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ČASOPIS SVEUČILIŠTA U DUBROVNIKU

**ECONOMIC THOUGHT AND PRACTICE**  
*PERIODICAL OF THE UNIVERSITY OF DUBROVNIK*

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**PRETHODNO PRIOPĆENJE**

***PRELIMINARY COMMUNICATION***





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## **OCCUPATIONAL SEGREGATION BY GENDER AND GENDER WAGE GAPS IN CROATIA**

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### ***Abstract***

*This paper is concerned to explore gender differences in occupation and sector of employment and gender wage gaps in Croatia. To examine the degree of occupational segregation and to assess if there is tendency for it to decline, we calculate Duncan and Duncan dissimilarity indices for Croatia for different years. We also compute dissimilarity indices for Croatia and ten other transition countries distinguishing by educational attainment. Furthermore, we compute the relative female earnings expressed as a percentage of male earnings for Croatia and ten other transition countries for comparisons. Our main findings are as follows: (i) degree of occupational segregation in Croatia has not been changing significantly over time and results suggest that it has no tendency to decline; (ii) the degree of occupational segregation is lower for highly educated categories of working force in Croatia, which is also the case in the EU15 countries, Latvia Lithuania, Hungary and Slovenia, and (iii) the relative female earnings expressed as percentage of male earnings on the base of average gross monthly earnings in Croatia are relatively high in comparison with other transition countries.*

**Keywords:** *occupational segregation, Duncan and Duncan dissimilarity index, gender wage gap, relative female earnings*

## **1. INTRODUCTION**

In this paper we will explore in which occupations and sectors women are employed. Even though, there is tendency of converging female and male participation rates, there are some studies that have shown that the distribution of employment by gender is still very much gender-segmented (OECD, 2002). Occupational segregation may be defined as tendency for men and women to be employed in different occupations across the whole spectrum of occupations. According to Anker (1997) occupational segregation is a major source of labour

market rigidity and economic inefficiency. Furthermore, occupational segregation by sex is harmful for women, because it has a negative effect on how men view women, and how women view themselves. This also has negative effect on women's status, income and many other social variables, because female dominated occupations are relatively lower paid occupations than those where men dominate. The stereotypes about women can negatively affect future generations, due to the effects they have on education and training decision.

Gender occupational segregation can be explained by labour supply and labour demand factors. Labour supply related factors in explaining focus on why women choose certain type of occupations. They may choose a job that is relatively easy to interrupt in order to bear child, for example. Labour demand related factors focus on why employers prefer to employ men and women for specific occupations and why they have different opportunities for promotion within firm. Preferences related to labour supply and labour demand factors are largely determined by learned cultural and social, gender related factors (Anker, 1997).

To examine the degree of occupational segregation and to assess if there is tendency for it to decline, we calculate Duncan and Duncan dissimilarity indices for Croatia for different years. Furthermore we compute dissimilarity indices for Croatia and ten other transition countries distinguishing by educational attainment. In this way we are able to assess how the degree of occupational segregation is changing relative to educational attainment and compare it with the findings in other countries. Unfortunately, we cannot examine the evolution of gender wage gap in Croatia since data on average monthly earnings by gender are available only for 2003. Therefore, we compute the relative female earnings expressed as percentage of male earnings for Croatia and ten other transition countries for comparisons.

The rest of this paper is structured as follows. We start with Section 2 by calculating the degree of occupational segregation over time in Croatia. Section 3 analyses occupational structure of female employment in Croatia. In Section 4, we examine the degree of occupational segregation distinguishing by educational attainment for Croatia and for ten other transition countries for comparison. In Section 5, we calculate relative female earnings and compare it with other countries. Lastly, Section 6 concludes with some recommendations for policy makers.

## **2. THE DEGREE OF OCCUPATIONAL SEGREGATION OVER TIME IN CROATIA**

The data on employment by sector are not available for Croatia for years before 1996. In order to explore how the degree of occupational segregation was changing through years since 1996 we will calculate the Duncan and Duncan (1955) dissimilarity index. This index expressed as percentage can be interpreted as the proportion of women or men who would have to change occupation for the

occupational distribution of men and women to be the same. A value of 0% indicates that the distribution of women across occupations is the same as that of men, while a value of 100% indicates that women and men work in completely different occupations. The formula is following:

$$St = 1/2 \sum |mit - fit|$$

where mit (fit) is the proportion of the male (female) labour force employed in occupation i at time t. Using the data of Croatian Central Bureau of Statistics (LFS), we combine nine different occupational groups<sup>1</sup>. Our calculations of these indices are presented in Appendix 1. Indices are listed in the Table 1 and show that degree of occupational segregation by gender have been varied from 1996 till 2003, but if we consider this index since 2001 to 2003 it was rising, which suggest that it does not have tendency to decline. On average index amounted 25% which means that 25% of women or men would have to change occupation for the occupational distribution of men and women to be the same.

Table 1.

Dissimilarity indices for Croatia (1996-2003)

Year	1996	1997	1998	1999	2000	2001	2002	2003
Dissimilarity index (%)	25.8	20.8	25.7	25.6	26.1	23.9	24.8	27.3

Own calculations based on Labour Force Survey (CBS)

### 3. FEMALE EMPLOYMENT BY OCCUPATION

Table 2 shows the share of female employment by occupation for Croatia in fourth quarter of 2004. It is evident that more than half of all clerks employed are women (66%). 60% of service and sales workers and 56% of professionals are women. 51% of workers in elementary occupations are women. Elementary occupations consist mainly of simple and routine tasks which mainly require the use of hand-held tools and often some physical effort. Most occupations in this major group require primary education which lasts about 5 years (ILO definition). The share of women among legislators, senior officials and managers amounts to 24%.

<sup>1</sup> Legislators, senior officials and managers, Professionals, Technicians and associate professionals, Clerks, Service workers and shop and market sales workers, Skilled agricultural and fishery workers, Craft and related trade workers, Plant and machine operators and assemblers, Elementary occupations.

Table 2.

Employment by occupation for age group older than 15 for Croatia (fourth quarter of 2004)

	Share of women
Legislators, senior officials and managers isco1	24%
Professionals isco2	56%
Technicians and associate professionals isco3	49%
Clerks isco4	66%
Service workers and shop and market sales workers isco5	60%
Skilled agricultural and fishery workers isco6	51%
Craft and related trade workers isco7	7%
Plant and machine operators and assemblers isco8	28%
Elementary occupations isco9	51%
Armed forces isco0	0%

*Source: EUROSTAT*

If we compare employment by occupation with other transition countries, the picture is similar. In most countries women are over- represented in elementary occupations, with exceptions in Romania, Bulgaria and Slovakia. More than half of all professionals are women. On the other hand, women are under-represented in managerial occupations. The highest female share in this occupation has Latvia 43% and Lithuania 41% (Eurostat).

#### 4. DEGREE OF OCCUPATIONAL SEGREGATION DISTINGUISHING BY EDUCATIONAL ATTAINMENT

In order to explore how the degree of occupational segregation is changing in relation to educational attainment and to compare it with ten other transition countries of Central and Eastern Europe we calculate comparable dissimilarity indices (Duncan and Duncan). We combine 9<sup>2</sup> different occupational groups distinguishing by educational attainment (Eurostat). Calculations are presented in Appendix 2 and dissimilarity indices are listed in Table 3.

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<sup>2</sup> Legislators, senior officials and managers, Professionals, Technicians and associate professionals, Clerks, Service workers and shop and market sales workers, Skilled agricultural and fishery workers, Craft and related trade workers, Plant and machine operators and assemblers, Elementary occupations.

Table 3.

Dissimilarity indices for fourth quarter of 2004 distinguishing by educational attainment

	Pre-primary, primary and lower secondary education	Upper secondary and post-secondary, non tertiary education	Tertiary education
CZ	13.39	33.28	16.86
EE	43.91	39.70	
LV	31.68	39.18	13.92
LT	29.16	32.85	27.04
HU	20.99	59.58	17.84
PL	16.48	30.07	19.05
SI	15.58	35.65	14.72
SK	14.95	35.93	18.59
BG	27.88	25.41	20.32
<b>HR</b>	<b>24.02</b>	<b>34.16</b>	<b>13.89</b>
RO	11.47	32.03	13.84

Own calculations based on data available on EUROSTAT

Dissimilarity indices show that occupational segregation distinguishing by educational attainment varies among countries. In Croatia occupational segregation is lowest for the group with tertiary education, and highest for group with upper secondary education. This is also the case in Latvia, Lithuania, Hungary and Slovenia. For other countries the degree of occupational segregation is also highest for group with upper secondary education, but it is the lowest for group with primary education. Bulgaria is the only exception, since the degree of occupational segregation is highest for group with primary education and lowest for group with tertiary education.

Dolado et. al. (2001) computed dissimilarity indices for 13 European countries in order to check if the decline in occupational dissimilarity has continued at a similar rate in the US and in the EU over the 1990s. The indices they calculate are shown in Table 4. They came to conclusion that in general EU countries suffer a higher degree of occupational segregation in the case of highly educated women comparing to US.

Table 4.

## Segregation index (EU), 1999 (%)

	Tertiary level of education			Less than tertiary level of education			
	25-34	35-44	45-54	25-34	35-44	45-54	
EU		35.2	40.9	41.9	49.6	48.6	48.2
Denmark		44.5	56.4	53.3	50.1	57.3	58
Finland	44.3	41.2	50.1	50.3	58.7	58.5	
Sweden	46.4	49	49.6	49.1	60.1	63.3	
Austria		38.9	44.1	47.1	52.6	52.5	52.1
Germany		41.1	44.3	43.3	51.2	51.6	49.3
Belgium	35.1	34.6	43.3	54.5	55.7	56.3	
France		35.7	39.1	39.5	52.1	52.5	51.1
Netherlands		33.1	38.5	32.2	49.3	56.4	54.5
Greece		32.4	33.2	31.8	43.5	42.7	44.7
Italy		30.3	34.3	46.1	39.8	40.3	41.4
Portugal	36.7	42.2	42.8	43.5	47.2	48.2	
Spain		37	43.1	49.5	50.2	47.2	51.7
UK		35.3	47.6	51.1	49.9	56.7	57.8

*Source: Dolado et al. (2001)*

Our indices are not comparable with indices presented in Table 4, since Dolado et al. are considering 108 occupations by combining nine occupational groups and 12 industrial sectors and they are distinguishing by age group too. But indices in Table 4 suggest that in Europe in general the degree of gender segregation is higher for less educated groups, which is also the case in Croatia.

## 5. GENDER WAGE GAPS IN CROATIA

Differences in pay are also the way in which gender inequalities in employment manifest themselves. Due to lack of data, we can not analyse gender wage differential for Croatia. According to the Croatian statistical bureau First Release about average monthly gross and net<sup>3</sup> earnings for employed persons by

<sup>3</sup> **Average monthly paid off net earnings** comprise income of a person in employment earned for work done during regular working hours as well as annual leave, paid leave, public holidays and day-offs as prescribed by law, sickness leave up to 42 days, absence for continuing professional education, during lay-off and job stop caused against person's will and of no fault of his own, worker's meal and net pays on the basis of compensations, allowances and rewards in sums which are subjects to contributions, taxes and surtaxes. **Average gross earnings** comprise all kinds of net pays on the basis of permanent employment plus participations: contributions, taxes and surtaxes as prescribed by the law (First Release).

occupation and gender that were surveyed for the first time in 2004, female net average monthly wage for 2003 amounted only 90% of those of men. The biggest gap in earnings for women and men employed is in air transport, where female earning amounted only 47% of male earning. This difference is not surprising, if we take into consideration that in air transport men are working on good paid positions such as pilots, while women earned lower average wage due to working at less paid jobs, such as stewardess. A big gap in average earnings is found also in manufacture of tobacco products, where mean female earning was 76% of those of men. The lowest difference in average wages is found in construction. Female earning was only 2% lower than those for men. This is not in accordance with expectations, since in that occupation women usually work better jobs in administration or as architects, while men are working at less paid, manual jobs. According to this official statistics women are better paid in only two occupations. The first is manufacture of medical, precision and optical instruments and watches and clocks where women earned average wage for 1% higher than their male counterparts. The second occupation is land transport and transport via pipelines, where women earned average net wage that is 6% higher than men's wage.

One part of the wage gap can be explained by existence of occupational segregation. Most of the occupations in which women dominate have lower wages in comparison to state average. Table 5 shows average monthly net earnings by occupations for 2003 and 2004. Seven occupations that are female dominated occupations are printed in bold. Three of these occupations have significantly lower earnings in comparison with total state average: manufacture of textile, textile apparel and footwear. In these occupations average monthly net earning was approximately 42% lower than state average in 2003, and 44% in 2004. In two occupations (Wholesale and trade and Hotels and restaurants) earnings were lower, but not significantly, while only two occupations had higher earnings: in education earnings were by 5% higher than state average, while in health and social work were higher by 15% than state average.

Table 5.

Average net monthly earning in Croatia by occupations for 2003 and 2004

	<b>Year 2003</b>	<b>Year 2004</b>
Agriculture, hunting and forestry	3378	3530
Fishing	2880	3055
Mining and quarrying	4429	4534
Manufacturing	3531	3711
-manufacture of textiles	<b>2540</b>	<b>2589</b>
-manufacture of weaning apparel; dressing and dyeing of fur	<b>2205</b>	<b>2216</b>
-tanning and dressing of leather, manufacture of luggage, handbags and footwear	<b>2083</b>	<b>2147</b>
Electricity, gas and water supply	4345	4750
Construction	3352	3636
Wholesale and retail trade	<b>3366</b>	<b>3617</b>
Hotels and restaurants	<b>3400</b>	<b>3559</b>
Transport, storage and communication	4443	4906
Financial intermediation	5865	5993
Real estate, renting and business activities	4041	4355
Public administration and defence; compulsory social security	4595	4611
Education	<b>4163</b>	<b>4224</b>
Health and social work	<b>4567</b>	<b>4781</b>
Other community, social and personal service activities	4031	4493
<b>TOTAL</b>	<b>3949</b>	<b>4173</b>

*Source: First Release (CBS)*

The gender pay gap in unadjusted form that is available for countries of European Union and new candidate countries on EUROSTAT is given as the difference between average gross hourly earnings of male paid employees and of female paid employees as a percentage of average gross hourly earnings of male paid employees. Therefore, we can not compare it with Croatia, since the data about gross hourly earnings by gender are not available. In order to compare gender



wage differences between Croatia and ten other transition countries of Central and Eastern Europe we will calculate the relative female earnings expressed as percentage of male earnings on the base of average gross monthly earnings. The source of data for Croatia is First Release (CBS) for 2003, and for other countries Eurostat (Structure of earnings survey 2002). The results are listed in the Table 6.

Table 6.  
Relative female earnings expressed as percentage of male earnings

	<b>Relative female earnings</b>
<b>Croatia</b>	<b>89</b>
EU 15	78
Czech Republic	78
Estonia	73
Latvia	79
Lithuania	76
Hungary	82
Poland	83
Slovenia	92
Slovakia	72
Bulgaria	82
Romania	85

*Source: CBS (2003), EUROSTAT (Structure of earnings survey 2002) and own calculations*

According to these indicators, relative female earnings in Croatia are high in comparison with other transition countries. Only in Slovenia are relative female earnings higher. However, we have to consider that these indicators do not include personal characteristics of employees (education and experience) and characteristics of job, therefore these differences need not indicate labour market discrimination. In order to have right insight in gender differences related to earnings, the examination of adjusted wage gap that control for differences in human capital factors should be made. The most popular way of wage decomposition into productivity and discrimination components is developed from work by Oaxaca (1973).

## 6. CONCLUSIONS AND RECOMMENDATIONS

By analysing available data and making our own calculations of dissimilarity indices through years and distinguishing by educational attainment, and calculating the relative female earnings expressed as percentage of male earnings on the base of average gross monthly earnings, we are able to document that the:

- Degree of occupational segregation has not been changing significantly over time in Croatia and results suggest that it has no tendency to decline.
- The degree of occupational segregation is lower for highly educated categories of working force in Croatia, which is also the case in the EU15 countries, Latvia, Lithuania, Hungary and Slovenia.
- The relative female earnings expressed as percentage of male earnings on the base of average gross monthly earnings in Croatia are relatively high in comparison with other transition countries.

According to our findings, for highly educated women the degree of occupational segregation is lower in Croatia, therefore the emphasis of policy makers should be on improving the educational attainment of future female generations. This can be achieved through training and retraining that is in accordance with labour market demand, and by removing gender stereotyping to encourage diversification of educational choices of boys and girls (to attract more women to the field of science and technology). Even though, our findings show that relative female earnings in Croatia are relatively high in comparison with other transition countries, we have to consider that these indicators do not include personal characteristics of employees and characteristics of job, and therefore these differences need not indicate labour market discrimination. In order to have right insight in gender differences related to earnings, the examination of adjusted gender wage gap that control for differences in human capital factors should be made.

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## Appendix 1

### Evolution of occupational segregation for Croatia

In order to investigate the evolution of occupational segregation in Croatia before starting to calculate the Duncan and Duncan dissimilarity indices, we have to calculate the share of male (female) labour force employed in each occupation of groups we consider, and these are: Legislators, senior officials and managers; Professionals; Technicians and associate professionals; Clerks ; Service workers and shop and market sales workers; Skilled agricultural and fishery workers ; Craft and related trade workers; Plant and machine operators and assemblers; Elementary occupations. This share we calculate using the following formula:

For males:

$$mit = Mit/M$$

where  $Mit$  is number of men in occupation  $i$  at time  $t$  and  $M$  is number of male workers in overall labour force.

For females:

$$fit = Fit/F$$

where  $Fit$  is number of women in occupation  $i$  at time  $t$  and  $F$  is number of female workers in overall labour force.

For calculating these shares we use Statistical Reports (LFS, CBS) data. Tables 1-8, present shares for males and females in different occupations and the difference between them for years from 1996 to 2003 for Croatia.

Table 1.

Year 1996, (%)

	mit	fit	<i>mit – fit</i>
Legislators, senior officials and managers	6.36	2.42	3.94
Professionals	6.36	8.16	-1.80
Technicians and associate professionals	9.82	12.12	-2.30
Clerks	5.83	15.43	-9.60
Service workers and shop and market sales workers	8.74	16.20	-7.46
Skilled agricultural and fishery workers	13.59	16.33	-2.74
Craft and related trade workers	17.48	3.95	13.53
Plant and machine operators and assemblers	11.87	4.59	7.28
Elementary occupations	6.80	9.82	-3.02

Table 2.

Year 1997, (%)

	mit	fit	<i>mit – fit</i>
Legislators, senior officials and managers	2.05	0.74	1.31
Professionals	5.45	7.99	-2.54
Technicians and associate professionals	10.06	12.29	-2.23
Clerks	6.08	15.85	-9.77
Service workers and shop and market sales workers	8.07	14.00	-5.93
Skilled agricultural and fishery workers	0.63	0.37	0.26
Craft and related trade workers	15.62	5.04	10.58
Plant and machine operators and assemblers	10.06	3.07	6.99
Elementary occupations	6.08	7.98	-1.90

Table 3.

Year 1998, (%)

	mit	fit	<i>mit – fit</i>
Legislators, senior officials and managers	7.81	3.01	4.80
Professionals	6.63	8.53	-1.90
Technicians and associate professionals	11.55	14.55	-3.00
Clerks	5.88	15.93	-10.50
Service workers and shop and market sales workers	8.55	15.06	-6.51
Skilled agricultural and fishery workers	12.41	14.18	-1.77
Craft and related trade workers	17.01	3.64	13.31
Plant and machine operators and assemblers	10.69	4.52	6.17
Elementary occupations	6.04	9.41	-3.37

Table 4.

Year 1999, (%)

	mit	fit	<i>mit – fit</i>
Legislators, senior officials and managers	8.23	3.09	5.14
Professionals	6.59	7.90	-1.31
Technicians and associate professionals	11.86	14.81	-2.95
Clerks	5.71	16.42	-10.71
Service workers and shop and market sales workers	7.24	13.46	-6.22
Skilled agricultural and fishery workers	11.42	13.33	-1.91
Craft and related trade workers	16.58	3.70	12.88
Plant and machine operators and assemblers	11.64	4.57	7.07
Elementary occupations	6.47	9.38	-2.91

Table 5.

Year 2000, (%)

	mit	fit	<i>mit – fit</i>
Legislators, senior officials and managers	8.02	2.75	5.27
Professionals	6.75	9.86	-3.11
Technicians and associate professionals	11.55	15.25	-3.70
Clerks	6.16	16.74	-10.58
Service workers and shop and market sales workers	9.49	13.65	-4.16
Skilled agricultural and fishery workers	6.95	8.49	-1.54
Craft and related trade workers	17.61	2.52	15.02
Plant and machine operators and assemblers	10.27	4.47	5.80
Elementary occupations	4.89	7.91	-3.02

Table 6.

Year 2001, (%)

	mit	fit	<i>mit – fit</i>
Legislators, senior officials and managers	6.24	2.61	4.08
Professionals	6.04	8.19	-2.15
Technicians and associate professionals	11.55	13.28	-1.73
Clerks	5.72	13.77	-8.05
Service workers and shop and market sales workers	8.95	16.63	-7.68
Skilled agricultural and fishery workers	11.13	11.17	-0.04
Craft and related trade workers	17.48	3.35	14.13
Plant and machine operators and assemblers	11.13	4.09	7.04
Elementary occupations	5.10	7.94	-2.84

Table 7.

Year 2002, (%)

	mit	fit	<i>mit – fit</i>
Legislators, senior officials and managers	5.89	2.18	3.71
Professionals	6.20	8.37	-2.17
Technicians and associate professionals	12.50	14.32	-1.82
Clerks	5.17	15.90	-10.73
Service workers and shop and market sales workers	9.92	16.50	-6.58
Skilled agricultural and fishery workers	10.74	11.29	-0.82
Craft and related trade workers	17.67	2.31	15.36
Plant and machine operators and assemblers	11.36	5.58	5.78
Elementary occupations	5.37	8.06	-2.69

Table 8.

Year 2003, (%)

	mit	fit	<i>mit – fit</i>
Legislators, senior officials and managers	5.97	2.68	3.29
Professionals	6.38	9.38	-3.30
Technicians and associate professionals	10.80	13.52	-2.72
Clerks	5.04	15.23	-10.19
Service workers and shop and market sales workers	8.64	15.47	-6.83
Skilled agricultural and fishery workers	11.11	13.76	-2.65
Craft and related trade workers	19.44	2.07	17.37
Plant and machine operators and assemblers	12.04	4.99	7.05
Elementary occupations	5.86	7.06	-1.20



Now we have all calculations we need to compute Duncan and Duncan dissimilarity indices for each year by using following formula:

$$St = 1/2 \sum |mit - fit|$$

where mit (fit) is the proportion of the male (female) labour force employed in occupation i at time t. The indices are listed in Table 9.

Table 9.

Dissimilarity indices for Croatia (1996-2003)

Year	1996	1997	1998	1999	2000	2001	2002	2003
Dissimilarity index (%)	25.8	20.8	25.7	25.6	26.1	23.9	24.8	27.3

## Appendix 2

### Occupational segregation distinguishing by educational attainment in Croatia and ten transition countries

In order to investigate degree of occupational segregation in Croatia and ten other transition countries of Central and Eastern Europe distinguishing by educational attainment, we use the data that are available in Eurostat for the fourth quarter of 2004. First we have to calculate the male and female labour force for each level of educational attainment. Labour force can be calculated by summing up persons in employment and unemployed persons. Since there are no data available for unemployed persons in absolute numbers distinguishing by educational attainment on Eurostat, but there are unemployment rates, we calculate the number of unemployed persons by using following formula:

$$\text{Unemployed persons} = (\text{Unemployment rate} \times \text{Employed persons}) / (100 - \text{Unemployment rate})^4$$

Table 10. presents male labour force for each level of educational attainment, while Table 11 presents the same for females.

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<sup>4</sup>Unemployment rate = (unemployed persons/labour force) x 100  
Labour force = employed persons + unemployed persons

Table 10.

Male labour force distinguishing by educational attainment in fourth quarter of 2004 (in thousands)

	Pre-primary, primary and lower secondary education	Upper secondary and post-secondary, non tertiary education	Tertiary education
CZ	160	2301	408
EE	43	204	
LV	97	178	106
LT	99	520	201
HU	321	1523	408
PL	1190	6703	1536
SI	87	367	91
SK	103	1164	184
BG	395	1036	334
<b>HR</b>	<b>193</b>	<b>646</b>	<b>148</b>
RO	1277	3501	604

Table 11.

Female labour force distinguishing by educational attainment for fourth quarter of 2004 (in thousands)

	Pre-primary, primary and lower secondary education	Upper secondary and post-secondary, non tertiary education	Tertiary education
CZ	236	1762	278
EE	29	169	126
LV	60	339	154
LT	61	473	259
HU	302	1161	437
PL	907	5235	1672
SI	82	264	111
SK	113	920	172
BG	175	780	482
<b>HR</b>	<b>199</b>	<b>462</b>	<b>158</b>
RO	1310	2578	560

Now we can calculate for each country the share of the male (female) labour force employed in each occupation distinguishing by educational attainment. We consider nine different occupations, and these are: Legislators, senior officials and managers (1); Professionals (2); Technicians and associate professionals (3); Clerks (4); Service workers and shop and market sales workers (5); Skilled

agricultural and fishery workers (6); Craft and related trade workers (7); Plant and machine operators and assemblers (8); Elementary occupations (9)<sup>5</sup>. This share we calculate using the following formulas:

For males:

$$mie = Mie/Me$$

where *Mie* is number of men in occupation *i* with *e* level of educational attainment and *Me* is number of male workers in labour force with *e* level of educational attainment.

For females:

$$fie = Fie/Fe$$

where *Fie* is number of women in occupation *i* with *e* level of occupational attainment and *Fe* is number of female workers in labour force with *e* level of educational attainment.

These shares and the difference between them are presented for each country separately for fourth quarter of 2004 in Tables 12-22.

Table 12.

## Czech Republic, (%)

	Primary education			Secondary education			Tertiary education		
	m	f	m-f	m	f	m-f	m	f	m-f
1	1.25	-	1.25	0.96	3.35	-2.39	20.1	7.91	12.19
2	-	-	-	2.61	5.05	-2.44	45.34	60.07	-14.73
3	2.5	2.97	-0.47	15.95	25.65	-9.7	25.49	24.1	1.39
4	2.5	5.08	-2.58	2.96	15.78	-12.82	0.98	3.6	-2.62
5	5.63	13.56	-7.93	8.26	18.96	-10.7	1.72	1.08	0.64
6	3.75	4.24	-0.49	1.87	1.19	0.68	0.49	-	0.49
7	11.25	5.93	5.32	19.95	4.99	14.96	0.98	-	0.98
8	26.88	22.03	4.85	20.08	9.76	10.32	0.74	-	0.74
9	16.88	20.76	-3.88	3.48	6.02	-2.54	-	-	-

<sup>5</sup> In tables occupations will be presented by numbers.

Table 13.

Estonia, (%)

	Primary education			Secondary education		
	m	f	m-f	m	f	m-f
1	-	-	-	10.78	5.33	5.45
2	-	-	-	4.90	4.73	0.17
3	-	-	-	5.88	15.98	-10.10
4	-	-	-	-	5.92	-5.92
5	-	17.24	17.24	5.88	21.89	-16.01
6	-	-	-	2.94	-	2.94
7	32.56	-	32.56	28.43	7.69	20.74
8	23.26	-	23.26	21.08	10.65	10.43
9	16.28	31.03	-14.75	8.33	15.97	-7.64

Table 14.

Latvia, (%)

	Primary education			Secondary education			Tertiary education		
	m	f	m-f	m	f	m-f	m	f	m-f
1	-	-	-	7.41	5.60	1.81	29.25	15.58	13.67
2	-	-	-	2.12	5.31	-3.19	31.13	41.56	-10.43
3	-	-	-	5.56	13.57	-8.01	16.04	22.73	-6.69
4	-	-	-	2.38	10.32	-7.94	-	5.19	-5.19
5	6.18	15.00	-8.82	7.94	25.37	-17.43	-	7.14	-7.14
6	14.43	23.33	-8.90	5.29	5.90	-0.61	4.72	-	4.72
7	22.68	-	22.68	26.72	5.90	20.82	-	-	-
8	17.53	-	17.53	20.90	4.42	16.48	-	-	-
9	19.58	25.00	-5.42	10.32	12.39	-2.07	-	-	-

Table 15.

## Lithuania, (%)

	Primary education			Secondary education			Tertiary education		
	m	f	m-f	m	f	m-f	m	f	m-f
1	-	-	-	4.81	3.38	1.43	22.39	12.36	10.03
2	-	-	-	2.88	7.82	-4.94	34.33	48.26	-13.93
3	-	-	-	2.88	10.15	-7.27	11.44	15.83	-4.39
4	-	-	-	1.54	6.13	-4.59	-	5.79	-5.79
5	-	8.20	-8.2	8.08	20.93	-12.85	6.47	4.63	1.84
6	35.35	34.43	0.92	10.77	10.78	-0.01	2.49	-	2.49
7	18.18	13.11	5.07	28.46	13.74	14.72	7.96	-	7.96
8	7.07		7.07	19.62	2.75	16.87	4.98		4.98
9	19.19	16.39	2.8	9.04	12.05	-3.01	2.49		2.49

Table 16.

## Hungary, (%)

	Primary education			Secondary education			Tertiary education		
	m	f	m-f	m	f	m-f	m	f	m-f
1	0.93	-	0.93	6.11	4.31	1.8	24.75	11.9	12.85
2	-	-	-	1.38	2.07	-0.69	50	61.33	-11.33
3	0.93	3.31	-2.38	8.54	22.39	-13.85	11.52	13.73	-2.21
4	3.12	5.63	-2.51	4.14	18.6	-14.46	1.23	6.18	-4.95
5	6.85	14.9	-8.05	11.42	24.98	-13.56	3.68	2.29	1.39
6	8.41	4.3	4.11	3.55	1.29	2.26	0.98	-	0.98
7	16.51	9.93	6.58	37.1	6.2	30.9	1.23	-	1.23
8	25.23	19.54	5.69	17.01	6.98	10.03	0.74	-	0.74
9	23.05	34.77	-11.72	4.33	5.94	-1.61	-	-	-

Table 17.

