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No. 4

Boris Vujelić: Structural Changes in
Employment: Where We Are, How We got
There and Where Are We Going To? ¹

September, 1998

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1. Introduction

The process of transition is characterised by deep structural changes throughout the entire economy. The changing economic structure – most notably the change in ownership structure and importance of different segments of the GDP – is reflected in the structure of employment. This is a simple consequence of the fact that the demand for labour is derived from the demand for goods and services that it helps to produce. Demand for goods and services, however, is not necessarily pure market demand, immune from government interference, but also reflects preferences of the government. Therefore, the analysis of the labour market creates the complementary background for the analysis of the overall structure of a particular economy and its developments.

The aim of this paper is to analyse the transitional change in employment in Croatia. This analysis will primarily attempt to identify and quantify some of the changes in the sectoral structure of employment.

The impression is that, so far, relatively little attention has been paid to the analysis of transitional change in the Croatian labour market, and when such analysis is available, in principle, too much weight is assigned to the analysis of the problem of unemployment. This is most likely a consequence of three interconnected reasons. First, the unemployment rate in Croatia is worryingly high (16-17%) according to the official method of recording¹ which was, until the recently conducted Labour Force Survey, the only methodology applied. Second, unemployment is not only a serious economic and social problem, but also a sensitive political problem. Third, domestic economists, are often influenced by western literature, which in recent times has devoted a great deal of attention to the problem of unemployment in the EU.

Our impression is, however, that economists who analyse transitional labour markets such as the Croatian one, might have good reasons to assign more weight to changes in the employment structure than to the unemployment problem itself. Why is the analysis of the changing employment structure more important than the unemployment problem? First, the analysis of the characteristics and changes in employment covers a considerably wider spectrum of the population and nearly the entire structure of the domestic economy. Second, such analysis is especially relevant to the transition economy when a country passes from one economic system to another, and undergoes deep structural changes in employment. Third, unemployment is by and large the reverse side of the employment story, i.e. the capability of the economy to create new jobs.

As suggested by Jackman and Pauna (1996), the first step in the analysis of structural change in employment might be to determine an end target of the transition process.

If the primary economic (and political) goal of the transition countries in Central and Eastern Europe is to join the developed countries of the EU, which also implies entry into the western economic structures such as the WTO, OECD, and eventually EMU, then it is likely that the structure of their economies, and also labour markets, will gradually adjust to become more like those developed countries. Therefore, employment structure in the countries of the EU/OECD could be taken as a relatively good approximation of the target for transitional change.

Taking the employment structure of the EU as an (approximate) target of the transition, this paper will try to answer several questions: 1) how far is the Croatian labour market from its anticipated long-term structure, 2) what is the speed of structural change, 3) are we moving in the right direction, and 4) what is Croatia's position in relation to other transition countries of Central and Eastern Europe.

2. Decrease in employment and change in the structure of employment

2.1. Decrease in employment

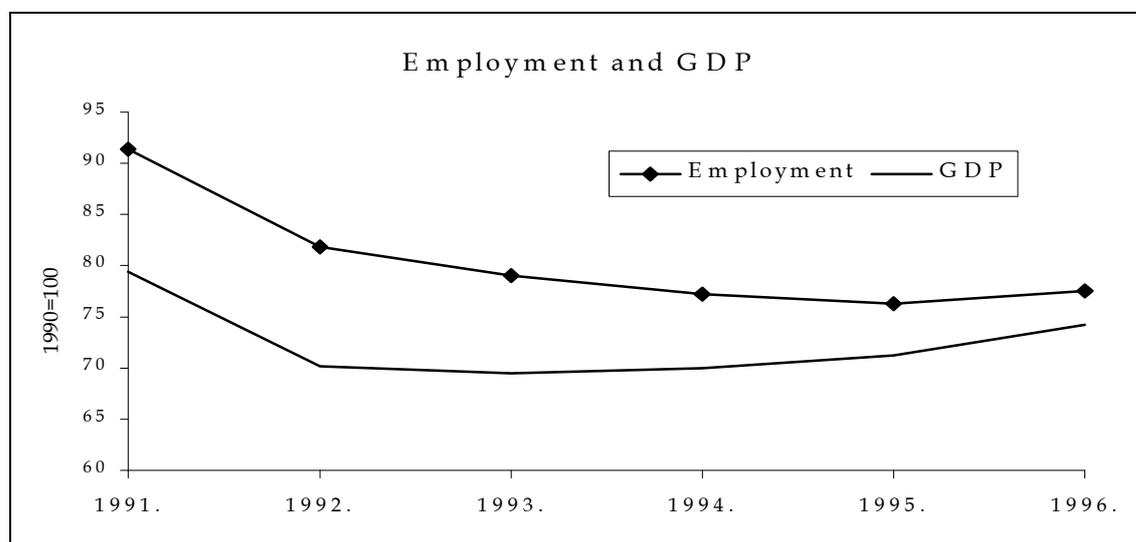
Undoubtedly, the dominant characteristic of the early phase of the transition process in the labour market is decreasing levels of employment and increasing unemployment, accompanied by an

¹ Counting the number of unemployed persons through the employment office registers.

accelerated change in the employment structure. In Croatia, this decrease in employment seems to be dramatic. Since the beginning of the transition, the total number of employed persons was reduced by more than four hundred thousand (see table 3.1). However, to get a better sense of the absolute and relative rate of the decrease in employment, these changes should be considered within the context of the pre-war hidden unemployment, the transitional recession, the war in Croatia, and the labour market changes in other transition countries.

In a previous article - Vujčić(1994) - the number of unemployed among employed persons in Croatia was determined by drawing the trend through the productivity cycles peaks. Based on data from 1965 to 1988, the hidden unemployment reached its peak in 1988 with approximately three hundred thousand persons employed when they were in fact redundant. Based on that one would have expected a sharp decline in employment once the real transition process starts. It should be pointed out that 1988 was already a period of recession and the first year in which the labour market in Croatia ceased to act in an asymmetric way², i.e. in that year employment for the first time started to decrease in reaction to recession. This was the beginning of the trend of declining employment which continued until 1996. As can be seen in figure 2.1, employment recovery reacted with the characteristic lag after the growth of GDP which began in 1994³.

