Labour market characteristics by sectors and statistical regions in Slovenia and their policy relevance

Charakteristik des Arbeitsmarkts nach Sektoren und statistischen Regionen in Slowenien und ihre politische Relevanz

Štefan BOJNEC

Zusammenfassung

Das überwiegend ländliche Pomurska ist die ärmste und das vorwiegend städtische Osrednjeslovenska die reichste Region Sloweniens. Die Wirtschaftsstruktur Dienstleistungen, Industrie und Landwirtschaft zeigt einen greifbaren Prozentsatz an Varianten auf regionaler Ebene der wirtschaftlichen Entwicklung, der Löhne und Arbeitslosigkeit. Die Arbeitslosenzahlen sind verbunden mit dem Entwicklungsstand, Löhnen und regionalem Standort. Der Entwicklungsstand wiederum ist verbunden mit Arbeitsproduktivität, welche am höchsten bei den Dienstleistungen ist. Löhne sind positiv verbunden mit Arbeitsproduktivität und dem Entwicklungsstand. Das Verhältnis von jungen und ausgebildeten aktiven Leuten bewegt sich Richtung Dienstleistungen. Mehr als die Hälfte der Bauern sind im Alter zwischen 45 und 64 Jahren und haben Grundschulausbildung oder weniger.
Schlagworte: Regionalentwicklung, Arbeitsmarkt, Slowenien

Summary

Predominantly rural Pomurska is the poorest and predominantly urban Osrednjeslovenska is the richest region in Slovenia. The economy structure by services, industry and agriculture explains substantial percentage of variations in regional level of economic development, wages, and rates of unemployment. Rates of unemployment are associated with the level of development, wages, and regional location. The level of development is associated with labour productivity, which is the highest in services. Wages are positively associated with labour productivity and the level of development. The substantial proportion

of young and educated active population moves towards services. More than half of farmers are age between 45 and 64 years with elementary school or less.

Keywords: regional development, labour market, Slovenia

1. Introduction

Several studies underlined a crucial role of human capital (education/skills and knowledge) in agricultural transformation and economic development (e.g. SCHULTZ, 1964). BOJNEC ET AL. (2002 and 2003) showed that the attained level of education of labour in Slovenian agriculture is relatively low, but human capital plays an important role in mobility and flexibility of labour. With EU-enlargement new opportunities for mobility of labour are likely to occur on a wider EU market.

Relatively high costs of labour in comparison with labour productivity in Slovenia may cause additional labour shedding in response to increased competitive pressures in the borderless EU markets (e.g. BOJNEC, 2003a, b). The major threats are for jobs and incomes in the rural areas with the prevailing low-skilled labour in labour-intensive manufacturing activities, often closely linked with agriculture (e.g. OECD, 2001). BANSE (2002) using a Computable General Equilibrium (CGE) model found that integration into the EU is likely to have substantial impacts on agriculture, food processing, and other sectors' labour and other factor markets. Rural areas are already largely dependent on different transfers linked to labour or agriculture. There is a need for investments in human, social (trust, norms, institutions) and physical capital (technologies, renewable natural and non-renewable) in rural areas. Investments in human capital to improve quality of labour in agriculture and to increase mobility and flexibility of labour are the key issues in synergy reducing labour mismatch and improving efficiency in labour flow adjustment (e.g. BOJNEC ET AL., 2003).

The combination of own financial resources with EU structural and regional funds may provide opportunities for such development in naturally less favoured, economically and socially depressed areas (e.g. SAPARD, 2001; EUROPEAN COMMISSION, 2002). In the case of Slovenia, these are largely mountain areas and the border-areas particularly in the north-eastern rural parts of Slovenia bordering with Croatia. Considering that EU structural, regional and rural policies have had a posi-

tive development role in several EU members upon membership; they are an opportunity for new members from Central and Eastern European (CEE) countries, including Slovenia. The aim of this paper is therefore to highlight some general and specific regional, rural and agricultural issues associated with labour and employment that are important for long-term sustainable agricultural, rural, regional and economic development in Slovenia. We also tested some hypotheses, but due to the lack of appropriate data they are limited to some basic regression relations.

The rest of the paper is structured in the following way. We start with brief presentation of methodology and data used, and after then with the detail presentation of the empirical results. Final section summarized and derives main conclusions and policy implications.

