Rural Development and Unemployment Reduction

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Abstract.

The objective of this paper is to study the link between rural regional development strategies and unemployment reduction in agricultural regions. Based on empirical data, the paper presents the assessment of the "diversification effects" for the regional labor demand achieved through the development of the non-state sector, small businesses and the service market on the regional labor markets' behavior.
By using the regression models we analyze how labor market performances depend on the patterns of the employment structure. Special attention is paid to the comparative analysis of agrarian and industrial regions. It is shown that high rates of employment in the agriculture weaken the position of the region on the labor market. However, diversification of the employment structure of the agricultural regions is a factor reducing the risk of rural unemployment. In rural regions the development of non-agricultural employment produces positive effects on the regional labor markets' behavior.
We study the relationships of the labor market performance with the key directions of the economic reform like changes in the ownership structure, development of small businesses and the service market.

Keywords: rural development, Russian regions, agricultural, diversification effects, unemployment reduction,

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1. INTRODUCTION

Among the most serious problems the transition period has brought about are the problems of regional unemployment in agricultural regions. Both in Russia and in Central and East European countries, the transformational recession produced the greatest negative effects on the rural areas, and the situation in the agrarian labor market did not improve during the reforms. The unemployment rate in agricultural regions is higher than the Russian average.

Agriculture is an important sector in Russia and it reforming is vital for the successful transition to a market economy. Share of employed in agriculture - about 13.0% as compared to 5.1% in the agrarian, forestry and fishery sector in the EU countries. The ratio of employed in the US agriculture and forestry has decreased from 13.7% (1950) to 9.2% (1960) and than to 3.0% (1992). The economic reforms in Russia (1992-2000) did not bring about any radical changes in the employment structure, which is still inefficient with a big share of agricultural employment. At the same time the service sector, infrastructure, nonagricultural activities remain underdeveloped, which does not facilitate diversification of the regional employment structure, and reduction of the unemployment. For many years the development of rural regional infrastructure was financed to a minimal extent. A permanent deficit in investment in the infrastructure and nonagricultural employment produced negative effects by decreasing the investment attractiveness of the rural regions. Moreover, the global structural shifts and employment trends show that economic growth is usually accompanied by a decrease in the share of employment in the agriculture with a simultaneous rise in the share of the service sector.

In economically developed countries, agriculture is a part of the multi-industry food complex. It is based on up-to-date industrial technologies, and the share of the agriculture sector is not large. Non-agricultural sectors supplying machinery and processing agricultural products. More than 90% of agricultural products undergo industrial processing, while the share of agricultural products in the final food production process does not exceed 10-15%. This system forms an employment structure with a small share of agriculture and a big share of non-agricultural sectors.

The share of employed in agriculture in Russia is 2-3 times higher than that in European countries and the USA. The kolkhoz and sovkhoz system was based on monopolistic state ownership, subsidies granted by the state, and the excessive number of workers, which used to compensate for low labor efficiency. As a result, a sectoral structure of the agricultural and industrial complex with a big share in agriculture was formed and still remains. Underdeveloped storage and specialized transport systems, up-to-date trade equipment, and packaging and processing industries used to restrict the sphere of employment in rural areas and small towns. The decrease in the share of agricultural employment during the transition period was slow.

The table1 shows that during twenty years the share of employment in the agricultural sector dropped just 1.2 per cent from 14.6% in 1980 to 13.0% in 2000.

Table 1. **AVERAGE ANNUAL EMPLOYMENT BY INDUSTRIES (As percentage of the total)**

	1980	1990	1994	1995	1998	1999	2000
Industry	32,5	30,3	27,1	25,9	22,2	22,2	22,4
Agriculture	14,6	12,9	15,1	14,7	13,7	13,4	13,0
Wholesale and retail trade, catering	8,3	7,8	9,5	10,1	14,5	14,9	15,0

It is important to know which of the impact of the high share of agriculture in the structure of employment on the regional labor markets' behavior, which of the effects of the major agrarian reform actions (liquidation of state monopoly and creation of a new ownership structure, support to small business, services market development) on the regional labor markets' behavior.

