

## **YOUTH UNEMPLOYMENT IN THE MEMBER STATES OF THE EUROPEAN UNION**

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### **Abstract**

A long lasting unemployment and underemployment of youth European generation can be in the future associated with high social and economic costs threatening the essentials of our societies. In some EU Member States, more than half of the young people who want to work are unemployed, young people faces difficulties finding a suitable job. In 2008 more than 16.77 million men and women in the EU were unemployed, but due to the crises the number of unemployed persons increased to 25.25 million in 2012. The total unemployment rate reached 10.5 % in 2012, the youth unemployment stood at 23 % in the same period of time. The gap between the countries of the EU with the highest and the lowest youth unemployment rates increased from 17.2 percentage points in 2007 to 47.2 percentage points in 2012. The divergence trend of the youth unemployment rate between the countries is a very negative signal for young European generation.

**Key words:** unemployment, youth unemployment rate, European Union, economic crises

**JEL Code:** J64, C10, J21

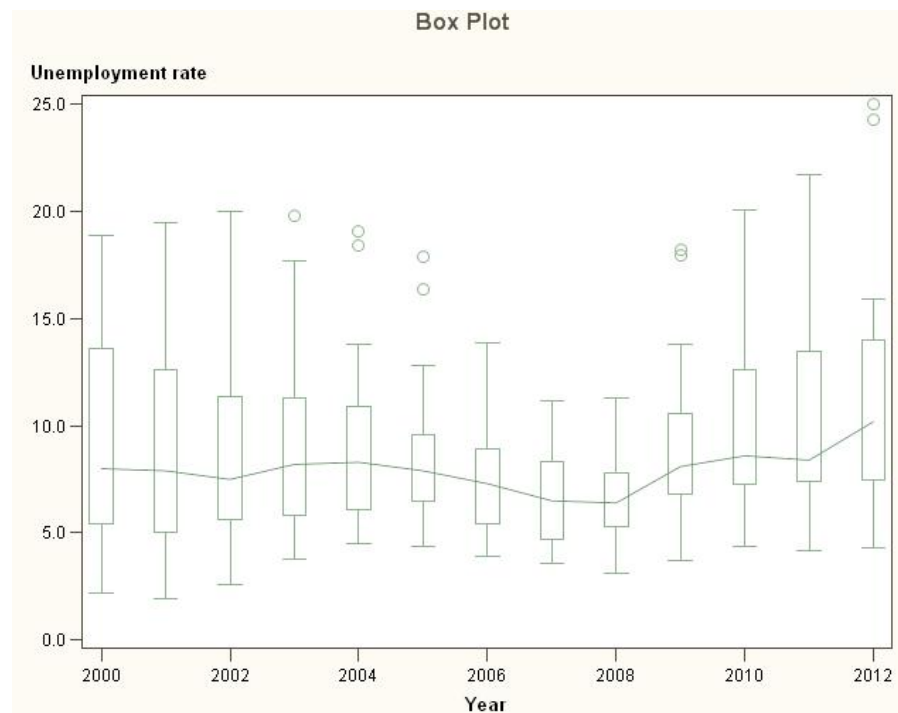
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### **Unemployment in times of crisis**

The economies of the EU Member States have entered recession in 2008 and as a consequence of this situation also the labour market of the Member States began a rapid deterioration. An unemployed person is defined by Eurostat as: i) someone aged 15 to 74 (in Italy, Spain, the United Kingdom, Iceland, Norway: 16 to 74 years); ii) without work during the reference week; iii) available to start work within the next two weeks; iv) actively having sought employment at some time during the last four weeks. The unemployment rate is the number of people unemployed as a percentage of the labour force. The labour force or economically active population includes both employed and unemployed people, but not the economically inactive, such as pre-school children, school children, students and pensioners. Unemployment rates move in a cyclical way, related to the overall business cycle.

