UDC: 331.526 JEL: J4

ORIGINAL SCIENTIFIC RESEARCH PAPER

Homogeneity of the European Union from the Point of View of Labour Market

Homogenost Evropske unije sa aspekta tržišta rada

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A B S T R A C T

The paper deals with the idea of the European Union labour market homogeneity from the perspective of employment, unemployment, earnings and gender pay gap. Due to integration procedures within Europe, important mutual trade, capital and labour force mobility; it can be expected that labour market phenomena are gradually transmitted from western European countries to new member states. The paper proves a certain rate of labour market mimicking within Europe. Tendencies in unemployment, employment and earnings are at least partially transmitted to new member states as for female, male and total indicators. However, gender pay gap phenomenon is not transmitted in the same way. We can rather observe a certain clustering in gender pay gaps in European regions.

The paper was elaborated within the project VEGA 1/0973/11.

KEW WORDS: *labour market transmission, the European Union, gender pay gap, employment, unemployment*

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Introduction

Is the European Union (EU) homogeneous as for labour market? Are the shocks in the EU labour market asymmetric? In addition to comparatively progressive integration in the monetary field, high mobility of goods, services and capital, free labour market should be another driving force of the EU. However, labour mobility is still limited within the EU, despite the fact that Germany and Austria have already opened their labour markets, too. In May 2011, they opened their markets to new EU member states as the last old EU member states (EU 15). At present, German trade unions call for statutory minimum wage in all sectors at the level of 8,50€ (The Irish Times, 2.5.2011). They are afraid that new inflow of labour force will lead to wage dumping especially in the temporary work sector. Great Britain, Ireland and Sweden opened their markets already in May 2004 when new member states (NMS) joined the block. Labour markets in other countries were opening gradually. Germany and Austria were the only states profiting from the whole 7-year transitory period. Since 2004, Malta and Cyprus were not limited by any restrictions.

Labour migration from NMS (especially Poland, Lithuania, Slovakia, Latvia, Estonia, Slovenia, Hungary and Czech Republic) to EU 15 was at the level of 900 000 people in 2003 and it increased to 1,9 mil. In 2009, it is estimated that EU GDP was increased by 0,11% between 2004-2007 due to labour migration (The European Parliament, 4.5.2011). Another rise is expected up to 0,2%. The most of migrants come from Poland and Lithuania, while the least of migrants are from Hungary and the Czech Republic. 2,3 mil. of NMS workers leave in the EU 15, while 19 mil. foreign workers are from the third countries. It is supposed, that number of NMS workers will be 3,3 mil. and 3,9 mil. in 2015 respectively 2020 (The European Parliament, 4.5.2011). Several EU 15 countries have still closed markets for Romania and Bulgaria that joined the EU in 2007. They will have to wait for opening probably next two years. 10 countries will have to open their labour markets up to 2013.

According the European commission (The Irish Times, 2.5.2011)., EU 15 suffers from lack of qualified labour force. Opening of markets can help them to overcome this inconvenience. It is estimated that German active part of population will be reduced by 6,5 mil. (The Irish Times, 2.5.2011). It is possible to solve the problem through higher labour mobility.

NMS have advantages but also disadvantages from labour mobility. Labour mobility helps NMS to solve their problems with higher unemployment. Employees working abroad come back home usually with better professional and language skills. Their working approach is more positive than before. On the other hand, NMS suffer from lack of qualified employees in certain sectors as they prefer to work in the EU 15 where they are well paid.

Gang, Rivera-Batiz and Yun brought in 2002 their study on association between the presence of immigrants and unemployment among native-born workers in the European Union. They wanted to verify a common declaration that "immigrants steal jobs from the native-born workers". They found out very little or almost any association between unemployment and immigrants to a country. Consequently, European countries should not afraid of immigration from the point of view of working possibilities.

In addition, sufficient labour market mobility is one of the fundamental conditions of an optimum currency area according to Robert Mundell (1961). Labour mobility enables to renew equilibrium at markets in a monetary union. If the EU aims to continue in integration process within the euro area with NMS, sufficient labour mobility should be one of its priorities. If labour mobility is weak or missing, a single currency is not an optimum solution for the area.

