AGR_{edu} = \left(\frac{edu_n}{edu_1} \right)^{\frac{1}{n-1}} \quad (1)$$

where AGR_{edu} denotes average growth rate of female participation in tertiary education, edu_1 is the female participation rate in the first year, edu_n is the female participation rate in the last year.

Average growth rate of female participation in employment of labour force with tertiary education is also calculated on the basis of geometrical mean:

$$AGR_{emp} = \left(\frac{emp_n}{emp_1} \right)^{\frac{1}{n-1}} \quad (2)$$

where AGR_{emp} denotes average growth rate of female participation in employment of labour force with tertiary education, emp_1 is the female participation rate in the first year, emp_n is the female participation rate in the last year. This indicator is calculated only for the population aged 25 to 29 and with time lag of four years between two sets of data. The four year period is the average period necessary for graduation at faculties and entrance into labour market.

On the basis of these two indicators we can measure how much is the labour market of each country successful in accepting and employing the new labour force (in this case female labour force with tertiary education). We named this indicator the Absorption index. Absorption index (AI) is calculated on the basis of the simple formula:

$$AI = \frac{AGR_{emp}}{AGR_{edu}} \quad (3)$$

If absorption index is smaller than 1 it means that dynamics of employment is slower than dynamics of education. In other words, system of higher education is faster in creating female labour force with tertiary education in comparison with dynamics of employment of females with the same educational level.

If absorption index is larger than 1 the situation is opposite and labour market is absorbing more female labour force with tertiary education than HE system is producing. In that case labour market is receiving and employing additional female labour force from abroad.

Results

The average growth rates and results of AI are presented in the Table 1.

Table 1: Average growth rates of participation and employment

Country	Years	EDU_{spes}	AGR_{edu}^*	EMP_{2012}	AGR_{emp}^{**}	AI^{***}
Austria	11	53.3	1.0080	54.7	0.9945	0.9866
Belgium	10	55.0	1.0060	58.6	1.0091	1.0030
Bulgaria	11	55.3	0.9904	58.6	0.9881	0.9977
Croatia	6	54.6	1.0052	59.5	0.9908	0.9857
Cyprus	10	49.0	0.9853	55.7	1.0035	1.0185
Czech Republic	11	55.5	1.0144	57.1	1.0258	1.0112
Denmark	11	58.0	1.0044	58.4	1.0037	0.9993
Estonia	11	61.7	1.0083	58.0	0.9875	0.9794
Finland	11	54.2	1.0013	59.4	1.0034	1.0021
France	11	55.2	1.0009	54.6	1.0014	1.0005
FYR Macedonia	7	53.2	0.9939	55.5	0.9752	0.9812
Germany	11	49.7	1.0067	55.1	1.0077	1.0010
Greece	11	50.1	1.0000	57.8	1.0030	1.0030
Hungary	11	58.0	1.0072	56.5	1.0109	1.0037
Iceland	11	64.4	1.0071	60.7	1.0151	1.0079
Ireland	11	54.2	1.0028	58.4	1.0045	1.0017
Italy	11	57.4	1.0048	61.1	1.0069	1.0021
Latvia	11	64.4	1.0090	65.3	1.0242	1.0151
Lithuania	11	59.9	0.9993	56.8	0.9958	0.9965
Luxembourg	9	51.6 (2006)	0.9998	50.0 (2010)	0.9953	0.9955
Malta	10	57.9	1.0131	54.4	1.0143	1.0011
Netherlands	11	51.7	1.0062	56.3	1.0053	0.9991
Norway	11	60.8	1.0070	60.1	1.0081	1.0010
Poland	11	57.6	1.0014	58.2	1.0017	1.0003
Portugal	11	53.5	0.9954	62.1	0.9946	0.9992
Romania	11	56.3	1.0121	55.6	0.9996	0.9877
Slovakia	11	60.3	1.0169	56.0	0.9954	0.9789
Slovenia	11	58.1	1.0051	65.0	1.0058	1.0006
Spain	11	54.0	1.0019	56.7	1.0084	1.0065
Sweden	11	60.3	1.0071	58.2	1.0061	0.9990
Switzerland	7	49.3	1.0219	47.8	1.0254	1.0034
Turkey	7	43.1	1.0067	40.2	0.9953	0.9886
United Kingdom	11	57.2	1.0082	49.3	0.9964	0.9883
Avg. 33 countries		55.7	1.0048	56.9	1.0031	0.9983
EU27	11	55.3	1.0046	55.5	1.0029	0.9982

