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DETERMINANTS OF UNEMPLOYMENT AND OCCUPATION IN ROMANIA BASED ON A SECTORIAL APPROACH

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Abstract

This paper brings as novelty for economic literature the identification of the unemployment and occupation determinants by taking into account variables that are measured at sectorial level. The analysis for Romania is based on the stochastic search variable selection and it is made on two sub-periods (1992-2008 and 2008-2014), because of the changes in the methodology for economic activities classification. The increase of employed female population in manufacturing industry had the highest impact of unemployment decrease over 1992-2008. In the same period, the highest influence on occupation rate is given by the occupied population in agriculture and forestry. Starting with 2008 till 2014, the highest influence on occupation rate is given by the female occupied population in extractive industry. There are individual effects in time that influence the unemployment and occupation on sectors, the economic crisis having an important impact on these variables, according to the fixed effects model for 2008-2014.

Key Words: unemployment, occupation, Bayesian model, fixed effects model
JEL classification indices: C51, C53, E24

1. Introduction

Unemployment is an important problem for the developing countries. A higher degree of occupation is preferable, but an empirical analysis should be conducted to determine the factors that ensure a lower unemployment and a higher occupation taking into account the population repartition on economic sectors of activity.

In the literature from Romania, only models for determinants of unemployment at national level were proposed. Therefore, this study considers a deeper research by analysing the unemployment and occupation factors on economic sectors in Romania. Two different periods were considered for analysis because of the

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methodological changes regarding the classification of economic activities. The reason for choosing a Bayesian algorithm for identifying the occupation and unemployment determinants is related to the small sets of data caused by changes in the official methodology regarding the economic activities classification.

The main objective of this paper is to identify the determinants of unemployment and occupation rate at national level by considering explanatory variables at national level and at sectoral level. This is a novelty for Romanian literature, where an analysis from sectoral level has not been made. This research area is explored, because the identification of unemployment and occupation determinants will improve the labour market policies in order to reduce the unemployment and its effect and to increase the occupation. Certain measures will be taken by Labour Ministry regarding the selected determinants of unemployment and occupation, because these variables have the highest impact on labour market phenomena.

This paper is organized as follows. After this introduction and the literature survey, the methodological background is described. In the empirical study, the results of the Bayesian models and panel data estimations are presented. The last section concludes.

2. Literature survey

Romania is included in the category of developing countries, a description of the unemployment in this context being necessary in order to better understand the unemployment determinants. For the Labour Ministry of Romania the identification of unemployment rate determinants has a practical importance in order to take suitable measures to reduce this phenomenon. On the other hand, the occupation rate increase will have effects on unemployment. In the last three decades, the debates regarding economic policy on unemployment in the case of developing countries was dominated by structural adjustment programs. For an increase in employment, two principal policy tools were considered: the flexibility of labor market and openness to global economy. From another perspective, labor demand is mainly caused by the cost of labor. The labor market regulations bring rigidities, but also some artificial high labor costs. The trade liberalization, in terms of Heckscher-Ohlin theorem, should grow employment in these developing countries with a comparative advantage that is observed in labor-intensive sectors. The flexibility of labor market flexibility has an important role in its relationship with the openness effects. A high number of developing countries knew large increases in labor market flexibility and in exports when these policies were considered in the last four decades. Nowadays, the flexibility and the openness effects on employment are not positive (Pollin et al. (2004), Onaran (2007)).

Most of the studies in literature are interested in the unemployment rate determinants and not in occupation rate determinants, because unemployment is seen as a problem that should be diminished by implementing the suitable active or passive policy measures. At the same time, the unemployment reduction brings, implicitly, the increase in occupation. Therefore, the literature review will focus on unemployment determinants by making a presentation from methodological point of view, insisting on econometric models use to represent unemployment rate.

Many studies in the literature are interested to explain the unemployment rate only in the period of recent economic crisis. In this case, the time series is short, include several years. Therefore, in these researches, the authors employed as methodology the panel data approach that solves the problem of small sets of data. In this study, we also employed panel data models as fixed effects models to explain unemployment and occupation rate at national level using variables that were registered at sectoral level. Compared to other studies in literature that preferred panel data models, our cross-sections are not represented by countries or regions. The cross-sections in this research are represented by sectors.

Some examples that use *panel data approach* for modeling unemployment rate are considered. Some of these papers made separately the analysis on panel data for each sector.

The effects of global crisis on employment and unemployment were analyzed by Marelli et al. (2012) for European regions using panel data approach. The critical factors that influenced labour market performance

were different in eastern and western European regions during the recent global crisis. In this paper, the structural characteristics were analyzed in terms of sector specialization corresponding to regional economies.

Aydiner-Avsar and Onaran (2010) made a sectoral analysis of employment determinants in Turkey. The authors chose the manufacturing industry companies and developed a panel data analysis. The period is 1973-2001 and 25 sectors are taken into account.

Kollmeyer and Pichler (2013) checked if deindustrialization contributed to persistent and high unemployment in the most affluent countries in the world since the middle of 1970s. They showed that the manufacturing sector contraction generated high unemployment. Two-way fixed effects models were estimated for 16 countries of Organization for Economic Cooperation and Development over 34 years. The results indicated that deindustrialization was an important cause of unemployment, but it did not contributed to persistent and high unemployment in these countries.

The effect of the recession from 2008-2009 on unemployment rate in the largest towns from England (60 cities) was measured by Lee (2014) using panel data approach. The results indicated that high skills of citizens maintained a lower unemployment rate compared to cities with lower skills of citizens. It seems that the economical specialization of a city (sectors where employees are present) does not influence the unemployment. The impact of crisis was assessed also for Greek towns by Palaskas et al. (2015) who showed that tourism policies, industry specialization and their connection with peri-rural locations are good stabilizers that minimize the crisis effects and are good factors that ensure support recovery. The fiscal policy was cyclical to economic recession.

Other studies that employed panel data do not take into account the sectoral perspective in explaining unemployment rate. Tanveer et al. (2012) evaluated the impact of various types of financial crises on youth unemployment rate (YUR) in different groups of countries. The authors constructed fixed effects models and dynamic models for about 70 countries over 1980-2005. The effect of financial crisis on youth unemployment rate was stronger than the effect of crisis on total unemployment. Institutional factors that generate unemployment were identified by Buccaro and Rei (2005) for 18 OECD countries during 1969-1998. The authors show that consumer price index, trade and productivity modifications are negatively correlated with the unemployment rate.

Moreover, as an alternative to panel data models, we employed Bayesian models in the context of stochastic search of the variables, which are a good solution to the same problem of small sets of data. This approach has not been yet used in literature to study the unemployment and occupation determinants. In Romania, Bayesian vector-autoregressive models were proposed for unemployment rate by Simionescu (2015a) and Spulbăr and Niţoi (2012), but this Bayesian algorithm for the selection of the best explanatory variables was not taken into consideration. The Bayesian VAR models for Romania used Minnesota/Litterman prior, but our methods uses hierarchical priors that specify priors for more levels. From this point of view, the proposed Bayesian algorithm is better, bringing more useful information.

Few recent studies are dedicated to *cross-section modeling*. Nvarko et al. (2014) studied the effect of search intensity on unemployment duration in Ghana using a 404 people in employment. Search intensity, sector of employment (private sector), age, educational attainment, years of schooling, family support and the year of employment were associated with the probability of entering employment and diminishing unemployment.

Other researches explained unemployment rate using *time series models*. Valadkhani (2003) employed a simultaneous equation model for the period 1968-2008 to show that there is a positive and strong relationship between unemployment rate in Iran and output gap and a negative correlation between real investment and unemployment. Cheema and Atta (2014) applied ARDL bound approach to identify the determinants of unemployment rate in Pakistan for the period 1973-2010. The authors identified a positive correlation between unemployment and economic uncertainty, productivity and output gap and a negative correlation between unemployment and openness of trade and gross fixed investment. For Malaysia, a negative rela-

tionship and a bi-directional causality were obtained by Noor et al. (2007) for unemployment and output growth in the period 1970-2004.

In *Romania*, Simionescu (2015b) estimated a spatial auto-regressive model with random effects and a cross-section model to forecast national unemployment on the horizon 2013-2015. These models were based on the regional unemployment rates corresponding to the 43 counties including Bucharest. The conclusions indicated that the current unemployment rate in a county is influenced by the previous value of unemployment in a neighboring county. A Bayesian VAR model with Minnesota/Litterman prior was estimated by Spulbăr and Nițoi (2012) who proved that the link between unemployment and inflation was consistent with Phillips curve over 2001-2012. These studies and the other researches in the economy considered as explanatory variables for unemployment rate other macroeconomic indicators. The novelty brought by our model is the fact that the explanatory variables are represented by the same variable (unemployment rate), but it is considered for a certain gender and for a certain sector of the economic activity. We were interested in this approach in order to study the same phenomenon at the sector level and to explain the national evolution of the indicator by considering the particularities of sectoral evolution.

3. Methodological background

A Bayesian approach (***Stochastic Search Variable Selection -*** SSVS) is employed to identify the most suitable subset of variables that determines the dependent variable. This algorithm was proposed by George and McCulloch (1997).

This stochastic search variable selection supposes the specification of a regression model with more explanatory variables. The objective is represented by the identification of the variables with the biggest impact on the dependent variable called Y. In the multiple regression model, the explanatory variables are represented by X1, X2, …,Xp (a number of p exogenous variables). The final aim is to identify the subset of predictors (X1*, X2*,…,Xq*) that represent inputs in the best model. The form of the model is:

$$Y = X_1^* \beta_1^* + X_2^* \beta_2^* + \cdots + X_q^* \beta_q^* + e(1) + e \tag{1}$$

$\beta_1^*, \beta_2^*, \cdots \beta_q^*$ - model's parameters

The stochastic search variable selection supposes the determination of the Bayesian hierarchical prior mixture. This type of mixture is employed for the determination of the posterior probability. The selected model is that with the highest posterior probability. In this particular situation, the algorithm performs with a higher speed, because not all the probabilities of all 2^p models have to be calculated. Gibbs sampler method is utilized to simulate the sample of the posterior distribution. There are high chances for identifying high probabilities.

The linear model is employed to express the relationship between the dependent variable (Y) and the possible explanatory variables (X1, X2,...,Xp):

$$f(Y \mid \beta, \sigma) = N_n(X\beta, \sigma^2 I)$$
$$X = [X_1, X_2, \ldots, X_p] \tag{2}$$

X - matrix (nxp elements)

Y - matrix (nx1 elements)

β - vector of parameters (px1 elements)

σ - unknown constant with positive value

Any possible subset is indexed in a vector. Those subsets of explanatory variables with very small estimations are neglected.

$$\gamma = (\gamma_1, \ldots, \gamma_p) \tag{3}$$

$\gamma_i = 0$, if β_i estimation has a small value and $\gamma_{i=1}$, if β estimation has a large value

The selected explanatory variable is modelled by using the prior mixture, where γ has an unknown value and q_γ ($q_\gamma = \gamma'1$) is the length of the γ-th sub-set :

$$\pi(\beta, \sigma, \gamma) = \pi(\beta|\sigma, \gamma)\pi(\sigma|\gamma)\pi(\gamma) \tag{4}$$

β is studied as prior realisation having a multivariate normal distribution. The model with the γ-th subset is written in the following form:

$$\pi(\beta|\sigma, \gamma) = N_p\left(0, \aleph_{(\sigma, \gamma)}\right) \tag{5}$$

The *i-th* element located on the diagonal matrix $N_p\left(0, \aleph_{(\sigma, \gamma)}\right)$ is the best solution for which the coefficient is 0 or 1. The specification of $N_p\left(0, \aleph_{(\sigma, \gamma)}\right)$ is essential to determine the hierarchical priors properties. The residual variance σ^2 for the γ-th model is a realisation of the prior inverse gamma repartition:

$$\pi(\sigma^2|\gamma) = IG\left(\frac{\vartheta}{2}, \frac{\vartheta\tau_\gamma}{2}\right) \tag{6}$$

This is equivalent with: $\vartheta\tau_\gamma|\sigma^2 \sim \chi_\vartheta^2$ \hfill (7)

The value of τ_γ decreases, when the predictors' number of the subset increases. τ_γ is the prior estimator of σ^2 and ϑ represents the prior for the sample size. If there is no information about σ^2 prior, then $\tau_\gamma \equiv s_{LS}^2$, where s_{LS}^2 is the OLS estimator for σ^2. ϑ is fixed in order to have a high probability for $\pi(\sigma^2 | \gamma)$ on the interval (s_{LS}^2, s_Y^2). s_Y^2 represents the variance corresponding to Y.

In fact, γ is modelled as a realisation of any prior $\pi(\gamma)$ selected from the 2^p values of γ :

$$\pi(\gamma) = \prod w_i^{\gamma_i}(1 - w_i)^{(1-\gamma_i)} \tag{8}$$

$$\pi(\gamma_i = 1) = 1 - \pi(\gamma_i = 0) = w_i = \text{ is the probability for to be enough big to be chosen in the}$$
refined model.

The marginal posterior distribution $\pi(\gamma|Y)$ provides essential information for variable selection. The Y's data set is known and the posterior distribution $\pi(\gamma|Y)$ updates the prior probabilities for any γ.

The prior hyper parameters are selected as to get high probabilities for $\pi(\gamma|Y)$.

Stochastic search variable selection uses Gibbs sampler procedure to simulate the parameter sequence when $\vartheta_{\sigma\gamma_{(i)}}$ >0. The distributions are conditioned by the last simulated parameters values:

$$\pi(\beta|\sigma, \gamma, Y) \tag{9}$$
$$\pi(\beta|\sigma, \gamma, Y) = \pi(\sigma|\beta, Y) \tag{10}$$
$$\pi(\gamma_i|\beta, \sigma, \gamma_{(i)}, Y) = \pi(\gamma_i|\beta, \gamma_{(i)}) \tag{11}$$
i=1,2,…, p

The model is rewritten in this form:

$$Y_i = X_i \cdot \beta_i + u_i, \text{ where } u_i \sim N(0, s^2) \tag{12}$$
$$\beta_i| \gamma_i \sim \gamma_i \cdot N(0, V1) + (1 - \gamma_i) \cdot N(0, V2), V1 > V2$$

$\gamma_i = 1$ indicates that the explanatory variable is selected in the model
$\gamma_i = 0$ indicates that β_i is almost zero and the corresponding regressor is not chosen in the model
More levels are considered for Gibbs sampler with hierarchical proper priors:

-      first level:

$$s^2 \sim IG(a, b)$$
$$\beta_i| \gamma_i \sim \gamma_i \cdot N(0, V1) + (1 - \gamma_i) \cdot N(0, V2)$$

- second level: $\gamma_i \mid \omega_i \sim$ Bernoulli (ω_i)
- third level: $\omega_i \sim$ Beta (a', b')

Bayes formula is utilized in order to update the conditional posterior of γ_i. The conditional posteriors for β_i, and s^2 have conjugate forms.

4. Determinants of unemployment and occupation in Romania based on a sectorial approach

4.1. Data and variables

The dependent variables are represented by unemployment rate and occupation rate in Romania in all the economic sectors during 1992-2008 and 2008-2014. The explanatory variables refer to unemployment rate by gender at national level and for each sector, total employed at national level and by sectors, female and male employment at national level and by sectors, overall occupation rate at national level and by sectors, female occupation rate at national level and by sectors, male occupation rate at national level and by sectors. The considered sectors are: total industry, mining industry, manufacturing industry, extractive industry, education, administration and defence, agriculture, forestry and hunting, agriculture and hunting, electricity, heating, gas and water, building, hotels and restaurants, health and social assistance, water distribution, sewerage, waste management, remediation activities, transport and storage, arts activities, entertainment and recreation, financial intermediations and assurance, administrative services and support services and other activities of national economy. The data are provided by National Institute of Statistics from Romania.

4.2. Estimations and results

Important changes in methodology were taken place in Romania regarding the classification of activities from national economy. Therefore, the sector models were proposed on two different periods: 1992-2008 and 2008-2014. The Stochastic Search Variable Selection was applied to identify the determinants of unemployment and occupation in Romania. This method was chosen to select the determinants of unemployment and application because we have small sets of data. Bayesian approach solves this problem of small data series while the traditional Econometrics does not help us in this case.

Sectorial model for period 1992-2008

After the application of Bayesian algorithm for variables' selection for the period 1992-2008, the unemployment rate is mostly influenced by the following variables, for an acceptance probability of 0.3:

- Unemployment rate for both genders (positive influence);
- Employed female population in mining industry (positive influence);
- Employed female population in manufacturing industry (negative influence);
- Employed female population in education (negative influence);
- Employed total population in public administration and defence (positive influence);
- Employed total population in industry (positive influence).

At each increase in employed female population in mining industry with one person, the unemployment rate insignificantly increases in average with 0.009 percentage points while at each increase in employed female population in manufacturing industry with one person, the unemployment rate increases in average with

0.437 percentage points. At each increase in employed female population in education with one person, the unemployment rate decreases in average with 0.222 percentage points.

Table 1

Posterior means and posterior standard deviations of the coefficients in the refined Bayesian regression models for unemployment rate (sector model for period 1992-2008)

Variable	Posterior mean	Posterior standard deviation
male unemployment rate	0.525	0.042
female unemployment rate	0.477	0.038
employed female population in mining industry	0.009	0.130
employed female population in manufacturing industry	-0.437	2.162
employed female population in education	-0.222	0.044
employed female population in public administration and defence	-0.008	0.009
employed female population in industry	0.012	0.006

Source: own calculations

At each increase in employed female population in industry with one person, the unemployment rate insignificantly increases in average with 0.012 percentage points, while at each increase in employed female population in public administration and defence with one person, the unemployment rate decreases in average with 0.008 percentage points.

The impact of unemployment rate for males on total unemployment is higher than the impact for female people. At each increase in male unemployment rate with one percentage point, the total unemployment rate increases with 0.525 percentage points, but at each increase in female unemployment rate with one percentage point, the total unemployment rate increases with 0.477 percentage points. The increase of employed female population in manufacturing industry had the highest impact of unemployment decrease over 1992-2008.

After the application of Bayesian selection algorithm for period 1992-2008, the occupation rate is mostly influenced by the following variables, for an acceptance probability of 0.3:

- Occupation rate (influence positive);
- Female occupation rate in agriculture, forestry and hunting (positive influence);
- Female occupation rate in agriculture and hunting (positive influence);
- Female occupation rate in extractive industry (positive influence);
- Female occupation rate in electricity, heating, gas and water (positive influence);
- Female occupation rate in building (positive influence);
- Female occupation rate in hotels and restaurants (positive influence);
- Female occupation rate in health and social assistance (positive influence);
- Female occupation rate in industry(positive influence);
- Female occupation rate in the other activities of national economy (positive influence);
- Total occupation rate at national level (positive influence);
- Total occupation rate agriculture, forestry and hunting (negative influence);

- Total occupation rate in extractive industry (positive influence);
- Total occupation rate electricity, heating, gas and water (positive influence);
- Total occupation rate in building (positive influence);
- Total occupation rate in the other activities of national economy (positive influence).