Labour mobility contributes to the homogeneity of the euro area that is still quite low and it brakes evolution of the monetary union. The EU enlargement has its consequences for Central and Eastern European labour markets as it is analysed in paper by Michael Burda (1998). Similar research was elaborated by Zuzana Maliková (2010) with the focus on relationship between European integration and position of women in business enterprise sector.

However, this contribution supposes that there is a significant transmission of tendencies at the EU 15 labour markets and NMS labour market. Ira Gang, Robert Stuart and Myeong-Su Yun (2006) analysed transmission in labour market between Eastern and Western Germany.

Data and Hypotheses

This paper analyses to witch extent evolution in the EU 15 and NMS labour markets is similar or not. The hypothesis is that with continuing

integration within the EU and even within the euro area, the labour market convergence of NMS should be obvious towards the EU 15. We have analysed data from the Eurostat since 1998 (respectively since 2002 in some cases) up to 2010.

The first hypothesis is that there is correlation between evolution of employment in the EU 15 and NMS. This correlation will be tested separately for female, male and total employment.

The second hypothesis is that there is correlation between evolution of unemployment in the EU 15 and NMS. This correlation will be verified separately for female, male and total unemployment, too.

The third hypothesis is that the gender pay gap in NMS is approaching to the gender pay gap in the EU 15.

The fourth hypothesis complementing previous hypothesis is that evolution in the EU 15 influences evolution in NMS and not vice versa.

Generally, it is supposed that there is a certain employment, unemployment and gender gap transmission between the EU 15 and the NMS. In other words, we expect that labour markets in the NMS will imitate labour market evolution in the EU 15. This should be confirmed particularly in long term.

Employment Transmission Analysis

According to the first hypothesis, it is supposed that there is an association between employment evolution in the EU 15 and NMS. More precisely, we expect that the EU 15 has impact on NMS in this case and not vice versa. Results of correlation analysis are presented in table 1.

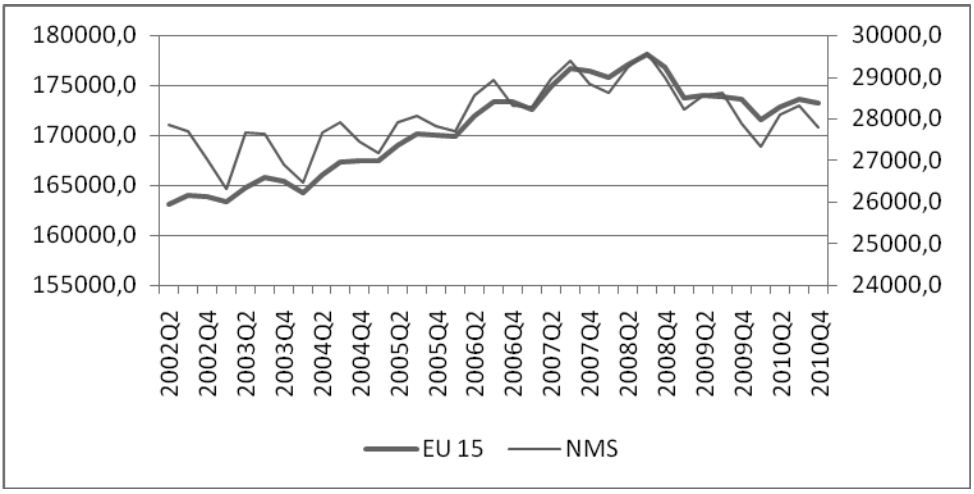
From the table 1, it is obvious that correlation between employment in the EU 15 and the NMS is statistically important in most of countries. Rather negative correlation was calculated only in case of Romania. Average correlation was very important in case of female, male and total employment.

Table 1: Correlation Analysis of Employment

Country	Correlation coeff. with the EU 15 (Total)	Correlation coeff. with the EU 15 (Female)	Correlation coeff. with the EU 15 (Male)
Bulgaria (BG)	0,9357	0,9133	0,9069
Cyprus (CY)	0,8870	0,9589	0,5930
Czech Republic (CZ)	0, 7288	0,7326	0,7469
Estonia (EE)	0,7084	0,7982	0,7076
Hungary (HU)	0,2386	0,4551	0,2690
Latvia (LV)	0,5086	0,5833	0,6366
Lithuania (LT)	0,4593	0,6726	0,5563
Malta (MT)	0,8198	0,8587	0,5686
Poland (PL)	0,7622	0,7717	0,6703
Romania (RO)	-0,5982	-0,6857	-0,4192
Slovakia (SK)	0,8470	0,8885	0,8150
Slovenia (SI)	0,9331	0,8952	0,9221
New mem. states	**0,8525**	**0,9036**	**0,8899**

