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## REGIONAL ASPECTS OF YOUTH UNEMPLOYMENT IN YUGOSLAVIA

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#### I. INTRODUCTION

The Yugoslav economy in 1987 is beset with many serious problems, most of which have been analysed extensively both within Yugoslavia and abroad. The problem of unemployment does not appear to have received the same degree of attention and certainly not the attention it warrants. We believe that the problem of unemployment should be the focus of both economic analysis and policy debate.

Analysis of aggregate unemployment in the Yugoslav context is of limited value. The diverse nature of the Yugoslav labour market is hidden in the aggregates. In 1985 the aggregate Yugoslav unemployment rate was 13.76%. In Slovenia the rate was 1.72%; in Kosovo 34.78%. In the same year, the adult unemployment rate for all of Yugoslavia was 5.89%, while the workers aged 27 years or less had an unemployment rate of 38.66%. What contribution to an understanding of the problem can aggregate economic analysis hope to make; indeed, to be more practical, what policy implications could be drawn from such an aggregate analysis? We think, not much.

We believe that an analysis at a lower level of aggregation is more informative and thus may lead to a better understanding of this complex problem. Our objective is to set out stylised facts on the pattern of unemployment in Yugoslavia paying special attention to its distribution among various categories of workers and across the six republics and two provinces1.

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'The problem of unemployment has been addressed before, by and large, at an aggregate level. Data limitations are only partly responsible for the lack of analysis of unemployment at a disaggregated level. (see for example Emil Primorac and Phillip A. Della Valle Jahrbuch der Wirtsehafts Osteuropas Band 5, 1974). For a survey of literature, see Saul Estrin and William Bartlett "The Effects of Enterprise Self Management in Yugoslavia: An Empirical Survey", Chapter 5 pp. 83—107, in Derek Jones and Jan Svejnar (eds), Participatory and Self-Managed Firms, D. C. Heath Company 1982.

Our analysis deals with regional aspects of unemployment in the Social sector. We do not deal with the private sector due to data limitations. The period we cover is between 1965 and 1985, with two subperiods 1965—1974 and 1975—1985. The choice of dates is by nature of things somewhat arbitrary. We chose 1965 as a starting point because in the spring of that year a major reform was introduced in the hope of expanding the role of the market in the Yugoslav economy. The end point of the sample was dictated by the availability of data. The choice of the mid-point was governed by two considerations: there were important institutional changes in the mid seventies; in addition, 1975 and 1985 represent years in which the rate of growth in the Yugoslav economy was near its trend rate of growth over the entire sample period (see Chart I). This should limit any cyclical distortion resulting from our choice of the end points.

Chart I depicts the annual growth rates in the social product of Yugoslavia between 1965 and 1985. Also shown is the estimated trend rate of change in the annual growth rates. The estimated equation is given by:

$$g = 8.27 - .29 t$$
 ,  $t = 2,21$   
(1.48) (.11)  
 $R^2 = .27$ 

where standard errors are reported in brackets below the coefficients.

The deviations in the actual growth rates from the estimated trend line are a measure of cyclical fluctuations. This provides a useful guide in analysing the behaviour of labour market variables.

#### II. AN OVERVIEW

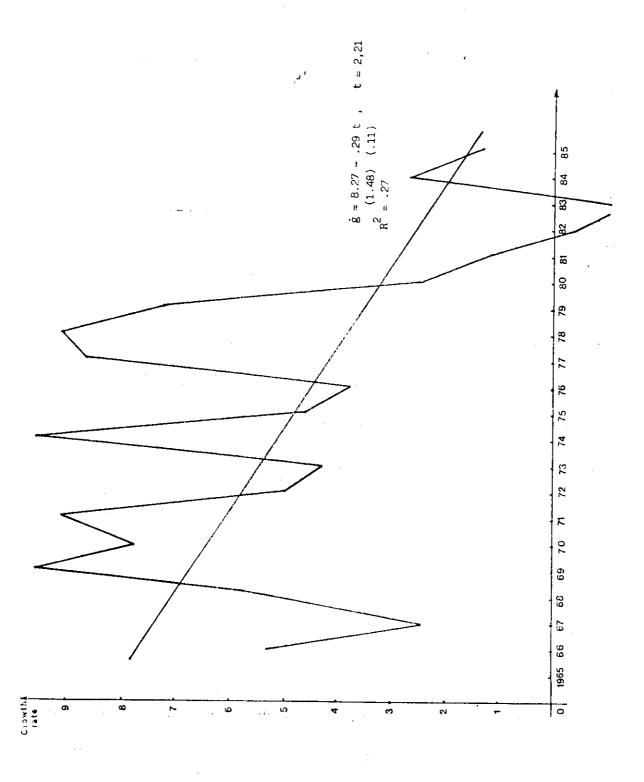
Growing unemployment is a common feature of most European economies. In order to place the Yugoslav unemployment problem in a wider context we report unemployment rates for selected European contries.

Table I — Unemployment rates in selected European countries	Table I —	Unemployment	rates in	selected	European	countries
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	1970	1975	1980	1983	1984	1985
Yugoslavia	7.8	10.4	12.1	12.8	13.3	13.8
Italy	3.2	3.3	7.4	9.9	9.9	10.3
Spain		4.7	11.2	17.8	20.6	21.9
F. R. Germany	.7	4.8	3.0	9.1	9.1	9.3
France	1.7	4.1	6.3	8.4	9.9	10.2
U. K.	2.5	4.1	6.9	10.7	11.1	11.3
Sweden	1.5	1.6	2.0	3.5	3.1	2.8

Source: O. E. C. D. Main Economic Indicators, various issues; for Yugoslavia, Statistički godišnjak Jugoslavije (S. G. J.), various issues.

Chart 1 GROWTH RATES (g) OF SOCIAL PRODUCT IN SOCIAL SECTOR, YUGOSLAVIA, 1966—1985



The Yugoslav aggregate unemployment rate performance is quite similar to that of a number of European economies. As we pointed out earlier, however, the aggregate unemployment rate reveals little about the true nature of the problem. We can throw some light on the nature of the unemployment by examining the distribution of aggregate unemployment by age, sex, experience, and qualifications of the unemployed as well as the duration of unemployment spells. Table II contains information on three of these variables for selected years.

Table II

Percentage distribution of unemployment in Yugoslavia by a) Age, b) Sex,
c) Experience, selected years

a) AGE

1965. 1970. 1975. 1980. 1985.  18 years or less 13.4 9.4 6.6 6.9 7.8 19 — 24 28.4 38.9 47.8 48.6 51.8 25 — 39 39.4 44.3 33.3 33.3 32.4 40 — 49 12.6 10.9 8.9 7.9 5.2 50 years or more 6.0 4.2 3.4 3.3 2.7  b) SEX  men 53.2 53.1 48.8 43.6 44.3 women 53.2 53.1 48.8 43.6 55.7  c) EXPERIENCE  no experience 33.3 50.9 59.8 68.1 71.4 up to 1 year 16.4 12.3 13.7 11.5 9.3 1 — 2 12.1 7.7 6.7 5.7 4.8 2 — 3 9.9 6.2 4.7 3.4 3.0 3 — 5 10.5 7.2 4.9 3.3 4.6 5 — 10 10.3 8.1 5.5 4.7 4.0 10 — 20 6.1 6.1 3.8 2.8 2.3 20 — 30 1.2 1.1 7.7 5.5 5.8					
	1965.	1970.	1975.	1980.	1985.
18 years or less	13.4	9.4	6.6	6.9	7.8
19 — 24	28.4	38.9	47.8	48.6	51.8
25 — 39	39.4	44.3	33.3	33.3	32.4
40 49	12.6	10.9	8.9	7.9	5.2
50 years or more	6.0	4.2	3.4	3.3	2.7
	b	) SEX			
men	53.2	53.1	48.8	43.6	44.3
women	46.8	48.9	51.2	56.4	55.7
	c) EX	PERIENC	E		
no experience	33.3	50.9	59.8	68.1	71.4
up to 1 year	16.4	12.3	13.7	11.5	9.3
1 — 2	12.1	7.7	6.7	5.7	4.8
2 — 3	9.9	6.2	4.7	3.4	3.0
3 — 5	10.5	7.2	4.9	3.3	4.6
5 — 10	10.3	8.1	5.5	4.7	4.0
10 20	6.1	6.1	3.8	2.8	
20 — 30	1.2	1.1	.7	.5	
30 or more years	.2	_	.1	.1	.1