Table 2

Posterior means and posterior standard deviations of the coefficients in the refined Bayesian regression models for occupation rate (sector model for period 1992-2008)

Variable	Posterior mean	Posterior standard deviation
male occupation rate	0.508	0.046
female occupation rate	0.492	0.049
employed population at national level	0.012	0.006
employed population in extractive industry	0.011	0.001
employed population in electricity, heating, gas and water	0.016	0.003
employed population in Buildings	0.01	0.002
employed population in the other activities of the national economy	0.008	0.000
occupied population in agriculture, forestry and hunting	-0.003	
female employed population in agriculture, forestry and hunting	0.014	0.002
female employed population in agriculture and forestry	0.6	1.899
female employed population in extractive industry	0.05	0.087
female employed population in electricity, heating, gas and water	0.113	0.023
female employed population in buildings	0.017	0.005
female employed population in hotels and restaurants	0.057	0.042
female employed population in health and social assistance	0.198	0.138
female employed population in industry	0.012	0.01
female employed population respectively in the other activities of the national economy	0.108	0.052

Source: own calculations

At each increase in employed population with one person at national level, in extractive industry, in electricity, heating, gas and water, in building, respectively in the other activities of the national economy, the occupation rate increases with 0.012 percentage points, with 0.011 percentage points, with 0.016 percentage points, with 0.01 percentage points, respectively with 0.008 percentage points.

The influence of occupied population in agriculture, forestry and hunting is contrary to the economic theory, but the negative influence is insignificant (a decrease with 0.003 percentage points in average of the occupation rate at each increase in occupied population with one person in each sector) and it can be attributed to structural changes inside the sector.

The impact of occupation rate for males on the total occupation is higher than the impact of occupation rate for female people. At each increase with one percentage point for occupation rate for males, the total occupation rate increases with 0.508 percentage points, but at each increase with one percentage point of the female occupation rate, the total occupation rate increases with 0.492 percentage points.

At each increase in female employed population with one person in agriculture, forestry and hunting, in agriculture and forestry, in extractive industry, in electricity, heating, gas and water, in buildings, in hotels and restaurants, in health and social assistance, in industry and, respectively in the other activities of the national economy, the occupation rate increases with 0.014 percentage points, with 0.6 percentage points, with 0.05 percentage points, with 0.113 percentage points, with 0.017 percentage points, with 0.057 percentage points, with 0.198 percentage points, with 0.012 percentage points, respectively with 0.108 percentage points. The highest influence on occupation rate is given by the occupied population in agriculture and forestry.

A. Sectoral model for 2008-2014

After the application of Bayesian selection algorithm for the period 2008-2014, the conclusion is that the unemployment rate is mostly determined by the following variables, at an acceptance probability of 0.3:

- Unemployment rate for both genders (positive impact);
- Total occupied population in water distribution, sewerage, waste management, remediation activities (positive influence).

At each increase of total population with one person from water distribution, sewerage, waste management, remediation activities, the unemployment rate increases in average with 0.205 percentage points.

The impact of unemployment rate for males on the total unemployment is higher than the impact of unemployment rate for female people. At each increase of male unemployment rate with one percentage point, the total unemployment rate will increase with 0.544 percentage points, but at each increase of female unemployment rate with one percentage point, the total unemployment rate will increase with 0.454 percentage points.

Table 3

Posterior means and posterior standard deviations of the coefficients in the refined Bayesian regression models for unemployment rate (sector model for period 2008-2014)

Variable	Posterior mean	Posterior standard deviation
male unemployment rate	0.544	
female unemployment rate	0.454	
employed female population in water distribution, sewerage, waste management, remediation activities	0.205	

Source: own calculations

According to the Bayesian algorithm in the period 2008-2014, the occupation rate is mostly influenced by the following variables, for an acceptance probability of 0.3:

- Occupation rate for both genders (positive influence);
- Average number of employees at national level (positive influence);
- Female occupied population in extractive industry (positive influence);
- Female occupied population in water distribution, sewerage, waste management, remediation activities (positive influence).
- Female occupied population in financial intermediations and assurance (positive influence);
- Female occupied population in administrative services and support services (positive influence);

- Female occupied population in buildings (positive influence);

- Female occupied population in hotels and restaurants (positive influence);

- Female occupied population in arts activities, entertainment and recreation (positive influence);

- Female occupied population at national level (positive influence);

- Total occupied population at national level (positive influence);

- Total occupied population in extractive industry (negative influence);

- Total occupied population in water distribution, sewerage, waste management, remediation activities (positive influence);

- Total occupied population in buildings (positive influence);

- Total occupied population in transport and storage (positive influence);

- Total occupied population in financial intermediations and assurance (positive influence);

- Total occupied population in administrative services and support services (positive influence).

Table 4

Posterior means and posterior standard deviations of the coefficients in the refined Bayesian regression models for occupation rate (sector model for period 2008-2014)

Variable	Posterior mean	Posterior standard deviation
average number of employees at national level	5.187	0.302
male occupation rate	0.511	0.261
female occupation rate	0.491	0.233
female occupied population in extractive industry	0.807	0.129
female occupied population in water distribution, sewerage, waste management, remediation activities	0.081	0.006
female occupied population in financial intermediations and assurance	0.495	0.233
female occupied population in administrative activities and support services	0.416	0.043
female occupied population in buildings	0.441	0.097
female occupied population in hotels and restaurants	0.087	0.028
female occupied population in arts activities, entertainment and recreation	0.013	0.001
total occupied population	0.141	0.04
total occupied population in extractive industry	0.217	0.033
total occupied population in water distribution, sewerage, waste management, remediation activities	0.04	0.003
total occupied population in financial intermediations and assurance	0.225	0.041
total occupied population in administrative activities and support services	0.058	0.016
total occupied population in buildings	0.06	0.012
total occupied population in transport and storage	0.019	0.003
total occupied population	1.048	0.053

Source: own calculations

At each increase of average number of employees at national level with one person, the occupation rate increases in average with 5.187 percentage points, if all the other variables remain constant.

The impact of occupation rate for males on total occupation is higher than the influence on females. At each increase of male occupation rate with one percentage point, the total occupation rate will increase with 0.511 percentage points, but the increase of female occupation rate with one percentage point will generate an increase of total occupation rate with 0.491 percentage points.

At each increase of female occupied population with one person in extractive industry, in water distribution, sewerage, waste management, remediation activities, in financial intermediations and assurance, in administrative activities and support services, in buildings, in hotels and restaurants, in arts activities, entertainment and recreation, respectively per total, the occupation rate increases in average with 0.807 percentage points, with 0.081 percentage points, with 0.495 percentage points, with 0.416 percentage points, with 0.441 percentage points, with 0.087 percentage points, with 0.013 percentage points, with 0.141 percentage points. The highest influence on occupation rate is given by the female occupied population in extractive industry.

At each increase of total occupied population with one person in extractive industry, in water distribution, sewerage, waste management, remediation activities, in financial intermediations and assurance, in administrative activities and support services, in buildings, in transport and storage, respectively per total, the occupation rate increases in average with 0.217 percentage points, with 0.04 percentage points, with 0.225 percentage points, with 0.058 percentage points, with 0.06 percentage points, with 0.019 percentage points, respectively with 1.048 percentage points. The highest influence on occupation rate is given by the occupied population at national level.

Some panel models were estimated to explain the unemployment rate and the occupation rate at national level using the variables at sector level (the sectors are those from CAEN2) for the period 2008-2014: net nominal earning (v1), number of female employees (v2), total number of employees (v3), average number of employees (v4), occupied female population (v5) and total occupied population (v6).

For unemployment rate a fixed effects model with individual effects in time was proposed. The unemployment rate depends on the total number of employees and female number of employees. In 2009 and 2010, in the context of economic crisis, the unemployment rate increased more compared to 2008 or to the period 2011-2014.

A fixed effects model with individual effects in time was estimated for the occupation rate which depends on the total number of employees and the female employees. In 2009, 2010 and 2011, the economic crisis effects were strongly felt and the occupation rate deceased more in these years compared to 2008 and compared to the period 2012-2013.

The results of the estimations for the panel models are presented in Appendix 1.

5. Conclusions

An econometric analysis was conducted to determine the variables at sectorial and national level that influence the total unemployment and occupation in Romania during 1992-2014. The analysis was made for two sub-periods, because of the changes in methodology regarding the economic activities classification. A Bayesian algorithm was applied to identify the unemployment and occupation factors in order to solve the problem of small sets of data.

The increase of employed female population in manufacturing industry had the highest impact of unemployment decrease over 1992-2008. In the same period, the highest influence on occupation rate is given by the occupied population in agriculture and forestry. Starting with 2008 till 2014, the highest influence on occupation rate is given by the female occupied population in extractive industry.

There are individual effects in time that influence the unemployment and occupation on sectors, the econom-

ic crisis having an important impact on these variables. The results are according to expectations. On the other hand, compared to previous studies from literature, our approach did not use other traditional macro-economic indicator to explain the unemployment rate or the occupation rate. We used the same variable, but it was registered at sectoral level and by gender. Therefore, the occupation and unemployment were analyzed from a perspective that has not been used yet in Romanian literature. From our point of view, the Bayesian algorithm for explanatory variables' selection is a better Bayesian approach than BVAR models, because the hierarchical priors consider more important known information that has impact on the unemployment or occupation rate evolution. These priors are closer on the natural evolution of the economic phenomenon, compared to standard priors in BVAR models.

The identification of sectoral determinants of unemployment and occupation will improve the labour market policies. The research brings an important contribution in the practical elaboration of suitable active and passive measures for ensuring a lower unemployment and a higher occupation. Labour Ministry from Romania should be interested in develop some policies that encourage occupation in extractive industry in order to increase the national occupation. On the other hand, some active measures should be implemented to support employed female population in water distribution, sewerage, waste management, remediation activities, because high unemployment was observed in this sector.

Appendix 1

Dependent Variable: RS

Method: Pooled Least Squares

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	5.916667	2.08E-13	2.85E+13	0.0000
V2?	2.98E-17	3.01E-18	9.895976	0.0000
V3?	-1.16E-17	1.20E-18	-9.629661	0.0000
Fixed Effects (Cross)				
_S1--C	1.71E-12			
_S2--C	1.73E-12			
_S3--C	-1.83E-12			
_S4--C	1.57E-12			
_S5--C	1.61E-12			
_S6--C	4.08E-12			
_S7--C	-2.06E-12			
_S8--C	2.33E-12			
_S9--C	4.24E-13			
_S10--C	1.21E-12			
_S11--C	2.76E-13			
_S12--C	1.20E-12			
_S13--C	8.81E-13			
_S14--C	1.76E-12			
_S15--C	1.85E-13			
_S16--C	-2.22E-12			
_S17--C	-3.12E-12			
_S18--C	9.58E-13			
_S19--C	1.02E-12			
_S20--C	-7.05E-13			
_S21--C	-1.10E-11			
Fixed Effects (Period)				
2008--C	-1.516667			
2009--C	1.883333			
2010--C	1.083333			
2011--C	-0.716667			
2012--C	-0.516667			
2013--C	-0.216667			
Effects Specification				

Cross-section fixed (dummy variables)

Period fixed (dummy variables)

R-squared	1.000000	Mean dependent var	5.916667
Adjusted R-squared	1.000000	S.D. dependent var	1.148268
S.E. of regression	1.73E-13	Akaike info criterion	-55.74555
Sum squared resid	2.92E-24	Schwarz criterion	-55.11527
Log likelihood	3539.970	Hannan-Quinn criter.	-55.48949
F-statistic	2.05E+26	Durbin-Watson stat	1.489218
Prob(F-statistic)	0.000000		

Dependent Variable: RO

Method: Pooled Least Squares

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	60.90000	3.72E-12	1.64E+13	0.0000
V2?	5.32E-16	5.38E-17	9.888036	0.0000
V3?	-2.08E-16	2.15E-17	-9.685163	0.0000
Fixed Effects (Cross)				
_S1--C	3.00E-11			
_S2--C	3.03E-11			
_S3--C	-3.19E-11			
_S4--C	2.74E-11			
_S5--C	2.83E-11			
_S6--C	7.27E-11			
_S7--C	-3.65E-11			
_S8--C	4.14E-11			
_S9--C	7.05E-12			
_S10--C	2.12E-11			
_S11--C	4.37E-12			
_S12--C	2.08E-11			
_S13--C	1.52E-11			
_S14--C	3.11E-11			
_S15--C	2.87E-12			
_S16--C	-3.99E-11			
_S17--C	-5.59E-11			
_S18--C	1.65E-11			
_S19--C	1.76E-11			
_S20--C	-1.14E-11			
_S21--C	-1.90E-10			
Fixed Effects (Period)				
2008--C	2.700000			
2009--C	-0.300000			

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2010--C	-1.300000		
2011--C	-1.300000		
2012--C	0.200000		
2013--C	2.29E-13		
Effects Specification			

Cross-section fixed (dummy variables)

Period fixed (dummy variables)

R-squared	1.000000	Mean dependent var	60.90000
Adjusted R-squared	1.000000	S.D. dependent var	1.346997
S.E. of regression	3.09E-12	Akaike info criterion	-49.97630
Sum squared resid	9.34E-22	Schwarz criterion	-49.34602
Log likelihood	3176.507	Hannan-Quinn criter.	-49.72024
F-statistic	8.81E+23	Durbin-Watson stat	1.496285
Prob(F-statistic)	0.000000		

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WHO IS WHO ON THE AUDIT SERVICES MARKET IN THE REPUBLIC OF MACEDONIA - BIG FOUR VERSUS NON-BIG FOUR

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Abstract

In the light of aligning the revised Eight Company Law Directive to the amendments of the Audit Law from September 2005, amongst the other, was introduced the obligation of the audit firms to present transparency reports. Defining the minimum segments and their order, the transparency reports were supposed to disclose the information related to the functioning of the audit firms which were considered as business secret. The first transparency reports were presented in 2007. Trying to give an overview of the states of affairs in the audit services market in the Republic of Macedonia, in this paper we will focus our attention to the three key segments of the transparency reports related to the: number of auditees, revenues realised from performed audit and non-audit services and the statements about the method of determining the engagement partner's fee. The paper is consisted of three segments. In the first one, is given an overview of the states of affairs in the audit profession before introducing the obligation for presentation of transparency reports. In the second one, we will analyse in more details the transparency reports presented on the period 2007-2014 especially regarding the allocation of the auditees to the audit firms and revenues realised and the influence of the Big 4 and non-Big 4 over the audit services market. At the end, in the third part, we will move our focus of attention to the benefits the information presented in the transparency reports offer to potential beneficiaries. We hope that with these three segments of the paper we will come to an answer to the question initiated in the title, more precisely we will identify who is who in the audit services market in the Republic of Macedonia.

Keywords: audit, transparency report, audit fee, audit services market.

Introduction

In the period 1945-1991, Republic of Macedonia, as an integral part of SFRY, was building a plan economy. At that time, like in the other former socialist countries, audit profession was not developed in the Republic of Macedonia. Following the separation of SFRY in 1991, transition period in the Republic of Macedonia was marked with privatization of socially-owned enterprises. Carrying out just privatization was conditioned, among other things, by true and fair presentation of the financial statements. Unfortunately, despite the emphasized need for credibility in the presented financial statements, in the period 1991-1997, audit profession was in the margins of the transition process. First steps towards creating the necessary climate for establishing the audit profession were undertaken in the post–privatization period by adopting the Audit Law in December 1997. Signing the Stabilization and Association Agreement (hereinafter: SAA) with the European Union and its Member States on 9 April 2001 confirmed the decisiveness of the Republic of Macedonia to integrate in the European family. Not even the audit profession was resistant to the requirements for harmonization with the Acquis Communautaire. On the contrary, in a relatively short period of time, in September 2005, new Audit Law was adopted, fully harmonized with the Revised Eighth Company Law Directive. New Audit Law introduced essential changes in the audit profession, which were assessed as a step forward in the EU integration processes. The requirement to present transparency report, by precisely defining the information necessary to be disclosed therein, reached the most sensitive and the most mysterious part of the operations of the audit firms in the Republic of Macedonia. With one-year delay, first transparency reports were presented in the course of 2008, covering the operations of the audit firms in 2007. In line with the commenced processes of harmonizing the audit profession with the EU regulations, amendments to the Auditing Law dated December 2010 extended the requirements on additional information in the transparency reports. Paper segments below give more detailed presentation on the trends on the audit industry in the Republic of Macedonia, observed from the point of view of the information presented in separate segments in the transparency reports in the period 2007-2014.

The audit industry in the Republic of Macedonia in the period 1997 – 2014

Under the Audit Law from 1997, conditions for creating the audit profession, with attributes immanent for the developed market economies, were established for the first time in the Republic of Macedonia. The Law defined for the first time the requirements for registration of audit firms as primary holders of audit activities. At the same time, the Law precisely stated the preliminary criteria to be met by individuals that wanted to become part of the audit profession. What was immanent for the environment in which the Law was adopted was the absence of strong professional association of accountants and auditors that could be the generator of changes. Association of Accountants, Financial Workers and Auditors, having tradition longer than half a century, remained passive at the time the foundations of the audit profession were laid down. Taking such trends in the accounting profession into account, delicate mission related to the creation of professional regulation in the audit profession under the Law was entrusted to the Ministry of Finance. Having in mind the fact that the Law expressed the commitment to accept and implement the international regulation as a substitute for the national one, in 1998 Ministry of Finance translated the IFAC's International Standards on Auditing. One year later, Ministry of Finance translated IFAC's Code of Ethics for Professional Accountants, which was accepted in the national profession in its original form and contents.

In 2001, Minister of Finance adopted the training program for the potential candidates to pass the exam for acquiring the title of statutory auditor. Ministry of Finance also adopted the Rulebook on the Manner of Passing the Exam for Acquiring the Title of Statutory Auditor by precisely stating the exam criteria under the program. Logical continuation of the undertaken activities was for the Minister of Finance to be assigned the toughest task to appoint the Exam Commission. The first exam for acquiring the professional title was held in December 2001, organized by the Ministry of Finance. By having two exam cycles annually (in May and December), nine exam cycles were carried out as of December 2005 inclusive, and the initial audit core, comprising 147 statutory auditors, was established. However, despite the generally created climate for intro-

duction of the audit profession in the accounting infrastructure, the Law did not cover all aspects that were crucial for this profession. Part concerning the continuous professional development of individuals who acquired the title of statutory auditor remained fully unregulated. Basically, the Law left series of opened issues, the resolution of which became an imperative in the next several years. Resolving these issues initiated radical changes in the existing Audit Law, which, after 7 years, was replaced with a new one in September 2005.

