

REGIONAL DIFFERENTIATION OF DEVELOPMENT LEVEL AND EFFICIENCY OF GROWTH*

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INTRODUCTION

One of the major components of Yugoslav development policy is the development policy for the less developed republics and provinces. Stemming from profound regional disparities and affecting a large share of the population and territory, as well as substantial resources, it has undergone numerous changes in conformity with the changes in the socio-economic system.¹ The present system of incentives through the Federal Fund for Crediting Less Developed Republics and the Province of Kosovo operates since 1965. It is based on a division of republics and provinces into developed (Slovenia, Croatia, Vojvodina, Serbia Proper) and less developed (Montenegro, Bosnia-Herzegovina, Macedonia and Kosovo); on allocation of considerable resources (some 1.5—2 per cent of the social sector economy's GSP over various five-year periods) and on an increasing share of resources that are directly pooled between donors and recipients. The upward trend observed in the volume of these resources implicitly confirms what is now generally recognized — that more efficient investment is necessary in less developed areas.

The policy of stimulating the development of less developed areas has yielded major result in the development of these regions. However, the two decades and more over which the present system has functioned have failed to reverse the status of any of the underdeveloped areas. Together with the expressly one-sided official classification, this suggests that the above-mentioned division is inadequate for running regional policy. It fails to reflect the present socio-economic reality as it classifies all areas into one or the other extreme group.

* This paper is an excerpt from broader research which is under way and which constitutes part of the medium-term programme of the Republican Community of Interest for Science of Serbia for the period 1986—1990.

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¹ These issues are discussed by M. Bazler-Madžar (1974) and B. Horvat (1981); detailed information can be found in the study *Razvoj privredno nedovoljno razvijenih područja u Jugoslaviji* (Development of Economically Underdeveloped Regions in Yugoslavia, (1987).

With all this in view, the aim of this paper is to present the differences in development level and pattern between republics and provinces, through analysis of the present regional differentiation and by using a comprehensive empirical base. Secondly, within the established differences, the paper aims to point out the differences in development efficacy and justify the notion that they are caused by the development level and structure of republics and provinces. In studying these objectives, the analysis is restricted to areas that constitute a base for adequate policy at the level of the Yugoslav economy (republics and provinces) and on the system of assistance provided through the Federal Fund, so that efficiency of growth has been studied for the 1965—1985 period.

I DEVELOPMENT DISPARITY OF REPUBLICS AND PROVINCES

The study of regional disparities assumes that theoretical articulation of development is a multidimensional phenomenon and factor analysis is the main classification method.² In this case, multidimensionality of development translates into a study of three broadly defined criteria. They are: development of productive forces, economic effects of productive forces and development of personal and social standards. As the criteria are expressed as indicators, 20 indicators were used to show the development criteria (dimension), as well as to illustrate overall socio-economic development.³ Development level of productive forces is represented by the following indicators: (a) proportion of non-agricultural in total population, (b) proportion of employed in population able for work, (c) proportion of literate in the population aged 10 years and older, (d) fixed assets per active inhabitant, (e) development of transport network (Engel's formula), (f) number of people engaged in manufacturing per 1,000 active population, and (g) unemployment ratio (reverse form).

The following indicators were used in the analysis of economic effects: (a) overall productivity level (social product per economically active person), (b) social product in manufacturing per head employed in manufacturing, (c) social product per capita, and (d) social product in non-agricultural sectors per head of non-agricultural population.

The welfare development dimension encompasses the following indicators: (a) number of telephone subscribers per 1,000 inhabitants, (b) number of radio and TV subscribers per 1,000 inhabitants, (c) number of passenger vehicles per 10,000 inhabitants, (d) expenditures (without transfers) of non-economic activities per capita, (e) fish and

² Details of these aspects of the analysis and on the ensuing results can be found in M. Bazler-Madžar, M. Bogdanović (1987).

³ Selection of development indicators as representatives of particular criteria is presented in M. Bazler-Madžar, S. Bolčić, Č. Očić, J. Tomaš-Jurišić (1978), so that the same indicators, referring mainly to 1984 and 1985, are used for comparison.

meat consumption per household member, (f) proportion of dwellings with bathrooms, (g) retail trade turnover per capita and (h) average lifespan.

All the above-mentioned indicators (20) are used for studying overall socio-economic development.

Certain data on the indicators used suggest the existence of substantial regional disparities. For example, between the extremes of Slovenia and Kosovo the span is over 7 for social product per capita and for the unemployment ratio, which is a specific indicator, it is the largest individual span. Individual distances and trends prompt several relevant conclusions. First of all, disregarding for the time being the significance of particular indicators, development level depicted by these indicators suggests that disparities are least for the productive forces. It also shows that a certain narrowing of span has been recorded for five out of eight indicators used. Furthermore, in view of the smaller number of indicators for the effect of productive forces, it cannot be explicitly asserted that differences are significantly different than within other dimensions. However, since the comparison of elements of productive forces effects shows significant disparities, with relative differences increasing over time for all indicators, this dimension requires an analysis of its own. As for the welfare dimension, the spans differ, including various disparities, large as e. g. in social product per capita as well as small ones such as in the literacy ratio. Considering the asymmetric feature of this criterion and the fact that differences are being reduced for most of the indicators, it is obvious that a separate analysis of this dimension is necessary as well.