Poland, (%)

	Primary education			Secondary education			Tertiary education		
	m	f	m-f	m	f	m-f	m	f	m-f
1	-	-	-	4.18	3.21	0.97	18.68	7.78	10.9
2	-	-	-	0.43	2.04	-1.61	45.25	60.65	-15.40
3	-	-	-	7.58	16.49	-8.91	9.77	11.96	-2.19
4	0.76	1.21	-0.45	4.18	10.14	-5.96	2.86	7.36	-4.50
5	2.27	7.50	-5.23	7.35	15.84	-8.49	3.97	3.17	0.80
6	37.90	41.12	-3.22	12.47	12.59	-0.12	1.69	0.60	1.09
7	13.61	4.41	9.20	25.02	5.96	19.06	1.95	-	1.95
8	10.67	2.76	7.91	15.17	2.66	12.51	1.63	0.36	1.27
9	10.25	17.2	-6.95	5.15	7.66	-2.51	-	-	-

Table 18.

Slovenia, (%)

	Primary education			Secondary education			Tertiary education		
	m	f	m-f	m	f	m-f	m	f	m-f
1	-	-	-	5.18	3.03	2.15	24.18	11.71	12.47
2	-	-	-	0.82	3.03	-2.21	56.04	64.86	-8.82
3	-	-	-	15.8	21.97	-6.17	8.79	13.51	-4.72
4	4.6	1.22	3.38	6.27	17.42	-11.15	2.18	3.6	-1.42
5	2.3	4.88	-2.58	10.35	24.24	-13.89	-	0.9	-0.9
6	25.29	26.83	-1.54	4.9	3.79	1.11	-	-	-
7	14.94	3.66	11.28	25.89	3.03	22.86	1.1	-	1.1
8	29.89	29.27	0.62	19.89	9.85	10.04	-	-	-
9	12.64	24.39	-11.75	2.45	4.17	-1.72	-	-	-

Table 19.

## Slovakia, (%)

	Primary education			Secondary education			Tertiary education		
	m	f	m-f	m	f	m-f	m	f	m-f
1	-	-	-	4.64	2.83	1.81	20.65	8.14	12.51
2	-	-	-	2.06	5.11	-3.05	39.13	56.4	-17.27
3	-	-	-	9.97	21.2	-11.23	23.91	20.93	2.98
4	-	2.65	-2.65	3.09	10	-6.91	2.17	4.07	-1.9
5	2.91	10.62	-7.71	7.99	21.63	-13.64	3.8	2.91	0.89
6	-	-	-	1.37	0.65	0.72	-	-	-
7	10.68	3.54	7.14	29.21	6.74	22.47	1.63	-	1.63
8	13.59	10.62	2.97	18.81	7.28	11.53	-	-	-
9	13.59	23.01	-9.42	7.56	7.07	0.49	-	-	-

Table 20.

## Bulgaria, (%)

	Primary education			Secondary education			Tertiary education		
	m	f	m-f	m	f	m-f	m	f	m-f
1	-	-	-	5.89	2.82	3.07	19.76	8.3	11.46
2	-	-	-	0.68	1.41	-0.73	33.83	44.61	-10.78
3	-	-	-	8.01	9.74	-1.73	16.77	25.31	-8.54
4	-	-	-	3.57	12.31	-8.74	4.49	5.81	-1.32
5	4.3	21.71	-17.41	11.1	26.92	-15.82	5.39	6.22	-0.83
6	13.42	25.71	-12.29	3.19	2.05	1.14	-	-	-
7	15.2	11.43	3.77	22.01	10.64	11.37	3.59	1.24	2.35
8	14.18	18.28	-4.1	22.3	13.59	8.71	4.49	1.24	3.25
9	28.1	46.29	-18.19	10.33	9.1	1.23	2.1	-	2.1

Table 21.

Croatia, (%)

	Primary education			Secondary education			Tertiary education		
	m	f	m-f	m	f	m-f	m	f	m-f
1	0.52	0.5	0.02	5.26	2.37	2.89	16.89	5.06	11.83
2	-	-	-	0.31	0.71	-0.4	40.54	48.73	-8.19
3	0.52	-	0.52	10.37	13.27	-2.9	25	25.28	-0.28
4	3.11	2.01	1.1	7.12	22.99	-15.87	2.7	5.7	-3
5	4.15	7.54	-3.39	12.85	28.44	-15.59	2.7	3.16	-0.46
6	32.64	42.21	-9.57	5.73	4.98	0.75	1.35	-	1.35
7	10.88	1.01	9.87	24.15	2.84	21.31	1.35	-	1.35
8	15.03	9.55	5.48	12.69	5.92	6.77	0.68	-	0.68
9	5.04	23.12	-18.08	4.8	6.64	-1.84	-	0.63	-0.63

Table 22.

Romania, (%)

	Primary education			Secondary education			Tertiary education		
	m	f	m-f	m	f	m-f	m	f	m-f
1	0.47	-	0.47	2.49	1.32	1.17	14.9	6.96	7.94
2	-	-	-	0.51	0.78	-0.27	60.93	66.43	-5.5
3	0.23	0.38	-0.15	7.48	17.3	-9.82	8.28	11.96	-3.68
4	0.31	0.69	-0.38	2.54	10.01	-7.47	1.99	5.18	-3.19
5	1.88	5.65	-3.77	6.8	18.74	-11.94	2.65	2.14	0.51
6	54.11	63.97	-9.86	15.28	12.02	3.26	0.99	0.89	0.1
7	10.1	4.73	5.37	28.62	14.7	13.92	1.16	-	1.16
8	5.25	3.05	2.2	19.22	9.5	9.72	5.46	0.36	5.1
9	16.84	16.11	0.73	7.77	7.29	0.48	0.5	-	0.5

Now we have all data that we need to calculate the Duncan and Duncan dissimilarity index for each country distinguishing by level of educational attainment. The formula is following:

$$Se = 1/2 \square |mie - fie|$$

Dissimilarity indices are listed in Table 23.



Table 23.

## Dissimilarity indices, (%)

	Pre-primary, primary and lower secondary education	Upper secondary and post-secondary, non tertiary education	Tertiary education
CZ	13.39	33.28	16.86
EE	43.91	39.70	
LV	31.68	39.18	13.92
LT	29.16	32.85	27.04
H U	20.99	59.58	17.84
PL	16.48	30.07	19.05
SI	15.58	35.65	14.72
SK	14.95	35.93	18.59
BG	27.88	25.41	20.32
HR	24.02	34.16	13.89
RO	11.47	32.03	13.84

**Perica Bjelokosić, mag.**

Sveučilište u Dubrovniku

## **RAZLIKA U ZANIMANJU PO SPOLU I RAZLIKE U PLAĆI PO SPOLU U HRVATSKOJ**

### **Sažetak**

*U ovom radu će se istražiti razlike po spolu u zvanjima i sektoru zaposlenosti te razlike u nadnici po spolu u Hrvatskoj. Kako bismo istražili stupanj profesionalne segregacije i utvrdili postoji li njezina tendencija opadanja, izračunat ćemo Duncan i Duncan indeks različitosti za Hrvatsku za različite godine. Također ćemo izračunati indekse različitosti za Hrvatsku i deset drugih zemalja u tranziciji uzimajući u obzir razlike u stupnju obrazovanja. Nadalje, izračunat ćemo relativnu zaradu za žene iskazanu u postotcima od zarade muškaraca za Hrvatsku te za deset drugih zemalja u tranziciji zbog usporedbe. Naša najvažnija zapažanja su: (i) stupanj profesionalne segregacije u Hrvatskoj se nije značajnije mijenjao već neko vrijeme, a rezultati pokazuju da nema tendenciju opadanja; (ii) stupanj profesionalne segregacije je niži za visoko obrazovanu radnu snagu u Hrvatskoj, a isti je slučaj i u 15 zemalja EU-a, Latviji, Litvi, Mađarskoj i Sloveniji, i (iii) relativna zarada za žene izražena u postotcima od zarade muškaraca na temelju prosječne bruto mjesečne zarade u Hrvatskoj je relativno visoka u usporedbi s ostalim zemljama u tranziciji.*

**Ključne riječi:** *razlika u zanimanju, Duncan i Duncanov indeks različitosti, razlike u nadnici po spolu, relativna zarada za žene*

**JEL klasifikacija:** *J31*

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## TRENDS IN THE CROATIAN LABOUR MARKET

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### *Abstract*

*In this paper, the main characteristics the Croatian labour market will be analysed – employment and participation rates, as well as unemployment and its structure. We will compare Croatian indicators to the other Central and Eastern European countries. Although unemployment indicators are not exceeding the range of the other transition countries indicators, Croatian ones are higher than the average. Transition process combined with the war created the deep recession in Croatia. Consequently, employment contracted transforming partly in inactivity and partly in unemployment. In this paper, we will use Blanchard's adjustment ratio to examine what was the primer form of transformation, whether inactivity or unemployment. Now, after fifteen years of transition, the Croatian labour market is still not performing well and it is troubled by low participation and employment rates and, at the same time, with high unemployment rates. Through the educational structure of employment and unemployment, we will see whether there is connection between educational attainment and job-finding.*

**Keywords:** *Croatian labour market, Blanchard's adjustment ratio, unemployment*

### 1. INTRODUCTION

The process of transformation from centrally planned to market economy brought a deep structural change that had the strong impact on the labour market in Croatia, as in all of the transitional countries. The beginning of transition in Croatia coincided with the War of Independence and that created an even deeper crisis in the economy. Even after almost fifteen years of transition, the Croatian labour market is still not performing very well if we consider low unemployment rates, high participation and employment rates as indicators of a good labour market performance. On a contrary, Croatia is

experiencing low participation rates, low employment and high unemployment rates, especially long-term unemployment.

In the analysis, two sources of data are used: data from the Croatian Employment Service (CES) register and the data from the Labour Force Survey (LFS) based on the criteria by International Labour Organisation (ILO) and conducted by the Croatian Bureau of Statistics (CBS). There is discrepancy between two sets of data due to different methodologies used in processing information. The data from the register will be used in analysing the situation in Croatia since they provide longer time series and the data from LFS will be used in comparisons with the other countries, as these are internationally comparable. We will compare Croatia to other European transition countries, whose economies experienced a similar situation to that of Croatia. Most of these countries already joined the European Union (Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovakia and Slovenia), while Bulgaria and Romania are in the same position as Croatia – waiting for accession. Comparing the Croatian labour market to other countries, we will point out some of the main economical problems of Croatia.

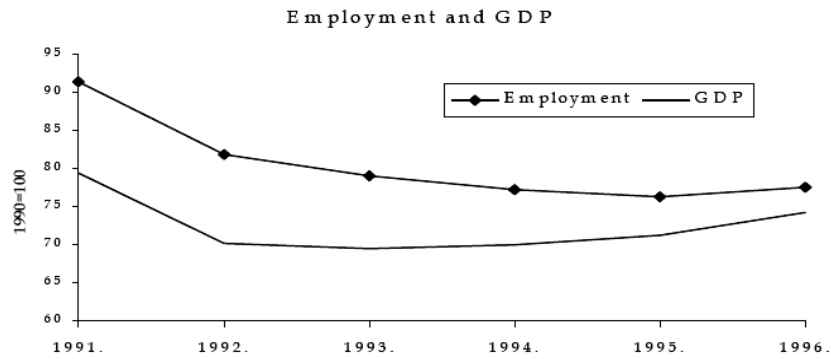
The paper is organised as follows: In the part two some main features of the transition will be emphasised. In the third part employment, its main characteristics and participation rates will be analysed. Part 4 will analyse unemployment, with the emphasis on the long term and youth unemployment. The following fifth part will analyse the educational structure of employment and unemployment and the paper will finish with the concluding remarks.

## **2. TRANSITION AND LABOUR MARKET IN CROATIA 1990 – 1996**

In the pre-transitional period, full employment, overstaffing and excess demand for labour were the main characteristics across the labour markets of the former centrally planned economies. Open unemployment did not exist and it was illegal, with the exception of the former Yugoslavia (and therefore, Croatia) where there were some schemes to help unemployed workers. Employment was mostly concentrated in the industrial sector, again with the exception of Croatia and Slovenia, which were the only countries with more than fifty percent of working force employed in the service sector.

The main characteristic of the transition process is deep structural change throughout the entire economy. In the early phase of transition, all the countries, including Croatia, experienced a decline in productivity what had a strong impact on the labour markets. Demand for labour decreased and consequently employment too. Nesporova (1999, p.6) argues that the “delay before the effects on employment were felt was due to the enterprises being at first reluctant to

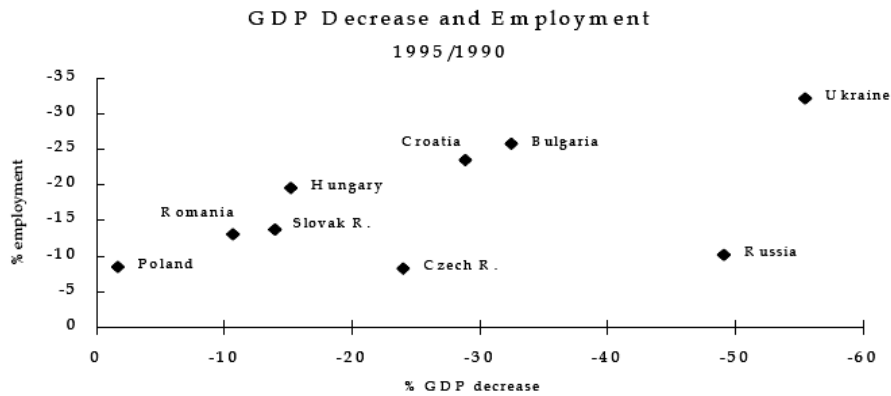
dismiss redundant workers, assuming that the economic recession would be a short-term crisis”.



Source: Vujčić, 1998

Figure 1. Employment and GDP in Croatia

The output in Croatia had the typical U-pattern as in most other transition countries. The difference lies in the fact that Croatia, along with Bulgaria, experienced one of the strongest recessions among the selected group of countries. The conflicts in the region, which in Croatia resulted in the Croatian War of Independence in the early stage of transition, provides an explanation for such a serious situation and recession deeper than it would have otherwise been.



Source: Vujčić, 1998

Figure 2. GDP Decrease and Employment in Transition Countries

After the initial output fall which cumulatively amounted to almost 35% in the period 1991-1993, GDP in Croatia started to recover in the 1994 but employment continued to fall until 1997 as productivity began to grow. By the end of 1996 employment declined by approximately 540,000 workers (34% of the employment in 1989). Rutkowsky (2003) emphasises that Croatia responded to the shocks largely through employment reductions rather than through wages (Table 1), i.e. firms in Croatia tried to raise unit productivity through employment cuts and not through wage cuts. When GDP (productivity) started to grow in 1994, wages were following productivity while, at the same time, employment was continuing its contraction.

Table 1.

## Employment and GDP per Capita

	1990	1991	1992	1993	1994	1995	1996	1997
Employment (000)	1513.6	1314.7	1159	1108.4	1061.5	1026.8	1028	1004
GDP per capita at market prices (USD)	5195.3	4023.1	2291	2349.2	3137.2	4028.9	4422	4398
Growth rate (%)	-	-21.1	-11.7	-8.0	5.9	6.8	5.9	6.8
Real gross wage (1994=100)	-	-	-	-	100.0	127.8	142.9	155.3

Source: *LABORSTA; Croatian Chamber of Commerce: <http://hgk.biznet.hr/hgk/fileovi/577.pdf>; CBS, Statistical yearbook, 2004; Wages: <http://www.unecce.org/stats/trends/ch5/5.12.xls>*

Nesporova (2001) argues that employment primarily transformed into economic inactivity and declines in the participation rates of the population aged 15 to 64 were visible across all the transition countries with only Slovenia keeping the rate above 70%. In Croatia, participation rate fell from 77% in 1990 to less than 60% in 1998. The second major way of employment transformation is to the unemployment. Table 2 shows us that all the countries had the same trend of increasing unemployment rates. Previously countries with practically zero unemployment (except Croatia and Slovenia) reached the double-digit unemployment rates. In 1996, the worst situation among the selected group of countries was in Croatia where registered unemployment rate reached over 16%. The rates were also high in Slovenia (13.9%), Bulgaria and Slovakia where the rate amounted 12.5% and 12.6% respectively. A better performance, surprisingly, can be seen in Romania (6.6%).

Table 2.

## Registered Unemployment Rates in Transition Countries 1989 - 1996

	1990	1991	1992	1993	1994	1995	1996
Bulgaria	1.7	11.1	15.3	16.4	12.8	11.1	12.5
<i>Croatia</i>	<i>8.2</i>	<i>14.9</i>	<i>15.3</i>	<i>14.8</i>	<i>14.5</i>	<i>14.5</i>	<i>16.4</i>
Czech Republic	0.7	4.1	2.6	3.5	3.2	2.9	3.5
Estonia	-	0.1	1.7	1.9	2.2	-	-
Hungary	1.7	8.5	12.3	12.1	10.4	12.0	10.7
Latvia	-	-	2.3	5.8	6.5	6.6	7.2
Lithuania	-	0.3	3.5	3.5	0.5	7.3	6.2
Poland	6.5	11.8	13.6	16.4	16.0	14.9	13.2
Romania	-	3.0	8.2	10.4	10.9	9.5	6.6
Slovakia	-	6.6	11.4	12.9	14.4	13.8	12.6
Slovenia	4.7	8.2	11.5	14.4	14.4	13.9	13.9

Source: LABORSTA

Blanchard (1997) suggests that it is typical for many transition economies that much of decrease in employment translated into a decrease in participation (i.e., similar as Nesporova (2001), he suggests increase in inactivity). To illustrate this, he computed the following formula:

$$\Delta P = \Delta N + \Delta U + \Delta O$$

where P is population of working age, N is employment, U is unemployment, O is non-participation and  $\Delta$  denotes the change of the variable in the selected period. Furthermore, if we consider the ratio

$$\chi = \frac{\Delta U}{\Delta P - \Delta N}$$

a value of 1 for  $\chi$  indicates that the entire adjustment was through unemployment rather than participation and a value of 0 that entire adjustment went through participation. Table shows the value of  $\chi$  for some transition countries.

It is necessary to stress that there is a big problem with the data about the population in Croatia in the 1990s considering the turbulent time and great migrations of population, within and out of the country. In order to calculate

adjustment ratio for Croatia, I used the change in the estimated mid-year population as a proxy of a change in working age population.

Table 3.

## Adjustment Ratios in Selected Transition Countries

	Bulgaria	Croatia	Czech Republic	Hungary	Poland	Slovakia
$\chi$	0.75	0.38	0.27	0.41	0.85	0.66

*Source: Bulgaria, Czech Republic, Hungary and Slovakia for 1994: Blanchard (1997); Croatia: own calculations for the period 1990-1997*

From the Table 3, we can see that in Bulgaria, Poland and Slovakia adjustment in the first year of transition was mainly through unemployment while in Croatia, Czech Republic and Hungary adjustment went mainly through participation. This means that workers in Croatia have chosen inactivity, usually in a form of early retirement, rather than unemployment. Due to the lack of data on population during that time, it is difficult to estimate the participation rates for the period 1990-1997 to support this thesis.

From the Table 4. we can see how unemployment in Croatia changed comparing to employment. Whilst in 1989 the number of unemployed was more than ten times lower than the number of employed workers, that figure was only three times lower in 1997. The number of employed decreased for 510 thousands (for 30%), the number of unemployed increased for 117 thousands (almost doubled from 1989), what suggests that most of the people transferred into inactivity often motivated by early retirement opportunities (there has been a large number of demobilised men who retired after coming home from the war).

Table 4.

## Unemployment as a Percentage of Employment in Croatia

	1989	1990	1991	1992	1993	1994	1995	1996	1997
Employment (000)	1566.71	1513.58	1314.66	1159.00	1108.4	1061.52	1026.8	1027.72	1003.91
Male	897.78	860.73	739.52	639.64	601.59	569.96	549.05	546.65	531.7
Female	668.93	652.85	575.14	519.36	506.81	491.56	477.74	481.07	472.21
Unemployment (000)	140	161	254	267	251	243	241	261	278
Male	57	70	121	126	113	113	117	131	141
Female	83	91	133	141	138	130	124	130	137
U/E <sup>a</sup> (%)	8.94	10.64	19.32	23.04	22.65	22.89	23.47	25.40	27.69
Male	6.35	8.13	16.36	19.70	18.78	19.83	21.31	23.96	26.52
Female	12.41	13.94	23.12	27.15	27.23	26.45	25.96	27.02	29.01

*Source: LABORSTA; own calculation*  
*a - Unemployment to employment ratio*



### 3. PARTICIPATION AND EMPLOYMENT RATES

As already mentioned, the transition process, from the labour market standpoint, resulted with the decline in the employment up to 1996, but the question is what happened after and where is Croatia now. In the following nine year period, from 1996 to 2004, working age population increased by more than 500 thousands (17%) and employment relatively stabilised varying around 1,550,000 (varying  $\pm 3$  to 4%) with no radical declines or increases (Table 5).

Table 5.

#### Key Labour Market Indicators

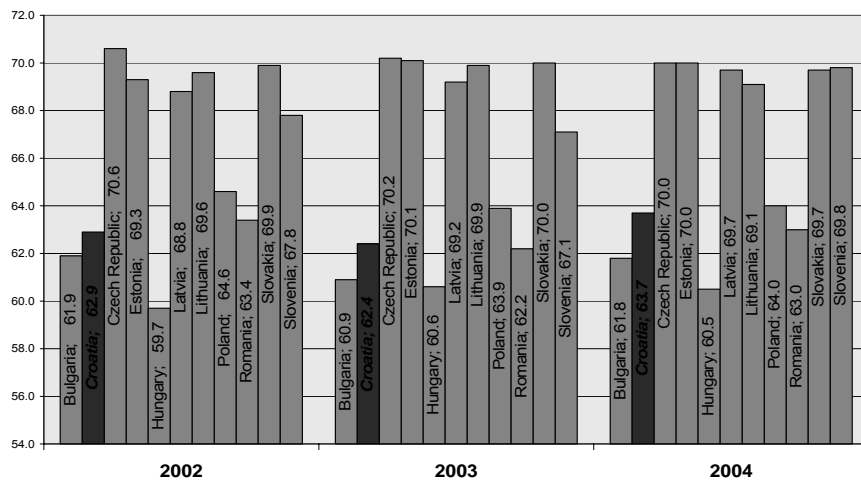
	1996	1997	1998	1999	2000	2001	2002	2003	2004
Population 15+ (000)	3042	3233	3284.5	3328.5	3646.5	3514	3526	3668	3589.5
Male	1428	1523	1529	1553	1709.5	1647	1660	1678	1692
Female	1614	1710	1755.5	1775.5	1937	1866.5	1866.5	1889.5	1897.5
Labour force (000)	1711	1768	1742.5	1725.5	1850	1745.5	1793	1792	1812.5
Male	927	954	933.5	919.5	998.5	953.5	972.5	978	981.5
Female	784	814	809	806	851.5	792	820.5	814	831
Labour force participation rate (%)	56.2	54.7	53.1	51.8	50.7	49.7	50.9	50.2	50.5
Male	64.9	62.6	61.1	59.2	58.4	57.9	58.6	58.3	58
Female	48.6	47.6	46.1	45.4	44	42.4	44	43.1	43.8
Employment (000)	1540	1593	1543.5	1491.5	1553	1469	1527.5	1536.5	1562.5
Male	838	864	832	802	848.5	819	842.5	850.5	866
Female	702	729	711.5	689.5	704.5	651	685	686	696.5
Employment rate (%)	50.6	49.3	47.0	44.8	42.6	41.8	43.3	43.1	43.5
Male	58.7	58.9	54.4	51.6	49.6	49.7	50.8	50.7	51.2
Female	43.5	42.7	40.5	38.8	36.4	34.9	36.7	36.3	36.7
Inactive Population (000)	1331	1464	1542	1603	1796.5	1768.5	1733	1776	1777.5
Male	501	566	595.5	633.5	711	693.5	687.5	700	706
Female	830	896	946.5	969.5	1085.5	1074.5	1045.5	1075.5	1071.5

Source: CBS, Statistical reports – LFS, various years

Note: For the period after 1998 I have calculated an average of semi-annual data

Participation rate was declining from 56.2% in 1996 to 49.7% in 2001, mainly because of faster increase in working age population than in labour force. Afterwards participation rate started to increase gradually and in 2004 amounted 50.5%. In other words, approximately half of working age population either works or at least is willing to work but unable to find a job. Even though there is constantly higher number of a female inactive in the period 1996 - 2004, the change in number of inactive males was much higher – increase of 41% comparing to 29% raise in female inactivity. From the Table 5 we can also see that female participation rates are relatively unstable, compared to those for males.

Comparing to the some other countries in the region (Figure 3) we can see that Bulgaria and Hungary constantly have a lower participation rates, in 15-64 age group, than Croatia. Rutkowski (2003) argues that the low level of overall participation reflects a poor availability of job opportunities in Croatia. He computed a job creation rate of 3.5% in 2001 what was rather low comparing to Bulgaria (7%) or Lithuania (10%). This means that Croatia, expressed as a proportion of total employment, creates only 3.5% of new jobs and it needs at least to double this rate to achieve the level that other transition already have. Although Šošić (2004) estimated job creation rate to be 8.7%, this is still very low. The decreasing levels of participation are also connected with the “discouraged worker” effect where people leave the labour market after unsuccessful job search in belief that there are no jobs for them. Furthermore, the possibility of early retirement for older workers also contributed to the increase of inactivity.

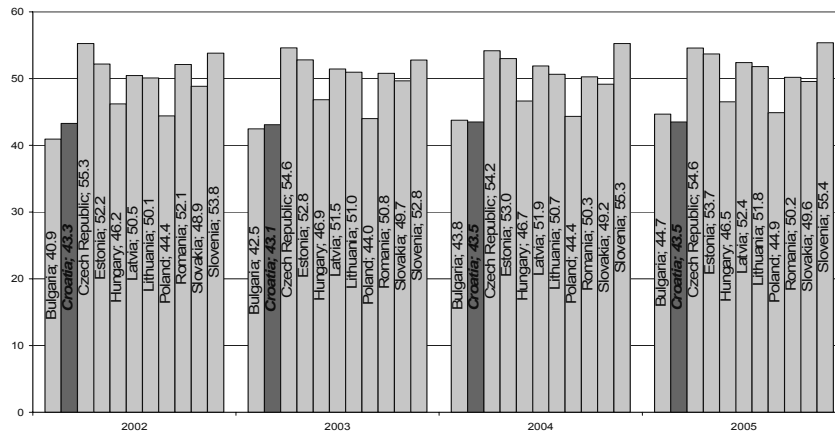


Source: EUROSTAT; Croatia: Labour Force Survey

Figure 3. Participation Rates in Transition Countries for the Age Group 15-64 (%)

Another characteristic of the Croatian labour market is the low employment-to-population ratio (Table 5). Only 43% of the working age population is actually employed in Croatia. While working age population was increasing since 1996, employment was relatively stable what entails a low-level labour resources utilisation. Among the female population, the situation is even more severe, only 36.7% of working age women works. Comparing employment rates in the selected group of countries, we can see that again Bulgaria is the only one that

had a lower share of population employed than Croatia. A similar situation to that in Croatia can be found in Hungary and Poland where employment-to-population ratio is around 54 – 55%. Czech Republic and Slovenia are leading with this perspective with 55% working age population employed.



Source: EUROSTAT - average of quarterly rates for every year; CBS, Statistical report 2003; Own calculation

Note: for 2005 the average is for the first three quarters of the year;

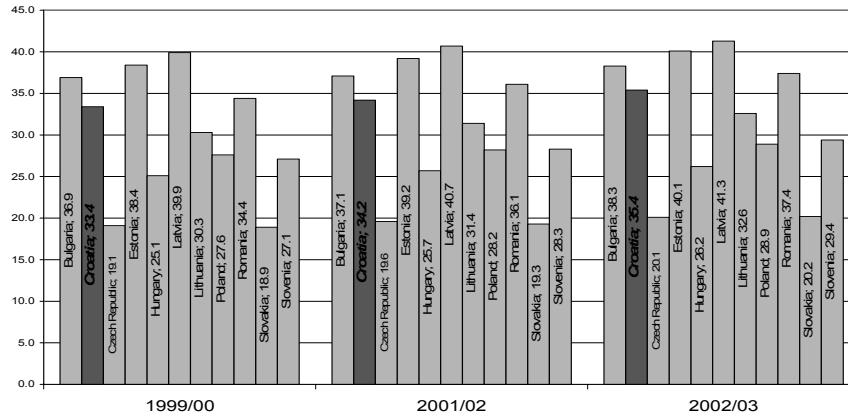
Figure 4. Employment Rates In Transition Countries (%)

It is noticeable that there is a big difference between the employment rate in 15-64 age group (62.3%) and the rate for overall population over 15 years (43.5%) in Croatia what implies a low levels of employment over 65 years due to the mandatory retirement at that age, or also a large number of people over 65.

It is necessary to stress the divergent movements in the overall employment. On one side the number persons in paid employment in legal entities irrespective of the type of ownership declined by almost one-fifth (from 1,303,000 in 1991 to 1,088,000 in 2003) and on the other side, the number of self-employed almost doubled (from 129,000 in 1991 to 242,000 in 2003).

Another “product” of the declining registered employment that created high unemployment, is the expansion of employment in the informal or shadow economy. Schneider (2004) defines shadow economy as all market-based legal production of goods and services deliberately concealed from the authorities usually in order to avoid the payment of taxes and social contributions. He estimated the size of the Croatian shadow economy to be 35.4% of official GDP in 2002/03. From the Figure 5 we can see that Croatia is constantly having very large estimated shadow economy, along with Bulgaria, Estonia, Latvia and

Romania. Such a large size of shadow economy could be associated to large contribution burden on wages in Croatia, i.e., to large labour costs. Calculating, I have computed the tax wedge of 39% on average Croatian wage, which is not significantly different from the other transition countries but it is still high. To avoid this high labour costs, employers hire workers in shadow economy.