In the meantime, on 9 April 2001, Republic of Macedonia became the first country in the region to sign the SAA with the European Union and its Member States. Parliament of the Republic of Macedonia ratified the SAA on 13 April 2001, thus confirming the strategic interest of the Republic of Macedonia and the political commitment for integration in the European structures. Article 68 of SAA clearly includes the obligations for harmonizing the national legislation with the Acquis Communautaire, creating own experience and guidelines in this process. On 9 November 2005, the country was delivered positive Avis for the status of a candidate country, with detailed standards to be met.

The Avis clearly pointed out the need for the candidate country to meet the EU criteria, among which was the acceptance of 31 Chapters of the Acquis Communautaire. Adoption and implementation of the relevant components in Chapter 5 (Company Law) of the Acquis Communautaire pertaining to accounting and audit is the key part of all the activities envisaged in the Country Action Plan adopted in June 2005 by the Steering Committee appointed by the Government. In line with the commenced EU integration processes, enforcement of the new Audit Law was to provide for a significant improvement of audit quality, as well as commencement of the process of approximation of the audit profession in the Republic of Macedonia to the European family.

Having in mind the fact that in the past period the term "self-regulation" was unknown, primary task of the new Audit Law was commencement of the process of deregulation of the audit profession. Deregulation was to contribute to transfer of the competences in the field of creating the professional regulation and certifying the statutory auditors from the Ministry of Finance to the Institute for Certified Auditors established under this Law. More specifically, the Law envisages establishment of a professional association of statutory auditors with a wide range of obligations and responsibilities, having all statutory auditors and audit firms as its members. Assembly for the incorporation of the Institute for Certified Auditors of the Republic of Macedonia (hereinafter: ICARM) was held on 23 May 2006.

Establishment of ICARM caused avalanche of changes in the audit profession, in particular in the field of public oversight of the profession, assessment of the quality of work of the statutory auditors and the audit firms, changes in the exam program for acquiring the title of statutory auditor, introduction of continuous professional development of statutory auditors, defining the requirement for the audit firms to present transparency report on annual basis, etc. Process of professional training and certification of statutory auditors by ICARM commenced in the course of 2009. In addition, training within the continuous professional development of statutory auditors was carried out for the first time in 2009, and thorough preparations were made for introduction of quality control over the operations of audit firms and statutory auditors.

In parallel to the commenced changes under the recent amendments to the Audit Law, starting from December 2010, a step forward was taken in terms of harmonizing the legal regulations with the Eighth Company Law Directive. To that end, elements in the transparency reports were extended, licencing of statutory auditors and audit firms was introduced, professional oversight body was transformed into regulatory body, etc.

The Big 4 versus Non-Big 4 in the audit industry observed through the transparency reports

Establishment of ICARM led to creation of the key pre-conditions for development of a modern audit profession with all attributes immanent for the EU Member States. Absence of strong professional association of statutory auditors in the past period not only slowed down the development of the profession itself, but also

completely blocked the integration of the national auditors in IFAC and FEE (Federation of European Accountants). Establishment of ICARM has opened new horizons for the statutory auditors in the Republic of Macedonia.

During the eight-year period of implementation of the first Audit Law, audit firms operated in conditions of unfair competition on the audit services market on which, unfortunately, quality was not the key criterion for attracting clients, but it was rather the price of the service offered. Most often offered price for carrying out audit by the local audit firms did not correspond to the time and the complexity of the engagement and the competence of the auditors. In an unscrupulous chase for profit and clients, deviations from the implementation of the professional regulation was clearly significant, in particular as regards the methodological approach of certain audit firms and the conduct of the statutory auditors. Despite the legal limitations for audit firms not to be allowed to carry out audit and render consulting services for the same client, it has never been proven that such legal requirement is de facto functioning. In conditions of absence of established mechanism to observe the rules of the game and adequate quality control, statutory auditors and audit firms observing the professional regulation were discontented by the unprofessional behaviour of their colleagues.

Such trends initiated the need to introduce, as a novelty in the existing Audit Law from 2005, the requirement for the audit firms or the statutory auditor – sole proprietor to publish the annual transparency report within three months of the end of the financial year, in at least one mass media or on their websites. Transparency report should provide for a permanent insight in adherence to the rules of the game in the competition on the market by the members of this profession. The report should include a wide range of information providing clear picture of the type and the volume of activities carried out by the audit firm during the year and the revenues thus realized. More precisely, pursuant to Article 26 of the Auditing Law, annual transparency report should include the following information:

(1) Description of the legal structure and ownership;

(2) Description of the professional network and both the legal and the structural arrangements in the network they belong to;

(3) Description of the governance structure of the audit firm or the statutory auditor – sole proprietor;

(4) Description of the internal quality control system of the audit firm or the statutory auditor – sole proprietor and a statement by the administrative or the management body on the effectiveness of its functioning;

(5) List of auditees during the preceding year;

(6) Statement on the policy implemented by the audit firm or the statutory auditor – sole proprietor concerning the continuing education of the statutory auditors and

(7) Financial information on the total revenues realized on the basis of audit carried out and on the basis of other fees, broken down by four categories of audit services, additional services for quality assurance, tax advisory services and other non-audit services. (Audit Law, 2005)

Transparency reports should be signed by the authorized person at the audit firm, i.e. the statutory auditor – sole proprietor, as the case may be.

If Article 26 Transparency Report in the former Law is compared to Article 40 Transparency Report in the Revised Eighth Company Law Directive, one can conclude that there is high level of compliance regarding the issue on compulsory information to be presented in the transparency report. However, regarding the requirement related to the information to be part of the transparency report, Revised Eighth Company Law Directive is more rigorous, in particular as regards the following points: (e) an indication of when the last quality assurance review referred to in Article 29 took place, (g) a statement concerning the audit firm's independence practices which also confirms that an internal review of independence compliance has been conducted and (j) information concerning the basis for the partners remuneration (Directive 2006/43/EC of the

European Parliament and of the Council of 17 May 2006 on statutory audit of annual accounts and consolidated accounts).

Isolated differences were overcome with the recent amendments of the Audit Law from December 2010 and broadening the list of requested information to be an integral part of the transparency reports. In fact, pursuant to Article 35 of the Law, audit firms are obliged, in special segments in their transparency reports, to disclose data pertaining to the following: (1) date of carrying out the last check on quality assurance of the auditor; (2) statement on independent operations of the audit firm, confirming the existence of internal procedures for check of independence compliance and their implementation and (3) information on the basis on which the fee of the statutory auditor is determined (Audit Law, 2010).

On Table 1 is presented a comparative review of the segments of the transparency reports according to the Audit Law from 2005 and the Audit Law from 2010.

Table 1.

Segment of the transparency reports according to the Audit Law from2010

Audit Law 2005 (Article 26)	Audit Law 2010 (Article 35)
(1) description of the legal structure and ownership;	(1) description of the legal structure and ownership;
(2) description of the professional network and both the legal and the structural arrangements in the network they belong to;	(2) description of the professional network and both the legal and the structural arrangements in the network they belong to;
(3) description of the governance structure of the audit firm or the statutory auditor sole proprietor;	(3) description of the governance structure of the audit firm or the statutory auditor sole proprietor;
(4) description of the internal quality control system of the audit firm or the statutory auditor sole proprietor and a statement by the administrative or the management body on the effectiveness of its functioning;	(4) description of the internal quality control system of the audit firm or the statutory auditor sole proprietor and a statement by the administrative or the management body on the effectiveness of its functioning;
(5) list of auditees during the preceding year;	(5) list of auditees during the preceding year;
(6) statement on the policy implemented by the audit firm or the statutory auditor sole proprietor concerning the continuing education of the statutory auditors and	(6) statement on the policy implemented by the audit firm or the statutory auditor sole proprietor concerning the continuing education of the statutory auditors and
(7) financial information on the total revenues realized on the basis of audit carried out and on the basis of other fees, broken down by four categories of audit services, additional services for quality assurance, tax advisory services and other non-audit services.	(7) financial information on the total revenues realized on the basis of audit carried out and on the basis of other fees, broken down by four categories of audit services, additional services for quality assurance, tax advisory services and other non-audit services.
	(8) date on carrying out the last check on quality assurance of the auditor;
	(9) statement on independent operations of the audit firm, confirming the existence of internal procedures for check of independence compliance and their implementation and
	(10) information on the basis on which the fee of the statutory auditor is determined

Sources: Audit Law (2005) and Audit Law (2010)

Audit Law that entered into force in the course of 2005 imposed the requirement for the audit firms to submit the annual transparency report in 2007 covering their operations in 2006. Unfortunately, during 2007, most of the audit firms did not submit annual transparency reports. Having in mind the fact that in 2007, the ICARM was engaged in building its architecture and it worked on constitutive acts, while the Council for Advancement and Oversight of the Audit (hereinafter: CAOA) put efforts to assist ICARM in commencing its functioning, non-adherence to Article 26 of the Law remained suppressed, and the offenders were unsanctioned.

First transparency reports were published in the course of 2008, and they covered the operations of audit firms in 2007. Number of submitted reports can lead to the conclusion that situation evidently improved in

2008 and, 17 out of 24 audit firms published their annual transparency reports, while the remaining 7 audit firms did not adhere to this legal requirement. In parallel to adhering to the legal requirements, in 2009, transparency reports were published, covering the operations in 2008. In 2009, 21 out of 24 audit firms published their transparency reports in the stipulated deadline. In 2010, for the first time, 24 audit firms adhered to the requirement to present their transparency reports. In the course 2011, there were 28 audit firms, 4 of which were newly established. This is the main reason why only 24 audit firms presented full transparency reports, 2 audit firms emphasized in their reports the fact that they were newly established and therefore were not in a position to disclose all data required by the Law, while the remaining 2 audit firms did not present transparency reports at all. In 2012 out of total 28 audit firms only one has not presented transparency report, whereas the remaining 27 fulfilled their legal commitment. In March 2013, CAOA initiated the process of licensing the audit firms and statutory auditors – sole proprietors. In the initial phase of the licensing out of the 28 existing audit firms, 24 were licensed, whereas 4 audit firms did not submit a request for licensing to the CAOA. One of the audit firms registered in the ICARM Registry, in the analysed period was not active in the audit services segment and due to that had not published transparency reports. Due to this reason, in observing the audit services market in the Republic of Macedonia there is a discontinuity of activities for 4 audit firms. In the meantime, in 2013 were licensed two new audit firms that disclosed their activities for 2013 and 2014 in their transparency report published in 2014 and 2015. Besides this, in 2014 was licensed another audit firms that published its realized activities in the transparency report in 2015. In the same year, one of the audit firms was transformed into statutory audit – sole proprietor. Considering the previously stated, in 2015 on the audit services market exist 26 audit firms. Trying to give a clear picture for the relations between the Big Four and the remaining Non-Big four audit firms for the period 2007 – 2014, the research is consisted of information from the transparency reports for all the audit firms that were active during the observed period. The information from the transparency reports are taken in their authentic form and substance.

In Table 2 is presented a list of audit firms that in the period 2007 – 2014 participated on the audit services market in the Republic of Macedonia.

First segment of transparency reports gives a review on the legal structure and ownership of all audit firms, ICARM members. Pursuant to Article 24 of the Audit Law, an audit firm established as company and statutory auditor – sole proprietor, having obtained working license therefore, can perform audit, as a service. Audit firm is issued working license to perform audit operations if it fulfils the following requirements: (1) having employed at least two statutory auditors, (2) majority voting shares in the audit firm owned by the statutory auditors and (3) possession of insurance policy of general responsibility in the amount determent by the ICARM (Audit Law, 2010). According to Article 13 of the Audit Law, the working license to the audit firms and statutory auditor – sole proprietor is issued by the Council for Advancement and Oversight of the Audit (hereinafter: CAOA). With the amendments in the Law from 2010, CAOA gained a status of regulatory body. With a time gap of one year, the CAOA was constituted in January 2012. During 2012, the CAOA was working on establishing its own architecture drafting the constitutional acts and was not able to commence the process of licensing the statutory auditors and the audit firms. In the period from March 2013 until June 2015, CAOA licensed 183 certified auditors, 26 audit firms and 13 statutory auditors – sole proprietors.

Second segment of transparency reports shows which professional network the audit firm belongs to, the legal and the structural arrangements therefore. There are differences in the extent of the information given about the network arrangements, with in some cases very little information on the structure of central Boards or committees and their functions. As shown in transparency reports, the segment explaining the professional network which the audit firms belong to and the legal and the structural arrangement there from, the Big Four provide more detailed explanations, while the local Non-Big Four just stress the fact that they act locally on the territory of the Republic of Macedonia.

Table 2.

Audit firms on audit market in Republic of Macedonia in period 2007-2015

	Name of audit firm	Status of the audit firm
1.	Ernst&Young Statutory Auditors, Skopje	Licensed
2.	PricewaterhouseCoopers Audit LLC Skopje	Licensed
3.	KPMG Macedonia LLC Skopje	Licensed
4.	Deloitte LLC Skopje	Licensed
5.	Grant Thornton LLC Skopje	Licensed
6.	Moore Stephens, LLC Skopje	Licensed
7.	BDO LLC Skopje	Licensed
8.	B&Lj, Boro and Ljupco, LLC Skopje	Licensed
9.	Trio-Consulting LLC Gevgelija	Licensed
10.	Rafajlovski Audit LLC Skopje	Licensed
11.	Censum LLS Skopje	Licensed
12.	Pelagoniska Audit Firm LLC Prilep	Licensed
13.	Kojzakliev-Pavleska LLC Skopje	Licensed
14.	Kni-Prokom, LLC Prilep	Licensed
15.	Baker Tilly Macedonia LLC Skopje	Licensed
16.	Ecovis, Primeko Audit LLC Skopje	Not licensed
17.	Revizions LLC Skopje	Licensed
18.	Audit IAS Skopje	Not licensed
19.	Efect Plus, LLS Skopje	Licensed
20.	Audit and Consulting firm - ERC - Skopje	Not licensed
21.	ProAudit, Kumanovo	Licensed
22.	European Audit Center, Skopje	Licensed
23.	Elit, LLC Skopje	Licensed
24.	Logist, LLS Kumanovo	Transformed into statutory auditor sole proprietor
25.	Audit, accounting and tax consulting firm, JVK, LLC Skopje	Licensed
26.	Audit and Finance A&F, LLS Skopje	Licensed
27.	Idea Plus Audit & Consulting, LLC Radovis	Licensed
28.	Audit Center BS, LLC Skopje	Not licensed
29.	Verifica LLC, Skopje	Licensed
30.	Bend Audit and Consulting, LLC, Tetovo	Licensed
31.	Joanidis, Audit Company, LLS Skopje	Licensed

Source: Registry of audit firms, ICARM, 2015

If we compare the information from the transparency reports for the eight subsequent years pertaining to this segment, we may conclude that the majority of the audit firms use almost identical formulations. Special attention should be given to four major changes. The first change occurred in 2008 when the local audit firm Infos D became part of the professional network of the Bakker Tilly International. The second change took place one year later, in 2009, when the local audit firm Macedonian Audit Center joined Moore Stephens. Based on the agreement signed in October 2011, Primeko audit became full member of ECOVIS International. During the same year, the local audit firm Dimitrov audit was rebranded to BDO. With the changes that happened in the period of presentation of the transparency reports (2007-2014) we may summarize that on the audit services market in the Republic of Macedonia at the beginning existed the Big Four and Grant Thornton, whereas during the eight years observed, four local audit firms became part of the international professional network.

Initial reading of the transparency reports for 2007 and 2008 imposed the impression of lack of experience of the audit firms in preparing and presenting such type of reports. Certain audit firms, especially the local ones, briefly focused in the reports on several key information (such as, the legal structure and ownership, description of the governance structure and part of the financial information), without covering the other segments of the report (such as, the internal control, continuous professional development, presentation of list of clients and realized revenues by categories of services defined in the Law). Unlike them, other audit firms, especially the Big Four, presented more detailed information on the internal quality control system of the firm, attached list of auditees; however, they did not make precise distinction of the realized revenues pursuant to the requirements in the Law. Such approach is logical if one takes into account that the Big Four operate according to the globally accepted audit methodology. It means a developed, detailed and rigorous internal control system. What is immanent for the Big Four is carrying out control through every–day controlling of the operations on the basis of hierarchy-pyramidal system, from the lowest to the highest management level (bottom-up approach). In addition, there are periodic internal controls according to specially designed methodology of the audit firm. Offices of the Big Four in the Republic of Macedonia are subject to detailed peer review once a year, carried out by another firm member of the network in Europe, according to specially designed control methodology and sophisticated and specially designed control software.

By developing the experience in preparing and presenting transparency reports, improvement in their form and contents is clearly significant. Such conclusion particularly refers to the local audit firms, which more precisely explain the internal quality control system, present detailed list of auditees, indicate the bases for calculating the fee for the audit engagement partner and the dates of last quality control carried out by the Quality Control Commission, operating within ICARM. Unfortunately, it is inevitable to notice that certain audit firms, which present reports with poorer quality, do it continuously by copying the same wordings, without putting efforts to improve information power of the transparency reports. Such inconsistent approach regarding the form and the contents of the transparency reports burdens the comparison of data presented in certain segments and the carrying out of more detailed research. However, despite such limitations, presented transparency reports provide realistic picture of the developments on the audit services market in the Republic of Macedonia.

According to the Audit Law, one of the responsibilities of the CAOA is related to a review of the transparency reports. The initial review of transparency reports was conducted by the CAOA in 2013, when it concluded that there is an inconsistence approach in the presentation of information in the audit reports by the audit firms and along with it a non respect of the requirements from Article 35 of the Audit Law. For the purpose of improving the quality of the transparency reports and helping the audit firms in interpreting the legal requirements, the CAOA prepared Guidelines for drafting transparency reports that in February 2015 was distributed to the audit firms with a recommendation for its implementation when drafting the transparency reports for 2014 which were to be submitted to CAOA by 31 March 2015. The initial review of the transparency reports form the last year shows significant improvement and unified approach in their drafting by the audit firms in comparison to the previous years.

Trying to give the most possibly clear image of the role the Big Four and Non-Big Four have on the audit services market in the Republic of Macedonia, in continuation to this paper we will analyse data from segments in the transparency reports pertaining to (1) the number of auditees and (2) the financial information on the total revenues realized on the basis of carried out audit, as well as on the basis of other fees, broken down to four categories of audit services, additional services related to quality assurance, tax advisory services and other non-audit services are analyzed in more details further on in this paper.

Due to the heterogeneous composition of the auditees (part of them are large enterprises, part of them are medium-size enterprises, also including projects financed by financial institutions and donors from abroad), Table 3 presents the number of auditees being audited by audit firms in the period 2007 - 2014.

Table 3.