* Average growth rates of participation of females in HE

** Average growth rates in employment with tertiary education in age group 25-29 years

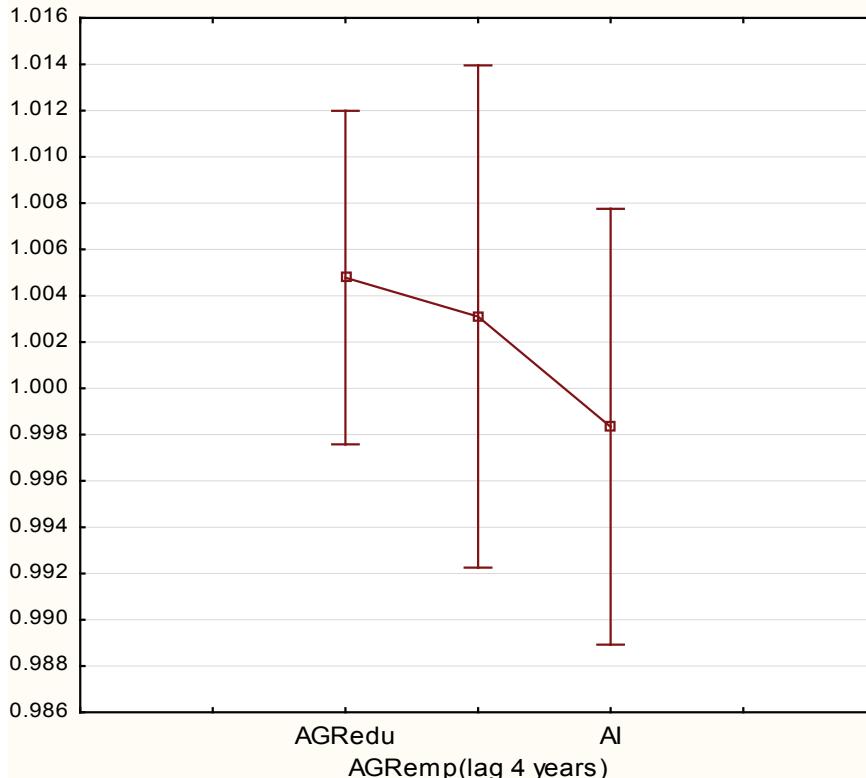
*** Absorption index for European 33 countries

The AGR_{edu} and AGR_{emp} have been calculated for 11 year period: AGR_{edu} from 1998 to 2008 and AGR_{emp} from 2002 to 2012. In the case of incomplete data for several countries the shorter period was taken. $EDU2008$ is the share of female students in the year 2008 while $EMP2012$ is the share of women among employed persons with tertiary education.

If we look at the average growth rate until 2008, we can see that only 6 out of 33 countries have the decrease of female participation in tertiary education. With the time lag of 4 years, in the case of employment 12 out of 33 countries have the decrease of FTE participation on the labour market. Unweighted average in all 33 countries shows that the growth in participation in employment is slower than participation in education ($AI=0.9983$). The same situation is in the case of EU27 ($AI=0.9982$).

On Figure 1 we can notice that mean of average growth rates across 33 countries is larger for female participation in education than female participation in employment. Also, variations in employment are more pronounced. Also we have discovered that correlation between AGR_{edu} and AGR_{emp} is statistically significant ($p < 0.05$) and it is 0.5126.

Figure 1: Mean plot for multiple variables (mean \pm standard deviation)



The most problematic situation is in the 7 countries where participation in HE for women is increasing on average from year to year but participation of women with higher education in employment is decreasing at the same time (Estonia, Croatia, Austria, Turkey, Slovakia, UK, and Romania).