Differences in Development Level

Application of factor analysis to development dimension and to overall development (major component method, i. e. score of the dominant factor F_1) suggests the following inter-regional distances. First, Slovenia clearly stands out at one end and Kosovo somewhat less conspicuously at the other end of the overall development scale, which is confirmed through the relations by dimensions. Second, three areas (Slovenia, Croatia and Vojvodina) stand above the average, rating on all three dimensions above the Yugoslav average. The above average position of Montenegro (productive forces) or the territory of Serbia Proper (welfare) does not translate into overall development, because it seems that indicators of economic effects are those which influence the factor values of the whole.

Due to small differences in factor scores the fourth place of Montenegro and the fifth place of Serbia Proper, with previously established differences by dimensions, suggest a similarity of the overall development level. As Bosnia-Herzegovina and Macedonia rank sixth and seventh on the overall development list, this indicates that they cannot be observed separately either. Their mutual position arises from the place they occupy within all three observed dimensions.

Differences in economic effects are obviously not of such a magnitude that can ensure a separate place for each of these regions. The established relations should be explained in more detail, both through the dominant factor score and through the analysis of regional similarity (cluster analysis).

Beginning, first, with the distances resulting from the dominant factor, one gets an insight into the levels on a specific development scale. As already pointed out, an above-average position both in terms of their overall development, and by individual development dimensions, is occupied by Slovenia, Croatia and Vojvodina. The values for Slovenia for overall development, productive forces, economic effects of productive forces and welfare are 1.934, 2.054, 1.876 and 1.773 respectively. The other two developed regions have a much smaller values, i. e. 0.566, 0.557, 0.489 and 0.470 (Croatia) and 0.348, 0.147, 0.492 and 0.470 (Vojvodina).

Slovenia has a quite unique position. Deviations in this area are greater than in any other observed region. It has very little similarity with other areas. In terms of productive forces it joins other areas in the last (seventh) iteration, in terms of economic effects and welfare in the sixth and fifth, while its link with other areas in terms of the overall development is established in the next-to-last (sixth) circle.

Croatia and Vojvodina exhibit similar scores for the dominant factor. As already pointed out, they occupy practically the same place in terms of economic effects, while in all other aspects Croatia surpasses Vojvodina. The differences between these areas are most conspicuous in the level of productive forces. In spite of this, their development pattern contains certain clear similarities. Pronounced similarity (level 1) is evident not only in productive forces and overall development, but also in welfare (level 2). Only in terms of effects they appear jointly after joining other areas at level 5.

In contrast with the previously discussed group, which demonstrates clearly determined relations and similarities, the group encompassing Serbia Proper, Montenegro, Bosnia-Herzegovina and Macedonia does not feature clear distinctions. Falling mainly below the Yugoslav average, with the exception of Montenegro in terms of productive forces and Serbia Proper in terms of welfare, and often showing similar distances on the basis of the dominant factor, as well as mutually less pronounced deviations, their similarities and differences deserve a more elaborate explanation. Serbia Proper shares its position in terms of productive forces (-0.517) with Bosnia-Herzegovina and Macedonia, and in terms of economic effects (0.400) and welfare (0.089) it stands before other areas. The second place of Serbia Proper in this group by the overall development level (-0.155) actually means that it shares the same ranking with Montenegro, due to close factor scores. As for Montenegro, in addition to sharing the same position in overall development (-0.128) it occupies the first place in this group in terms of productive forces (0.070), second in economic effects (-0.186) and welfare (-0.279). Bosnia-Herzegovina and Macedonia rank equal by all development elements as well as by the overall development level. Their characteristic values are -0.504 , -0.521 ,

—0.571 and —0.650 (Bosnia-Herzegovina) and —0.532, —0.501, —0.541 and —0.546 (Macedonia).

These relations are largely corroborated by the cluster analysis. Productive forces join Bosnia-Herzegovina and Macedonia in step 4, Serbia Proper in step 5, and Montenegro in step 6. Similarities in economic effects between Bosnia-Herzegovina and Macedonia appear at level 1, joined by Serbia Proper at level 2, while Montenegro levels with them only in step 5, after joining other regions. While great similarities are apparent in terms of welfare (Bosnia-Herzegovina and Macedonia — level 1, Serbia Proper — level 3), by the composition of this dimension Montenegro is explicitly the least similar area (level 7). Relations in terms of the overall development are in line with these findings and confirm the joining of Montenegro in the last iteration. Serbia Proper joins Vojvodina and then Croatia, Macedonia and Bosnia-Herzegovina join this group as well.