Number of auditees in period 2007-2014

	Name of audit firm	Number of auditees						
		2007	2008	2009	2010	2011	2012	2013
1.	Ernst&Young Statutory Auditors, LLC Skopje	17	25	29	28	34	28	27
2.	PricewaterhouseCoopers Audit LLC Skopje	23	28	31	31	45	47	53
3.	KPMG Macedonia LLC Skopje	46	43	41	48	53	54	59
4.	Deloitte LLC Skopje	28	33	30	24	33	39	31
5.	Grant Thornton LLC Skopje	22	30	43	47 companies, 5 projects	48	62	96
6.	Moore Stephens, LLC Skopje	47	57	60	59	59	66	78
7.	BDO, LLC Skopje	24	33	56	48	54	64	66
8.	B&Lj, Boro and Ljupco, LLC Skopje	41	41	47	55	58	65	73
9.	Trio-Consulting LLC Gevgelija	69	50 companies, 1 association of citizens and 5 projects*	56	65	69	67	65
10.	Rafajlovski Audit LLC Skopje	2 construction companies, 22 production, trading and services companies and 1 brokerage house	2 construction companies, 30 production, trading and services companies and 1 brokerage house	36	1 construction company, 35 production, trading and services companies and 1 brokerage house	1 construction company, 49 production, trading and services companies and 1 brokerage house	3 construction companies, 50 production, trading and services companies and 1 brokerage house	51
11.	Censum LLC Skopje	no data in the report	no data in the report	37	42	34	42	35
12.	Pelagoniska Audit Firm LLC Prilep	36	41	31	34	29	31	38
13.	Kojzakliev-Pavleska LLC Skopje	6	6	11	16 companies, 5 projects*	14 companies, 3 projects*	21 companies, 2 projects*	31 companies, 1 project*
14.	Kni-Prokom, LLC Prilep	15 companies and 2 public enterprises	15 companies, 5 public enterprises and 2 projects*	26	33	33	34	37
15.	Baker Tilly Macedonia LLC Skopje	This audit firm did not publish a TR	24 companies and 25 projects*	24	22 companies, 10 projects*	21 companies, 5 projects*	17	18
16.	Ecovis, Primeko Audit LLC Skopje	30 companies and non-profitable organizations	30 companies and non-profitable organizations	17	23	10	15	The firm does not possess a working license from CAOA and has not published TR
17.	Revizions LLC Skopje	5 non-profitable organizations and 1 public enterprise	10	12	11 companies, 4 projects*	8 companies, 4 projects*	11 companies, 5 projects*	9 companies, 4 projects*
18.	Audit IAS Skopje	This audit firm did not publish a TR	12	14	25	23	28	The firm does not possess a working license from CAOA and has not published TR
19.	Efect Plus Audit Firm, LLS Skopje	This audit firm did not publish a TR	12	20	9 companies, 11 projects*	9 companies, 11 projects*	8 companies, 8 projects*	17
20.	Audit and Consulting firm - ERC - Skopje	This audit firm did not publish a TR	29	34	34	31	31	The firm does not possess a working license from CAOA and has not published TR
21.	ProAudit, LLC Kumanovo	This audit firm did not publish a TR	31	33	37	37	42	49
22.	European Audit Center, LLC Skopje	This audit firm did not publish a TR	This audit firm did not publish a TR	23	37	40	43	44
23.	Elit, LLC Skopje	This audit firm did not publish a TR	This audit firm did not publish a TR	12	17	20	26	30
24.	Logist, LLS Kumanovo	This audit firm did not publish a TR	This audit firm did not publish a TR	17	9	13	9	13
25.	Audit, accounting and tax consulting firm, JVK, LLC Skopje	-	-	-	-	14	22	35
26.	Audit and Finance A&F, LLS Skopje	-	-	-	-	18	25	17
27.	Idea Plus Audit & Consulting, LLC Radovis	-	-	-	-	19	18	26
28.	Audit Center BS, LLC Skopje	-	-	-	-	This audit firm did not publish a TR	The firm did not perform audits in 2012	The firm does not possess a working license from CAOA and has not published TR
29.	Verifica LLC, Skopje	-	-	-	-	-	The audit firm was licensed in 2012 and as a newly established has not	6

*Projects financed by financial institution and foreign donors.

Source: Transparency reports of the audit firms, 2007, 2008, 2009, 2010, 2011, 2012, 2013 and 2014

Audit firms apply different approach when demystifying the clients at which audit was carried out. Most of them provide detailed list of all auditees. Small portion of the audit firms use descriptive approach to indicate the auditees by summarizing them in certain categories (companies, non-profitable organizations, projects financed by financial institutions and donors from abroad, etc.). Only one local audit firms did not present a list of auditees in the first two years. In the last six years, the weaknesses in this segment of the transparency report were overcome. However, despite such approach, this segment in the report points out to a positive trend in disclosing information related to client's identity, which was considered as business secret in the past and was not subject to public debate. Regardless of the fact that independent audit reports were subject to publishing pursuant to the first Audit Law from 1997, it was exceptionally difficult to relate the audit firms to the specific clients. Hence, how small audit firms, having limited personnel resources, manage to carry out audits at large number of clients has always been an open issue. Here we should not ignore the fact that in the last decade the audit firms are facing high staff turnover which is not immanent for the other professions. Such states of affairs make much difficult the efforts to establish clear correlation between the staff potential in the audit firm and the number and complexity of the performed audit engagements, presented in the transparency reports. Finally, numerous users of audit reports can learn from this segment of the transparency report about the allocation of potential clients to be audited (pursuant to the Company Law, they are the large and the medium-sized enterprises) between the audit firms and how much one participates in dividing the pie. This information is also a good signal for ICARM to trigger its control mechanisms, should it detect discrepancy between the available personnel potential and the volume of realized engagements at certain audit firms.

At the beginning of the analysis we would like to put attention to the fact that the number of auditees, during the whole analysed period, is continuously growing from 437 in 2007 to 1,043 in 2014, i.e. and increase of 238%. From the enclosed list of audit firms, in the transparency reports we may isolate various trends at the audit firms. Two of the Big Four in the eight years period doubled the number of auditees. More precisely, PriceWaterhouseCoopers, Skopje from 23 clients in 2007 managed to increase the number to 49 auditees on 2014. Similar trend can be noted in Deloitte that in the analysed period increased the number of its auditees from 28 to 46. In the same period, Ernst&Young Statutory Auditors noted a pronounced fluctuation from 17 auditees in 2007, 34 in 2011, and 26 auditees in 2014. For the last from the Big Four, KPMG are noted minor oscillation in the number of auditees from 46 in 2007 to the maximum 59 in 2013 and again 46 in 2014. From the remaining audit firms, the most significant changes can be noted at Grant Thornton that from 22 managed to increase the number of its auditees to 101, Moore Stephens from 47 to 70 and BDO from 24 to 58 for the period 2007-2014. Five of the local audit firms have slightly decreased the auditees, whereas the others managed to keep almost the same number of clients during the analysed eight years period. At two of the local audit firms can be noted a significant increase in the number of auditees, and that at B&Lj, Boro and Ljupco from 41 in 2007 to 93 in 2014 and at Rafajlovski Audit from 25 in 2007 to 47 in 2014. Special attention should be given to the fact related to the newly established audit firms, of which three that presented the transparency repots enclosed a list of auditees which number indicates initially good approach to the audit services market and acquirement part of the auditees.

If we compare the Big Four and the remaining Non-Big four audit firms, we may conclude that out of the total population of auditees in the analysed period, the share of the Big Four was significantly decreased from 26,09% in 2007 to 16,01% in 2014. From the remaining audit firms deserves attention the fact that the share of the audit firms belonging to international network increased (Grant Thornton, Moore Stephens and BDO) from 21,28% in 2007 to 24,93% in 2014. The local audit firms participated with 52,63% in 2007 and 59,06% in 2014.

Trying to find out the reasons for the oscillations in the number of auditees at the Big Four and Non-Big Four, we isolated three particularly significant. Oscillations are partially due to the requirement in the Banking Law in the Republic of Macedonia on mandatory external rotation of audit firms each 5 years. Taking into account the fact that banks in the Republic of Macedonia most often select the Big Four as their auditors, mandatory rotation causes changes in the number of their auditees. If going into more details in the analysis of the

list of the companies subject to audit, we may conclude that the big entities and public interest entities were mainly audited by the Big Four. Part of the big entities and significant part of the medium entities are concentrated in the audit firms part of the international networks that do not belong to the Big Four (Grant Thornton, Moore Stephens and BDO), as well as in the local audit firms. In the list of auditees of the local audit firms are as well included projects financed by foreign donators. Due to these reasons, we consider that a valid conclusion on the participation of the audit firms on the audit services market cannot be drawn only on the basis of the number of auditees (as an isolated parameter). Besides that, according to the legislation in the Republic of Macedonia, primary criteria when selecting the audit firm, for the majority of the auditees, is the price of the offered service. Because of these reasons, during the public bidding among the audit firms the chances to be selected are higher for the audit firms that offers lower price of their services. Unfortunately, the quality is not considered as overriding criteria, so that the audit firms, especially the Big Four, that are subject to rigorous quality control checks feel a serious handicap to compete with the low prices on the market. However, regardless of the level reached as regards transparency in disclosing information related to the auditees, these data do not give the answer to the question whether more audits carried out means larger share on the audit services market, observed through the prism of the realized revenues on the basis of audit. Answer to this question depends on the size of the auditee, as well as on the fee the audit firm realizes from the audit carried out. We can get the large picture by relating these data not only to the available personnel resources in the audit firms, but also to the revenues realized from the offered audit services. Segregation of the audit services market and the struggle for new clients is often related to the offering of lower fees for the service rendered compared to the offer of the competitive audit firm. Unfortunately, lower fee always goes hand in hand with the compromise to render the service, however with lower quality. Taking into account the above mentioned, we believe that this segment of the transparency reports is a red flag for the quality control of ICARM.

Pursuant to Article 35 of the Audit Law, audit firms are obliged to disclose, in their transparency reports, even the most sensitive information related to the structure of realized revenues. Financial information on the total revenues realized on the basis of carried out audit and on the basis of other fees should be broken down to four categories: (1) audit of annual statements and consolidated accounts, (2) additional information on quality assurance, (3) tax advisory services and (4) other non-audit services.

Individual share of audit firms in the total offered audit services and the revenues thus realized in the period 2007-2014 is shown in Table 4 below.

Table 4. Structural share of audit firms in other turnover realized on the basis of audit services

	Audit firm	Audit-related turnover in EURO								Percentage							
		2007	2008	2009	2010	2011	2012	2013	2014	2007	2008	2009	2010	2011	2012	2013	2014
1	Ernst & Young, Statutory Auditors, Skopje	305.447	508.176	525.353	634.168	1.184.898	684.291	302.104	342.160	7,49%	10,33%	10,09%	12,26%	22,43%	14,04%	6,95%	8,24%
2	PWC LLC Skopje	1.239.900	669.426	1.092.485	966.396	706.491	852.103	798.557	571.127	30,42%	13,60%	20,99%	18,68%	13,38%	17,48%	18,37%	13,75%
3	KPMG Macedonia LLC Skopje	510.155	1.025.069	938.703	943.541	737.908	786.683	689.805	676.699	12,51%	20,83%	18,04%	18,24%	13,97%	16,14%	15,87%	16,29%
4	Deloitte LLC Skopje	699.936	927.079	653.610	555.970	596.421	492.720	463.649	519.318	17,17%	18,84%	12,56%	10,75%	11,29%	10,11%	10,67%	12,50%
5	Grant Thornton LLC Skopje	244.663	329.368	563.090	545.582	603.879	463.996	464.850	488.871	6,00%	6,69%	10,82%	10,55%	11,43%	9,52%	10,69%	11,77%
6	Moore Stephens/Macedonian Audit Center, Skopje	224.880	195.655	199.512	202.687	206.085	201.564	196.519	177.971	5,52%	3,98%	3,83%	3,92%	3,90%	4,14%	4,52%	4,29%
7	BDO/Dimitrov Audit, Skopje	242.654	300.946	230.016	262.667	207.000	216.142	219.306	193.303	5,95%	6,12%	4,42%	5,08%	3,92%	4,43%	5,05%	4,65%
8	B&Lj, Boro and Ljupco, LLC Skopje	151.512	130.407	141.707	161.837	146.423	147.350	190.033	218.439	3,72%	2,65%	2,72%	3,13%	2,77%	3,02%	4,37%	5,26%
9	Trio-Consulting LLC Gevgelija	140.605	162.445	93.257	96.787	94.828	103.784	104.172	71.559	3,45%	3,30%	1,79%	1,87%	1,80%	2,13%	2,40%	1,72%
10	Rafajlovski Audit LLC Skopje	72.325	98.553	121.122	96.585	115.382	122.780	123.626	110.748	1,77%	2,00%	2,33%	1,87%	2,18%	2,52%	2,84%	2,67%
11	Censum LLC Skopje	38.968	79.947	90.039	88.464	37.268	91.999	71.738	44.549	0,96%	1,62%	1,73%	1,71%	0,71%	1,89%	1,65%	1,07%
12	Pelagoniska Audit Firm LLC Prilep	65.267	83.712	87.365	77.458	78.090	88.797	94.694	109.732	1,60%	1,70%	1,68%	1,50%	1,48%	1,82%	2,18%	2,64%
13	Kojzakliev-Pavleska Ad Skopje	8.488	8.488	14.895	33.760	29.601	33.445	30.247	35.696	0,21%	0,17%	0,29%	0,65%	0,56%	0,69%	0,70%	0,86%
14	Kni-Prokom Prilep	29.333	53.854	67.447	48.846	58.699	58.000	59.317	40.033	0,72%	1,09%	1,30%	0,94%	1,11%	1,19%	1,36%	0,96%
15	Baker Tilly Macedonia LLC Skopje	43.841	73.951	84.081	73.675	79.171	63.203	64.223	82.389	1,08%	1,50%	1,62%	1,42%	1,50%	1,30%	1,48%	1,98%
16	Primeko Audit LLC Skopje	56.496	55.064	35.737	39.807	13.307	22.293	0	0	1,39%	1,12%	0,69%	0,77%	0,25%	0,46%	0,00%	0,00%
17	Revizins LLC Skopje	1.889	12.190	17.328	28.298	24.480	34.473	32.895	13.478	0,05%	0,25%	0,33%	0,55%	0,46%	0,71%	0,76%	0,32%
18	International Auditing Standards (IAS) Skopje	0	14.341	27.496	35.041	27.626	42.813	0	0	0,00%	0,29%	0,53%	0,68%	0,52%	0,88%	0,00%	0,00%
19	Effect Plus Audit Firm, Skopje	0	28.151	42.901	43.367	54.443	40.901	37.057	10.358	0,00%	0,57%	0,82%	0,84%	1,03%	0,84%	0,85%	0,25%
20	Audit and Consulting firm —ERC , Skopje	0	87.479	65.035	87.479	44.718	31.631	0	0	0,00%	1,78%	1,25%	1,69%	0,85%	0,65%	0,00%	0,00%
21	Pro-audit Audit Firm, Kumanovo	0	48.423	42.829	55.041	51.675	60.260	65.333	76.407	0,00%	0,98%	0,82%	1,06%	0,98%	1,24%	1,50%	1,84%
22	European Audit Center, Skopje	0	0	45.146	47.187	58.650	67.301	64.752	81.106	0,00%	0,00%	0,87%	0,91%	1,11%	1,38%	1,49%	1,95%
23	Elit, Dance LLC Skopje	0	27.740	25.203	33.382	38.033	41.317	42.033	34.927	0,00%	0,56%	0,48%	0,65%	0,72%	0,85%	0,97%	0,84%
24	Logist, LLS, Kumanovo	0	0	0	15.607	17.670	15.076	17.359	16.222	0,00%	0,00%	0,00%	0,30%	0,33%	0,31%	0,40%	0,39%
25	Audit, accounting and tax consulting firm, ''JVK'', Sk	0	0	0	0	27.805	38.472	50.341	52.878	0,00%	0,00%	0,00%	0,00%	0,53%	0,79%	1,16%	1,27%
26	Audit and finance A&F, Skopje	0	0	0	0	26.307	42.386	27.640	22.639	0,00%	0,00%	0,00%	0,00%	0,50%	0,87%	0,64%	0,55%
27	Idea Plus Audit & Consulting, Radovis	0	0	0	0	15.236	30.195	42.195	38.423	0,00%	0,00%	0,00%	0,00%	0,29%	0,62%	0,97%	0,93%
28	Audit firm AUDIT CENTER BS, LLC Skopje	0	0	0	0	0	0	0	0	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%
29	Verifica LLC, Skopje	0	0	0	0	0	0	5.057	12.429	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,12%	0,30%
30	Bend Audit and Consulting, LLC, Tetovo	0	0	0	0	0	0	89.365	108.599	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	2,06%	2,61%
31	Joanidis, Audit Company, Skopje	0	0	0	0	0	0	0	3.000	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,07%
	Total	4.076.359	4.920.463	5.204.359	5.173.630	5.282.094	4.873.976	4.346.865	4.153.057	100%	100%	100%	100%	100%	100%	100%	100%

Source: Transparency Reports 2007, 2008, 2009, 2010, 2011, 2012, 2013 and 2014.

In the analysed period, the total market of audit services observed through realized revenues from audit activities is characterized with emphasized fluctuations, starting from 4,076,359 EUR in 2007, 4,920,463 EUR in 2008, 5,204,359 EUR in 2009, 5,173,630 EUR in 2010, 5,282,094 EUR in 2011, 4,873,976 EUR in 2012, 4,346,865 EUR in 2013 till 4,153,057 EUR in 2014. Such oscillations do not correspond with the number of auditees, which as previously mentioned was increased double. The reason of such discrepancy between the increased amount of work of the audit firms through drastically increase of the number of auditess in one hand and maintenance of the level of audit revenues on approximately the same level on the other hand is an issue that should be elaborated by the Quality Control Commission within ICARM.

Data from transparency reports speak of dominant share of the Big Four, 67.60% in 2007, 63.61% in 2008, 61.68% in 2009, 59.92% in 2010, 61.07% in 2011, 57.77% in 2012, 51.86% in 2013 and 50.79% in 2014 in the total revenues realized on the basis of audit services in the Republic of Macedonia. However, in spite of the dominant share on the audit services market as per the realized revenues, it is worthed noting the fact that such share of the Big Four is continuously decreasing that corresponds to the decrease of the number of auditees in the analysed period. More detailed analysis of data in the Table 4 points out to the fact that PriceWaterhouseCoopers dominated with 30.42% in the total revenues realized on the basis of audit in 2007. Share of KPMG Macedonia in the structure of realized revenues is evident in 2008, participating with 20.83% compared to the other firms in the group of the Big Four. PriceWaterhouseCoopers was again dominant on the audit services market in 2009, participating with 20.99% in the total revenues realized on the basis of audit. The situation was similar in 2010 as well, with PriceWaterhouseCoopers (18.68%) and KPMG Macedonia (18.24%) having the highest share on the audit services market. As a result of the continuous increase in the revenues from audit services from 7.49% in 2007 Ernst&Young Statutory Auditors, Skopje achieves a dominant position on the market with 22.43% in 2011. Besides the significant fluctuation during the eight years period, at the end of 2014 amongst the Big Four the greatest share in the realized audit revenues has KPMG Macedonia (16.29%), then on approximately same level are PriceWaterhouseCoopers (13.75%) and Deloitte (12.50%), where the smallest is the share of Ernst&Young Statutory Auditors, Skopje (8.24%). Right after the Big Four, from the group of non-Big Four, Grant Thornton raises up above with a continuous increase in the revenues realised from audit services from 6.00% in 2007 to 11.77% in 2014. The dramatically increase of the revenues from audit activities of Grant Thornton is due to the fivefold increase of the number of auditees that this audit firm has disclosed in the transparency reports for the past eight years (from 22 to 101).