The unemployment is rising at a slower pace in some of the EU economies, but unemployment rose significantly in Spain, Ireland, Greece, Lithuania, Latvia, and Cyprus. Especially the unemployment of young people increased rapidly. In many cases prediction of unemployment would help to plan fiscal policy, programs of active employment policy and other tools of social politics (Miskolczi – Langhamrová – Fiala, 2011). In 2008 more that 16.77 million men and women in the EU-27 were unemployed. Due to the crises the number of unemployed persons increased to 25.25 million in 2012. The total unemployment rate rose from 7.1 % in 2008 to 10.5 % in 2012 (see *Fig. 1* for the latest development of the unemployment including median rate of the unemployment rate). Among the Member States, the lowest unemployment rates in 2012 were recorded in Austria (4.3 %), Luxembourg (5.1 %), Netherlands (5.3 %) and Germany (5.5 %), and the highest rates in Spain (25.0 %), Greece (24.3 %), Portugal (15.9 %). Compared with year 2008, the highest increases in unemployment rate were registered in Spain (11.3 % to 25 % between 2007 and 2012), Greece (7.7 % to 24,3 %), Ireland (6.4 % to 14.7 %) and Lithuania (5.3 % to 13.3 %). Unemployment brings considerable economic and non-economic losses to individuals but also the whole society (Pavelka, 2011).

**Fig. 1: Box-Plot of the unemployment rates in the EU including Croatia**



Source: Author's calculations using Eurostat Statistics Database

The Box-Plot figure is a very useful tool to discover not only the total (average) level of the unemployment rate in the EU, but we can see in the figure also some more detailed structure of the analysed data through their quartiles. Using this graphical tool it was also discovered that in some year the unemployment rates in some EU Member States were identified as outliers, these extremely high or extremely low data are plotted as individual points. For example the unemployment rates in 2012 were in Greece (24.3 %) and in Spain (25 %) as high, that this data were plotted as individual points, which means that the unemployment rate in these two countries was extremely high and according to the box-plot chart these two unemployment rates were presented as outliers.

## 1 Youth unemployment

Youth unemployment includes all the youth (people between the ages of 15 and 24, inclusive) who are unemployed. Youth unemployment rate is the percentage of the unemployed in the age group 15 to 24 years old compared to the total labour force in that age group<sup>1</sup>. In 2012, 5.55 million young persons (under 25) were unemployed in the EU-27 compared to 4.2 million in 2008. Youth unemployment has a profound impact on individuals as well as on society and the economy. Unless current trends are reversed quickly, today's levels of youth unemployment risk damaging the longer-term employment prospects for young people, with serious implications for future growth and social cohesion<sup>2</sup>.

Unemployment rate in European Union (EU 27 and Croatia) stood at 10.5 % in 2012, but the youth unemployment rates stood at 23 % in the same period of time. In 2012 the lowest youth unemployment rates were observed in Germany (8.1 %), Austria (8.7 %) and the Netherlands (9.5 %), and the highest in Greece (55.3 %), Spain (53.2 %), Croatia<sup>3</sup> (43.0 %), and Portugal (37.7 %).

Young people hold the key to Europe's future dynamism and prosperity. Their talents, energy and creativity will help Europe to grow and become more competitive as we move beyond the economic and financial crisis. Yet young people have been hit particularly hard by the crisis<sup>4</sup>. Young people are the social group that is most affected on the labor market by the economic crisis. The youth employment crisis, considerably aggravated by the global economic and

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<sup>1</sup> [http://epp.eurostat.ec.europa.eu/statistics\\_explained/index.php/Glossary:Youth\\_unemployment\\_rate](http://epp.eurostat.ec.europa.eu/statistics_explained/index.php/Glossary:Youth_unemployment_rate)