It is common knowledge that Kosovo is the other extreme area on the development scale. This is confirmed by the respective factor values: —1.286, —1.489, —1.627 and —1.479. Method of major components also leads to the conclusion that it will join other areas at a later stage. While it exhibits a lot of similarities with Bosnia-Herzegovina in the development of productive forces (level 3), it differs the most from any other area in economic effects (level 7), somewhat less as far as welfare is concerned (level 6), and in the complex analysis of the development degree and pattern joins other areas at level 5.

Classificatory Scheme of Republics and Provinces

Following the results of development level study, including the analysis by dimensions, the areas can be classified into three broad groups. The group of developed regions encompasses Slovenia on the one side, and Croatia and Vojvodina on the other. The group of regions at medium development level comprises Serbia Proper, on the one side, and Bosnia-Herzegovina, Macedonia and Montenegro, on the other. Kosovo, alone, is in the group of underdeveloped regions.

It is obvious that all the essential features of a developed region do not equally apply to Slovenia, Croatia and Vojvodina. These major characteristics which are reflected in the completion of the intensive phase of industrialization, a diversified industrial structure, a relatively minor important place for agriculture, a large share of the secondary and tertiary sectors, in short, in an elaborate production structure with all its implications for employment and social development, are most conspicuous in Slovenia. Here we have a region which has attained a high level of industrial maturity. That Slovenia has the least development features in common with the other regions is warranted by all the findings associated with the categorization according to similarity. As confirmed by the analysis referred to earlier, Slovenia as a rule joins the entire host of other regions only in the final iterations.

The distinctly separate place of this area is corroborated not only by all the results of investigation, but also by the fact that almost all indicators for Slovenia greatly exceed those for Croatia or Vojvodina. It has an economy which employs 66.6 per cent of the population able for work, with no apparent unemployment problem. Slovenia even engages work forces from other republics. The number of people employed in the social sector per 1,000 active (824) is impressive indeed, illustrating the very favourable structure of this important contingent. On the other hand, the proportion of agricultural workers in the total population (9 per cent) is exceptionally low. If we add to this the outstanding results achieved in both agriculture and the social-sector economy, despite a lower capital/labour ratio, it follows that the effects of the economic structure combined with the broader effects of productive forces contribute to the characteristic, distinct place of this region.⁴

Among the developed areas, Croatia and Vojvodina make up a separate group, with similar although fluctuating ranking by specific indicators.⁵ These regions do not exhibit the pronounced features of a developed area as much as Slovenia does. As has been pointed out, they demonstrate similar deviations from the Yugoslav average in terms of the effect of activated productive forces. Whether above-average effects result from a more favourable structure of the economy (Croatia) or from a high productivity in private-sector agriculture (Vojvodina), both indicators give the two regions an advantage over the less developed regions. Employment rates (49.5 and 43.6 per cent) are likewise high and actually above the average. Although the structure of active population is more favourable in Croatia compared with Vojvodina, with also higher capital/labour ratio, the effects of Vojvodina's highly productive agriculture and the region's more even development make up for this, so that the two regions are on a par in terms of overall development.

The fact that they often appear together has already been mentioned, in spite of the intensity of their similarities which is only moderate. It has been observed that Croatia and Vojvodina are the areas which join others at the average levels. This arises from the order of association: Croatia joins other areas in the first, third, second and again the first iteration, respectively by dimensions and by the overall development. It joins Vojvodina by productive forces in the first, by welfare and overall development in the second, and in economic effects in the fifth level of similarity.

⁴ Data are presented in M. Bazler-Madžar, M. Bogdanović (1987).

⁵ In comparison with the earlier analysis, the differences in most indicators have been reduced, which is reflected in shorter distances between them and affects their classification. For earlier findings refer to M. Bazler-Madžar (1981).

Unlike developed regions, the medium developed regions,⁶ although having the essential characteristics of an industrial economy and society, still feature an insufficiently developed economic structure. This is determined by an inadequately diversified industrial structure and a substantive share of agriculture. Together with an unfavourable population make-up, these factors do not make for an above-average growth of such an intensity as would enable a substantial improvement of the relative position of these regions in comparison with the developed regions.

Association of Serbia Proper with Bosnia-Herzegovina and Macedonia does not mean that its development level is on a par with other areas in this group, which comprises Montenegro in addition to Bosnia-Herzegovina and Macedonia. Except for the development level of productive forces, Serbia Proper differs from these areas. However, it shares the same rank with Montenegro in terms of the overall development. In connection with such a position of Serbia Proper and corresponding distances, the following should be pointed out. First, all indicators used, except most of indicators of productive forces, demonstrate much higher values compared with other regions in this group. Second, the leading position of Serbia Proper in economic effects and welfare provides an argument in favour of its separation within the given group. This is even not disputed by the fact that it is associated with Montenegro on the basis of aggregate analysis. Indeed, the position resulting from higher effects in spite of less favourable development conditions suggests that certain qualitative differences set this area apart from all the other in the same group.

