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Transition Economy and Regional Differentiation at the Russian Agrarian Labor Market*

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Introduction

Deepening of the regional labor market differences is a general regularity for Central and East European countries. However, in Russia this process has acquired the form of regional contrasts. Persistent regional differences entail different behavior reactions and different models of behavior at the labor market.

Notwithstanding the fact that in the time of transition national economic factors exert the dominating influence on the regional labor market segments' behavior, a considerable part of the regional differences cannot be explained on the national level.

Having performed a regression analysis of the regional and national labor markets, Blanchard and Katz (1992) and later Decressin and Fatas (1995) found out that the national unemployment rates in the USA and EU countries respectively referred to just 66% and 20% of the regional-level transformations.

The growth of the regional labor market differences taking place in the economy has sharpened the contradictions between the federal center and regions.

The objective of this paper is to make a theoretical and empirical analysis of the regional agrarian labor market differences and study the dominating behavior models.

Review of Literature

There are three approaches to regional unemployment rate differences generally distinguished among in the economic literature. First, a regional unemployment rate is viewed as "residual" in the labor-market supply-and-demand equilibrium model.

Second, a regional unemployment rate is considered as a dependent variable in a stochastic equation, in this case reflecting along with other indicators the social and economic situation in the region.

And, finally, a regional unemployment rate is treated as the basic variable. In this instance the key economic factors are ascertained that explain the difference between the national and regional unemployment rates.

Layard, Nickell, Jackman (1991) and later other authors published a number of works in which unemployment rate differences in economically developed countries are explained. Employing a dynamic non-linear twelve-parameter equation the authors come to the conclusion that the inter-country differences are a consequence of institutional peculiarities.

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Regional unemployment rate differences are studied in the works of Elhorst (1994), who applies a formula, in which the regional unemployment rate is represented through two components, that being the regional and the national unemployment rates.

$$U_{reg} = (U_{reg} - U_{nat}) + U_{nat} = U_{com} + U_{nat} ,$$

where

U_{nat} – national unemployment rate;
 U_{reg} – regional unemployment rate;
 U_{com} – regional component of unemployment.

The study of the regional differences was based on the following equation:

$$U_{i,t} = PW_{i,t} \cdot L_{i,t} + NC_{i,t} - E_{i,t}$$

$$PW_{i,t} = G_{i,t} + NM_{i,t} ,$$

where:

U – unemployment;
 i – regional index;
 t – time index;
 PW - working age population;
 L – rate of labor participation;
 $E_{i,t}$ – employment;
 $NM_{i,t}$ – net migration;
 $G_{i,t}$ – working age enter-retire balance.

We have analyzed the U_{nat} , U_{reg} and U_{com} cross-correlation for the agrarian sector of Russia and compared the results with the data presented by Elhorst (1994). Our calculations show that the correlation coefficients for the pairs U_{nat} and U_{reg} , and U_{reg} and U_{com} constitute 0,53 and 0,85, respectively. According to Elhorst, the cross-correlation is represented by the following coefficients: U_{nat} and $U_{reg} = 0,73$; U_{reg} and $U_{com} = 0,63$; U_{nat} and $U_{com} = -0,07$. However, the regional component appeared to be not very informative to allow for further analysis.

Viewing the regional differences in the unemployment rates in Spain, Saez and Murillo (1996) study the long-term co-integration connections.

Taking into account the fact that co-integration between the basic and the regional sectors is a prerequisite and assuming that the principal economic mechanism is an important behavior hypothesis, Mur and Trivez (1994) simulate the dynamics of the inter-regional connections. The regional revenue is presented in their research as a sum of the revenues generated in the basic (B) and local (L) sectors: $Y = B + L$.

Adaptation of the Keynesian consumption function to this simple model resulted in the following:

$$L = a + bY$$

$$Y = \mathbf{a} + \mathbf{b}B$$

$$L = \mathbf{g} + \mathbf{h}B,$$

where:

- a – parameter measuring the rate of autonomous economic activity in the sector;
- b – direct effects the regional revenue produces on the model.

A similar approach was also applied to the explanation of the regional employment factors.