A number of striking patterns emerge: The age distribution of the unemployed altered substantially. In 1965, workers 25 years of age or less accounted for 41.8% of the total unemployed. This percentage grew steadily to 59.6% in 1985. Women's share grew in similar fashion. Inexperienced workers accounted for 33.3% of the unemployed in 1965; by 1985, 71.4% of the unemployed were new entrants. Persons with higher and secondary professional qualifications represented 4.5% of the unemployed at the beginning of the period, 37.0% at the end of the

period. Highly skilled and skilled workers' share also increased from 11.7% in 1965 to 19.3% in 1985. The movements in all of these categories do not represent cyclical fluctuations but rather a long term trend which is difficult to explain.

The evidence on the duration of unemployment also indicates a worsening pattern. Spells of unemployment of one year or longer rose from 16.6% in 1965 to 55.3% in 1985! This is a particularly disturbing development which reveals serious structural imbalances in the labour market.

The above data indicate the inadequacies of aggregate unemployment analysis, and point forcefully to the need for a more disaggregated approach.

#### III. DECOMPOSITION INDEX

We wish to consider the contribution made by an identifiable group of workers to the change in the total unemployment rate over a given period.

The change in the total unemployment rate can be decomposed as follows

$$\Delta U = U_t - U_{t-1} = \sum_{i=1}^n (u^i \ \Delta w^i + w^i \ \Delta u^i + \Delta w^i \ \Delta u^i) \dots$$
 (1)

where, U = total unemployment rate

u<sup>1</sup> = unemployment rate of the i-th group

 $w^i$  = share of the i-th group in the total labour force.

For sufficiently small one period change:  $\Delta w^i \Delta u^i \sim 0$ . Therefore, we can write:

$$1 = \frac{\sum u^i \cdot \Delta w^i}{U_t - U_{t-n}} + \frac{\sum w^i \cdot \Delta u^i}{U_t - U_{t-n}}, \dots$$
 (2)

For the i-th group, the contribution to the change in the total unemployment is:

$$\frac{u_t^i (w_t^i - w_{t-n}^i)}{U_t - U_{t-n}} + \frac{w_t^i (u_t - u_{t-n})}{U_t - U_{t-n}} \dots$$
 (3)

However, over longer time periods w<sup>i</sup> u<sup>i</sup> will not approximate zero. The system of 'cross weights' accounts for the unexplained residual, so expression (3) becomes:

$$\frac{ \cdot 5 \left[ u_{t}^{i} \left( w_{t}^{i} - w_{t-n}^{i} \right) + u_{t-n} \left( w_{t}^{i} - w_{t-n}^{i} \right) \right]}{U_{t} - U_{t-n}} + \\
+ \frac{ \cdot 5 \left[ w_{t}^{i} \left( u_{t}^{i} - u_{t-n}^{i} \right) + w_{t-n}^{i} \left( u_{t}^{i} - u_{t-n}^{i} \right) \right]}{U_{t} - U_{t-n}} \dots$$
(4)

Whenever we use this measure, the version given by expression (4) is reported.

The first term (we shall refer to it as term 'a') captures the impact of the change in the labour force share of the i-th group (i.e.  $\Delta w^i$ ) on the net contribution made by the i-th group to the change in the total unemployment rate. The second term (we shall refer to it as term 'b') captures the impact of the change in the unemployment rate of the i-th group.

We consider, firstly, a decomposition of the total labour force into its 'youth' (aged below 27 years) and 'adult' (the remainder) components and secondly a decomposition into 'educated' (higher and secondary professional qualification<sup>2</sup>) and 'others' components. The results, for the republics and provinces and for total Yugoslavia are reported in Table III.

To illustrate the use of this index we consider four examples:

- (i) Yugoslavia, 1965—1985 period (column 1, bottom entries): Term 'a' has a value of .32; 'b' is .43, which sums to .75. This indicates that over the period in question the youth contribution to the change in the total unemployment rate was 75%, implying a 25% adult contribution.
- (ii) Bosnia and Herzegovina, 1965—1985 period (column 1, top entires). Term 'a' is .50, term 'b' is .54. In this case the net contribution by youth is 1.04 illustrating a situation in which the youth contribution exceeded 100%, thus implying that the adult contribution to the change in the total unemployment rate was negative, i.e. 'adults' contributed 4.0%.
- (iii) Slovenia, 1965—1985 period, (column 6, where the decomposition is between the 'educated' and 'others'). Term 'a' is —4.57; term 'b' is —6.03, therefore, the net contribution of the 'educated' is —10.60. Two elements gave rise to the large negative number. First, the total unemployment rate fell from 1.76% in 1965 to 1.72% in 1985. The denominator in expression (1) is therefore negative. Second, the 'educated' unemployment rate rose from .65% to 1.71%, while the share of the 'educated' in the total labour force rose from 18.00% to 30.00%. As a result both numerators in expression (4) are positive. Therefore both, term 'a' and term 'b' are negative. This scenario can be usefully contrasted with the case (ii) above, where the negative adult contribution implied the decreasing unemployment rate for that group. Here, of course, the unemployment rate of the 'educated' increased, while the total unemployment rate fell.
- (iv) Serbia, 1980—1985 (column 5): The youth share of the labour force fell from 24.0% to 18.0%, while the youth unemployment rate fell from 35.54% to 34. 92%, thus making numerators in terms 'a' and 'b' negative. Since the total unemployment rate fell by 1.05 percentage points both terms 'a' and 'b' become positive. The positive and large net contribution is mainly due to a decrease in the youth's share of the labour force (see the value for term 'a'!).

<sup>&</sup>lt;sup>2</sup> See S. G. J. — 1986 p. 31 and 134.

Table III

Contributions by youth / "educated" to changes in total unemployment rate, 1965 — 1985, Yugoslavia; republics and provinces