As to whether Serbia Proper should be included in the group of developed regions or not, a number of results support a thesis that it does not belong there and also confirm that the official classification is inadequate. The much lower values of key indicators, well-known intraregional disparities and a rather different overall development pattern do not warrant the inclusion of this area in the group of developed regions. An employment rate below average (40.4 per cent), extremely unfavourable composition of active population, both in terms of the number employed in the social sector and in terms of the proportion of agricultural population (with 28 per cent it is higher than in any other region) indicate that this region cannot fit in the group which includes Vojvodina and Croatia. The separate place of Serbia Proper within the group of medium developed regions and away from developed areas is likewise corroborated by the results of

⁶ Unlike the earlier analysis [M. Bazler-Madžar, (1981)], in which this group of regions was referred to as the regions lagging behind, the data available at this point of research do not substantiate that they clearly lag behind. Indeed, except in Serbia Proper, growth rates are above the average during the 1980—1985 period, and often in the 1965—1980 period as well. Also, an improved position by per capita product is observed in some regions compared with the period encompassed by the earlier analysis. In addition, some important aspects of structural analysis of the social product are lacking, which could help in clearer definition of the regions lagging behind.

an analysis of regional grouping according to similarities. Similarities with other areas are of a moderate intensity. It joins a larger group of regions by productive forces in step 5, by economic effects it becomes associated with Bosnia-Herzegovina and Macedonia in step 2, and joins the same regions by welfare level in step 3. In the aggregate analysis it is associated with Vojvodina at the first level, where the same group also encompasses Croatia, Macedonia and Bosnia-Herzegovina.

Among the medium developed regions the least differences are apparent between Bosnia-Herzegovina and Macedonia. Ranking by dimensions and in the aggregate analysis suggests that they share the same place. These two regions have the most pronounced similarities among all the areas observed. Compared by economic effects and welfare, they already join one another at the first level and by productive forces at the fourth level of similarity. They are also associated at the fourth level in terms of the overall development and subsequently join the group of developed areas.

The same relations are confirmed by individual indicators. Although they have achieved major development results reflected through an increasing proportion of secondary and tertiary sectors and particularly in the industrial development, the effects of industrialization on employment increase and consequently on changes in the population pattern are still below a satisfactory level. The share of non-agricultural population (83 and 78 per cent respectively) does not essentially differ from Vojvodina or Serbia Proper, but, on the contrary, indicates somewhat better relations. However, the employment rate compared with population able for work is still below the comparable figure for Serbia Proper (38 per cent). In addition, the composition of active population points out that these areas still fall behind by this criterion. Regardless of the better capital/labour ratio, the considerably lower production coefficients point out that in addition to unfavourable effects of economic structure, these regions are affected by the complex workings of production factors.

As far as Montenegro is concerned, the following facts deserve particular attention. In terms of productive forces it ranks first among the medium developed regions. It was also pointed out earlier that it shares the same rank with Serbia Proper in terms of the overall development. By all the development components it is ahead of the two formerly discussed regions. In terms of association with other regions it exhibits a highly diversified structure, standing side-by-side with Slovenia and Kosovo as the regions which join the others only in final instances. It only becomes associated with other regions in the sixth iteration by production forces and in the seventh by welfare and by the overall development. Having mainly higher values of indicators for productive forces than Bosnia-Herzegovina and Macedonia, and often Serbia Proper, it nevertheless cannot be distinctly separated, because of poorer economic effects in relation to development assumptions, but also because of numerous structural problems observed in its economy which are also manifest in levels of association.

The only undeveloped region is Kosovo. A rather simple production structure, a large share of low-productive agriculture, generally low labour productivity levels, an unfavourable social structure and a very low per capita income are the main features of this region. Factor values confirm that Kosovo needs to be separated from the previously discussed group. Its classification into a separate group is furthermore warranted by the fact that this region lags behind all the others by all the examined indicators. The proportion of the non-agricultural population in the total (75 per cent) and that of the employed persons in the contingent able for work (22 per cent) reveal about the difficulties confronting this particular region. The structure of the active population is likewise unfavourable; this particularly refers to its component employed in the social sector. Although capital/labour ratio is considerably high, the effects of unfavourable economic structure and various other factors are responsible for this region's lower labour productivity levels in all sectors and for a very low value of the production coefficient.

Specific features of this region which set it apart from the formerly discussed group are also confirmed by the results of regional grouping. A certain explicitness in this association with other regions is observed, as was the case with Slovenia. As it becomes related to other regions only at higher iterations, it definitely needs to be classified as a distinct type of region.