Beside the above, there is a number of theoretical approaches to making classifications of regions presented in the literature, like the ones described by Lehman (1991), Fazekas (1994), Gorzelak (1993) and other authors.

The most interesting, we think, is the classification of the Central and East European regions proposed by Scarpetta and Huber (1995). Their approach is based on a successive multi-dimensional sampling process consisting of four stages. A discriminatory analysis performed at the first stage enables to single out highly specialized regions. In this case the share of employed in agriculture or industry measured in standard deviations from the average value must match with certain sampling criteria (the Herfindahl index tops the average national rate). At the second stage three macro groups are formed, two of which include highly specialized regions. And, finally, the groups comprising highly specialized regions are checked for the regions with the best economic structures and prospects in terms of employment. The authors employed such indicators as the local infrastructure development index, private sector development index, human capital characteristics and etc., and finally singled out 7 groups of regions. We accepted this approach as the basis for classifying the Russian regions and analyzing the relatively homogeneous typological groups' behavior at the labor market.

Methodology of Research

a. Data Description

The research is based on the use of the data of the two following types: cross-section and time series.

Assessing the regional reactions to changes in the national labor market indicator values takes the use of unemployment rate by regions of Russia for the 1992-1999 period. The source of the required information is government statistical data collected monthly, quarterly and annually. A shortcoming is that the official data appears to be biased downward because the actual rates of unemployment observed in Russian regions are higher than the registered ones.

In view of the above circumstance the project also employs the data obtained during sample surveys on employment issues conducted in conformity with the international classification standards and ILO recommendations. The sample represents the Russian Federation and regions of Russia.

The database of regions, made use of in the multi-dimensional sampling typology of regions and cluster analysis, contains indicators for 78 regions of Russia, including 20 republics (Chechnia is not included because of the lack of many data), 49 oblasts, 6 krais, 1 autonomous oblast and 1 autonomous okrug (the rest are not included because of insufficiency of data).

The initial statistical data employed in the typology were presented in the form of a system of matrixes.

The matrix “object-property” with employment branch structure characteristics (x) for each of the regions included in the analysis has the following form:

$$X_1 = \begin{pmatrix} x_1^{(1)}(t) & x_1^{(2)}(t) & \dots & x_1^{(p)}(t) \\ x_2^{(1)}(t) & x_2^{(2)}(t) & \dots & x_2^{(p)}(t) \\ \dots & \dots & \dots & \dots \\ x_n^{(1)}(t) & x_n^{(2)}(t) & \dots & x_n^{(p)}(t) \end{pmatrix}, t = t_1, t_2, \dots, t_n \quad (1.1)$$

where $x_i^j(t_k)$ - employment indices for branch j , region i , year t_k .

Data (1.1) form a space and time sample and include n implementations of p -dimensional time series $(x^{(1)}(t), x^{(2)}(t), \dots, x^{(p)}(t))$.

For analyzing the regional employment structure for each of the years (1992-1998) we made space statistical samples in the form below:

$$X_1 = \begin{pmatrix} x_1^{(1)} & x_1^{(2)} & \dots & x_1^{(p)} \\ x_2^{(1)} & x_2^{(2)} & \dots & x_2^{(p)} \\ \dots & \dots & \dots & \dots \\ x_n^{(1)} & x_n^{(2)} & \dots & x_n^{(p)} \end{pmatrix},$$

where $n=1$.

Beside that, we have analyzed the time series curves and the time series of the matrixes with dimensions $n \times n$ (object space) and $p \times p$ (feature space).

The structure of indicators applied is the following:

- number and share of employed in the economy (industry, agriculture, construction, transport, communication, trade, etc.);
- breakdown of the population of the regions by education;
- infrastructure development indicators;
- number and share of employed in the private sector;
- urban and rural telephone communication development basic indicators;
- road infrastructure development basic indicators.