2. Material and methods

The available statistical evidence on GDP/value-added, employment, unemployment, and wages from national account and other macro- and sector-evidence are used to present labour in Slovenia by sectors and statistical regions, and evidence on labour in agriculture from the Farm Structure Survey (June 1997), and the Agricultural Census 2000 (SORS, 2002).

The analysis of economic, social and demographic potentials by main sectors and regions is important for better understanding labour policy implications associated with the EU accession. Agricultural labour structures are analyzed in broader macro-economic environment in combination with labour productivity, level of economic development, and structure of the economy with the relevance of the results for policy implications.
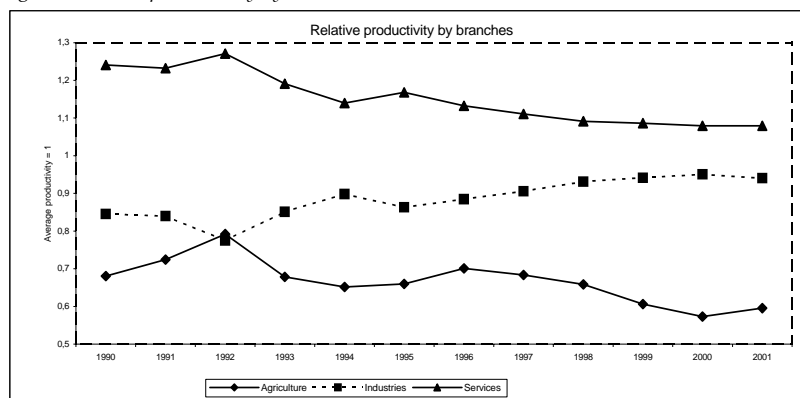
We estimated ordinary-least square (OLS) regressions across 12-statistical regions in Slovenia using the rate of registered unemployment, level of development (GDP per capita), and wages, respectively, as dependent variables.

3. Results

3.1 Structure of the Slovenian Economy by Activities

The structure of the economy is an indication of the level of economic development: high share of services and lower share of agriculture is an indication of higher level of economic development. The importance of industrial activities may vary across regions depending on different region-specific factors that may be considered as advantage or disadvantage in economic development. The evidence suggests that importance of agriculture and industry, respectively, in Slovenia is declining while the importance of services is increasing. The share of agriculture and industries in employment is higher than in value-added, and vice versa for services. As a result, labour productivity in agriculture and industries is less than average in the economy, and vice versa for services (Figure 1). It is interesting to notice that the gap between employment and value added shares is converging for industries resulting in an increasing tendency in labour productivity closer to the economy average. The gap is also converging for services with more stable share in value added and increasing share in employment resulting in a declining labour productivity closer to the economy average. The decline in already relatively low level of labour productivity is recorded for agriculture, which varies depending to definition of labour in agriculture (e.g. BOJNEC, 2001).

Figure 1: Labour productivity by activities

Source: STATISTICAL YEARBOOK OF SLOVENIA, various issues

3.2 Slovenia by Statistical Regions

Regional data in the EU are based on the NUTS (*Nomenclature des Unités Territoriales Statistiques*) levels.[1] Slovenia at the NUTS 0, 1, and 2 is considered as the one region.[2] At the NUTS 3 Slovenia is divided into 12 statistical regions (Table 1). Jugovzhodna Slovenia by area and Osrednjeslovenska by population, respectively, are the largest statistical regions in Slovenia. The population density in the former is among the lowest, while in the latter is the highest. Zasavska is the smallest NUTS 3 region. Slovenia is largely urban-rural country with strong rural roots. According to the population density and the percentage of the population living in rural areas, only Osrednjeslovenska with the capital of Ljubljana, and traditionally coal-mining Zasavska region, are predominantly urban. Pomurska, Jugovzhodna Slovenia, Notranjsko-kraška, and Goriška are predominantly rural. The population declined in the regions situated in the north-eastern parts of Slovenia. It increased or remained more stable in the central and the western parts of Slovenia. The statistical regions with the decline in population also experienced the highest rates of registered unemployment.