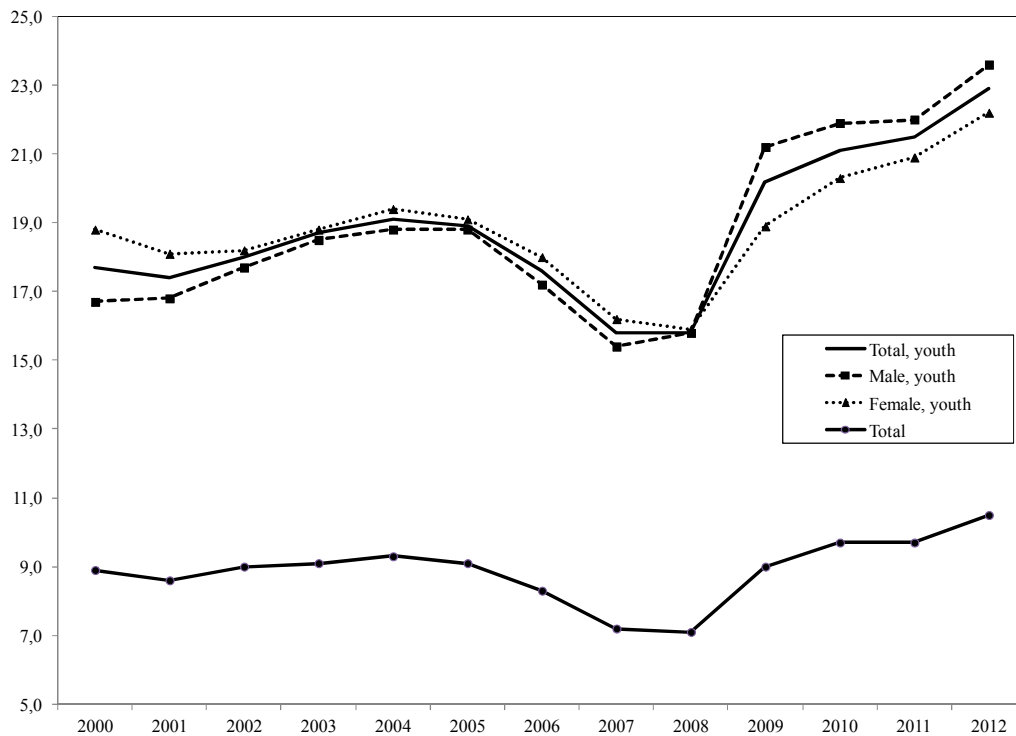
<sup>2</sup> Working together for Europe's young people, A call to action on youth unemployment, European Commission, 2013

<sup>3</sup> Croatia is set to become the EU's 28th Member State on 1 July 2013

<sup>4</sup> Working together for Europe's young people, A call to action on youth unemployment, European Commission, 2013

financial crises, now requires governments, employers and workers to work ever harder to promote, create and maintain decent and productive jobs<sup>5</sup>. The youth employment crisis is a global challenge. Historically, well educated young people have a better change to be employed in the future. At present the power influencing human future is ascribed to education and its quality (Čonková – Závadský, 2011). The education level is also significant from the point of view of the future income boundary and achievable living standard. According to Langhamrová – Bílková (2011) the wealth and living standards of people living in a country or region reflect among other things, the amount of their income. Long-term unemployment and low education level have significant impacts on poverty levels (Želinský – Stankovičová, 2012).

**Fig. 2: Total unemployment rates and youth unemployment rates in EU (including Croatia)**



Source: Author's calculations using Eurostat Statistics Database

Historically, women have been more affected by unemployment than men. In 2000, the youth unemployment rate for women in the EU was around 18.8 %, while the rate for men was 17.7 % (see Fig. 2). The gap between the unemployment rates began to narrow and between 2002

<sup>5</sup> The youth employment crisis: A call for action, ILO, 2012

and 2007 the gap remained constant. In 2008 when the rates were at their lowest levels the male and female youth unemployment rates in the EU have converged. Since 2009 the male unemployment rate is higher than the youth unemployment rate of female. The rapid increase in male unemployment rate could be explained mainly to a very negative development of some industries (heavy industry) and also construction sector of the economies in times of recession that mainly give jobs to male rather than female. It means that more man loses their jobs during the crises and so in last year's the male youth unemployment rate is higher than the female youth unemployment rate.

Not only young people have problems with getting a job. According to Wagnerová (2012) in Czech Republic the labour market is not capable to employ adequately elder individuals and so many of them go three years before qualifying for a regular pension to an early retirement.

## 2 Divergence of the youth unemployment rate across EU Member States

In some EU countries, more than half of the young people who want to work are unemployed. Youth unemployment rates are generally much higher than unemployment rates for other age groups, that means that young people faces difficulties finding a suitable job.