2. OBJECTIVES AND HYPOTHESIS

The objective of this paper is to estimate the link between development strategies of agricultural regions and unemployment reduction. The tasks are the following:
1. Explain the relationship between nonagricultural activities in agricultural regions and labor market performance. Measure the influence of share nonagricultural employment on unemployment rate (affect nonagricultural activities on unemployment reduction).
2. Explain the relationship between the key directions of the economic reform like changes in the ownership structure, develop of infrastructure, service market, promote small businesses and labor markets' behavior. Measure the influence of the share of the "new" sector on unemployment rate.
This paper tests the following hypothesis.

Hypothesis 1. *The sectoral composition of employment effect.* The regions with a high share of agricultural employment in the employment structure have a weaker position on the labor market. For Central and Eastern European countries, this hypothesis has been tested and proved by Scarpetta and Huber, (1995).

Hypothesis 2. *Labor demand diversification effects.* Formation of a certain ownership structure reflects the priorities of the economic policy. Regions with a higher share of non-state sectors, small businesses, service markets have a more advantageous position on the labor market.
To test both hypotheses, we used data from Russia's Labor Force Survey.

3. MODEL SPECIFICATION AND ESTIMATION RESULTS

3.1. Estimation of the influence of the nonagricultural activities on the unemployment reduction

In this section we evaluate the link between development strategies of agricultural regions and unemployment reduction. Hypothesis one poses a relationship between the nonagricultural activities and the regional labor markets behavior.

The major objective is to identify the statistical dependence between risk of unemployment and specific features of the structure of labor demand.

It was assumed that higher share of agriculture of a regional structure would increase the risk of unemployment, while a diversified structure of employment with higher share of nonagricultural activities would reduce the risk of unemployment.

The task was to plot the function of dependence of the labor market performance on the employment structure of the region. Hypothesis one was tested by using the following regression equations:

$$Un_{i\,t} = \beta_0 + \beta_1 Sh\_AGR_{i\,t-n} + \beta_2 SH\_IND_{i\,t-n} + \beta_3 S_{i\,t-n} + \beta_4 P_{i\,t-n} + \xi \quad (1.1.)$$

$$D\_Un_{i\,t} = \beta_0 + \beta_1 Sh\_AGR_{i\,t-n} + \beta_2 SH\_IND_{i\,t-n} + \beta_3 S_{i\,t-n} + \beta_4 P_{i\,t-n} + \xi \quad (1.2.)$$

$$E_{i\,t} = \beta_0 + \beta_1 Sh\_AGR_{i\,t-n} + \beta_2 SH\_IND_{i\,t-n} + \beta_3 S_{i\,t-n} + \beta_4 P_{i\,t-n} + \xi \quad (1.3.)$$

$$L_{i\,t} = \beta_0 + \beta_1 Sh\_AGR_{i\,t-n} + \beta_2 SH\_IND_{i\,t-n} + \beta_3 S_{i\,t-n} + \beta_4 P_{i\,t-n} + \xi \quad (1.4.)$$

Here:

$Un_{i\,t}$ – unemployment rate in region i at time t;

$D\_Un_{i\,t}$ - duration of unemployment in region i at time t;

E - employment rate in region i at time t;

L- labor force participation in region i at time t;

$Sh\_AGR_{i\,t-n}$ – share of employment in agriculture in region i at time t-n;

$SH\_IND_{i\,t-n}$ - share of employment in industry in region i at time t-n;

$S_{i\,t-n}$ – size of region i at time t-n;

$P_{i\,t-n}$ – population density in region i at time t-n.

To avoid deviations that might result from size differences among the regions, the regression equation includes such variables like the size of the region (S) and population density (P).