1965— 1965— 1975— 1975— 1985   1974   1985   1985   1974   1985   1985   1974   1985   1985   1975— 1985   1975— 1985   1985	75 111 111 122 - 22 - 58	1975— 1980 07	1980—	1045	1507	1075		
to $\Delta$ w charge vina a50 .75 to $\Delta$ u b54 .11 change c. 1.04 .86 LF $_{\rm t}$ = ith share: d14* .31 tenegro a87 1.22 b1065 c77 .58 d05* .24 tia a97183 b51 1.92 c. 1.48 .09 d16* .25		70.—		1985	1965— 1974	1985	- 1975— 1980	1980— 1985
to $\Delta$ w b50 .75 to $\Delta$ u change c. 1.04 .86 LFT = ith share: d14* .31 tenegro a87 1.22 b1065 c77 .58 d05* .24 tia a971.83 b51 1.92 c. 1.48 .09 d16* .25	'	70.—						:
to $\Delta$ u change c. 1.04 .86 LFT = ith share: d14* .31 temegro a87 1.22 b1065 c7758 d05*24 tia a97183 b51 1.92 c. 1.4809 d16*25	'	78.	.07	.18	90:	.020	.15	.24
change c. $1.04$ .86 LF $_{\rm t}$ = ith share: d. $.14^*$ .31 tenegro a87 1.22 b1065 c77 .58 d05* .24 tia a971.83 b51 1.92 c. 1.48 .09 d16* .25		G	1.28	.41	11.	.72	짫.	.64
LFT = ith share: d14* .31 tenegro a87 1.22 b1065 c77 .58 d05* .24 tia a971.83 b51 1.92 c. 1.48 .09 d16* .25		œ.	1.35	.59	.17	.92	66.	<b>%</b>
a87 1.22 b1065 c77 .58 d05* .24 a971.83 b51 1.92 c. 1.48 .09 d16* .25	'	.33	34	.15*	.23	.33	.27	.33
a87 1.22 b1065 c77 .58 d05* .24 a97 -1.83 b51 1.92 c. 148 .09 d16* .25	'							
b1065 c77 .58 d05* .24 a97 -1.83 b51 1.92 c. 1.48 .09 d16* .25		-1.38	004	.18	90:	.39	2.24	.27
c77 .58 d05* .24 a97 —1.83 b51 1.92 c. 1.48 .09 d16* .25		3.21	1.12	.47	.30	.82	5.02	.56
d05* .24  a97 —1.83  b51 1.92  c. 1.48 .09  d16* .25		1.83	1.11	.65	.37	1.21	7.27	.83
a97 —1.83 b51 1.92 c. 1.48 .09 d16* .25		.26	.26	.20*	.28	.39	.33	.39
a97 —1.83 b51 1.92 c. 1.48 .09 d16* .25								
b51 1.92 c. 1.48 .09 d16* .25	•	1.72	—.23	.64	34		70	.16
c. 1.48 .09 d16* 25		98	1.24	.92	21		80	58
d16* .25		.75	1.01	1.55	55	1.07	-1.50	.74
		.25	.22	.15*	.24		.28	.33
Macedonia								
a75 1.16 —7.36	ł	-2.17	6.15	.24	.11	5.31	'	5.49
50		3.34	6.54	4.	.32	2.57		3.40
.66 .65		1.17	38	89.	.43	7.88	1	3.09
.27		.25	.23	.16*	.25	.35	.29	.35

		NOX.	TH,				EDU	CATED			
		1965— 1985	1965— 1974	1975— 1985	1975— 1980	1980— 1985	1965— 1985	1965— 1974	1975— 1985	- 1975 1980	1980-
Slovenia			1			-					
	લ	99.9—	-1.32		1.46		4.57	10		1%	28
	þ,	10.12		.83	51		6.03	10	•	1.20	. 4 <del>.</del>
	ပ်	3.46			.95	•	-10.60	.00	•	-1.49	2 %
Serbia	ď.	.19*			.27	.25	.15*	.21	.30	.25	30
	(	8	Ē	•	ļ	,	·				
	œi,	70:	.57	-1.58	47	1.93	.26	.15	.55		88 88
	Ö.	.28	.29	<i>1</i> 9.	.56	.12	.57	.42	1.15	'	-1.36
	ပ	.30	.87	91	89.	2.06	.82	.57	1.70	38	_2.24 2.24
	ď.	.18*	.26	.18	24	18	*02	80	27		27
Kosovo					Ì	!	Ì	}	<u>.</u>		.C.
	ei ei	.43	83	.12	.27	—.03	.29	80	35	%	46
	Ъ.	99.	.71	.91	.59	1.16	99.	.28	6	1.53	. ×
	ن	1.04	1.54	1.03	%: 98:	1.13	<u>&amp;</u>	37	1.25	1.23	1.74
	Ġ	.14*	.31	.34	.34	.34	.16*	.27	4	34	44
Vojvodina											•
	a.	.21	.40	45	95	5.	.20	.10	.37	22	73
	٩	.34	.20	.72	1.23	29	.41	.25	88	78	96
	ن	.55	99.	.27	.28	.25	.61	\ <del>%</del>	1.25	? <del>-</del>	177
,	ď.	.14*	.23	.22	.20	.22	.14*	74	. 23	29	33
Yugoslavia					-					ì	)
	ъ,	.32	.81	44	74.—	-35	23	14	13.	20	44
	ф,	.43	.03 .03	1.13	86. 80.	1.32	.48	31	79	į 2	<del>.</del> 6
	ပ	.75	.84	69:	.40	76.	17	54.	1 1	; &	2, 1 2, 1
	Ġ.	.16*	.27	.24	.26	.24	.16*	72	34	5	34
	İ								,	ì	

# IV. CONTRIBUTIONS BY YOUTH AND 'EDUCATED' TO CHANGES IN TOTAL UNEMPLOYMENT RATE

Examination of Table III reveals three cases where youth's NET contribution to the change in the total unemployment rate is negative: Macedonia 1980—1985; Slovenia, 1975—1985 and Serbia 1975—1985.

In the case of Macedonia there was a fall in the total unemployment rate from 21.54% in 1980 to 21.34% in 1985, while the youth unemployment rate rose from 49.77% to 55.13% over the same period. Hence, the negative 'b' term. At the same time, the youth share of the labour force fell from 25.0% to 23.0% of the total labour force, generating a positive 'a' term. The negative unemployment rate effect overpowered the positive labour force share effect. Here again the resulting negative net contribution represents a relative worsening of the youth's position in the labour market.

In the remaining two cases for the 'youth' decomposition: Slovenia 1975—1985; Serbia 1975—1985, the negative net contribution is due to a fall in the youth share of the labour force, i.e. the term 'a' was negative. The share fell in Slovenia from 32.0% to 25.0%, while in Serbia it fell from 25.0% to 18.0%.

However, in all other cases (37 out of 40 i.e. 8 regions over 5 sample periods) the youth's NET contribution to the change in the total unemployment rate was positive. Furthermore, in all but three cases: Croatia, 1965—74, Slovenia 1980—1985 and Serbia 1975—1980, their net contribution to the rise in the total unemployment rate exceeded their share of the labour force. Indeed in most instances the net contribution was several times the size of the youth share in the labour force. Consider the overall period, 1965—1985 (column 1). The ratio of the net contribution by youth to their share in the labour force ranged from high of 13.8 (Slovenia) to low of 1.7 (Serbia), averaging 4.6 for all regions.

When we divide the labour force between the 'educated' (high, higher and middle qualifications: referred to as the 'educated' in Table III) and the rest, there are seven cases in which the net contribution of the 'educated' is negative. In all, but two cases, the 'educated' unemployment rate increased as the total unemployment rate fell. In the case of Macedonia, 1980-1985; Slovenia 1965-1974, the 'educated' unemployment rate also fell but not sufficiently to compensate for the negative term 'a'. Despite the negative net contributions all seven cases indicate relative worsening of the educated group's position in the labour market. In most of the remaining cases when the total unemployment rate rose, the net contribution of the 'educated' group far exceeded their share in the relevant labour force. This is an unexpected pattern: one would anticipate that the 'educated' group would contribute less than proportionately to the rise in the total unemployment rate. In the short run one might reconcile this pattern with unavoidable labour market imbalances, but this certainly does not help us here where the

pattern persists over the whole of our sample period. In the case of Croatia, between 1965 and 1985, the net contribution of 155% to the rise in total unemployment by the 'educated' group is difficult to comprehend. Furthermore, both terms 'a' and 'b' are positive indicating the rising share in the labour force for this group and an increasing unemployment rate among them. Although this is an extreme example, it is indicative of the pattern in other regions and for different sample periods. For Yugoslavia as a whole, for the 1965—85 period, the 'educated' group was 'responsible' for 71.0% of the rise in the total unemployment rate, while their share of the labour force in 1985 was 34.60%.