**Tab. 1: Elementary statistics of the youth unemployment rates in the EU (including Croatia)**

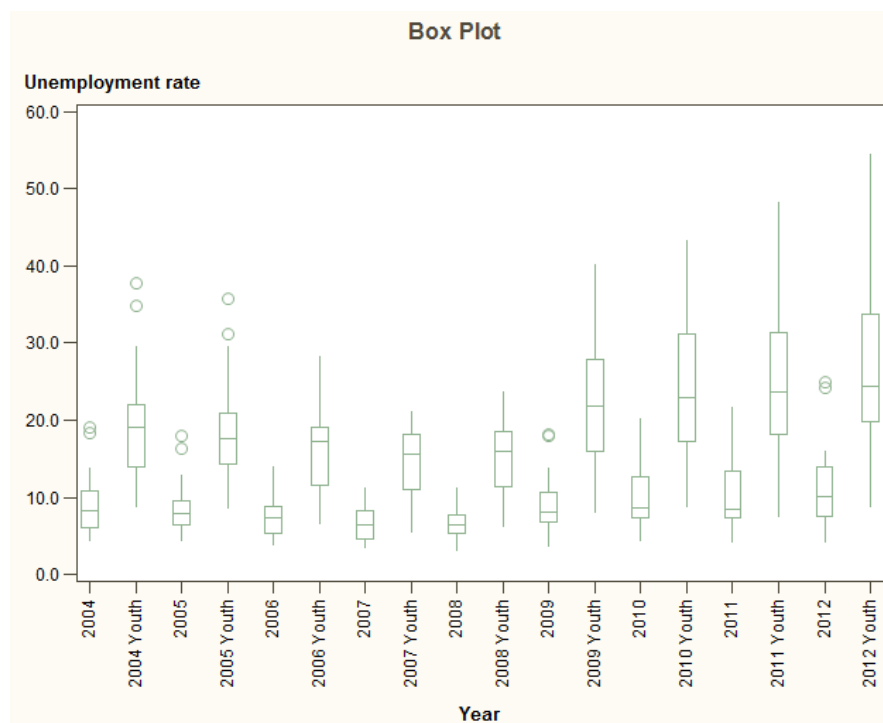
The MEANS Procedure					
Variable	Minimum	Maximum	Range	Median	Coeff of Variation
2000	5.30	37.30	32.00	16.85	55.06
2001	5.00	40.10	35.10	17.20	57.38
2002	5.40	42.50	37.10	17.15	53.35
2003	7.30	41.90	34.60	18.45	44.60
2004	8.20	39.60	31.40	20.40	39.06
2005	8.60	36.90	28.30	19.35	36.30
2006	7.50	29.80	22.30	17.70	37.04
2007	6.80	24.00	17.20	14.95	34.99
2008	6.30	24.60	18.30	15.75	32.91
2009	7.70	37.80	30.10	21.70	35.27
2010	8.70	41.60	32.90	23.00	38.05
2011	7.60	46.40	38.80	22.80	40.83
2012	8.10	55.30	47.20	24.00	45.46

Source: Author's calculations using Eurostat Statistics Database

The gap between the countries with the highest and the lowest youth unemployment rates is extremely high. In 2012 there was a gap of 47.2 percentage points between the Member States with the lowest and the highest rate of youth unemployment – the lowest level was reached in

Germany and the highest level in Greece. The same difference in 2000 reached 32.0 percentage points, with the lowest level in Austria and the highest level in Slovakia, and in 2007 the gap was only 17.2 percentage points – the lowest youth unemployment rate was reached in this year in Lithuania and the highest in Croatia. After some years of a positive convergence of the youth unemployment rates between the lowest and the highest rates we can see a very negative trend nowadays, when this difference is again very high and the difference show a negative divergence trend beginning in 2008. That is visible from the box-plot chart (see *Fig. 3*) where the range between the first and the third quartiles is increasing since 2008 and also the whiskers of the plots, which represents the minimum and maximum (in case of nonexistent outlier) of all of the datasets are extremely high since 2009.

**Fig. 3: Box-Plot of total and youth unemployment rates in the EU including Croatia**



Source: Author's calculations using Eurostat Statistics Database

A growing variability of the youth unemployment rates is visible also from the changing coefficient of variation. The coefficient of variation was at a level of 32.9 in 2008, but in 2012 the variability measured using this statistics reached 45.5. Both statistics show an unacceptable divergence of the youth unemployment rates amongst the Member States. Fifty percent of the Member States had a youth unemployment rate at the level of 14.95 % and

lower in 2007, the situation in youth unemployment changed dramatically in time of crisis and so the median increased to 24.0 % in 2012. The analysis of youth unemployment could be done separately for the regions of the EU Member States. To obtain a more comprehensive view about the labour markets is appropriate to analyse the unemployment rate in each region (Löster – Langhamrová, 2012).