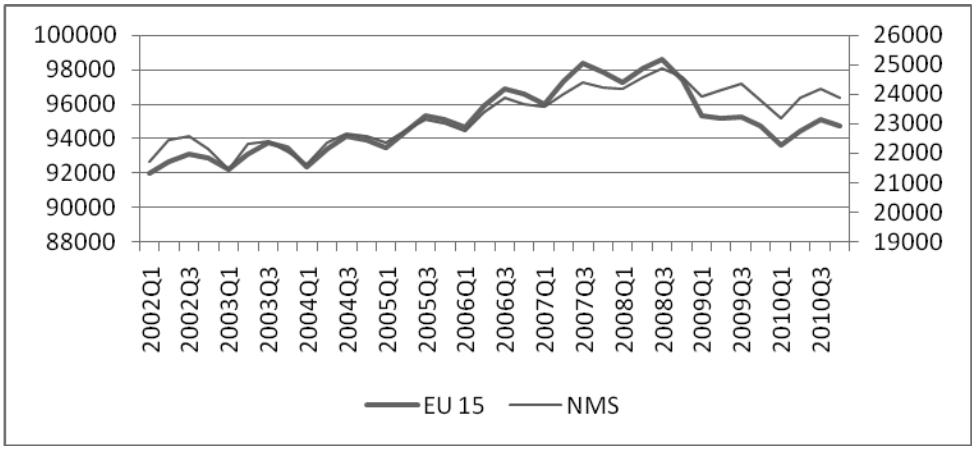
These relationships in average are depicted also in Figures 1 – 3:

Figure 1: Total employment correlation between average value in new member states (NMS) and the European Union 15 (2002Q2 – 2010Q4), in thousands of people



N.B.: left axis for the EU 15 values, right axis for new member states

Figure 2: Male employment correlation between average value in new member states (NMS) and the European Union 15 (2002Q1 – 2010Q4), in thousands of people

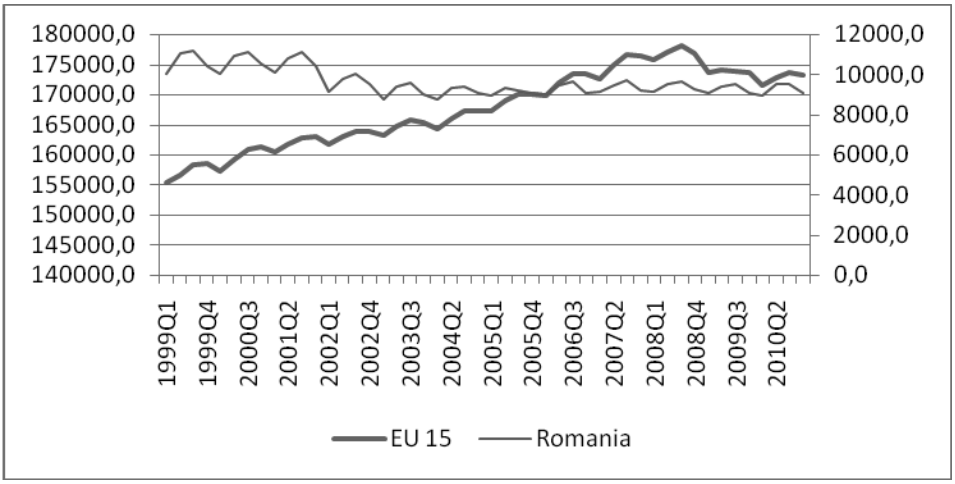


N.B.: left axis for the EU 15 values, right axis for new member states

We can observe that volatility of employment is higher in all three cases (total, male and female employment) in new member states in comparing with the European Union 15. Tendencies of average male employment in NMS are almost identical with the EU 15. More important differences start since the end 2008 and during 2009. These differences are linked to financial and economic crisis that stroke older member states earlier than Central and Eastern Europe. Female average employment in NMS was during whole observed period more volatile in comparison to the EU 15. This phenomenon is caused by lower female job security in NMS linked to their more complicated come backs at the labour markets after their maternity leaves. Advanced legislation according to European standards could gradually reduce this volatility.