Figure 2.1



In the early phase of the transition, Croatia experienced a particularly sharp decrease in GDP (see figure 2.1) which was stronger than in most other transition countries. Only Bulgaria, Russia and Ukraine experienced stronger recessions than Croatia (see figure 2.2). This can be attributed to the fact that the transition in Croatia also coincided with the outbreak of war, and the occupation of almost one-third of its territory. Overall, employment decreased by less than the drop of GDP. Considering the estimated high rates of hidden unemployment for 1988, one could have expected a decline in employment of greater magnitude than the decline in GDP. As this was not the case, it suggests that even today there might still be a considerable degree of hidden unemployment.

The current level of registered employment has been maintained in great part by the substantial decline in real wages since 1988/89 (see table 2.1). The current level of employment is also reflected in the extent of arrears and/or open subsidies (the government allocates in one way or another about half of the GDP). Where present, subsidies lead to distortions in the allocation of

² Expression from Mencinger (1989). It means the increase of employment during the period of increase of GDP and downward rigidity of employment during the time of Yugoslav recessions. Vujčić(1991), however, demonstrated that such form of asymmetric behaviour in Croatia had value in terms of absolute number of employees, but not in terms of the rate of growth of employment which was significantly reduced in the periods of recession.

³ A part of the decrease in official employment was most likely reflected in the increase in the employment in the unofficial sector of the economy. Therefore, data that we use are a better indicator of the employment trend, than of the level of employment.

resources, by delaying necessary structural change, slowing the creation of new jobs and preserving those for which there is no economic justification. Such policies prevent the personnel reductions and the development of efficient compensation schemes in companies and institutions that might be viable, but instead play a role which should be assigned to the welfare system.

Table 2.1
Trends in Wages and Labour Productivity

Real net wages		1989/1988	1990/1989	1991/1990	1992/1991	1993/1992	1994/1993	1995/1994	1996/1995	1997/1996	
		123.2	83.8	75.0	56.5	99.5	114.4	140.2	107.2	112.3	
		<hr/>									
	(1989= 100)	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
		81.2	100.0	83.8	62.9	35.5	35.3	40.4	56.7	60.7	68.2
		<hr/>									
	(1988= 100)	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
		100	123.2	103.2	77.4	43.7	43.5	49.8	69.8	74.8	84.0
Real gross wages (only employees' contributions included which account for around half of all contributions)								1995/1994	1996/1995	1997/1996	
								30.9	7.6	8.3	
		<hr/>									
	(1994= 100)							1994	1995	1996	1997
								100.0	130.9	140.9	152.6
Labour productivity (industry)		1989/1988	1990/1989	1991/1990	1992/1991	1993/1992	1994/1993	1995/1994	1996/1995	1997/1996	
		100.4	92.8	86.8	100.3	100.3	103.0	106.6	111.3	111.9	
		<hr/>									
	(1989= 100)	1989	1990	1991	1992	1993	1994	1995	1996	1997	
		99.6	100.0	92.8	80.6	80.8	81.0	83.5	89.0	99.0	110.8
		<hr/>									
	(1988= 100)	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
		100.0	100.4	93.2	80.9	81.1	81.4	83.8	89.3	99.4	111.3