### 3 Correlation and regression analysis of the total unemployment rates and the youth unemployment rates

Unemployment is one of the basic indices, which evaluates the economy. It is not only for this reason that great attention is paid to unemployment and its extent by many economists and analysts (Löster – Langhamrová, 2011). To define whether there is a statistically significant linear relationship between the total unemployment rate and the youth unemployment rate the Pearson correlation coefficient  $r_{xy}$  was calculated. The results are presented in Table 2. As it was expected a very strong and positive linear dependence of these two measures was discovered. The coefficient of correlation between the total unemployment rate and the youth unemployment rate for female sex was a bit higher ( $r_{xy} = 0.95$ ) than for male sex ( $r_{xy} = 0.93$ ), both coefficients are statistically highly significant ( $p < 0.0001$ ).

Due to the strong linear relationship between the two selected indicators a linear regression was produced with one dependent variable – youth unemployment rate and one explanatory variable of total unemployment rate.

**Tab. 2: Correlation analysis of the total and youth unemployment rates (F – female, M – male)**

Pearson Correlation Coefficients, N = 28 Prob >  r  under H0: Rho=0	
	UR Total, F
	0.94757
Youth UR, F	<.0001

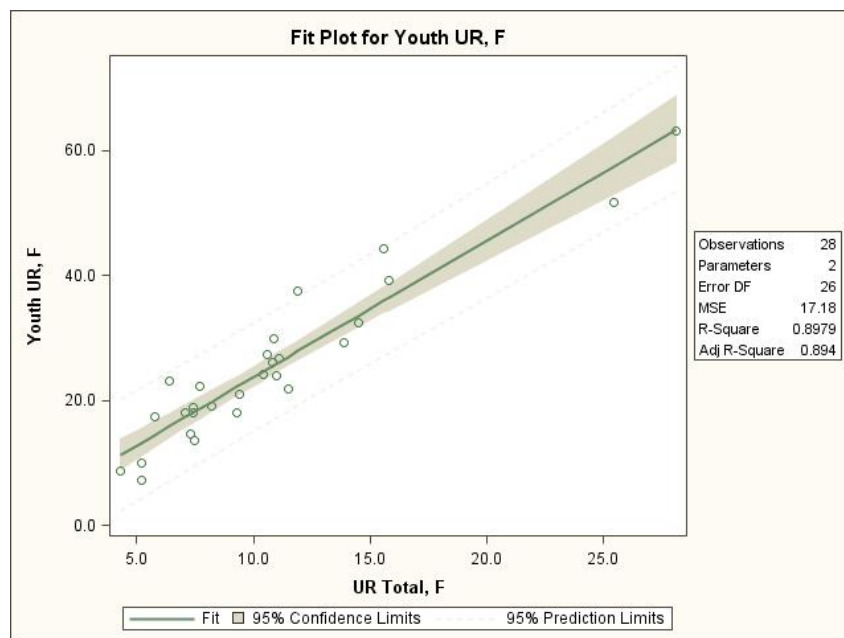
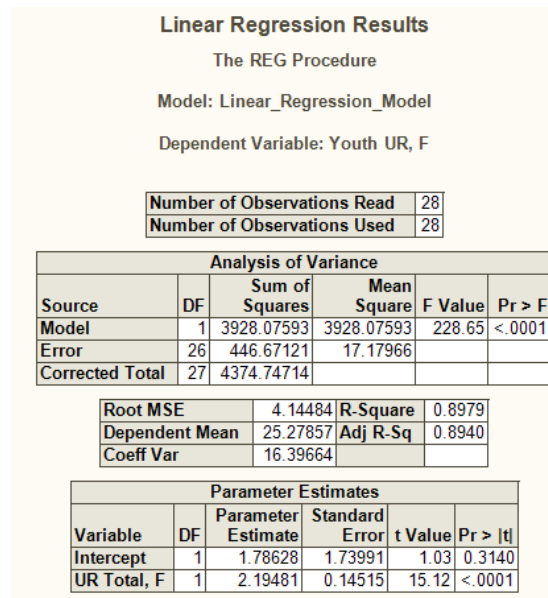
Pearson Correlation Coefficients, N = 28 Prob >  r  under H0: Rho=0	
	UR Total, M
	0.92723
Youth UR, M	<.0001