We are faced with a conundrum: when we decompose the change in the total unemployment rate into contributions made by adults and youths, we find that the *youth* group makes a disproportionate contribution to this change. Over the period 1965—1985, the youth accounted for 75.0% of the change in the total unemployment rate, (See Table III, above). When we decompose the change in the total unemployment rate into contributions made by the 'educated' and 'others', we find that now the 'educated' group makes a disproportionate contribution. Over the same period, the 'educated' accounted for 71.0%.

One possible explanation for this finding is that both categories (youth and educated) are proxies for new entrants into the labour market. It is quite reasonable to equate the youth with new entrants, but how does one justify equating the 'educated', with new entrants? Our data show that the share of the 'educated' in the total labour force increased substantially: their share for the whole of Yugoslavia was 16.0% in 1965 and 34.0% in 19853 implying that an increasing proportion of new entrants were in the 'educated' group. As a slightly more rigorous test for the relationship between the youth and the 'educated' groups, we compare the growth rates in unemployment rate for the youth and 'educated' categories. Table IV below summarises the results. The results indicate a statistically significant correlation between the growth rates in the unemployment rate of the youth and 'educated' categories across regions. This holds true for the total period as well as for two sub-periods.<sup>4</sup>

Some other correlation coefficients are also interesting. The correlation between the growth rates in the unemployment rates of the adults and both the youth and 'educated' is statistically insignificant in all but one case (youth, period 1975—85), when it is negative. We would expect to find that regions with unusually high growth rates of the un-

<sup>&</sup>lt;sup>3</sup> See Table III.

<sup>&#</sup>x27;It is interesting to note that the correlation between the growth rates of unemployment rate for the youth and 'educated' holds even when we control for the growth rates in the total unemployment rate. Over the whole sample period, the partial correlation coefficient between the youth and 'educated' categories is .63 (significant at 90% level). In the first subperiod the partial correlation coefficient is .71 (significant at 95% level). In the second period the partial correlation coefficient was not significant, because both groups are highly correlated with the growth rates in the total unemployment rate.

Table IV
Simple correlation coefficient between the growth rates in the unemployment rates for 4 groups across regions

	τ	Total Jnemployment	Adult Unemployment	Youth Unemployment
Adult: 1965—1985:	i	.72		
1965—1974:	ii	.87		
1975—1985:	iii	<del>48</del> *		
Youth:	i	.74	.40*	
	ii	<b>—</b> .01*	20*	
	iii	.80	80	
Educated:	ú	.48*	—.05*	.73
Lunou.	ii	03*	02*	.71
	iii	.84	<b>—</b> .22*	.62

<sup>\*</sup> Significant at 5% level

Note: a) t — test for significance of simple correlation coefficient: Let  $r_{1,2}$  be the correlataion coefficient between variables 1 and 2.,

then 
$$t = \sqrt{\frac{r_{12}^{2} (n-2)}{t-r^{2}}}$$

b) t — test for significance of partial correlation coefficient: let  $r_{12}$  be the partial correlation coefficient between variables 1 and 2. Let  $r_{12,3}$  be the partial correlation coefficient, then,

$$r_{12.3} = \frac{r_{12} - r_{13} \cdot r_{23}}{\sqrt{1 - r_{13}^2} \cdot \sqrt{1 - r_{23}^2}}, \text{ then,}$$

$$t = \sqrt{\frac{r_{12.3}^2 (n - 3)}{1 - r_{12.3}^2}}$$

employment rate for the adults would also have high growth rates of the unemployment rate of the youths and 'educated' groups. Indeed, in one instance when a relationship does exist, regions in which the growth rates in the adult unemployment rate are low tend to be regions with high growth rates in the youth unemployment rate.

When we turn to the relationship between the growth rates in the total unemployment rate and the three sub-categories (column 1), we again find two different patterns corresponding to the two subperiods.

In the first period, 1965—74 there is a high correlation between the growth rates in the total unemployment rate and that for adults while there is no relationship between the total on the one hand and the youth and 'educated' groups on the other.

In the second period, 1975—85 the pattern is reversed. We now find a high and significant correlation between the growth rates of the total unemployment rate and those of the youth and 'educated' category. Now the correlation between the growth rates of the total unemployment rate and those for the adults are negative but statistically insignificant. This would imply that in the period 1975—85 the growing burden of unemployment is not carried by the established workers (adults) but rather by those entering the labour market (youth).

New entrants experience difficulties in securing permanent employment in most labour markets, as illustrated in Table V.5 What is striking is that the ratio of adult to youth unemployment is high in Yugoslavia and shows continuous growth.

Table V
Ratio of youth and adult unemployment rates

	1970.	1975.	1980.	1983.	1984.
Yugoslavia	2.9	4.2	4.3	5.4	6.2
Italy	• •		3.4	3.2	3.3
F. R. Germany	.8	1.5	1.4	1.5	1.2
France	2.3	2.8	3.6	3.7	2.8
U. K.	1.4	3.0	3.1	2.6	1.9
Sweden	2.4	3.2	3.6	3.1	1.9

Source: Friedrich Klau and Axel Mittelstadt, "Labour Market Flexibility", OECD Economic Studies, No. 6/Spring 1986, p. 32; our estimates for Yugoslavia

This indicates again that the problem of unemployment of new entrants is a particularly serious problem in Yugoslavia. It might well be that institutional rigidities with regard to hiring and firing of workers in Yugoslavia, coupled with apparent reluctance to make required adjustements with respect to unprofitable enterprises, make the usual labour market forces a rather blunt tool in a self-managed economy. Our analysis indicates that the unemployment burden is borne primarily by those who can be hardly held responsible for the present unemployment problem and who are least capable of fending for themselves: new entrants into the labour market.

<sup>&</sup>lt;sup>5</sup> The selection of countries was limited to Europe and the dates were dictated by the source.

# V. CONTRIBUTIONS BY 'REGION' TO CHANGES IN TOTAL YOUTH UNEMPLOYMENT RATE

We turn now to a discussion of contributions by the republics and provinces to the changes in the total youth unemployment rate. The results are presented in Table VI.

Table VI

Contributions by 'region' to changes in total youth unemployment

		1 <del>9</del> 65— 1985	1965— 1974	1975— 1985	1975— 1980	1980— 1985
Bosnia-Herzegovina						
due to A w	a)	.25	2.16	.17	.11	.20
due to $\Delta$ u	b)	.35	.82	.36	.23	.44
Net change	c)	.59	2.98	.53	.34	.64
$LF^{i}_{t}/LF^{r}_{t} = ith share$	d)	.12*	.16	.23	.19	.23
Montenegro	a)	.08	1.51	.02	.01	.02
	b)	<b>—</b> .01	1.03	.04	.01	.05
	c)	.07	.47	.06	.03	.08
	d)	.007*	.02	.03	.02	.03
Croatia	a)	07	1.68	02	<b>—.01</b>	02
•	b)	.06	-4.37	.15	.04	.22
	c)	01	6.05	.14	.03	.20
	d)	.26*	.21	.21	.22	.21
Macedonia	a)	.08	2.78	.01	.04	.001
	b)	02	2.59	.06	.09	.05
	c)	.07	.19	.08	.13	.05
	d)	.06*	.08	.08	.08	.08
Slovenia <sup>*</sup>	a)	<b>—.01</b>	<b>—</b> .15	006	007	004
	b)	<b>—.02</b>	-1.10	.007	.004	.008
	c)	03	1.25	.001	003	.004
	d)	.17*	.15	.12	.13	.12
Serbia	a)	<b>—</b> .13	-1.14	—.12	<b>—</b> .04	19
	b)	.16	3.18	.09	.30	<i>—.</i> 01
	c)	.02	2.04	04	.26	20
	d)	.27*	.25	.19	.24	.19

