



Macroeconomic Prognosis of Employment in the Czech Republic

Daniel Toth^{1*}, Lenka Kučirková²

¹Department of Management, Masarykův Ústav Vyšších Studií, ČVUT, Kolejní 2, 160 00 Praha 6, Czech Republic, ²Department of Languages, Faculty of Economics and Management, Czech University of Life Sciences Prague, Czech Republic.

*Email: daniel.toth@cvut.cz

ABSTRACT

The article is focused on employment policy in the Czech Republic, its success and development, stated goals, and whether it is possible to reach 75% employment by 2020. In the context of comparison with another country, Austria has been chosen. Total employment, women's employment, men's employment and age groups from 55 to 64 years will be compared. Employment is a comprehensive indicator, which requires economic and social definition. For prognosis processing, the ordinary least squares (OLS) method, so called OLS, was used. Multiple regression analysis generates a regression econometric equation which could be, after the substitution of variables, used as an instrument of the prognosis of employment development for medium term forecasts. The OLS econometric model requires an econometric verification, which shows the conditions under which the model works and is valid.

Keywords: Employment, Prognosis, Macroeconomics

JEL Classifications: C53, E27, J01, J23

1. INTRODUCTION

An active employment policy has been in development in the Czech Republic since 1990. Its aim has been to support the functioning of the labor market through job mediation which, together with labor offices, provides the information on job vacancies (Večerník, 2006). The Czech Republic and other European Union member states have set targets relating to the increasing of the overall employment rate and the employment of women and workers in the age of 55-64 years, as well within the Europe 2020 Strategy. Based on the document of the Employment Policy in 2020, the Czech Republic has set a goal that total employment will reach 75% (age group 20-64 years). The main priorities are the following: Promoting access to employment; gender equality on the labor market; adaptation of enterprises, employees and the unemployed to the changes and needs on the labor market; development of employment services (Hančlová, 2002). In 2014, the rate of employment reached 73.5% (men - 82.2%, women - 64.7%), compared to 2013, it increased by 1% - the total employment reached 72.5% (men - 81.0% women - 63.8%) (Czso, 2015). While

the employment rate seasonally adjusted reached 69% (men - 77%, women - 60.7%) (Casario et al., 2016) in 2014, compared to 2013, it increased by 1.3% (VUPSV, 2014). Employment in the Czech Republic in many cases is affected by foreign direct investments and mobility of foreign capital which influences stock markets in countries and the expectation of investors (Maitah et al., 2014; Maitah et al., 2015; Smutka et al., 2014).

2. METHODOLOGY AND OBJECTIVE

In order to achieve the stated objectives of active employment policy, it is necessary to focus on labor market requirements and on candidates for a particular job, i.e., motivation and willingness to adapt etc., for groups that are the most vulnerable on the labor market, it is necessary to create such conditions that increase their chances, e.g., advisory services or training courses (VUPSV, 2015). Various retraining courses and public work are some of the tools of an active employment policy (Bakule, 2014). Qualification is not limited to educational attainment, nowadays, it is possible to be educated even on the job. Unskilled workers are easily

replaceable, and their chances of finding another job are limited compared to skilled workers (Maitah et al., 2016). Using part-time jobs, which is not so usual in the Czech Republic, can help toward greater economic activity. A negative side is usually the reluctance of employers caused by an economic disadvantage and low part time wages as well (Bhatarai, 2016). One of the causes of lower employment is also higher social income, which is in some cases higher than the minimum wage. It is possible to increase the motivation to take a job through the reduction of various benefits. If employment increases, the tension in the society may be reduced (EUROSTAT, 2015).