Source: Author's calculations using Eurostat Statistics Database

The linear regression was again calculated separately for both sexes. Figures 4 and 5 present the results of the regression analysis. The regression model for the female sex had a

coefficient of determination (*R squared*,  $R^2$ ) equal to 0.9, and the same model for male sex reached a coefficient of determination equal to 0.86. Both  $R^2$  coefficients are very high, it means that the observed figures are very good replicated by the model, as the proportion of the total variation of outcomes is very well explained by the linear model.

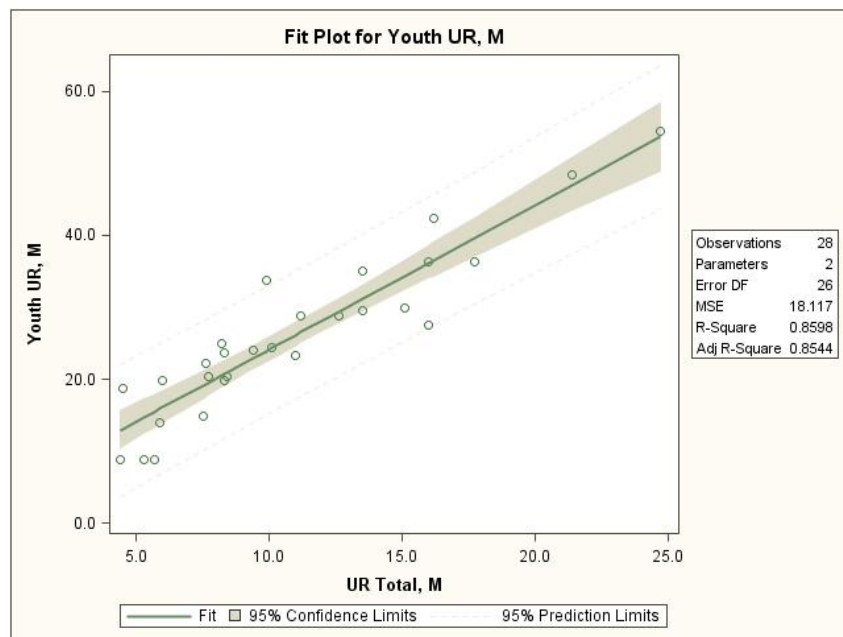
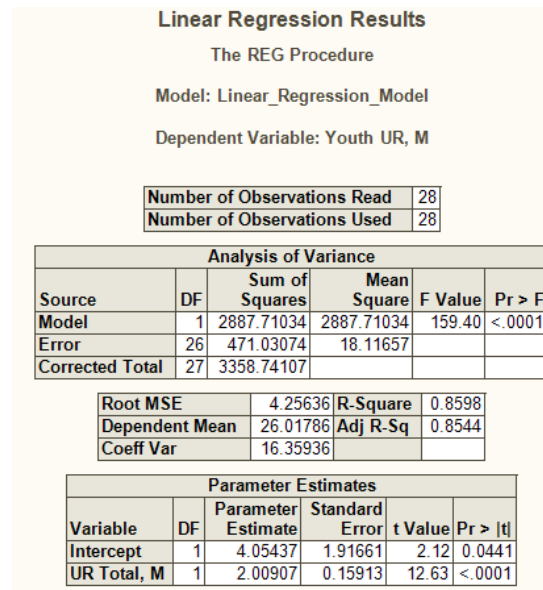
**Fig. 4: Regression analysis of the unemployment rates - females**



Source: Author's calculations using Eurostat Statistics Database



**Fig. 5: Regression analysis of the unemployment rates - males**



Source: Author's calculations using Eurostat Statistics Database

According to the outcomes of the regression equation the dependent variable youth unemployment rate can be predicted by the total unemployment rate at the following way: when the total unemployment rate of female sex goes up by one (one percentage point) the youth unemployment rate of female is predicted to increase by 2.19 percentage points. The male youth unemployment rate is predicted to increase 2.0 percentage points when the total male unemployment rate variable goes up by one percentage point. These regression

outcomes between the total and youth unemployment rates are very negative, because they explain a strong positive relationship of the selected variables and discovered that an increase in total unemployment rate by 1 percentage point will cause a strong increase in youth unemployment rates by about 2 percentage points. Youth education should help to change the negative trend in youth unemployment. It can be assumed that there will be further growth in the level of education of the population. The decline of the proportion of people with only primary education will continue, while conversely the proportion of people with tertiary education will increase several-fold (Fiala – Langhamrová – Miskolczi, 2012).