For the domestic audit services market significant is the participation of the two local audit firms that during the analysed period became part of the international professional network - Moore Stephens (5.52% in 2007, 3.98% in 2008, 3.83% in 2009, 3.92% in 2010, 3.90% in 2011, 4.14% in 2012, 4.52% in 2013 and 4.29% in 2014) and BDO (5.95% in 2007, 6.12% in 2008, 4.42% in 2009, 5.08% in 2010, 3.92% in 2011, 4.43% in 2012, 5.05% in 2013 and 4.65% in 2014). Basically, in the analysed period the individual share of the audit firms that belong to the international network in the total audit revenues is relatively stable, but analysed all together they take significant part of the market starting from 18.55% in 2007 with mild fluctuations in the following six years till 22.69% in 2014. The share of the other local audit firms on the audit services market was minor in 2007 (13.86%), continuously increasing year by year, reaching significant 26.52% in 2014.

However, a period of eight years might be too short of a period to draw valid conclusions. Anyhow, if we analyze the numbers in more details, significant fluctuations can be noticed at certain audit firms. Reasons for such fluctuations should be further thoroughly analyzed, which certainly goes beyond the contents of this paper. As previously emphasized, such trends are partially resulting of the requirements in the Banking Law from June 2007 for external rotation of audit firms each five years. More specifically, Banking Law does not allow for the same audit firm to carry out audit at the same client, i.e. bank, continuously for a period longer than five years. Therefore, engagements of the Big Four in the financial sector change, causing to lose the big clients at part of these firms, which, on the other hand, results in reduced revenues realized on the basis of audit. Should we compare the data on the fluctuations in the revenues realized on the basis of audit and the data on the number of auditees being audited by the audit firms in the last eight years, we can notice

that certain audit firms, with reduced number of clients, experienced increased revenues realized on the basis of audit services.

Audit Law requires revenues the audit firm realize from quality assurance services to be separately presented in the transparency report. Taking into account the fact that audit services market is still not developed in the Republic of Macedonia, as is the case in the EU Member States, small number of clients request quality assurance services, and when they request such services, the audit firms treat them as another type of services. Data in the transparency reports speak of such trends, and it was only Ernst&Young Statutory Auditors, Skopje that showed revenues on the basis of quality assurance services in first years (2007 - 2011). Since the review of the transparency reports started, and especially after the submission of the Guidelines for drafting transparency reports, a significant improvement is noted in the part of delineation of the realized revenues in four categories, as per the Audit Law. In the category of realized revenues from quality assurance services in 2014, 15 audit firms disclosed their revenues in a total amount of 251.693 EUR, of which 35.99% are related to Ernst&Young Statutory Auditors, Skopje and PriceWaterhouseCoopers. In favour of the previously stated, goes as well the fact that one of the local audit firms Bend Audit and Consulting in the transparency report for 2014 disclosed revenues from quality assurance services representing 12.84% of the total revenues. We hope that in the upcoming period, the audit firms will disclose these revenues separately and that they will not incorporate them in the category other revenues from non-audit services.

Another category of revenues from the transparency reports includes the revenues realized on the basis of tax advisory services. Data on the participation of the audit firms in the total revenues realized on this basis are presented in Table 5.

Table 5. Structural share of audit firms in tax advisory services

	Audit firm	Tax advisory services								Percentage							
		2007	2008	2009	2010	2011	2012	2013	2014	2007	2008	2009	2010	2011	2012	2013	2014
1	Ernst & Young, Statutory Auditors, Skopje	0	0	0	0	0	0	0	0	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%
2	PWC LLC Skopje	435.101	0	0	0	0	0	0	40.518	79,90%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	8,94%
3	KPMG Macedonia LLC Skopje	57.666	31.828	19.358	1.605	0	0	0	0	10,59%	14,48%	8,46%	0,55%	0,00%	0,00%	0,00%	0,00%
4	Deloitte LLC Skopje	34.814	24.625	8.001	6.178	22.687	63.227	79.683	137.126	6,39%	11,20%	3,50%	2,10%	2,46%	22,48%	31,19%	30,27%
5	Grant Thornton LLC Skopje	0	0	0	0	513.118	0	0	0	0,00%	0,00%	0,00%	0,00%	55,64%	0,00%	0,00%	0,00%
6	Moore Stephens/Macedonian Audit Center, Skopje	0	0	3.186	3.115	4.106	7.835	0	0	0,00%	0,00%	1,39%	1,06%	0,45%	2,79%	0,00%	0,00%
7	BDO/Dimitrov Audit, Skopje	0	131.436	54.780	30.894	42.065	50.736	0	0	0,00%	59,80%	23,94%	10,50%	4,56%	18,04%	0,00%	0,00%
8	B&Lj, Boro and Ljupco, LLC Skopje	0	0	0	0	0	0	0	2.504	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,55%
9	Trio-Consulting LLC Gevgelija	6.342	2.813	4.451	0	400	834	7.344	11.303	1,16%	1,28%	1,95%	0,00%	0,04%	0,30%	2,87%	2,50%
10	Rafajlovski Audit LLC Skopje	0	0	0	0	0	0	0	0	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%
11	Censum LLC Skopje	0	0	0	78.212	106.471	119.360	150.994	182.561	0,00%	0,00%	0,00%	26,57%	11,55%	42,43%	59,09%	40,30%
12	Pelagoniska Audit Firm LLC Prilep	0	0	0	0	0	0	0	0	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%
13	Kozjakliev-Pavleska Ad Skopje	0	0	0	0	0	0	0	407	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,09%
14	Kni-Prokom Prilep	0	19.886	585	797	0	0	0	9.967	0,00%	9,05%	0,26%	0,27%	0,00%	0,00%	0,00%	2,20%
15	Baker Tilly Macedonia LLC Skopje	8.249	0	51.317	129.496	115.659	0	0	0	1,51%	0,00%	22,42%	44,00%	12,54%	0,00%	0,00%	0,00%
16	Primeko Audit LLC Skopje	2.390	6.328	85.158	40.267	92.525	33.630	0	0	0,44%	2,88%	37,21%	13,68%	10,03%	11,96%	0,00%	0,00%
17	Revizions LLC Skopje	0	0	0	869	2.141	2.166	2.185	6.157	0,00%	0,00%	0,00%	0,30%	0,23%	0,77%	0,86%	1,36%
18	International Auditing Standards (IAS) Skopje	0	0	0	0	0	0	0	0	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%
19	Effect Plus Audit Firm, Skopje	0	0	0	0	0	0	0	33.496	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	7,39%
20	Audit and Consulting firm —ERC , Skopje	0	2.879	2.017	2.879	13.779	2.572	0	7.805	0,00%	1,31%	0,88%	0,98%	1,49%	0,91%	0,00%	1,72%
21	Pro-audit Audit Firm, Kumanovo	0	0	0	0	715	0	797	1.772	0,00%	0,00%	0,00%	0,00%	0,08%	0,00%	0,31%	0,39%
22	European Audit Center, Skopje	0	0	0	0	2.618	0	0	488	0,00%	0,00%	0,00%	0,00%	0,28%	0,00%	0,00%	0,11%
23	Elit. Dance LLC Skopje	0	0	0	0	0	0	0	0	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%
24	Logist, LLS, Kumanovo	0	0	0	0	0	0	0	0	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%
25	Audit, accounting and tax consulting firm, "JFK", Sk	0	0	0	0	0	0	0	0	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%
26	Audit and finance A&F, Skopje	0	0	0	0	0	0	0	0	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%
27	Idea Plus Audit & Consulting, Radovis	0	0	0	0	5.854	927	5.382	3.919	0,00%	0,00%	0,00%	0,00%	0,63%	0,33%	2,11%	0,86%
28	Audit firm AUDIT CENTER BS, LLC Skopje	0	0	0	0	0	0	0	0	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%
29	Verifica LLC. Skopje	0	0	0	0	0	0	0	0	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%
30	Bend Audit and Consulting, LLC, Tetovo	0	0	0	0	0	0	9.129	3.414	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	3,57%	0,75%
31	Joanidis, Audit Company, Skopje	0	0	0	0	0	0	0	11.596	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	2,56%
	Total	544.563	219.796	228.854	294.311	922.138	281.287	255.515	453.033	100%	100%	100%	100%	100%	100%	100%	100%

Source: Transparency Reports 2007, 2008, 2009, 2010, 2011, 2012, 2013 and 2014.

As we may conclude from the Table 5, the tax advisory services market in the Republic of Macedonia in the period 2007-2014 is characterized with emphasized oscillations. Starting with 544,563 EUR in 2007, in the following three years the total amount of revenues were decreased by more than double (219,796 EUR in 2008, 228,854 EUR in 2009 and 294,311 EUR in 2010), reaching the maximum 922,138 EUR in 2011, then drastically reducing in the following two years (281,287 EUR in 2012 and 255,515 EUR in 2013), and at the end of the analysed period, i.e. 2014 reaching 453,033 EUR.

Unlike audit services, where the Big Four had the dominant share in the structure of the revenues realized on the basis of audit services, their highest share as regards tax advisory services was noticed in 2007, covering 96.88% of the market. In 2007, only the following three out of the Big Four participated in the revenues realized on the basis of tax advisory services: PriceWaterhouseCoopers with 79.90%, KPMG Macedonia LLC Skopje with 10.59% and Deloitte LLC Skopje with 6.39%. Two local audit firms participated in the remaining 3.12%. In the following years, share of the Big Four in tax advisory services drastically dropped to 25.68% in 2008, 11.95% in 2009, 2.64% in 2010 and 2.48% in 2011. Significant growth is noted in 2012 of total 22.48% that continues in the following two year (31.19% in 2013 and 40.24% in 2014). Interesting fact related to the share of the Big four in the revenues from tax advisory services is that Ernst&Young Statutory Auditors, Skopje, according to the presented transparency reports, has not realized any revenues on this basis during the analysed period. With regards to PriceWaterhouseCoopers that had the dominant share in 2007 of 79.90%, in the next six years, it did not disclose revenues from tax advisory services and in 2014 achieved a market share 9.18%. KPMG Macedonia LLC Skopje participated in the tax advisory services market with 10.59% in 2007, 14.48% in 2008, 8.46% in 2009, and modest 0.55% in 2010 and no revenues in the upcoming four years. As a difference from the previously mentioned Bug Four, in the course of the analysed period Deloitte has been continuously reporting for the realized revenues from tax advisory services, starting from 6.39% in 2007, growth to 11.20% in 2008, decrease to 3.50% in 2009, 2.10% in 2010 and 2.46% in 2011, up to significant increase to 22.48% in 2012, 31.19% in 2013 and 31.06% in 2014.

Unlike the developments at the Big Four, Non-Big Four increased their share on the market for tax advisory services. What is surprising is the leader position of BDO for 59.80% in 2008, which share decreased to 23.94% in 2009, 10.50% in 2010 and 4.59% in 2011. In the next 2012, BDO notes increase of the revenues from tax advisory services, and therefore a market share of 18.04%. In the last two years, it has not disclosed any revenues realized on this basis. Special attention should be paid to the drastically increase of the market share of tax services revenues for Grant Thornton that in 2011 is 56.00%. In the previous four years and in the following three, the audit firm did not disclose revenues from tax advisory services. As regards revenues realized on the basis of tax advisory services, what is significant is the share of the local audit firm, which became part of the Baker Tilly Macedonia network. In fact, the other audit firm, together with Baker Tilly Macedonia, managed to increase their participation in tax advisory services from 1.51% in 2007 to 22.42% in 2009, 44.00% in 2010 and 12.54% in 2011. In the last three years, the audit firm did not realize revenues from tax advisory services. The discontinuity in reporting revenues from tax advisory services is typical for the local audit firms as well. Taken as whole, the local audit firms managed to continuously increase, with slight oscillations, their market share from symbolic 1.60% in 2007 to 14.52% in 2008, 40.29% in 2009, 41.80% in 2010, 24.35% in 2011, 56.70% in 2012, up to solid 68.81% in 2012 and 60.79% in 2013.

The reasons for exceptionally stressed oscillations in the tax services revenues are not elaborated in the transparency reports. For this type of services there is no obligation to present a list of clients where they were performed, which makes it difficult to draw a valid conclusion just on the basis of the presented amounts for the realised revenues. Such tendencies deserve more detailed research by the relevant bodies (quality control within the frames of ICARM and the Council for Advancement and Oversight of the Audit). Last category of revenues covers other non-audit services and, according to the explanations in the transparency reports of the audit firms in the Republic of Macedonia, this category incorporates the revenues from accounting services and valuation. Review of structural share of audit firms in the Republic of Macedonia in the total revenues realized on the basis of other non-audit services is presented in Table 6.

Table 6. Structural share of audit firms in other non-audit services

#	Audit firm	Other non-audit services								Percentage							
		2007	2008	2009	2010	2011	2012	2013	2014	2007	2008	2009	2010	2011	2012	2013	2014
1	Ernst & Young, Statutory Auditors, Skopje	245.433	82.083	8.110	136.475	0	88.873	164.708	212.354	3,26%	10,33%	0,92%	21,12%	0,00%	12,95%	14,86%	16,01%
2	PWC LLC Skopje	0	0	0	0	337.575	268.287	258.862	333.289	0,00%	0,00%	0,00%	0,00%	45,91%	39,10%	23,36%	25,13%
3	KPMG Macedonia LLC Skopje	541.157	334.036	186.757	54.899	47.635	0	0	58.309	7,18%	42,03%	21,26%	8,50%	6,48%	0,00%	0,00%	4,40%
4	Deloitte LLC Skopje	71.697	193.324	352.589	166.236	91.301	22.002	176.297	133.289	0,95%	24,33%	40,13%	25,73%	12,42%	3,21%	15,91%	10,05%
5	Grant Thornton LLC Skopje	6.503.702	19.909	138.143	117.345	90.760	12.314	20.340	152.848	86,26%	2,51%	15,72%	18,16%	12,34%	1,79%	1,84%	11,52%
6	Moore Stephens/Macedonian Audit Center, Skopje	11.836	7.138	29.887	35.693	14.156	11.300	20.413	22.764	0,16%	0,90%	3,40%	5,52%	1,93%	1,65%	1,84%	1,72%
7	BDO/Dimitrov Audit, Skopje	33.043	4.321	16.244	3.902	35.491	100.708	144.722	212.201	0,44%	0,54%	1,85%	0,60%	4,83%	14,68%	13,06%	16,00%
8	B&Lj. Boro and Ljupco, LLC Skopje	7.512	21.675	8.959	32.049	12.829	5.398	0	0	0,10%	2,73%	1,02%	4,96%	1,74%	0,79%	0,00%	0,00%
9	Trio-Consulting LLC Gevgelija	32.148	31.315	22.730	25.385	39.157	31.604	119.583	28.020	0,43%	3,94%	2,59%	3,93%	5,33%	4,61%	10,79%	2,11%
10	Rafajlovski Audit LLC Skopje	81	49	2.976	33	0	0	0	17.252	0,00%	0,01%	0,34%	0,01%	0,00%	0,00%	0,00%	1,30%
11	Censum LLC Skopje	53.729	56.191	63.333	27	1.330	17.041	3.591	6.804	0,71%	7,07%	7,21%	0,00%	0,18%	2,48%	0,32%	0,51%
12	Pelagoniska Audit Firm LLC Prilep	5.881	6.407	2.647	4.060	2.493	49	417	1.706	0,08%	0,81%	0,30%	0,63%	0,34%	0,01%	0,04%	0,13%
13	Kozjakliev-Pavleska Ad Skopje	0	0	0	1.017	1.629	1.450	0	0	0,00%	0,00%	0,00%	0,16%	0,22%	0,21%	0,00%	0,00%
14	Kni-Prokom Prilep	24.244	6.455	6.797	2.390	618	7.593	2.081	5.626	0,32%	0,81%	0,77%	0,37%	0,08%	1,11%	0,19%	0,42%
15	Baker Tilly Macedonia LLC Skopje	0	3.854	2.228	15.301	4.374	95.740	119.291	83.790	0,00%	0,48%	0,25%	2,37%	0,59%	13,95%	10,77%	6,32%
16	Primeko Audit LLC Skopje	5.850	8.569	15.172	25.187	146	101	0	0	0,08%	1,08%	1,73%	3,90%	0,02%	0,01%	0,00%	0,00%
17	Revizilon LLC Skopje	3.756	1.996	1.107	372	432	192	0	0	0,05%	0,25%	0,13%	0,06%	0,06%	0,03%	0,00%	0,00%
18	International Auditing Standards (IAS) Skopje	0	390	2.195	33	0	0	0	0	0,00%	0,05%	0,25%	0,01%	0,00%	0,00%	0,00%	0,00%
19	Effect Plus Audit Firm, Skopje	0	13.031	13.197	9.800	24.806	0	19.854	0	0,00%	1,64%	1,50%	1,52%	3,37%	0,00%	1,79%	0,00%
20	Audit and Consulting firm —ERC , Skopje	0	0	0	0	0	0	0	0	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%
21	Pro-audit Audit Firm, Kumanovo	0	0	5.415	325	325	374	1.187	1.512	0,00%	0,00%	0,62%	0,05%	0,04%	0,05%	0,11%	0,11%
22	European Audit Center, Skopje	0	0	59	14.813	17.122	8.894	3.413	390	0,00%	0,00%	0,01%	2,29%	2,33%	1,30%	0,31%	0,03%
23	Elit, Dance LLC Skopje	0	3.967	65	829	33	4.878	2.894	5.203	0,00%	0,50%	0,01%	0,13%	0,00%	0,71%	0,26%	0,39%
24	Logist, LLS, Kumanovo	0	0	0	0	0	0	0	0	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%
25	Audit, accounting and tax consulting firm, ,,JFK'', Sk	0	0	0	0	13.106	9.285	9.772	7.024	0,00%	0,00%	0,00%	0,00%	1,78%	1,35%	0,88%	0,53%
26	Audit and finance A&F. Skopje	0	0	0	0	0	8	6	0	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%
27	Idea Plus Audit & Consulting, Radovis	0	0	0	0	0	0	0	634	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,05%
28	Audit firm AUDIT CENTER BS, LLC Skopje	0	0	0	0	0	0	0	0	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%
29	Verifica LLC, Skopje	0	0	0	0	0	0	20.399	41.211	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	1,84%	3,11%
30	Bend Audit and Consulting, LLC, Tetovo	0	0	0	0	0	0	20.262	2.123	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	1,83%	0,16%
31	Ioanidis, Audit Company, Skopje	0	0	0	0	0	0	0	0	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%
	Total	7.540.071	794.710	878.609	646.171	735.319	686.091	1.108.093	1.326.349	100%	100%	100%	100%	100%	100%	100%	100%

Source: Transparency Reports 2007, 2008, 2009, 2010, 2011, 2012, 2013 and 2014.