In order to facilitate the construction of the typology of Russian regions the data concerned was presented in the form of standard deviations from the average national level. The Herfindahl index and standard deviations have been calculated for each region and macro group. The typology was developed based on the methods proposed by Scarpetta and Huber (1995).

b. Theoretical and Econometric Model

Labor market functions on the basis of price equilibrium. The function of regional demand for labor (L_r^D) is an aggregate function of demand of all companies operating in the region. The function of regional supply of labor is an aggregate function of supply from local households (L_r^S). Unemployment is explained by excess of supply over demand at the labor market:

$$u_r = L_r^S - L_r^D.$$

The aggregate supply of labor from the regional households maximizing the utility is described by Nickell (1990) as log-linear:

$$n^S = b + b_1(w-p) - b_2(w-p)^* - z, \quad b_2 > 1,$$

where

n – employment, w – wage, $(w-p)$ – real wage, $(w-p)^*$ – real wage in long-term equilibrium, z – other factors.

Transformation of this equation into an unemployment equation results in the system of relationships.

$$u^S = l - n^S, \text{ where } l - \log \text{ of labor force.}$$

$$u^S = b - b_1(w-p) + b_2(w-p)^* + z.$$

Regional demand for labor is determined by profit maximizing firms.

$$Y_i = N_i^a K_i^{(1-a)} \exp(\epsilon_p),$$

where N_i – employment, K_i – capital, ϵ – technologies.

$$\frac{P_i}{P} = \frac{w}{ap} \left(\frac{N_i}{K_i} \right)^{1-a} \exp(-\epsilon_p), \quad i=1...F$$

Profit maximizing condition can be put down in the log form:

$$p - w = a_0 + (1-a)(n-k) - \epsilon_p$$

or with taking into account unemployment:

$$p - w = a_0 - (1-a)u - (1-a)(k-l) - \epsilon_p$$

The equations explain the principal economic mechanisms bringing about changes in demand for labor. However, peculiarities of the transition period in Russia introduce certain corrections.

In the time of transition many companies chose a rather specific way of decreasing the costs in response to the fall of demand. That is long delays in the payment of wages, vacations without pay initiated by the administration and shortened working days instead of reduction in the number of workers. This leads to expansion

of the secondary employment, existence of latent unemployment (which is a non-market feature) and latent employment, accumulation of the companies' debts to the workers. Beside that, there are administrative, legal and economic restrictions. All this hampers the release and transfer of labor to more efficient employment spheres and active inter-regional movement. Unevenness of the market reforms also makes the regional differences greater.

In conditions of steady regional differences there appears the so-called "portfolio effect", when high regional specialization increases the risk of unemployment, while diversification of employment makes the risk of unemployment lower by expanding the sphere of application of labor. This hypothesis is to be examined in the course of the research.

Unemployment rate is defined by the ratio:

$$u_r = \frac{U_r}{L_r} = \frac{U_r}{U_r + E_r},$$

where

u – unemployment rate;

L – labor force;

U – number of unemployed;

E – number of employed.

Growth of unemployment in a region R_j can be connected with both the risk of growth of the number of unemployed (r) and increase in the duration of unemployment (d).

$$u = f(r, d) + error$$

Risk factors can lie with both demand and supply and be connected with both regional and general economic transformations.

Formally the regional labor market was represented by a system of factors influencing the supply and demand. From the whole variety we singled out the key factors and formed a system of indicators.

The basic classification of Russian regional labor markets was made by applying the method proposed by Scarpetta and Huber (1995).

The multi-dimensional sampling process included the following stages. First of all two groups of regions were formed, that being highly specialized regions (a) and the remainder regions (b). A location coefficient value was calculated for each of the regions:

$$LC_r^i = \frac{E_r^i / E_r}{E_n^i / E_n},$$

where:

E_r^i and E_n^i – number of employed in the industry i of the region r ;

E_r and E_n – number of employed in the region and in the national economy.

Employing the location coefficient, Mur and Trivez (1994) assessed the nature of specialization of the regions, grounding their research on the criterion $LC_r^i > 1$.

According to the multiple discriminate rule highly specialized regions in the studies of Scarpetta and Huber (1995) can be characterized by any of the conditions below:

- 1) the share of employed in agriculture or industry measured in standard deviations is above the critical value;
- 2) the Herfindahl index (a regional value equaling a half of the standard deviation) is above the set criterion.