		1965— 1985	1965— 1979	1975— 1985	1975— 1980	1980— 1985
Kosovo	a)	.10	.87	.09	.09	.07
	b)	.13	1.31	.1·1	.06	.14
	c)	.22	2.18	.19	.16	.21
	d)	.02*	.04	.06	.05	.06
Vojvodina	a)	03	<b>—</b> .61	01	.08	.03
	b)	.10	1.05	.05	.15	01
	c)	.07	.44	.04	.07	.02
	d)	.10*	.09	.08	.07	.08
Yugoslavia: ∆ Total youth						
unempl. rate		18.05	.43	16.51	5.52	10.99

When we consider the overall sample period (1965—1985), the net contribution by regions to the total youth unemployment rate exceeds the share of the labour force (at the beginning of the period) in Bosnia, Montenegro, Kosovo and Macedonia. The regions which contribute less than proportionately are Croatia, Slovenia, Serbia and Vojvodina. The latter group, except for Vojvodina in the last two subperiods (1975—80 and 1980—85), consistently exhibits a negative term 'a'. That is to say, a portion of their relatively low contribution to the growth of the youth unemployment rate is attributable to their declining share of the total youth labour force. In three cases (Slovenia 1965—85, 1965—74; Croatia, 1965—74 and Serbia, 1980—85) these negative share effects, i. e. terms 'a', are reinforced by negative unemployment effects (terms 'b'). Negative 'b' terms are observed in two instances in the former group (Montenegro, Macedonia), however, these are overpowered by relatively large share effects ('a' term).

What is clearly evident from the data presented in Table VI is that regions which contribute most to the growing youth unemployment rate are the regions which account for an increasing share of the youth labour force. Kosovo's share of the youth labour force grew by a factor of 3, while Bosnia's doubled between 1965 and 1985, for example.

### VI THE SUPPLY SIDE

These patterns point to a demographic explanation. Table VII contains annual average growth rates (over the 1965—1985 period and for two subperiods, 1965—1974 and 1975—1985) for total population and four demographic groups, for each region and Yugoslavia total.

Table VII

Average annual growth rates\* for total population and components, 1965—1985.

		BiH	Mon.	Cro.	Mac.	Slo.	Ser.	Kos.	Voj.	Nor.	Sov.	Yug.
A. Total:									* *			
196585	(i)	1.05	1.04	.41	1.47	.80	.74	2.49	.38	.58	1.41	.89
1965—74	(ii )	1.28	1.13	.51	1.52	.71	.73	2.67	.38		1.56	
1975—85	(iii)	.67	.79	.29	1.38	.93	.77	2.13	.37		1.13	
B. Adults												
	(i )	2.25	1.81	.89	2.30	1.08	1.33	2.46	.90	1.09	2.27	1.44
	(ii)	2.91	2.17	1.11	2.49	.94	1.37	2.94	.95	1.16		1.61
	(iii)	1.31	1.33	.66	2.06	1.30	1.35	1.48	.86	1.05		1.19
C. Youth:												
	(i )	.08	.28 -	<b>—.27</b>	.76	.44 -	<b>—</b> .10	2.50	40	12	.75	.25
	(ii)	.08	.28 -	<b>27</b>	.76	.44 -	10	2.51	<b>—.40</b>	12	.70	.22
	(iii)	.08	.27 -	<b></b> .27	.76	.44 -	<b></b> .10	2.50	40	<b>—.12</b>	.79	
D. Females	:											
	(i )	.81	.86	.37	1.47	.88	.77	2.33	.39	.58	1.91	.82
	(ii )	.81	.85	.37	1.47	.88	.77	2.33	.39	.60	1.56	.81
	(iii)	.81	.86	.37	1.47	.88.	.76	2.33	.40	.58	1.13	.83
E. Males												
	(i )	1.30	1.21	.44	1.46	.71	.71	2.64	.36	.58	1.41	.94
	(ii )	1.76	1.42	.66	1.56	.54	.69	2.99	.38	.60		1.07
	(iii)	.54	.72	.19	1.30	.98	.78	1.94	.34	.58	1.13	.72

<sup>\*</sup>  $\ln X = \alpha + rt$ , where r = reported growth rate.

A consistent pattern is evident in the total population growth. The four regions which contributed most to the growth of youth unemployment have higher population growth rates than the remaining four. Following accepted classification, the former are grouped as the 'South', the latter as the 'North'. Table VII indicates that the 'South' exhibits a significantly higher growth rates over the total period and two subperiods. For example, over the entire sample period, the average annual rate of growth of the total population in the 'South' is 1.41%, as compared to .58% in the 'North'.

The same pattern is evident for the adult category. The growth rates reported are 1.52% and 1.05% respectively.

When we turn to the youth category we again observe substantial differences in the growth rates; indeed in the 'North' the youth cohort falls at an average annual rate of .12% compared to an increase of .75% in the 'South'. Although it would be of interest to compare the growth rates of the various demographic groups across regions the quality of the underlying data for certain subgroups (youth female) prevents this.

Table VIII contains the growth rates of the potential labour supply, which includes all males aged 15 to 65 and all females aged 15—60.6

Table VIII

Average anual growth rates for potential labour supply, 1965—1985.

	BiH	MON	CRO	MAC	SLO	SER	KOS	VOJ	NO	so	YUG.
1965—1985	1.71	1.57	.56	1.98	.96	.95	2.68	.51	.76	1.92	1.15
1965—1974	1.47	1.43	.69	2.29	.91	1.21	2.41	.70	.92	1.21	1.21
19751985	1.31	1.26	.39	1.59	1.17	.88	2.56	.36	.88	1.58	1.00

This variable can be used to detect demographic influences on the pattern of unemployment by region, although it does not allow us to isolate the youth component which is of our primary concern.

The growth rates in the potential labour supply (see Table IX) ehibit two distinct patterns. The four regions with highest average growth rates comprise the 'South', their average being 1.92% as opposed to the average growth rate of .76% for the 'North'.

The potential labour supply to population ratio is a useful indicator of the proportion of the population capable of active participation in economic activity. It is useful to observe the pattern of growth

Table IX

Average annual growth rates for the potential labour supply/population ratio, 1965—1985.

	BiH	MON	CRO	MAG	SLO	SER	KOS	VOJ	NO	so	YUG.
1965—1985	.65	.54	.15	.52	.16	.21	.19	.13	.17	.51	.27
19651974	.19	.30	.18	.77	.19	.48 -	26	.31	.32	.24	.27
1975—1985	.63	.47	.10	.21	.24	.11	.44 -	<b>01</b> *	.11	.45	.22

<sup>\*</sup> Significant at 1% level.

rates of this ratio for the two subperiods. In the first (1965—74) the 'South' lagged behind the 'North', while in the second (1975—85) the 'South' grew at the rate three times greater than that of the 'North'. This illustrates differing demographic patterns among the regions. Kosovo is the case in point: in the first period the average growth rate of the ratio was negative, while in the second it was the third highest among the regions. This is consistent with a growing 'baby boom' cohort entering the numerator in this ratio.

Potential labour supply, as the name indicates, provides a number of people of economically active age; the labour force data provide a number who are actively engaged in the labour market. The labour force consists of all individuals who are either employed or actively seek work.

<sup>&</sup>lt;sup>6</sup> This variable is used later to calculate the participation rate — one of the important variables in 'explaining' labour market behaviour.

Table X
Average annual growth rates total labour force and components, 1965—1985.