II REGIONAL DIFFERENCES IN ECONOMIC GROWTH EFFICACY

The increasingly pronounced slowdown in the growth of the Yugoslav economy, a tendency that has been observed over a longer period and which inevitably brought the economy to a standstill during the 1980s, requires a more detailed breakdown of the elements comprising overall growth efficiency. This is even more justified in view of the fact that in spite of high investment rates the economy shows a deteriorating performance. The chronic economic stagnation which has in recent years acquired all the essential features of an economic crisis, must in no way be associated with the overall internationally observed economic slowdown in the expansion of labour productivity.⁷ Its roots are institutional. They have prevented the Yugoslav economy from following the policy of structural adjustment which is gaining increasing recognition worldwide. At the same time, the terms of economic functioning changed sharply as the inflow of additional foreign resources stopped while the exceptionally high outflow necessary in order to service the accumulated debt continued. Therefore, a distinction must be made within the time horizon of the study, so that the 1965–1985 period is studied within two separate sub-periods — 1965–1980 and 1980–1985.

⁷ See J. W. Kendrick, ed. (1984), M. Bazler-Madžar (1987).

The profound differences in development dynamics by sub-periods suggest that efficiency of growth has substantially deteriorated. However, in order to establish the effects of an otherwise highly expansive economy in terms of total investments, the analysis of its functioning must not be restricted to the study of production growth rates or to the use of capital coefficients only, but must include labour productivity as well. At the same time, it is necessary to evaluate the overall efficiency of economic growth, in addition to the effects of individual factors, measured through total factor productivity. The inclusion of this global measure of efficiency is further reinforced by the following fact. The Yugoslav economy has witnessed a process of intensive introduction of modern production methods and upgraded organization, so that the technological level of the economy has improved greatly, but failed to produce the appropriate effects on labour productivity and output. With a view to highlighting regional differences, in this section the differences in efficiency are examined within the framework of regional differentiation between republics and provinces in terms of the development level and pattern, as elaborated in the preceding section.

Regional Differences in Labour Productivity and Efficiency of Resource Use

Although the fundamental characteristics and principal socio-economic assumptions underlying the Yugoslav economic system suggest that it could be highly efficient, the development performance of the economy points to a very low and decreasing efficiency. While the Yugoslav economy recorded a rather high growth rate over the entire 1965—1985 period amounting to 4.85 per cent on the average, factor growth was 6.68 per cent for capital assets and 2.86 per cent for employment. Value of the social product increased 2.6 times, value of fixed assets 3.6 times and the number of employed 1.8 times. As the data indicate, capital/labour ratio improved considerably, doubling its value during the period under examination. Highly different pace of factor growth produced different development of factor productivity over time. Labour productivity, growing at the rate of 2.86 per cent, increased about 1.5 times. On the other hand, the capital coefficient increased from 2.11 to 2.97, suggesting a decline in the efficiency of fixed assets at an average rate of 1.75 per cent. It follows that a modest rise in labour productivity was achieved with substantial investment and at the cost of declining efficiency of fixed assets.⁸

The two development sub-periods feature exceptionally divergent development of the observed aggregate values, which makes their

⁸ The analysis includes the social-sector economy, and the data on social product, employment and fixed assets (purchase price), as well on proportion of gross payroll and rentals in the social product at factor costs have been taken from statistical publications or obtained from the Federal Bureau of Statistics.

joint study unsuitable, as will be demonstrated by total factor productivity. First of all, the growth in production factors is different, which is particularly pronounced in the case of fixed assets. Growth rate in capital assets declined from 7.72 per cent to 3.64 per cent, making it less than half of its original value. On the other hand, the employment growth rate did not decline as much (from 3.03 to 2.37 per cent). With the economic growth almost at standstill (growth rate fell from 6.24 to 0.77 per cent) this resulted in declining labour productivity. In addition to deteriorating efficiency of capital utilization (capital coefficient grew by 0.78 per cent from 2.59 to 2.97), labour productivity declined by 1.57 per cent. In contrast with the previous period, which shows a clearly visible improvement of labour productivity (3.03 per cent) regardless of the fact that it was achieved under the falling efficiency of capital (-1.36 per cent) in the latter period of crisis the decline in capital efficiency not only doubled (-2.70 per cent) but a downward slope of labour productivity was recorded as well. It is evident that the increase in capital/labour ratio at the rate of 1.25 per cent cannot provide for a growth in labour productivity in an economy accustomed to a nearly three times faster increase in capital/labour ratio. Even when some productivity growth occurred, it was achieved at a high price of the overall efficiency decline.