At the next stage agricultural, industrial and other regions were picked out from the first group (a) by applying the same criteria. Expanding this approach, we made an additional classification of the diversified regions with the use of specific average by-group values playing the role of borders for the variables (GCS). Calculated were the average by-group values for the indicators, and estimated was the unemployment rate inner-group variability. The typology was analyzed in the system of labor market indicators. A number of tests were employed to check the quality of the taxonomy. Beside that, several classification variants were developed based on cluster analysis. As a result we made a classification consisting of 6 groups of regions, that being agrarian, industrial, infrastructure, agrarian-industrial, agrarian-infrastructure and industrial-infrastructure regions.

Typology

Typology of regional labor markets of Russia was constructed based on the antecedent theoretical and empirical knowledge about the regularities of formation of the employment structure. The classification procedure presupposed that each of the regions was to be included in one of the macro-groups of the typology. The notion of “macro-group” itself was interpreted as a set of regions described by a single-model density function $S(X)$ or a single-model probability polygon when distributing discrete features (X).

The classified features were interpreted as a sample from the general set and were represented by six typological groups (each of which is single-model) with the following probability density:

$$f(x) = \sum_{j=1}^k p_j f_j(X) \quad \Bigg|$$

Where δ_j – antecedent probability that the sample will include an element from the j class with $f_j(x)$ density.

δ_j is the share of j -class elements in the total general set.

The classification procedure was considered optimal if it was accompanied by minimum losses among all other classification procedures.

We were mistaken (m) times, and the value of losses that we suffer when attributing an i -class object to the j class makes up $c(j|i)$, while the total losses equal:

$$C_n = \sum_{i=1}^k \sum_{j=1}^k c(j/i) m(j/i) \quad \Bigg|$$

Beside that we can calculate specific characteristics of losses that do not depend on the number of classified objects.

Our conception of how unemployment rate regional values depend on regional employment structure peculiarities explains:

$$U_{ij}^{ti} = a + bX_i + \mathbf{x}_i \quad t = 1 \dots n$$

where:

X_i is a determined value.

Inclusion of the picked out indicators into the regression equation will enable to derive quantitative relationships for different typological groups and explain the diverse behavior reactions demonstrated by the labor market regional segments.

Transition Matrix Analysis

Unemployment rate regional values for the years 1992-1998 were viewed as a discrete probability space with the final number of elementary outcomes w_1, w_2, \dots, w_n and their probabilities $p_1 = P\{w_1\}$, $p_2 = P\{w_2\}$, ..., $p_n = P\{w_n\}$. Each of the elementary outcomes w_j was interpreted as a “possible state” of the region at the labor market. Discrete time (t) and random value $\mathfrak{x}(w)$ with the value $(1, 2, \dots, n)$ determine the state of the object at a certain instant of time $\mathfrak{x}(w_1) = i$. The 1992-1998 period was viewed in two stages: 1. 1992-1995 and 2. 1995-1998, assuming that the region’s position at the labor market could change at any point of time, so that the region could shift from the w_i state to the w_j state. Three possible scenarios were provided for: 1) the region retains its position, 2) the situation at the local labor market gets worse (from the macro-group with lower unemployment indices the region moves to a macro-group with a higher unemployment rate), and 3) the situation at the local labor market improves (the region passes to a macro-group with a lower unemployment rate).

Preliminary analysis of the unemployment rate dynamics reveals high dependence on the previous values. Such random value series relationships can be viewed as Markov process creating series. The matrix of transition probabilities (Markov matrix) allows analyzing the transition of regions from one macro-group to another.

$$P = \begin{bmatrix} p_{11} & p_{12} & \dots & p_{1m} \\ p_{21} & p_{22} & \dots & p_{2m} \\ \dots & \dots & \dots & \dots \\ p_{m1} & p_{m2} & \dots & p_{mm} \end{bmatrix} \quad \Bigg|$$