In all new member states evolution of employment is more or less correlated with employment in old the EU member states. However, Romania is exception, its correlation coefficient is -0,5982. Opposite tendencies in labour market are obvious from Figure 3. Since 2002, stagnation can be observed while in other countries employment trend line is rising in long run as it is in the EU 15.

Figure 3: Total employment correlation between Romania and the European Union 15 (2002Q1 – 2010Q4), in thousands of people



N.B.: left axis for the EU 15 values, right axis for Romania

To test the causality of this relationship or the direction of employment transmission, Granger causality test was applied. Chi-square test explains the statistical significance (see Table 2). Employment in the EU 15 does not depend significantly on employment in new EU member states. However, opposite relationship was confirmed by Granger causality test in case of the Czech Republic, Hungary, Malta, Slovakia and Slovenia.

The first hypothesis is confirmed almost in all countries, except Romania. Its fourth complementary hypothesis is confirmed only in five countries.

Table 2: Granger causality - Chi square statistics

Independent variable	**Dependent variable**					
	CZ	**HU**	**MT**	**SK**	**SI**	**EU 15**
Czech Rep.		2.927	2.155	0.182	1.479	1.807
Hungary	0.015		1.061	0.491	3.903*	1.774
Malta	2.899	8.458		2.215	0.888	0.952
Slovakia	2.217	2.749	3.795		6.826*	2.478
Slovenia	3.311	7.226	1.281	1.659		1.836
EU 15	9.581***	6.965***	3.207*	6.499***	6.164***	

Unemployment Transmission Analysis

According to the second hypothesis, it is supposed that there is an association between unemployment evolution in the EU 15 and NMS. More precisely, we expect that the EU 15 has impact on NMS and not vice versa. However, unemployment correlation and transmission was not confirmed in most of countries. Correlation was statistically important only in case of Cyprus, Latvia, Lithuania, Hungary and Slovenia with correlation coefficient from 0,621 up to 0,872. The results were similar for female, male and total unemployment measured either in percent or in thousands of people.

Granger causality is represented in Table 3. Unemployment in Cyprus, Lithuania, Hungary and Slovenia is dependent on unemployment in the EU 15.

The second and its complementary fourth hypotheses are partially confirmed for chosen countries.

Table 3: Granger causality - Chi square statistics

Independent variable	**Dependent variable**					
	CY	**LV**	**LT**	**HU**	**SI**	**EU 15**
Cyprus		0.985	1.244	1.963	1.178	1.113
Latvia	1.505		2.033*	4.038	1,059	1.098
Lithuania	3.009	5.128		2.879	2.816	1.352
Hungary	1.298	2.339	1.542		2.631*	3.171
Slovenia	2.587	3.651	5.812	1.094		1.446
EU 15	5.341***	2.965	3.512**	7.487***	2.004***	

Gender Pay Gap and Earnings Transmission Analysis

According to the third hypothesis, we suppose that the gender pay gap in NMS is approaching to the gender pay gap in the EU 15. Nevertheless, sufficiently long time series are not available to realise correlation analysis and/or Granger causality tests. Gender Pay Gap data

are available for some countries in the European Union only since 2004 or they are missing. However, we can do at least partial correlation among earnings evolution in certain NMS and certain old EU 15 members according to their availability. Table 4 presents very strong correlation among earning evolution as for total, female and male observations as well as in the case of net earnings. Complete data were available only for Belgium, Finland, France, Netherlands and the United Kingdom, representing old member states and for Bulgaria, Cyprus, the Czech Republic, Hungary, Latvia, Romania and Slovakia, representing new member states.

Nevertheless, smaller correlation exists in net earnings because of impact of large tax system diversity in Europe.