It is particularly interesting to observe development performance from the regional point of view. Even a glance at the data presented in Table 1 shows that the growth in social product was quite even over the 1965-1985 period. Indeed, it cannot be asserted that production growth rate is in correlation with the development level. The difference between the maximum and minimum growth rate is 20 per cent, which speaks in favour of a uniform development across regions. Regional similarity is, furthermore, substantiated by the data on capital growth development, where the highest growth rate is by only 18 per cent above the lowest. In contrast with this, differences in the employment growth are pronounced (2.4 times) and inversely related to the development level, resulting in slower labour productivity growth in less developed regions. With lower initial productivity levels this translates into increasing differences in the labour productivity of the social-sector economy. Similarly, higher initial capital coefficients and faster decrease in efficiency of resource use in some of the less developed regions resulted in growing differences in efficiency of social resources. At the same time, one must not neglect the fact that capital coefficient is determined by the economic structure which is, as a rule, more capital intensive in less developed areas.

The above-mentioned relations in development growth pattern deserve to be further examined depending on the development level. According to these indicators, Slovenia, as the most efficient region, stands out in the developed group. Its growth rate of 5.45 per cent, by 20 per cent higher than the comparable indicator for Croatia, is achieved with only a 5 per cent higher capital increase and with somewhat slower employment growth (2.26 per cent). Labour productivity growth of 2.71 per cent is far ahead of the value of the same indicator in any other region, except in Vojvodina, where its growth

Table 1
GROWTH RATES OF MACROECONOMIC AGGREGATES

	— in % —						
	Social product	Employment	Productivity	Fixed assets	Capital/labour ratio	Efficiency of resource factor	Total productivity
<i>1965—1985</i>							
Slovenia	5.45	2.26	2.71	6.82	4.46	-1.64	0.42
Croatia	4.54	2.33	2.16	6.49	4.07	-1.78	0.11
Vojvodina	4.63	1.66	2.91	6.52	4.78	-1.75	0.65
Serbia Proper	5.00	3.36	1.60	6.50	3.04	-1.38	0.08
Montenegro	5.10	4.00	1.11	6.88	2.80	-1.66	-0.27
Bosnia-Herzeg.	4.78	3.56	1.17	6.82	3.16	-1.90	-0.34
Macedonia	5.45	3.84	1.55	7.24	3.26	-1.62	0.01
Kosovo	5.41	4.35	1.03	7.66	3.18	-2.09	-0.36
YUGOSLAVIA	4.84	2.86	1.93	6.68	3.71	-1.69	0.10
<i>1965—1980</i>							
Slovenia	6.55	2.72	3.75	7.74	4.88	-1.68	1.46
Croatia	6.01	2.53	3.41	7.48	4.83	-1.33	1.18
Vojvodina	6.79	1.97	4.15	7.54	5.88	-1.67	1.60
Serbia Proper	6.50	3.74	2.65	7.77	3.89	-1.21	0.91
Montenegro	6.69	3.89	2.76	7.56	3.53	-0.81	1.20
Bosnia-Herzeg.	5.77	3.36	2.33	7.60	4.10	-1.69	0.56
Macedonia	7.04	4.04	2.88	8.66	4.44	-1.48	1.01
Kosovo	6.56	4.41	2.08	9.09	4.48	-2.33	0.32
YUGOSLAVIA	6.24	3.03	3.12	7.72	4.55	-1.36	1.08
<i>1980—1985</i>							
Slovenia	0.58	0.90	-0.34	4.12	3.20	-3.31	-2.24
Croatia	0.20	1.70	-1.47	3.56	1.80	-3.10	-2.61
Vojvodina	1.22	1.94	-0.70	3.54	1.56	-2.14	-1.62
Serbia Proper	0.68	2.22	-1.51	2.77	0.53	-1.89	-1.86
Montenegro	0.48	4.36	-3.68	5.04	0.66	-4.18	-4.26
Bosnia-Herzeg.	1.86	4.16	-2.21	4.56	0.37	-2.52	-2.53
Macedonia	0.82	3.23	-2.34	3.04	-0.21	-2.05	-2.30
Kosovo	2.01	4.17	-2.07	3.50	-0.64	-1.36	-1.82
YUGOSLAVIA	0.77	2.37	-1.57	3.64	1.25	-2.70	-2.33

rate of 2.91 per cent can be attributed to a much slower employment growth. This is the region with not only the highest labour productivity, but also with resource efficiency among the highest. The average values of capital coefficient (2.04 and 2.84) indicate the slowest deterioration in the efficiency of social resources (with the exception of Serbia Proper). The next mutually similar areas in terms of devel-

opment level — Croatia and Vojvodina — exhibit a similar pace of expansion of production and capital assets, resulting in a similar pace of deterioration in the efficiency of fixed assets (—1.78 and —1.75 per cent). Otherwise, the values of the capital coefficient (2.11 and 3.02, as well as 1.98 and 2.82) point to a better position for Vojvodina. However, in spite of a faster growth in labour productivity in Vojvodina, its level is similar in both regions. It follows that faster growth in labour productivity in all three regions compared with the Yugoslav average is attained with deteriorating efficiency of fixed assets, which does not essentially differ from the average.