Source: Croatian Bureau of Statistics

Figure 2.2

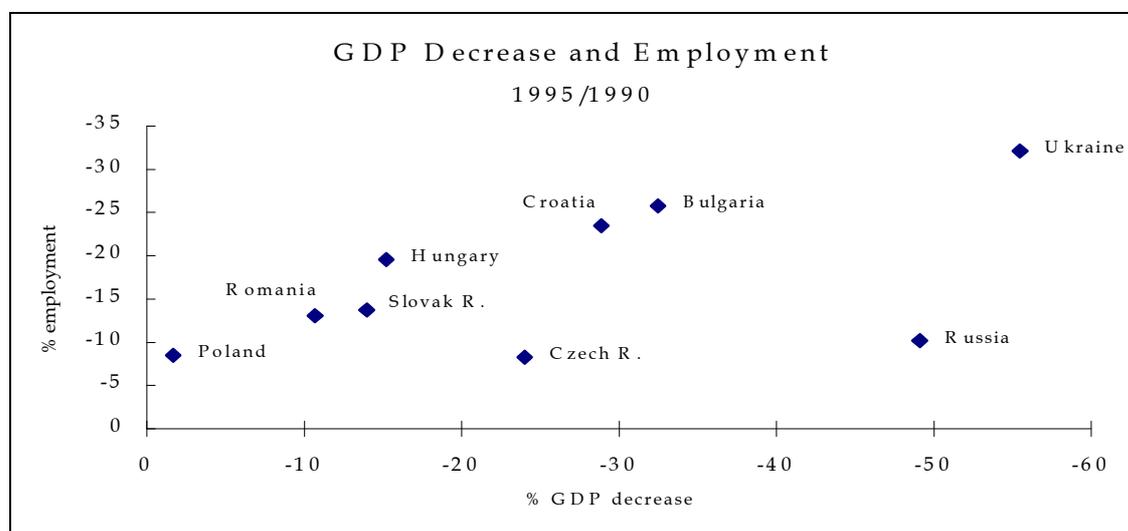


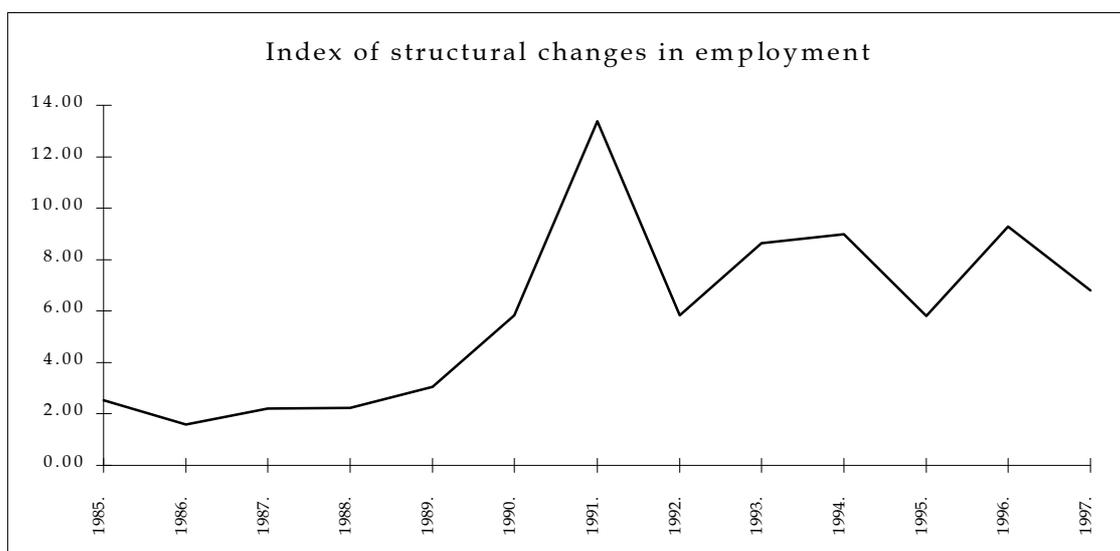
Figure 2.2 reveals some additional insights into the employment-GDP relationship. First, there is a clear correlation between a decrease in employment and decrease in GDP in the first phase of the transition. This should be expected given the depth of the initial recession and the ongoing deep structural reforms. Second, the two countries which are obvious outliers from this relationship - the Czech Republic and Russia - are countries in which structural change in the labour market is lagging. Not surprisingly, these countries have the lowest rates of unemployment and are suffering from the consequences of delayed restructuring. In other words, there is no alternative to restructuring; one can not expect an efficient restructuring of the state-owned sector and significant increases in the productivity of companies without at least temporarily increasing unemployment. Third, Croatia, together with the Czech Republic, Russia, Bulgaria and Ukraine, belongs to a group of countries in

which the fall in employment was smaller than the fall in GDP. In countries, where the fall in employment was greater than the fall in GDP⁴, the labour market adjusted downwards more strongly than the goods and services market, eliminating (a part) of hidden unemployment. It should be noted, however, that in such a comparison, Croatia is closer to Hungary than to Russia or Ukraine.

2.2 Changes in the structure of employment

The intensity of structural change in employment from 1985 to 1996 is illustrated in figure 2.3; structural change is given as the summation of the absolute values of the annual change in the share of employment of individual sectors of the economy.

Figure 2.3

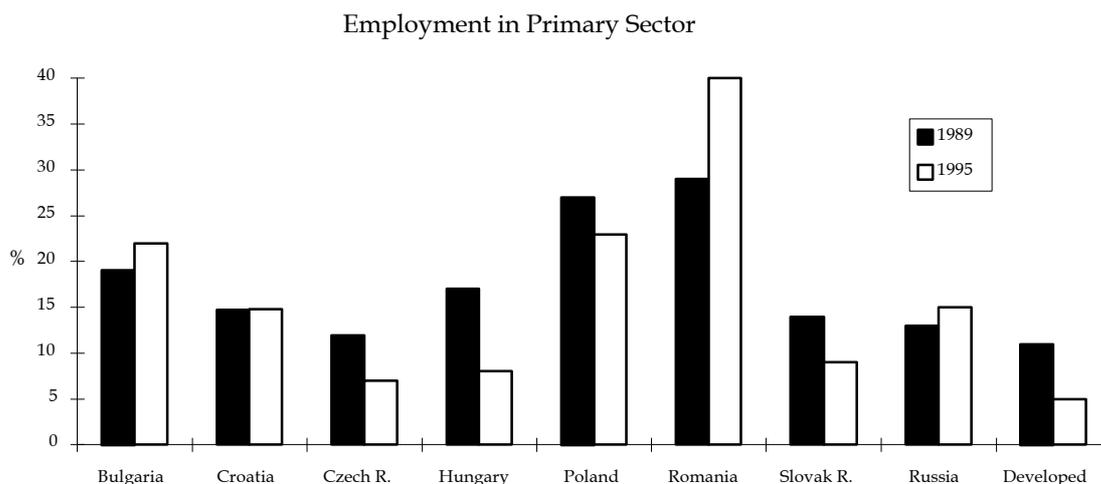


According to our calculations, the period from 1990 to 1997 was marked by considerable change in the employment structure with an intensity of three to four times greater than the pre-transition level at the end of the eighties.

In the introduction, we identified the employment structure of the EU countries as a good target for transitional change. In the analysis of the direction and effects of these changes on the employment structure in Croatia, we will examine the structure of the Croatian labour market before the beginning of the transition process and in relation to other transition and developed countries. Figures 2.4 - 2.6 show the employment structure in the primary, secondary and tertiary sectors in Croatia and in a select group of transition and developed OECD countries in 1989 and 1995.

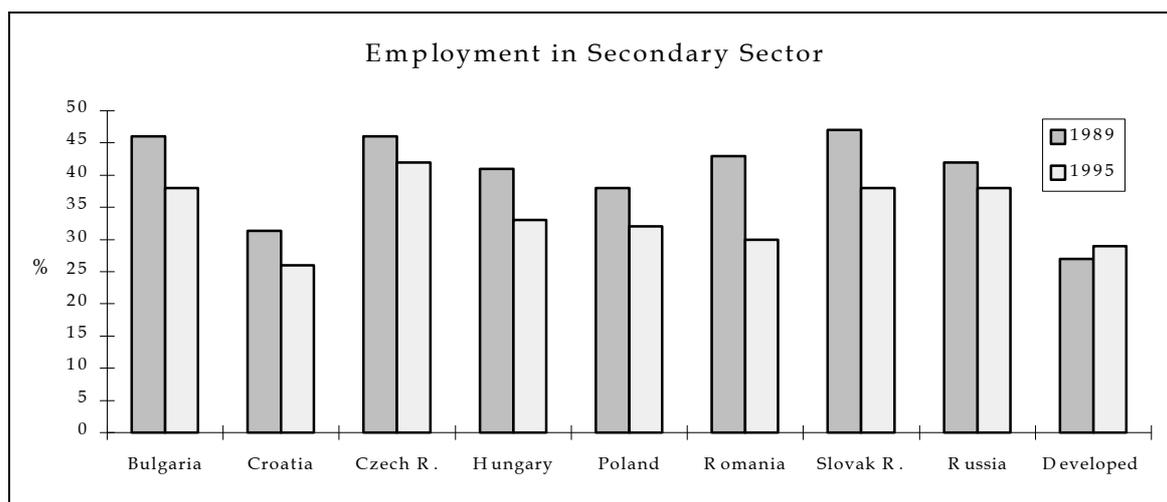
⁴ There are good arguments in favour of the thesis that GDP in the transitional countries, in fact, decreased by less than shown above. That would mean that the adjustment of the labour market was relatively stronger.