The predominant source of secondary data for the own work is the Ministry of Labor and Social Affairs and the Czech Statistical Office. These data are the annual averages of time series and are publicly accessible. The statistical program of Statistica, version 12 and Gretl software will be used for data processing. In conclusion, there will be used the method of interpretation and comparison. Time series is a sequence of materially and spatially comparable data that strictly keep the influence of time in the direction past - present:

Y_1, Y_2, \dots, Y_n
 Y_t , where $t = 1, 2, \dots, n$
 Y = Indicator
 t = Time variable

The time series analysis is a set of methods which describe these systems and which are used for the understanding of a mechanism, conditions and relations of the arousal of these values, for the anticipating of the future behavior or for the simulation by means of a model. Time series breakdown expresses the difference in the content of monitored indicators. On that basis, we distinguish: (1) Temporal aspect, when interval time series and instantaneous time series are distinguished. Interval time series contain the data for a period of time. Instantaneous time series are comprised of the data which are found out as to a certain point of time, (2) periodicity aspect, which expresses with what regularity the monitored indicators in time series are observed - short term time series, medium term and long term ones, (3) kinds of monitored indicators: Primary time series and derived time series, (4) way of expressing indicators for the series of monetary indicators and natural indicators.

The comparability of the data in a time series is possible if aspects of factual, spatial and temporal comparability are fulfilled. Characteristics are used for quick information about the nature and behavior of indicators development in the course of time. The basic method is the graphical analysis of the course of time series, together with elementary characteristics of time series. Elementary characteristics are divided into absolute and relative.

Absolute characteristics are as follows:

1. First difference (absolute increments).

$$dyt = yt - yt - 1$$

Where, $t = 2, 3, \dots, n$,

Characterizes an absolute increment or decrease of an examined indicator in a certain period against the period immediately preceding and,

2. Second absolute difference

$$d(2)yt = dyt - dyt - 1 = yt - 2yt - 1 + yt - 2$$

Where $t = 3, \dots, n$,

States if the following increment was higher or lower than the preceding one. Relative characteristics are as follows: Growth coefficient: $kt = yt/yt - 1$ where $t = 2, 3, \dots, n$, which expresses the relative gradual rate of change of values in time series. Through the expression of the growth coefficient in percentage, the growth rate is obtained. 2. Average growth coefficient, which is determined for the whole time series, and it is often defined as the geometric average of individual coefficients kt . For the purposes of the study, the relative characteristics of time series will mainly be used. It is also necessary to define the modeling of time series. The one-dimensional model is characterized by the fact that the sole factor of the indicator dynamics, which is accumulated in the time series, is time. The one-dimensional model is accessed in three ways: By a classical model, using the Box-Jenkins methodology and through a spectral analysis. According to the classical model, the time series is broken into the following components: Trend component, seasonal component, cyclical component and random component. A trend component shows the basic tendency in terms of a long term development of indicator values in the course of time. The trend component is either increasing, decreasing or constant. The seasonal component is a regularly repeated deviation from the trend. It is a consequence of the changing seasons. It occurs in the data with a periodicity shorter than 1 year. The cyclical component is the fluctuation around the trend in the long term cyclical development and at the intervals longer than 1 year. The random component represents random events. It arises after the elimination of the trend, seasonal and cyclical components and it cannot be described by the function of time. Time series have besides the classical one-dimensional model also the multidimensional model, in which the analyzed indicator is influenced not only by a time factor, but also by many other factors.

Using trend functions, it is possible to describe the development of examined indicators in the course of time. A linear trend, parabolic trend and an exponential trend can be included among simple trend functions. A typical common feature is the limitlessness of the growth. Trend functions as an exponential trend, logistic trend and Gompertz curve are suitable for modeling the economy. The decision about selecting a particular type of trend function is important, therefore, it is necessary to consider the following criteria: A graphical display and logical judgment, factual analysis of researched economic phenomenon, an approximation of a time series development by several functions, comparing the size of the residual deviations, parameters of the trend function (index determination and correlation). In practice, the method of extrapolation of time series is the most widely used method for predicting. The principles of an extrapolation method are based on a deterministic principle which says that the future is based on the present. The method in the construction of classic models has a number of advantages: Simple theoretical and numerical terms, the data on the past development of the phenomenon are sufficient for the prediction, the dependent variable is the

forecasted variable, for its use it is possible to use software, there is no need to forecast other phenomena.