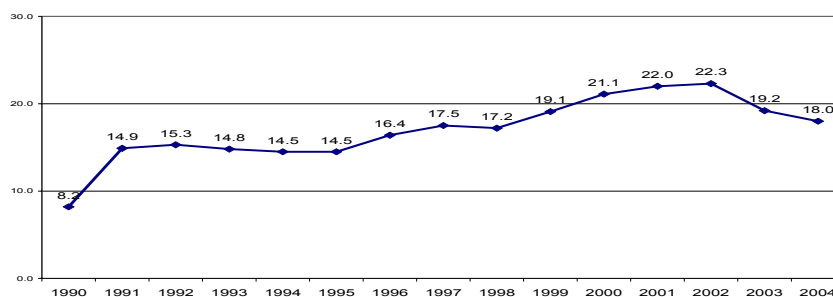


Source: Schneider (2004)

Figure 5. The Size of Shadow Economy in Transition Countries

#### 4. UNEMPLOYMENT

Unemployment is the key issue in the Croatian economy. According to the Croatian Employment Service, the number of unemployed and overall unemployment rate was increasing until 2003 (Figure 6). In the period from 1996 to 2003 registered number of unemployed increased almost by 50% (Table 6). The revival of the economic activity in the second half of 90s (GDP increased by 6% in 1996 and by 6.5% in 1997) was not accompanied by higher employment but on the contrary, employment stagnated and unemployment continued to increase significantly and by the year 2002 registered unemployment rate was 22.3%. Notwithstanding the declining trend in unemployment for the last two years, the unemployment rate is still very high, 18% in 2004.



Source: CES, [www.hzz.hr](http://www.hzz.hr)

Figure 6. Evolution of the Registered Unemployment Rate in Croatia (%)

The restructuring of enterprises caused an accelerating inflow of newly unemployed since reducing the number of employed became necessary for many firms in order to survive in new circumstances of a market economy. This was especially important for privatised firms, which were commonly overstaffed previously. Inflow to registered unemployment was constantly higher than outflow since 1995, though in 2003 this situation changed (Table 6).

Table 6.

#### Inflow and Outflow from Unemployment

	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Unemployment ('000)	266.6	250.8	243.3	240.6	261.0	278.0	288.0	322.0	358.0	380.0	390.0	330.0
	As a percentage of unemployment (%)											
Inflow (newly registered)	66.9	64.1	77.2	73.6	77.9	78.9	76.9	77.4	73.2	73.9	72.1	70.3
Employed	30.0	29.1	35.2	31.5	35.7	36.7	36.0	32.8	33.0	38.8	37.8	44.0
Removed from register	45.3	42.1	41.4	41.4	34.5	35.8	33.6	32.4	29.9	30.8	30.0	40.7
Outflow	75.3	71.3	76.6	73.0	70.2	72.5	71.5	65.2	62.9	69.5	67.8	84.7

Source: Own calculation based on CBS Statistical yearbook 2004

The number of unemployed according Labour Force Survey (LFS) is lower than the registered unemployment and therefore, there is a substantial difference in the unemployment rates from two sources (even to 5% difference). The reason for such a big difference is that it was necessary to register as unemployed in order to be eligible for most social transfers and benefits. Therefore, many people registered as unemployed to receive financial support from the Employment Service. In the first half of 2001, LFS recorded almost 170 thousand people registered at CES who, according to international criteria, were not considered unemployed, mostly because they were not actively looking for a job or they did not accept offered jobs. Even 60 thousand of them stated that they were working what implies their involvement in the informal economy. Reform of the labour

market institutions in the period 2001-2003 meant that the CES register actually was used for social rights administration and not for its primary objective – as an employment agency. After 2003 there were some efforts to divide the administration of social rights from that concerned with benefits related to unemployment status.

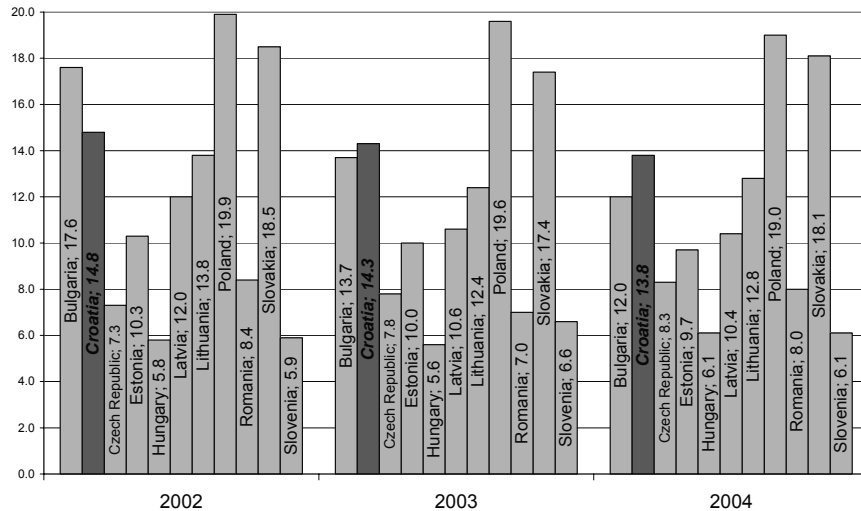
Table 7.

## Unemployment Indicators Comparison of LFS and Employment Register Data

	1996	1997	1998	1999	2000	2001	2002	2003	2004
<b>Registered unemployment</b>									
<b>Unemployment (000)</b>	261	278	288	322	358	380	390	330	310
Male	131	141	139	153	169	177	177	140	129
Female	130	137	149	169	189	203	213	190	181
<b>Unemployment rate (%)</b>	16.4	17.5	17.2	19.1	21.1	22.0	22.3	19.1	18.0
Male	15.6	16.5	15.6	17.2	19.0	19.5	19.3	15.5	-
Female	17.3	18.6	19.0	21.2	23.4	24.7	25.6	23.2	-
<b>Labour Force Survey</b>									
<b>Unemployment (000)</b>	170	175	199.0	234.0	297.5	276.5	266	256	249.5
Male	88	91	100.6	117.5	150.0	132.5	130	128	120.0
Female	82	84	97.5	116.5	147.5	141.5	136	128	129.5
<b>Unemployment rate (%)</b>	10.0	11.2	11.4	13.6	16.1	15.8	14.8	14.3	13.8
Male	9.5	11.1	10.8	12.8	15.0	13.9	13.4	13.1	12.2
Female	10.5	11.3	12.1	14.5	17.3	17.9	16.6	15.7	15.6

Source: LABORSTA; CBS, Statistical reports, various years;

In 2004, Croatian unemployment rate, according to LFS, was 13.8% with only Poland and Slovakia having higher rate of 19% and 18%, respectively. Even though it is almost 15 years since the beginning of transition, the high unemployment rates are still usual in all transitional countries and Croatia, Poland, Slovakia and Bulgaria kept the double-digit unemployment rates (Figure 7) of while Czech Republic, Estonia, Hungary, Romania and Slovenia succeeded in keeping it below 10%. The low rate in Romania is actually very surprising but it can be associated to the agrarian structure of the economy, which is, in turn, connected to the high rates of employment and low unemployment (Biondić et al., 2002).



Source: LABORSTA

Figure 7. Unemployment Rates in Selected Transition Countries (%)

Male and female unemployment rates are diverging as time passes according to both sources. As was the case with participation rates, female unemployment rates are also less stable than male unemployment rates. While in 1996 the difference between gender unemployment rates was one (LFS) to two (CES register) percentage points, in 2003 the difference was much higher – 2.7 (LFS) and 7.7 (CES register) percentage points (Table 7). The female unemployment rate grew faster than male unemployment rate especially according to the CES register. Part of the explanation for such a situation is the fact that women had more incentives than men to register as unemployed (even though inactive) in order to be eligible for maternity leave.

#### 4.1. Long Term Unemployment

Besides the high overall unemployment rate, one of the main characteristics of the Croatian labour market is long-term unemployment (unemployment longer than a year). Long-term unemployment is a particularly delicate problem for society because people who are long-term unemployed are faced with greater probability of poverty. More than half of the unemployed in Croatia (55%) are looking for a job for more than a year and even 40% is unemployed for more than two years. While in 1990 only 10.6% of unemployed were looking for a job more than three years, in 2004 that figure increased to 30% of workers looking for a job for the same time. Although there is a larger share of

long-term unemployment among female unemployed population (58%), the share of 52.2% among males is also considerably high (Table 8).

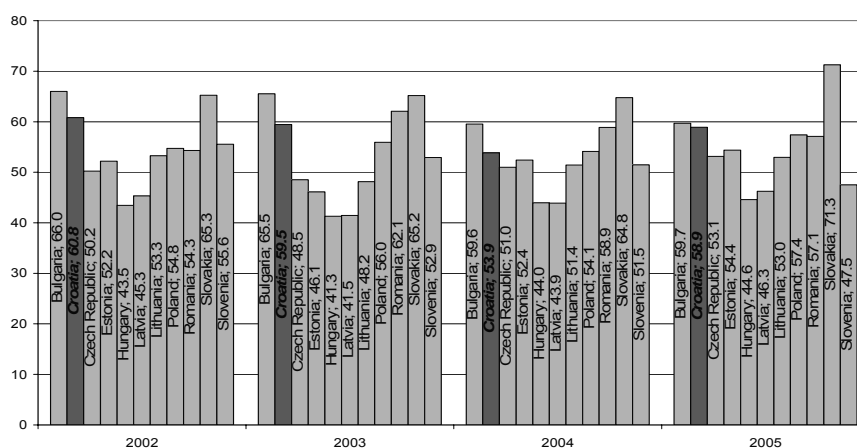
Table 8.

## Long Term Unemployment as a Share of Total Unemployment in Croatia (%)

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Total	34.3	43.9	59.5	59.8	53.8	53.8	51.3	49.0	50.4	50.3	52.5	52.9	59.2	58.1	55.6
Male	28.9	38.3	58.4	57.1	48.7	50.8	49.0	46.5	48.6	47.2	50.0	49.8	56.7	56.2	52.2
Female	38.8	49.2	60.4	61.9	58.5	58.7	53.7	51.5	52.0	53.0	54.7	55.6	61.1	59.5	58.0

Source: CES

The problem of long-term unemployment is not a unique characteristic of the Croatian labour market; it is a problem of all of the transitional countries. There are notably high shares of unemployed workers who are without the job for more than a year all across these countries. According to the Labour Force Survey, Slovakia, Bulgaria and Romania are even having the larger share of long-term unemployed than Croatia (on average, 68%, 60% and 58% respectively). Slovenia is doing better than Croatia, but also with more than a half (51%) unemployed workers looking for a job longer than a year (Figure 8).



Source: EUROSTAT - average of quarterly rates for every year; CBS, Statistical report 2003; Own calculation

Note: For 2005 the average is for the first three quarters of the year;

Figure 8. Long-Term Unemployment as a Share of Total Unemployment in Selected Transition Countries (%)



If we look at the Table 9, we can see that workers older than 50, both males and females, are the most affected by the long-term unemployment. Considerably high share of prime age women are also without the job for more than a year, 63.3%.

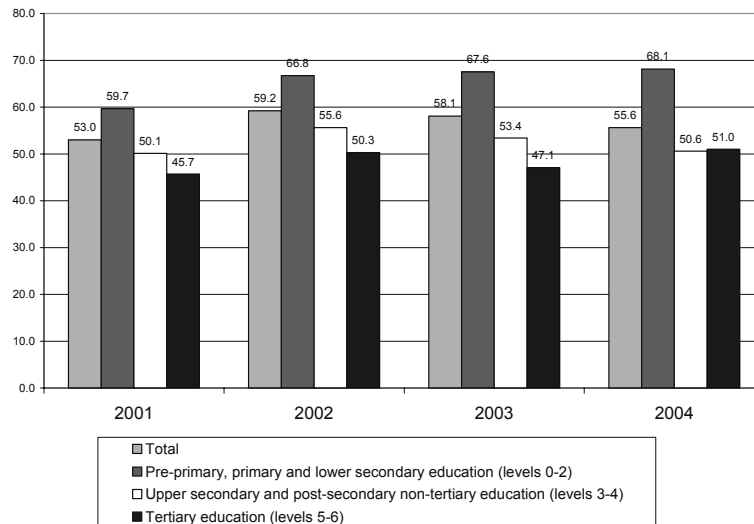
Table 9.

Long-term Unemployment as a Share of Total Unemployment by Age Groups (%)

	Total	Male	Female
15 and over	54.1	50.9	56.8
15-24	39.5	38.6	40.4
25-49	58.7	52.7	63.3
50 and over	65.1	69.4	60.2

*Source: EUROSTAT, second half of 2004*

Long-term unemployment often indicates that there are groups of workers with minimal chance of re-employment. It might be that they are disadvantaged because of their age, as we have already seen that the highest share of long term unemployed is among older workers. Furthermore, they might be disadvantaged due to their skills or educational attainment. Figure 9 suggests that the group of workers with only primary or lower secondary education is the most affected by long-term unemployment comparing to higher education than that. However, shadow economy is considered to be mostly concentrated in those sectors where workers are not required high qualifications (construction or catering) so this figures could be much lower in reality than the register shows.



Source: CES yearbook, various years

Figure 9. Long-term Unemployment by Educational Attainment (%)

Empirical evidence by Micevska<sup>1</sup> (2004) suggests that there is a particularly strong association between the shadow economy and long-term unemployment rate. The effect of the shadow economy in increasing long-term unemployment seems to be twice as high as the effect in increasing overall employment. This result could be due to the tendency of long-term unemployed to engage occasionally in informal activities.

## 4.2 Unemployment by Age Group

Although young people of age 15–24 are having the lowest share of long-term unemployment, in transitional countries they are often the group the most affected by unemployment. High youth unemployment rates often indicate a rigid labour market what is connected to difficulties of dismissing workers and indirectly hiring new workers and creating additional job opportunities. Young people, more and more, decide to prolong their education to avoid the unemployment and job finding process. In 1998, about half of the population between 15 and 24 years of age were in education, while that share had increased to 58% in 2003.

<sup>1</sup> Micevska (2004) used econometric models in order to examine the relationships between labour market institutions and various aspects of unemployment (overall, male, female and long-term unemployment). Data on 37 countries were included in the analysis (24 OECD countries, 6 CEE countries and 7 SEE countries), mostly referring to the end of 1990s.

The unemployment rate tends to decline with higher age range, reaching the lowest level in the 'over 50 years' group (Table 10). If we consider prime age workers in Croatia (aged 25-49), unemployment rate is considerably lower than in the case of 15-24 age group and it amounts 11.5% and for the older workers it is "only" 8%. The same trend is across all the countries with Poland and Slovakia followed by Croatia and Bulgaria having the highest rate of unemployment among prime-age and older workers.

Table 10.

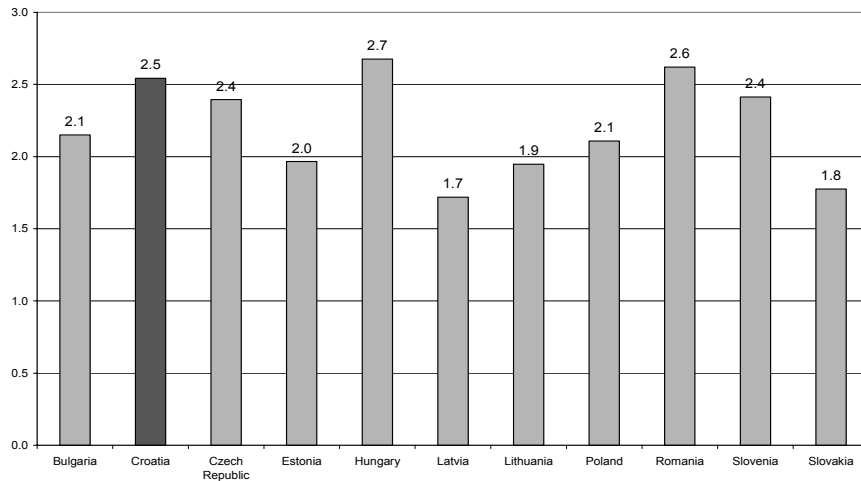
## Unemployment Rates by Age Groups in 2005 (%)

Age group	15-24			25-49			50 and over			Total unemployment rate		
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female
Bulgaria	23.0	24.3	21.5	9.6	9.7	9.5	9.1	9.5	8.7	10.7	11.0	10.3
<i>Croatia</i>	<i>32.8</i>	<i>30.5</i>	<i>36.1</i>	<i>11.5</i>	<i>10.5</i>	<i>12.5</i>	<i>8.0</i>	<i>8.1</i>	<i>7.9</i>	<i>12.9</i>	<i>12.3</i>	<i>13.8</i>
Czech Republic	19.4	20.5	17.9	7.3	5.5	9.5	6.4	5.3	7.8	8.1	6.9	9.7
Estonia	17.3	18.8	16.7	8.1	9.2	7.1	7.0	9.5	7.1	8.8	10.5	7.2
Hungary	19.0	20.2	17.4	6.6	6.1	7.1	4.5	4.4	4.6	7.1	7.0	7.3
Latvia	16.5	15.4	17.8	8.5	8.3	8.8	9.0	10.2	7.8	9.6	9.7	9.5
Lithuania	18.3	17.8	18.9	8.5	8.6	8.5	8.9	8.3	9.4	9.4	9.4	9.4
Poland	39.0	37.6	40.9	16.3	15.0	17.6	13.4	13.4	13.3	18.5	17.6	19.6
Romania	20.7	22.1	18.9	7.5	7.8	7.1	3.1	3.8	2.4	7.9	8.4	7.2
Slovenia	15.2	12.8	18.4	5.7	5.0	6.5	3.7	4.5	2.6	6.3	5.7	6.9
Slovakia	30.0	31.3	28.2	15.4	14.5	16.6	14.2	13.7	15.0	16.9	16.4	17.7

*Source: EUROSTAT, average of quarter unemployment rates in a first half of 2005*

Considering youth unemployment, in Croatia almost one-third of young people (aged 15 to 24) are unemployed - 32.8%. The only country where situation is even worse is Poland where 39% of young people are jobless. Somewhat similar situation as in Croatia is in Slovakia with 30% of youth unemployment rate, following Bulgaria 27% and Romania 21.9%. Slovenia and Latvia have the lowest youth unemployment rates among the group but still very high (15.2% and 16.5% respectively). From the Table 10 we can see that female youth unemployment in Croatia is the second highest among the selected countries, 36% of active female population between 15 to 24 years of age is unemployed. High youth unemployment often indicates that there are some barriers to the entry in to the employment.

As we have already seen, youth unemployment is in all of the selected countries higher than the national average and Figure 10 presents the relationship between those two values. Youth to total unemployment rate ratio is the highest in Hungary, followed by Romania where the youth unemployment rates are almost three times larger than average national rates. This implies very low levels of unemployment in other age groups in these countries. The countries with otherwise the highest rates of unemployment are having this ratio lower, so Croatian youth unemployment exceeds average 2.5 times. The lower value of this ratio implies somewhat higher unemployment rates among other age groups.



*Source: Own calculation based on EUROSTAT data*

Figure 10. Youth Unemployment Rate to Total Unemployment Rate in 2005

## 5. THE EDUCATIONAL STRUCTURE OF EMPLOYMENT AND UNEMPLOYMENT

In the whole period after 1980, there have been improvements in the educational structure of employment in Croatia, which comes because of employing young educated people but also because of the further education and training of already employed people. Bejaković (2003) analysed the structure of employment in the period from 1981 to 1996. In the relatively short-term period of fifteen years, the structure of employed improved significantly. In 1981 almost one-fifth of employed was without even primary level education and another fifth had only primary school – all together about 40%. The situation changed by 1996, where the workers with pre-primary and primary level of education were making about 30% of employment and that decreasing trend continued and whereas in 2004 there was only 22% of those workers in employment. The share of workers with high school education, which was less than 50% at the beginning of 80s, increased over the years and in 2004 they are making the majority of the employed, almost 60% (Table 11). A significant increase is in the share of workers with tertiary education (university diploma, Msc diploma or PhD). In 1981 they were making about 12% of employed workers and in 2004 more than 18%. From the gender perspective, we can see that among female employment there is larger share of women with high level of education and larger share of primary educated women than is the case among men.

Table 11.

## The Structure of Employment in 2004

	Total		Male		Female	
	000	%	000	%	000	%
Total	1542	100	854	100	689	100
Pre-primary, primary and lower secondary education - levels 0-2	340	22.0	169	19.8	171	24.8
Upper secondary and post-secondary non-tertiary education - levels 3-4	918	59.5	546	63.9	373	54.1
Tertiary education - levels 5-6	284	18.4	139	16.3	145	21

Source: EUROSTAT, second half of 2004

According to Employment Service (Table 12) in 2003, 15% of the vacancies reported were requiring university degree and 5% non-university college degree. In three years selected, needs for workers with so high education, expressed in vacancies reported, and vacancies requiring university (or higher) diploma filled were constantly rising. Based on the current evolution and reported needs for workers we can expect further improvements in educational structure in employment.

Table 12.

## Vacancies

	2001		2002		2003	
	000	%	000	%	000	%
<b>Vacancies reported</b>						
Total	202.98	100	174.15	100	130.45	100
Pre-primary, primary and lower secondary education - levels 0-2	66.23	32.6	52.84	30.3	37.66	28.9
Upper secondary - levels 3-4	106.09	52.3	92.47	53.1	66.24	50.8
Tertiary education - levels 5-6	30.66	15.1	28.84	16.6	26.55	20.3
<b>Vacancies filled (000)</b>						
Total	169.61		150.62		139.59	
Pre-primary, primary and lower secondary education - levels 0-2	39.75		33.6		29.08	
Upper secondary - levels 3-4	104.00		91.99		86.57	
Tertiary education - levels 5-6	25.85		24.96		23.94	
<b>Vacancies filled as a share of vacancies reported (%)</b>						
Total	83.6		86.5		107.0	
Pre-primary, primary and lower secondary education - levels 0-2	60.0		63.6		77.2	
Upper secondary - levels 3-4	98.0		99.5		130.7	
Tertiary education - levels 5-6	84.3		86.5		90.2	

Source: CES, Yearbook, various years

Comparing Croatia to the other countries (Table 13), we can see that the share of workers with low educational level in employment is one of the highest, only Romania has higher. Another characteristic arising is that, along Romania,

Croatia is country that has low share of tertiary education in the employment, even lower than primary education.

Table 13.

## Educational Structure of Employment, 2004

	Bulgaria		Croatia		Hungary		Romania		Slovenia		Slovakia	
	'000	%	'000	%	'000	%	'000	%	'000	%	'000	%
Total	2912	100	1542	100	3909	100	9032	100	938	100	2198	100
Pre-primary, primary and lower secondary education (levels 0-2)	527	18.1	340	22.0	557	14.2	2378	26.3	155	16.5	107	4.9
Upper secondary and post-secondary non-tertiary education (levels 3-4)	1617	55.5	918	59.5	2528	64.7	5539	61.3	566	62.5	1754	79.8
Tertiary education (levels 5-6)	768	26.4	284	18.4	824	21.1	1114	12.3	197	21	337	15.3

Source: EUROSTAT, last quarter 2004

If we now consider unemployment and its structure, we can see that the situation is almost the same in both cases of male and female population (Table 14). The highest share of unemployed is having high school education, followed by the workers with pre-primary and primary school. Finally, the lowest share in unemployment is that of the highly educated workers. The level of education is very important determinant in the process of finding a job. According to the Croatian Employment Service register, workers with university degree were leading in employment process during 2004 with the accession rate of 38.5%. They were followed by the workers with college non-university degree (35.7%) while the lowest job-finding rate was for the workers with primary school only (18.3%) and for workers without any school at all (8.8%).

Table 14.

## Educational Structure of Unemployment, 2004

	Total		Male		Female	
	'000	%	'000	%	'000	%
Total	309.875	100	129.028	100	180.847	100
Pre-primary, primary and lower secondary education (levels 0-2)	91.99	29.7	38.267	29.7	53.703	29.7
Upper secondary and post-secondary non-tertiary education (levels 3-4)	197.385	63.7	82.976	64.3	114.409	63.3
Tertiary education (levels 5-6)	20.5	6.6	7.765	6.0	12.735	7.0

Source: CES

We have seen that the share of workers with tertiary education is the lowest in overall unemployment. Moreover, unemployment rates are also low –from the Table 15 we can see that unemployment rates were consistently lower for workers

with university or even higher-level diplomas, they were constantly below 10%. On the other hand, unemployment rates for workers with lower educational levels than that reached double-digits and in 2003 they were almost 17%.

Table 15.

## Unemployment Rates by Educational Attainment

	1998	1999	2000	2001	2002	2003
Pre-primary, primary and lower secondary education - levels 0-2	12.3	12.2	18.7	16.2	16.6	16.9
Upper secondary and post-secondary non-tertiary education - levels 3-4	13.5	15.0	19.3	18.4	17.4	16.7
Tertiary education - levels 5-6	5.2	8.4	11.3	7.6	9.4	8.4

Source: CBS, Statistical reports – LFS, various years

## CONCLUSION

After analysing the Croatian labour market, we have seen that during the last fifteen years since the independence of Croatia and the beginning of transition, it has not been performing well and the situation is not changing still. Participation rates are very low in Croatia, only 50.5% of people over 15 years of age are active. Participation has been decreasing and our calculations using Blanchard's adjustment ratio of 0.38 suggest that the most of the adjustment process during the transition period 1990-1997, while employment was decreasing, was through lower participation rather than higher unemployment. This implies that, while employment was decreasing, the majority of those who left employment transferred to inactivity (often encouraged by early retirement benefits) rather than becoming unemployed. On the other hand, while formal employment declined, the informal economy in Croatia grew to account for approximately a third of the official GDP, which is amongst the highest shares in transition countries. Furthermore, this decrease in employment rates, indicates that only 43.5% of population older than 15 is actually employed. At the same time unemployment rate increased to 18% according to CES or 13.8% according to LFS what is in either case very high and among the highest in transition countries. An especially large part of unemployed is unemployed for more than a year: one out of two unemployed is long-term unemployed. Another pronounced problem is high youth unemployment with one-third of those young people willing and available for work currently unemployed. We have to bear in mind that even though the unemployment rates are high this might not be the realistic situation considering widespread and large shadow economy.

Comparing the labour markets of Croatia to the other countries in the Central and Eastern Europe, which also went through transition, indicators suggest that the situation is more severe in Croatia than in most other Central and Eastern European countries. The problem in Croatia is low job creation; lower than in other countries, what results in low levels of job opportunities what especially affects the new enterers in the labour market. The war and the crisis afterwards contributed to the worse performance of the labour than it would have otherwise been. However, that is only the small part of the explanation for the labour market stagnation.

Overall, indicators show the bad labour market performance in Croatia. Although they are not exceeding the range in which other transition countries' indicators are, that does not mean that unemployment is not a serious social and political problem. For example, unemployed and especially long-term unemployed are the group of people exposed to the increased risk of poverty what again affects the overall standard in the country. Therefore, decreasing unemployment and improving labour market performance should be a priority of policy makers in Croatia.

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## **KRETANJA NA TRŽIŠTU RADA U HRVATSKOJ**

### ***Sažetak***

*U ovom će se radu analizirati glavne karakteristike hrvatskog tržišta rada – zaposlenost, stope participacije, nezaposlenost te njena struktura. Usporedit će se hrvatski pokazatelji s pokazateljima zemalja srednje i istočne Europe. Iako pokazatelji nezaposlenosti ne premašuju opseg pokazatelja drugih tranzicijskih zemalja, hrvatski su znatno viši od prosjeka. Tranzicijski proces u kombinaciji s ratom uzrokovao je veliku recesiju u Hrvatskoj, a kao posljedica, zaposlenost se smanjila te djelomično preinačila u neaktivnost, a djelomično u nezaposlenost. U ovom radu koristit će se Blanchardov omjer prilagodbe kako bi se ispitalo koji je bio primarni oblik transformacije, neaktivnost ili nezaposlenost. Ni petnaest godina nakon početka tranzicije hrvatsko tržište rada još nije uspješno; opterećeno je s niskom stopom zaposlenosti te isto vrijeme s visokom stopom nezaposlenosti. Pokazatelji obrazovne strukture zaposlenosti i nezaposlenosti pokazat će nam postoji li veza između obrazovanja i pronalaženja posla.*

***Ključne riječi: hrvatsko tržište rada, Blanchardov omjer prilagodbe, nezaposlenost***

***JEL klasifikacija: J21***

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## **THE EU AIR TRANSPORT SECTOR IN THE POST 9/11 ERA**

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### ***Summary***

*The terrorist attacks of 11 September, 2001 in New York have been putting the air transport sector in de world and the European Union in a deep crisis.*

*The deregulation of the EU air transport market was already fully accomplished before the tragic events of 9/11. The policy was based on free fare setting and market access, on a fair competitive environment and on common licensing rules for air carriers. In order to eliminate any other unfair cross border competition in the EU air transport sector, complementary actions were adopted by the EU in the post 9/11 era.*

*Only a minority of these actions were a direct response to the new security problems.*

*In the meantime the EU demonstrated the ambition to consolidate its air transport policy with many third countries by expanding the European Common Aviation Area.*

*The Croatian government participates in this project.*

*Most business players in the EU air transport market continued the same strategies in the post 9/11 era as they used before, although sometimes in varying degrees of frequency and intensity. High emphasis was put on more efficiency and cost cutting. Typical strategies are membership of alliances, outsourcing non core activities or the focus on niche markets, such as cargo, low-cost and regional operations, leisure and executive business air transport.*

*In case of future EU membership, Croatia has to adopt the complete legislation – called *acquis communautaire* - in the field of EU air transport. Problems are not*

*expected because Croatia is already aligned as a member of the European Common Aviation Area. On the business side can be observed that Croatia Airlines is part of the EU air transport network via membership of the Star alliance and other code share agreements.*

*Croatian domestic and international air routes are very suitable for low-cost and regional operations. A lot of competition in this field can be expected from foreign carriers.*

***Key words: deregulation, acquis communautaire, alliances, outsourcing, niche markets***

## INTRODUCTION

It is a challenging world for the air transport sector. The 9/11 terrorist actions caused a shockwave in the landscape of commercial air transport. Many airline companies decreased capacity, thousands of airline employees in the US and Europe lost their jobs, and air carriers got into trouble. Bankruptcies happened in Europe in the case of Sabena and Swissair and other companies are still struggling, like Alitalia and Olympic. The situation is not really better in the US, where nearly fifty percent of all available seat km (ASK) actually are supplied under chapter 11 protection, which is the last stage before bankruptcy.