The regression equations were assessed for Russia as a whole and for agrarian and industrial regions separately. This resulted in a system of 8 regression equations. The results are presented in tables 2.1 and 2.2.

Table 2.1. RESULTS OF ESTIMATIONS FOR ALL REGIONS OF RUSSIA

Y	X	B	Std Err	t	Sig (t)	F	Sig (F)	R^2	DW
Un	Const shind	25,31 -0,39	1,90 0,07	13,3 -5,5	0,000 0,000	30,7	0,000	0,299	1,569
D_un	Const shagr	8,56 0,05	0,27 0,02	31,5 3,0	0,000 0,004	8,9	0,004	0,110	1,414
E	Const Shagr Shind s	49,68 -0,27 0,20 0,003	3,12 0,08 0,08 0,001	15,9 -3,5 2,5 3,6	0,000 0,001 0,016 0,001	24,4	0,000	0,511	1,178
L	Const Shagr s	64,91 -0,32 0,003	1,00 0,06 0,001	64,8 -5,4 3,8	0,000 0,000 0,000	28,0	0,000	0,441	1,658

Table 2.2. RESULTS OF THE ESTIMATIONS FOR AGRICULTURAL REGIONS OF RUSSIA

Y	X	B	Std Err	t	Sig (t)	F	Sig (F)	R^2	DW
Un	Const shagr	-4,95 0,96	6,17 0,27	-0,8 3,5	0,430 0,002	12,6	0,002	0,411	1,195
E	Const shind	41,0 0,34	3,0 0,13	13,7 2,5	0,000 0,021	6,4	0,021	0,262	1,530

The results of the regression analysis show a significant dependence of the labor market performance on the employment structure of the region. An assessment of the regression equations testing the 1st hypothesis shows a general positive correlation between the labor market performance and the employment structure of the region. The share of employment in agriculture is a significant factor worsening the position of the region on the labor market. The share of nonagricultural activities is a significant positive factor affecting employment growth and unemployment decrease in agrarian regions.

The negative correlation is the highest (for all regions) between the share of agricultural sectors and the employment rate in the region. Agrarian regions show a positive correlation between the unemployment rate and the share of employment in agriculture within the region. A bigger share of the agriculture makes the regional labor markets more sensitive to shocks. A negative correlation exists between the unemployment rate and the share of

nonagricultural activities (for example, in industry). This is not surprising, as expansion of nonagricultural employment is an important factor improving the position of agrarian regions in the labor market. The correlation between these factors and the duration of unemployment is a little bit lower. The other correlations are less significant.

3.2. Estimation of the Influences "Effect of Diversification."

In this section we evaluate the influence of the economic policies implemented on the regional level on the labor market performance. Hypothesis 2st poses a relationship between the regional labor markets behavior and the development of the "new" sector. It was assumed that high employment rate in the private sector, joint companies, small businesses, service sector would reduce the risk of unemployment, bring about relative stabilization of employment, make the labor demand diversification and incomes increase along with the outflow from unemployment. Trade is one of the most dynamic sectors in all transition countries, and employment exceeding the average rate can be an important signal of diversification of the economic activity in the rural region. However, rural tourism was not taken into account in our study because of its insignificant position in the Russian rural regions. The indicators of regional differences by numbers of telephone lines per 100 people correlate with the labor market performances quite vaguely and were therefore eliminated from the analysis. In general, we based ourselves on the assumption that labor demand diversification and economic policies supporting a "new" sector by promoting private initiative, small businesses, service market reduce the risk of unemployment. The testing was done based on the following equations.