3. RESULTS AND DISCUSSION

Men's employment in the Czech Republic is relatively high, within available Eurostat data (18/06/2015) for the first quarter of 2015, the United Kingdom with men's employment of 77.1% and the Netherlands with 78.5% show higher employment. Men's employment in Austria and in the Czech Republic does not show such differences as women's employment. Although in the above table there is a visible decline between stated countries, the men's employment rate from the fourth quarter of 2013 in the Czech Republic is higher than in Austria. Out of 7% employees working overtime, Czech men make 11% share (OECD, 2016). In order to determine the impact of exogenous variables on employment an econometric model was constructed. It is a single-equation model for which the employment rate depending on the amount of savings, taxation rate, inflation rate, gross domestic product, the amount of direct foreign investments and on the number of job applicants per vacancy was chosen. The time series 2002-2014 was chosen.

Endogenous variable is the rate of employment. The amount of savings, taxation rate, inflation rate, gross domestic product, the amount of direct foreign investments and the number of applicants per vacancy are exogenous variables. For the calculation of the econometric model, the Gretl software was used. The model assumes that increasing gross domestic product and the state of direct foreign investments will lead to the growth of employment. Furthermore, it is assumed that the increase in the savings rate, inflation rate, taxation rate and the number of job applicants per vacancy will lead to the decline of employment. The application of the econometric model assumes the formulation of the economic model in the form of: $y_1 = f(x_1, x_2, x_3, x_4, x_5)$, or $y_{1t} = \gamma_1 x_{1t} + \gamma_2 x_{2t} + \gamma_3 x_{3t} + \gamma_4 x_{4t} + \gamma_5 x_{5t} + u_{1t}$. Furthermore, it is necessary to declare variables.

- y_{1t} : Rate of employment (%/year), dependent variable,
- x_{1t} : Amount of savings (thousands CZK/person/year), independent variable,
- x_{2t} : Rate of corporate income tax (%/year), independent variable,
- x_{3t} : Inflation rate (%/year), independent variable,
- x_{4t} : Amount of gross domestic product (CZK/year), independent variable,
- x_{5t} : Direct foreign investments in the Czech Republic (millions CZK/year) independent variable,
- x_{6t} : Number of job applicants per one vacancy (as to 31st December of a given year) independent variable,
- x_{7t} : Constant (unit vector), independent variable,
- u_{1t} : Stochastic variable, random component of the equation,
- γ : Parameter used with x variables.

The underlying table was created from the data from 2002 to 2014, which are freely accessible on the website of the Czech Statistical Office and the Statistical Office of the European Communities. These data include the description from which the arithmetic average for unsorted data, characteristics of variability and extreme

values on both poles of observation can be seen. The table shows that the average employment rate is 71.41%.

The difference between the maximum and minimum value is higher, thus it can be concluded that the employment rate has changed. The standard deviation is not too small, the data from observations and an overall average are a little different. The presence of multicollinearity was determined using a correlation matrix. The correlation matrix for the raw data shows the high multicollinearity between exogenous variables, namely between the amount of gross domestic product and the rate of corporate income tax and between the amount of direct foreign investments and the rate of corporate income tax.

This multicollinearity can be solved by either omitting the variable which causes the multicollinearity or by modifying their values. The adjustment of values by means of differentiated variables was selected. Using a new correlation matrix, which is stated in the Table 1, the presence of multicollinearity was not proven.

The calculation of econometric model parameters will be performed using the method of ordinary least squares (OLS), when the smallest sum of residues is searched. The Gretl software is used for the calculation. The equation for the OLS calculation is:

$$\gamma = (X^T X)^{-1} X^T y$$

After importing the input data into the software, the OLS model was chosen. The model output shows the estimated parameters for a significance level of $\alpha = 0.05$. The whole output is shown in the Table 2.

Parameters are calculated in the column of a coefficient and based on them, the econometric model has its shape:

$$Y_{1t} = -0.511088x_{1t} - 0.230309x_{2t} - 0.190268x_{3t} + 0.0000771282x_{4t} + 0.00000895025x_{5t} - 0.265004x_{6t} + 80.1392 + u_t$$

After calculating the econometric model, it needs to be verified whether the parameters are in accordance with the stated hypotheses before its application. Economic, statistical, econometric and mathematical characteristics are verified. Then economic model verification follows. During economic verification, the direction and intensity of exogenous variables on the endogenous variable is examined. Estimated parameters for each variable are as follows: $\gamma_1 = -0.511088$, $\gamma_2 = -0.230309$, $\gamma_3 = -0.190268$, $\gamma_4 = +0.0000771282$, $\gamma_5 = +0.00000895025$, $\gamma_6 = -0.265004$, $\gamma_7 = 80.1392$.