Basically, on the non-audit services market are noted pronounced oscillations from maximum 7,540,071 EUR in 2007 to minimum 646,171 EUR in 2010. At the end of the analysed period all audit firms realized total revenues from non-audit services in 1,326,349 EUR.

Information on the participation of certain audit firms in the total revenues realized from non-audit services, obtained from the data in the transparency reports, is slightly different from the previously analyzed services. The participation of the Big Four stressfully oscillates from 11.38% in 2007, 76.69% in 2008, 62.31% in 2009, 55.34% in 2010, 64.80% in 2011, 55.26% in 2012, and 54.14% in 2013 to 55.58% in 2014. However, we may conclude that in the segment of non-audit services, except for 2007, during the whole analysed period, the Big Four dominate on the market. Analysed individually each of the Big Four, in the period 2007-2014, show discontinuity in realized revenues from non-audit services. Ernst&Young Statutory Auditors, Skopje from the minimal 0.92% realized revenues from non-audit services in 2009, achieved its maximum in 2010 with 21.12%. In 2011 it did not realize any revenues from non-audit services, whereas in the remaining years its share was approximately 10.00% to 16.01%. Special attention should be paid to the fact that PriceWaterhouseCoopers in the period 2007-2010 did not disclose any revenues from non-audit services in its transparency reports. However, in the following 2011 it disclosed revenues acquiring the dominant position at the market with a share of 5.91%. Its participation was decreasing in the upcoming period to 39.10% in 2012, 23.36% in 2013 and 25.13% in 2014. It is similar with KPMG Macedonia as well that in 2007 had 7.18% of the market share, increasing it to 42.03% in the following 2008. Starting from 2009 the realized revenues and thus the market share decreased to 21.26%, in 2010 8.50% and in 2011 to 6.48%. In the upcoming two years, the audit firm did not realize any revenues from non-audit services, whereas in the last 2014 achieved its minimum of 4.40%. The transparency reports for the last of the Big Four, Deloitte LLC Skopje is not immune as well to the pronounced oscillations in the revenues from non-audit services. This audit firm at the beginning of the analysed period noted a minimal market share of 0.95% that increase to 24.33% in the next 2008. The trend of increase continued in 2009 achieving the maximum 40.13%, after which is noted a dramatically decrease to 25.73% in 2010, 12.42% in 2011 and 3.21% in 2012. Since the marked increase in 2013 to 15.91% at the end of the analysed period the market share dropped again to 10.05%.

Out of the audit firms that are part of the international network but do not belong to the Big Four, Grant Thornton dominates with achieved maximum in 2007. In the following 2008 the share was dramatically decreased to 2.51% and in 2009 increased again to 15.72%. In the following two years the share level was maintained to 18.16% (2010), i.e. 12.34% (2011). The pronounced oscillations continued in 2012 when the share was decreased to 1.79%, as well as in 2013 with market share of 1.84%. The share of Moore Stephens in the total revenues from the non-audit services during the analysed period is symbolic, from the minimal 0.16% in 2007 to the maximum of 5.52% in 2010. It is slightly different for BDO that started with modest 0.44% in 2007 and with mild oscillations reached 4.83% of the market share in 2011. From achieved 14.68% in 2012, through 13.06% in 2013, it reached its maximum of 16.00% market share.

As a difference to the Big Four that dominate the market of realized revenues from non-audit services and the audit firms that are part of the international network (that do not belong to the Big Four) which have a significant part of the market share, the remaining local audit forms at the beginning participated with minimum 1.77%. In 2008 their share increased to the maximum 18.88% whereas in the upcoming period are noted slight oscillations from 16.46% in 2009, to 18.00% in 2010, 15.51% in 2011, 12.66% in 2012, 18.36% in 2013 to 8.86% in 2014.

Based on the conducted analysis of the transparency reports in the segment for realized revenues grouped into four categories, we may conclude that the Big Four along with the audit firms that are part of the international network (but do not belong to the Big Four) dominate on the audit services market in the segment of audit and non-audit services, and partially in the segment of assurance services and tax advisory services. As a difference to them, the local audit firms are well positioned in the audit services segment, dominate with revenues from tax advisory services and have a significant share in the assurance revenues.

Research limitations and potential benefits for the users of the results from the research

Analyzing the data in the transparency reports is a challenge; however, it also imposes certain limitations. In the first year of presentation of transparency reports we faced difficulties in receiving the reports from all the audit firms because there was not established a practice for their regular publication in the public media or on the web sites of the audit firms. Because of this, we received some of the reports directly from ICARM. In the following years was established a practice for regular publication of the transparency reports on the web site of ICARM, thus overcoming the problems we had faced at the beginning of the research. Processing the inconsistently presented data also imposed serious limitations. At part of the audit firms, selecting the realized revenues on the basis of realized service in the reports did not correspond to the requirements in the Audit Law. This certainly required, when processing the data, additional grouping so as to realistically include the revenues the audit firms in the Republic of Macedonia realized on the basis of the four types of services. Additional problem in analysing the data represents the lack of consistency in data disclosure. In some parts of the reports, the audit firms quote part of ISA or give extensive explanations. As a difference, other audit firms usually present the information briefly in one paragraph. From the point of view of analysing the data, the both extremes lead to various dilemmas. In the first case which information to consider as relevant, and which for less relevant for the purpose of the research. In the second case how to complete the information in case of lack of additional information. Based on the conducted analysis on the transparency reports for 2014 we may surely conclude that the major part of the problems and dilemma we faced in this research will stay in the past. Since the Guidelines for drafting transparency reports was prepared and distributed by CAOA, the quality of the reports have been significantly improved in terms of respecting the provisions from the Audit Law for the form and content of the reports. Surely, the fact that CAOA since 2013 has been actively involved in review of the transparency reports, carefully studying them and in case of identified deficiencies communicating to the audit firm for their correction has had a preventive impact for better and more informed reports. The application of the Guidelines provided for consistent reporting by the audit firms on separate segments from the transparency reports, eliminating the possibility for arbitrary interpretation and implementation of the provisions from the Audit Law.

Finally, relatively short period of eight years of presenting the transparency reports, which commenced in 2008, limits the research and makes it poorer in terms of monitoring the dynamics of the development of certain audit firms and their participation in the audit services market in the Republic of Macedonia. In favour to this conclusion goes the fact that in the analysed period was conducted licensing of the audit firms by the CAOA followed by a transformation of several audit firms to statutory auditor – sole proprietor and vice versa and non licensing to existing audit firms. The discontinuity in the existence and operation of the audit firms was reflected to the number of auditees, as well as to the realized revenues on the basis of key services that audit firms offer to the market. Their isolation from the research would have influenced on the large picture for the position and importance of certain audit firms on the audit services market in the Republic of Macedonia.

However, regardless of the numerous limitations we faced when obtaining the transparency reports from the audit firms and analyzing the presented data, observations we made gave us the real picture of the trends on the audit services market in the Republic of Macedonia in the analyzed period 2007-2014. After 18 years since the adoption of the first Audit Law and after 10 years since the adoption of the new Audit Law and 5 years from its amendments, which promoted the building of the audit profession with attributes immanent for the developed economies, the Big Four have played the dominant role in creating the climate for development of the profession. They were, are and, we expect, will be generators of changes in the audit profession in the Republic of Macedonia. Besides them, the analysis of the transparency reports in the two segments (number of auditees and revenues realised for audit, assurance, tax and non-audit related services) showed that very close to the Big Four, are Grant Thornton as well the firms that became members of international networks, such as, Moore Stephens, BDO and Baker Tilly Macedonia. In parallel to them, several local audit firms (B&Lj, Boro and Ljupco, Trio-Consulting LCC Gevgelija, Cenzum LCC Skopje etc.), by showing high professionalism in their operations, gained their position on the audit services market. Such trends for par-

ticipation of audit firms in the audit services market could not be foreseen even prior to obtaining the initial information from the presented transparency reports. However, as said at the beginning, in conditions of absence of strong professional association of statutory auditors, establishment of the audit profession in the accounting infrastructure, establishment of audit firms and their struggle to win the market and the clients was accompanied with a certain amount of mystery. Issue of which audit firm works at which client and the fee for the offered service was speculated. Such atmosphere protected the audit firms and made them untouchable. Adjusting the new Audit Law to the revised Eighth Company Law Directive opened the issue of transparency in the operations of the audit firms and touched upon the most sensitive information. Resistance to such requirement was shown by refraining from presenting the 2007 transparency reports by most of the audit firms in the Republic of Macedonia.

At the very beginning of the application of the 2005 Audit Law, audit firms perceived transparency reports as a bureaucracy nightmare, requiring employment of resources during the season of audit services on the market. Different perception of the requirement to present sensitive information from the operations of the audit firms in the transparency report is partially overcome, following their first presentation in 2008. Legal requirement for the audit firms to offer, through the report, transparent information on themselves provides for (1) their better presentation in front of the potential users of their services; (2) better insight for those purchasing the service in the quality of the products offered through the statements for the internal control system of the audit firm, as well as in meeting the obligation for continuous professional development of the employees, in respecting the requirement for independence in realizing the engagement, etc. All in all, presenting data from the transparency report should provide for a positive input of the audit quality and it can help in promoting sounder competition on the audit services market.

So far the practice has shown that the Quality Control that functions within the frames of ICARM is not using the information from transparency reports as red flags to activate the control mechanisms. A contrary, the Commission operates according to an accepted methodological approach for selection of the entities subject to quality control which is based on replies to questionnaires distributed to the audit firms. Besides that, the Audit Law prescribes the obligation to present transparency reports, but fails to prescribe sanctions for audit firms that would not do so or in case they disclose non-accurate data. The lack of penalty measures may address poor message to the audit firms, so that they will not take seriously their obligation for timely presentation of the transparency reports and disclosure of accurate data in them. Unlike the approach of the Quality Control Commission within the frames of ICARM, according to Article 8 of the Audit Law the CAOA has a wide spectrum of competences among which check of the transparency reports especially in terms of their compatibility with the legal requirements. In 2013, the CAOA with due care reviewed the transparency reports, thereby identifying inconsistency in their presentation by the audit firms. Aware of its oversight position, as well as of its function for advancement of the profession, CAOA prepared Guidelines for drafting of transparency reports that should help in overcoming the identified weaknesses. The results became evident in the upcoming 2014. Presenting the transparency report might, for part of the smaller local audit firms, be a legal obligation that is time consuming, incurs costs which in a given constellation of arrangement of clients can be hardly valorised through winning new clients and winning better position on the audit services market.

After eight years of presenting the first transparency reports, it is extremely difficult to measure the benefits arising from the legal requirement to publicly present the data for themselves and their policies and processes. However, it is quite certain that by developing the audit services market in the Republic of Macedonia, audit firms will, in the coming years, start feeling the benefits from their transparent presentation in front of the clients.

Considering this, the results from the conducted research will show the share of each audit firm on the audit services market regarding the number of auditees and realized revenues. For the Big Four and the audit firms part of other international networks, the results of this research may show them how big they are on the market and where is their position compared to the others. On the other hand, the research outcomes may represent an impulse for local audit firms to direct there promotional activities towards winning markets that are not dominated by the Big Four or the other audit firms part of the international network.

Conclusion

Strategic commitment of all Governments of the Republic of Macedonia since its independence till today is approximation and integration in the EU. Audit profession was, still is and, it is quite certain, will be part of the strategies for faster integration in the EU. In the light of such commitments, new Audit Law was adopted in 2005, being modified and amended in 2010. Audit profession has been waiting for this Law for eight years. It was not just a mere coincidence that, during its preparation, then proposed Eighth Company Law Directive was consulted. Striving for approximating the national audit profession to the global professional elite, new Audit Law is harmonized with the said Directive in all key segments. To that end, requirement for audit firms in Macedonia to present annual transparency report was introduced in 2007 for the operations carried out in 2006. However, despite such defined legal requirement, public in the Republic of Macedonia saw the first transparency reports in 2008 covering the operations of audit firms in 2007. Information presented in the reports aroused huge interest at us and stimulated us to carry out initial research so as to depict the trends on the audit services market in the Republic of Macedonia in the period 2007 - 2014. Comparing the data from the transparency reports in the two segments that may give more precise image for the states of affairs on the audit services market we came up to several conclusions. First, the number of clients where the audit firms performed audit engagements indicates that the Big Four were, are and probably will be dominant at the large auditees and in the financial sector. Regarding the number of auditees, non-Big Four do not lag either. Namely, according to the transparency reports, they participate quite successfully in the distribution of the "audit cake". The second conclusion does not vary drastically from the first one, and arises from the financial data related to the revenues that the audit firms generate from the audit, assurance, tax advisory and non-audit related services. The realised revenues confirm the domination of the Big Four on the audit services market in the Republic of Macedonia. Just behind them are the audit firms which are part of the international companies' network. The share of the domestic audit firms especially in the part of the revenues realised from tax advisory and non-audit related services, should not be neglected either. The revenues variances in the analysed eight years cannot assure us of the fact that the market is segregated among the existing audit firms, each of them having 'marked' its territory of functioning. A contrary, the market is still turbulent and the audit firms, through the quality of their services, will have yet to find their way to the clients. The transparency reports along with the data disclosed in them should stimulate the ICARM, the Quality Control Commission, as well as the Council for Advancement and Oversight of the Audit to act towards improving the profession image by isolating the audit firms that do not comply with the rules of the profession and sanctioning them. In a long term, exactly in this segment should be sought the benefit of presenting transparency reports, not only for the audit firms that respect the profession rules, but for the audit services users', as well.

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LABOR MARKET SUPPLY VS. DEMAND CHARACTERISTICS IN THE NORTHEASTERN PLANNING REGION OF MACEDONIA

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Abstract

Unemployment remains one of the largest issues in the Northeast planning region (NERP) in the Republic of Macedonia. The employment rate of 30.3% in the region is well below the national average and unemployment rate of 44% is almost 16 percentage points above the national average, and highest rate compared with the rest of the regions in Macedonia. Thus the issue of unemployment is a strong reason and an incentive to analyze in-depth: what are the characteristics of the labor supply among young people - unemployed, in terms of demand; what are the constraints of the labor supply versus demand; what policies / reforms / actions are appropriate for resolving potential gaps between the labor market supply and demand etc. This research revealed a number of interesting characteristics of labor demand/supply - that the business sector, especially in NEPR requires a workforce with skills and knowledge in order to carry out specific working tasks and higher education, focusing on the possession of professional, technical skills in order to respond to specific tasks for industrial processes and the use of technology. In addition, the need for possession of personal skills such loyalty, ambition, seriousness in carrying out tasks and sense of teamwork is emphasized. A significant portion of the business sector in the region is willing to cooperate with educational institutions in order to generate the necessary human resources. On the side of the supply, the larger portion of the unemployed youth in the NEPR,

perceive their ideal job in starting own businesses and public administration positions. In addition the majority of the unemployed youth: are interested in internships, have not received an assistance from the Employment Agency of the Republic of Macedonia (EARM), and almost half of the respondents are not aware of the current active employment measures etc.

Key Words: *labor demand, labor supply, unemployment, young unemployed, NEPR in Macedonia*

1. Introduction

The Northeast Planning Region is a statistical region in Macedonia consisting of six municipalities with the highest unemployment rate of 44%, representing 16 percentage points above the national average of 28% in 2014. At the same time, the region's employment rate of 30.3% is the lowest in the country. The unemployment rate in the rural areas of NERP is 52.2%, which is twice as much, or 25.7 percentage points above than the national average rural area's unemployment rate of 26.5%. On the other hand, the unemployment rate in the urban areas of the region is 39.3%, or 9.9 percentage points above the national urban area average unemployment rate of 29.2%.[2]

The labor market issue of inadequately skilled workers may affect the future economic growth by creating barriers for the companies, creating a gap difficult to fill in with job posts that are highly demanded, since the dynamics of the economy requires adequate formal education and additional trainings and skills. This indicates that the potential issue is not limited solely to an insufficient number of skilled labor, nonetheless a labor force which needs the appropriate combination of skills that are in-line with the national and/or regional economy requirements.

Altering the structure of the economy with a reduced role of the manufacturing sector, while increasing the importance of services, and improvements in technology and internationalization are a proof that the environment where the business sector "operates in" have altered, thus the demand for highly educated workers is increasing. As a result, the employers, unlike in the past, demand workers with adequate formal education and skills, and adequate trainings with advanced interpersonal communication abilities and skills.

According to the Employment Survey of the National Employment Agency concerning the open job posts on a national level,[3] the employers reported that they are faced with certain difficulties in filling-in the vacancies. Namely: they cannot find workers with proper occupation, there is a lack of experience, and there is a lack of knowledge and skills to perform the tasks that are required for the specific job positions.

The developed countries got to a conclusion that it is no longer enough to train the workforce in order to answer to the current needs of the market, but there should be training programs that support lifelong learning of skills with a focus on future market needs.[4] This research has shown that the business sector, especially in NERP requires a workforce with skills and knowledge in order to carry out specific working tasks and higher education, focusing on the possession of professional and technical skills in order to respond to the specific tasks for industrial processes and the use of technology. In addition, the potential employers emphasize the need for personal skills such as loyalty, ambition and seriousness/professionalism in carrying out the job tasks and a sense of teamwork.

Hence, with the conducted survey[5] aspired to provide an answer to several issues related to the labor market in NEPR:

- What is the profile of the unemployed youth - labor supply unemployed?

- What are the major constraints of the unemployed youth labor supply versus the labor demand?

- Is the level of education and skills of the unemployed appropriate to the specific requirements of the labor market in the region?

- What policies/reforms/actions are appropriate for resolving potential mismatch gaps between supply and demand of labor?

2. Methodology and approach

The analysis of the needs of the employers in the Northeast Planning Region aims to assess the gap between the labor demand needs and the labor market supply with its determinants. The analyses covered representatives of the business sector in the Northeast Region within the municipalities of Kratovo, Kriva Palanka, Lipkovo, Rankovce, Staro Nagoricane and Kumanovo. The survey covered 20 businesses, ensuring geographical representation, ethnic heterogeneity, focus on rural coverage and size of entities. In the process of conducting the analyses of the employers' market needs a methodology based on both qualitative and quantitative data was used. The data collection tools used in the process are as follows:

Phase 1: Gathering quantitative data through statistical releases, publications and analysis published by the State Statistical Office and the National Employment Agency of the Republic of Macedonia; analysis of the existing policies and applicable strategic documents, programs, action plans, on a national, regional and local level covering the issue of unemployment and youth as well as the labor market.