The good news is that at the same time the emerging economies of Asia are enjoying a spectacular growth of the airline sector. Even in Europe some airline companies have been performing very well since 11 September, 2001. Some have been clustering together in successful alliances like Star, Oneworld, Skyteam. Other players focused successfully on niche markets such as the low cost segment of the market, the regional and leisure carriers, cargo operators, and executive transport. Most companies involved in the supply chain were performing financially better than the airlines (Doganis, p. 6). A lot of airports and airport groups are in good shape, and the same applies for the global catering and handling companies.

Within this turmoil of highly contrasting events the EU is continuously pushing ahead its liberalized air transport policy which tends to expand vertically and horizontally. The vertical dimension refers to the numerous actions that are adopted by the EU to deepen the liberalization process. This increases the complexity of the *acquis communautaire* which makes adaptation by new member states a real challenge. The horizontal dimension is the result of the increasing geographical area that is covered by the EU air transport policy. This European Common Aviation Area (ECAA) steadily opens up more markets but makes competition harder.

As such the liberal EU framework severely limits protectionism and state aid, and requires a high level of managerial efficiency for air carriers to adapt and to survive.

This article will provide a brief overview of the *acquis communautaire* of the EU air transport policy. Most of the focus will be on the deregulation and the achievements after 9/11, and on the business response of the major players in the EU air transport market. Considering future EU-membership of Croatia, the Croatian government and Civil Aviation Authority will eventually have to cope with all necessary adjustments. Consequently Croatian Airlines, airports, and other players in the air transport market will face a huge competitive challenge.

## **1. THE INTERNATIONAL INSTITUTIONAL FRAMEWORK**

The EU aviation policy does not constitute the highest level of the regulatory environment. The primary authority at world level is the International Civil Aviation Organization (ICAO), created in December 1944 by the Convention of Chicago and having its headquarters in Montreal. Worldwide principles have been agreed, such as the sovereignty of airspace, the practice of recommendations, the setting of international standards with respect to safety, environment, etc. Croatia and the majority of countries in the world are established members of ICAO and subscribe as well most other important international conventions, like for instance the Convention of Montreal dealing with the liability of air carriers towards passengers and their luggage.

Within Europe \* the leading specialized organizations are the European Civil Aviation Conference (ECAC), the Joint Aviation Authorities (JAA), and Eurocontrol.

All these worldwide and European organizations and conventions are limited to intergovernmental cooperation only, which means that enforcement is not possible.

While the above mentioned organizations and conventions strictly involve governments and civil aviation authorities, a variety of private organizations and pressure groups constitute an important complementary framework at the business level of the air transport sector. The major air carriers worldwide are grouped in the International Air Transport Association (IATA) and in the Association of European Airlines (AEA Yearbook 2005, p.53) in Europe. The interests of the regional carriers in geographical Europe are represented by the European Regions Airline Association (ERA) and the Airports Council International (ACI) consists of the membership of international and regional airports.

This listing is not exhaustive but illustrates the high level of institutional complexity at the international and European scenery.

## **2. THE EU AIR TRANSPORT POLICY**

The most challenging dimension is undoubtedly the EU air transport policy. The policy as such is rather new, and did not really exist before 1985. In the Treaty of Rome (1957) the transport policy in the European Community (EC\*\*) was limited to transport via road, rail and the inland waterways. Maritime and air transport were initially not included. Consequently air transport policy in the member states of the EEC was on a voluntary basis relying on the global and European framework. Company interests were protected by their own national governments and the agenda's of the business and pressure groups.

The air transport sector in the world and in the EEC was consequently based on a highly regulated market. It was dominated by bilateral agreements between governments about capacity, routes and destinations. It was common practice to restrict the number of airline companies allowed to operate in the domestic and international air transport markets. Indeed, this privilege was in most cases limited to the national flag carrier under the so called single designation principle.

Fair competition did not exist under such a bilateral system and was responsible for a lot of inefficiencies and high fares for passengers. Parallel restrictive strategies were implemented by IATA that behaved as a global cartel, fixing prices and capacity between member air carriers.

### **2.1. EU Deregulation**

This anticompetitive situation was reversed for the first time in the world in 1978 by the American Airline Deregulation Act. The EC followed in 1985 by allowing EC antitrust rules to be used in the airline sector. Three packages of airline deregulation enacted by the Community were introduced by appropriate Regulations in 1988, 1990 and 1993. Regulations can be considered as pure EU laws and are automatically applicable in the member states without prior incorporation in national law.

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\* Europe in this article refers to geographical Europe in contrast to the European Union (EU)

\*\* EC (European Community) changed into EU (European Union) since 1992

### **2.1.1. Free pricing**

Free pricing in the air transport sector is one of the main achievements of the deregulation process in the EU. This policy made it possible for an entire new type of air carrier to emerge. Based on the Southwest experience in the US, several low-cost (no-frills) airlines have been entering the EU aviation market and are performing very well (Lawton, p. 35 – 36).

They are represented in Europe by the European Low Fares Airline Association (ELFAA).

By applying efficient managerial techniques, these carriers are able to reduce the average cost per seat/km by up to 59% compared to that of a traditional carrier (Doganis, p.150).

As these low-cost carriers do not offer a business class, they are able to fit more seats in the same aircraft, delivering an average cost reduction per seat/km of 16%.

By using less busy airports (like London Stansted instead of London Heathrow; Frankfurt Hahn instead of Frankfurt Main, etc.) less time is lost between arrival and re-departure which creates a higher degree of utilization of the aircraft and a cost reduction of 3% per seat/km. Another 6% cost reduction is possible due to the lower user fees at these airports. Cost reductions of 3% are possible by lower labor costs and 2% can be saved by flying the same type of aircraft and outsourcing maintenance.

Because only an absolute minimum of staff is provided at departure and arrival airports and because of the outsourcing of handling services, cost reductions of up to 10% are possible. Another 6% can be economized by the absence of free on board catering, 8% by a direct booking system avoiding travel agents commissions, 3% by simplifying ticketing procedures and 2% by lowering administrative overhead costs.

### **2.1.2. Free market access**

Deregulation packages gradually liberalized market access conditions. Since April 1997 cabotage has been allowed in the EU.

Free market access in general has brought with it a hard time for many inefficient flag carriers. A number of them were state-owned and habitually made up their losses by availing of tax money. It became apparent very soon that some airline companies could cope with the new deregulated reality, while other carriers could not escape from their corporate culture of staying afloat by subsidies. It became a fact of life in the EU that privatization in the airline sector became one of the vital instruments to make the airlines strong enough to survive the jungle of competition and instability after 11 September.

There is however no legal obligation for privatization – neither for Croatia Airlines - , and there are cases of state owned carriers (like TAP in Portugal) that perform financially very well.

Capital injections by governments in state owned airlines should comply with the *market investor* principle to avoid unfair competition with private carriers (ICAO, Government intervention in air transport in the European Union, p. 2).

Further, state subsidies in the EU to airline companies have become very restricted and even impossible. However article 87 of the Treaty of Nice still accepts strict exceptions for regional and sector aid .The Commission can allow state aid in case of public air service obligations and to overcome financial difficulties due to an unexpected crisis (ICAO, Government intervention in air transport in the European Union, p. 2 -3). After 9/11 EU governments were allowed to provide temporary subsidies to air carriers to overcome the sudden increase of the war-risk insurance premiums.

Air carriers that are in a restructuring stage and that can deliver a good business plan can be allowed to get state aid on a *one time last time* basis (ICAO, European experience of air transport liberalization, p. 4). This type of aid is conditional and air carriers can be forced by the Commission to refund the state aid if conditions are not met. A recent case is that of Olympic Airways which will have to pay back illegal state aid to the Greek government (Commission, IP/06/531).

There is a high potential that some regional airports and air carriers in new member states could make temporary use of these exceptions. In case of future membership, the Croatian air transport sector could be eligible for similar exceptions.

### **2.1.3. Fair antitrust environment**

The EU antitrust policy – frequently called competition policy – aims to maintain fair cross-border competition between companies in the EU. Pure domestic distortion of competition still falls under the application of national competition authorities. As air transport in the EU is frequently a cross-border activity, EU competition policy is applicable in most cases.

Article 81 in the treaties (Art. 85 before the Treaty of Amsterdam) puts rules and restrictions on agreements between companies: “*The following shall be prohibited as incompatible with the common market: all agreements between undertakings, decisions by associations of undertakings and concerted practices which may affect trade between Member States and which have as their object of effect the prevention, restriction or distortion of competition within the common market,...*”



A lot of cooperative agreements between air carriers over the years have been the subject of investigations of the EU Commission (Corduant and van de Wouwer, p.98).

But even when some of these agreements cause negative cross border impacts on competition, the Commission can authorize such agreements when the positive impact – for instance on the passengers – compensates for the negative impact on competition.

Many predetermined authorizations – the so-called block exemptions – have been granted to the airline sector as part of the three deregulation packages. Examples are agreements on schedule coordination, tariff consultations, slot allocation agreements at airports, common computer reservation systems.

In some cases such as alliances, far reaching cooperative agreements, code-sharing, etc., the Commission can open a specific investigation resulting in a positive or negative conclusion, and fines can be imposed in case of violations. The attitude of the Commission in the majority of the cases is not very prohibitive as most agreements such as alliances and vertical integration with regional carriers are authorized.

In case of dominant positions, Article 82 (Art. 86 before the Treaty of Amsterdam) applies: *“Any abuse by one or more undertakings of a dominant position within the common market or in a substantial part of it shall be prohibited as incompatible with the common market in so far as it may affect trade between Member States...”*

In a very recent case, British Airways got subject to a complaint from Virgin Atlantic which resulted in a fine of 6.8 million EUR imposed by the EU (European Court of Justice, Case C-95/04 P).

BA abused its dominant position in its relation with air travel agencies in the UK, with the intention to push competitors – such as Virgin Atlantic – out of the market.

Dominant positions that are the result of mergers, even when no abuses occur, are regulated by the Council Regulation 4064/89 recently amended by Regulation 139/2004.

Mergers that exceed certain thresholds and with a Community dimension should be notified to the Commission and get prior approval, as happened for instance in 2004 in the case of the KLM/Air France merger.

#### 2.1.4. Common licensing rules of air carriers

As the result of the third deregulation package, full freedom to start an airline has become possible since 1992. Based on Regulation 240/92, all civil aviation authorities of the EU countries should give equal treatment to companies applying to get licensed as a Community air carrier. One of the necessary requirements is Community ownership, and a solid business plan providing for financially sound operations in the future.

An air carrier's operating license can only be granted and remain valid if the company is in possession of a valid Air Operators' Certificate (AOC).

The civil aviation authorities will deliver an AOC when the operator demonstrates the professional and technical ability and organization to run the safe operation of aircraft.

Within the EU, the deregulation of the licensing of air carriers has stimulated the emergence of low-cost carriers, regional airlines and other newcomers.

#### 2.1.5. Comments

The deregulation constitutes the fundamental framework of the EU air transport policy and it was fully established at the start of the 9/11 era. It constitutes the basic *acquis communautaire* which by all actual and new member states should be adopted.

The EU air transport policy moves steadily in the direction of a common policy, leaving less national degrees of freedom to rely on the *subsidiarity* principle (Assess, p. 17 – 18).

There is a strong political belief in the world and in the EU that deregulation is the only way towards the development and the survival of the air transport market.

Politicians however overlook some critical questions that are raised in theoretical discussions about the long term market stability. This debate is typical for sectors with high fixed costs and as such could be applicable to the air transport sector. A deregulated air transport market with too many players could end up in a situation where nobody is able to survive

Symptoms could be the low historical and actual profit margins of the air transport sector, the many cases of bankruptcy protection in the US, commercial failures and bankruptcies.

In the maturity stage, even the no frills carriers eventually can be expected to become subject to the same problem.

A brief overview of this theoretical issue can be found in Button (Air transport networks, p. 169 – 189).

## 2.2. Complementary *acquis communautaire*

Unfair cross border competition in the EU air transport sector still could be possible if member states were allowed to implement pure national actions in complementary fields such as safety, security, air traffic control, congestion and environment, passenger rights, insurance, and other.

This explains why the EU has been complementing the packages of deregulation with numerous additional Regulations and Directives ([www.europa.eu](http://www.europa.eu)).

In contrast to Regulations, Directives constitute less intense legislation. They impose a particular goal but allow some levels of freedom about the specific way of implementation. They only can be enforced in a member state after prior incorporation in national law.

Many of these complementary actions have been introduced after 2000, especially those dealing with the new challenges of security of the 9/11 era.

The complementary *acquis communautaire* affects not only the governments of the actual and new member states, but as well air carriers, airports and air traffic management.

The EU continues its project of the European Common Aviation Area (Commission, COM/2004/74 final, p. 5 – 6 and COM/2005/79 final, p. 8). The full implementation of the ECAA is expected by 2010, and will integrate the EU aviation markets with those of the states at the south and the east of the common borderline. As Croatia participates in the ECAA it is as such already fully aligned with EU air transport policy (Commission, IP/06/582). Future EU membership will make Croatia an integrated part as well of the Open Skies Agreements which the EU tries to sign with major other countries in the world. The only limitation is that existing and

new bilateral air agreements of Croatia will have to be or become fully compatible with EU Regulation 847/2004.

Furthermore Regulation 437/2003 and 1358/2003 make full cooperation of member states mandatory in providing statistical air transport data about passengers, cargo and mail.

Most other actions rely on particular Directives, dealing with issues such as air safety in Directives 2003/42, 94/56 and 2004/36, the mutual acceptance of licenses for cockpit and cabin crew in Directive 91/670, etc.

The impact of the national civil aviation authorities will diminish in the future as the European Air Safety Agency (EASA) will take over a lot of responsibilities in the field of aviation safety and airworthiness requirements.

The *acquis communautaire* for airline companies consists of the three packages of deregulation and several other Regulations about mandatory insurance, computer reservation systems, denied-boarding compensation, technical

requirements and administrative procedures. Steadily new proposals are initiated by the Commission, such as procedures for informing passengers about the carrier's identity, revised limits on maximum duty time for cockpit and cabin crew, etc.

Airports are affected by Directive 2002/30 about noise abatement, Directive 96/67 sets the principles for ground handling at airports, and new legislation is expected to deal with excessive user fees that are charged on some EU airports (Pilling, "Campaign trail", p. 51 – 52).

Airports and air carriers both are subject to the slot Regulation 793/2004 and rules are in the pipeline for travelers with reduced mobility.

Civil aviation security has become a high priority since 9/11 and this clears the ground for the strict common rules on security control to be followed by EU airports and governments.

It is the ambition of the EU to create a Single European Sky in order to increase airspace capacity and to reduce congestion and delays. The Commission has become very active in this field since 2004, by publishing a series of important Regulations.

### **3. STRATEGIES IN THE AIR TRANSPORT SECTOR**

The demand for air transport is indirect and depends primarily on global economic activity (Doganis, 2001). Consequently international air transport is a highly volatile business, expanding when the economy is booming and declining in periods of economic recession (OACI, p. 81). Variables such as high fuel prices and environmental constraints can cause a deeper and more intensive recession in the air transport market.

Most analysts of ICAO, Airbus, Boeing, and other, expect for the middle term a continuous world wide growth in the air transport sector. According to the IATA forecasts up to 2009, international passenger traffic growth is expected to increase by 5.6 % per year and even by 6.3 % for freight (IATA, Passenger and freight forecast until 2009).

The model used by Eurocontrol forecasts in Europe for the period 2006 - 2009 an average annual traffic growth of 3.7 %, ranging under extreme assumptions between minimum 2.4 % and 5.3 % (Eurocontrol, p. 2).

The air transport business generates many positive feed back effects on the economy.

The impact on European jobs was estimated to range in 2004 between 4.1 million jobs to 7.5 million with all spin-off effects included, realizing an added value between \$ 274 billion up to 1,041.7 billion (ATAG, p. 25). Regional economic

activities, such as tourism in Croatia, can get extra stimuli by more inbound tourist passengers (ACI Europe, p. 41 – 45).

The area which is most vulnerable to business cycles is the middle segment of the passenger air travel market. It involves the typical tourist-class passengers with higher elasticity of price and income. This market segment can be served very well by the typical low-cost carriers and this is why most of these operators see their businesses booming in periods of recession. On the other hand, the *high price low number* business travelers are of premium importance for most airline companies. Special actions such as *frequent flyer* programs try to seduce the business traveler (Shaw, p. 206 – 214).

Moreover, during economic recessions, a switch from business to tourist class can be observed.

Of crucial importance for airline companies is to keep the yield/cost ratio larger than unity. One of the necessary – although not sufficient – key variables is a high load factor. When load factors are structurally declining, overcapacity becomes a major problem (Morrell, p. 8 – 10).

In the volatile context of the air transport market, carriers inevitably have to demonstrate sufficient flexibility to adapt their capacity to the cyclical evolution of demand.

Success and survival of a carrier will depend primarily on the speed and the intensity of these capacity adjustments.

Fast capacity adjustments are even more important to deal with unexpected external shocks, such as 9/11, the outbreak of SARS, the war in Iraq.

Many carriers traditionally are reluctant to reduce capacity, primarily because this will inevitably cause layoffs and create problems with the labor unions. Although there was already an overcapacity problem before the tragic events of 9/11, only a few airline companies at that time were willing to react appropriately (Airline industry grounded again, p.61 – 62). Major downsizings, however, occurred worldwide after 11 September 2001. In many cases, these were rather late adjustments to the slowing economy and 11 September was just used as the more socially acceptable justification. It was in some respects the excuse that came at the right time.

As less capacity is needed, routes have to be cancelled, flight frequencies reduced, and aircraft have to be taken out of service. After 9/11 over two thousand big commercial jets were parked in the deserts of Arizona and California, just waiting for better times to come, and this number was double that of the period immediately before the terrorist attacks (Kingsley-Jones, p. 36 – 38).

Airline companies using flexible leasing contracts can enjoy a competitive advantage over carriers using fully-owned aircraft (Morrell, p. 197 - 212).

Another solution to cut capacity consists in using smaller aircraft (Shifrin, p. 12) which can explain the increasing importance of the regional carriers in the US and the EU.

Flexible-capacity management can be enhanced by implementing code-share agreements with other airline companies. In this case, seats on the same flight can be offered and sold under a double flight number. Frequent use of this system is made by the major airline alliances.

### 3.1. Airline alliances

The strategies of many European air carriers are based on membership of one of the major alliances. Depending on the airline company, objectives of alliance membership could be market-defensive, market offensive and efficiency-seeking (Kleymann, p. 35 – 45).

The most intensive type of cooperation is code-sharing and schedule coordination, followed by frequent flyer programs and lounge sharing, co-operation about broader marketing and technical matters.

The STAR alliance has been for a number of years the market leader, realizing on average 26 % of worldwide airline revenues.

Croatia Airlines is a regional member of the Star Alliance since 15 December 2004 ([www.croatiaairlines.hr](http://www.croatiaairlines.hr)), enjoying since then access to the worldwide Star network.

Connections to this huge network are a real must for a small carrier as Croatia Airlines which was in 2004 in position 220 in the world airline rankings based on revenue passenger/km (The Airline Rankings, p. 79).

Table 1.

STAR alliance members

Carriers	Revenue in \$ million (2004)
Adria Airways	165
Air Canada	6,858
Air New Zealand	2,196
All Nippon Airways	12,043
Asiana	2,628
Austrian Airlines	2,940

Blue1	178
bmi	1,520
<b>Croatia Airlines</b>	<b>226</b>
LOT-Polish Airlines	802
Lufthansa	21,101
SAS	7,921
Singapore Airlines	7,334
Spanair	1,084
TAP Air Porugal	1,618
Thai Airways	3,791
United Airlines	16,391
US Airways	7,117
Varig	2,600

*Source: Field, p. 46*

The second most important player is SKYTEAM, with a 19.6 % share in the world market. Its members are Aeromexico, Air France-KLM, Alitalia, Continental Airlines, CSA Czech Airlines, Delta Airlines, Korean Air, Northwest Airlines, Air Europa, China Southern, Copa Airlines, Kenya Airways, Tarom.

ONEWORLD is the third major group, with 14.5 % share in world wide revenue.

Members are Air Lingus, American Airlines, British Airways, Cathay Pacific, Finnair, Iberia Airlines, Lan, Qantas Airways, Malev.

Croatia Airlines has been signing as well individual cooperation agreements with some airline companies outside the Star alliance. In this way Croatia Airlines is able to offer flights to the most important hubs in the EU, such as Amsterdam, Brussels, Frankfurt, London, Munich, Paris, Rome, Vienna, Zurich (World Airline Directory, p. 46).

An important advantage of the economic power of the airline alliances is the pressure they can put on the hubs and the major airports they are using. Strong bargaining power is necessary to get a good location at the airport for gates, in check facilities, hangars for maintenance and cargo handling, etc. Last but not least, the market power of airports tends to increase because they follow the movement towards globalization by setting up alliances as well. So far the financial results are very good taking into account that profit margins are in the double digit area.

Table 2.

## Key data of the leading European airport alliances (2004)

<b><u>Airport Group</u></b>	<b><u>Revenue (\$ million)</u></b>	<b><u>Operating margin</u></b>
<b>BAA:</b> London Gatwick, Heathrow, Stansted, Southampton, Aberdeen-Dyce, Edinburgh, Glasgow	3,902.6	31.8 %
<b>AENA:</b> Madrid, Barcelona; 3 airports in Colombia (Cartagena, Barranquilla, Cali); 12 Mexican airports including Guadalajara	2,615.5	11.9 %
<b>FRAPORT AG:</b> Frankfurt Main, Lima Jorge Chavez International, Antalya (Turkey), Portway Handling de Portugal, Hanover, Brisbane Airport, Frankfurt Hahn	2,541.9	13.8 %
<b>AEROPORTS DE PARIS:</b> Paris Charles de Gaulle, Paris Orly, Le Bourget, Beijing Capital International Airport, France Handling, Liège Airport (Belgium), Phnom Penh (Vietnam)	2,264.9	33.1 %
<b>SCHIPHOL GROUP:</b> Amsterdam Schiphol, Rotterdam, Lelystad, JFK New York, Stockholm Arlanda, Jakarta Soekarno Hatta (Indonesia), Aruba Queen Beatrix International (Netherlands Antilles)	1,131.4	28.4 %

*Source: Mountford, p. 59 – 62.*

Other global airport groupings with participation of European partners are Abertis (Spain), Aeroporti di Roma (Italy), Copenhagen Airports (Denmark), Dublin Airport Authority (Ireland),

Ferrovial (Spain), Flughafen Wien (Austria), Hochtief AirPort (Germany), Infratil (New Zealand), Macquarie Airports (Australia), Malaysia Airports Berhad, Manchester Airports Group (UK), Peel Airports (UK), SEA Aeroporti di Milana (Italy), Unique (Switzerland), Vinci Airports (France).

The ways of cooperation within the global airport groupings vary between management contracts, joint ventures and equity stakes. The financial results are superior compared to the airline groups. The profitability gap *airport versus airline group* for operating margin was on average 18.3 % for the period 2004 – 2005 (Baker, “Fighting talk”, p. 51). This gap never dropped under 18 % for the period 1999 – 2005, even not after 9/11



As deregulation in the EU causes more competition in the air transport market, yields are under constant pressure, making it a huge challenge for carriers to keep the yield/cost ratio above unity.

More efficiency and appropriate cost reductions are an absolute must in order to survive.

Outsourcing is one of the frequently used strategies during the last years.

### **3.2. Outsourcing**

Air carriers who focus on their core transportation business can outsource non-essential activities to other specialized companies. Most vertical outsourcing can be spotted in the fields of maintenance, catering and ground handling, while horizontal outsourcing refers to routes that are subcontracted to other carriers.

Global players in the catering sector and ground handling offer services worldwide to hundredths of airline companies. The major players in ground handling

realized in 2004 a total worldwide revenue of \$ 4,898.8 million, which is 10.8% higher than the year before (Conway, "Common vision", p. 42). The four largest players – Swissport, Servisair/GlobeGround, Fraport Ground Services, Worldwide Flight Services – have a stake of nearly 70 % in this worldwide revenue.

In the field of catering, the four global dominating companies are LSG Sky Chefs, GateGourmet, Servair, and Alpha Flight Services.

Based on high volume and synergies these global services companies enjoy economies of scale and scope and consequently their services can be supplied at lower prices compared to airline companies who are performing these operations independently.

Maintenance services are following similar tendencies. Major cost reductions can be achieved by outsourcing maintenance to global or to lower cost facilities. Ryanair is for instance looking for cheaper maintenance in either Latvia or Poland, Lufthansa Technik established a subsidiary in Budapest, and more will follow in the future (Turner, p. 28 – 31). Whether Croatia Airlines/Technical Services will be able to join the competitive maintenance market in Europe is questionable. At this time, the facilities and the services at Zagreb airport lack the critical size to get economies of scale. Hangar size is too limited compared to the competition, and only checks C are possible while the full spectrum of checks B, C, and D is available elsewhere in Europe (Maintenance Directory, p. 34).

Table 3.

## Leading civil maintenance operators in Europe (2003)

Company	Country	Revenue \$ million
Lufthansa Technik	Germany	4,922
Air France industries	France	2,162
SR Technics Holdings	Switzerland	1,142
KLM Eng & Maint	Netherlands	916
BA Engineering	UK	847
Alitalia Eng & Maint	Italy	750
SAS Technical	Sweden	680
Iberia Eng & Maint	Spain	500
Finnair Technical Services	Finland	238
TAT Industries	France	212
Sabena Technics	Belgium	165

Source: Pilling, M., "Service challenge", p. 52

Horizontal outsourcing is possible in the field of feeder services. Many airline companies

use the services of regional carriers to transport passengers to their major hubs.

Although this type of independent feeder is very popular in the US, the EU is lagging behind because most regional feeders are financially controlled by the airline company.

### 3.3. Niche markets

The analysis so far has been limited to the strategies of the main carriers, but smaller parts of the market could offer interesting opportunities to niche players, such as cargo, the low cost operators, the regionals, the leisure carriers, and executive air transport.

Is air cargo an independent niche market? A double approach can be observed in the air cargo market. Many flag carriers still consider cargo as a complementary activity to their scheduled passenger flights. Cargo is transported in the belly space of the aircraft or on board of pax/combi aircraft. Some flag carriers are using full freighters and sometimes set up an independent cargo division in their organizational structure. Lufthansa Cargo is a typical example.

The real cargo niche market is served by those carriers who operate full freighters only, such as Cargolux and Polar Air Cargo, or by the express services of Federal Express, UPS, TNT, DHL .

In line of globalization and economies of scale, full freight operations are becoming steadily more important. Cargo alliances on the other hand are still less popular than the passenger alliances. Skyteamcargo runs parallel to the passenger Skyteam alliance, and WOW consists of Singapore Airlines cargo, Japan Airlines Cargo, SAS Cargo, Lufthansa Cargo. To reduce the paperwork in the air cargo business an initiative, called Cargo 2000, was initiated by IATA with the aim to increase the efficiency and to lower costs (Conway, "Paper farewell", p. 48 – 50).

Most cargo operators are member of The International Air Cargo Association (TIACA).

Table 4.

## Leading European players in the air cargo market (2004)

<b>Company</b>	<b>Revenue \$ million</b>
Lufthansa Cargo	2,923
Air France-KLM Group	2,900
Cargolux	1,186
British Airways	889
Martinair	615
Alitalia	532
SAS Cargo	386
Swiss	356
Iberia Airlines	303
Finnair	181
THY Turkish Airlines	178
Volga-Dnepr Airlines	168
Austrian Airlines Group	168

*Source: Tacoun, p. 59.*

The basic concept of the low cost phenomenon has already been discussed in paragraph 2.1.1. The typical niche market served by the no-frills carriers is point to point short haul transportation. Growth rates in terms of revenue are very high, up to double digit level for some European operators.

Table 5.

Revenue growth rates in the European low-cost air transport sector

<b>Carrier</b>	<b>Growth rates 2004 - 2005</b>
easyJet	+ 26.7 %
Ryanair	+ 31.7 %
Air Berlin	+ 14.9 %
Germanwings	+ 61.2 %
Hapag-Lloyd Express	+ 40.9 %
Norwegian	+ 69.5 %

*Source: Baker, "Blurring the model", p. 44.*

The low-cost sector is continuously transporting more passengers, even during 2001, a disastrous year for the airline industry (Button-AEA, p. 27). Because of the typical low fares, half of the low-cost passengers are new. They would either not have traveled at all or would have used alternative transportation.

As most Croatian air transport is short haul and point to point, this is the typical environment which is most suitable to low-cost services. The Croatian economy has already a comparative cost advantage because of the overall lower factor costs in Croatia compared to the EU average. The big challenge, for instance for Croatian Airlines, is to try to stay ahead of the competition, because future EU membership will make access of low cost competitors to the Croatian air travel market much easier than it is already today. As is indicated by table 6, many low fare airline connections to Croatia are already operational.

Table 6.

## Low fare airline connections to Croatia

<b>Air carrier</b>	<b>Route</b>
Aer Lingus	Dublin – Dubrovnik
easyJet	Manchester/London Gatwick – Split/Rijeka
Estonian Air	Tallinn – Dubrovnik
Fly Globespan	Glasgow – Pula
Fly Lal	Vilnius – Dubrovnik
Germanwings	Cologne/Berlin/Stuttgart – Split/Dubrovnik
Hapag-Lloyd Express	Germany – Rijeka/Dubrovnik
InterSky	Friedrichshafen – Zadar
Norwegian	Norway – Rijeka/Split/Dubrovnik
Onair	Pescara – Split
ScandJet	Sweden/Denmark – Zagreb/Pula
Sky Europe	Central Europe – Zadar/Split/Dubrovnik
Wizz Air	London/Budapest - Zagreb/Split

*Source: [www.attitudetravel.com/croatia/lowcostairlines](http://www.attitudetravel.com/croatia/lowcostairlines)*

Regional carriers are operating smaller aircraft in a typical range between 50 to 100 seats, serve mostly regional airports with lower landing fees, pay lower wages to staff, and have less overhead costs because of a more simplified organizational structure.

They have lower costs than the majors, but higher than the no frills carriers

They serve distances up to 500 km. Most of the European regional passengers (73 %) are transported by captive feeders. They fly passengers to the major hubs in Europe and are majority or fully owned by the major carriers, while only 1 % of the passengers use the services of an independently owned feeder (Regional ranking 2005, p. 52). In contrast to Europe, independent US feeders constitute the most important niche market as they transport 52 % of all regional passengers.