Table 1: Correlation matrix for unraw data

	y_{1t}	x_{1t}	x_{2t}	x_{3t}	x_{4t}	x_{5t}	x_{6t}
y_{1t}	1	-0.0494	-0.3180	0.1175	-0.0897	0.5325	-0.3246
x_{1t}		1	-0.0451	-0.0368	0.4152	0.2869	0.0765
x_{2t}			1	0.5849	-0.3050	-0.3216	-0.3961
x_{3t}				1	-0.2306	0.0427	-0.5242
x_{4t}					1	0.4658	0.8281
x_{5t}						1	0.2544
x_{6t}							1

Source: Own processing

Table 2: Model 2: OLS, using observations**2002-2014 (t=13)****Dependent variable: y_{1t}**

	Coefficient	Standard deviation	t-share	P-value
Constant	80.1392	5.11766	15.6594	<0.00001
x_{1t}	-0.511088	0.296449	-1.7240	0.13547
x_{2t}	-0.230309	0.227917	-1.0105	0.35126
x_{3t}	-0.190268	0.211263	-0.9006	0.40249
x_{4t}	7.71282e-05	5.0892e-05	1.5155	0.18042
x_{5t}	8.95025e-07	4.18294e-07	2.1397	0.07618
x_{6t}	-0.265004	0.108203	-2.4491	0.04985
Medium value of dependent variable				71.41538
Sum of squares of residues				2.745908
Coefficient of determination				0.755635
F (6, 6)				3.092243
Logarithm of credibility				-8.339757
Schwarz criterionw				34.63416
Rho (coefficient of autocorrelation)				-0.094374
Standard deviation of dependent variable				0.967683
Standard deviation of regression				0.676499
Adjusted coefficient of determination				0.511271
P-value (F)				0.097662
Akaike criterion				30.67951
Hannan-Quinn criterion				29.86666
Durbin-Watson statistics				1.814464

Source: Gretl software, own processing

Parameter γ_1 says if the amount of savings increases by 1% per year, the employment rate will increase by 0.511088%, ceteris paribus. Parameter γ_2 says if the corporate income tax rate increases by 1% the employment rate will decrease by 0.230309%, ceteris paribus. Parameter γ_3 expresses what happens if the inflation rate increases by 1%, the employment rate will decrease by 0.190268%, ceteris paribus.

Parameter γ_4 says when gross domestic product increases by CZK 1 per capita the employment rate will increase by 0.00000895025%, ceteris paribus. Consequently, when gross domestic product increases by CZK 10,000 per capita, the employment rate will increase by 0.00895025%. Parameter γ_5 says if the state of direct foreign investment increases by CZK 1,000,000 per year, so the employment rate will increase by 0.00000895025%, ceteris paribus. Parameter γ_6 says if the number of applicants per job grows by one candidate as to 31 December of a given year, the employment rate will drop by 0.265004%. The employment rate is, with a different strength, dependent on selected explanatory variables. Dependence direction corresponds to the economic theory and to logical reasoning, however, the intensity is relatively weak. Parameter γ_7 states that in case of zero values of independent variables, the employment rate will be at the level of 80.1392%, ceteris paribus. Econometric model assumptions were met. In statistical verification of the model, the statistical significance of estimated parameters and of the entire model is assessed.

From the above output of Gretl program, it follows that at the chosen significance level α of 0.05 three parameters are statistically significant: Constant, the number of applicants per job and the state of direct foreign investment in the Czech Republic. The coefficient of determination is approximately

equal to 0.7556. It can be stated that the endogenous variable is explained from 76% by exogenous variables. According to the result of P-value that is equal to 0.097662 which is not lower than $\alpha = 0.05$, the model cannot be declared statistically significant. It is necessary to observe the fundamental assumptions of a linear regression model. Here, residues autocorrelation, heteroscedasticity and normal distribution of random components are detected. To test the normality of residues the Jarque-Bera test was selected. The result of this test is shown in Graph 1. The results indicate that $P = 0.35462$, which is higher than selected $\alpha = 0.05$. From this, it is clear that it is a normal distribution of a random component.