Table 2: Average growth rates in participation in HE and employment of women

Country	Number of years	AGR_{edu}	AGR_{emp}	AI	Country	Number of years	AGR_{edu}	AGR_{emp}	AI
Austria	6	0.8972	1.0535	1.1743	Lithuania	6	1.0523	1.0107	0.9604
Belgium	6	1.0785	1.0049	0.9318	Luxembourg	6	1.0313	1.0818	1.0489
Bulgaria	6	0.9373	1.0290	1.0978	Malta	6	1.0093	1.0481	1.0384
Croatia	5	0.9761	0.9777	1.0016	Netherlands	6	1.0858	1.0179	0.9375
Cyprus	6	1.0978	1.0264	0.9350	Norway	5	0.9306	1.0254	1.1019
Czech Republic	6	1.1307	1.0842	0.9589	Poland	6	1.0876	1.0270	0.9442
Denmark	6	0.9882	1.0024	1.0144	Portugal	6	1.0690	0.9869	0.9232
Estonia	6	1.0125	1.0365	1.0237	Romania	6	1.1007	1.0237	0.9300
Finland	6	0.9300	1.0163	1.0928	Slovakia	6	1.0438	1.0543	1.0101
F Y R Macedonia	3	1.2162	1.0784	0.8867	Slovenia	6	1.0816	0.9766	0.9030
France	6	0.9980	0.9958	0.9978	Spain	6	0.9779	0.9306	0.9516
Germany	6	1.0272	1.0777	1.0492	Sweden	6	1.0530	1.0284	0.9766
Greece	6	1.0654	0.9876	0.9271	Switzerland	5	1.1787	1.0121	0.8587
Hungary	6	1.0014	1.0179	1.0164	Turkey	3	1.0502	1.0867	1.0347
Iceland	-	-	-	-	United Kingdom	6	1.0600	1.0368	0.9781
Ireland	6	1.0304	0.9589	0.9306	Average for 33 countries	-	1.0502	1.0241	0.9752
Italy	6	1.2655	1.0043	0.7936	EU27	6	1.0336	1.0137	0.9808
Latvia	6	1.1425	1.0735	0.9396		-	-	-	-

AGR_{edu} - Average growth rates of nominal number of females in HE
 AGR_{emp} - Average growth rates in employment with tertiary education in age group 25-29 years
AI - Absorption index for European 33 countries

The second part of analysis is to calculate average growth rates and absorption index on the basis of the number of female students and number of employed females with tertiary education aged 25-29 years, also with the time lag of four years. The goal of this analysis is to see whether the dynamic of female employment follows the dynamic of female enrolment in the higher education.

On the basis of results in the Table 2 we can conclude that 24 out of 33 countries have the average yearly growth of female students ($AGR_{edu}>1$), while in 25 countries there is recorded the average yearly employment growth of females with tertiary education ($AGR_{emp}>1$) with the time lag of 4 years. Italy has the largest AGR_{edu} of 1.2655 which means that on average each year they have 26.55% more female students than previous year. In the case of female employment, the fastest growth is in Turkey ($AGR_{emp}=1.0867$).

Unfortunately, growth in education is not followed by the same growth in employment. If we look at the absorption index (AI), we can see that only 13 countries have the higher average growth rate in employment than in higher education ($AI>1$). The serious situation is in Spain and France where we have average decrease of females both in higher education and in employment, but the average yearly decrease in employment is faster (Spain: $AI=0.9516$; France: $AI=0.9978$). The most serious situation is in Italy, where $AI=0.7936$, because we have significant average yearly growth in education of 26.55% and very modest average yearly growth in employment of females with tertiary education of only 0.43%. On the other hand, the best situation is in Austria, where $AI=1,1743$, which means that Austria is importing highly educated female labour force from abroad.

If we look at the aggregate results for sets of 33 European countries and EU27, we can notice the average increase both in education and in employment of women with tertiary education, but the average growth rate in employment is smaller (33 countries: AI=0.9752; EU27: AI=0.9808).