Figure 2.4



Sources: Statistical Yearbook Croatia, S. Commander and A. Tolstopiantenko: Unemployment, Restructuring and the Pace of Transition, p. 4, EDI Development Studies, The World Bank, 1995.

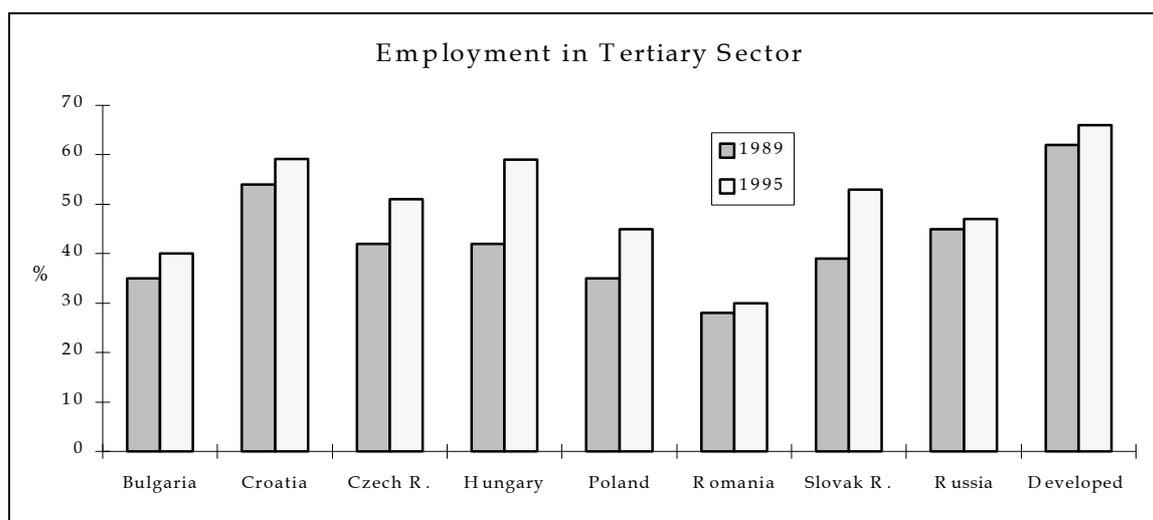
Figure 2.5



Sources: Statistical Yearbook Croatia, S. Commander and A. Tolstopiantenko: Unemployment, Restructuring and the Pace of Transition, p. 4, EDI Development Studies, The World Bank, 1995.

Croatia started the transition process with a relative advantage in relation to other transition economies, excluding Slovenia, which is not shown in the charts. Slovenia's employment structure is considered better due to a smaller share of agriculture in total employment. In 1989, Croatia was the only transition country in our group with a service sector employing more than fifty percent of the work force. Croatia's favourable position in relation to other transition countries was a consequence of two factors: 1) historically much less forced industrialisation than in the typical planned economy; and 2) greater importance of services, particularly transport, catering, and the hotel and tourist industries, due (in part) to the geographical characteristics of Croatia.

Figure 2.6



Sources: Statistical Yearbook Croatia, S. Commander and A. Tolstopiantenko: Unemployment, Restructuring and the Pace of Transition, p. 4, EDI Development Studies, The World Bank, 1995.

Tertiary sector development in the Croatian economy was extremely intense during the seventies and eighties and notably faster than tertiary sector development that was experienced in the developed countries during the sixties (for a more detailed analysis see Vujčić 1991). During the transition process, the share of employment in the tertiary sector further increased, not at the expense of employment in the primary sector, which would have been desirable, but at the expense of employment in the secondary sector. Furthermore, this deterioration of employment in the secondary sector was so significant, that the share of employment in the secondary sector in Croatia today is already lower than in the OECD countries. (This does not mean that the loss of jobs in this sector was not justified, but, as will be shown later, that it was not accompanied by a significant creation of new jobs in more productive areas of the secondary sector). Also, tertiary sector development was not accompanied by a rapid enough employment decrease in the low productivity sector, agriculture. Only Romania, Bulgaria, and Poland have higher shares of employment in agriculture than Croatia.

3. Some measures of structural change

With the assumption that the transition process involves the transformation of economic structures to more developed (EU) forms, it is possible to analyse the structural change of employment in further detail at the industry level (adjusted to UCEA classification). Along these lines the employment structure in the EU can be used as a target against which we can measure the progress of change in the employment structure in Croatia.⁵ The results of such a comparison are given in table 3.1. The first two columns in the table show employment by industry in Croatia in 1989 and 1996, respectively.

The third column shows employment in Croatia, if the sectoral shares were equivalent to our EU reference countries; this is our employment target. Due to the differing sectoral composition of employment among EU countries, most notably agriculture, the EU is divided into two groups: the southern EU (France, Greece, Italy and Spain), and the northern EU (Denmark, Germany, Great Britain and Netherlands). The share of agriculture is significantly higher in the southern EU countries. The targeted sectoral compositions are the southern EU in 1989 and 1994 and the northern EU in 1989.

The fourth column shows the change in employment between 1989 and 1996 for each industry, and the fifth column shows the difference between the actual employment in 1989 and the targeted employment. The sixth and seventh columns demonstrate the change in employment that moved either towards or away from the targeted structure respectively.

Several conclusions can be drawn from the tables. *First*, the employment structure, today, is much more similar to the targeted structure than at the beginning of the transition process.