Table 4: Correlation Analysis of Earnings Evolution

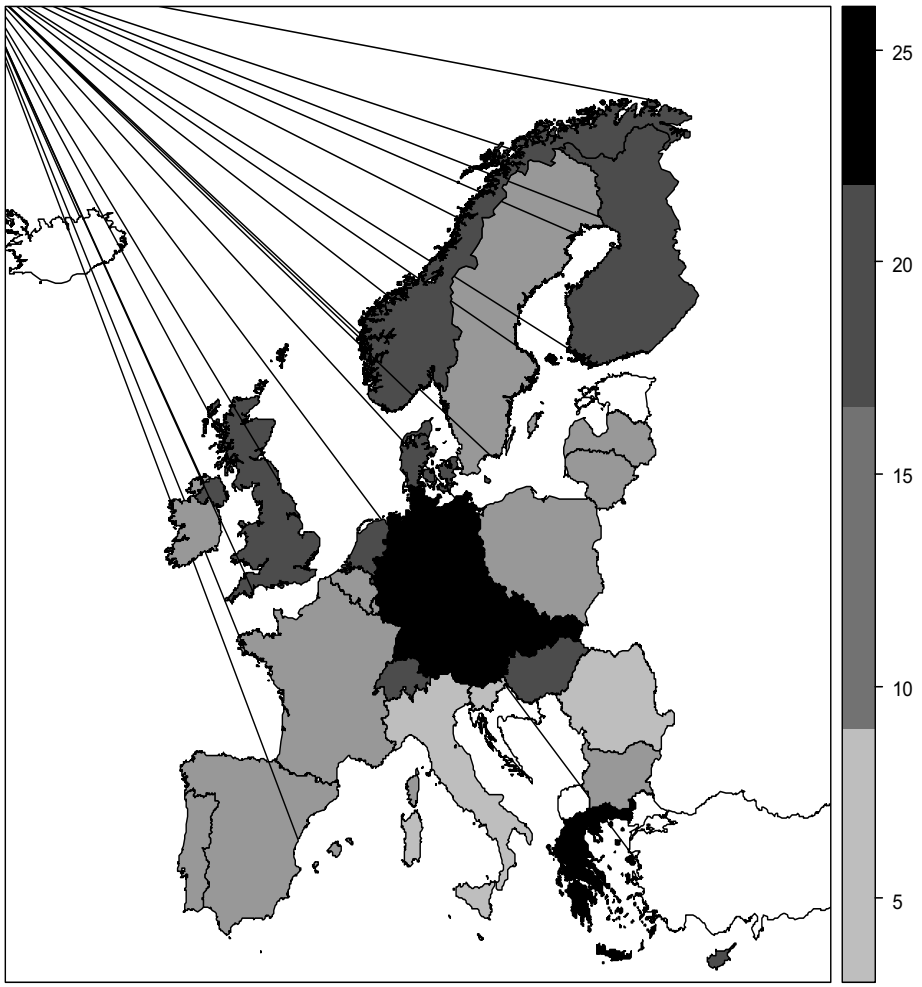
Country	Correlation coeff. With the EU 15 (Total)*	Correlation coeff. With the EU 15 (Female)	Correlation coeff. With the EU 15 (Male)
Bulgaria (BG)	0,9671 (0,8898)	0,9666	0,9691
Cyprus (CY)	0,9834 (0,8816)	0,9883	0,9830
Czech Republic (CZ)	0,9815 (0,9103)	0,9673	0,9887
Hungary (HU)	0,9769 (0,8816)	0,9824	0,9603
Latvia (LV)	0,9784 (0,8965)	0,9602	0,9851
Romania (RO)	0,9976 (0,8786)	0,9958	0,9988
Slovakia (SK)	0,9453 (0,9525)	0,9367	0,9507
New member states	0,9757 (0,9122)	**0,9711**	**0,9889**

N.B.: * net earnings correlation coefficient is in brackets

The third hypothesis that the gender pay gap in NMS is approaching to the gender pay gap in the EU 15 was not proved. We could expect that statistically more important gender pay gaps are especially in new member states with gradually reducing tendency. This expectation was proved, neither. High gender pay gaps can be equally found among old member states as among NMS. Gender pay gaps are influenced by long term situation in labour markets, specificities of labour force, traditions and some other subjective aspects in a country. We can observe an obvious clustering among countries maintaining similar level of gender pay gap. E.g. the highest gaps are traditionally in central Europe, i.e. the Czech

Republic, Austria, Germany and Slovakia as well as in Greece and Cyprus (up to 26%). The lowest gaps are typical for the triangle of neighbouring countries; Italy, Slovenia and Malta (3,2-6,9%). Scandinavian countries (Norway, Finland and Denmark) maintain approximately the same gender pay gap. Poland, Lithuania and Latvia as well as France, Spain and Portugal have they gender pay gaps from 10 up to 16%. Situation is depicted in Fig. 4.