$$Un_{i\,t} = \beta_0 + \beta_1 Sh\_Pr_{i\,t-n} + \beta_2 SH\_ST_{i\,t-n} + \beta_3 SH\_FOR_{i\,t-n} + \beta_4 SH\_ROS_{i\,t-n} + \beta_5 ENT\_AGR_{i\,t-n} + \beta_6 ENT\_IN_{i\,t-n} + \beta_7 ENT\_TR_{i\,t-n} + \beta_8 SH\_TR_{i\,t-n} + \beta_9 SH\_FIN_{i\,t-n} + \xi \quad (2.1.)$$

$$D\_Un_{i\,t} = \beta_0 + \beta_1 Sh\_Pr_{i\,t-n} + \beta_2 SH\_ST_{i\,t-n} + \beta_3 SH\_FOR_{i\,t-n} + \beta_4 SH\_ROS_{i\,t-n} + \beta_5 ENT\_AGR_{i\,t-n} + \beta_6 ENT\_IN_{i\,t-n} + \beta_7 ENT\_TR_{i\,t-n} + \beta_8 SH\_TR_{i\,t-n} + \beta_9 SH\_FIN_{i\,t-n} + \xi \quad (2.2.)$$

$$E_{i\,t} = \beta_0 + \beta_1 Sh\_Pr_{i\,t-n} + \beta_2 SH\_ST_{i\,t-n} + \beta_3 SH\_FOR_{i\,t-n} + \beta_4 SH\_ROS_{i\,t-n} + \beta_5 ENT\_AGR_{i\,t-n} + \beta_6 ENT\_IN_{i\,t-n} + \beta_7 ENT\_TR_{i\,t-n} + \beta_8 SH\_TR_{i\,t-n} + \beta_9 SH\_FIN_{i\,t-n} + \xi \quad (2.3.)$$

$$L_{i\,t} = \beta_0 + \beta_1 Sh\_Pr_{i\,t-n} + \beta_2 SH\_ST_{i\,t-n} + \beta_3 SH\_FOR_{i\,t-n} + \beta_4 SH\_ROS_{i\,t-n} + \beta_5 ENT\_AGR_{i\,t-n} + \beta_6 ENT\_IN_{i\,t-n} + \beta_7 ENT\_TR_{i\,t-n} + \beta_8 SH\_TR_{i\,t-n} + \beta_9 SH\_FIN_{i\,t-n} + \xi \quad (2.4.)$$

Here:

$Sh\_Pr_{i\ t-n}$ - share of the private sector in the structure of employment (region i, time t-n);
$SH\_ST_{i\ t-n}$ – share of the state sector in the structure of employment (region i, time t-n);
$SH\_FOR_{i\ t-n}$ - share of mixed enterprises with foreign participation in the structure of employment (region i, time t-n);
$SH\_ROS_{i\ t-n}$ – share of the mixed enterprises without foreign participation in the structure of employment (region i, time t-n);
$ENT\_AGR_{i\ t-n}$–share of employment in small agricultural enterprises (region i, time t-n);
$ENT\_IN_{i\ t-n}$ – share of employment in small industrial enterprises (region i, time t-n);
$ENT\_TR_{i\ t-n}$ – share of employment in small trade enterprises (region i, time t-n);
$SH\_TR_{i\ t-n}$ – share of employment in trade (region i, time t-n);
$SH\_FIN_{i\ t-\ n}$ – share of employment in the credit, financial and insurance sector (region i, time t-n).

All the equations were assessed for all regions of RF included in the sample and for the group of agricultural regions. The results are presented in table 3.1 -3.2.

Table 3.1. ESTIMATIONS RESULTS FOR ALL REGIONS OF RUSSIA

Y	X	B	Std_err	t	Sig (t)	F	Sig (F)	R^2	DW
Un	Const Sh_st Sh_ros Ent_ag	6,04 0,25 -0,16 0,75	3,95 0,06 0,07 0,35	1,5 3,9 -2,4 2,2	0,131 0,000 0,020 0,034	17,2	0,000	0,425	1,754
D_un	Const Sh_ros	10,10 -0,04	0,38 0,02	26,7 -2,2	0,000 0,029	4,9	0,029	0,064	1,356
E	Const Sh_ros Ent_ag shtr	43,19 0,22 -1,11 0,60	3,38 0,06 0,36 0,30	12,80 3,35 -3,09 2,02	0,000 0,001 0,003 0,047	14,4	0,000	0,382	1,216
L	Const Shtr Sh_pr	60,13 0,96 -0,26	3,62 0,30 0,06	16,6 3,2 -4,4	0,000 0,002 0,000	15,6	0,000	0,306	1,434