Second, the adjustment in the employment structure occurred primarily by a decrease in the overall level of employment, i.e. by job destruction, and much less by job creation. From 1989 to 1996, total employment declined by 413,000. A part of this decline can be attributed to the substantial population decline (by estimated 200-250 thousand) and migrational consequences associated with the war. Among the main sectors, net creation of new jobs occurred only in trade and, to a much smaller degree, in finance and in utilities (electricity, gas and water).

If the EU countries are a good indicator, it seems that trade and finance are sectors with the greatest employment creating potential. In contrast, agriculture, electricity, gas and water, and, to a lesser extent, public services and transport sectors appear to be areas where further reductions should occur. With a southern EU target, the Croatian agriculture sector would need to reduce employment by 26.4 percent, or 66 percent if we use a northern EU target. Similarly, to meet the EU target, the transport industry would need to reduce 18 percent of jobs and public services 6 percent (most economists would, however, agree that the public administration is too large even in the EU countries). On the other hand, the share of employment in manufacturing is already lower than the northern EU target. Therefore, the room for further (significant) employment reductions in this industry appears small. Nevertheless, the employment reduction in manufacturing seems to have been, overall, a positive structural change⁶.

Third, judging by its structure and changes in its labour market, Croatia lies nearly midway between those transition countries more similar in structure to the northern EU (smaller share of agriculture) and those more similar in structure to the southern EU (larger share of agriculture) (see figure 2.4). In comparison to countries of similar economic characteristics and a similar level of development, Croatia has a relatively high share of employment in agriculture, primarily at the expense of employment in manufacturing. This, as said before, does not mean that Croatia's enduring deindustrialisation is considered a bad characteristic of the Croatian labour market restructuring, but rather, that further decreases in employment in the processing industry can not be easily considered as

⁵ This is the method which was used by Jackman and Pauna (1996) for the following countries in transition: Bulgaria, the Czech Republic, Poland, Hungary, Romania and Slovak Republic. From that study we are borrowing the target structure of employment for the EU countries from 1989 and 1994.

⁶ However, not all employment reduction was necessary. There have been problems associated with privatisation process at the enterprise level. In many cases when individuals were able to acquire companies far below their asset value, the new owners considered the company as a real estate encumbered by employees, and not as an operating enterprise. Such privatisation methods did not encourage efficient corporate management, but, instead, the simple realisation of quick capital gains often accompanied by doubtful transactions.

a desirable feature of labour market restructuring in the medium-term. Here, however, it is important to distinguish between two processes - the job creation and the job destruction. Both processes should proceed in parallel; a desirable medium-term result would be an increase in the number of jobs in the processing industry (at a lower rate) and services (at a relatively higher rate), and the decrease of the number of people employed in agriculture.

Fourth, as Jackman and Pauna (1996) pointed out, as the EU countries themselves are constantly changing, an EU target for the employment structure in the long-run is in reality a moving target. This can be very well seen in the data from the Mediterranean EU countries for 1989 and 1994, and will be illustrated in greater detail below. In other words, if a transition country wants to catch up with EU countries, it should restructure considerably faster than EU countries themselves are restructuring. It is useful to note that the EMU is likely to speed up this restructuring process within the EU.

Table 3.1

thousand of employed persons	1989	1996	Reference country (Southern EU, 1989)	Change in employment (89-96)	Differential of employment 1989		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Agriculture	260.1	160.7	143.8	-99.4	-116.3	-99.4	
Mining	10.4	7.9	5.4	-2.5	-5.0	-2.5	
Manufacturing	574.9	315.3	295.7	-259.6	-279.2	-259.6	
Electricity, gas and water	20.1	22.2	12.1	2.1	-8.0		2.1
Construction	128.2	93.7	108.9	-34.5	-19.3	-19.3	-15.2
Trade	166.1	200.6	259.4	34.5	93.3	34.5	
Transport	127.2	98.4	80.7	-28.8	-46.5	-28.7	
Finance	28.9	35.0	82.0	6.1	53.1	6.1	
Public and other services	441.2	410.4	356.2	-30.8	-85.0	-30.8	
Total	1,775.7	1,334.4	1,344.2	-412.9	705.8	480.9	17.3
thousand of employed persons	1989	1996	Reference country (Southern EU, 1994)	Change in employment (89-96)	Differential of employment 1989		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Agriculture	260.1	160.7	118.3	-99.4	-141.8	-99.4	
Mining	10.4	7.9	5.4	-2.5	-5.0	-2.5	
Manufacturing	574.9	315.3	275.6	-259.6	-299.3	-259.6	
Electricity, gas and water	20.1	22.2	10.8	2.1	-9.3		2.1
Construction	128.2	93.7	111.6	-34.5	-16.6	-16.6	-17.9
Trade	166.1	200.6	262.1	34.5	96.0	34.5	
Transport	127.2	98.4	80.7	-28.8	-46.5	-28.8	
Finance	28.9	35.0	96.8	6.1	67.9	6.1	
Public and other services	441.2	410.4	383.1	-30.8	-58.1	-30.8	
Total	1,757.1	1,344.2	1,344.2	-412.9	740.7	478.3	20.0
thousand of employed persons	1989	1996	Reference country (Northern EU, 1989)	Change in employment (89-96)	Differential of employment 1989		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Agriculture	260.1	160.7	55.1	-99.4	-205.0	-99.4	
Mining	10.4	7.9	13.4	-2.5	3.0		-2.5
Manufacturing	574.9	315.3	357.6	-259.6	-217.3	-217.3	-42.3
Electricity, gas and water	20.1	22.2	14.8	2.1	-5.3		2.1
Construction	128.2	93.7	86.0	-34.5	-42.2	-34.5	
Trade	166.1	200.6	233.9	34.5	67.8	34.5	
Transport	127.2	98.4	80.7	-28.8	-46.5	-28.8	
Finance	28.9	35.0	116.9	6.1	88.0	6.1	
Public and other services	441.2	410.4	385.8	-30.8	-55.4	-30.8	
Total	1,757.1	1,344.2	1,344.2	-412.9	730.7	451.4	46.9

Source: for EU Jackman, Pauna (1996), and for Croatia own computations from Labour Force Survey (1996).