---

[1] The NUTS 0 level comprises the EU-15 Member States. The NUTS 1 level comprises 77 regions. The NUTS 2 level comprises 206 regions. The NUTS 3 level comprises 1031 regions, and NUTS 5 includes the level of local municipalities or communes.

[2] Slovenia is in a group of smaller European countries by the size of population (a bit less than 2 million) and the size of area (20,273 km^2). The NUTS 4 comprises local administrative units (58 in Slovenia) and the NUTS 5 municipalities (about 193 in Slovenia).

Table 1: Basic data by statistical regions

	Area (km², 2002)	Population (thousands, 2001)	Population density (2001)	Population predominantly*	Registered unemployment rate (%, 2001)
Total	20,273	1,992.0	98.3	Urban-rural	11.8
Pomurska	1,337	124.1	92.8	Rural	17.7
Podravska	2,170	319.9	147.4	Urban-rural	18.4
Koroška	1,041	74.0	71.1	Urban-rural	11.2
Savinjska	2,384	257.0	107.8	Urban-rural	14.0
Zasavska	264	46.2	175.0	Urban	14.8
Spodnjeposavska	885	69.8	78.9	Urban-rural	14.3
Jugovzhodna Slovenia	2,675	138.2	51.7	Rural	9.9
Osrednjeslovenska	2,555	491.0	192.2	Urban	8.0
Gorenjska	2,137	197.1	92.2	Urban-rural	9.0
Notranjsko-kraška	1,456	50.7	34.8	Rural	9.8
Goriška	2,325	120.2	51.7	Rural	5.9
Obalno-kraška	1,044	103.9	99.5	Urban-rural	9.3

Note: Rural (population density below 150 inhabitants per square kilometre and over 50% of the population living in rural communities); Urban-rural (15 to 50% of the population living in rural communities); Urban (population density greater than 150 inhabitants per square kilometre and less than 15% of the population living in rural communities).
Sources: STATISTICAL YEARBOOK OF SLOVENIA, 2002; SLOVENIA IN FIGURES (2002); AND CENSUS OF POPULATION (2002)

Registered unemployment rates by statistical regions. The registered rate of unemployment is the highest in Podravska, Pomurska, Zasavska, Spodnjeposavska, and Savinjska, while the lowest in Goriška and Osrednjeslovenska. We regressed the rate of register unemployment across 12-statistical regions: Rate of register unemployment = f [Level of development (- GDP per capita); + Wage level; + Location dummy; Structure of the economy (+/- Service sector, +/- Industry , + Agriculture)]. We were not able to obtain variables on education and experiences of employed as a reason that they are not included in the regression specification.[3] The regression analysis showed that the rate of registered unemployment is negatively and significantly associated with the level of economic development measured by the GDP per capita, and positively and largely significantly associated with wages and location (Table 2).

---

[3]   Education variable in terms of years of schooling might be particularly important.

Table 2: Ordinary Least Square (OLS) regressions of the registered rates of unemployment (%) across 12-statistical regions, 1999

Explanatory variables:	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Ln(GDP per capita)	-17.40	-33.72	-36.66	-35.80	-35.59	-36.34	-35.87	-35.92
	(3.06***)	(1.92**)	(3.63***)	(3.59***)	(4.10***)	(4.80***)	(4.60***)	(4.61***)
Ln(Wage)		29.98	59.16	46.57	46.94	70.78	62.56	62.59
		(0.98)	(3.16***)	(2.16**)	(2.72**)	(4.82***)	(3.43***)	(3.45***)
Location			5.81	5.43	5.56	6.55	6.28	6.27
			(4.39***)	(4.04***)	(4.87***)	(6.36***)	(5.65***)	(5.65***)
% services				0.11			0.06	
				(1.12)			(0.80)	
% industry					-0.14			-0.06
					(1.97**)			(0.81)
% agriculture						0.43	0.40	0.34
						(2.69**)	(2.34**)	(1.65*)
Constant	170.96	-46.14	-378.68	-238.27	-233.40	-252.94	-432.92	-426.60
	(3.29***)	(0.20)	(2.51**)	(1.23)	(1.57*)	(4.19***)	(2.50**)	(2.40**)
R^2	0.48	0.53	0.86	0.88	0.91	0.93	0.94	0.94
F-statistic	9.3***	5.1**	16.8***	13.3***	18.1***	24.2***	18.5***	18.6***

Note: ln – natural logarithm. Dependent variable: Registered rate of unemployment (%). t-statistics in the brackets. Location dummy 1, if Pomurska, Podravska, Koroška, Savinjska, Zasavska, and Spodnjeposavska, and 0 otherwise.
*** Significant at the 1% level, ** significant at the 5% level, * significant at the 10% level.