The only genuine regional niche market in Europe is that of the independent regional carriers who operate their own routes and network. They represent 26 % of all regional passengers carried.

Because of the short range distances, domestic air transport in Croatia and to the immediate countries in the neighborhood is very suitable to be served by regional air transport.

The underlying table illustrates the number of passengers carried by the most important regional carriers in Europe.

Table 7.

## Largest regional airlines in Europe (2005)

<b>Airline</b>	<b>Country</b>	<b>Passengers (x 10<sup>3</sup>)</b>
Lufthansa Cityline	Germany	5,975
Air Nostrum	Spain	4,689
Austrian Arrows	Austria	4,107
Aegean Airlines	Greece	4,007
Régional	France	3,745
Brit Air	France	3,484
BA Connect	UK	3,407
KLM Cityhopper	Netherlands	2,922
Binter Canarias	Spain	2,700
Eurowings	Germany	2,693
Alitalia Express	Italy	2,128
KLM Cityhopper UK	UK	2,021
Wideroe's Flyveselskap	Norway	1,825

*Source: Regional ranking 2005, p. 57.*

In contrast to the typical short distances of the regional carriers, the leisure carriers -called as well charter companies - serve average trip lengths of more than 2,000 km. As seats are pre sold to tour operators, they enjoy high load factors and can charge relatively low fares. Most of the tour operators are selling holiday packages, including air travel, accommodation and various tourist activities. Ticket only selling is frequently available, but is not the primary business of charter airlines.

As is indicated in table 8, some tour operators are using their own aircraft.

On less high density destinations, seats can be booked with other air carriers even with scheduled airlines.

Table 8.

Key data for the leading European tour operators (2004)

**TUI Tourism:** revenue \$ 16,322 million

Carriers length (km)	Country	Passengers (x 10 <sup>3</sup> )	Average trip length
Thomsonfly	UK	8,100	2,519
Hapagfly	Germany	7,100	2,366
Corsair	France	2,100	5,810
Britannia Nordic	Sweden	1,150	3,530
Tui Belgium	Belgium	1,000	2,300

**Thomas Cook Airline Group:** revenue \$ 9,094 million

Carriers (km)	Country	Passengers (x 10 <sup>3</sup> )	Average trip length
Condor Flugdienst	Germany	7,110	3,027
Thomas Cook Airlines	UK	5,010	2,862
SunExpress	Turkey	1,160	2,266
Thomas Cook Airlines	Belgium	970	2,455

**My Travel Airways:** revenue \$ 5,914 million

Carriers length (km)	Country	Passengers (x 10 <sup>3</sup> )	Average trip length
MyTravel Airways	UK	6,380	2,812
MyTravel Airways A/S Denmark		2,900	2,666

*Source: Baker, "New horizons: Focus leisure travel", p. 92 – 99.*

The International Air Carrier Association (IACA) looks after the interests of the leisure carriers, but nevertheless their market position is actually threatened by the low cost competition.

There are multiple reasons. Tour operators traditionally offer fixed package holidays and rely on early bookings, up to many months before departure. Many

consumers today decide increasingly for shorter but more frequent holidays. A faster and more flexible solution for a holiday seeker is to book on line: the flight with a no frills carrier, hotel accommodation, a rental car, and other tourist services. This market behavior of *dynamic packaging* could be an early symptom that the life cycle of the traditional package holiday is ending.

Some charter airlines understood the message, and have introduced in the meantime low cost operations as well. Typical examples are Hapag-Lloyd Express and Air Berlin.

Other carriers in the charter business start to substitute the short haul charter flights by the more profitable long-haul destinations outside Europe.

While the low cost carriers serve the bottom end of the air transport market, the premium part is taken care of by business and executive air transport.

It is a recent trend that some scheduled air carriers introduce on selected routes exclusive business class flights only. Lufthansa has some scheduled business flights only from Düsseldorf and München to US destinations. The operations are outsourced to the Swiss carrier Privatair who uses modified Airbus A319LR and Boeings 737 BBJ. These aircraft have a limited number of seats because of the business class configuration and have long range tanks for the long haul route to the US. KLM introduced recently a similar service between Amsterdam and Houston.

Top of the market is the segment of business aviation, making it possible for business travelers to use private air transportation. Air taxi operators can provide different range of aircraft, from twin piston engine aircraft to business jets. Some companies operate their own business jets, sometimes shared with other companies under a *fractional ownership* arrangement (Warwick, p. 83 – 85). Private business aircraft are increasingly used since 9/11, as less security risk is involved.

Business jet manufacturers are actually in the stage of introducing the very light business jet (VLJ) to the market. These jets have only a limited number of seats but will have cheaper operational costs and will make fast business jet travel more affordable to the business traveler market. Acquisition prices of VLJs are expected to range between \$ 1 to 4 million, while the top end long range business jet can be priced up to \$ 45 million. (Sarsfield, p. 68).

## CONCLUSION

The EU air transport policy hardly existed before 1985. The European air transport market was subject to the institutional framework of the ICAO at world level, of the ECAC at European level, and finally of the national civil aviation authorities at domestic level. International air transport – as well in



Europe – was dominated by restrictive bilateral agreements between governments, resulting in a highly inefficient air transport market.

This anticompetitive situation was reversed for the first time in the world by the American Airline Deregulation Act in 1978, followed by a similar initiative in the European Community. Free pricing and market access, fair competition and common licensing rules for air carriers were successfully introduced in the European Union before the tragic events of 11 September, 2001.

The EU did not hesitate to continue in the post 9/11 era its liberalized air transport policy.

Most Regulations and Directives during the last years have been adopted aiming at deepening the liberalization process. Only a minority of actions were directly related to the problems of 9/11, such as common EU rules for security controls at airports and minimum mandatory insurance for air carriers.

At the same time, the EU tried to integrate the EU aviation markets with external partners by expanding the European Common Aviation Area. Croatia participates in this ECAA project, and is as such already aligned with EU air transport policy.

The basic business strategies applied in the EU air transport sector did not fundamentally change after 9/11, although some business responses occurred at a higher frequency and more intensively. Illustrative were the drastic capacity reductions in the sector immediately after the terrorist attacks.

Most other strategies aiming at increased efficiency and cost cutting continued in the same way as in the past: airline and airport alliances, outsourcing in the sector of catering, ground handling and maintenance. Some niche markets continued the upward trend, especially the extreme segments of the market served by the low-cost operators and executive business carriers.

Many regional carriers are feeding passengers into the main hubs of the major airlines or are operating their own short distance network. Leisure carriers are switching into longer haul flights and start to introduce as well ticket only low-cost operations as a substitute to the declining full package holiday formula. Cargo operations tend to become more a specialized business by the expanding market share of the full freighters and express services.

Croatia Airlines is integrated in the EU air transport network via membership of the Star alliance and its bilateral code share agreements with other major carriers in Europe.

The growing tourist sector could enhance additional growth for the Croatian air transport sector.

It will depend on appropriate and correct management strategies whether this growth will create new opportunities for Croatian companies, such as Croatia Airlines. Especially foreign low-cost and regional operators could constitute a huge competitive challenge.

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**SEKTOR ZRAČNOG TRANSPORTA EUROPSKE UNIJE U  
RAZDOBLJU NAKON 11. RUJNA****Sažetak**

*Teroristički napad 11. rujna 2001. godine u New Yorku uzrokovao je veliku krizu u svjetskom i europskom zračnom sektoru.*

*Deregulacija tržišta zračnog transporta Europske Unije već je bila potpuno ostvarena i prije tragičnog događaja 11. rujna, koja je bila bazirana na politici slobodnog pristupa tržištu, okružju lojalne konkurencije i pravilima zajedničkog licenciranja za zračne prijevoznike. Europska Unija je usvojila dopunske mjere u razdoblju nakon 11. rujna kako bi se uklonila bilo koja druga međugranična konkurencija u zračnom sektoru Europske Unije, od kojih je samo nekolicina bila izravan odgovor novonastalim problemima osiguranja.*

*U međuvremenu Europska Unija je pokazala želju za konsolidaciju svoje politike zračnog prometa sa mnogim zemljama trećeg svijeta tako što je proširila European Common Aviation Area (Europski Zajednički Zračni Prostor). Hrvatska vlada sudjeluje u ovom projektu.*

*Većina poslovnih sudionika na tržištu zračnog prometa Europske unije zadržali su istu strategiju u razdoblju nakon 11. rujna, iako katkad s promjenjivim stupnjem učestalosti i intenziteta. Poseban naglasak je bio stavljen na većoj efikasnosti i smanjivanju troškova.*

*Tipične strategije su članstvo u udruženjima, eksternaliziranje netemeljne djelatnosti ili usredotočenje na tržišne niše kao što je teret, jeftine i regionalne operacije, zračni transport za odmor i privredne subjekte.*

*U slučaju članstva u Europskoj Uniji, Hrvatska mora potpuno usvojiti zakonodavstvo vezano za zračni transport Europske Unije – nazvano *acquis communautaire*. Ovdje se ne očekuju nikakvi problemi za Hrvatsku budući da je ona već priznata kao član European Common Aviation Area (Europskog Zajedničkog Zračnog Prometa).*

*Gledajući s poslovnog aspekta primjećuje se da je Croatia Airlines član mreže zračnog transporta Europske Unije i to putem članstva u udruženju Star i ostalih ugovora u sličnim udruženjima.*

*Hrvatske domaće i međunarodne zračne linije su veoma pogodne za jeftine i regionalne operacije. U ovom polju se može očekivati dosta konkurencije od strane stranih zračnih prijevoznika.*

***Ključne riječi: deregulacija, acquis communautaire, eksternalizacija, tržišna niša***

***JEL klasifikacija: R49***

**PREGLEDNI RAD**

***REVIEW***





## **NEURONSKE MREŽE I ANALITIČKI HIJERARHIJSKI PROCES U SEGMENTACIJI TURISTIČKOG TRŽIŠTA**

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### **Sažetak**

*Segmentacija tržišta temelj je za donošenje strateških odluka u poduzeću. Na taj način identificiraju se različite skupine potrošača koje su, s obzirom na turističke preferencije, unutar sebe homogene i zahtijevaju identične proizvode i/ili marketinške mikseve. Više je načina segmentiranja tržišta, a najčešće rabljena metoda je socio-demografska segmentacija tržišta.*

*Cilj je radu uputiti na suvremene metode, kao što su modeli neuronskih mreža i analitički hijerarhijski proces, koji mogu također vrlo uspješno produžiti u procesu segmentiranja tržišta i odabira ciljnih segmenata, pa na taj način olakšati i unaprijediti donošenje odluka u ovom složenom procesu s kojim se suočava turistički menadžment. Modeli neuronskih mreža omogućuju podjelu tržišta na određene homogene grupe ili segmente, a analitički hijerarhijski proces omogućuje odabir adekvatnog, tj. prioritarnog tržišnog segmenta. Ove tehnike pokazale su se efikasnijima od linearnih metoda. Obje metode pružaju visok stupanj pouzdanosti.*

**Ključne riječi:** *segmentacija tržišta, turizam, neuronske mreže, analitički hijerarhijski proces*

### **1. UVOD**

Segmentacija tržišta postala je jedan od osnovnih koncepata u marketingu. Proces segmentacije tržišta omogućuje bolje razumijevanje potreba i želja potrošača i uočavanje osobnih, situacijskih i bihevorijskih značajki segmenta. Na taj način poduzeća mogu turistički proizvod u potpunosti

prilagoditi željama i potrebama određenoga tržišnog segmenta, tj. specijalizirati se i usmjeriti na određeni tržišni segment. Strategijom ciljanoga marketinga nastoji se, dakle, grupirati glavno tržište uz marketinške programe posebno odabrane za svaki segment.

Grupiranje potrošača i segmentacija tržišta pomažu u kreiranju strateških marketinških planova. Poduzeća će potom u svojim strateškim planovima posebnu pozornost posvetiti potrebama i zahtjevima potrošača na različitim tržišnim segmentima.

Strategije marketinga kojima se koriste poduzeća često nailaze na problem odabira načina segmentacije tržišta. Najčešće rabljena metoda je socio-demografska metoda segmentiranja tržišta koja se provodi podjelom tržišta na varijable kao što su: dob, spol, prihod, izobrazba, zanimanje, te religijska, rasna, nacionalna pripadnost i slično. Međutim, potreba za što boljim poznavanjem tržišnih segmenata i potreba za tehnikama koje će svladati ograničenja linearnih tehnika u rješavanju nelinearnih problema zahtijevaju korištenje novijih, suvremenijih metoda koje nisu dostatno rabljene na ovom području. Takve su metode neuronske mreže i analitički hijerarhijski proces. U domaćoj se literaturi posebice malo pisalo o mogućnostima uporabe ovih metoda u turizmu. Mogućnosti koje one pružaju gotovo su neograničene, a karakteristike metoda omogućuju zajedničko korištenje i dodatni sinergijski učinak.

Neuronske mreže upotrebljavaju se sve više za rješavanje složenih zadataka, a posebno velike mogućnosti pokazuju na polju paralelne obrade podataka kad su komponente neovisne jedna o drugoj. Prednosti modela neuronskih mreža ogledaju se u visokoj elastičnosti prema poremećajima u ulaznim podatcima i u sposobnosti mreže da "uči". Ponavljanjem procesa učenja i asocijativnom memorijom model neuronske mreže može precizno klasificirati informacije prema unaprijed zadanoj strukturi. Modeli umjetnih neuronskih mreža zasnovani na tehnologijama umjetne inteligencije mogu se upotrijebiti u kreiranju klastera ili grupa na osnovi kombinacija karakteristika zastupljenih u bazi podataka, kao što su demografske, psihološke karakteristike i sl. Zato su pogodne za uporabu i u procesu segmentacije turističkoga tržišta.

Model analitičkoga hijerarhijskog procesa je metoda pogodna za donošenje odluka kada treba odabrati rješenje između nekoliko ponuđenih alternativa po određenim kriterijima. Glavna prednost ove metode je upravo uključivanje više kriterija varijabla, tj. inkorporiranje objektivnih i subjektivnih činitelja koji utječu na odluku, te postizanje kvalitativnih i kvantitativnih marketinških ciljeva. Klasične metode u tome dosad nisu dale zadovoljavajuće rezultate. Postoje široke mogućnosti primjene za tu metodu, a jedno od područja je i segmentacija turističkoga tržišta. S obzirom na karakteristike metode, ona može biti vrlo korisna jer izračunati koeficijenti prioriteta pojedinih alternativa (u ovom slučaju segmenata) mogu biti vodilja u odabiru strategije kojom će se poduzeće koristiti u daljnjem poslovanju. Također je moguće utvrditi prioritetni tržišni segment po odabranim kriterijima, što je još jedna velika prednost ove

metode. Za turistički je menadžment to iznimno važno, posebice kad se primjenjuje strategija koncentriranoga marketinga u kojoj poduzeće sve marketinške napore usmjerava na jedan tržišni segment. Analiza osjetljivosti modela može biti vrlo korisna jer omogućuje menadžerima uvid u ako povećaju ili smanje određeni kriterij uključen u donošenje odluka o odabiru tržišnoga segmenta.

Cilj je radu uputiti da se ove metode mogu upotrebljavati zajedno tako da neuronske mreže obave prvi dio procesa segmentacije, tj. definiranje tržišnih segmenata, a analitički hijerarhijski proces drugi dio procesa, tj. odabir prioritetnoga tržišnoga segmenta. Ovim metodama može se povećati kvaliteta i olakšati proces donošenja odluka o segmentaciji tržišta. To je posebice važno s obzirom na činjenicu da neodgovarajuća segmentacija i odabir pogrešnoga tržišnoga segmenta ponekada dovesti do toga da poduzeća u poslovanju ne poluču očekivane rezultate.

## 2. SEGMENTACIJA TRŽIŠTA

Segmentiranje tržišta polazna je točka uspješnoga marketinškog koncepta i strateškoga planiranja.

Proces segmentacije tržišta teče u tri smjera:<sup>1</sup>

### 1. segmentacija

- uzimaju se u obzir varijable za segmentaciju,
- analiziraju se profili dobivenih segmenata,
- vrednuju se dobiveni tržišni segmenti;

### 2. odabir ciljnog tržišta

- odlučuje se o strategiji odabira ciljnih tržišta,
- određuje se koji segmenti i koliko njih bi moglo doći u obzir kao ciljna tržišta;

### 3. pozicioniranje

- treba upoznati percepcije potrošača,
- valja pozicionirati proizvod u misaoni proces,
- programira se odgovarajući marketinški splet.

Pri segmentaciji tržišta ključno je pitanje otkriti sve varijable koje su najprikladnije da bi se označili različiti zahtjevi prema proizvodu. Jedino ona

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<sup>1</sup> S. Dibb, L. Simkin, W.M. Pride, Targeting Segments and Positioning, International Journal of Retail and Distribution Management, vol. 19., broj 5., 1991., str. 5

poduzeća koja dobro poznaju svoje ciljne segmente, moći će optimalno oblikovati adekvatan marketinški splet. Međutim, proces se mora nastaviti, jer nakon što se otkriju segmenti, treba odlučiti koje će se skupine potrošača i koliko njih odabrati kao ciljna tržišta. Moguće je usredotočiti se samo na jedan segment, ali isto tako usmjeriti se i na više tržišnih segmenata, nudeći pritom jedan proizvod ili više njih. Poduzeća moraju precizno odlučiti kako i kamo će usmjeriti svoj proizvod. U postupku vrednovanja različitih marketinških segmenata tvrtka mora vidjeti dva čimbenika: ukupnu privlačnost segmenta i ciljeve i sredstva tvrtke. Prije svega, tvrtka mora razmotriti ima li potencijalni segment karakteristike koje ga čine osobito privlačnim, kao što su: veličina, rast, profitabilnost, ekonomija obujma, nizak stupanj rizika i slično. Poduzeće također mora voditi računa o tome koliko je lako uvjeriti pripadnike segmenta da kupe njihov proizvod, koliko vrijedi njihov posao, tj. koji kupci dosta troše, ostaju privrženi i utječu na druge. Isto tako mora se razmotriti je li ulaganje u određeni segment u skladu s ciljevima i sredstvima tvrtke. Segment koji dugoročno ne odgovara, za koji nema vještina ili sredstva potrebnih za uspjeh, pa ni kvalifikacija ili se one ne može steći i u kojima se ne može razviti prednost -nije poželjan. Ona bi trebala opsluživati one segmente kojima može ponuditi izuzetnu, ili superiornu vrijednost.<sup>2</sup>

Osnove segmentacije uključuju razne karakteristike tržišta, poput demografskih i socio-ekonomskih, geografskih, zatim ponašanja potrošača, stavova i preferencija za određene atrakcije i doživljaje.<sup>3</sup>

Prema tome, varijable za segmentaciju tržišta kojima se uobičajeno koristi jesu:<sup>4</sup>

1. demografske varijable,
2. socio-ekonomske varijable,
3. zemljopisne varijable,
4. osobnost, motivi, način života,
5. ponašanje u kupnji,
6. kupuje u izvanrednim situacijama,
7. traženje određene koristi od kupljene robe,
8. stav prema proizvodu,
9. ponašanje u potrošnji i status korisnika.

Na temelju pravilno odabranih varijabla može se kvalitetno provesti postupak segmentacije tržišta, koji je u suvremenom tržišnom poslovanju od

<sup>2</sup> P. Kotler, Upravljanje marketingom, analiza, planiranje, primjena i kontrola, 9. izdanje, Mate, Zagreb, 2001., str. 269.

<sup>3</sup> S. Dibb, L. Simkin, W. M. Pride, O.C. Ferrell, *Marketing*, Mate, 1991., str. 76.

<sup>4</sup> Više o tome vidi – isto, str. 75–87.

izuzetnog značenja jer treba dobro poznavati želje i preferencije potrošača, i u razvijanju strateških planova tome valja dati prioritarno mjesto.

U protivnom, to može imati negativne posljedice za poslovanje poduzeća.

Segmentacija tržišta odlučno je usmjeravanje proizvoda prema ciljnomu definiranom dijelu tržišta ili ciljnom segmentu. Međutim, treba znati da smo odabirom ciljnog segmenta istodobno odredili i poziciju našeg proizvoda na tržištu. Proces segmentacije vodi prema pozicioniranju proizvoda na tržištu. Taj rezultat segmentacijske analize predstavlja u uvjetima konkurentnog tržišta oblik iskorištavanja segmentacijske analize i njezino pretvaranje u strategiju s obzirom na to da sami odabiremo "svoje" potrošače i dajemo im "njihov" proizvod koji smo sami kreirali.<sup>5</sup>

Prema tome, neminovno se nameće potreba dubljega razumijevanja tržišnih segmenata, ali isto tako i uporaba suvremenih metoda u segmentaciji tržišta uz preispitivanje uobičajenih pristupa. U tom smislu mogu se postići zadovoljavajući rezultati koristeći se modelima neuronskih mreža, koji mogu unaprijediti i olakšati proces segmentacije turističkog tržišta, ali i modelom analitičkoga hijerarhijskog procesa, koji omogućuje odabir prioritetskoga tržišnog segmenta.

Odabirom prioritetskoga tržišnog segmenta postiže se maksimizacija profita i maksimizacija zadovoljstva potrošača, što povećava kvalitetu pružene usluge, koja danas na vrlo konkurentnom i zahtjevnom tržištu turističkih potrošača postaje strateška varijabla.

### **3. NEURONSKE MREŽE I PRIMJENA U PROCESU SEGMENTACIJE TURISTIČKOG TRŽIŠTA**

Početak upotrebe modela neuronskih mreža obično se vezuje za 1943. godinu. Iako su neki znanstvenici postizali značajne rezultate na tom polju, sredinom 1960-ih godina je pristup rješavanja problema neuronskih mreža okarakteriziran kao pogrešan. Razlog tomu bio je matematički dokaz da jednoslojna neuronska mreža ne može dati adekvatne rezultate, te pretpostavka da dodavanjem više slojeva neurona problem također neće biti uspješno riješen. Istraživanja neuronskih mreža su zaustavljena, a financiranje je usmjereno na druga područja umjetne inteligencije. U vremenu između 1967. i 1982 pojavljuju se istraživači koji su ovom području dali značajan doprinos, osobito Teuvo Kohonen, Kunihiko Fukushima i Stephen Grossberg. Posebno se ističe Teuvo Kohonen; on je otkrio nekoliko tipova neuronskih mreža, koje su po njemu dobile ime. Početkom 80-ih američka vojna agencija DARPA postala je zainteresirana za neuronske mreže, što je ponovno pokrenulo financiranje istraživanja na ovom

<sup>5</sup> Prema F. Rocco, *Marketinško upravljanje*, Školska knjiga, Zagreb, 2000., str. 77.

polju. To je rezultiralo velikim uspjehom i značajnim otkrićima, pa se krajem 80-ih i početkom 90-ih neuronske mreže izučavaju kao predmet na nekoliko elitnih sveučilišta u SAD-u. Njihova je popularizacija rasla i danas su na gotovo svim sveučilištima. Bez obzira na to, područje izučavanja i uporabe neuronskih mreža vrlo je široko, pa se može reći da su one još uvijek u fazi razvoja.

Neuronska mreža je zapravo matematički model (funkcija) koja izračunava output na temelju ulaznih varijabli.<sup>6</sup>

Kad se govori o neuronskim mrežama, onda se pod tim podrazumijevaju dvije vrste neuronskih mreža: i biološke neuronske mreže i umjetne neuronske mreže. Biološke su puno složenije od umjetnih s obzirom na to da zapravo predstavljaju živčani sustav živih bića. Umjetna neuronska mreža je sustav od više jednostavnih procesora, tj. neurona, od kojih svaki ima lokalnu memoriju, u kojoj pamti podatke što ih obrađuje, i koji su povezani komunikacijskim kanalima. Ograničenja lokalnih operatora mogu se otkloniti tijekom treninga. Umjetne neuronske mreže (eng. *Artificial Neural Networks*, ANN) zapravo su matematički modeli koji simuliraju neke od promatranih osobina bioloških nervnih sustava i utvrđuju sličnosti s tim procesima. Sastoje se od velikog broja međusobno povezanih neurona koji su poput bioloških neurona povezani vezama što sadržavaju propusne, tj. težinske koeficijente. Te veze pohranjuju znanje potrebno za rješavanje određenog problema

Većina neuronskih mreža ima neki način "obučavanja". One "uče" preko primjera. Velike mogućnosti neuronske mreže pokazuju na području paralelne obrade podataka, tokom izračunavajući komponente ovisne jedna o drugoj. Prednost neuronskih mreža ogleda se u visokoj elastičnosti prema poremećajima u ulaznim podacima i u sposobnosti da "uče".

Umjetne neuronske mreže mogu se klasificirati na raznovrsne načine, npr. na osnovi metode nadziranog (*supervised training*) i nenadziranog učenja (*unsupervised training*), te nepovratne (*feedforward*) i povratne (*feedbackward*) strukture ponovne uporabu informacija.<sup>7</sup> Nadzirani proces učenja postignut je prezentiranjem slijeda vektora učenja, ili strukture, svakoga s odgovarajućim ciljnim vektorom izlaza. Težine su onda prilagođene prema specificiranom algoritmu učenja. Ponovna uporaba informacija je metoda dvosmjernoga informacijskog procesa u kojoj svaka jedinica dobiva informacije od prethodne jedinice ili jedinice koja slijedi. Neuronske mreže koje se šire unatrag ili BP (*backpropagation*) najčešće su mreže koje se sastoje od nekoliko slojeva, te se te višeslojne mreže upotrebljavaju u 80 posto primjena ove metode zbog svoje dokazane sposobnosti učenja i generalizacije.<sup>8</sup> U nenadziranom procesu učenja

<sup>6</sup> Prema – J. Kim, S. Wei, H. Ruys, Segmenting the market of West Australian senior tourists using an artificial neural network, *Tourism Management*, vol. 24., broj 1., veljača 2003., str.3

<sup>7</sup> Prema- S.-H.Tsaur, Y.-C. Chiu, C.H. Huang, Determinants of quest loyalty to international tourist hotels-a neural network approach, str. *Tourism Management*, vol.23., broj 4., 2002.,str. 397-405.

<sup>8</sup> Prema M. Caudill, *The View from Now*, *AI Expert*, June, broj 26. 1992. str. 24-31 u J. Z. Bloom, *Turizam*, vol. 50. broj 4., 2002., str. 340. Više o tome vidi – R.Law, *Back-propagation learning in*

mreža mora sama otkriti sve moguće strukture i specifičnosti, a parametri se mreže mijenjaju i tada dolazi do procesa samoorganizacije. Tada se govori o samoorganizirajućoj neuronskoj mreži, kod koje signal putuje od ulazne jedinice do izlazne u smjeru prema naprijed. Tijekom nenadziranog učenja i mreži je u samo ulazni stimulans.

Neuronsku mrežu, dakle, čini:

1. arhitektura mreže,
2. prijenosna funkcija neurona,
3. izlazni podatak.

Arhitektura predstavlja specifično uređenje i povezivanje neurona u mrežu, i po njoj se razlikuje broj slojeva mreže. Svaki sloj obično preuzima ulaze iz prethodnog sloja i svoje izlaze šalje sljedećem sloju. Prvi sloj naziva se *ulazni sloj*, posljednji je *izlazni sloj*, a između njih su *pokriveni slojevi*. Vrlo se često susreću mreže s tri sloja.

Kreiranje neuronskih mreža izvodi se u nekoliko faza. Nekoliko je pritom autora, uključujući Deboeck (1994), Mastersa (1993), Bluma (1992) McCord-Nelsona i Illingwortha (1993)<sup>9</sup>.

Osmofazni model dao je Bloom 2002. godine. Pri tome navodi sljedeće korake u kreiranju neuronske mreže:<sup>10</sup>

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improving the accuracy of neural network – based tourism demand forecasting, *Tourism management*, vol. 21., broj 4., kolovoz, 2000., str. 331-340.

<sup>9</sup> Prema – J.Z. Bloom, MARKET SEGMENTATION A Neural Network Application, *Annals of Tourism Research*, vol. 32., broj 1., 2005., str. 110

<sup>10</sup> Z. J. Bloom, Primjena neuronskih mreža u segmentaciji turističkog tržišta, *Turizam*, vol. 50, broj 4., 2002., str. 341.

Autor je prilagodio originalni osmofazni model koji su dali I. Kaastra ,M. Boyd, Designing a Neural Network for Forecasting Financial and economic Time Series, *Neurocomputing*, vol.10,1996., str.219.

Inicijalno: Definiranje problema, razumijevanje poslovnog okruženja te:

Korak 1. Anketiranje/prikupljanje informacija

Korak 2. Odabir varijabli (broj ulaza, broj izlaza ako je potrebno)

Korak 3. Eksplorativna analiza i obrada (npr. normaliziranje, log-transformacija, standardizacija)

Korak 4. Odabir podskupa simuliranja, testiranja i vrednovanja

Korak 5. Simulirani parametri i vrijednosti konfiguracije neuronskih mreža

- broj skrivenih slojeva
- broj ulaznih neurona, nevidljivih neurona i izlaznih neurona
- funkcija transfera, inicijalna težina, brzina učenja
- pravila učenja (npr. BP "širenje unatrag")

Korak 6. Simulacija neuronske mreže

- prikaz vrijednosti
- broj ponavljanja

Korak 7. Kriteriji evaluacije (npr. RMSE I MSE)

Korak 8. Uporaba modela

Uporabu neuronskih mreža moguće je podijeliti u tri područja, i to:

1. procesiranje senzorskih podataka,
2. analiza podataka,
3. kontrola upravljanja.

One se uspješno upotrebljavaju:

1. za predviđanje kretanja cijena na tržištu,
2. za upravljanje proizvodnim procesima,
3. psihijatrijske procjene,
4. u naftnim istraživanjima,
5. u kriminalističkim istraživanjima,



6. u analizi medicinskih testova,
7. pri upravljanju robotima,
8. za vremensku prognozu,
9. u medicini,
10. u turističkom menadžmentu,
11. u marketingu i drugim područjima.

Neuronske se mreže sve više rabe za analizu nelinearnih i kognitivnih aktivnosti u području turističkoga menadžmenta.