The time series analysis of female participation in HE across different fields in EU27 countries (Table 3) showed us that in the period 2002-2010 (latest available data), participation in fields of education and social science, business and law has the average yearly growth of approximately 4% while the largest growth is in the field of engineering, manufacturing and construction. Female participation is declining in the fields of science, mathematics and computing and service.

Table 3: Average growth rate of female participation in higher education across different fields (EU27 countries: 2002-2010)

Education indicator (INDIC_ED)	EDU_{2002}	EDU_{2010}	AGR_{edu}
Education	74.5	76.7	1.0036
Social science, business and law	56.4	58.3	1.0042
Science, mathematics and computing	38.8	37.6	0.9961
Engineering, manufacturing and construction	23.2	25.0	1.0094
Service	50.4	49.4	0.9975

In the case of employment across occupations in EU27 countries (Table 4), participation of females with tertiary education is growing in eight out of 10 occupations. Especially important is average yearly growth rate in the case of occupations traditionally occupied by males: managers (1,5%) and armed forces (2,9%).

According to Jutting et al. (2010, p. 26) “Female education significantly increases the relative ratio of female to male employees in service and significantly decreases the relative ratio of female to male employees in industry” and “education seems to be a sine qua non condition for women to work in service”, but in the case of average growth rate and females with highest educational level, we can see the exactly opposite situation: constant decrease of female participation in service sector and increase in industry in the period of 11 years.

Table 4: Average growth rate of females with tertiary education in the employment aged 25-29 across different occupations (EU27 countries: 2002-2012)

International Standard Classification of Occupations (ISCO-88 (Com))	EMP_{2002}	EMP_{2012}	AGR_{emp}
Managers	0.29	0.35	1.0149
Professionals	0.47	0.52	1.0081
Technicians and associate professionals	0.55	0.50	0.9910
Clerical support workers	0.68	0.70	1.0015
Service and sales workers	0.62	0.61	0.9944
Skilled agricultural, forestry and fishery workers	0.27	0.28	1.0060
Craft and related trades workers	0.08	0.12	1.0296
Plant and machine operators, and assemblers	0.16	0.16	1.0028
Elementary occupations	0.43	0.55	1.0210
Armed forces occupations	0.07	0.10	1.0287
No response	0.38	0.46	1.0090

What is the answer of higher education to recession in the last four years when it comes to dynamic of enrolled female students and what should be the answer of labour market? The following table is showing the numbers of female students from 2008 to 2011. These are the latest available data.

If we look at the average growth rate for EU27 the conclusion is that the number of female students is still increasing, but this dynamic is slower in comparison with previous period presented in Table 2 (1.0273 vs. 1.0336). In the case of unweighted average for all 33 countries, we can notice the acceleration of enrolled female students (AGR_{edu} from 2008 to 2011 is 1.0692 while AGR_{edu} from 1998 to 2008 is 1.0502).

Table 5: The number of female students and average growth rate of female participation in higher education (2008-2011)