Table 3.1 enables us to create three measures of structural change in employment: the speed of restructuring, efficiency of restructuring, and an index of job creation. To measure the speed of restructuring we must ask: how much of the "required" reallocation of the employment between

industries occurred during the first seven years of the transition? Such a measure can be obtained by dividing the absolute sum of the sixth column (change in employment in direction of target) by the absolute sum of the fifth column (difference between target and actual employment) in table 3.1.

The efficiency of employment restructuring can be obtained by determining the change in employment which moved closer to the reference group. This measure we can obtain by dividing the absolute sum of the sixth column by the absolute sum of the fourth column (change in actual employment 1996-1989).

The measures for the speed and efficiency of restructuring include qualitatively different changes: the loss of jobs in sectors with redundant workers and the creation of jobs in sectors with insufficient number of employees. As the elimination of jobs is normally an easier economic task than the creation of new ones, it is useful to construct an additional measure for the creation of new jobs - job creation index. Such an index can be obtained by calculating the share of jobs created within a given sector⁷ in relation to the total number of new jobs.

Table 3.2 shows indices for the employment structure of a number of transition countries and three less developed EU countries. Table 3.3 shows similar indices for Croatia for the period 1989-96, and for the period of *de iure* transition from socialist to market economic system between 1991 and 1996.

Comparing 1989-96 period for Croatia to the other countries in table 3.2 Croatia has a two year advantage. This difference increases the index of the speed of restructuring (but not of efficiency or job creation). *De facto*, however, there was actually only one year advantage as the real structural changes in Croatia started in 1990, together with the transition process (as was demonstrated in figure 2.3). The period from 1991 to 1996 is not only equally long as that of the other transition countries in table 3.2, but also a period of the real transition, and is, therefore, better suited for comparisons of the speed of restructuring.

Table 3.2

Indices of Structural Change in Employment, 1989-1994*

	Speed	Efficiency	Job creation index
Bulgaria	40.5	70.0	3.9
The Czech Republic	44.2	90.7	28.0
Hungary	60.3	84.1	12.8
Poland	35.3	70.6	23.3
Romania	21.1	64.8	3.4
Slovak Republic	48.7	92.5	19.1
Greece**	26.3	57.0	41.9
Portugal**	70.1	85.9	89.9
Spain**	26.3	58.5	26.3

*For Bulgaria, Poland and Romania, the reference countries for which the indices were calculated are the Southern EU countries in 1989, and for the others the Northern block of the EU countries in 1989.

**For Greece, Spain and Portugal 1989-93.

Source: Jackman and Pauna (1996)

⁷ Those sectors in which the share of employment is lower than the EU reference group.

Table 3.3

Indices of Structural Change in Employment in Croatia in Comparison to EU Countries

SPEED	1989-1996	1991-1996
Southern EU '89	68.1	59.6
Southern EU '94	64.6	55.2
Northern EU '89	61.8	54.1
EFFICIENCY	1989-1996	1991-1996
Southern EU '89	96.5	89.4
Southern EU '94	94.9	90.5
Northern EU '89	90.6	84.3
JOB CREATION INDEX	1989-1996	1991-1996
Southern EU '89	27.8	36.5
Southern EU '94	24.8	34.1
Northern EU '89	25.6	38.0

Source: own calculations

Comparing our data on restructuring, it seems that Croatia has made the most progress. Croatia's employment structure adjusted more quickly and more efficiently in the direction of the EU targets. In five, i.e. seven years of the transition period in Croatia, between 54 and 68 percent of the targeted labour market adjustment occurred, in comparison to an average of 40 percent for the other transition countries. Of the other transition countries only Hungary came close with 60 percent of the targeted adjustment.

From our calculations Croatia was not only quicker but generally more efficient in restructuring - between 84.3 and 96.5 percent of change in the structure of employment was in the right direction. The average for the other transition countries is 60 percent, and only the Czech Republic and the Slovak Republic achieved the same high degree of efficiency in restructuring as Croatia did. Among the more developed countries, only Portugal achieved such a high efficiency in restructuring during the period under review, while Greece and Spain were least efficient.

Our last measure of labour market change is the job creation index. Our calculations show that job creation has not progressed significantly. This is a consequence of the fact that in the early years of transition the labour market adjusted primarily through job elimination rather than job creation. Compared to the other transition countries, job creation in Croatia, ranging from 25 to 38 percent, was relatively high. Among other transition countries, the scores range from 3.4 percent in Romania to 28 percent in the Czech Republic. In comparison to all transition countries, Greece, and particularly Portugal, achieved much better results in job creation.

Not surprisingly, the results for Croatia are as worse as the comparative group of the EU countries is more developed and as the information on the structure of the labour market in comparator group of countries is more recent. The later is the consequence of the previously mentioned fact that transition economies are faced with a moving target.

4. Adjustment in the labour market

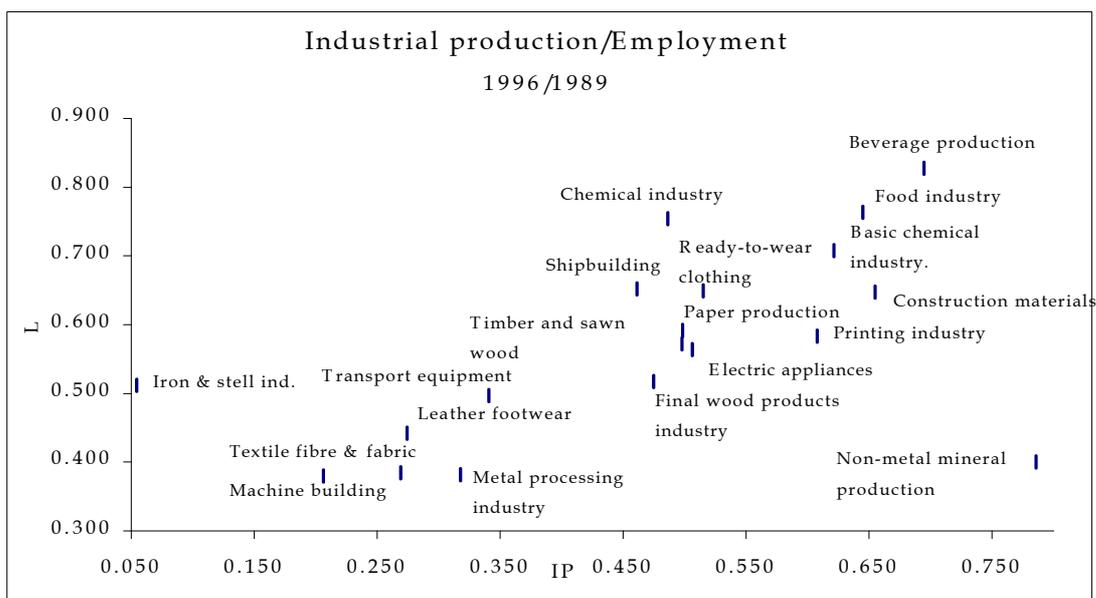
Through 1996 employment structure change in Croatia can be characterised by recessionary adjustment. In a period of recession the labour market adjusts by decreasing employment and/or by reducing wages and salaries. Further insight into the adjustment process in the Croatian labour market is shown in figures 4.1 - 4.3.