The separate place of Serbia Proper among the medium developed regions is corroborated by the growth rates of macroeconomic aggregates. Indeed, with a somewhat slower growth of employment (3.36 per cent) and fixed assets (6.50 per cent) compared with other regions in the same group, it manages to achieve a much faster growth in labour productivity (1.60 per cent), with the exception of Macedonia. In addition, this area displays the lowest capital coefficient and its slowest deterioration (—1.38 per cent). As the other medium-developed regions are concerned, a faster growth of Macedonia (5.45 per cent) was attained through a more dynamic increase in both the employment and fixed assets. Its labour productivity growth is similar to that of Serbia Proper, but its efficiency of fixed assets falls faster (—1.62 per cent). Bosnia-Herzegovina and Montenegro demonstrate by 40 per cent slower increase in labour productivity compared with Serbia Proper (1.17 and 1.11 per cent). However, unlike Macedonia, these two regions have much higher capital coefficients (2.44 and 3.58, as well as 3.16 and 4.42) and show a more pronounced deterioration of fixed assets efficiency, particularly in Bosnia-Herzegovina (—1.90 per cent). Needless to say that the gap between the increase in productivity and fall in social resource efficiency in these regions is greater than in the more developed regions.

However, the most conspicuous gap in the development of partial factor productivities is recorded in Kosovo, the only underdeveloped region. As shown by the data, a high growth rate of 5.41 per cent was achieved with the fastest rise in employment (4.35 per cent) and fixed assets (7.66 per cent). Along with this, the nearly twice-slower increase in labour productivity (1.03 per cent) compared with the average, and the sharpest fall in capital efficiency (—2.09 per cent), with capital coefficient well above the average (2.67 and 4.07) all point out that this region possesses essentially different characteristics compared with all the other areas. The development efficiency indicators suggest that Kosovo deserves a separate place.

Regional Differentiation in Total Factor Productivity

The total factor productivity index was used to assess the overall effects of production factors and its development would approximate the growth of the overall efficiency. Unlike the labour productivity index or index of resources efficiency, which are also used as efficiency

indicators, although their changes are determined not only by the changes in the overall production efficiency but also by factor substitution the total factor productivity index implicitly encompasses substitution effects, since it is derived from both production factors. In line with this, it represents changes in weighted usage of production factors, where either relative factor prices or their shares in the functional income distribution are used as weights.⁹

Empirical analysis applies the geometric total factor productivity index which is based on factor shares in the functional income distribution, assumption on constant returns and neutrality of the technical progress in Hicks' sense.¹⁰

In order to quantify the effects of total factor productivity, the period 1965—1985 was studied first. Total factor productivity index during this period grew at an average rate of 0.10 per cent. Its unusually low growth rate makes its influence in determining the production growth almost negligible. Regional differentiation of the overall productivity growth largely follows the scheme of development demonstrated by other indicators, and hence the differences in development between republics and provinces. Above average increase in this index was recorded in two developed regions — Vojvodina (0.65 per cent) and Slovenia (0.42 per cent), while Croatia, with 0.11 per cent, is at the average level. Serbia Proper (0.08 per cent) is somewhat below the average pace of growth; Macedonia shows a very slight increase (0.01 per cent), while declining factor productivity is observed in Bosnia-Herzegovina and Montenegro (—0.34 and —0.27 per cent). An even sharper decrease of this indicator is characteristic of Kosovo (—0.36 per cent).

During the 1965—1980 sub-period the contribution of the total factor productivity to production growth amounted to 17.3 per cent in the Yugoslav economy, since the overall productivity expands at 1.08 per cent on the average. Republics and provinces exhibit very diverse development of this indicator, as is the case with other aggregates too. While the differentiation of growth rates of production and fixed assets is not pronounced, since the largest difference amounts to some 20 per cent, there are conspicuous differences in the movement of employment, as well as in labour productivity growth. In this case also Vojvodina leads by the labour productivity growth (4.15 per cent). Slovenia with 3.75 per cent and Croatia with 3.41 per

⁹ More about the methodology applied can be found in J. W. Kendrick (1973).