		BiH	MON	CRO	MAC	SLO	SER	KOS	VOJ Y	ľUG.
A. Total: 1965—1985 1965—1974 1975—1985	(i ) (ii ) (iii)	4.90 3.14 4.84	4.12	3.12 1.72 3.05	4.21	2.94 2.67 2.12	4.19 3.82 3,23	5.91 4.43 5,92	2.99 1.65 2,62	3.88 2.88 3,45
B. Adult:	(i ) (ii ) (iii)		3.77 * 1.78 5.41	2.85 .47 <sup>9</sup> 3.95	2.18	2.66 1.03 3.38	4.12 2.63 4.82	4.54 1,81 5.34		3.42 1.28 4.39
C. Youth:	(i ) (ii ) (iii)	-	12.30 20.80 3.64	6.46	7.38 12.63 * 1.95	3.84 7.63 —1.00	8.00	10.10 13.89 7.15	4.17 7.10 —.61*	5.55 8.73 .96

<sup>\*</sup> Significant at 1% level.

By now the familiar pattern emerges again in Table X: the growth rates of the total labour force in the four regions which comprise the 'South' are higher than those for the four regions in the 'North'. This is accentuated for the youth component. The average annual growth rates for this group are not only extremely high, but the differentials are phenomenal. For example, over the twenty one year period, the annual growth rate for Montenegro is 12.30%, while in Slovenia the rate is 3.84%. Furthermore, in the second sub-period (1975—85) the youth growth rates are negative and/or statistically insignificant in all regions comprising the 'North', while in the 'South' they are positive and statistically significant. Kosovo's growth rate of 7.15% per annum is the highest, followed by Bosnia (4.48%), Montenegro (3.64%) and Macedonia (1.95%).

The adult category provides the first exception to the 'North'—'South' dichotomy: In Serbia, the growth rate per annum is the second highest and exceeded only by Kosovo. The general pattern across regions is one of relatively low growth of the adult labour force in the 1965—74 period, followed by the relatively high growth in this segment of the labour force in the 1975—1985 period. Two influences are at work here: high outmigration to the West in the first period and the transfer of workers from youth to adult category in the second period.<sup>7</sup>

The growth rates in the labour force are a function of both the growth rates of the potential labour supply (purely demographic variable) and the participation rate, which is the ratio of the actual labour supply to the potential labour supply (which is an economic variable).

<sup>&</sup>lt;sup>7</sup> Compare growth rates for the youth in the first period.

Chart 2.

LABOUR FORCE PARTICIPATION RATES, 1965—1985

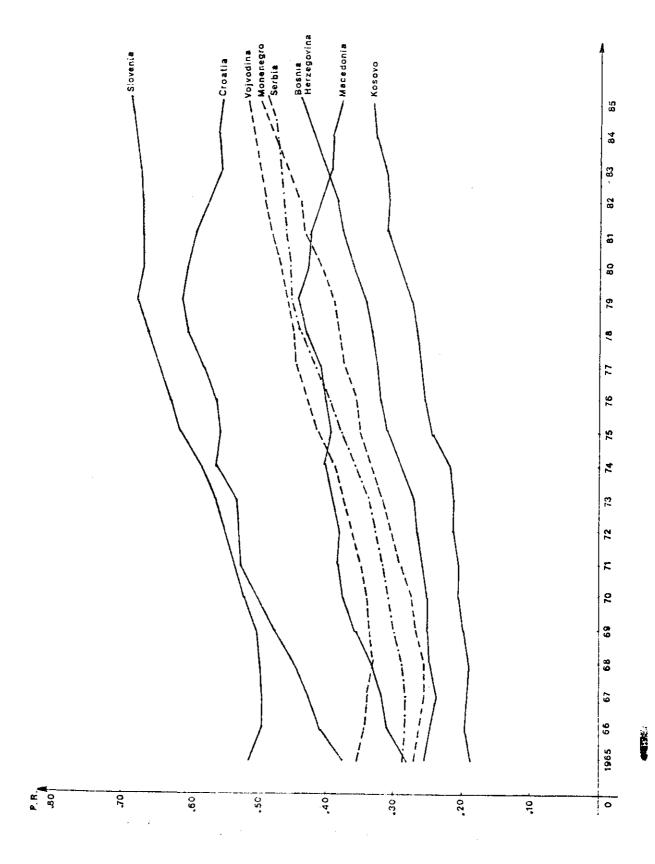


Table XI
Average annual growth rates for participation rate, 1965—1985.

	BiH	MON	CRO	MAC	SLO	SER	KOS	VOJ	YUG.
1965—1985 1965—1974 1975—1985		2.79	1.03	2.76 1.91 2.46	1.77		2.02	.95	2.15

In Chart 2 we present the participation rate levels for the period 1965—1985, by region. In light of this information, high growth rates in the participation rate are accounted for by the low participation rate levels at the beginning of the period. For example, Slovenia, with the highest participation rate at the beginning of the sample period, shows the lowest average annual growth rate in participation rate.

# VII. EMPLOYMENT AND UNEMPLOYMENT

We proceed now by decomposing the labour force into its two components (employment and unemployment) and observing the growth patterns in these two variables (see Table XII). The total employment growth rates tend to be more uniform across regions than most

Table XII

Average annual growth rates for totals and components of employment and unemployment, 1965—1985.

			BiH	MON	CRO	MAC	SLO	SER	KOS	VOJ	YUG
E	MPLOYMEN	Γ:				· · · · · · · · · · · · · · · · · · ·	<del></del>			<del></del>	
A.	Total:						1				
	1965—1985		4.09	4.30	3.05	4.33	3.01	3.62	4.91	2.45	3.44
	1965—1974	(ii)	2.77	3.66	1.93	3.66	2.76	3.43	4.18	1.23	2.67
	1975—1985	(iii)	4.01	4.36	2.94	4.06	2.09	3.18	4.54	2.42	3.16
B.	B. Adults:	(i)	3.55	3.50	2.92	3.96	2.69	3.74	4.58	2.44	3.27
		(ii)	.46*	1.46	.61*	1.91	1.02	2.50	2.45	.14*	1.22
		(iii)	5.25	5.57	4.08	5.15	3.37	4.55	5.43	3.50	4.38
C.	Youth	(i)	6.48	12.04	3.75	7.26	4.06	3.05	6.22	2.58	4.29
		(ii)	12.56	27.65	7.60	16.37	8.20	7.54	11.36	6.77	8.97
		(iii)	.35*	80*	95 -	1.01		-2.70 -	<b>−1.18</b> *	-2.20*	-1.17
D.	Females:	(i)	6.13	5.50	3.86	6.07	3.51	4.84	5.65	3.39	4.44
		(ii)	5.19	4.00	2.93	5.29	3.59	4.65	4.81	2.06	3.77
		(iii)	5.44	5.66	3.35	5.47	2.30	4.30	5.03	3.26	3.88

UNE	/PI	OYM	IFNT.	

A.	Total:	(i) (ii) (iii)	11.78 8.11 9.46		4.18 —2.05 4.72	6.94	18* 1.41* 3.91	8.77 7.89 3.58	9.00 5.64 9.37	8.54 7.65 4.12	8.00 5.49 5.59
B.	Adult:	(i) (ii) (iii)		9.94	.53* 3.98 45*	5.00	1.71*	5.58	1.28*		6.95 2.71 4.55
C.	Youth:	(i) (ii) (iii)	14.64 11.00 11.58	13.31 10.19 9.79	6.42 —.55* 7.18		24* 3.55* 4.05		16.34 21.10 12.93	9.02 8.52 3.11	9.35 7.60 6.22

<sup>\*</sup> Significant at 1% level.

of the variables encountered so far. Nonetheless, the regions comprising the 'South' have higher growth rates in total employment over the whole sample period than the remaining regions. The same holds for the adult and the youth categories, except for Serbia which has a marginally higher growth rate than Montenegro.