Probability of transition ($p_{ij}^{(t-1)}$) from state i to state j during the period of time t was calculated by using the equation:

$$p_{ij}^{(t)} = \sum_{q=1}^m p_{iq}^{(t-1)} * p_{qj}$$

The researched object in the proposed analysis is the regional labor market, while the possible “states” represent typological groups classified by unemployment rates. Proceeding from this, p_i of initial distribution of probabilities is interpreted as a share of the regions belonging to i macro-group in 1992. The transition probability p_{ij} is interpreted as a share of the regions of i-type, which passed to j macro-group within the 1992-1995 period. Matrix P of transition probabilities p_{ij} can be defined in terms of unemployment rates classified into 4 groups respectively representing 1) maximum rate, 2) above average, 3) below average, 4) minimum rate (4x4) or 5 groups (5x5) by quintiles. The range of “states” of the regional labor markets is represented by the singled out typological groups.

Of practical interest is the question about the average period of time the regional labor market of i-type is in the micro-group with the maximum unemployment rate values.

Interpretation of the Obtained Results

The analysis enabled to explain the differences among the regional labor market behavior models and find out the specific features of the typological groups.

Table 1

Typology of Russian Regions

	Section 1	Section 2	Section 3	Section 4	Section 5	Section 6
Mean Agro	0.236	0.105	0.087	0.174	0.173	0.077
Min. Agro	0.175	0.057	0.020	0.145	0.157	0.048
Max. Agro	0.333	0.147	0.133	0.201	0.201	0.119
St. Dev. Agro	0.098	0.049	0.070	0.033	0.031	0.073
Mean Ind	0.200	0.335	0.225	0.286	0.208	0.283
Min. Ind	0.094	0.281	0.155	0.261	0.165	0.259
Max. Ind	0.267	0.399	0.301	0.322	0.254	0.308
St. Dev. Ind	0.083	0.084	0.054	0.031	0.055	0.028
HHI	0.143	0.172	0.122	0.154	0.130	0.149

Agrarian Regions

The regions included in this group can be characterized by a large share of rural unemployment: in Daghestan Republic this share makes up 77,6%, Kalmikia Republic – 68,7%, Ingushetia Republic – 68,6%. Expansion of the labor market’s bounds owing to the hidden forms of unemployment is a most important characteristic feature of the agrarian sector in the 1992-1999 period. The decline in agricultural production was for a long time accompanied by growth of hidden unemployment. Release of workers was not a part of the large collective farms’ strategy. As a result, the wages had to be reduced, and the companies’ debts were constantly growing because of long delays in

the payment of wages. All this led to the situation when working for a large collective farm was no longer paying, and the people had to switch to working on their personal land plots, performing commercial activities or other, i.e. found themselves in the sphere of secondary employment. The regional analysis shows that the correlation dependence between the production decline trends and the dynamics of employment in the agricultural sector became stronger in the 1997-1999 period.

Transition of the agrarian reform to the stage of deep structural and institutional changes will form the necessary preconditions for decreasing the rate of latent unemployment.

The strategy of formation of the structure of employment in the agrarian sector should account for, first, the global development trends which set out the universal regularities and tendencies and, second, the specific features of the Russian regions – the existing demographic, economic, social and cultural conditions. Changes in the structure of aggregate demand at the labor market which will probably take place in the future will be a result of creation of new jobs in the sphere of non-agricultural employment (agricultural services, food processing, production and social infrastructure), technological modernization and restructuring of large agricultural enterprises. One can hardly expect creation of any additional jobs in the traditional branches of agricultural production, where there are both permanently free vacancies and excessive labor supply already now. At the same time the demand for services is on the rise, which is likely to facilitate the development of agricultural services and expansion of non-agricultural employment. Construction of dwelling houses, creation of efficient transport and communication systems, more intensive application of information technologies and construction of recreational zones in rural areas will enable to create new jobs and renew the traditional ones.

Industrial Regions

In industrial regions the nature of relationship between the structure and dynamics of employment depends on specialization of the region. The least decrease in the number of employed is observed in the regions with a high share of raw material producing and export-oriented branches. The number of employed reduced considerably in the light industry, which was quite painful for the regions with big share of employed in that industry. As a result of the break up of economic connections the textile and tailoring industries have lost their traditional sources of raw materials. Noticeable was also the negative influence of such factors like the drop of demand, reduction and differentiation of the incomes of the population, problems with marketing and expansion of imports at the Russian markets.