Figure 4.1 relates the ratio of industrial production to employment from 1989 to 1996 for the twenty largest manufacturing branches in terms of the number of employees. An indication that the

recessionary adjustment in the labour market was taking place is that all branches in the diagram are grouped in the south-western quadrant. Therefore, not only had overall employment in manufacturing declined from 1989 to 1996, but there was not a single manufacturing branch (among the top 20) in which employment increased.

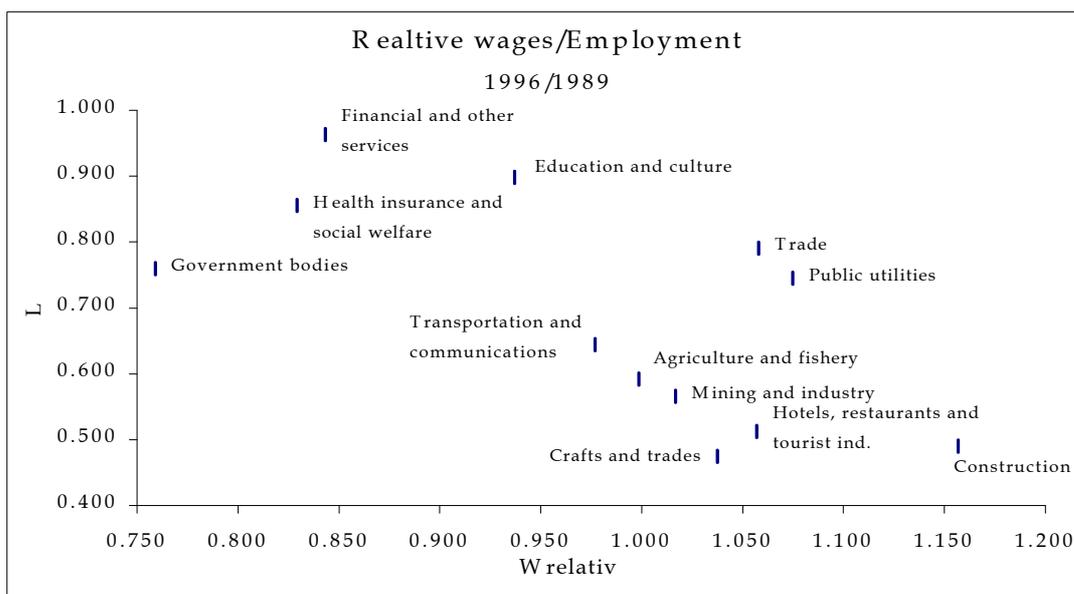
Furthermore, a simple inspection of the chart, establishes a positive connection between a fall in production and a fall in employment. This relationship has only two obvious outliers: the iron and steel industry, and the processing of non-metal minerals, in which employment decreased significantly less than would have been suggested by an imaginary regression line. In the former, the results might be attributed to an explicit government subsidy to this particular branch. The later might had a higher disguised unemployment before the restructuring started. It is also interesting to note that employment decreased faster than production in only three branches: electricity supply, printing industry and production of construction materials. The electricity supply can not be seen on the chart because this branch recorded a very high (33.5 percent) increase in production accompanied by a decrease of employment of 23 percent. The fact that employment decreased more than production in only four branches can be attributed to two reasons. First, real wages in 1996 have declined dramatically in comparison to 1989, by almost 40% (see table 2.1). Second, substantial labour hoarding might have continued during the war. The usual reason for labour hoarding is to avoid either the cost of the dismissal of workers, and/or the cost of recruiting them back again in the post-recessionary phase of the demand recovery. The downward adjustment in employment would normally be weaker if the downward wage adjustment is stronger, the anticipated duration of the recession is shorter, the firing and hiring costs are higher, and/or the direct or indirect subsidies granted to companies during recession are higher.

Figure 4.1



To conclude, if we take into account the previously mentioned high estimates of hidden unemployment for 1988, the analysis suggests that the rate of *de facto* unemployment in the manufacturing sector might still be substantial. Therefore, a large increase in industrial production will be necessary in the medium term to avoid a further substantial decrease in employment in this sector which, at this stage, can not be considered a positive medium-term development. Rather, a reallocation of employees within the sector itself towards new or more efficient branches would be a more desirable development.

Figure 4.2



Figures 4.2 and 4.3 demonstrate the relationship between relative wages (the average wage in the overall economy/manufacturing is equal to 1) and employment. This relationship is depicted for the main sectors of the economy and for all branches within the manufacturing sector. Although in both cases the labour market data fall within the southern or recessionary quadrant⁸, it is interesting to note that the relationship is not the same for the overall economy and the manufacturing branches. In the first case there is an inverse relationship between relative wage⁹ and employment. An explanation for such a relationship is that, all else being equal, a stronger downward adjustment in employment enables better relative wage, or vice versa. The only clear outlier from this relationship is government bodies which, given the decrease in employment, should have attained better relative wages.