When we turn to the total unemployment growth rates, the 'North' — 'South' split is not as clear out as it has been so far. Although Bosnia, Montenegro and Kosovo keep their position, Serbia and Vojvodina have higher growth rates in total unemployment than Macedonia.

In the case of adult unemployment there is no discernible pattern. Serbia is the highest with an average rate of growth of 9.94% between 1965 and 1985, followed in descending order by Montenegro (8.92), Vojvodina (8.97), Macedonia (5.39) Bosnia (4.76) Kosovo (4.45) Croatia (.53) and Slovenia (—.04).

The youth unemployment growth rates, in general, follow the 'North' — 'South' dichotomy, although Vojvodina and Serbia have higher growth rates than Macedonia.

Next we examine the employment and unemployment growth rates for the two sub-periods: 1965—74 and 1975—85. For total employment the pattern is fairly consistent. This is not the case with the adult and youth categories however. For adults the employment growth rate was very low in the first period and relatively high in the second period. For youth the pattern is just reversed: between 1965 and 1974 the youth employment growth rates are generally high (ranging from 27.65 in Montenegro to 7.54 in Serbia), while between 1975 and 1985 they are either negative and/or statistically insignificant.

For total unemployment the pattern is less consistent. Half of the regions show a decline, the other half an increase, in the average growth rate.

The pattern for the adult and youth categories is similarly less consistent. One thing worth noting, however, is that the growth rates in unemployment across regions show greater dispersion in each period than the corresponding employment growth rate.

Table XIII. below summarises the regional pattern in the growth rates of the unemployment rate for the total as well as adult, youth and 'educated' categories. The patterns in these growth rates reflect, of course, the behaviour of employment and unemployment across regions. Again we find a varied pattern in the growth rate of the unemployment rate. At one extreme: Slovenia, for the total, adults and youth categories, the growth rate is negative (i. e. falling unemployment nates) over the entire sample period. At the other, the total rate grew fastest in Bosnia (6.89%), the adult rate in Serbia (5.82%), the youth rate in Kosovo (6.24%) and the 'educated' rate again in Kosovo (25.11%).

Table XIII

Average annual growth rates for the unemployment rate: aggregate and component, 1965—1985.

			BiH	MON	CRO	MAC	SLO	SER	KOS	VOJ	YUG
A.	Total:										
	1965—1985		6.89	6.44	1.07	1.82 -	-3.12	4.57	3.09	5.54	4.10
	1965—1974		4.97	5.94	-3.77	2.74	4.08*	4.07	1.21*		2.61
	19751985	(iii)	4.62	2.74	1.67*	—.05*	1.79*	.35*	3.45	1.49	2.14
В.	Adult:	(i)	1.16*	5.15	2.32	1.29 -	-2.70	5.82	09*	5.34	2.73
		(ii)	2.53*	8.15 -	4.45	2.83*	.69*		-3.09*		1.44*
		(iii)	-5.25	2.02*	-4.40 -	-2.49	.41*		41*		.16*
C.	Youth:	(i)	5.81	1.10*	2.25	.19*	-4.06	3.37	6.24	4.86	3.80
		(ii)	-1.35* -	-10.63 -	<del></del> 7.01 -	-3.98 -	11.18	1.28*	7.22	1.42*	
	- V	(iii)	7,10	6.19	6.71	3.48	5.02	1.88	5.76	3.72	5.25
D.	'Educated':	(i)	14.83	11.69	4.49	6.97	2.78	6.83	25.11	10.35	8.71
		(ii)	7.14	15.34	11*	14.46 -	-9.97	9.35	37.13	10.62	8.38
		(iii)	14.43	7.33	6.80	2.59	13.07	4.58	12.41	7.73	7.89

<sup>\*</sup> Significant at 1% level.

When we turn to sub-periods, the adults fare much better in the second period (1975—85) than they did in the first: in six cases the unemployment rate growth rate was negative and/or insignificant. For the youth category the experience was just the opposite: in seven cases the growth rate was negative and/or insignificant in the first period (1965—74) while in the second period, the growth rate in the youth unemployment rate was positive in all regions and often quite high. The earlier findings with respect to the employment growth rates (see, Table XII) are reflected here. However, it is not always the case that regions with high (low) employment growth experience low (high) unemployment rate growth. If the labour supply growth outpaces the labour demand growth we can have a high employment growth associated with a growth in the unemployment rate. For example, Montenegro

has the second highest growth rate in the unemployment rate (6. 44%) despite the fact that it has the third highest employment growth rate (4.3%). But Montenegro also has the second highest labour force growth rate (5.12%).

We should point an apparent anomaly in the pattern of growth rates. There are cases where the estimated growth rate for the entire period exceeds those of the two subperiods. This 'anomaly' is due to a substantial upward shift in the unemployment rate, which occurred in the middle of our sample period, as can be observed for example in the case of Bosnia (total unemployment rate). This in fact occurs in a number of instances and may imply a structural change in the labour markets around this time (see Charts 3 and 4).

## VIII. DEMAND SIDE

We now turn briefly to the demand side of the labour market. A rigorous analysis of the demand side cannot be done without proper modelling of the worker self-managed economy at this level of aggregation. Much work has been done in this direction of the firm and industry level as well as at the aggregate level, but the empirical work at this level of aggregation is at best incomplete. In this section of the paper we consider output and capital stock behaviour across regions.

Table XIV
Selected indicators of regional economic performance, 1965—1985.

	BiH	MON	CRO	MAC	SLO	SER	KOS	VOJ	NO	SO	YUG.
SOCIAL PRODU	CT —	Social	Sect	or			<del></del>		<del></del>		
1965—1985: (i)	5.28		4.92	5.28	5.42	5.47	5.64	5.13	5.23	5.46	5.28
1965—1974: (ii)			6.33		7.19	6.44		5.98	6.51	6.13	6.43
1975—1985: (iii)	4.03	4.99	2.70	3.31	2.90	3.59	3.17	3.53		3.94	3.31
SOCIAL PRODUC	CT —	Indust	rv								0.01
(i)		5.92	_	6.17	5.38	6.96	6.63	6.42	4.05	<b>4.50</b>	
(ii)	5.59					7.26		6.75		6.58	6.17
(iii)	5.92			4.59			3.62			6.41 5.72	6.75 4.59
CAPITAL STOCK	— Sc	cial S	ector								
(i)				7.78	7.27	6.92	7 93	6.62	7.02	714	~ ^ ^
(ii)	7.06	6.29	7.51					7.36		7.16	7.09
(iii)	6.79	6.08		5.56			5.76			7.62 6.01	7.77 5.81

See, Derek Jones and Jan Svejnar, op. cit.

### CAPITAL STOCK — Industry

- (i) 7.64 7.13 7.06 8.17 7.58 6.34 8.40 7.66 7.19 7.48 7.33
- (ii) 7.28 4.44 7.50 9.21 7.67 7.99 10.43 7.46 7.61 7.80 7.70
- (iii) 7.43 5.90 5.47 5.76 6.91 5.21 5.74 7.26 6.16 6.21 6.18

## SOCIAL PRODUCT MIX (SPind/SPsoc)

- (i) 1.01 .42\* .24 1.69 .46 1.49 .99 1.29 .82 1.12 .89
- (ii) .03\* -1.93 -.38 1.38 .39 .82 1.12 .77 .34\* .28\* .32\*
- (iii) 1.89 1.63 .49 2.16 .71 1.91 .45\* 1.31 1.12 1.79 1.29

# LABOUR PRODUCTIVITY (SP / Empl. total)

- (i) 1.18 1.20 1.87 1.47 2.41 1.85 .73 2.68 1.84
- (ii) 2.79 2.18 4.41 3.78 4.43 3.01 2.24 4.74 3.76 (iii) .02\* .63\* -.22\* -.44\* .81 .41\* -.37\* 1.10 .15\*

Growth rates of social product in the entire social sector show an amazing consistency across regions. For the entire sample period the difference between the fastest growing region (Kosovo: 5.64%) and the slowest (Croatia: 4.92%) was .72 of a percentage point per annum. There is somewhat more variance in the two sub-periods, but nothing approaching the magnitudes observed either on the supply side or in the unemployment rates. Social product in industry exhibits roughly the same consistent pattern. It is also noteworthy that the growth rates are very high, although in the second period they take on lower values.