The break up of the traditional economic relations and shrinkage of the government support produced a negative impact on the machine-building and metal fabricating industries as well. The largest decrease in the number of employed was experienced by the electronic device industry. The situation was not much better for the regions with a large number of enterprises included in the military and industrial complex.

There emerged a general tendency towards de-industrialization, which inevitably brought about a reduction of the number of employed in the industrial sector.

Along with the natural increase in the number of employed in the services sector and decrease in the number of employed in the industrial sphere, which is a

process typical of the developed countries, there are some certain specific features in the Russian economy in the time of transition. We should not underestimate the harmful role of such factors like shrinkage of investments, high costs reducing the competitiveness of domestic products, lack of innovations and etc. In these conditions the expansion of imports aggravates the production decline in the food processing industry causing a rise of unemployment.

Regions with Diversified Structure of Employment

From the point of view of the regional labor markets, diversification of employment has the following advantages.

First, it makes it possible to distribute the risk of unemployment owing to the diversity of the sphere of application of labor. A fall of production and decrease in the number of employed in some of the industries can in this case be offset by growth of the number of engaged in other sectors. As a result, the growth of unemployment in that region may be not very considerable. That is just what was happening in 1992-1999 in the regions encouraging the development of the private sector, trade and infrastructure. The risk of unemployment is higher for the regions with high rates of specialization and low rates of development of the local infrastructure.

Second, diversification of employment enables to make the structural transformations less painful and to gradually shift the employment from the stagnant industries to the ones with a high growth potential. Highly specialized regions appeared to be especially vulnerable. The regions with high rates of employment in the coal mining, military defense, light and electronic device building industries found themselves in the most desperate position.

The analysis of the regional structure of employment puts forward fundamental problems connected with the efficiency of the regional labor proportions. There are two types of strategies in the world's practice usually applied within active regional labor-market policies. The strategy of the first type is aimed to reduce the production costs and create additional jobs by using such economic instruments as privileged taxes and credits. The strategy of the second type is oriented towards higher social standards and quality of labor conditions, it pursues long-term objectives and requires considerable investments to be made in the infrastructure of the region. Mobilization of the regional sources of growth, taking into account the peculiarities of the internal market and demand of the population, and stimulation of the endogenous factors of development are essential anyway. If this approach is applied, then foreign investors will be attracted by high standards of infrastructure and quality of life and labor resources, rather than by low production costs.

Comparative Positions of the Groups

Judging by the results of comparative inter-regional analysis, 29 regions retained their positions in 1992-1995 and 38 regions if classification by quintiles is applied and 46 regions according to the classification based on standard deviation (1995-1998).

25 (1992-1995) and 19 (1995-1998) regions have improved their positions, while the positions of 24 (1992-1995) and 21 (1995-1998) regions have become worse.

Estimations based on correlation analysis and calculations, related to the transition matrix, made us come to the following conclusions.

First, “starting conditions” play a very important role.

We have analyzed two transition matrixes, that being 5x5 and 4x4. The former is based on classification of the regions by quintiles, while the latter is grounded on classification based on standard deviations of the regional values from the average level.

Entry (i, j) is a probability of transition of the region from group i to group j.

Analysis of the two matrixes - (5x5) and (4x4) – shows that there is a high probability for the regional labor markets to retain their position (belonging to the group). For the regions with high rates of unemployment the probability to retain their position values 0,89 (1992-1994) and 0,70 (1995-1997). These indices are effective if the regions are broken down by standard deviation rates. If we classify the regions by quintiles, then the probability to retain their position for the regions with high unemployment rates equals 0,63 (1992-1994) and 0,75 (1995-1997).

For the micro-group with the minimum unemployment rate the probability to retain the position makes up 0,53 (1992-1994), 0,60 (1994-1995) and 0,53 (1995-1997) (classification by quintiles). If the regions are grouped based on standard deviation rates, then the values of that index are 0,50 (1992-1994), 0,68 (1994-1995) and 0,63 (1995-1997).