The differences in the registered rates of unemployment across statistical regions are positively associated with wage differences across statistical regions and the location in the north-eastern parts of Slovenia (Pomurska, Podravska, Koroška, Savinjska, Zasavska, and Spodnjeposavska). The positive wage-unemployment effect suggests labour cost adjustments via reduction in employment with an increase in unemployment, and with wage increases for those employed. The impact of the service sector share in the economy on the rate of registered unemployment is insignificant. The negative association is found between the registered rates of unemployment and the share of industry in the economy. The registered rates of unemployment are higher in the regions with lower share of industry and higher share of agriculture. The greatest consequences of liberalization, transformation and restructuring have been so far in industrial activities, which faced greater pressures from increased competition due to trade liberalization and new

firm entries in domestic markets, and increased competition in exports markets. The agricultural regions face both a reduction in employment in industrial activities and hence an increase of registered unemployment as well as a hidden unemployment in agriculture.

Level of development by statistical regions in Slovenia
Level of economic development is measured by GDP per capita. GDP per capita is less than the Slovenian average in the north-eastern parts of Slovenia and Notranjsko-kraška. Close to or slightly greater than the Slovenian average are Goriška and Obalno-kraška. The most considerable peak above the average is for Osrednjeslovenska where the GDP per capita is approximately twice as high as in Pomurska where there is the highest share of agriculture in the economy. The role of services is the highest in Obalno-kraška and Osrednjeslovenska where is the highest GDP per capita. The role of industrial activities in the economy varies considerably across statistical regions from 26.2% in Obalno-kraška to 55% in Zasavska. The evidence suggests causality between GDP per capita and the structure of the economy. It is interesting to investigate the direction of these causalities. To test this, we estimated regression where GDP per capita is function of labour productivity, location, and the structure of the economy: GDP per capita = f (+ Labour productivity; - Location; Structure of the economy: + Services, +- Industry, - Agriculture). Higher GDP per capita is positively and significantly associated with higher labour productivity across 12-statistical regions clearly indicating a crucial importance of increasing gross value-added per employee for the increasing level of economic development (Table 3). It is negatively, but not significantly associated with location. As expected, GDP per capita across 12-statistical regions is positively associated with services and negatively with agriculture, while the association with industry changes in both directions, but more significant is with the negative association. Of course, GDP per capita as well as labour productivity across statistical regions are associated with capital intensity and other sector- and regional-specific factors, which are due to lack of data omitted in the regression framework.

Table 3: OLS regressions of GDP per capita across 12-statistical regions, 1999

Explana-tory vari-ables:	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Ln(Prod uctivity)	1.85 (3.91***)	1.45 (2.64**)	0.88 (1.50*)	1.15 (1.87**)	1.19 (2.23**)	0.77 (1.34)	0.78 (1.36)	0.78 (1.37)
Location		-0.09 (1.34)	-0.07 (1.14)	-0.08 (1.16)	-0.08 (1.35)	-0.07 (1.15)	-0.07 (1.17)	-0.07 (1.17)
% services			0.01 (1.75*)			0.02 (1.87*)	0.01 (1.48*)	
% industry				-0.01 (1.03)		0.01 (1.26)		-0.01 (1.50*)
% agricul-ture					-0.02 (1.60*)		-0.01 (1.32)	-0.02 (1.94**)
Constant	-6.70 (1.65*)	-3.18 (4.70***)	1.26 (0.26)	-0.49 (0.09)	-0.90 (0.20)	1.16 (0.24)	2.31 (0.48)	2.86 (0.58)
R²	0.60	0.67	0.76	0.71	0.75	0.81	0.81	0.81
F-statistic	15.3***	9.1***	8.5***	6.5**	8.0***	7.3**	7.4**	7.5***

Note: OLS - ordinary least square. ln – natural logarithm. Dependent variable: ln(GDP per capita). t-statistics in the brackets. Location dummy 1, if Pomurska, Podravska, Koroška, Savinjska, Zasavska, and Spodnjeposavska, and 0 otherwise.
*** Significant at the 1% level, ** significant at the 5% level, * significant at the 10% level.