Table 3.2. ESTIMATIONS RESULTS FOR AGRICULTURAL REGIONS OF RUSSIA

Y	X	B	Std_err	t	Sig (t)	F	Sig(F)	R^2	DW
Un	Const	4,95	7,87	0,63	0,538				
	Sh_st	0,40	0,14	2,86	0,011				
	Sh_ros	-0,31	0,14	-2,17	0,045				
						13,3	0,000	0,610	1,452
E	Const	42,28	2,06	20,52	0,000				
	Sh_ros	0,32	0,10	3,11	0,006				
						9,7	0,006	0,350	1,783

The results of the regression analysis signify some dependence between labor market performance and development of the "new sector", expansion of non-state ownership, small businesses and service market.

The positive effects of the private sector are still insufficient to offset at drop in employment in the state sector. Any significant negative influence of private ownership on employment is not observed either. This is in accord with the conclusions made by Commander (1996), Earle and Estrin (1997), Perevalov, Gimadi, Dobrodei (2000) and other authors that have revealed the weak influence of privatization on employment. Our study also proves that labor market performance weakly reacts to the expansion of the private sector. However, an indirect influence manifests itself in the shrinking of the state sector. For all groups of regions there exists steady dependence: the higher the share of the state sector in the previous period, the higher the regional unemployment rate values in the following period. The share of the state sector also has significant positive correlation with the reduction of employment, as excessive numbers of personnel was a feature of large enterprises. The development of mixed ownership exerts positive influence on reducing the rate and duration of unemployment. The share of employment at mixed-ownership enterprises was among the significant factors when the evaluation of the relationship between unemployment and employment rates for all the regions included in the sample and the group of agrarian regions was done.

The study is based on the assumption that the employment structure of the region and the influence exerted by the "new" sector are exogenous. However, the situation when the non-state sector, small businesses and the service market develop in the regions with a favorable position on the labor market is possible. Another alternative is also possible, when the "new" sector develops in the regions with a crisis situation in the regional labor markets. In both cases incorrect evaluation is possible. In the first case the cause-effect relation between the labor markets' behavior and the economic policies implemented at the regional level will be biased. In the second, case the "accumulated unemployment" effects will manifest themselves in the new economic environment. In order to partially remove the endogenous effects, we used the lag structure of the equation.

CONCLUSION FOR ECONOMIC POLICY

Changes in unemployment rates are connected with development strategies agricultural regions. We assumed that unemployment rates and the behavior of the regional labor markets are determined by heterogeneous reactions of the agricultural regions to shocks, which in turn depend on the employment structure and development strategies. In this situation, a regional employment structure with a high share of agriculture increases the risk of unemployment, while diversity of labor demand reduces such risk.

The employment structure is being formed over a long period of time and depends on the state's strategy of production placement within the rural areas. The institutional structure of employment highly depends on the economic policy of the region and on the rate of development of small businesses, private sector, enterprises with foreign participation, infrastructure, and on the amount of investment in human capital. If the economic policy implemented in the region has the aim to increase the efficiency of the institutional structure of employment, the risk of unemployment tends to be lower. At the same time, if the private sector, infrastructure, small businesses and education are underdeveloped, the risk of unemployment in that region is high.

Consequently, unfavorable starting conditions for entering the labor market and the inefficiency of the structure of employment in rural regions can be to a certain extent offset by a regional economic policy intended to promote the non-state sector, small and middle-scale businesses, regional infrastructure.