## **Conclusion**

High and rising unemployment rate of young people is a very actual phenomenon across the Member States of the EU and can be solved with help of the Commission. The Commission already proposed measures to help Member States tackle youth unemployment and social exclusion. Youth Employment Package includes the recommendation to launch a Youth Guarantee in every country, according to which Member States should ensure that all young people up to age 25 receive a good quality offer of employment, continued education, a traineeship within four months of leaving formal education or becoming unemployed. This will require structural reforms and to set the employment of youth as a priority of the national policy makers across the EU Member States.

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## **References**

- Čonková, M. & Závadský, C. (2011). Quantitative population analysis as the factor of the qualitative evolution of the higher education. In *International Days of Statistics and Economics. Conference Proceedings*. ISBN 978-80-86175-77-5. pp. 127 – 135.
- European Commission. (2013). Working together for Europe's young people, A call to action on youth unemployment. Brussel, COM(2013) 447 final.
- Fiala, T. & Langhamrová, J. & Miskolczi, M. (2012). Future development of the education level of the population of Czech regions. In *The 6<sup>th</sup> International Days of Statistics and Economics. Conference Proceedings*. ISBN 978-80-86175-86-7. pp. 384 – 394.

- International Labour Office. (2012). The youth employment crisis: A call for action. ILO, Geneva. Resolution and conclusions of the 101<sup>st</sup> Session of the International Labour Conference. ISBN 978-92-2-126492-7.
- Langhamrová J. & Bílková, D. (2011). Analysis of the distribution of income in recent years in the Czech Republic by region. In *International Days of Statistics and Economics. Conference Proceedings*. ISBN 978-80-86175-77-5. pp. 286 – 297.
- Löster, T. & Langhamrová, J. (2011). Analysis of long-term unemployment in the Czech Republic. In *International Days of Statistics and Economics. Conference Proceedings*. ISBN 978-80-86175-77-5. pp. 307 – 316.
- Löster, T. & Langhamrová, J. (2012). Disparities between regions of the Czech Republic for non-business aspects of labour market. In *The 6<sup>th</sup> International Days of Statistics and Economics. Conference Proceedings*. ISBN 978-80-86175-86-7. pp. 689 – 702.
- Miskolczi, M. & Langhamrová, J. & Fiala, T. (2011). Unemployment and GDP. In *International Days of Statistics and Economics. Conference Proceedings*. ISBN 978-80-86175-77-5. pp. 407 – 415.
- Pavelka, T. (2011). Long term unemployment in the Czech Republic in comparison with the other countries of the European Union. In *International Days of Statistics and Economics. Conference Proceedings*. ISBN 978-80-86175-77-5. pp. 481 – 489.
- Wagnerová, I. (2012). Employment of persons 55+. In *The 6<sup>th</sup> International Days of Statistics and Economics. Conference Proceedings*. ISBN 978-80-86175-86-7. pp. 1218 – 1227.
- Želinský, T. & Stankovičová, I. (2012). Spatial aspects of poverty in Slovakia. In *The 6<sup>th</sup> International Days of Statistics and Economics. Conference Proceedings*. ISBN 978-80-86175-86-7. pp. 1228 – 1235.
- Statistics Database. Eurostat (2013). Retrieved from [http://epp.eurostat.ec.europa.eu/portal/page/portal/statistics/search\\_database](http://epp.eurostat.ec.europa.eu/portal/page/portal/statistics/search_database).
- Statistics Explained. Glossary. Eurostat (2013). Retrieved from [http://epp.eurostat.ec.europa.eu/statistics\\_explained/index.php/Glossary:Youth\\_unemployment\\_rate](http://epp.eurostat.ec.europa.eu/statistics_explained/index.php/Glossary:Youth_unemployment_rate).

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