Phase 2: Gathering qualitative data through a direct survey with interviews (questionnaire) with 20 private sector operating in the Northeast Region with a focus on the rural areas. The primary data was collected through a tailor made structured questionnaire designed for this purpose and though direct meetings with the representatives of the businesses' top management or HR management. The questionnaire is comprised of sections, according to their size and activity, challenges of doing business, with emphasis on the needs of the workforce and the process of identifying labor, as well as the adequacy of policies and measures to promote employment in the region.

The methodology used for the development of the profile of the unemployed youth in the NERP is based on gathering and analyzing both qualitative and quantitative data:

Phase 1: Gathering quantitative data through statistical releases, publications and analysis published by the State Statistical Office and the National Employment Agency of the Republic of Macedonia; analysis of the existing policies and applicable strategic documents, programs, action plans, on a national, regional and local level covering the issue of unemployment and youth as well as labor market.

Phase 2: Gathering primary qualitative data through interviews with unemployed youth (aged 20 to 39 years) citizens of the NERP, with a focus on the rural areas. The gathering of the primary data is conducted through a tailor made structured questionnaire conducted through direct meetings, and a smaller portion of the surveys / interviews conducted by phone.

The sample covered 91 unemployed youth aged between 20 and 39 years, residing in the municipalities of Kratovo, Kriva Palanka, Lipkovo, Rankovce, Staro Nagoricane or Kumanovo. The largest portion of the interviewees are with complete secondary education, both male and female and different ethnicities present in the region.

3. Characteristics and structure of young unemployed in the region

The rate of activity is participation of the labor force in the working age population aged 15 and over. The activity of the population throughout the Republic of Macedonia in 2014 was 57.3%, while in the Northeast

Region (NERP) for the same year it was 54.2%, which is among the lowest in Macedonia by region[6] and by 3 percentage points below the national average.

Meanwhile, the same region is with an employment rate of 30.3%, well below the national average and the highest compared to other regions, and an unemployment rate of 44%, which is 16 percentage points above the national average and the highest unemployment rate compared with all other regions. Hence, unemployment remains one of the largest issues of the NERP.[7]
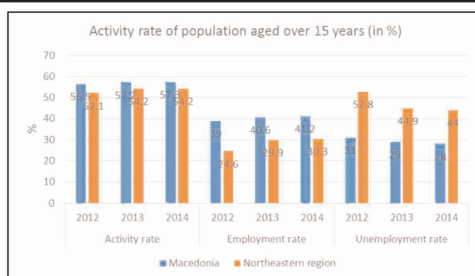
Source: State Statistical Office, in April 2016

The latest data[8] of the National Agency for Employment (EARM) indicated that the total number of registered unemployed people in the (local) employment offices[9] of Kumanovo, Kratovo, Kriva Palanka, is 15,046, out of which, the largest part are residents of the municipality of Kumanovo (10,639). Out of the total number, 10,096 unemployed are residents of the urban areas while 4,951 are residents of the rural areas which is 33% compared to the number of the urban area unemployed residents of the region.

Considering the gender unemployment, out of the total number of unemployed in the region, 6,064 (or 40.3%) are female. Respectively, the highest percentage of female unemployment rate has Kratovo (52%, or 522), then Kriva Palanka (44%, or 1509) and Kumanovo (38%, or 4033).

The total population of the Northeast planning region is 175.442 citizens, characterized by a population with lower average age compared with other regions, of 37 years indicating that this is a region with a predominantly young population.[10]

The largest percentage of unemployed out of the total number of registered unemployed are in the age range between 45 and 49 years (12.4%), followed by the age group between 25 and 29 years (11.8%) and between 45-49 years representing 11.9% out of the total number of unemployed persons. The other unemployed age groups (except 15-19 years) range between 9% and 11%.
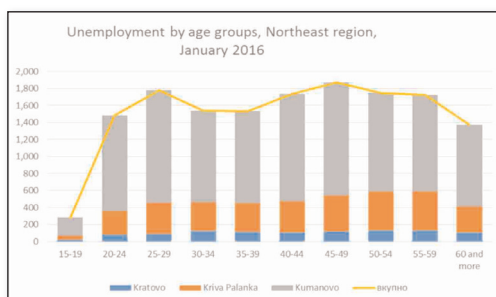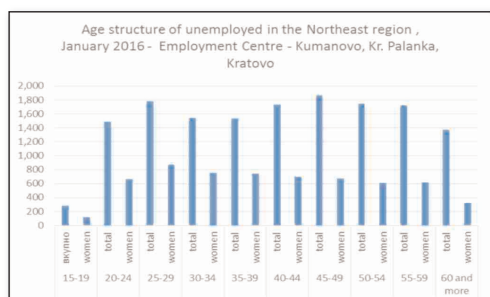
Source: Employment Agency, Employment Centres

6) The lowest activity rate is in the Polog region with 46.1% followed closely by SIPR

7) Unemployment data are taken from the website of the Employment Agency of the Republic of Macedonia (www.avrm.gov.mk)

8) Agency for Employment of the Republic of Macedonia, Review of the unemployed, status 31/01/2016, accessed 30.03.2016.

9) Employment Centre Kumanovo includes the municipalities of Kumanovo, Staro Nagoricane, Lipkovo Employment Centre Kriva Palanka includes Rankovce and Employment center Kratovo, only from Kratovo.

10) Regions in Macedonia, 2015, seen in April 2016

In regards to the unemployed level of education attained, almost half of the respondents (41%) are without completed primary education, 33% has completed secondary education, and 10% are with a higher education degree. These indicate of the large number of unemployed with limited qualifications and the existence of a mismatch and labor force gap, with a lack of opportunities for training and requalification.

The data also indicate that the unemployed females with a university degree, compared with the number of unemployed males with the same education level attained, (representing 6.3% of the total number of unemployed in the region), or 65% of the total number of unemployed with a higher education degree (absolute number of 943).

4. Labor market supply – Youth unemployment in NEPR

Profile of an average unemployed person residing in the rural areas of NEPR

| Male	Female
Unemployed male is of an age between 20 and 30 years	*Unemployed female of an age between 26 and 35 years*
He lives in a rural area within a 4-member household out of which at least 2 unemployed	*She lives in a rural area in a 4-5 member household out of which 1 to 3 are unemployed*
Secondary education - vocational or general	*Secondary education - vocational education or higher education*
No experience or informal experience/seasonal work	*With or without experience, experience in the textile sector, trade, shoemaking, catering, for less than 1 year up to three years*
Informal experience in agriculture, services, construction of one to three years	
With an average monthly compensation of 6 up to 15 thousand denars	*With an average monthly compensation of 6 up to 10 thousand denars*
Unemployed less than one year up to 3 years	*Unemployed for more than 1 year*
Actively seeking job for more than 1 year and less than 3	*Actively seeking job for more than 1 year*
Desired job: own business/own farm or private sector employment	*Desired job: own business or public sector employment, the administrative /technical work*
Perception of the cause of unemployment: failure to meet the qualifications and conditions, low wages and lack of open vacancies/job posts	*Perception of the cause of unemployment: failure to meet qualifications and lack of open vacancies*
Methods of job search: application in EARM and advertisements of employers, sent 3 job applications	*Methods of job search: application in EARM, sent 7 job applications*
Reasons for refusal of an offered job post: low salary	*The reason for refusal of an offered job post inappropriate job post according to qualifications*
He is not aware of the active employment measures	*She is aware of the active employment measures*
Not ready to be move or move to another country, he would move only if it has good conditions	*Not ready to move, or travel unless there are good conditions*
Ready for a paid internships from 1 up to 3 months	*Ready for internship regardless of the duration*

4.1. Required qualifications and skills

Self-assessment of the skill level

In terms of the perception and views of the unemployed youth regarding their own level of additional skills outside the formal education, such as knowledge of foreign languages, computer skills, and technical skills - most of them state that they possess a basic level of knowledge of all the skills listed, somewhat lower level of the surveyed unemployed with a secondary education, while a very small portion of respondents state that they possess a higher level of additional skills.
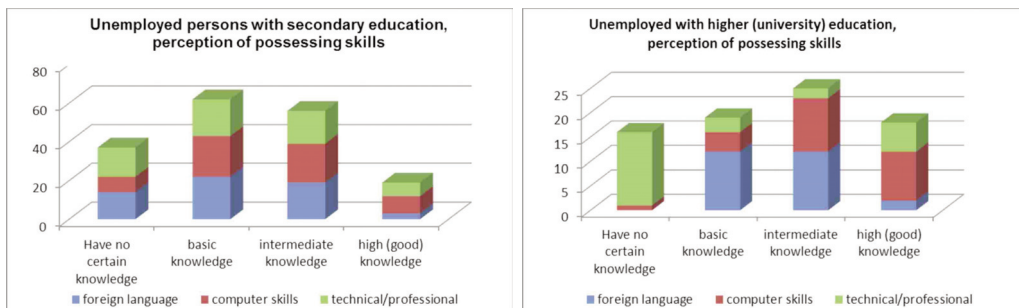
Regarding the perception of their skills of the categories: foreign languages, computer skills and technical skills (welding, sewing, etc.) if we consider only the respondents with higher education degrees, they state that most of them have average or basic knowledge of foreign languages, and medium to high level of computer skills (computer work) however a lower level of technical skills.

Unemployed youth's perception for the most important employability qualifications and skills

According to the perception of the unemployed youth (through ranking 1-3 where 3 is the most important employability quality) the most important qualities for finding a job, for the youth with completed secondary education are: 1) personal acquaintances of people as the primary quality needed to find employment (31% of all rank this with the highest score); 2) then computer/IT skills (24% of all rank t of all rank this with the highest score); 3) knowledge of foreign languages, completed training or internship (14% of all rank this with the highest score) and the remaining qualities and skills with lower frequency (scientific / technical qualification, general education, etc.).

The most emphasized needed skills, according to the perception of the surveyed with attained university education, are 1) computer skills, followed by 2) knowledge of foreign languages and 3) knowledge of people/networking.

4.2. Job posts demanded by the unemployed youth

According to the unemployed youth in the region, the most demanded job posts in the selection and in the job search, are those with administrative work both by the youth with attained secondary school and with higher education. Furthermore, the youth with higher education is searching for professional job posts depending on the type of the completed education, such as: medical doctors, dentists, electrical engineers, lawyers, teachers, etc. Nonetheless, there is a group of highly educated unemployed who are willing to accept job posts with tasks of manual work, i.e. have stated that any job post without defining what they are seeking.

Considered in groups by level of education, a total of 58 people with secondary education, almost 26% are looking for manual job, 21% administrative-office work, 19% any (different) work, 14% technical job posts,

and other categories with lower frequencies. The unemployed youth with a higher education degree can be categorized in two groups, those in search of professional work (48%), and 40% searching for administrative related job posts.

4.3. Desired job

An "optimistic" signal of the unemployed youth in the region comes from those with complete secondary school education, stating that their ideal job would be though self-employment by starting their own business (36%), while a large part prefers working within public sector administration (26%) and smaller portion (10%) considers the ideal job within the private sector. Furthermore, another 7% of the surveyed people with complete secondary education ideally would work on their own farm / agricultural company and within an existing family business.

If we separate out the respondents with higher education, a dominant 64% (16 people) prefer a job post within a state institution, only 20% prefer starting their own business, and only 8% or two respondents, would choose a job within the private sector as their first choice. Some of the respondents gave a second option to work in the private sector, those are the persons who have made a first response that they want to work in the public sector or opening their own business.

4.4. Proactivity and use of methods of job search

In regards to the methods and channels used to identify open job posts and what specific steps you have taken to find a job or start a proper business, 32 respondents replied that the only way of identifying a job post is through the listed job posts by EARM, 12 people replied that a direct communication though an open job application to the employers or through an advertised job posts checking websites is used, 7% of the respondents asked and used an assistance from friends and relatives, additional 7% stated that they are doing nothing, and the rest use a combination of unemployed recording in the EARM, advertisements, internet advertisements, direct contact potential employers.

This suggests the need to improve the skills of people in finding a variety of channels for self-promotion and job search.

Most of the unemployed, although looking for a job for more than a year, hardly apply for employment, most of the respondents submitted up to three job applications while a smaller portion applied for job posts more than three requirements (4 to 7 applications). Compared with the level of education, persons with higher education are more active by submitting multiple open job applications, however, none of the respondents who are looking for a job, had not stated that he/she has sent more than 10 job applications although looking for a job for more than a year.

The frequency of attending a job interview is almost identical to the frequency of job application, the number of attendances at interviews depends on the number of application which means that low proactivity of unemployed people through formal approach of sending out job applications is not utilized enough.

The reasons behind may be various including the lack of knowledge of how to act upon in looking for a job as well as lack of proactivity among the unemployed youth, which suggests the need to inform them about the methods/tools and channels in the process of job search, applying for job through active open announcements as well as through direct communication with a potential employer.

4.5. Willingness to improve employability through education

Most of the respondents, over 90% (83 of 91) are interested in participating in additional training primarily for the topics of 1) start-up for own business and opportunities for accessing funding sources, 2) techniques in agricultural production, 3) entrepreneurship and business planning, 4) foreign languages and computer

skills, and 5) social skills for job search, while only 8% are not willing to attend training due to their perception that it will not be beneficial.

What training / education you think you would be most useful for employment?
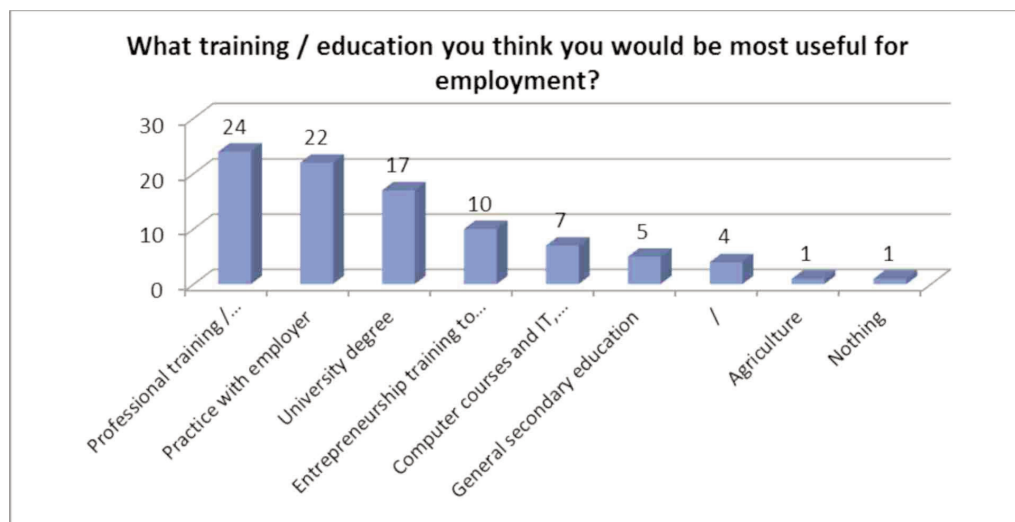
Most of the respondents which attended some type of training in the past as an informal education, consider that the past trainings were very or somewhat useful, and a smaller proportion (17%), respond that they do not know whether the trainings were useful, were not useful or have not attended any type of training.

When asked if any of them would attempt to "earn" by working an online job using the Internet, most of them said they do not want, and/or have no confidence in this type of work (63%), while a smaller part 20% would try or 18% would try however do not possess the knowledge.

4.6 Preparedness for traineeship

The most of unemployed youth surveyed (89% or 81 people) are interested in attending an internship within the business sector in the region, while 11% (10) are not interested and do not want to work as interns. Those who are not interested in an internship position are interviewees with secondary school education, and the majority is male respondents from the urban areas.

Those who expressed interest in an internship position, 65% are interested in internships regardless of the duration of the period, 24% were interested only if it lasts for up to 1 month, and 11% up to a maximum of three months. There are no significant differences in the preferred internship/traineeship duration neither in terms of the education level or the gender of the respondents.

4.7 Familiarity with the national system for labor market support

Most of the surveyed unemployed when asked whether they have received any advice or assistance from EARM in terms of employment, the majority of the interviewees responded that they have not received any assistance (60%). Others stated that they have received or used assistance through the national employment policies and 15% responded that they received assistance in the form of an advice on how to seek an employment, 8% received an assistance in the form of information on the usage of the measures for employment, and an additional 11% stated several types of assistance by indicating at least two types of assistance including information on available job posts, job search advice, use of employment measures, attending trainings.

Almost half of surveyed responded that they are not familiar with the active employment measures, and half of them are familiar with the measures. Out of the total number of surveyed 11% said that they are familiar and they want to use the measures, and 7% of all respondents are familiar but do not want to use the measures. 37% of respondents know people who have used the measures of employment, while 63% (out of 91 people) do not personally know anyone who

is a "user" of the employment measures. Most respondents (35%) are people who are not familiar and do not know anyone who has used the measures, 19% are people who are familiar but not personally know someone who uses them, 16% are people who are familiar and personally know someone who uses/ed the subsidized employment measures.

5. Analysis of the needs of local businesses in the Northeast region – Labor Force Demand

This section presents the results of the research based on the direct interviews with the business entities in the region used to depict the labor market situation, business environment challenges and characteristics of the business sector regarding the availability and adequacy of the workforce in the NEPR. The findings are based on interviews conducted with individuals - managers of enterprises / companies or HR departments.

5.1. Challenges of the companies in NEPR for their development

The main challenging factors for doing business, as stated by the companies which are part of the study, are: (1) nearly all representatives point out the lack of qualified labor force. In addition, they are facing other challenges such as (2) instability of economic policies in the country; (3) inefficient public administration; (4) lack of resources and raw materials; and (5) high fixed costs. The majority of micro and small enterprises stress the problem with high fixed costs, taxes and limited access to finance, while medium and large enterprises are increasingly affected by the bigger picture in terms of general policies in the country, public administration, the unstable political situation etc.
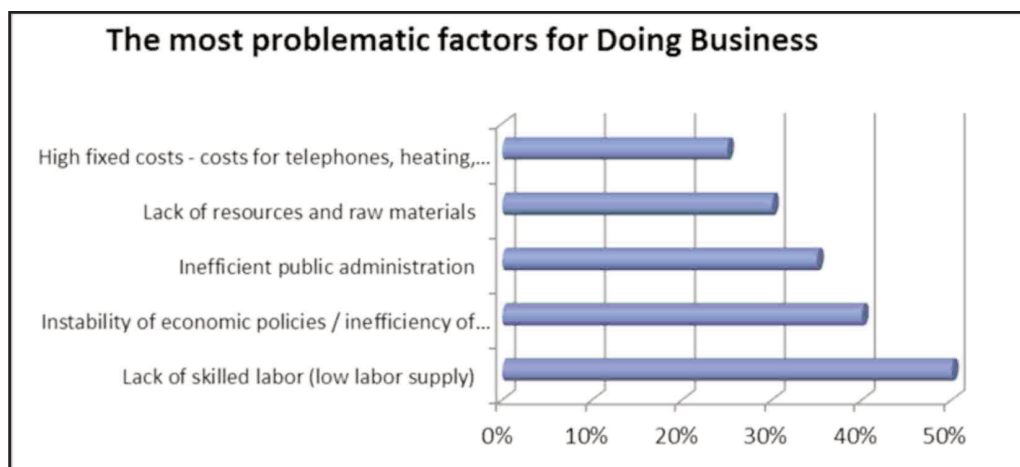

Despite these five most problematic factors for doing business, to a slightly smaller extent the companies are faced with challenges concerning: inadequate infrastructure, insufficient support for the business sector,

poor supply (lack of) qualified workforce, lack of seasonal workers, inadequately educated/skilled workforce, as well as unfair competition from imports. Unfair competition (from imports) was mainly highlighted from companies dealing with the production of shoes.