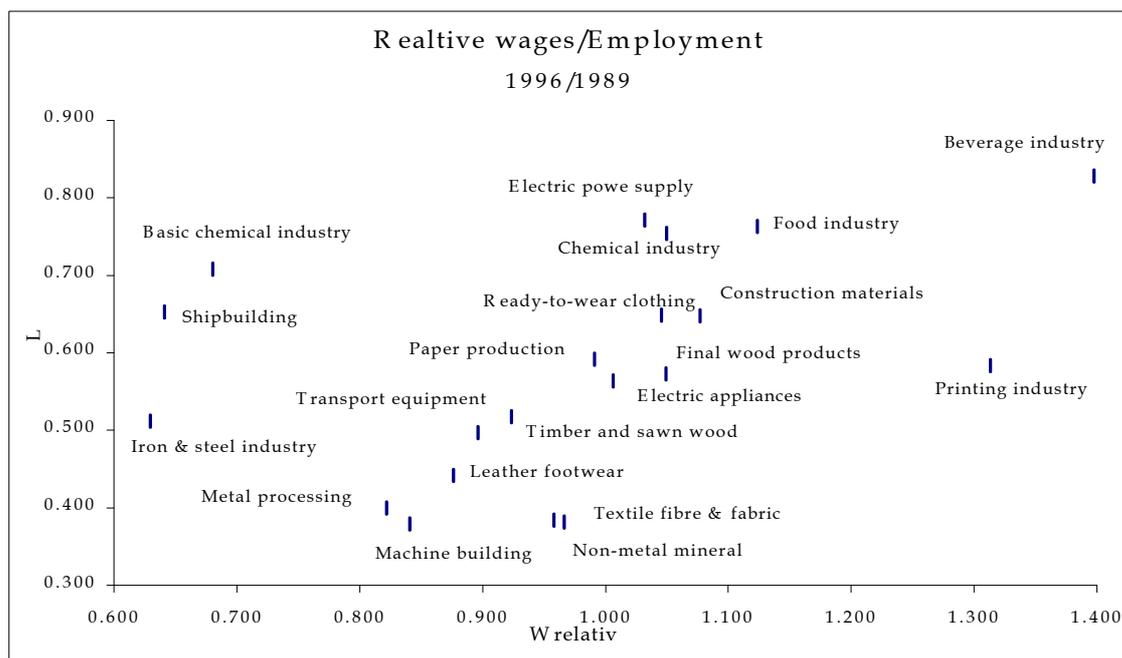
Among the industrial branches, on the other hand, there seems to be a perverse relationship: a stronger downward adjustment of employment, in most cases, is directly correlated with a higher deterioration of the relative average wage in the branch. This connection, however, is not so strong and has the following outliers: the iron and steel industry, basic chemicals industry, shipbuilding and printing. In the case of the iron and steel industry, its position in figure 4.3 might to a certain degree explain its outlier position in figure 3.1: the higher downward price adjustment can explain smaller quantity adjustment. In the case of the printing industry, the case is just the opposite. Its improved market position, as manifested by large increases in relative prices of printing services¹⁰ has enabled the branch to attain higher wages. This was even more true in the case of beverage production in which high relative wages, in spite of little downward employment adjustment, were a consequence of large increases in relative prices in the sector due to improved market conditions.

⁸ Again, it is worth reminding of the fact that the employment decline was, in part, attributable to the war associated population decline, rather than the recession.

⁹ The same result is obtained also with the average real wages in stead of relative wages.

¹⁰ The data on relative prices, that are not shown here, can be obtained from the author.

Figure 4.3



At least a part of the explanation for labour market adjustment in manufacturing sector lies in the fact that parts of it experienced the recession most severely. Therefore, the most affected branches (see figure 4.1) such as the machine industry, manufacturing of metal products, the textile fiber and fabric industry, and leather footwear and accessories manufacturing had to adjust by both a drastic reduction in employment¹¹ and a deterioration of relative wages.

5. Final considerations

The aim of this paper was to analyse structural changes in employment in Croatia in relation to other countries. Taking the economic structure of the EU as a target for the process of transition, this paper intended to answer the following questions: 1) how far is the Croatian labour market from its anticipated long-term structure, 2) what is the speed of structural change, 3) are they moving in the right direction, and 4) what is the relative position of Croatia in relation to other transition countries of Central and Eastern Europe.

By taking the employment structure of the EU countries as a long-term target, we have found that Croatia is still a long way from that goal, but that it is proceeding in the right direction and at a considerable speed towards achieving it. Moreover, in comparison to other countries in transition, it appears that employment restructuring in Croatia measured by indices of speed, efficiency and job creation has been most successful during the first seven years of the transition.

Another conclusion of our analysis is that the first phase - the recessionary phase - of labour market restructuring in Croatia seems to have come to an end, and a new and more difficult phase has begun, in which the speed of job creation should outpace the speed of job destruction.

It is, however, necessary to point out that the continued process of job destruction is still desirable, as long as hidden unemployment remains in many sectors and branches, especially in agriculture and in state-owned companies. However, unless this process is accompanied by a higher rate of job creation in the official part of the economy, such a process can not be successful: total unemployment along with employment in less productive areas in the unofficial sector would continue to grow.

¹¹ In some cases, such as in companies in the war-torn regions, such adjustment was a direct consequence of the war.

In the later phase of the transition process, job creation will be a more difficult economic task than was the job destruction in the earlier phase. On the other hand, the further job destruction, in the context of a normalised/stabilised political environment, will become an increasingly difficult political problem.

Bibliography:

Commander S. and A. Tolstopiantenko, Unemployment, Restructuring and the Pace of Transition , p. 4, EDI Development Studies, The World Bank, 1995.

Jackman R. and C. Pauna, Labour Market Policy and the Reallocation of Labour Across Sectors , paper prepared for OECD Colloquium on Economic Transformation and Development of Central and Eastern Europe: What Lessons from the 1990s? , 1996.

Mencinger J., Economic Reform and Unemployment (in Croatian), Privredna kretanja Jugoslavije, p. 23-38, March 1989.

Vujčić B., Estimates of the Hidden Unemployment in Croatia in Labor Market in Croatia, (in Croatian), Institute of Economics - Zagreb, 1994.

Vujčić B., Structural Changes in Croatia's Labour Market (1965-1988) (in Croatian), Institute for Research in Economics, Faculty of Economics, Zagreb, 1991.