The Breusch - Pagan test was chosen for heteroscedasticity testing. Heteroscedasticity is an undesirable phenomenon. According to the comparison of P-value, which was 0.507197, and α value of 0.05 the presence of heteroscedasticity has not been confirmed.

Autocorrelation of residues is undesirable in the model because when it occurs the statistical verification is distorted. Estimates should be impartial, consistent and best. For the detection of residues, the Breusch-Godfrey test for the autocorrelation of the first order was selected. The test result is shown in Table 3. P-value is compared with the α value for all test statistics ($0.678 > 0.05$), ($0.486 > 0.05$), ($0.724 > 0.05$). From the results, it is clear that in the model there is not present any autocorrelation of residues of the first order.

3.1. Prognosis and Future Employment Trends During the Years 2015-2020

The last partial objective is to analyze the development of selected elementary statistical indicators of time series and forecast the development of employment by 2020. According to the visual assessment of Graph 2, in the time series there are not suitable trends for modeling by classical trend functions. Adaptive forecasting models, namely exponential smoothing technique as described in the methodology, will be used. Data are calculated by dividing the number of employed persons aged 20-64 years by the total number of people in this age group.

Higher employment is shown in the Czech Republic for older workers in the age group 55-64 years with 54% in 2014, compared to 2013, it is an increase by 2.4% (2013-51.6%). While Austria has employment in the age group of 55-64 years, 45.1% for 2014, compared to 2013, it increased by 1.3% (2013-43.8%). In 2012, employment in the Czech Republic with the age group 55-64 years was 49.3%, in Austria it was 41.6% (EUROSTAT, 2015).

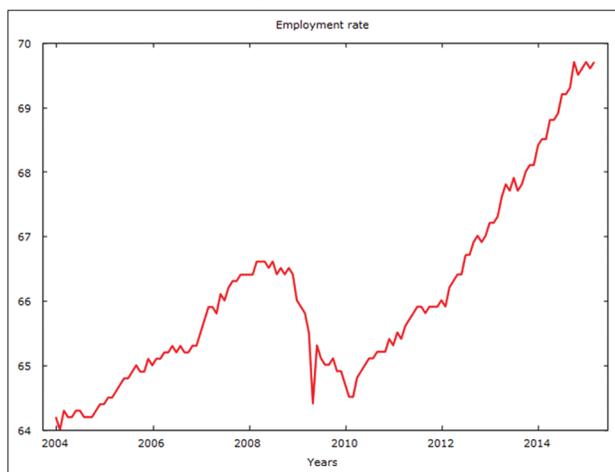
The Graph 3 shows the exponential average employment rate. The curve of the average employment rate was, in the course of the years 2000-2010, both rising and falling. Since 2010, the curve has had a rising trend. Smoothed series (in the graph it is shown by a red line) is the forecast for the years 2015-2020 In the graph there are recorded estimated values of the employment rate for the period 2015-2020. For 2015, the estimated value is 73.41524%. For the year 2016, the estimated value of employment rate was 73.42018%. For the year 2017, the employment rate of 73.42113% was predicted. In 2018, the employment rate should be 73.42132%.

Table 3: Gretl software output

	Coefficient	Standard deviation	t-share	P-value
Constant	80.1392	5.11766	15.6594	<0.00001
X _{1t}	-0.511088	0.296449	-1.7240	0.13547
X _{2t}	-0.230309	0.227917	-1.0105	0.35126
X _{3t}	-0.190268	0.211263	-0.9006	0.40249
X _{4t}	7.71282e-05	5.0892e-05	1.5155	0.18042
X _{5t}	8.95025e-07	4.18294e-07	2.1397	0.07618
X _{6t}	-0.265004	0.108203	-2.4491	0.04985
Coefficient of determination				0.755635
P-value (F)				0.097662