Labour productivity and wages by statistical regions in Slovenia

Wages in Slovenia are higher than in other CEE transition countries, but there is less considerable difference in labour productivity and wages in Slovenia are approaching wages of some EU countries (e.g. BOJNEC, 2003a,b). Labour productivity (gross value-added per employee) and wages by statistical regions in Slovenia indicate that only in Osrednjeslovenska and to a lesser extent in Podravska gross-wages per employee are greater than gross-value added per employee, and vice versa in the remaining 10-statistical regions in Slovenia (Figure 2). The wage-productivity gap across statistical regions is of particular policy relevance, and needs an additional investigation. The wage regressions are estimated as function of labour productivity, level of development, level of unemployment, and structure of the economy: Wage = f (+ Labour productivity; + Level of economic development or GDP per capita; Structure of the economy: + Services, +- Industry, -

Agriculture; - Level of registered unemployment).[4] The estimated regressions are somehow constraint by data availability. Differences in the level of development or GDP per capita across statistical regions turned out to be the most significant determinant for wage differences across statistical regions (Table 4).
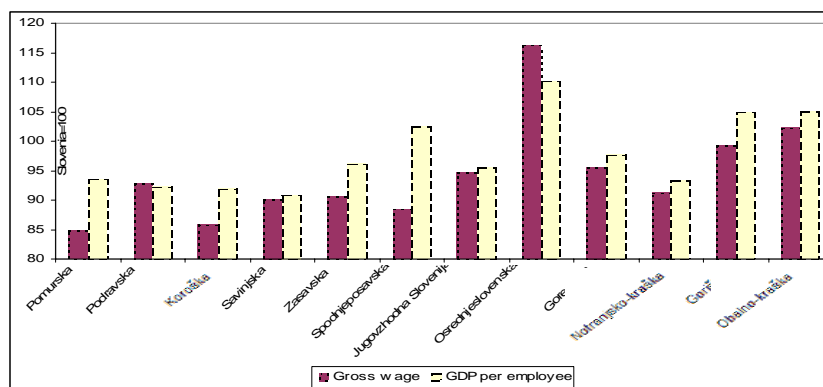

Figure 2: Gross value added per employee and monthly gross wage per employee by statistical regions, 1999-2001 (Slovenia=100)
Source: STATISTICAL YEARBOOK OF SLOVENIA, 2002

While the association between the level of labour productivity and wages is expectedly positive, the coefficients in the multivariate analysis are largely insignificant. However, if differences in labour productivity across statistical regions increased for 1%, wages increased even more by 1.1%. Except of the positive association between wages and the share of services in the economy, the other associations between wages with the level of unemployment, and with the shares of industry and agriculture in the economy, respectively, are insignificant.

---

[4] There is some multicolinearity between the explanatory variables, particularly between labour productivity and GDP per capita, but we investigated which effect on wages is stronger. Education and experiences of employees are additional variables useful to be included among explanatory variables.

Table 4: OLS regressions of wages across 12-statistical regions, 1999

Explanatory variables:	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
ln(productivity)	1.101 (4.25***)		0.233 (1.04)	0.292 (1.11)	0.185 (0.86)	0.195 (0.85)	0.253 (1.10)	0.201 (0.93)
ln(GDPpercapita)		0.544 (9.20***)	0.469 (5.00***)	0.445 (4.06***)	0.385 (3.64***)	0.433 (4.26***)	0.429 (3.94***)	0.342 (2.92**)
ln(unemployed)				0.007 (0.48)				
% services					0.002 (1.44*)			0.005 (1.37)
% industry						-0.001 (0.92)		0.003 (0.90)
% agriculture							-0.003 (0.77)	
Constant	2.806 (1.27)	7.243 (13.40***)	5.946 (4.39***)	5.60 (3.54***)	7.009 (4.74***)	6.64 (4.26***)	6.152 (4.36***)	6.960 (4.64***)
R^2	0.64	0.89	0.91	0.91	0.93	0.91	0.91	0.93
F-statistic	18.1***	84.6***	43.24***	26.4***	32.9***	28.6***	27.7***	24.3***