¹⁰ The share of factors in functional income distribution, (gross payroll and rentals) is determined in the following way. Gross payroll represents net wages/salaries and all payroll taxes and contributions. The price of capital includes depreciation and gross profit. As the sum of these two items makes the social product at factor prices, the returns on production factors exhaust the social product. While the share of the gross payroll in the Yugoslav economy amounted to 50.5 per cent, and 54.5 and 42.3 per cent in the observed sub-periods, different percentages have been recorded in republics and provinces. It is interesting that these shares are inversely correlated with the development level, which does not apply only to Vojvodina.

cent follow suit. According to this indicator Serbia Proper (2.65 per cent) is similar to other areas in the medium developed group. Kosovo again is characterized by the lowest labour productivity growth (2.08 per cent), which is twice slower than in Vojvodina. The fact that efficiency of capital falls both in the economy as the whole (—1.36 per cent) and in the regions as well, confirms the opinion noted earlier that labour productivity expanded at a very high cost. While the efficiency of resource utilization deteriorated least in Montenegro (—0.81 per cent), followed by Serbia Proper (—1.21 per cent) and Croatia (—1.33 per cent), in other regions it assumed a trend above the average. This happened either in the regions with characteristics of medium development or in those where capital/labour ratio grew at a faster than average pace (Vojvodina, Slovenia). The most prominent deterioration is observed in Kosovo (—2.33 per cent).

Such trends of partial factor productivities influence their total productivity development. As the measure of the overall development efficiency, this indicator is, as a rule, higher in developed areas. Total factor productivity growth in Vojvodina (1.60 per cent) is almost 50 per cent above the average; in Slovenia it grows at the rate of 1.46 per cent, and in Croatia by 1.18 per cent. These values are probably the result of faster labour productivity growth in the first two areas, but also of a slower decrease in efficiency in Croatia. It is worth pointing out that higher total productivity in Montenegro (1.20 per cent) compared with Serbia Proper (0.91 per cent) within the same medium developed group follows from slower deterioration of capital efficiency, since labour productivities are similar. Compared with Macedonia (1.01 per cent) the difference in labour productivity growth is quite significant. Lower ranking of Bosnia-Herzegovina (0.56 per cent) results from slower productivity growth of both factors, which is even more conspicuous in the case of Kosovo (0.32 per cent).

As far as the importance of the total factor productivity is concerned, over the observed 1965—1980 period only 17.3 per cent of output increase in the social sector of the Yugoslav economy can be explained by an increase in the effects of broadly defined technical progress. This proportion is higher in developed areas: in Vojvodina it is 27.6 per cent, in Slovenia 22.3 per cent and in Croatia 19.6 per cent. In Serbia Proper the same indicator is 14.0 per cent, in Macedonia 14.3 per cent, and thus lower than in Montenegro (17.9 per cent). It is lower in Bosnia-Herzegovina (9.7 per cent), and Kosovo in this respect stands alone with 4.9 per cent share.

The crisis period in the development of the Yugoslav economy is characterized, as shown by data in Table 1, with declining labour productivity in all regions, a much faster deterioration of efficiency in the use of social resources and, consequently, a falling total factor productivity. The regularity referred to before in faster improvement or slower deterioration in efficiency in developed areas, is hardly detectable. While a decline in labour productivity is slower at higher development levels, the same has not been observed either in worsening efficiency of fixed assets or in deteriorating overall efficacy. There is certain connection between these changes and the level

and structure of development, but it is not very conspicuous. Negative values of total productivity rates, as the result of the pronounced overall inefficiency of economic performance, make the study of the entire period unsuitable from both the analytical and practical point of view. It will be enough to mention that only 2.1 per cent of the rise in social product between 1965 and 1980 can be attributed to total factor productivity and also that in less developed regions this extremely significant source of growth appears to have negative values.

Concluding Remarks

The results of the analysis of regional differentiation of development level and efficiency of growth presented here suggest several conclusions on the development level and development process in republics and provinces. The first point which deserves to be mentioned is a much wider variety in development levels and patterns than is recognized by the official dichotomous classification, which fails to make a distinction on the basis of these truly relevant features of regional differentiation. The detailed classificatory scheme explained in this work proves the untenableness of the one-sided official classification and is very important from an economic and political standpoint. It offers the elements for the selection of various methods and instruments of incentive policy, as well as for defining the different roles that certain developed regions have to play within the general regional development policy.

The second point refers to various levels and the growth pattern of partial productivities of individual factors and their connection with measurement of the development degree of republics and provinces. As a rule, the faster growth in labour productivity in more developed regions and the slower decline in efficiency of social resources show that the gap between growing labour productivity and falling efficiency is greater in less developed areas, which suggests that poorer development efficiency is involved. Consequently, regional policy deserves to be reconsidered, in particular towards the selection of more efficient investment projects in less developed areas with greater effects on employment, income and labour productivity growth. In the generally inefficient resource allocation in the Yugoslav economy, it is necessary to insist on efficiency improvement, particularly in less developed regions.

Higher efficiency is also suggested as being necessary by the third point, which refers to the trend of total factor productivity as the global indicator of development efficiency. In addition to the connection established between the pace of expansion of this aggregate and development level, the different trend of this indicator in the two sub-periods should be stressed, as well as the less pronounced connection in the recent, crisis period in the development of the Yugoslav economy.

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Received: 01. 02. 1988.

Revised: 30. 05. 1988.