Growth rates of capital stock reveal the same pattern. The consistency across regions is again evident. In addition the growth rates are generally higher in the 1965—1974 period than in 1975—85 period. In the case of the industrial sector there are two exceptions to this pattern: Bosnia and Montenegro.

We also find it interesting that the growth rates in capital stock exceed the corresponding growth rates in social product in all but one instance (Montenegro, the industrial sector, 1975—85 period). The increasing capital/output ratio is indeed predicted by theoretical analysis of workers self-management, although other factors (negative real interest rates, for example) may have contributed to the above phenomenon. One may be tempted to discuss employment implications of the phenomenon, but this must await proper modelling.

Growth rates of the ratio of social product in the industrial sector to that of social product in the entire social sector are presented although they do not have direct implications for the labour market performance. The social product mix variable can be taken as an indicator of the degree of industrialization. Growth rates must be interpreted in light of the initial industrialisation levels and cross region differences in industrial structure.

<sup>\*</sup> Significant at 1% level.

Chart 3.
TOTAL UNEMPLOYMENT RATES YUGOSLAVIA,
REPUBLICS AND PROVINCES, 1965—1985.

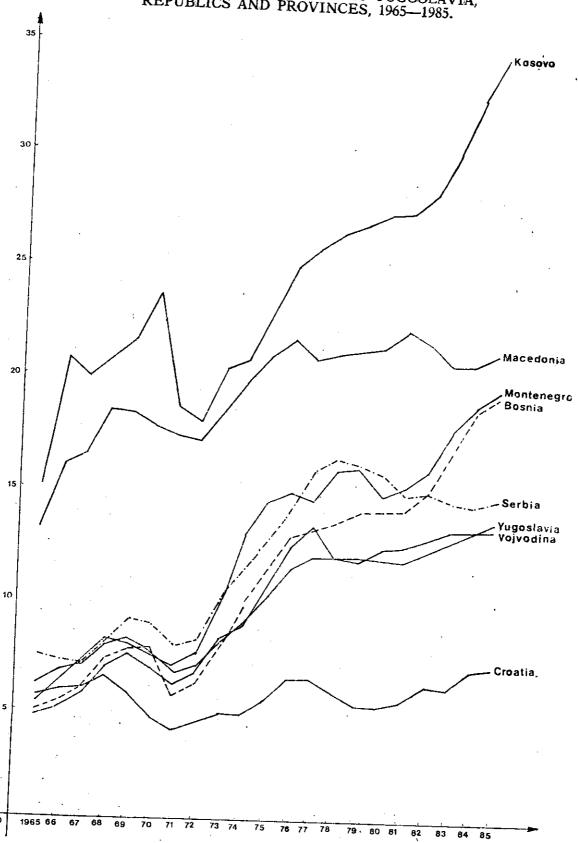
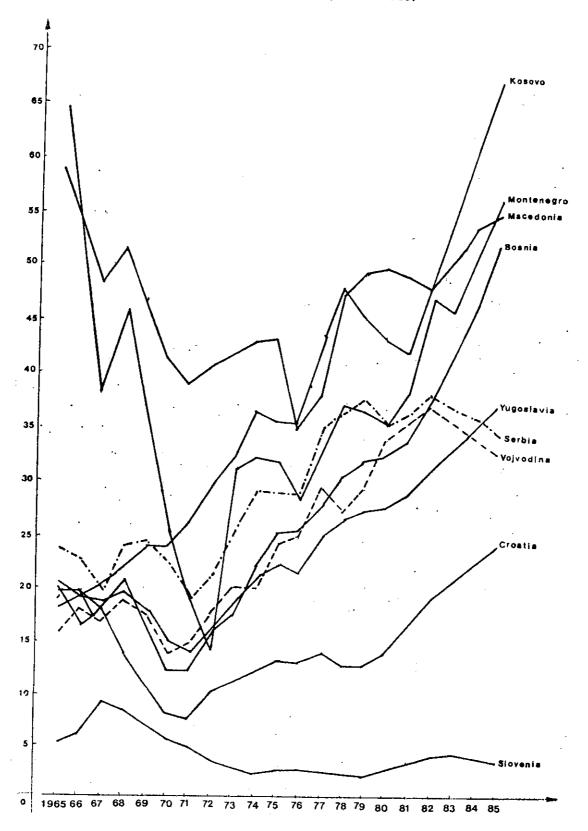


Chart 4.

YOUTH UNEMPLOYMENT RATES: YUGOSLAVIA, REPUBLICS
AND PROVINCES, 1965—1985.



The pattern of growth rates in the labour productivity variable is alarming. In the first sub-period labour productivity growth is good. In the second period which encompasses a *complete* cycle (See Chart 1), growth rates in labour productivity are positive and significantly different from zero in only two regions: Slovenia (.81) and Vojvodina (1.10).

Given the reported growth rates in capital stock, the fall in labour productivity growth is disturbing. This may be due to misallocation of capital and/or labour resources. We emphasize again that the 1975—85 period covers a full cycle which would imply that reported productivity pattern is indicative of serious structural imbalances.

## IX. CONCLUSION

A number of patterns clearly emerge from the foregoing analysis. Differences in the growth rates of demographic variables across regions are substantial. Differences in the labour force growth rates are less pronounced. Output and capital stock growth rates are quite similar. The substantial differences in the growth rate of the unemployment rate across regions may be due to these factors, but we refrain from drawing firm conclusions from our descriptive analysis.

Overall labour market performance, with the notable exception of Slovenia and to a lesser extent Croatia, has been unsatisfactory. Moreover, the brunt of the burden has been borne by new entrants. Table XV. illustrates this quite clearly.

Table XV
Youth unemployment rates for republics, provinces and total Yugoslavia, selected years

	1965.	1970.	1975.	1980.	1983.	1984.	1985
Bosnia-Herzegovina	19. <b>7</b> 7	12.20	25.36	32.60	42.22	46.93	52.66
Montenegro	65.38	26.35	31.90	35.56	46.02	51.72	56.36
Croatia	20.08	8.17	13.31	14.23	20.81	22.44	24.28
Macedonia	59.23	41.28	43.31	49.77	50.58	69.81	72.16
Slovenia	5.49	5.78	2.86	3.03	4.41	4.02	3.68
Serbia	23.63	22.45	28.91	35.54	36.99	36.12	34.92
Kosovo	18.26	25.03	35.45	43.53	56.56	62.81	68.58
Vojvodina	15.67	13.88	24,04	34.03	35.43	34.06	32.65
Yugoslavia	20.61	15.34	22.15	27.67	32.96	35.05	37.28

The labour market problems in general and those of the youth component in particular do not appear to be a cyclical phenomenon. The youth unemployment rates in all regions except Slovenia have risen steadily and now have reached extraordinarily high levels. In comparison, adult unemployment rates compare very favourably to those in other countries. If the stylised facts we presented here carry any message, it is that the problem of unemployment across regions is essentially a problem of youth unemployment, and that policy must be directed towards finding ways of providing employment opportunities for new entrants.

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