Thus, it is clear from the analysis that only 11% of the regions included in the macro-group with the maximum unemployment rates have undergone changes in their position, while the initial status was retained by 89% of the regions in 1992-1994 and 70% of that in the 1995-1997 period.

The transition probability matrix manifests that the most intensive rotation takes place between the second and the third (second, third, fourth) groups. At the same time it is obvious that the regions included in the polar groups tend to retain their initial status.

Recommendations

Forecast calculations show that the regional differences at the agrarian labor market remain considerable. The situation in a number of Russian regions, in which the unemployment rate is forecasted to reach 20-27%, can become critical. The federal employment policy should take into account the existing regional contrasts and reduce their impact by employing a system of “social amortizators”.

Smoothing of the negative consequences of the unemployment growth and restraining of polarization at the labor market takes a package of measures to be implemented with the view to create new jobs in rural areas and increase the investment attractiveness of the latter, construct an efficient economic mechanism of labor force re-distribution, and promote the professional, qualification and territorial mobility. This would enable to prevent the expansion of the latent, stagnant and chronic forms of rural unemployment.

In the framework of a middle-term program it is very important to encourage the development of non-agricultural employment in rural areas, which is considered to be one of the key factors that can help overcome the crisis and depression.

Structural transformations in the rural employment sphere should go in line with the global regularities of economic transition from traditional to industrial and service types of employment. It seems advisable that the share of agriculture in the

branch structure of employment be decreased from 14,7% down to 11% in 2000 and then to 9,6% in 2005. At the same time the following measures should be taken:

- selective support to housing and road construction, transport, communication, trade, and agricultural service branches and social infrastructure in small towns and rural areas;
- reorientation of non-agricultural enterprises, the products of which are of low demand, towards the production of other goods of greater demand; maximum utilization of local resources for the purpose of creation of new jobs; promotion of investments in efficient and competitive enterprises;
- creation of an adequate economic environment for successful functioning of agricultural service and recreational companies in rural regions;
- long-term strategic orientation towards gradual delivery from unqualified labor, re-training of low-qualified labor force, and elimination of the imbalance of wages;
- promotion of entrepreneur and business activity in small towns and rural areas, restriction and ousting of “shadow” economy manifestations.

Transition to such a structure of employment, in which the key role is played by “service economy” and qualified labor, will enable to attain another important objective of the reforms, that is to strengthen the economic status and market position of wages and increase the share of the latter in the structure of incomes. This in turn will make it possible to increase the efficiency of labor and make the economic mechanisms of regulation of the labor market function livelier.

Structural transformation and increase in the rate of payment for qualified labor will provide real grounds for transition to higher standards of quality of life in rural regions.

References

1. Scarpetta, St. and Huber P. (1995), “Regional Economics and Unemployment in Central and Eastern Europe: An Attempt to Identify Common Patterns”. OECD, Paris.
2. Huber P. and Wörgötter An. (1997), “Local Labor Market Dynamics in the Czech and Slovak Republics”.
3. Shoesmith G.L. (1992), “Non-cointegration and Causality Implications for VAR Modeling”, International Journal of Forecasting, Vol.8, p.p. 187-199.
4. Saez M. and Murillo C. (1996), “Regional Disparities and National Similarities in Spanish Unemployment: A Case of Seasonal Cointegration?”, Applied Economics, Vol.28, p.p. 1529-1544.
5. Bobeva D. and Hristoskov Y. (1995), “Unemployment in Agricultural Areas: An Overview of Central and Eastern-Europe and a Case Study of a Bulgarian Region”, OECD, Paris.
6. Mur J. and Trivez J. (1994), “Modeling Dynamic Interregional Labor Markets: An Application to the Spanish Case”, Groningen.
7. Elhorst P. (1994), “Unemployment Disparities between Regions in the European Community”, Groningen.
8. Nickell St. (1990), “Unemployment: A Survey”, The Economic Journal, Vol.100, p.p. 391-439.