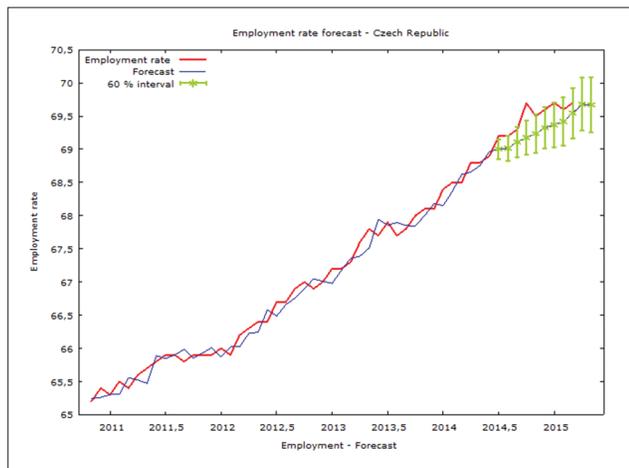
Source: Gretl software, own processing

Graph 1: Employment rate - Czech Republic



Source: Eurostat

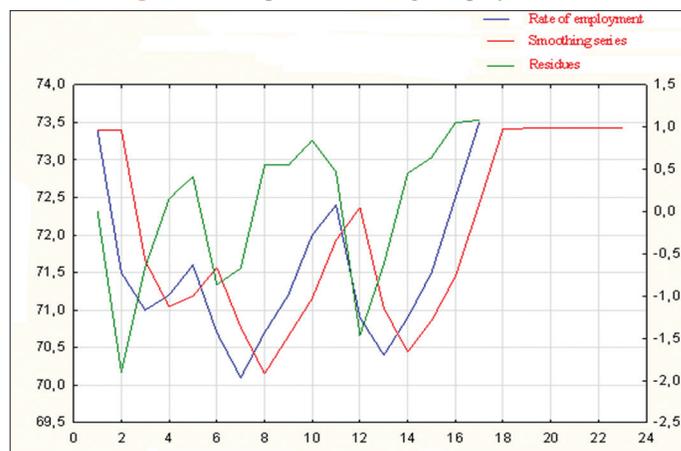
Graph 2: Employment forecast - Czech Republic



Source: Eurostat, own processing

For 2019, the estimated employment rate is 73.42136%. For 2020, the estimated employment rate is 73.42137%. According to Europe 2020 strategy, the national goal is the increasing of the employment in the age group of 20-64 years up to 75%. According to the above forecast, this target will not be met. According to the Statistical Yearbook of the labor market, in 2014, slight improvement on the labor market is expected, but in some months even worsening. Thus, the estimated values of an average employment rate can be realistic.

Graph 3: Development of average employment rate



Source: Software Statistica, version 12, own processing

4. CONCLUSION

The fact that the regions in the Czech Republic are very different in terms of population density, economic maturity and literacy is a significant factor for the development of employment. In order to comply with the Employment Policy Strategy by 2020 implemented through operational programs, the support from EU funds can be drawn. For the programming period of 2014-2020, it is about CZK 70 billion. A current labor market situation can be improved through more efficient utilization of the tools of active employment policy for problematic groups of registered job applicants, such as persons aged over 50, people without education or with primary education, graduates and the long-term unemployed. Using econometric model, the factors influencing employment rate were examined.

The above model says that the number of applicants per job and the state of direct foreign investments in the Czech Republic has the biggest impact on the employment rate. The employment rate is out of 76% explained by exogenous variables. Generally recommended variables were included into the model. The development of the employment rate is affected not only by the above mentioned factors, but also by many others that cannot be quantified. Based on an econometric model, it is recommended to create new jobs in order that the number of applicants per job would decrease and also to support the inflow of foreign investments into the Czech Republic. Regions with higher unemployment rates could be supported by bigger investment incentives directed at foreign investors who would create jobs for difficult to employ groups of applicants. An important part of the labor market should be the cooperation among employers, educational institutions and labor offices.

The number of reported job vacancies is growing, however, there are not suitable jobseekers. The structure of initial and further education should respond to market demands and in this way the saturation of candidates in specific fields would be avoided, and the flexibility of the labor market would be ensured. Solving the problem of education is seen in the support of employers' involvement into the lessons, in the capacity of specific schools and