Note: *OLS - ordinary least square. ln – natural logarithm. Dependent variable: ln(wage). t-statistics in the brackets.*
*** *significant at the 1% level,* ** *significant at the 5% level,* * *significant at the 10% level.*

3.3 Employment by Statistical Regions

Around 29% of employment is concentrated in Osrednjeslovenska, 15% in Podravska, 13% in Savinjska, and the remaining 43% in the others nine statistical regions. Labour shedding with the decline in employment continued in Zasavska associated with structural problems in industrial activities. The level of employment remains at similar levels in Spodnjeposavska and Pomurska, while it has recovered since 1997 in other statistical regions. Employment by activities is likely to underestimates the employment share in agriculture, which in 1999 varied between 0.9% in Zasavska and 11.2% in Pomurska. In the same year the share of services ranged from 41.2% in Zasavska to 69.9% in Obalno-kraška. The service sector's share greater than 50% is recorded also for Podravska (57.2%) and Osrednjeslovenska (67.2%). The share of industry ranged from 27.9% in Obalno-kraška to 57.9% in Zasavska.

3.4 Employment in Agriculture

Agriculture in Slovenia is still in a stage of over employment. At least 4% of labour force is engaged in employment as a head of the farm and more than 10% of employment is recorded as agricultural employment.[5] While the former underestimates agricultural employment as it only includes the self-employed persons in agriculture included in pensions, health and disability insurance schemes, the latter as the Annul Work Unit (AWU) in agriculture in total employment overestimates employment in Slovenian agriculture. The AWU includes also work units conducted by retired people and others outside a formal employment pool.

Age structure and human capital in agriculture
The recent studies suggest rather unfavourable age and education structure of farmers in CEE countries (e.g. RIZOV ET AL., 2001, for Romania; BOJNEC ET AL., 2002 and 2003 for Slovenia). On the other side young, well-educated and entrepreneurial farmers are crucial engine for efficiency of farming and for agricultural growth and rural development. Lower labour productivity in Slovenian agriculture may indicate a surplus of labour in agriculture, but it also indicates less qualified labour in agriculture than in the other economy sectors. With improvement in quality of human and social capital, and off-farm employment opportunities, the surplus of labour in agriculture may disappear.
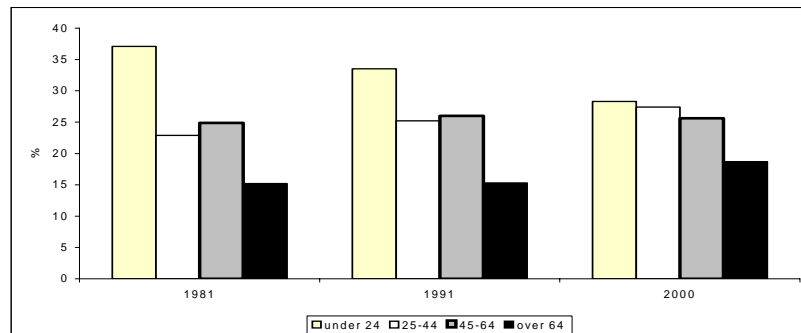

Figure 3: Population on farms by age groups at censuses in Slovenia (%)
Source: SORS (2002a)

---

[5]   The evidence on employment in agriculture differs in different statistical sources due to different definitions and methodology.

Age structure of farm population

The population on farms has declined. As illustrated in Figure 3 there has been a shift in the structure of the population on farms towards elderly age groups. The age group under 24 years is still individually the most important, but the remarkable decline in its importance by almost 10 percentage points from around 37% in 1981 to around 27% in 2001 is recorded. The relative increase in the farm population structure is for the age groups between 25 and 44 years (the second group by the importance) and the age group over 64 years (the last, the fourth group by the importance).