Figure 4: Gender Pay Gaps in the European Union, 2009



Conclusion

Despite numerous differences and specificities in European countries labour market, we can confirm a certain transmission process among chosen phenomena. If employment is increasing in Western European countries, it is gradually increasing also in Central and Eastern European countries. In long term, mimicking of NMS towards EU15 is even stronger. However, gender pay gap evolution is rather regional phenomenon.

Homogeneity of the EU labour markets should contribute to more successful integration process and higher or more adequate labour mobility. Sufficient labour mobility can increase sustainability of the European Union and the euro area and not only from the point of view of optimum currency area.

References

[1] Burda, Michael. 1998. "The Consequences of EU Enlargement for Central and Eastern European Labour Market" *Center for Economic Policy Research*.

[2] European Parliament. 2011. Nemecko a Rakúsko konečne otvorili pracovný trh 8 novým krajinám. 4.5.2011. Available at: http://bratislava.adagio4.eu/view/sk/press-release/news/news-2011/news-2011-May/news-2011-May-7.html;jsessionid=39A1ABCF58B1786A489CAEA09C055D92

[3] Eurostat, 2011. Employment (main characteristics and rates) - Annual averages. Available at: http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=lfsi_emp_a&lang=en

[4] Eurostat, 2011. Unemployment rate, annual average, by sex and age groups. Available at: http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=une_rt_a&lang=en

[5] Eurostat, 2011. Gender pay gap in unadjusted form in % - NACE Rev. 2. Available at: http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=earn_gr_gpgr2&lang=en

[6] Gang, Ira; Rivera-Batiz, Francisco and Yun, Myeong-Su. 2002. „Economic Strain, Ethnic Concentration and Attitudes Towards Foreigners in the European Union" *Rutgers University Department of Economics Working Papers.*14: 1-39

[7] Gang, Ira; Stuart, Robert and Yun, Myeong-Su. 2006. „Wage Growth and Inequality Change During Rapid Economic Transition" *Rutgers University Department of Economics Working Papers.* 31: 1-45

[8] Irish Times. 2011. Call for minimum wage as Germany and Austria open labour markets. 2.5.2011. Available

at:http://www.irishtimes.com/newspaper/finance/2011/0502/1224295867671.html

[9] Maliková, Zuzana. 2010. "European Integration and Position of Women in Business Enterprise Sector (BSE)", *Journal of Women´s Entrepreneurship and Education (JWE)*, Institute of Economic Sciences, no. 3-4, 2010, pages 7-17

[10] Mundell, Robert A. 1961. "A Theory of Optimum Currency Areas," *American Economic Review*, November 53: 657–665

A P S T R A K T

U ovom radu razmatra se ideja homogenosti tržišta rada Evropske unije sa aspekata zaposlenosti, nezaposlenosti, zarada, kao i razlika u zaradama izmedju polova. U skladu sa procedurom integracije unutar Evropske unije i značaja međusobne trgovine, mobilnosti kapitala i radne snage, može se očekivati da će se pojave na tržištu rada postepeno prenositi iz zemalja Zapadne Evrope u nove zemlje članice. Ovaj rad dokazuje da su određene stope na tržištu rada slične unutar evropskih zemalja. Međutim, tendencije u pogledu nezaposlenosti, zaposlenosti i zarada se delimično prenose na nove zemlje članice, i to kako posebno za žene i muškarce, tako i za ukupne pokazatelje. Ipak, fenomen razlika u zaradama prema polu se ne prenosi na isti način. Pre možemo primetiti grupisanje po pitanju razlika u zaradama među polovima po pojedinim evropskim regionima, mišljenje je autota.

Rad je pripremljen u okviru projekta VEGA 1/0973/11.

KLJUČNE REČI: *transmisija tržišta rada, Evropska unija, razlika zarada prema polu, zaposlenost, nezaposlenost*

Article history: Received: 9 July 2011

Accepted: 26 September 2011