Law i Au su poslužili ANN-modelom u predviđanju putovanja Japanaca u Hong Kong i pritom su također potvrdili ove teze. Model je mogao pomoći menadžerima i vladi kako bi točnije planirali dolaske i usluge koje se pružaju japanskim turistima jer oni čine najvažniji segment turističkih potrošača u Hong Kongu.<sup>11</sup> U predviđanju turističkih dolazaka Cho je dokazao prednost modela neuronske mreže nad modelima ekspanzionalnog izgladivanja i ARIMA-modelima.<sup>12</sup> Tsaur, Chiu i Huang su se (2002) poslužili ANN-modelom u analizi lojalnosti gostiju internacionalnim turističkim hotelima, pri čemu je model bio bolji od regresijskoga. Neuronske se mreže rijetko rabe u segmentaciji tržišta iako se posljednjih godina povećala njihova upotreba na ovom području.<sup>13</sup> Ima uspješnih primjera aplikacije neuronskih mreža upravo u tom području. Tako je, primjerice, Mazanec (1992)<sup>14</sup> upotrijebio ANN u segmentaciji austrijskih turista i dobio je zadovoljavajuće rezultate. Kim, Wei i Ruys rabili su model neuronske mreže u segmentaciji starijih turista u zapadnoj Australiji.<sup>15</sup> Bloom je 2002. također poslužio neuronskim mrežama u segmentaciji turističkog tržišta i dobio je zadovoljavajuće rezultate. U modelu kojim je koristio Bloom u segmentaciji turističkog tržišta u Cape Townu, u južnoj Africi, ulazni sloj čine geografske i demografske informacije, karakteristike putovanja i slično. Izlazni sloj rezultat je ulaznog stimulansa modela, a čine ga segment 1, segment 2 i segment 3. Dva prikrivena sloja određuju strukturu odnosa između ulaznog i izlaznog sloja. Odnos između jedinica pohranjen je kao težina veze, što pokazuje slika 2.<sup>16</sup>

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<sup>11</sup> Prema-R. Law, N.Au, A neural network model to forecast Japanese demand for travel to Hong Kong, *Tourism Management*, broj 20., 1999., str. 90

<sup>12</sup> Više o tome vidi – V. Cho, A comparison of three different approach to tourist arrival forecasting, *Tourism Management*, broj 24., 2003., str. 323 – 330.

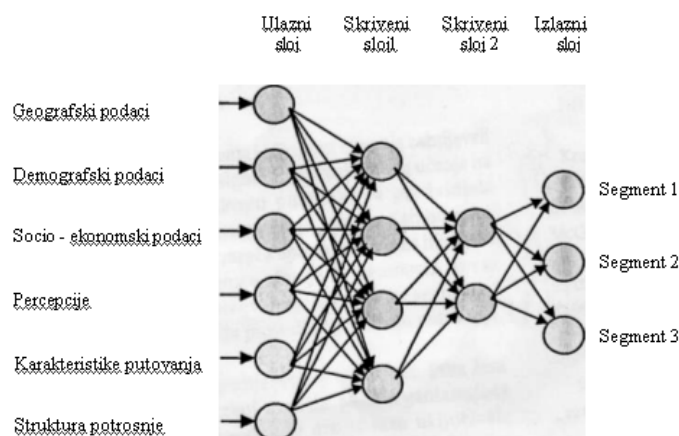
<sup>13</sup> Prema-A. Vellido, P.J.G. Lisboa, K. Meehan, Segmentation of the on-line shopping market using neural network, *Expert System with Applications*, broj 17., 1999., str. 304

<sup>14</sup> Više o tome vidi – J. A. Mazanec, Classifying tourists into market segments: A neural network approach, *Journal of Travel and Tourism Marketing*, vol. 1., broj 1., 1992., str. 39-59.

<sup>15</sup> Više o tome vidi – J. Kim, s. Wei, H. Ruys, isto djelo, str. 25 – 34.

<sup>16</sup> Z. J. Bloom, Primjena neuronskih mreža u segmentaciji turističkog tržišta, *Turizam*, vol. 50., broj 4., 2002., str. 339

## NEURONSKA MREŽA KOJA SE POPUNJAVA UHAPRIJED S BP ALGORITMOM UČENJA



Slika 2.

Neuronske mreže pokazale su se kao vrlo djelotvorni modeli. Značajna razlika između ANN i regresijskih modela je u tomu što regresijski modeli utvrđuju odnos između zavisnih i nezavisnih varijabli izravno, dok ANN taj odnos utvrđuje posredno na osnovi težina jedinica slojeva. Za uporabu ANN-modela u turističkom menadžmentu i marketingu može se reći da su se neuronske mreže pokazale superiornijima od regresijskih modela ili modela vremenskih serija poput metoda pomičnih prosjeka i eksponencijalnoga izgladivanja.<sup>17</sup>

Vjeruje se da će ekspertni sustavi kao što su neuronske mreže, biti pokretačka snaga za segmentiranje i ciljanje tržišta, i da će se tako povećati djelotvornost marketinga i prodaje.<sup>18</sup>

Neuronskim mrežama može se uspješno segmentirati tržište i na taj način dobiti slika određenog broja tržišnih segmenata. Međutim, postupak segmentacije još uvijek nije završen jer je izuzetno važno da poduzeće odabere ciljni segment koji mu najviše odgovara i na njega usmjeri marketinške aktivnosti. Proces koji su počele neuronske mreže može završiti model analitičkog hijerarhijskog procesa. Tim modelom moguće je između više tržišnih segmenata odabrati onaj prioritetni.

<sup>17</sup> Više o tome vidi – J.Z. Bloom, Tourist market segmentation with linear and non-linear techniques, Tourism Management, vol. 25., broj 6., prosinac, 2004., str. 723-733.

<sup>18</sup> Prema P. Kotler, Upravljanje marketingom: analiza, planiranje, primjena i kontrola, 9. izdanje, Mate, Zagreb, 2001., str. 130.

#### 4. ANALITIČKI HIJERARHIJSKI PROCES I MOGUĆNOST UPORABE U ODABIRU TRŽIŠNOGA SEGMENTA

Složenost odlučivanja može biti u tomu što se za donošenje odluka mora uzeti u obzir veliki broj činitelja o kojima te odluke ovise, tj. koji utječu na određeni ishod odluke. Upravo iz tog razloga bitno je točno procijeniti važnost činitelja i odabrati one koji mogu odvesti do najboljega mogućeg rješenja. Kako bi se riješio problem donošenja odluka unatoč riziku, neizvjesnosti, različitosti činitelja i različitostima u mišljenju i prosuđivanju, Thomas L. Saaty na Wharton School of Business je razvio novi pristup - analitički hijerarhijski proces.<sup>19</sup> Primjena metode vezuje se u srednje 70-e prošlog stoljeća, i odonda su poznate brojne promjene metode. Pogodna je upravo za marketinško odlučivanje, a omogućuje uključivanje kvalitativnih i kvantitativnih ciljeva i čimbenika s mogućnošću da se utvrdi hijerarhija ciljeva. Donositelj ili skupina za donošenje odluka na temelju toga može izabrati alternativno rješenje koje smatra najpovoljnijim. Glavna prednost metode AHP je mogućnost da se uključi više kriterija varijabla, tj. da se inkorporiraju i objektivni i subjektivni činitelji koji utječu na odluku.

Ako bi se okarakterizirao ovaj model trima riječima, one bi bile: analitički, hijerarhijski i proces.<sup>20</sup> Pridjev *analitički* označuje da se ova metoda koristi brojkama, *hijerarhijski* da model AHP struktuirao probleme na određene razine, tj. da postavlja ciljeve, kriterije, potkriterije, alternative, a riječ *proces* označuje da se problematika rješava u određenom kontinuitetu.

Analitički hijerarhijski proces koristi se kvalitativnim izrazom da bi se definirao određeni problem i uputilo na povezanost među činiteljima, ali se također koristi i kvantitativnim izrazom da bi se upozorilo na jakost veze. Kriteriji se odabiru ovisno o prioritetima važnima za donositelja odluka. Različite alternative vezane su u odnosu prema kriterijima i potrebno je odabrati najbolju, što je i svrha modela. Kod AHP-a prvo se određuju zahtjevi sustava - što se mora napraviti, zatim se odabiru alternative koje udovoljavaju zahtjevima. Treće je određivanje prioriteta, pa se konačno odabiru najbolje alternative. Alternative koje se uključuju, ovise o cilju koji je na umu.

Matematičke osnove modela su jednostavne. Tehnika rada metodom analitičko hijerarhijskog procesa temelji se na karakterističnim vrijednostima i karakterističnim vektorima.<sup>21</sup>

Prvi korak u razradi modela je hijerarhijska raščlamba problema. Izbor hijerarhijske strukture ovisi o složenosti problema, a uključuje:<sup>22</sup>

<sup>19</sup> Prema - T.L. Saaty, G.L. Vargas, *The Logic of Priorities*, Kluwer, Nijhoff Publishing, 1982., str.3.

<sup>20</sup> L.B. Golden, A.E. Wasil, T.P.Harker, *The Analyze Hierarchy Process*, Springer Verlag Berlin, Heidenberg 1989., str. 13.

<sup>21</sup> Više o tome vidi - I. Pavlović, B. Markić, Analitički hijerarhijski proces u marketinškom odlučivanju, *Ekonomski misao i praksa,FTVT, broj 1.*, Dubrovnik,1996., 159-164. i 165-169.

- cilj, kriterij, alternative,
- cilj, kriterij, potkriterij, alternative,
- cilj, scenarij, kriterij (potkriterij) alternative,
- cilj, činitelji, kriteriji (potkriterij), alternative,
- cilj, potkriterij, nizovi intenziteta, (mnogo alternativa),
- cilj, grupe alternativa, alternative (više od nekoliko, manje od mnogo).

Obično se počinje s jednostavnom strukturom koja se sastoji od ciljeva, kriterija i alternativa, što čini osnovnu strukturu analitičkoga hijerarhijskog procesa. Cilj je postavljen u samom problemu, tj. određivanjem problema istodobno se određuje i cilj. Sve drugo je strukturirano tako da vodi ostvarenju tog cilja.<sup>23</sup> Kriteriji omogućuju da se odabere najbolja alternativa. Osim kriterija mogu se uvesti i potkriteriji, a oni dopuštaju detaljnije specificiranje u modelu. Uključujući potkriterije može se bolje opisati kriterij i pojasniti ciljevi. Uvođenje potkriterija također može poboljšati vjerodostojnost i preciznost u odabiru alternativa koje se uključuju u izbor. Alternative su različite mogućnosti izbora u odlučivanju.

Uspoređivanje modelom analitičkoga hijerarhijskog procesa provodi se tako da se uspoređuje svaka alternativa prema svakoj u parovima. Pri tome se koristi ljestvicom uspoređivanja parova za AHP.

Ima više načina uspoređivanja, a široko je prihvaćeno uspoređivanje ljestvicom s devet mogućnosti rangiranja (tablica 1.).

Tablica 1.

Ljestvica uspoređivanja parova za AHP

Verbalna procjena	Numerička procjena
Izuzetno dajemo prednost	9
Vrlo jako do izuzetno	8
Vrlo jako dajemo prednost	7
Jako do vrlo jako	6
Jako dajemo prednost	5
Umjereno do jako	4
Umjereno dajemo prednost	3
Jednako do umjereno	2
Jednako dajemo prednost	1

*Izvor: F.R. Dyer - E. Forman, An Analytic Approach to Marketing Decision, Prentice Hall, Englewood, New Jersey, 1991., str.91.*

<sup>22</sup> E. Forman, *Decision Support for Executive Decision Makers*, Information Strategy, The Executive Journal, tom 1, 1985., str.4.

<sup>23</sup> I. Pavlović, B. Markić, isto, str. 155.

Uspoređenje se može obavljati verbalno i numerički, a intezitet prednosti ovisi o donositelju odluke i njegovoj mogućnosti procjene.

Na temelju uspoređivanja parova alternativa dobivaju se koeficijenti prednosti alternative. Isto tako se na temelju uspoređivanja parova kriterija izračunavaju koeficijenti prednosti kriterija. Izračunatim koeficijentima koristi se za izračunavanje koeficijenta konačne prednosti alternative, koji govori o tome koja alternativa najbolje udovoljava postavljenom cilju modela. Softverski paket Expert Choice olakšava izračun.

Analitički hijerarhijski proces je dakle teorija koja se bavi rješavanjem kompleksnih tehničkih, ekonomskih i sociopolitičkih problema. Situacije u kojima može poslužiti AHP:<sup>24</sup>

1. **osobne odluke** - kupnja automobila, odabir kućanskih aparata, odabir snježne radikalne gume, odabir kućnog kompjutera, odabir zvanja, postajanje doktorom znanosti, odabir najbolje investicije, odabir bračnog partnera, odlučivanje o broju potomaka, odabir škole, odabir mjesta stanovanja, kupnja kuće ;
2. **socio-psihološko područje** - procjena roditeljskog utjecaja na opću psihološku dobrobit, planiranje broja djece prosječne obitelji;
3. u poslovanju poduzeća: kupnja uretanske opreme, kupnja opreme za poljodjelstvo, kupnja ili uzimanje opreme na *leasing*, odabir menadžerske pozicije;
4. **neprofitabilne agencije** - procjenjivanje koristi od prelaženje rijeke, razvijanje istraživačkih programa, razvijanje istraživačkih instituta, odlučivanje o kapacitetu luke;
5. **javna politička pitanja** - odabir ambalaže za piće, prosuđivanje vrijednosti sustava za skladištenje energije, više obrazovanje, razvrstavanje sredstava za korigiranje ponašanja maloljetnika, klizno radno vrijeme za očuvanje energije, vjerojatnoća tehničkih inovacija s obzirom na oblike korporacijske kontrole, analiziranje školskih konflikata, sukob interesa u zdravstvenoj administraciji, planiranje u čeličnoj industriji, odabir regionalnih projekata, odabir mjesta za turbine s unutarnjim izgaranjem, raspored sredstava za istraživanje i razvoj u bankama, marketinške odluke o proizvodu, financijske odluke, procjena postupka razdiobe, retrogradni proces planiranja;
6. **internacionalni kontekst** - ekonomska strategija za nerazvijene zemlje, vađenje minerala;
7. **procjena/predviđanje** - odabir glazbenih skupina, predviđanje ishoda izbora.

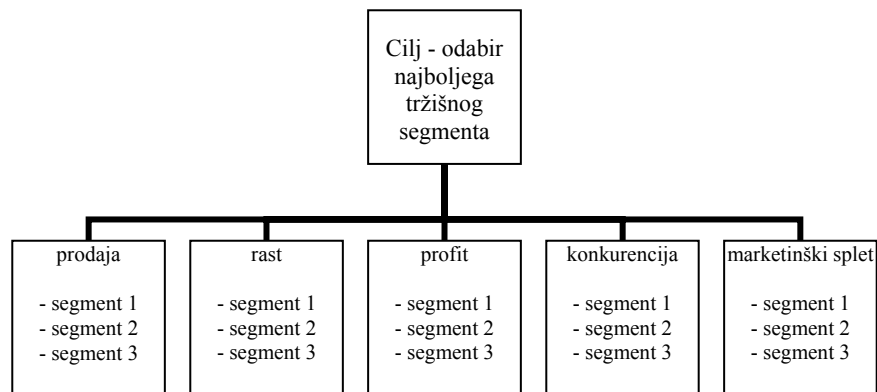
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<sup>24</sup> Prema - T. Saaty, L. Vargas, isto djelo, str.275.

Za model se uvijek može napraviti analiza njegove konzistentnosti i osjetljivosti.<sup>25</sup>

Može se upotijebiti i u području turističkog menadžmenta i marketinga. Kad se govori o tomu, znatna je mogućnost osobito u segmentaciji turističkoga tržišta, ali i u procesu segmentacije turističkoga tržišta u kombinaciji s modelom neuronske mreže.

Definiranjem tržišnih segmenata neuronske mreže završila je jedna faza procesa segmentiranja tržišta. Poduzeće se nakon toga mora odlučiti prema kojemu segmentu ili segmentima će usmjeriti svoje marketinške akcije. Pitanje odabira strategije kojom će se poslužiti u daljnjem poslovanju, vezano je uz tržišne segmente koje će poduzeće opsluživati. Navedeni model u ovoj fazi segmentacije turističkoga tržišta može pomoći menadžerima u odabiru tržišnog segmenta. Isto tako on omogućuje i odabir prioritelnoga tržišnog segmenta, što je značajno, posebice kad se poduzeće namjerava specijalizirati za jedan tržišni segment. Primjena strategije koncentriranog marketinga na heterogenim tržištima, a poznato je da je turističko tržište izuzetno heterogeno, ima veliko značenje. Pri tome se mogu odabrati različiti modelski strukture. Model u kojemu bi se poslužilo jednostavnom hijerarhijskom strukturom prikazuje slika 3.<sup>26</sup>



Slika 3. Model AHP za odabir najboljega tržišnog segmenta

U odabiru tržišnog segmenta važno je uključiti kriterije koji su za to značajni. U ovom modelu su odabrani sljedeći kriteriji:

1. \$ - prodaja u dolarima,
2. konkurencija - jakost konkurencije,
3. rast - predviđanje stope rasta,
4. profit M - granični profit (eng. *profit margin*),

<sup>25</sup> Više o tome vidi – I.Pavlović, B. Markić., isto, str. 162-164 i 170-172.

<sup>26</sup>17Prema D. B. A. Dyer, E. Formann, An Analytic approach to marketing decision, Prentice Hall, Englewood Cliffs, str. 249

##### 5. marketinški splet - postojeći marketinški splet.

Odabrana je dakle jednostavna hijerarhijska struktura u kojoj je postavljeni cilj bio odabir prioritetnoga tržišnog segmenta. Promatrana su tri tržišna segmenta po odabranim, prije navedenim kriterijima. Model je uključio tri alternativna rješenja, dakle sljedeće segmente:

1. segment - poslovna administracija,
2. segment - vlasnici malih poduzeća i menadžeri,
3. segment - vlasnici kuća.

Uspoređujući u parovima alternative po zadanim kriterijima i uspoređujući međusobno i vrednujući kriterije uz korištenje matričnog računa, moguće je odrediti koeficijente prioriteta. Na temelju koeficijenata daje se odrediti prioritetni tržišni segment. To je onaj segment za kojega je koeficijent konačne prednosti alternative najveći. Najmanje povoljan bit će onaj tržišni segment koji po odabranim kriterijima ima najmanji koeficijent. Softverski paket Expert Choice može olakšati proces izračuna. Model može pomoći da se konzistentno donese odluka o odabiru prioritetnoga tržišnog segmenta.

Analiza osjetljivosti modela također je značajan pokazatelj jer omogućuje menadžerima uvid u situaciju ako se mijenja značaj određenog kriterija, pa zapravo govori o tome što bi se dogodilo ako bi se mijenjao odnos kriterija za odabrane alternative.

Navedeni i slični modeli mogu vrlo uspješno poslužiti i na taj način unaprijediti proces donošenja strateških menadžerskih odluka u segmentaciji turističkoga tržišta.

## 5. ZAKLJUČAK

Segmentacija tržišta postupak je bez kojega se ne može zamisliti suvremeno poslovanje poduzeća orijentiranoga na želje i potrebe klijenta poradi maksimizacije zadovoljstva uslugom i kvalitetom usluge, kao i maksimizacije financijskoga rezultata poduzeća.

Pri segmentaciji tržišta uključene su brojne varijable, tj. metode, kao što su segmentacija na osnovi demografskih karakteristika potrošača, socio-ekonomske karakteristike, obilježja kupovnih situacija i slično.

U donošenju odluka o tako vrlo složenom procesu mogu poslužiti suvremene i novije metode koje nisu na tom polju dostatno upotrebljavane, posebice ne u sinergijskom obliku.

U tom smislu može se koristiti modelima neuronskih mreža, koji omogućuju da se na lakši i kvalitetniji način definiraju tržišni segmenti na osnovi odabranih varijabla - "produžena ruka" tim modelima može biti model

analitičkoga hijerarhijskog procesa, koji omogućuje odabir prioritetnoga tržišnog segmenta.

Ovim metodama olakšava se i ubrzava postupak segmentacije tržišta, ali se i prevladavaju ograničenja linearnih tehnika. Ovi modeli mogu poslužiti s visokim stupnjem pouzdanosti.

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## **NEURON NETWORK AND ANALYTICAL HIERARCHY PROCESS IN THE TOURIST MARKET SEGMENTATION**

### ***Summary***

*Market segmentation is basic for the strategic decision-making within a company. In that way, heterogeneous consumer groups, homogeneous within themselves with regard to the tourist preferences and that demand identical products and/or marketing mix, are identified. There are many ways of the market segmentation, but the most used one is socio-demographic market segmentation.*

*This paper will show modern methods such as neuron network model and analytical hierarchy process that can be successfully applied in the market segmentation process and in target segments selection as well. Consequently, decision-making in the complicated process that the tourist management has to constantly deal with, is facilitated and improved. Neuron network models enable the market distribution into certain homogeneous groups or segments, while the analytical hierarchy process enables the selection of the adequate or priority market segment. These techniques have proved to be more efficient than the linear methods. Both methods provide high degree of reliability.*

***Key words: market segmentation, tourism, neuron network, analytical and hierarchy process***

***JEL classification: M31, L83***

**STRUČNI RAD**

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## **EKONOMSKI RAST TRANZICIJSKIH ZEMALJA U PROCESU GLOBALIZACIJE**

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### **Sažetak**

*Perspektive ekonomskog rasta tranzicijskih zemalja temelje se na neoklasičnoj teoriji rasta i hipotezi uvjetne konvergencije. Većina ranijih ekonometrijskih istraživanja konvergencije pretpostavlja da je tehnološki rast posljedica napretka znanja, a ne specifičnost pojedine zemlje. Modeli se temelje na tvrdnji da su razlike u razinama dohotka i stopama rasta među zemljama posljedica razlike u tehnologiji. Takav pristup nije u skladu s procesima globalizacije, ekonomske integracije i tehnološke razmjene s kojima smo danas suočeni. Međunarodni transfer tehnologije je osnovni mehanizam preko kojega regionalna integracija utječe na rast. Tehnološka se razmjena ostvaruje kupnjom proizvoda u kojima su ta dostignuća ugrađena, prihvatanjem novih ideja, organizacijskih struktura i poslovnih operacija. Tehnološki je napredak sada ugrađen u kapitalu i radu. Najnovija istraživanja pokazuju da siromašne zemlje ne uvode suvremene kapitalne proizvode iako su im dostupna jer radna snaga ne raspolaze potrebnim znanjima i vještinama za njihovo produktivno korištenje. Razmatrajući još i institucionalno i ekonomsko restrukturiranje kroz koje moraju proći u procesu pristupanja EU, europske tranzicijske zemlje imaju povoljne uvjete za postizanje brzog rasta produktivnosti posebno s aspekta nove ekonomije. Perspektive europskih tranzicijskih zemalja leže i u rastu ljudskog kapitala i njegove fleksibilnosti, kako bi se bili u mogućnosti produktivno koristiti novim proizvodima i tehnologijama.*

**Ključne riječi:** *ekonomski rast, konvergencija, ekonometrijski modeli, tranzicija, tehnološki napredak, nova ekonomija.*

## 1. EKONOMETRIJSKA ANALIZA EKONOMSKOGA RASTA

Prema neoklasičnoj teoriji rasta, stopa rasta dohotka po stanovniku u obrnutom je odnosu s početnom razinom dohotka po stanovniku. Hipoteza klasične konvergencije empirijski se temelji na Solow-Swanovu modelu rasta (vidi Sala-i-Martin, 1996.) Početna razina realnoga GDP *per capita* često je u empirijskim istraživanjima odabrana kao eksplanatorna varijabla za testiranje navedene hipoteze neoklasične teorije rasta, no pregled dostignutih rezultata ekonometrijskih istraživanja ekonomskog rasta pokazuje da je problem konvergencije složen i da se, jednostavno, ne može objasniti s pomoću jedne eksplanatorne varijable. Postoji više ekonometrijskih istraživanja na tu temu: T. F. Cooley and S. F. LeRoy (1981), R. Levine and D. Renelt (1991), R. Kormendi and P. Meguire (1985), R. Barro (1991), N. G. Mankiw, D. Romer and D. Weil (1992) itd. Utvrđeno je više od 50 varijabla koje su signifikantno korelirane s rastom, no nema pouzdanoga model niti egzaktno specificiranoga teorijskog puta za empirijsko istraživanje rasta.

Levine i Renelt (1991) ispitivali su ponašanje funkcijske veze između rasta GDPpc i određene grupe eksplanatornih varijabla, od kojih su određene one koje su tretirane kao stalne varijable, a ostale su eksplanatorne varijable u modelu mijenjale. Ako su pritom stalne eksplanatorne varijable zadržale predznak i signifikantnost, takve su definirali kao robusne. Robusnost su ispitivali Leamerovom metodom pod nazivom „Extreme-bounds analysis“. Primijenili su je na funkciju:

$$Y = \beta_I I + \beta_M M + \beta_Z Z + u,$$

gdje je  $Y$  - rast GDPpc,  $I$  – skup stalnih eksplanatornih varijabla (uvijek uključenih u regresiju),  $M$  – skup eksplanatornih varijabla koje ispitujemo,  $Z$  – podskup eksplanatornih varijabla koje su prema nekim istraživanjima identificirane kao potencionalno važne za istraživanje ekonomskoga rasta.

Testirana je signifikantnost skupa  $M$  varijabla, mijenjajući podskup  $Z$  varijabla, kako bi se ispitala robusnost varijabla u skupu  $M$ , na skupu podataka za razdoblje 1960. -1989., za 101 zemlju. Utvrđeno je da varijable koje čine skupinu  $I$  (realni GDPpc u 1960. g, rast stanovništva, relativni udio stanovništva uključenoga u srednjoškolsko obrazovanje u 1960. g. i relativni udio investicija u GDP) objašnjavaju 50% varijance stope rasta podataka vremenskog presjeka. Ono što je posebno važno jest da postoji robusna negativna korelacija između stope rasta GDPpc za razdoblje 1960. -1989. i početne razine realnoga GDPpc (u 1960.), ali sve dok je u skupinu  $I$  varijabla, uključena varijabla relativni udio stanovništva uključenoga u srednjoškolsko obrazovanje u 1960. godini.

Ova empirijska analiza podupire nešto modificiranu neoklasičnu teoriju rasta - siromašne zemlje mogu imati brži ekonomski rast od bogatih zemalja, ali samo uz određenu veličinu ljudskoga kapitala. Nepoznat je precizni mehanizam

sustizanja bogatih i razvijenih zemalja. On je specifičan za svaku zemlju i područje je neprestanoga istraživanja. Ono što je poznato iz empirijskih istraživanja jest da što je zemlja više uključena u svjetsko tržište, to su joj perspektive veće ako raspolaže inicijalno većim ljudskim kapitalom, tj. obrazovnijim stanovništvom. Tendencija zemalja s niskim dohotkom da imaju veće stope rasta potpomognuta je međunarodnom mobilnošću kapitala i tehnologije. U zemljama sljedbenicama s prosječno većim obrazovanjem moguće je brži rast jer brže prihvaćaju nova dostignuća i brže sustižu tehnološka lidera.

Među zemljama koje su slične u ekonomskom i tehnološkom smislu "postoji sila" koja promiče konvergenciju u razini dohotka *per capita*. Konvergencija je rezultat smanjenih prinosa kapitala. Ocijenili smo regresijske funkcije i analizirali rast GDP pc, ali i produktivnost za svaku od 15 zemalja EU u razdoblju 1973. - 1997. (Lovrić, 2001.) Utvrđena je inverzna korelacija između GDP pc stope rasta u razdoblju 1973. - 1997. u odnosu prema početnoj razini GDP pc (1973.). Podaci su uzorka pokazali relativno homogenu skupinu bogatijih zemalja. Iz regresijske veze je utvrđeno: pri povećanju GDP pc dvostruko u odnosu prema prosjeku EU15, stopa porasta GDP pc 1973. - 1997. smanjuje se za 0,64%. Najmanja je raspršenost oko srednje vrijednosti GDP p/c 1973. Tu skupinu čine: Italija, Austrija, Njemačka, Belgija, Nizozemska, Velika Britanija i Francuska. Iznad prosjeka stope porasta GDP pc najviše odstupa, svakako, Irska s prosječnom stopom od preko 4% i Luksemburg 2,8%, a ispod su prosjeka Grčka i Švedska. Utvrđena je također inverzna korelacija između stope rasta produktivnosti u razdoblju 1973. - 1997. u odnosu prema početnoj razini produktivnosti (1973.). Regresijom je utvrđeno da ako se produktivnost udvostruči u odnosu prema prosjeku EU15, njezina će se stopa rasta smanjiti za 0,84%. Očita je sličnost s rastom GDP pc za isto razdoblje. Produktivnost reagira s 0,2% većim padom. Slična je i raspršenost oko prosjeka. Irska je u oba slučaja daleko iznad prosjeka EU s gotovo istim pokazateljima i za GDP pc i za produktivnost: proporcionalni udio u prosjeku EU15 u 1973. je 0,6, a stopa rasta i za GDP pc i produktivnost je oko 4% godišnje, što je za 2% veći iznos od prosjeka EU15.

Ovi rezultati potvrđuju pretpostavku o konvergenciji (vidi npr. Barro, Sala-i-Martin (1992)) a to je da u startu siromašnije zemlje ekonomski rastu značajno brže i tako nastoje sustići u startu bogatije zemlje. Djelovanje smanjenih prinosa<sup>1</sup> implicira smanjivanje stope ekonomskoga rasta na dulje razdoblje. Stope rasta bit će veće što je niži omjer kapitala i rada, i smanjivat će se kako taj omjer raste (vidi npr. Barro, Grilli, 1994.). Cilj je dostići točku stacionarnosti kapitala i dohotka. Ta je točka ista za ekonomije koje su u osnovi slične.

<sup>1</sup> Smanjeni prinosi uvjetuju da ekonomski rast ne ide u beskonačnost povećanjem akumulacije kapitala.

Tehnološki napredak omogućuje pomicanje točke stacionarnosti, a time i izbjegavanje smanjenih prinosa. Zbog toga govorimo o relativnoj konvergenciji. Stope rasta *per capita* nisu velike kad je omjer dohotka i rada nizak u apsolutnom iznosu, već kad je daleko po vrijednosti od točke stacionarnosti, koja više nije konstantna veličina u vremenu.