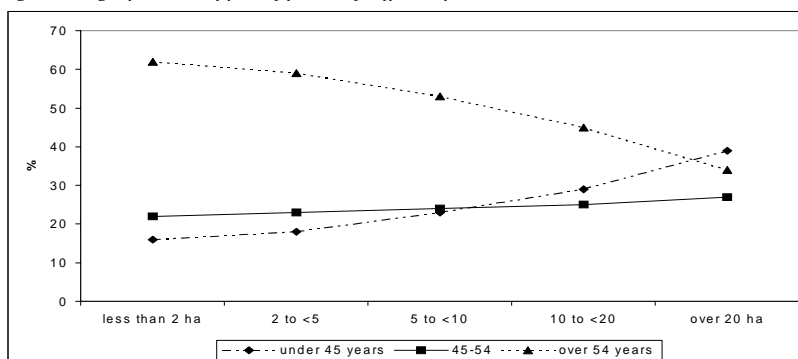*Age structure of farmers by farmland size*

The holders of family harms are on average older than 54 years. As depicted in Figure 4, there is a substantial association between the farm size and the age of farmers. The high percentage of farmers older than 54 years is on farms smaller than 2 ha of agricultural land. In 2000, more than 60% of the holders of family farms with less than 2 ha of agricultural land were farmers older than 54 years. With the increase in the farmland size, the percentage of farmers older than 54 years is smaller. For example, it is almost 30% percentage points less on farms with over than 20 ha of agricultural land. On the other hand, the percentage of holders of family farms of age less than 45 years is increasing with the farmland size: it is about 16% for farms with less than 2 ha of agricultural land and almost 40% on farms with more than 20 ha of agricultural land. As most striking, the percentage of farm holders under 45 years is greater than the percentage of farm holders over 54 years only on farms greater than 20 ha of agricultural land. The percentage of family farm holders of age between 45 and 54 years is more stable, but it tends to be slightly higher with the farmland size: about 21% on farms with less than 2 ha and almost 24% on farms with more than 20 ha of agricultural land.

Age structure of farmers by statistical regions

As a rule, the farm holders are largely elderly people. The concentration in distribution of farm holders is greater by the age. The lower percentage in the structure of farm holders is under 35 years (less than 10%). The distribution of farm holders between age 35 and 44 years varies considerably across statistical regions with the lowest importance in Notranjsko-kraška and the highest importance in Koroška. The peak in the concentration of farm holders is for the ages between 45 and 64 years and then the concentration is again less for the ages over than 64 years. For the latter age stratum, the patterns in development are mostly in inverse directions than for the age group 35 and 44 years. For the age group over 64 years, the percentage of farm holders is the

lowest in Koroška and the highest for Notranjsko-kraška. The de-scribed patterns largely hold for both the age of farm holders and the age of farm holders expressed in AWU. In the latter AWU case, the peak in concentration for the age group 45 and 64 years is even more pronounced.

Figure 4: Age of holders of family farms by different farm-land sizes, 2000

Source: SORS (2002a)

Educational level of farmers

The distribution of farm holders according to attained education shows the peak for elementary education, but varies substantially across sta-tistical regions from less than 30% in Obalno-kraška to around 60% in Pomurska. It is interesting to notice that Obalno-kraška explores a pe-culiar pattern in distribution of farm holders by attained education with almost equal percentage of farm holders with elementary and vo-cational education. It has also the highest percentage of farm holders with secondary and university education than any other statistical re-gion in Slovenia.

4. Conclusions and policy implications

With rapid increase in wages in Slovenia, labour-intensive activities have experienced considerable competitiveness problems and as result, considerable labour shedding occurred particularly in regions with initially prevailing labour-intensive manufacturing activities and agri-culture. Yet, similar or even more severe problems have faced interna-tionally uncompetitive high capital-intensive industries. The concentra-tion of service activities, particularly budgetary financed public ser-vices, is largely concentrated in Osrednjeslovenska with the capital of

Ljubljana, which has several characteristics of region with the level of economic development approaching the EU average. The considerable economic differences between eastern, western, and middle part of Slovenia (Osrednjeslovenska) suggest a need for potentially sub-regional specific structural and rural development policies consistent with the EU objectives.

The regression analysis showed significant associations of the registered rates of unemployment across statistical regions: negative with the level of development and regional location in the north-eastern part of Slovenia, and positive with wages. The level of development is positively associated with labour productivity. Wages across regions are positively associated with labour productivity and the level of economic development.