The perceptions for the lack of needed skilled workforce is illustratively shown in the figure below. The companies agree that the education system does not generate the necessary (needed by the business sector) skilled workforce, indicating the need for improved education of the technical professions and skills (which existed in the past), and identifying manner to motivate young people to enroll in the professional and technical departments in secondary schools (however at the same time for the needed improvement of the quality of the educational system in these professions was stressed, especially the practical skills).

Half of the companies highlight the problem of the fluctuation/turnover of the youth labor force, and that they are faced with the difficulty to retain the youth in the companies for a longer period. This is especially common in the technical positions that requires practical experience such as working with heavy machinery.

Only a small percentage of the interviewed companies agreed that in the NEPR lacks quality in the business management, which is understandable having in mind that the interviews were conducted mainly with the management in the companies.

Perceptions of the companies for the labor force in the region
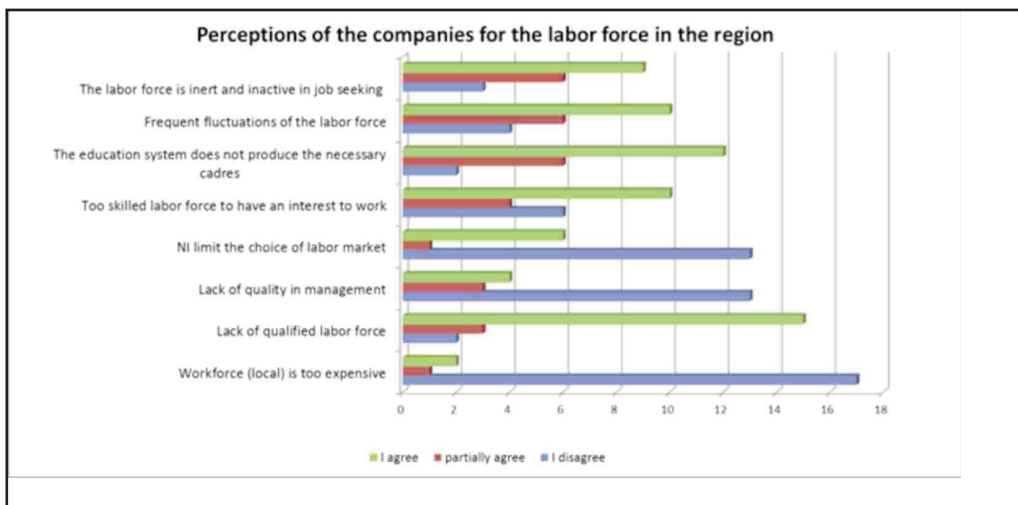
5.2. Perception of the companies for adequacy of support

In terms of adequate policies to support businesses, and the adequacy of policies and measures to promote employment in the region, the companies stated that they do not use national employment measures and in addition the region lacks support of the other stakeholders that need to improve the business environment.

The majority (65%) of companies believes that the promoted employment measures by the government have no effect in terms of improving the quality of the workforce and in the reduction of the unemployment. None of the interviewed companies use subsidies/measures for employment or other benefits from the government. According to the companies the most common reason for not using the government measures for employment are mainly administrative reasons and limitations, as well as built-in conditions in the measures that is difficult for the companies to guarantee to meet in the future (such as the commitment of the company to maintain the same or higher number of employees in the next 2 years). In addition, the statements show that the unstable economic and political situation creates uncertainty and distrust, and is also a common reason companies to be suspicious to use benefits from the government.

Perceptions of the companies about the effects of employment policies

Supporting companies by the institutions in the country
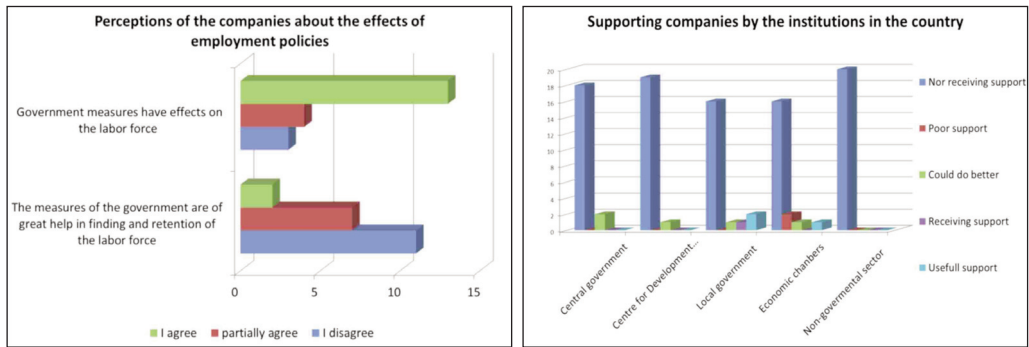
In terms of whether the companies receive support from the central level institutions, local government, the Centre for Development of the Northeast Region, as well as chambers of commerce and the NGOs - the highest percentage of companies consider that they not receive, or do receive however very limited support from the mentioned policy makers and implementers and entities. A very small percentage, no more than 10% stated that they have some type of support in the form of cooperation with local authorities. Also a small percentage of companies stated that they have support by the Chambers of Commerce.

However, even though most of the companies indicate they did not receive support from the local authorities, 40% of them state that they have no need for support from LSGUs, while nearly half (45%) state that the needed support is necessary in the form of improved local infrastructure where the companies operate. A small portion of the companies (5%) believes that the local authorities should offer mechanisms to include the businesses in the policy-making process within the municipalities, and 10% believe that a higher importance should be given to the improvement of the professional high schools which are under the local jurisdiction, and to return departments such as the textile departments within the secondary schools.

5.3. Required qualifications for new jobs

Regarding the types of employees/professions that companies need - the companies are most interested in seasonal workers such as waiters, agricultural workers, physical unskilled workers, salesmen, etc., and professional technical staff such as technologists, engineers, machinists, locksmiths, welders, shoemakers, cosmetician, etc.

About 40% of the interviewed companies in the NEPR when asked for the level of importance of the employees of education vs. experience, stated that both the education and the work experience are equally important, when deciding and employing new employees. While a significant percentage (35%) state that neither is mandatory, because all job tasks are easy for someone to learn them and manage them. On average, for 25% of the companies the applicants' experience is with higher importance compared to the education, while none of the companies stated that the education of the candidates is the most important and crucial for getting the position.

According to the interviewed companies, the necessary employee quality, most difficult to be found is loyalty, as an extremely important characteristic. The qualities and skills that are needed for companies however are found easier are: physical strength, ability for team work, social and communication skills.

Education versus Experience
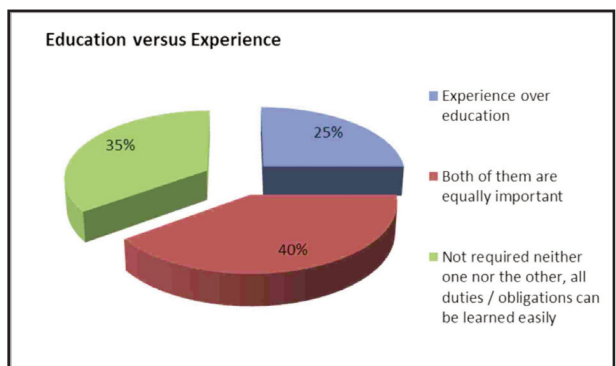
5.4. Recruitment and selection process

In terms of the *approach used by the companies for identifying the required profiles of the workforce* – 60% of the companies, with highest confidence rely on the recommendation obtained from their acquaintances and co-workers. A small part of them (10%) use the social media and Internet advertisers to publish a new position call, while 20% of the companies (usually those with highest workforce turnover) continually with open positions (application forms by visiting the company or online set form) for job applications. *None of the contacted companies hire private recruitment agencies employment mediation.*
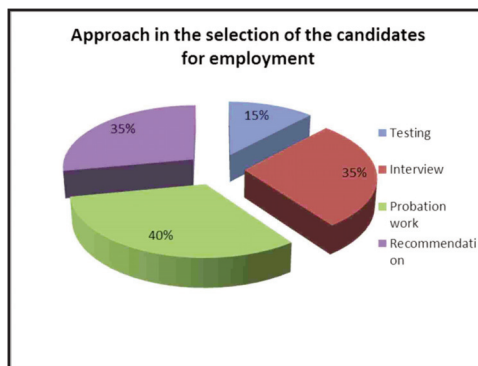
In regards to the process of candidate selection, 40% of the companies provide an opportunity for the applicants to demonstrate their skills through trail period, which is considered as the most objective manner of assessing the quality of a potential employee. Although most of the companies give an opportunity for individuals with recommendations, only 35% of the companies employ without testing or trial period employment. About 15% of the companies test their candidates for employment.

The process of final decision for employment for most (65% of the companies) of the companies it based on the top management's decision (General Manager/Company Owner), and about 10% (mainly medium and large enterprises that have sectorial development) the selection decision is made by the human resources departments. The remaining 25% are small and medium-sized companies where executives together with those directly involved in the production, assesses the performance of the candidates.

5.5. Companies and internship

Due to the highlighted issue of lack of qualified workforce, and that the lack of adequate educational system skills for the necessary personnel, 70% of the surveyed companies state that they would collaborate with the universities or other educational institutions in order to identify the main profession needs within the sectors where they operate. Also, 80% of companies state that they would cooperate with secondary professional schools in order to strengthen the capacities of the students, besides the theoretical knowledge in order to gain practical skills.

Some companies, mainly those working in the footwear industry and other manufacturing companies in need of technical professional have collaborated with secondary schools for student internships in the past. Nowadays, according to the companies, with the elimination of the mandatory internships within the companies (during the educational process), the interest among the students is very low almost inexistent.
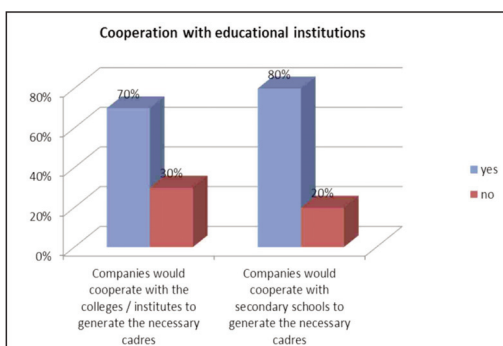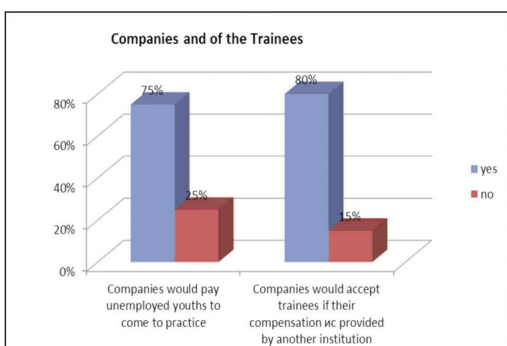
About 75% of the companies are willing to accept interns within the organizations since it is their belief that the internship is equally beneficial for both the company and the intern. Some of the companies which are not interested believe that the type of work does not provide the conditions for hosting interns, or there is a mentorship lack of time to be dedicated to the interns.

An increasing proportion of companies (80%) are interested to host interns on the basis of paid internship when another institution will provide adequate financial compensation for the interns. Some of the companies which are not interested in such collaboration believe that they simply have no need for interns because they are micro enterprise.

Only 30% of companies had experience with internships in the last three years, which is the case, especially in the production sector or in sectors where there is a need for a large number of manual workers (e.g. construction). According to these companies, during the internship period the trainees/interns have acquired relevant skills, however, have now contributed significantly to the efficiency of the company.

6. Instead of conclusion – reducing the labor gap between supply and demand in the NEPR

As a replacement for the conclusion the key issues concerning NEPR labor market demand and supply resulted from the research are elaborated. In addition, through identifying the links between the needs of the labor market and supply in the labor market it is attempted to provide some specific recommendations for overcoming the identified gap.

Characteristics of labor supply	Characteristics of labor demand	Recommendations to reduce the gap between supply and demand
The supply of the labor force is targeted by a number of employment measures and activities by the MLSP, the Employment Agency, and the Agency for Youth and Sport - although the perception of unemployed young people is that these measures and activities are not fully satisfactory and do not significantly improve their state of the labor market.	The largest percentage of companies consider that they receive no or receive very limited support by the institutions of the central government, local government, Centre for Development of NEPR, chambers of commerce and NGOs.	Paid Internship and reform of secondary technical education with adequate laboratories, workshops, teachers, pedagogical and methodical teaching tools and materials. Local government in whose jurisdiction are the schools together with the chambers where the entities are members can be the driving force to align the policies of the central government.
Almost all unemployed answered that the municipalities do not take measures/activities for young unemployed to increase their capacities and ease their job search.	Most companies stated they did not receive support from local authorities, 40% of them believe that they have no need for support from LSGU's, while 45% stated that they need some support mainly for improving the infrastructure in the place where they operate.	More active and comprehensive involvement of the municipalities in the region in the process of improving the conditions of the young workforce through appropriate reforms in secondary and primary school education.
Most of the respondents -young unemployed (60%) stae that they have not received assistance from EARM, almost half of respondents said they are not aware of active employment measures, and 63% did not know the person who has utilized employment measures.	None of the interviewed companies use subsidies/ measures for employment or other benefits from the government. Most frequently mentioned reasons are administrative and restrictions in the form of embedded conditions they cannot be sure that they can meet. Most (65%) of the companies believe that government employment measures have no effect in terms of improving capacities of labor force and decreasing unemployment.	This implies the need for evaluation, assessment and / or modification of the forms and methods of support to other forms of support that will be aimed at improving the working conditions and the business environment, but also important is the need for modifications in the direction of simplify the procedures and reduction of administrative and technical constraints.
Unemployment remains one of the largest issues of the NEPR- employment rate is considerably below the national average and it is only 30.3%, while the unemployment rate of 44% is 16 pp above the national average and highest compared to all other regions.	About 75% of the interviewed companies expect that in the next 12 months the number of their employees will increase.	An important part of the policies to reduce unemployment in the NEPR should be directed to provide more technical education, and greater focus on gender equality.
43% of the respondents as a main reason why they cannot still find work, note that there are no free positions in accordance with their qualifications or cannot find a suitable job. As a frequent additional comment is stated the politicization of the system, and need of "connections" and personal acquaintances for finding job.	Almost all representatives of responsible positions in companies pointed out that the most problematic factor for doing business is: lack of qualified labor force. In addition the companies stated that they are facing other challenges such as instability of economic policies in the country; with inefficient state administration; shortage of resources and raw materials; and with high fixed costs.	Therefore it is necessary to improve the relevance of education outcomes to the requirements of the labor market; integrating teaching career guidance and more effective plans and strategies for employment even during the period of education.

Most of the unemployed young people with secondary education (even 74%) are persons with secondary professional education while 24% have general secondary education.	Companies agree that the education system does not produce adequate personnel, indicating the need to think in terms of finding ways to motivate young people to enroll in professional and technical departments in secondary schools, but also raise the quality of the educational system of these departments.	More crucial reform of key areas of the education system (introduction of career education and reforming the curriculum, defining internship schemes which will be paid) as a main tool for improving youth employment.
Ideal job for unemployed persons with secondary education is opening their own business (36%), work in administration (26%) and a smaller proportion (10%) see the ideal job in the private sector.	In terms of the profiles of staff that companies need - companies are dominantly searching seasonal workers. The perception of the representatives of the interviewed companies is that there are not enough qualified technical personnel right in their sector, which can meet their needs and the needs in the sector. In addition to the expertise and professionalism of the personnel, what matters is their seriousness, loyalty, honesty and motivation to work.	Lack of appropriate environment for motivating entrepreneurship, for starting their own business, as well as for seeing perspective in the private sector. Preference of the public sector as a preferred employer is a phenomenon that occurs especially among unemployed persons with higher education, which is a particular challenge because these people think that the quality of the work of the private sector is worse than that of the public sector.
The unemployed persons with higher education 64% prefer in ideal terms work in a government institution, 20% to start their own business, while 8% would choose as a first choice employment in the private sector.	95% of employers believe that young people need more practical skills, and of secondary meaning is formal education that they have or will acquire in the future.	The skills possessed by the young unemployed are critical to the business sector and for the general society. The lack of technical skills acquired outside of the formal education which are necessary for the business sector are the main problem for the adjustment of the needs with the business sector in the region. One of the features to overcome this gap is paid internships and focus on technical secondary education.
The most important qualities for finding work in all categories, young high school graduates consider 1) the knowledge of people is the primary quality that young people should have to find work (31%); 2) computer / IT skills (24%); 3) knowledge of languages, completed training or practice (14%) and with a lower frequency other qualifications (scientific / technical qualification, general education, etc.	About 40% of the interviewed companies in the NEPR think that for them is equally important the education and the experience of potential employees.	It is necessary to establish a mechanism that would allow employers to share all information about job vacancies and required qualifications and receive real timely and accurate information on available labor force. In this sense LSU's is in the unique position to enable the flow of relevant information and mediation for example through LED sectors.
1/3 of the respondents, listed EARM as the only way of identifying the open jobs positions, about 14% said they directly submit an application to the employers, or they report upon public announcements, or frequently check websites/posts, 7% of the respondents search help from friends	The business sector in the region shows limited use of the forms of recruitment, namely the companies do not use outside help in identifying adequate staff, while the preferred method of recruitment is a recommendation, while rarely using other methods to find adequate work force.	Internships and job training is an approach and a tool to align the needs that would be accepted to a greater extent by the companies and the unemployed, and therefore should be improved and promoted by the local players, using integrated access by involvement of other

and relatives, and as much said they do nothing.		stakeholders such as education sector, local government and business sector. The internships should be paid by the entities where they perform the practice.
Almost all unemployed persons (89%) are interested in internships in the legal entities in the region, while 11% (10 persons) are not interested and do not want to work as interns.	About 75% of the companies are willing to accept internships in their organizations because they think the internship is equally beneficial for both the company and the person who performs it. Greater proportion of companies (80%) are interested to receive internships if another institution provide adequate compensation for those internships.	

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