Mankiw, Romer i Weil (1992.) ocijenili su loglinearizirani model i koristili su se kao eksplanatornom varijablom logaritama *per capita* dohotka na početku analiziranoga razdoblja rasta, kao mjeru udaljenosti od točke stacionarnosti – a to je dakle negativni prediktor sljedećega rasta. Tim se načinom koristilo više ekonometričara (npr. Cohen, 1995., Sala-i-Martin 1996., Brumm, 1996., Temple, 1998. itd.). Osnovni aspekt ovog pristupa jest da sve zemlje implementiraju novu tehnologiju po istoj stopi, te da je tehnološki rast posljedica napretka znanja, a ne specifičnost pojedine zemlje. Zbog toga su varijacije u stopama rasta među zemljama trebale biti objašnjene varijacijama u udaljenostima od točke stacionarnosti i s pomoću smanjenih prinosa kapitala. Ovakav je pristup posebno nepogodan kad se istražuje rast tranzicijskih zemalja.

## 2. EKONOMSKI RAST TRANZICIJSKIH ZEMALJA I GLOBALIZACIJA

Tražeci odgovor na pitanje koliko prosječna tranzicijska zemlja treba vremena da sustigne razinu dohotka prosječne razvijene ekonomije, neki su se autori koristili modelima koje su specificirali Barro (1991.) i Levine i Renelt (1992.) na velikom skupu zemalja u razvoju s tržišnom ekonomijom.

Ocijenjeni «Barroov model»:

$$\widehat{GDPGROWTH} = 0,0302 - 0,0075 Y_{0i} + 0,025 PRIM_i + 0,0305 SEC_i - 0,119 GOV_i$$

Ocijenjeni «Levine-Reneltov model»:

$$\widehat{GDPGROWTH} = -0,83 - 0,035 Y_{0i} - 0,38 POP_i + 3,17 SEC_i + 17,5 INV_i$$

gdje su:

GDPGROWTH - realni rast GDP pc,

$Y_0$  - početna razina dohotka per capita,

PRIM - stopa stanovništva uključenog u osnovno obrazovanje,

SEC - stopa stanovništva uključenoga u srednje obrazovanje,

POP - stopa rasta stanovništva,



GOV - udio proračunske potrošnje u GDP,

INV - udio investicija u GDP.

Modeli su rabljeni tako da su prikupljeni podaci za navedene eksplanatorne varijable za skupinu tranzicijskih zemalja, i tako je dobivena procijenjena dugoročna stopa rasta. No procijenjene su stope rasta se pokazale precijenjenima (prosječna vrijednost rasta je 5,2, za Bugarsku je 1,8, a za Turkmeniju 11,57), a to je posljedica neusporedivosti veličine fizičkog i ljudskog kapitala, koji je bio veći u tranzicijskim nego u tržišnim ekonomijama korištenog uzorka, a i razlikama u rastu stanovništva. Primijenivši ocijenjene modele na podatke za tranzicijske zemlje, *à priori* je pretpostavljeno da su tranzicijske zemlje strukturalno identične tržišnim ekonomijama na sličnim razvojnim razinama. Dobiveni rezultati pokazuju da ovakav pristup ekonometrijskoj analizi rasta uopće nije primjeren za tranzicijske zemlje.

Neadekvatnost pristupa da sve zemlje implementiraju novu tehnologiju po istoj stopi, te da je tehnološki rast posljedica napretka znanja, a ne specifičnost pojedine zemlje, potaknula je stvaranje nove struje u empirijskim istraživanjima koja se usredotočila na tehnološki transfer kao silu što diktira konvergenciju (npr. Romer, 1990.).

Velik je broj radova koji ispituju efekte globalizacije na ekonomski rast. Henrekson i Torstensson (1997.) specificirali su model za istraživanje efekata ekonomske integracije na rast zemalja EZ i EFTA. Proveli su empirijsku analizu s naglaskom na specifikaciji i osjetljivosti eksplanatornih varijabla. Upotrijebili su podatke vremenskoga presjeka za skupinu zemalja, zatim također za skupinu samo bogatih zemalja i panel-podatke za OECD-zemlje. Posebno je važno što su u model uključili varijablu koja je mjerila integracijske efekte u okviru tržišta, a odnosi se na određene razine tržišnih barijera (varijabla RERD). Model glasi:

$$GROWTH = \alpha + \beta_1 Y_0 + \beta_2 SCHOOL + \beta_3 INV + \beta_4 ECEFTA + \beta_5 RERD$$

gdje su:

*GROWTH* – prosječna stopa rasta realnog GDPpc,

*Y<sub>0</sub>* – početni realni GDPpc,

*SCHOOL* – prosječni broj godina školovanja,

*INV* – relativni udio investicija u GDP,

*ECEFTA* – dummy varijabla, ima vrijednost 1 ako je zemlja članica EZ ili EFTA,

*RERD* - omjer stvarnih i očekivanih razinua cijena.

Model je ocijenjen na uzorku od 115 zemalja. Rezultati su dobri i signifikantni na razini od 5%. Sve varijable imaju očekivani predznak. Zaključak je da članstvo u EC ili EFTA potiče rast. Daljnje pitanje koje se razmatralo jest jesu li ti utjecaji različiti ako je riječ o velikim ili malim zemljama. Tako se u

model uključilo dummy varijablu *SMALL* koja je imala vrijednost jednaku 1 ako se radilo o maloj zemlji, a 0 ako je riječ o velikoj zemlji. Rezultati su pokazali da nema značajnih razlika u efektima integracije na rast velikih ili malih zemalja. Zaključak je istraživača da je transfer tehnologije glavni mehanizam preko kojega članstvo u EZ ili EFTA utječe ne ekonomski rast.

Trebalo je zato poboljšati Sollow-Swanov model rasta i prilagoditi ga otvorenoj ekonomiji. Naime, taj je model definiran za zatvorenu ekonomiju i tehnološki se napredak specificirao kao zaseban utjecaj na rast. No u današnjim uvjetima globalizacije i tehnološke razmjene, većina svjetskih ekonomija je otvorena i mogu se u globalnom smislu tretirati kao male. Sollow-Swanov model objašnjava ekonomski rast i razlike u visini dohotka među zemljama s pomoću razlika u tehnologiji. To je i njegov nedostatak u postojećim uvjetima globalizacije. Najnovije spoznaje pokazuju da su mnoge nove tehnologije ugrađene u proizvodima koji se mogu uvesti, i tako i siromašne zemlje imaju pristup novim tehnološkim dostignućima. S. Kosempel, (2005.) specificirao je takav model u kojemu je rast produktivnosti utjelovljen u faktorima proizvodnje.

Ako se nove tehnologije mogu uvesti, zašto su onda neke zemlje siromašne, a druge bogate? Osnovni uzrok leži u razlici obrazovanosti stanovništva. U zemljama gdje je razina obrazovanja niska, iako je nova tehnologija dostupna uvozom suvremenih proizvoda, radna snaga nema potrebne vještine i znanja da se produktivno koristi tim proizvodima. Ulaganje u ljudski kapital u tranzicijskim zemljama jezbog toga osnovna pretpostavka za realizaciju modificirane neoklasične teorije rasta: siromašne zemlje mogu imati brži ekonomski rast od bogatih zemalja ali samo uz određenu veličinu ljudskoga kapitala.

Sredinom devedestih u SAD-u po mišljenju mnogih analitičara počinje razdoblje nove ekonomske paradigme ili *nove ekonomije*. Karakterizira je visoki rast produktivnosti, niska nezaposlenost, niska inflacija. Objasnjava se brzim inovacijama i investiranjem u informacijsku tehnologiju u kombinaciji s globalizacijom, deregulacijom i drugim poboljšanjima u procesu poslovanja, a sve je rezultiralo dugoročnim značajnim rastom produktivnosti u odnosu prema prethodnih 25 godina. Ta iskustva mogu biti od velike koristi za tranzicijske zemlje, ali one prije svega moraju poraditi na postizanju pretpostavka za produktivnu primjenu novih tehnologija na svim razinama.

## ZAKLJUČAK

Cilj ovom radu bio je utvrditi ograničenja i rezultate dosadašnjih metoda ekonometrijskog istraživanja ekonomskog rasta primijenjenih na tranzicijske zemlje. U većini dosadašnjih radova osnovni aspekt pristupa u istraživanju ekonomskoga rasta jest da sve zemlje implementiraju novu tehnologiju po istoj stopi, te da je tehnološki rast posljedica napretka znanja, a ne

specifičnost pojedine zemlje. Taj je nedostatak posebno došao do izražaja nastajanjem globalizacijskog procesa, pa se pojavila i nova struja u empirijskim istraživanjima koja se usredotočila na tehnološki transfer kao silu što diktira konvergenciju. To izaziva potrebu za prilagodbom postojećih ocijenjenih modela rasta otvorenoj ekonomiji. Najnoviji rezultati primjene takvih modela potvrđuju da je ulaganje u ljudski kapital u tranzicijskim zemljama osnovna pretpostavka za realizaciju modificirane neoklasične teorije rasta, prema kojoj siromašne zemlje mogu imati brži ekonomski rast od bogatih zemalja, ali samo uz određenu veličinu ljudskog kapitala. Ostvarivanjem pretpostavka za produktivnu primjenu novih tehnologija na svim razinama, posebno s aspekta uvjeta „nove ekonomije“, europske tranzicijske zemlje imaju realne šanse da smanje razvojni raskorak u odnosu prema članicama EU.

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**TRANSITION COUNTRIES ECONOMIC GROWTH IN  
THE PROCESS OF GLOBALIZATION**

**Summary**

*The transition countries' prospects are based on the neoclassical growth theory and the convergence hypothesis. Most of the previous econometrics studies tend to assume a common and exogenous technology in investigation of cross-country convergence. The models relied heavily on differences in technology to explain international differences in income levels and growth rates. These assumptions are nowadays inconsistent with the features of the process of globalization and economic integration, and recent evidence on technological change. International transfer of technology is the main mechanism through which regional integration influences the growth. The transfer is achieved by purchasing the products in which the new technology is built, by accepting new ideas, new organizational structures and business operations. Technological change is now embodied within capital and labour. Some recent researches suggest that poor countries do not import capital goods that embody advanced technologies, despite their accessibility, and the reason is shortcoming of workers' skills required to use these goods productively. Furthermore, considering institutional and economic restructuring in the process of accession to the EU, European transitional countries have favourable terms for achieving rapid productivity growth, especially from the aspect of „new economy“. The European transitional countries' perspectives and expectations are also in improving of the human capital and its flexibility, as it would be able to productively utilize new products and technologies.*

**Key words:** *economic growth, convergence, econometric models, transition, technological change, new economy.*

**JEL classification:** *O49, P29*



**ESEJ**

***ESSAY***





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## **CHIEF SECRETARIAL OFFICER AT A UNIVERSITY - MANAGER**

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Esej / Essay

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### **Summary**

*The legal and organisational trends of the 21st century have to adapt not only to the economy but also to public administrations and institutes. In the area of higher education we are still situated in a period of transitional change and adaptation. The transitional development strategy that was attempted until now has for the most part meant blindly following the developed countries in the West and taking over their standards in the areas of democracy and legal order. In the aspiration for comparing study programs with European ones, we must not neglect the problem of organization and administration at post-secondary education institutions. The archaic system of managing public administrations and the dominating premise of self-sufficiency have been out-lived and as a result, in spite of being partially financed by the state budget, are destined to collapse. In order to develop a more modern, transparent and marketable method of managing a university, it is necessary to draw attention to the current management of universities and in a way, the disproportionate distribution of jurisdiction and responsibility in managing the university.*

**Key words: university, organization of the administration, management, jurisdiction, responsibility**

## 1. INTRODUCTION

The primary activities of the university as an autonomous, scientific-research, art and higher education institute with special status, are carrying out the national program for post-secondary education and scientific-research work. The university is a public institution. The Institution Act<sup>1</sup> does not encroach upon as much with the area of post secondary education because the Post Secondary Education Act<sup>2</sup> deals with this area as *lex specialis*. The university operates under the principles of autonomy, which above all ensures it the freedom to do research, artistic creativity and passing on knowledge. This also includes independently managing internal affairs of the organization, operating under the statute in accordance with the law (for the most part, this paper deals with this part of autonomous decision-making by the university), adopting measures for the election of titles for lecturing professors, researchers and post-secondary co-workers, the selection of professors, researchers and post-secondary co-workers for employment, the creation and adoption of study and research programs, defining the study regime. Furthermore, defining the form and time period for student examinations, awarding academic and scientific titles in accordance with the law, awarding honourable doctorates and professor of merit titles, elections, appointing and recalling bodies in accordance with the statute and other acts, making decisions about the form of participation with other organizations, managing property in accordance with the intention for which it was obtained.

In accordance with the provision under the Post Secondary Education Act, the university is autonomous in the area of independent management of the organizations internal affairs and operations. The university must do this by establishing a statute. However, autonomy is limited as it must be accordance with the law. As a result, the law recognizes autonomy for the university, which is already in the constitution<sup>3</sup> and only with the framework of its provisions.

The usual practice of managing a university is still based on one person. *Primus inter pares* – the Chancellor of University is a specialized as well as a business manager of the university. Undoubtedly, their most important role is to care for and be responsible for legality of the university's operations and for the execution of its obligations. As a result, their jurisdiction and responsibility - *ex lege* originate from these facts.

The archaic method of managing by unifying the professional and business function under one person, many times means a mouthful that is too big for someone, who undoubtedly must have top-notch academic qualities, although experience and managerial skills remain on the sidelines.

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<sup>1</sup>The Institution Act (Official Gazette of the Republic of Slovenia no. 12/91, 8/96)

<sup>2</sup> Post Secondary Education Act (Official Gazette of the Republic of Slovenia no. 100/04 – ZVis – UPB2)

<sup>3</sup> The Constitution of the Republic of Slovenia (The Official Gazette of the Republic of Slovenia no. 33/91, 42/97, 66/00, 24/03, 69/04), article 58.

## 2. THE UNIVERSITY ADMINISTRATION

For the most part, the university administration consists of non-academic employees with different profiles. These are areas that are in the background that professionally, administratively and technically make sure that the university executes its mission. It is a fact that non-academic departments are rarely discussed. Furthermore, there is at least double the amount of non-academic employees than academic ones (note: free estimation by author). This big group forms the secretarial department or the university administration.

### 2.1. Department Head – Chief Secretarial Officer

Article 27 of the law<sup>4</sup> defines that the secretariat is responsible for managing administrative and professionally technical tasks at post secondary institutions. The secretariat is managed by secretaries. In practice, this article is usually carried out in a way so that the universities have a chief secretarial officer, who manages the administration and university members have secretaries who manage the administration of the members. This type of organization is usually also written in the university's statute.

The problem that arises is a vacuum with provisions that state the jurisdiction and responsibility of the chief secretarial officer. For the most, the regulations define that the university administration is managed by the chief secretarial officer but do not concretize their jurisdictions and responsibilities. This is a prerequisite for successful managing.

The chief secretarial officer is neither a specialized nor a business manager. These functions, as listed above are unified under the functions of the Chancellor. How much jurisdiction do they have and where do their responsibilities end? The regulations do not clarify the replies to the questions. They only define that the work tasks, authorization and responsibilities of the chief secretarial officer are defined by the Organization and Systematization of Universities and Members Act<sup>5</sup>. In so far as it would include carrying out the tasks of the chief secretarial officer only for a working position, then the provision above might be sufficient. However, chief secretarial officer is not only a working position but also an important management function. After all, the university's senate must give their opinion beforehand for the appointment of a four year mandate. The fact that the chief secretarial officer while performing their everyday tasks can only fall back on the Organization and Systematization of Universities and Members Act, is unacceptable. A preamble in various resolutions or instructions, which is issued by the chief secretarial officer, is at least surreal if not even legally questionable. It would be justified to expect, that the jurisdiction and responsibilities of the person who should be managing the entire university administration be clearly

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<sup>4</sup> Look at note 2

<sup>5</sup> e.g. University of Maribor Statute, article 54, paragraph 3

defined in the statute. In the same or similar way they are defined for the Chancellor.

### **3. SEPARATING THE SPECIALIZED AND BUSINESS MANAGEMENT FUNCTION**

The numerous problems that have been caused by the above described practice in managing university administration and especially the discrepancy between jurisdictions and responsibilities might be worth organizing with a different model of management. A large part of the above described problem could be organized by only taking into consideration the legal possibilities that foresee a different model of management and at the same time offers a separation in the specialized and business management function.

The jurisdiction and the responsibilities would be worth dividing into two functions and thus the function of the Chancellor as a specialized manager of the university and the function of the chief secretarial officer (at the same time, maybe it would be worth changing the title of the chief secretarial officer, in a way so that it would reflect the actual management function. There are many possibilities: Administration Director (similar abroad) or University Management Director...), who would be a professional employee responsible for managing the university's property and finances.

#### **3.1. Chancellor – professional university manager**

The function of professionally managing and representing the university would continue to be the function of the Chancellor. However, the Chancellor would have jurisdiction especially over professional academic content, the adjustment of the educative, scientific-research or artistic work, which attention would be paid to more easily and efficiently without having to worry about the management of the university's property and finances. As a result, the responsibilities for the following would also be solved.

#### **3.2. Chief Secretarial Officer- Management Body**

The chief secretarial officer would get the function as university manager, whose main task would be the organization and management of the university's professional departments and the adjustment of work with the professional departments of university members, especially responsibility for the material management of the university's property. Of course, at the same they would not be able to encroach upon the areas of adjusting the educative, scientific-research or artistic work and other tasks at the university, which are under the jurisdiction of the Chancellor.

The chief secretarial officer would answer to the Chancellor and the university's administration board for their work. In the event of an eventual conflict between the jurisdictions of the chief secretarial officer and the Chancellor, the administration board would make a decision on the motion of the Chancellor or chief secretarial officer.

### **3. 2. 1. Selecting a Chief Secretarial Officer**

The chief secretarial officer is appointed by the university's senate after completing a public competition and who is proposed by the Chancellor after being approved by the administration board for a mandate of four years. They can also be appointed for numerous consecutive mandates.

The conditions for receiving the position should not only be political and based on academic education but above all other things also proven professional training in the area of legal, economic or organizational sciences and at least five years work experience in leading management positions in the economy or in public institutions, with proven positive results.

The reasons for the above mentioned points are more than obvious. The university, as an institution with a special status must also quickly and efficiently adapt to new legal economic and organizational trends in the market economy. In spite of the percentage of financing ensured by the state budget, it must ensure its economic share in the market, keep it and also expand it. By obtaining this capital, it must not only operate legally but it must also do it in the proper professional manner. On the contrary, it is destined to fail.

### **3. 2. 2. The rights and responsibilities of the chief secretarial officer**

The chief secretarial officer represents the university in property matters regarding legal transactions as a subject with rights, obligations and responsibilities. In legal transactions, they represent and sign documents having limited amounts, independently. When the limit is exceeded, they represent and sign documents together with the Chancellor or an authorized person.

As manager of the university, the chief secretarial officer would have to have clear jurisdictions and responsibilities. There should not be any doubts about their rights and obligation in managing. Besides the above mentioned tasks, their tasks would include the following:

- Adjusting financial questions regarding education, scientific-research, artistic work and other work at the university,
- Worrying about executing the resolutions made by the administration board and the university's senate, in so far as they are connected with the area of work,

- Caring for and having responsibility for the legal operations of the university and its members in the area of property relations and management,
- Obligation to warn bodies and university employees about illegal decisions or decisions made in contradiction to the university's statute or resolutions, relating to property and financial operations of the university and its members,
- Caring for the preparation and realization of the yearly financial plan of the university and co-operating in entering contract regarding financing by the state and with other business partners,
- Caring for the evidence about the university's property and about their physical and property insurance,
- Obtaining explanations from those responsible regarding the financial and property operations of the university's members,
- Offers professional help to responsible persons at the university's members regarding the management of property with members,
- Responsibility for the legal financial operations of the university and its members in relation to the university bodies and founding bodies,
- Caring for the financial side of executing international exchange agreements with other partner universities,
- Control over treasury operations and responsibility for consistent up-to-date and proper management of the university's (including its members) financial books,

The chief secretarial officer should submit a written report to the university's senate and administration board, twice a year.

#### **4. CONCLUSION**

Of course, the prerequisite for such an organization is suitable statutory provisions, for which the legal basis can be found in legislation. Statutory provisions should clearly define the jurisdiction and responsibilities not only of the Chancellor but of the chief secretarial officer as well.

By separating the professional and business functions in managing a university, we would be able to solve the problem of discrepancy between jurisdictions and responsibilities. The Chancellor as a professional manager would as a priority care for the development of the profession. The chief secretarial officer as a manager would be responsible for the financial operations of the university and its members.

The undisputed fact exists that the current organizational structure is rigid and out-dated. The current status does not allow a modern university to react fast and efficiently to changes in legislation and in the market. Even the best study programs will not be enough to complete the goals set by the universities, unless

they are supported by the transparent and efficient organization of non-academic departments that will enable for lasting and firm operations of the university as a whole.

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## **GLAVNI TAJNIK NA SVEUČILIŠTU – MENADŽER**

***Sažetak***

*Pravni i organizacijski trendovi 21. stoljeća moraju se prilagoditi se samo gospodarstvu već i javnoj administraciji i institucijama. U pogledu višeg obrazovanja, još smo uvijek u razdoblju tranzicijskih promjena i prilagodbe. Do sada je strategija tranzicijskog razvoja uglavnom značila slijepo povodenje za razvijenim zemljama Zapada, odnosno preuzimanje njihovih standarda u područjima demokracije i prava. Težnja za usporednim europskim studijskim programima ne smije zanemariti problem organizacije i administracije u obrazovnim institucijama nakon srednjeg obrazovanja. Arhaični sistem upravljanja javnom administracijom kao i prevladavajuća pretpostavka o samodostatnosti još su prisutni. Iako se djelomično financiraju iz državnog budžeta, takvo je stanje neodrživo i zasigurno će propasti.*

*Kako bi se razvila modernija, transparentnija i marketinški opravdana metoda upravljanja sveučilištem, neophodno je svratiti pozornost na sadašnje rukovođenje sveučilištima i na neproporcionalnu distribuciju pravne nadležnosti i odgovornosti u upravljanju sveučilištem.*

***Ključne riječi: sveučilište, organizacija administracije, upravljanje, pravna nadležnost, odgovornost.***

***JEL klasifikacija: I29***



**POSEBAN PRILOG**

***SEPARATE SUPPLEMENT***



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## **DRUŠTVO PRIJATELJA PRIRODE DUB - OZBILJNO ZADUŽILO DUBROVAČKI TURIZAM**

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### **Sažetak**

*Današnji Dubrovnik već od svojega postanka, bio je sav obrašten gustom zelenom šumom. Tako je i ime Dubrovnik nastalo od dubrave, dubova šuma. Dubrovčani su oduvijek voljeli svoj grad, bili su, s pravom, njegovi zaljubljenici, i to su pokazivali na razne načine. Upravo je ta ljubav i zaljubljenost bila i povod da se osnuje društvo koje bi se ozbiljno i redovito bavilo uređenjem i uljepšavanjem grada i predgrađa, koje bi skrbrilo o javnim parkovima, šetalištima, prometnicama. To je bilo potrebno i zbog samih stanovnika, ali još i više zbog turista koji su počeli posjećivati grad u sve većem broju. Stoga je rad posvećen početcima tih društava kojima je današnji DUB, rekli bismo, sljednik i nastavljač. Golemo je značenje DUB-a za turizam i grad Dubrovnik, za dubrovački puk u prošlih stotinjak godina, bez obzira na činjenicu što od početka Drugoga svjetskog rata pa sve do osamdesetih godina 20. stoljeća Društvo nije radilo. Njegovim ponovnim uspostavljanjem i početkom rada 1984. godine, došlo je do novog zamaha i skrbi za grad i njegovu svekoliku uređenost, tako da su današnji članovi DUB-a, među kojima je sve više mladih, pravi nastavljači i čuvari Dubrovnika i njegovih ukupnih vrijednosti. Današnja gradska uprava prepoznala je njihov rad u korist Dubrovnika i Dubrovčana, što je vrlo pohvalno i ohrabrujuće.*

**Ključne riječi: ljubav, spomenici, parkovi, čistoća, uređenost, turizam.**

### **UVOD**

Poboljšanje opskrbe pitkom vodom, popravci postojećih i izgradnja novih cesta, javna čistoća, pošumljavanje i drugi infrastrukturni i komunalni zahvati i objekti - stvorili su (i stvaraju) uvjete za razvoj turizma, ali i života općenito. To se odnosilo (i odnosi) i na čuvanje - održavanje kulturno-povijesnih spomenika grada Dubrovnika u prvome redu, ali i širega područja. S tim u svezi, godine 1878. Ivan August Kaznačić, poznati dubrovački liječnik i književnik, bio je imenovan čuvarom "historičnijeh i umjetničkijeh spomenika", a ista je dužnost bila povjerena od 1881. Josipu Gelcichu, povjesničaru i profesoru Nautičke škole u Dubrovniku. Poslije su taj posao obavljali i drugi ugledni Dubrovčani (dr. Josip

Posedel, dr. Milorad Medini...). Ubrzo nakon toga, u Dubrovniku je bilo ustanovljeno i Povjerenstvo za ures; članovi su bili birani na dvije godine i davali su svoje mišljenje o svim gradnjama unutar gradskih zidina. Tako su u Povjerenstvo za ures 1900. godine bili izabrani: Božo Mičić, Melko Čingrija, Baldo Kosić, Frano Bilica mlađi i Marko Mitrović. Općinska uprava Dubrovnika očito je imala dobru suradnju s Povjerenstvom za ures i zajednički su se vrlo odgovorno skrbrili da se ne "nagruđe izgled Dubrovnika".

## OSNUTAK I RAD DRUŠTVA ZA PROMICANJE INTERESA DUBROVNIKA

Dubrovčani su ljubav za svoj grad pokazivali često, u raznovrsnim situacijama i prigodama, ta je ljubav očita i vidljiva iz svakoga razgovora s njima. Postoje i brojni zapisi o tomu. Sve to zajedno je bilo i povod da se osnuje društvo koje bi se s pomnjom i razumijevanjem skrbrilo za uređenje i uljepšavanje grada i predgrađa uz osiguravanje određenih financijskih sredstava koja bi se upotrebljavala namjenski - za uređenje javnih perivoja, šetališta, prometnica, za sadnju ukrasnih stabala i biljaka na javnim lokalitetima. To je bilo potrebno učiniti i zbog samih stanovnika Dubrovnika, ali još više zbog turista koji su počeli posjećivati ovaj grad u sve većem broju. Jer, kako piše dr. Ivo Perić: "pokretačka snaga tog nastojanja bila je svijest da su lijepi Dubrovnik učinili lijepim njegovi stanovnici svojim stvaralačkim htijenjem i radom, te da on i njegova okolica - daljnjim stvaralačkim htijenjem i radom ovdašnjih ljudi - mogu biti još ljepši, privlačniji i ugodniji".

Zbog toga su se četvorica Dubrovčana (Marej Šarić, Baldo Kosić, Jero Pugliesi i L. Tauber) u drugoj polovici siječnja 1897. godine, desetak dana prije otvaranja Grand hotela Imperial, dogovorili da upravo oni budu "odbor" koji će se ubuduće skrbriti "o poljepšavanju grada i okolice". Golema je zasluga tog "odbora" jer je pokrenuto vrlo važno pitanje javnog rada u interesu, napišimo, turističkoga Dubrovnika. Vrlo su brzo Dubrovčani shvatili da taj "odbor" neće biti dovoljan, već da taj posao treba nastaviti šire i još bolje organizirano društvo. Ako znamo da je u to vrijeme klima bila smatrana glavnim razlogom dolaska i privlačenja turista, takva su društva nazivana „klimatičnim“ društvima. Zato je, već početkom veljače 1898. godine, u Dubrovniku ustrojen novi, širi odbor sa zadatkom da "osnuje klimatično društvo". Članovi tog novog odbora bili su: V. Basegli-Gozze, B. Caboga, I. Chlumecky, M. Čingrija, C. Loiseau, A. Manussi - Montesole, R. Negrini, J. Pugliesi, M. Šarić, V. Švrgulja, G. Valtriny i I. Vojnović. Odbor je odmah pristupio prikupljanju novaca za rad Društva, te je već 6. veljače 1898. u Bondinu teatru održan veliki maskirani veljun, a također je izdan i proglas kojim su građani Dubrovnika pozvani da, u okviru svojih mogućnosti, pomognu njihov rad.

O zadatku Klimatičnog društva u Dubrovniku lokalni je list tad pisao:

"Društvu bi bila glavna svrha da posjetiocima Dubrovnika učini ugodnim boravak

i da jakom i uspješnom utakmicom privabi što više stranaca u Dubrovnik, koji se svojim prirodnim ljepotama može natjecati sa svakim mjestom na kontinentu".

Inače, pri izradi pravilnika nije rabljen pojam klimatičko društvo nego Društvo za promicanje interesa Dubrovnika. U tom je pravilniku, među ostalim, pisalo:

"Svrha je Društva, da promiče blagostanje Dubrovnika, nastojeći osobito oko toga, kako bi se razvila općina, uredile, napravile i uzdržavale nasade, šetališta i putevi, potičući na to da se kraj što prije pošumi i podupirući gradnju što većeg broja stanova za strance".

Financijska sredstva potrebna za rad pribavljat će se članarinom, zatim izvanrednim darovima i na zabavama što će se organizirati u korist Društva. Zanimljivo je da su članovi - utemeljitelji plaćali - jednom za svagda - po 400 kr, doživotni članovi - također jednom za svagda - po 100 kr, a redoviti članovi po 6 kr godišnje. Počasni članovi nisu plaćali članarinu. Uprava Društva, tzv. Upraviteljstvo, imala je od 9 do 15 članova, koje je birala skupština Društva. Jedna trećina članova Upraviteljstva morala je biti nastanjena u Dubrovniku. Upraviteljstvo je bilo podijeljeno u više odbora, a svaki je odbor mogao u svoj rad uključiti do 10 članova iz redova članstva Društva i, naravno, izabrati voditelja. U pravilniku je bilo posebno istaknuto da: "Društvo nema nikakve političke tendencije", i da "nije njegov posao ni raspravljati o političkim pitanjima". Dalmatinsko namjesništvo odobrilo je Pravilnik svojim rješenjem od 11. srpnja 1898.