Analysis of the employment structure allows one to see some certain imbalances on the Russian labor market. First of all, there is the disproportionately big share of employment in agriculture (if compared with that in economically developed countries) arising from the low labor productivity traditionally observed in that sector. Creation of highly specialized zones in agrarian regions could help overcome the imbalances by making labor productivity rise. Research shows that the process of creating such highly specialized agricultural zones should be implemented in parallel with further diversification of the employment structure. For rural regions that means the development of market services, food processing industries and expansion of non-agricultural activities.

REFERENCES

Abraham, K. And L. Katz (1986) Cyclical Unemployment: Sectoral Shifts or Aggregate Disturbances? *Journal of Political Economy*, *June*, *507-522.*

Aivazian, S.A and V.S. Mkhitarian (1998) Applied Statistics and Essemtials of econometrics. UNITY. (Moskow).

Alogoskoufis,G.S. and A. Manning (1988) Unemployment Persistence. *Economic Policy 7, 428-469.*

Bean, C.R. (1994) European Unemployment: A Survey. *Journal of Economic Literature XXXII, 573-619.*

Bobeva, D. and Y. Hristoskov (1995) Unemployment in Agricultural Areas: An Overview of Central and Eastern Europe and a Case Study of a Bulgarian Region. (OECD, Paris).

Bruce F Johnston and Peter Kilby (1975) Agriculture and Structural Transformations: Economic Strategy in Late-developing Countries (London: Oxford University Press).

Bruce F Johnston (1970) Agricultural and Structural Transformation in Developing Countries: A survey of research. *Journal of Economic Literature 8*.

Commander S., Fan Q., and M.E. Schaffer. (eds) (1996) Enterprise restructuring and Economic Policy in Russia.(The World Bank. Washington.)

Demekas, D.G. (1990) Labor Market Segmentation in a Two-Sector Model of an Open Economy. IMF Working Paper 37 (4), 849-864.

Dharam Ghai et al. (eds.) (1979) Agrarian Systems and Rural Development (New York: Holmes & Meier).

Earl J., and S. Estrin (1996) Privatization versus Competition: Changing Enterprise Behavior in Russia. Report No 315. London: Center for Economic Performance.

Earl J., and K. Sabirianova (1998) Understanding Wage Arrears in Russia. Site Working Paper No.139 (Stockholm)

Elhorst P. (1994) Unemployment Disparities between Regions in the European Community (34 st European Congress of the Regional Science Association. Groningen)

Ehrenberg R.G., and R.S.Smith (1996) Modern Labor Economics:Theory and public Policy.

Huber P. And An. Wörgötter (1997) Local Labor Market Dynamics in the Czech and Slovak Republics (OECD, Paris)

Layard, R., S.Nickell, and R. Jackman (1991), Unemployment: Macroeconomic Performance and the Labor Market (Oxford University Press)

Nickell St. (1990) Unemployment: A Survey. *The Economic Journal 100, 391-439.*

Perevalov,Y., Dobrodey, V. And I.Gimadi (2000) Analysis of the Impact of Privatization on Performance of Medium- and Large-size Industrial Enterprises in Russia, EERC Working Paper series 2K/01 (Moscow)

Regions of Russia (1999) Goskomstat of Russia. (Moskow).

Labor and Employment (1999) Goskomstat of Russia. (Moskow).

Russia in Figures: Concise statistical handbook (2001), Goskomstat of Russia. (Moskow).

Russia and the EU Member States - Statistical comparison 1990-1996. Luxembourg: Office for Official Publication of the European Communities, 1998 –167 pp.

Scarpetta, St. and P. Huber (1995) Regional Economics and Unemployment in Central and Eastern Europe: An Attempt to Identify Common Patterns (OECD, Paris)

Todaro Michael P. Economic Development (1997),UNITY, Moscow.

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