fields of studies that should correspond to the expected placement of graduates and to the change of education financing. The state should pay more attention to small and medium entrepreneurs who are of a great potential for the growth of the national economy and creating new jobs. In the Czech Republic there is a significant proportion of entrepreneurs without employees (13.6%). Entrepreneurs who employ people on full-time jobs and also part-time jobs, in which women with children would be interested, should be supported. At the same time, entrepreneurs who have employees, but their economic situation is not stable, should be encouraged. For their support, the government of the Czech Republic included programs the aim of which is to maintain employment in the period of decrease in demand for products and services in the tools of active policy. The implementation of these instruments should be less administratively burdened and entrepreneurs should be encouraged to use them. Attention should also be paid to the discrimination against women. This type of discrimination is typical for the Czech Republic. In 2013, the employment rate of men was 64.1%, while the employment rate of women achieved 46.7% in the same year, while the proportion of women in the population in the same year was 51%. According to the macroeconomic forecast, the economy in 2016 should reflect normal conditions and possibilities of the Czech economy. It is also necessary to take into account the slowing of Chinese economy, uncertainties associated with monetary policy in the United States of America, geopolitical risks, particularly instability in the Middle East and North Africa. In connection with a migratory crisis, it is not possible to accurately predict economic impacts on single states of the European Union. Owing to a business connection with Germany, negative impacts with the cause of diesel engines in Volkswagen concern can be expected. According to a macroeconomic prediction, the rate of employment in 2016 should increase by 0.2%. According to forecasts by means of adaptive prognostic models, particularly of an exponential smoothing technique, the rate of employment for 2015 in the amount of 73.41524% was predicted.

In connection with the effects of the above-mentioned events and situations, there are expected deflections of predictions downwards. Based on the information and facts, it is recommended to direct the development of employment policies at a long-term time horizon and care for trends on the labor market. Nowadays, one of the discussed topics is the employment policy. The offer or demand for labor is changing with the development of the economy. If the economic development is unfavorable, there is a rise in unemployment and logically there is a drop in employment. The European Union (European Social Fund - Operational project of Human Resources and Employment) contributes financially to active employment policy in the Czech Republic. In 2014, it was spent on active labor market policies CZK 6, 386, 632 billion. This year, the highest amount of money has been spent since joining the European Union. A similar amount was also marked in the year of 2008, in the amount of CZK 6, 131, 279 billion. Compared to 2013, expenditures increased by CZK 2, 135, 542 billion. At that time the overall costs of the active employment policy were CZK 4, 251, 090 billion. The lowest expenditures (after joining the European Union) on the active employment policy amounted to CZK 2, 451, 117 billion in 2012 (MPSV, 2015). Expenditures on the active employment policy in the Czech Republic are one of the

lowest (in 2011, the lowest expenditures were recorded, less than 1% of GDP, e.g., in the Czech Republic, Estonia, Bulgaria, Poland, the biggest expenditures (3.7% of GDP) in Belgium and Denmark. In the Czech Republic, expenditures on active labor market policy are around 0.2% of GDP, while the EU average is 0.5% of GDP – the Source of Eurostat Archive: Labor Market Policy Expenditures). MLSA argues that the expenditures are derived from individual decisions of EU member states governments, with regard to political preferences, the amount of the state budget, the situation on the labor market, and according to estimates of the unemployment rate for a given budget period. As mentioned above, the employment policy is debated topic, however, the efforts in the promotion of jobs in less productive sectors may be harmful because no values arise. Artificially created unproductive jobs are not beneficial for the economy. In the Czech Republic there is valid the Employment Act no. 435/2004 Coll. (amended with the effect as of 1st January 2015), which regulates the State employment policy aimed at achieving full employment and protection against unemployment. The fifth part, Chapter I deals with the active employment policy, in which there are given the tools and measures to achieve the maximum level of employment.

Unemployment in single regions vary, the lowest unemployment rate as to 31 May 2015 was recorded in Prague - it was 4.61%, and the highest in Ústí Region with 9.65%. In comparison with December 2014, unemployment in single regions declined. Unemployment of 7% and more remains in Olomouc, Karlovy Vary, Moravian and Silesian, and Ústí regions. In 2014, various sums of money were spent on an active employment policy in four of these regions with the highest unemployment. In Olomouc Region it was CZK 599, 255 mil., in Karlovy Vary Region CZK 193, 915 mil., in Moravian Silesian Region CZK 912, 346 million and in Ústí Region, it was CZK 759, 318 million (MPSV, 2014). Differences in unemployment rates of individual regions may be due to an insufficient number of suitable jobs or because of long-term unemployed job seekers. This situation worsens the finding of places, and finally, the overall employment decreases.