Country	2008	2009	2010	2011	AGR_{edu}	Country	2008	2009	2010	2011	AGR_{edu}
Austria	11.8	14.4	18.0	18.7	1.1659	Lithuania	27.1	22.4	23.6	17.0	0.8560
Belgium	89.0	91.2	92.8	94.3	1.0195	Luxembourg	1.4	2.5	1.6	2.4	1.1968
Bulgaria	17.0	19.9	17.4	18.9	1.0359	Malta	2.2	2.6	3.4	3.4	1.1562
Croatia	6.9	8.3	9.8	9.2	1.1006	Netherlands	98.4	98.2	101.8	108.2	1.0322
Cyprus	11.8	12.7	13.5	12.4	1.0167	Norway	22.8	21.2	19.1	25.4	1.0367
Czech R.	24.4	30.7	35.0	34.6	1.1235	Poland	186.6	206.5	227.9	237.0	1.0830
Denmark	9.8	8.6	11.4	14.1	1.1289	Portugal	42.3	41.0	40.5	55.3	1.0934
Estonia	8.3	9.6	10.7	9.1	1.0311	Romania	48.8	68.1	75.6	85.6	1.2060
Finland	8.0	11.4	11.0	10.3	1.0879	Slovakia	17.1	22.2	29.2	35.0	1.2697
FYR Macedonia	7.1	9.0	10.0	11.3	1.1675	Slovenia	3.7	3.0	5.1	5.3	1.1273
France	632.9	622.4	596.4	566.2	0.9636	Spain	349.5	324.2	334.5	349.0	0.9995
Germany	135.6	150.1	152.9	200.2	1.1387	Sweden	41.3	42.1	43.3	46.1	1.0373
Greece	38.7	35.2	37.5	40.2	1.0128	Switzerland	22.2	18.6	25.7	27.7	1.0766
Hungary	27.9	26.2	28.8	32.3	1.0500	Turkey	329.6	345.7	392.7	410.7	1.0692
Iceland	0.6	-	-	-	-	UK	513.6	541.6	595.3	586.3	1.0451
Ireland	52.5	49.1	48.8	42.4	0.9313						
Italy	130.5	132.0	119.5	121.0	0.9751	EU27	2,544.7	2,600.2	2,690.1	2,759.0	1.0273
Latvia	14.6	12.0	14.8	13.7	0.9790	Average 33 countries	-	-	-	-	1.0692

From 2008 to 2011 only six out of 33 countries have decrease in the number of female students (Ireland, Italy, Spain, France, Latvia and especially Lithuania). Romania and especially Slovakia are having the fastest growth of women enrolled in HE.

Conclusions

“Female enrolment ratios now exceed those of men in two out of every three countries with available data.” (Morley, 2013). The constant growth of enrolled female students in higher education across Europe is a positive tendency, contributing to better socio-economic relations, but it is not followed by corresponding employment growth of females with tertiary education.

The basic conclusion is that labour market in many European countries does not keep up with HE sector when it comes to the employment of women with tertiary education. Scientific literature suggests several policy measures in order to improve the employment dynamic of females through increase of aggregate demand:

- wage or employment subsidies to private sector firms to hire them,
- incentives for hiring in the public sector,
- development of apprenticeship programs,
- development of practical sessions for employment and self-employment at universities,
- improvement and diversification of study programmes at universities.

During the last five years we can see the expansion of higher education through increase of new students at the universities. The young labour force is significantly cyclically sensitive, and during the economic crisis young people are more oriented towards colleges and faculties and the number of applications rise. Since we had the recession from 2008 and economy is not recovered yet, the future will show us whether this growth in education and slower employment are the usual and predictable consequence of the recession or this is a long-term tendency as the result of education strategy and employment policies. On the other hand, demographic factors must be taken into account and although we have the decrease of younger population in all European countries, the number of female students is still growing.

On the basis of calculated absorption indexes we have discovered that several countries have significant problems when we compare the growth of females in higher education and employment growth of females with tertiary education and this problem is especially pronounced in Spain, France, and Italy, while the best situation is in Austria, where labour market is able to absorb all females with tertiary education from national universities.

Our study has its limitations because for the more complete analysis it is necessary to overview all age groups, not only the females enrolled in HE and those employed ageing 25-29 years. In other words, in reality we can't expect that all women will graduate in time, many women are studying in late years of their lives, and also, not all females enrolled in HE will finish it.

Although absorption index can be very useful in the dynamic comparison of different time series, it must be mentioned that it also has several shortcomings and the most significant is the following characteristic: Average growth rate represents the dynamic of certain variable in constant time, for example, during several years, but it is actually calculated on the basis of the value in the first and the last period. Therefore, the value of average growth rate and absorption index significantly depends on the selection of the starting and ending period. The data variations between the first and last period are not covered by indicator. The goal of the future development of absorption index will be to include these variations in the calculations.

Regardless of these shortcomings, the use of absorption index could be expanded to all segments of labour force, for example to any demographic cohort, any gender (or both), any level of education etc. because this is the easy, understandable and effective way of comparison between the dynamic of education and dynamic of employment.

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