## PARK GRADAC

Treba napisati da je Društvo počelo s radom i prije odobrenja Pravilnika o njegovu radu. Osnivački se odbor Društva u ožujku 1898. obratio Općinskoj upravi Dubrovnika tražeći dozvolu za uređenje parka Gradac, posebno ističući da će on nakon uređenja biti otvoren "građanstvu i strancima kao ugodno šetalište i park".

Općinska uprava udovoljila je tom traženju i radovi na uređenju Gradca su započeli već u travnju 1898. (odrađeni su samo oni najpotrebniji radovi, a ostalo je ostavljeno za neka "bolja vremena"). Iste godine u lipnju Društvo je pristupilo i popravku puta na Dančama, a za taj popravak zatražili su i dobili od Općinske uprave pomoć od 500 forinta. Budući da je članarina bila glavni prihod, Društvo je nastojalo imati što više članova. Zanimljivo je da su novčane potpore davali i pojedini turisti, gosti tadašnjih dubrovačkih hotela. Također, kao članovi utemeljitelji Društva postale su i parobrodarske tvrtke - austrijski Lloyd iz Trsta i Ugarsko-hrvatsko parobrodarsko društvo iz Rijeke.

Radovi na izgradnji parka Gradac odvijali su se po planu, a da taj posao nije bio lak i jednostavan, svjedoči i jedan tekst u ondašnjem tisku u kojemu piše i ovo: "Priznajmo da je vilinsko djelo od proste goljeti i mrkjente učiniti udoban park." Društvo se često obraćalo građanstvu za pomoć glede dovršetka radova u parku,

naglašavajući da je taj park namijenjen građanima Dubrovnika za njihovo "uživanje i odmor". Zbog toga se dovršenje radova u parku Gradac i njegovo otvaranje za javnost, očekivalo u Dubrovniku s velikim zanimanjem. Konačno, 23. srpnja 1898. u večernjim satima, park Gradac bio je svečano otvoren, što je bilo popraćeno dobrom rasvjetom i biranim programom gradske glazbe. U park Gradac rado su dolazili i građani i turisti.

U Grand hotelu Imperialu 27. ožujka 1899. održana je prva Godišnja skupština Društva za promicanje interesa Dubrovnika, na kojoj su podneseni izvještaji o radu, o prihodima i rashodima, a bilo je izabrano i upraviteljstvo.

## AMERLINGOVA ČESMA

Jedna od zadaća Društva u to vrijeme bila je izgradnja i postavljanje česme na odgovarajućem u javnom prostoru Dubrovnika, a povod je bila oporuka Nika Amerlinga. Naime, on je izrazio želju da se njegovim sredstvima i u njegovo ime podigne česma u Dubrovniku (to je bio dosta bogat čovjek, a bogatstvo je zaradio radeći u Aleksandriji). Umro je 1892. u sedamdesetoj godini života. Njegov otac Inje bio je gostioničar u Dubrovniku. Prema želji iz oporuke, česma je trebala biti na prostoru današnje Gundulićeve poljane, ali se je već onda znalo da će tu biti podignut spomenik velikom pjesniku. Stoga je Društvo postiglo dogovor s braćom Amerling 1900. godine da česma bude na Brsaljama (dio Pila) uz uvjet da se na budućoj Gundulićevoj poljani postavi mala česma s natpisom koji tumači taj premještaj. To je i učinjeno.

Godine 1904. Društvo je uredilo i park na Pilama, ispod gradskih zidina. U lipnju 1907. održana je Godišnja skupština Društva, na kojoj je, pored ostalog, izabrano i Upraviteljstvo. Za predsjednika je bio ponovno izabran Matej Šarić, za tajnika Ivo De Giulli a za blagajnika Rajmond Negrini. U listopadu te godine Društvo je od Općinskog vijeća Dubrovnika dobilo pomoć u iznosu od 500 kruna. Vidljivo je da je Društvo za promicanje interesa Dubrovnika mnogo toga učinilo s nevelikim novčanim sredstvima i to su svi u gradu prepoznali i cijenili - i vlast i građani. Lokalni je list posebno isticao dotadašnja postignuća, posebno naglasivši tri ostvarenja - park Gradac, put preko Gorice svetog Vlaha i balustru na Brsaljama.

Društvo je novca uvijek nedostajalo tako da su poduzimali razne i brojne akcije. Tako je Društvo 3. veljače 1908., na Dan svetog Vlaha, upriličilo u Bondinu teatru veliki maškarani bal. Na njemu je bila dodijeljena nagrada trojici "najljepših maškara". Očito, sve se činilo da se prigodom takvih manifestacija prikupi što više novca za rad Društva.



## TVRĐAVA LOVRJENAC

Godine 1907. vojna je vlast napustila tvrđavu Lovrjenac, ali je ta tvrđava odlukom vojske bila dodijeljena na korištenje Planinarskom i turističkom društvu "Liburnija" iz Zadra. U Dubrovniku je, naravno, nastalo negodovanje zbog te odluke. Inače, spomenuto je društvo bilo utemeljeno 1899. godine i ono je po ondašnjoj Dalmaciji osnovalo, kako bi se danas reklo, svoje podružnice, koje su trebale biti organizirane kao planinsko-turistički domovi. Ipak, nakon reagiranja Dubrovčana, koji se s takvom odlukom nisu mogli niti htjeli pomiriti, tvrđava je Lovrjenac bila dodijeljena Društvu za promicanje interesa Dubrovnika, što je bio realan i očekivan potez. Društvo se je, glede toga, 1908. obratilo za "novčanu pomoć" i središnjoj vladi u Beču. Tom se pomoći htjela urediti ta znamenita dubrovačka tvrđava kao kavana - svratište?! Trošak je trebao iznositi 33 tisuće kruna. Srećom, ta namjera Društva nije provedena jer iz Beča nije stigao nikakav novac. Vezano uz tvrđavu Lovrjenac toga vremena postoji i jedna zanimljivost. Od 4. travnja 1911. pa do početka Prvoga svjetskog rata svakodnevno je, naravno u organizaciji Društva, topovski hitac s Lovrjenca oglašavao podne.

## SVE VIŠE U SLUŽBI TURIZMA

Društvo za promicanje interesa Dubrovnika, da bi moglo ostvariti svoje sve veće radne planove i obveze, trebalo je i sve više novca. Zato su se mnogima obraćali za pomoć i u tomu su imali uspjeha. Pokrajinska vlada u Zadru početkom travnja 1909. poslala je 6.800 kruna za uređenje parka na Ilijinoj glavici i 3.300 kruna za nastavak izgradnje puta u Lapadu prema Uvali sv. Martina. Valja napomenuti da je izgradnju tog puta financirao i knez Ivan od Lichtensteina on koji je u studenom 1909. poslao Društvu 18.000 kruna.

## DUBROVAČKA LUTRIJA

Da bi osiguralo još više novca za rad, Društvo je sredinom 1909. odlučilo zatražiti odobrenje za svoju lutriju. Lutrijske "kartele" bile su zamišljene sa slikama Dubrovnika i njegove okolice i trebale su pozitivno utjecati kao oblik promidžbe za još veći dolazak turista. Glavni zgoditak trebala je biti "vila sa vrtom na morskoj obali blizu Dubrovnika", a ostale lutrijske nagrade trebali su biti predmeti "domaćeg narodnog stvaranja i umjetnosti". Dobivši dozvolu za lutriju, početkom 1910. godine dani su u prodaju lutrijski brojevi srećke u posebnom uredu Društva na Placi (Stradunu). Lutrija se zvala "Dubrovačka efektna lutrija za saobraćaj stranaca".

Treba napisati da je u to vrijeme u Zadru, gdje se nalazilo glavno upravno sjedište i središte pokrajine Dalmacije, djelovao i Savez za promidžbu dolaska stranaca u Dalmaciju, koji je počeo s radom 1909. godine. Njegov je zadatak bio da zastupa i unapređuje "sve što je u korist razvitka saobraćaja stranaca", te da podupire "rad svojih članova oko saobraćaja stranaca" i samostalno poduzima "sve za

postignuće te svrhe". Savez se posebno skrbio o prometu turista i činio sve da se uklone sve zapreke i teškoće za: kvalitetnu promidžbu, "zgodnu reklamu", za što bolje i udobnije ukonačivanje, za što ukusniju, jeftiniju i zdraviju opskrbu, a podupirao je i objavljivanje članaka koji bi propagirali turizam i izvještavali o aktivnostima u interesu razvoja turizma. Savez je namjeravao pokrenuti i svoj stručni list. Članarina je iznosila: za općine 100, za hotele I. reda 100, za privredna društva i lječilišta 50, za turistička društva 10 i za pojedince 10 kruna. Članovi tog Saveza iz Dubrovnika bili su: Općina, Grand hotel Imperial, Hotel de la Ville i Društvo za promicanje interesa Dubrovnika. Predsjednik Saveza bio je Dubrovčanin Niko Nardelli, tad na dužnosti dalmatinskoga namjesnika, a u upravi se nalazio i Matej Šarić, predsjednik Društva za promicanje interesa Dubrovnika.

Inače, vrijedno je istaknuti suradnju Društva za promicanje interesa Dubrovnika i dubrovačke općinske uprave. Računajući na daljnju općinsku pomoć, Društvo je početkom 1913. odlučilo urediti na Pločama javno kupalište, a te su godine završeni i radovi na Skalinati uz Posat (za izgradnju tog kamenog stubišta potrošeno je ukupno 17.800 kruna). Godine 1913. izvedeni su i radovi u Bogišićevu parku.

Po svemu što je radilo i učinilo, Društvo za promicanje interesa Dubrovnika imalo je mnoga obilježja turističke djelatnosti, te se može reći i napisati da je ono bilo prvo dubrovačko turističko društvo. Posebice zato jer je njegov nastanak bio i potaknut razvojem turizma.

## **NOVO IME DUB**

Za vrijeme Prvoga svjetskog rata, a i tijekom dvije prve poratne godine, Društvo za promicanje interesa Dubrovnika nije djelovalo, ali se je osjećala potreba da se ponovno i što brže aktivira. Zato je koncem veljače 1921. održan sastanak zainteresiranih građana, i oni su tom prigodom odlučili obnoviti njegov rad i izabrali privremenu upravu. Skupština Društva održana je 9. ožujka 1921., kad je odlučeno da se Društvo reorganizira na temelju novih pravila i da se nazove DUB. Ime dub (hrast) uzeto je kao simbol stasanja, čvrstoće i dugovječnosti. DUB - društvo za razvitak Dubrovnika i okolice, potvrdila je Pokrajinska vlada za Dalmaciju u Splitu 28. svibnja 1921. Sjedište je bilo u Dubrovniku, a njegovi su zadatci bili:

- okupljanje stanovnika dubrovačke oblasti, Dubrovčana i prijatelja Dubrovnika u Jugoslaviji i tuđini, da se zainteresiraju za napredak Dubrovnika i okolice,
- promicanje zanimanja stranaca,
- uređenje saobraćajnih sredstava sa pozadinom i preko mora,
- razvijanje, uzdržavanje i nadziranje putova, vodovoda i rasvjete,
- pošumljavanje okolice, uređivanje parkova, nasada, šetališta, zabavišta,
- poticanje na gradnju stanova, vila, hotela, kupališta, igrališta,

- nadziranje građevinske estetike i higijene ulica i grada,
- osnivanje čitaonica, biblioteka, muzeja, kazališta, umjetničkih atelijera, izložbenih paviljona,
- populariziranje prirodnih ljepota i starina dubrovačkih publikacijama i slikama,
- unapređenje domaćeg a nadasve umjetničkog obrta,
- surađivanje s općinskim i državnim vlastima, s domaćim i stranim društvima na polju kulturnoga, ekonomskog i socijalnog preporoda pučanstva dubrovačke oblasti.

Novčana sredstva potrebna za rad Društvo je i dalje osiguravalo članarinom, dobrovoljnim prinosima, prihodina od organizacije raznih zabava, ali i od prodaje svojih publikacija, cvijeća, slika, umjetničkih predmeta. DUB je svoj glavni ured imao u Dubrovniku, a podružnice u nekoliko mjesta dubrovačke regije. Zanimljivo je da su koncem 1921. godine dubrovački studenti osnovali u sastavu Društva svoju "posebnu sekciju". Osnovni im je zadatak bio je da promiču prirodne ljepote i kulturno-umjetničke i povijesne znamenitosti dubrovačkog kraja. Sekcija je, među ostalima, izdala i album s fotografijama dubrovačke rivijere, a 6. kolovoza 1921. organizirala je i "veslačku utakmicu uz nazočnost mjesne vojne muzike". Zanimljiv je i njihov slogan: „Šuma je bogatstvo, čuvaj je od ognja.“ DUB je 1921. godine obavio mnoge važne i vrijedne poslove u interesu grada i regije. Uredio je zapušteni i opustošeni park Gradac, koji su Dubrovčani i njihovi gosti opet rado posjećivali, a isto je učinjeno i s Bogišićevim parkom, dok je donji Posat, u kojem je u to vrijeme bilo vojničko vježbalište i preko kojega prelazi most, pretvoren u "lijepi vrt". Isto je bilo i s gornjim Posatom zatim su postavljene nove klupe na putu prema Sv. Jakovu, na Brsaljama, na Porporeli, Iza grada i na Boninovu, a napravljeni su i drugi kvalitativni pomaci, osobito na području Lapada.

Koncem 1921. godine društvo DUB imalo je 295 redovitih članova i 12 dobrotvora, a među odborima koji su djelovali u njegovu sastavu najaktivniji je bio Odbor za pošumljavanje i nasade. Predsjednik DUB-a tad je bio Luko Bona, potpredsjednik Frano Bizzaro-Ohmučević, a tajnik I. Sindik.

DUB radi dosta uspješno u cijelom razdoblju tridesetih i četrdesetih godina 20. stoljeća. Njegov je utjecaj velik u životu Dubrovnika, zacrtani se ciljevi ostvaruju, Dubrovčani podržavaju njegov rad. Godine 1929. objavljena je publikacija o tridesetogodišnjem radu Društva, 1933. obavljena je sadnja borova pod Lovrjencom za vrijeme kongresa PEN-a, učinjeni su i brojni manji zahvati u gradu i njegovoj bližoj okolini.

Lokalne novine, a posebno "Dubrovačka tribuna," pratile su rad DUB-a i o tomu su često pisale. Zato ću ovom prigodom iznijeti nekoliko objavljenih tekstova iz 1929. i 1931. godine.

"Dubrovačka tribuna", 7. svibnja 1929. na naslovnoj stranici donosi tekst "Pomozimo akciju DUB-a", u kojemu piše:

„Ove godine navršava se ravno 30 godina od kada je osnovan "Dub", društvo za

razvitak Dubrovnika i njegove okolice. U ovih trideset godina nastojanjem nekih vrlo agilnih građana uspjelo je izvesti toliko lijepih radova, koji nijesu samo estetski nego i korisno preporodila odnosna mjesta. Dub je prigodom svoje 30-godišnjice izdao proglas na Dubrovčane, doma i na strani, u kojem se spominje sve radove, koje je društvo izvelo u ovih 30 godina i apelira da se njegova akcija pomogne članarinom i prinosima. Društvo će u četvrtak 9. o. mj. započeti sa javnim sabiranjem prinosa za uređenje "Graca". "Dub" očekuje da će svaki pravi Dubrovčanin kupiti par otkupnih bonova za spomenutu svrhu. Za bon se plaća 2 din., a prodavati će ga društvene članice i učenice srednjih škola. Pomozimo akciju "Dub-a."

Isti list 14. svibnja 1929., također na naslovnoj stranici, donosi tekst "Dan Dub-a":

„Izvijestili smo o proglasu kojega je Dub izdao prigodom 30-godišnjice osnutka i njihovoj akciji za uređenje i proširenje parka Gradac. Sa dosta velikim materijalnim uspjehom završen je dan Dub-a. Prodavali su se otkupni bonovi od 2 dinara, koji su donijeli dosta lijep prihod. Ali dalji uspješni razvoj akcije Dub-a ovisit će o stalnoj pažnji njegovih prijatelja, koji treba da se začlane i tako prošire radove onih koji vole rođeni grad i koji drže do njegovog razvoja.“

Ovaj list, u broju 134., tiskanomu za Uskrs 1931. godine, donosi dva manja teksta posvećena Dub-u:

#### "Svečana sjednica društva "Dub"

Društvo Dub pozivlje cjelokupno svoje članstvo da prisustvuje svečanoj sjednici društva, koja će se održati u subotu dne 11. aprila t. g. u 6 sati poslije podne, u općinskoj vijećnici prigodom 80-te godišnjice mnogozasluznog člana i osnivača gospara Mata Šarića.“

#### Aleja Mata Šarića

Želeći odati trajno priznanje dugogodišnjem u plodnom radu svojega člana gospara Mata Šarića, koji ima svoje posebne zasluge za razvoj naših parkova, Dub je predložio općinskom vijeću da se glavna aleja parka Gradac prozove "Alejom Mata Šarića". Vijeće je taj prijedlog prihvatilo jednoglasno.

Ponovno isti list, u broju 105. od 29. travnja 1931., na trećoj stranici donosi ovaj tekst:

#### "Začasni član Društva

Na svečanoj sjednici društva Dub koja je održana u gradskoj vijećnici, gospodar Mato Šarić, bio je izabran začasnim članom Dub-a i njegovim imenom prozvana je glavna aleja parka Gradac. Društvo je sa sjednice telegrafski pozdravilo svoga osnivača i vrlo zaslužnog radnika na uljepšavanju Dubrovnika u kojem je gospodar Mato stvorio prve uređene parkove.“

Društvo DUB mnogo je i uradilo u interesu Dubrovnika i njegova turizma, ali i svojih građana, koji su upravo zahvaljujući tom radu imali ljepše i ugodnije

uvjete i življenja na ovim prostorima. Unatoč tomu, Društvo je ostajalo sve više i više bez financijske potpore, i to je, naravno, zabrinjavalo njegovo vodstvo. Tako je, primjerice, "Ptičji raj" u parku Gradac, koji je bio svojevrsna atrakcija, prestao s radom u kolovozu 1940. Ptice koje su tu bile u krletkama, prodane su ili darovane zainteresiranim građanima. Ali, treba istaknuti da je DUB i u tim sve nepovoljnijim prilikama djelovao koliko je to bilo moguće. Njegovim nastojanjem upriličena je u Turističkom domu (u Sponzi) od 2. do 11. studenog 1940. izložba umjetničkih i povijesnih slika. O toj vrlo uspjeljoj i korisnoj izložbi Cvito Fisković je tada napisao:

"Vanredna organizacija priređivača i dobar aranžman izložbe rasvijetljene su reflektorima u zgodno udešenim dvoranama Sponze, pa konačno posjet i interes za izložbu, uvjeravaju da se u Dubrovniku mogu danas poduzeti i uspjeti kulturne akcije većeg zamaha".

Odjek koji je imala ta izložba, potaknula je društvo DUB da pripremi izložbu o prošlosti dubrovačkog pomorstva. Ova nova DUB-ova izložba imala je, između ostalog, i zadatak da potakne ostvarivanje potrebe ustanovljenja pomorskog muzeja u Dubrovniku, koji bi bio i jedna nova atrakcija za turiste.

Skupljajući izložbenu građu o prošlosti dubrovačkog pomorstva, Odbor za organiziranje izložbe obrazlagao je vlasnicima te građe da je dadu za izložbu, a po mogućnosti i za budući dubrovački pomorski muzej, jer da je ta građa, dok je u privatnim rukama, samo ures kuće u kojoj se nalazi, a kad postane vlasništvo muzeja - bit će ures građu.

Građani su ustupali te drage uspomene iz svojih kuća i za izložbu i za budući pomorski muzej. Bile su: to umjetničke slike ili fotografije brodova, pomorskih kapetana i ostalih pomoraca, makete brodova, razne nautičke sprave, pomorske karte, brodsko naoružanje, pomoračke škrinje, svjedodžbe nautičke škole i svjedodžbe s položenim ispitima za pojedina pomorska zanimanja, pomorske knjižice, zdravstveni listovi, odličja, pisma, prijevozni ugovori i drugo.

Da bi se skupilo što više izložbene građe, postojali su izložbeni predstavnici: u Zagrebu, Ljubljani, Beogradu, Kotoru, Splitu, Šibeniku, Bakru i Sušaku. Izložba je bila u prizemlju Turističkog doma, u palači Sponzi, i na prvomu katu Kneževa dvora, a nazvana je "Dubrovačko pomorstvo kroz vjekove". Trebala je trajati od 2. veljače do 11. ožujka 1941. Očekivao se veliki posjet iz različitih krajeva Jugoslavije. U tiskanoj najavi te izložbe bili su objavljeni i podaci o mogućnostima i cijenama smještaja i prehrane u to vrijeme u Dubrovniku.

Izložba "Dubrovačko pomorstvo kroz vjekove" po broju, raznolikosti i zanimljivosti izložaka, po znalačkoj postavi i prekrasnim prostorima u kojima se nalazila, bila je, s pravom, kulturni događaj prvoga reda. O tomu pisalo se s velikim priznanjem i poštovanjem. Dolazili su znatizeljnici pojedinačno i grupno iz svih krajeva ondašnje države, kao i brojne učeničke ekskurzije. U to vrijeme moglo se računati uglavnom na tuzemne posjetitelje Dubrovnika.

Stoga se lokalni "informativno - turistički i i ekonomski list" pod nazivom

"Dubrovačka rivijera" zalagao za promjenu "našeg nacionalnog turizma", kojemu "vanjske neprilike neće naškoditi". Taj je list pritom podsjećao da je Dubrovnik do 1939. izgrađivao svoju "turističku budućnost na drugim narodima", pa je dolaskom novoga svjetskog rata veoma bolno osjetio "što to znači".

Sve veći interes za ovu izložbu uvjetovao je da je njezino trajanje produženo do 20. travnja 1941. Posjetitelji iz drugih krajeva Jugoslavije, a s njima i poneki stranac iz Njemačke, Mađarske i Italije, bili su posljednji turisti uoči okupacije. Jer, prije završetka produženog trajanja te izložbe došlo je do napada fašističkih zemalja na Jugoslaviju, koja je ubrzo bila pregažena i okupirana.

Društvo DUB prestalo je s radom 1940. godine, ali je ipak 1943. podignulo spomen-ploču na groblju sv. Mihajla u Lapadu, povodom pedesete godišnjice smrti dubrovačkoga biskupa i književnika Mata Vodopića.

## DUB - GRAĐANSKA SVIJEST

Početak Drugoga svjetskog rata prestao je rad društva DUB, i taj je prestanak potrajao sve do 1984., dakle pune 43 godine. Naime, 14. lipnja 1984. obnovljen je rad Društva: točnije, ponovno je osnovano društvo DUB, a njegov predsjednik postaje Ivo Zec, ugledni Dubrovčanin, veliki zaljubljenik u svoj grad i sve njegove vrijednosti, ali i ekološki osviještena osoba, koja je poštovala prirodu i njezina pravila. Obnovom rada počelo se s raznim predavanjima, ali i određenim zahvatima u funkciji uređenja Grada i njegove bliže okolice. Ivo Zec obnašao je dužnost predsjednika do 1995., a naslijedio ga je dr. Stijepo Bogdanović, prvi čovjek DUB-a do 2005. godine. On je još više proširio i učinio prepoznatljivim rad Društva i, među ostalim, utemeljio je i Zakladu "Park Gradac".

U "Vijestima", glasilu Turističke zajednice grada Dubrovnika, u siječnju 1995. u kolumni "Ekologija i turizam", a pod naslovom "Krajobrazne vrijednosti - temelj i poticaj razvoja turizma" - dr. Bruno Šišić je, uz ostalo, napisao:

"Turizam je tijekom svoje ekspanzije šezdesetih, sedamdesetih i osamdesetih godina ovog stoljeća, u punoj mjeri koristio izuzetne prirodne i krajobrazne pogodnosti i ljepote ovog kraja, izrastavši i u najjaču granu dubrovačkog gospodarstva.

Misli li se i dalje živjeti od turizma, bit će potrebno smišljenije pristupiti s prostorom općenito, posebice s krajobraznim vrijednostima koje još imamo na raspolaganju. Zaključiti je da će briga o prirodnim i posebno krajobraznim vrijednostima ovih u čitavom svijetu dobro poznatih prostora, predstavljati ubuduće izuzetnu obvezu i odgovornost svih relevantnih čimbenika, jer su te vrijednosti prirodna osnova, na kojoj će turizam graditi svoju budućnost, o kojoj će ovisiti njegov opstanak, a time i gospodarski napredak ovog kraja."

Dana 8. veljače 2006. održana je redovita Godišnja skupština Društva, a nakon smrti dr. Stijepa Bogdanovića, trebalo je izabrati i novoga predsjednika. Tom je

prigodom dr. Jerko Brešković postao član Upravnog odbora (dopuna), a istoga dana, Upravni odbor, koji ima 11 članova, izabrao je dr. Breškovića za predsjednika DUB-a na vrijeme od tri godine, te Luciju Žitnik za blagajnicu. Skupština je donijela programske aktivnosti za sljedeće tri godine (2006. - 2009.), prihvatila je godišnji plan rada i financijski program za 2006., a na temelju tih programskih aktivnosti i plana rada za ovu godinu, donijeta je odluka i o rasporedu zaduženja za svakog člana Upravnoga odbora.

U spomenutom razdoblju posebna će se pozornost posvetiti omasovljenju Društva (pridobiti što više mladih ljudi, pronaći odgovarajuće oblike pristupnine, poraditi na izdavanju pristupnica, razmotriti mogućnost organiziranja po gradskim kotarevima u gradu Dubrovniku, te općinama i gradovima na području Dubrovačko-neretvanske županije). Društvo će okupljati građane i predstavnike pravnih osoba koji su iskreno i duboko zainteresirani za očuvanje zelenila, prirodnih i kulturno-povijesnih vrijednosti Dubrovnika i okolice. Bit će potrebno u idućem razdoblju osigurati prostor za rad Društva, povećati imovinu Društva i Zaklade "Park Gradac", te posebno pratiti i poticati rad Zaklade, poraditi na kvalitetnijem odnosu s javnošću - medijima (predstavljanje i kontakti), a predviđeno je da se utemelji i Savjetodavni odbor. U sastavu DUB-a djeluju i tri sekcije: Sekcija za zaštitu zelenila, prirodnog i urbanog krajobraza Dubrovnika i okolice (voditelj Vladimir Onofri, dopredsjednik Društva), Sekcija za očuvanje dubrovačke kulturno-povijesne baštine (voditelj Nikša Bender, dopredsjednik Društva) i Sekcija za razvijanje suradnje (voditelj Đorđe Vrtikapa, član Upravnoga odbora).

## ZAKLJUČAK

Društvo prijatelja prirode DUB, kao pravni sljednik prvotne Klimatičke udruge, do danas bilježi uspone i padove, vrlo djelatna i učinkovita razdoblja, ali je bilo i onih lošijih i težih, bili su zanemarivani i hvaljeni, no uvijek su ostali na ispravno zacrtanoj liniji očuvanja i unapređenja Dubrovnika i njegove okolice, sukladno vremenu i potrebama. Kroz stoljetnu povijest Društvo je ostavilo neizbrisiv trag široko obuhvatne djelatnosti, ali uvijek s promišljenim izborom interesa koji se mogu sažeti u jednostavnoj rečenici: Mi predlažemo, a Vi odlučite. Također, jedan od postulata društva DUB glasi: Uništavanje prirode odraz je snage, a njezino očuvanje odraz je kulture.

Danas govorimo: svaki je građanin turistički radnik, tj. čovjek je ključ uspjeha u turizmu, što je istina, što stoji i na čemu valja i ubuduće raditi. Pojednostavljeno rečeno - to je stalna težnja i htijenje za ljepotom, za nečim što je lijepo i korisno, i nama i našim gostima - prijateljima i turistima. Imao je pravo pokojni Antun Zec, ljubitelj lijepoga, a napose zaljubljenik u svoj Dubrovnik i njegovu "šesnost", kada je napisao:

"Svugdje tamo gdje čovjek živi, radi, korača, upire pogled, pa na osnovu toga

zaključuje, stvara ukupni dojam o ljudima, sredini koja ga okružuje, nalazi se i temeljna odrednica DUB-a, pogotovo kad je riječ o zelenilu gradskih prostora."

DUB je u proteklih više od stotinu godina, svojim postojanjem i radom, pomogao Dubrovniku i njegovu turizmu, a to čini i danas, kad je bitka za okoliš još veća, potrebija i izraženija. Današnja uprava DUB-a, svjesna visokih troškova i ograničenih mogućnosti kad je riječ o njihovom radu i ukupnom djelovanju, pogotovo lokalne zajednice - mišljenja je da je moguće postići željeni cilj zauzimanjem široke društvene zajednice preko zakladnoga tijela i pravnoga subjekta Zaklade "Park Gradac" - Dubrovnik. DUB, kao osnivač i predlagatelj, zatražio je i dobio odobrenje o osnivanju spomenute zaklade.

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**Nikola Šubić**

Tourist journalist, Dubrovnik

## **THE ASSOCIATION OF NATURE LOVERS – DUB, GRAVELY INDEBTED THE DUBROVNIK TOURISM**

### **Summary**

*Dubrovnik was named after the groves of holm oak, or dubrava in Croatian. The people of Dubrovnik have always loved their city, and they have always showed it in many different ways. The love and the devotion of the people of Dubrovnik to their city were the motive for the foundation of an association. They would regularly be engaged in improving the appearance of the city and its suburbs. They would look after the public parks, walks and roads. This was necessary for the very inhabitants of Dubrovnik, but even more for the tourists who became more numerous. Therefore, this paper is dedicated to the beginnings of such associations, and DUB is their successor. DUB has had an enormous importance for the tourism, the city of Dubrovnik and the inhabitants of Dubrovnik in the last hundred years. Its importance is not diminished by the fact that this association was not in function from the beginning of the Second World War to the 1980's of the 20<sup>th</sup> century. With its reopening in 1984, the care for the City and its beauty became priority again. Among today's members of DUB, there are many young people, who are true guardians of Dubrovnik and its values. Today's City management has recognized its work, which can only stimulate their work to benefit Dubrovnik and its people.*

**Key words: love, monuments, parks, cleanliness, neatness, tourism**



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