The unemployed, who have been looking for a job for more than 3 months have lower chances of getting or keeping a job. The increase of employment and the decrease of unemployment is also affected by the external environment. If the offer of labor exceeds the demand for labor, then the chance to find a place on the labor market is low (MPSV, 2014). Employment policy is trying to achieve a balance among single regions, thus promoting occupational and territorial mobility. As already mentioned, in single regions there is a different structure not only on the demand side, but also on the supply side (imbalance often causes structural unemployment), the unevenness of the labor force is reflected on the labor market. The factors that affect the labor market, are for example the amount of offered wages, qualifications, costs associated with transportation, and housing market that has an influence on a population movement for a job.

REFERENCES

- Bakule, M. (2014), *Zaměstnatelnost - Konceptuální Východiska, Možnosti Empirického Zkoumání a Dosavadní Výsledky v České*

- Republice. Výzkumný Ústav Práce a Sociálních Věcí. FÓRUM Sociální Politiky 2/2014. Dostupné v PDF z. Available from: http://www.praha.vupsv.cz/Fulltext/FSP_2014-02.pdf.
- Bhatarai, K. (2016), Unemployment-inflation trade-offs in OECD countries. *Economic Modelling*, 58, 93-103.
- Casario, A., Profeta, P., Pronzato, C.D. (2016), On the regional labour market determinants of female university enrolment in Europe. *Regional Studies*, 50(6), 1036-1053.
- Czso, Český Statistický Úřad. (2015), Databáze Eurostatu. Zaměstnanost - Míra Zaměstnanosti ve Věkové Skupině 20 - 64 let, Členění Podle Pohlaví. Dostupné z. Available from: http://www.apl.czso.cz/pll/eutab/html.h?ptabkod=t2020_10.
- Eurostat. (2015), Employment Statistics. Dostupné z. Available from: http://www.ec.europa.eu/eurostat/statistics-explained/index.php/Employment_statistics.
- Hančlová, J. (2002), Modelování a Klasifikace Regionálních Trhů Práce. 1. Vyd. Ostrava: Vysoká Škola Báňská - Technická Univerzita Ostrava, Ekonomická Fakulta.
- Maitah, M., Hayat, A., Malec, K., Eldeeb, O. (2014), The impact of foreign direct investments on employment in the Czech republic. *Reserach Journal of Applied Sciences*, 9(12), 1001-1008.
- Maitah, M., Řezbová, H., Smutka, L., Tomšík, K. (2016), European sugar production and its control in the world market. *Sugar Tech*, 18(3), 236-241.
- Maitah, M., Saleem, N., Malec, K., Boubaker, M., Gouda, S. (2015), Economic value added and stock market development in Egypt. *Asian Social Science*, 11(3), 126-134.
- MPSV. (2014), Politika Zaměstnanosti a Náklady Nezaměstnanosti v České Republice, Scientia et Societas. Archív. Číslo 3, Ročník. Dostupné. Available from: <http://www.sets.cz/archiv-predchozich-cisel>.
- MPSV. (2015), Výdaje na APZ v Krajích. Dostupné z. Available from: <http://www.portal.mpsv.cz/sz/stat/vydaje>.
- Smutka, L., Maitah, M., Zhuravleva, E.A. (2014), The Russian federation-specifics of the sugar market. *Agris On-line Papers in Economics and Informatics*, 6(1), 73-86. Available from: http://www.online.agris.cz/files/2014/agris_online_2014_1_smutka_maitah_zhuravleva.pdf.
- Večerník, J. (2006), Trh Práce a Politika Zaměstnanosti 2006, Sociologický Ústav Akademie Věd ČR. Praha, Dostupné v PDF. Available from: <http://www.soc.cas.cz/publikace/trh-prace-politika-zamestnanosti>.
- VUPSV, Výzkumný Ústav Práce A Sociálních Věcí. (2014), Hodnocení Programů Aktivní Politiky Zaměstnanosti na Lokálním Trhu Práce. Dostupné v PDF. Available from: <http://www.praha.vupsv.cz/fulltext/Aktiv.pdf>.