With the memberships of Slovenia in the EU the competitive pressures in the Slovenian markets are likely to increase and uncompetitive activities are likely to face the loss of incomes and associated increase in rates of unemployment. Slovenian agriculture is also confronted with severe structural problems. Labour productivity in agriculture is relatively low. Due to in general high wages in the Slovenian economy, the value-added in agricultural activities on small farms is often not enough to covers higher costs of labour and higher costs of resources. With the restructuring in Slovenian agriculture open and hidden unemployment may increase. Investments in human capital may improve knowledge, mobility and flexibility of the redundant labour in agriculture to move to other more productive activities.[6]

The EU membership is also a challenge for Slovenian agriculture and rural areas. The future of rural policies in an enlarged EU, regional income disparities, and co- financing of regional, structural and rural development programs are the issues of particular concern. The EU membership and further trade liberalization are likely to lead to a reduction in demand for agricultural labour. Agricultural and rural labour markets are becoming an issue not only of agricultural policy, but broader structural, rural and regional policies, where EU policies may play important role in small and medium business and infrastructure devel-

---

[6] For example, WEISS (1997) for a sample of Austrian farm households found that wage increases are associated with a shift from full-time to part-time farming, but not vice versa. The evidence for Slovenia indicates that among backward linkages there are retired and partly unemployed (BOJNEC ET AL., 2003). As employment in Slovenian agriculture is relatively higher than in OECD countries, the outflow of labour from agriculture is likely to continue.

opment in rural areas to effectively employ potential surplus of labour in agriculture and in rural areas.

References

Banse, M. (2002): The Impact of EU-Accession on Agricultural Employment in Slovenia and Poland – A CGE Model Approach, Working Paper 1/8. ACE/Phare Research Project: „Impact of EU Eastern Enlargement on Agricultural Employment in Poland and Slovenia (P98-1007-R)", University of Göttingen.

Bojnec, Š. (2001): Agricultural and Rural Labour Market in Slovenia. Working Paper 3/8. ACE/Phare Research Project: „Impact of EU Eastern Enlargement on Agricultural Employment in Poland and Slovenia (P98-1007-R)", University of Göttingen.

Bojnec, Š., Dries, L., and Swinnen, J.F.M. (2002): Causes of Changes in Agricultural Employment in Slovenia: Evidence from Micro-Data, Working Paper 4/8, LICOS Center for Transition Economics, Catholic University Leuven.

Bojnec, Š. (2003a): Labour Market Flows, Labour Productivity and Wages in Slovenia.

Bojnec, Š. (2003b): Wage Formation during Economic Transformation: Macro-economic Facts and Firm-survey Evidence from Slovenia, Post-Communist Economies, 15(4): forthcoming.

Bojnec, Š., Dries, L., and Swinnen, J.F.M. (2003): Human Capital and Labour Flows out of the Agricultural Sector: Evidence from Slovenia, Contributed Paper, XXV IAAE Conference, 16-22 August, Durban, South Africa.

European Commission (2002): The Enlargement Process and the Three Pre-Accession Instruments: PHARE, ISPA, SAPARD. Brussels: Enlargement Directorate General.

OECD (2001): Review of Agricultural Policies: Slovenia, Paris: Organisation for Economic Co-operation and Development.

Rizov, M., Gavrilescu, D., Gow, H., Mathijs, E., and Swinnen, J. (2001): Transition and Enterprise Restructuring the Development of Individual Farming in Romania, World Development 29: 1257-1274.

SAPARD Programmes 2000-2006. Slovenia (2001).

http://www.europa.eu.int/comm/agriculture/external/enlarge/countries/slovenia/overview/slov_en.pdf.

Schultz, T.W. (1964): Transforming Traditional Agriculture, New Haven, Conn.: Yale University Press.

SORS (2002): Agricultural Census, Slovenia, 2000, Ljubljana: Statistical Office of the Republic of Slovenia.

Weiss, C.R. (1997): Do They Come Back Again? The Symmetry and Reversibility of Off-farm Employment, European Review of Agricultural Economics, 24(1): 65-84.

Affiliation

Dr. Štefan Bojnec
Independent Research Organisation
Ul. Metoda Mikuža 12, 1109 Ljubljana
Tel.: +386 1 5348 622
eMail: stefan.bojnec@siol.net