

SOME CONNECTIONS OF ECONOMIC BALANCE AND REGIONAL STRUCTURE FROM THE POINT OF VIEW OF ECONOMIC GROWTH

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Nowadays, analysing the determinant factors of economic growth, nobody can leave the several structural questions out of consideration. It is obvious that macro-and microstructure on different level, with different intensity and at the same time from different aspect influence the economic growth. The impact of structure on growth changes both in time and space. Thus we had quite different tasks in the period following our liberation, in the so called extensive than in the intensive period of our economic development. At the present stage of our development, when the extensive sources gradually or in the majority of cases are used up, and the main source of economic growth has become the increase of economic efficiency, our tasks in the field of structural change greatly differ from the earlier ones. Nowadays, the most important factor of racionalization of economic structure is the increase of productivity, i.e. manufacture of such export-productions, which both from the point of view of quality and production cost are marketable on the world market and to a certain degree compensate our deficiencies, caused by the rising costs of raw material and energy sources.

On the basis of the above mentioned facts, it is reasonable that the change of the economic structure is brought up from a new aspect.

The improvement of economic structure has become the key-question nearly every country. Therefore, it is understandable that a great majority of scientists and economic leaders deal with the evolving of such a structure that better complies with the claims of development. The researches are quite heterogenous by the method and nature of them and the results (the analysis in connection with the range of subjects) are manifolded. For the many-sided character of the problem, we pick out only one element of the structure; the element, which is judged the most important one, from the point of view of the growth of regional efficiency. This factor is the economic balance or more concretely, the regional connections of the branches of national economy, the exploration of reserves, concealed in the balanced regional development of the branches of economy.

It is known that the stege of development of the productive-sphere of a given area and the level of degree of supply by non-productive projects have an effect on the socially necessary quantity of labour and so on the economic efficiency as well. When we examine the effects of the factors of economic growth on various regional levels, the evolving of counterpoise on every regional level considered to be a key-question.

According to the present state of sciences, dealing with regional questions, we cannot qualify the structure of a unit area, the proportion of branches of national economy by exact means, (e.g. with the help of indexes or mathematical modells)

but there are number of possibilities to judge indirectly all these questions. Generally it can be said that mainly the negative effects draw our attention. The minor negative and positive deviation from the counterpoise are hardly perceptible. Therefore, it is an important task of the research-workers to explore these sharp deviations and to work out variations to abolish them.

The regional arrangement of productive forces changed in its foundations during the dynamic development of Hungary in the period following liberation. The difference between the stage of development of the several branches of national economy considerably decreased, thus the areal units came closer to each-other from the point of view of social and economic development. At the same time, there are regions of course, where some of the branches rise above or considerably fall behind the national average. The relative backwardness brings differentiated consequence about branch by branch. The insufficient social structure must be abolished from the point of view of social politics first of all. The backwardness of productive infrastructure restrains the development of the branches of national economy, therefore its abolishment is an important question. The lack of harmony between the stage of development of the branches inside of a given region, has a disadvantageous effect on the further development of the whole region.

Further on, we try to show you the harmony, or in case of its lack the disharmony between the stages of development of the branches — or rather the characteristic economic indexes — of national economy.

In our research the areal units mean the various levels of territorial hierarchy, such as micro-, sub- and mezoregions; the indexes are originated from the partial results of an earlier analysis. The indexes are as following:

1. Sectorial specialization of industry.
2. Technical level of industry.
3. Dynamism of industrial development.
4. Proportion of settlements, having industrial activity.
5. Stage of development of agriculture.
6. Stage of development of social-infrastructure.

First of all, on the basis of the state of development of the above mentioned indexes, we arranged the hierarchy of the various regions. The results are shown by table 1., 2., 3.

Examining the tables it is clear at the first sight that the hierarchy is quite differentiated according to the unit areas. The degree of differentiation is particularly marked in the case of such areas which, on the basis of the indexes are at the fore-part and that of those being at the end of hierarchy. On microregion level we arranged the list of those units which, on the basis of some indexes are behind the first ten, and at the same time, according to other indexes, are behind the first forty position. These microregions are as following: Ózd, Jászberény, Tatabánya, Karcag, Kaposvár, Cegléd, Pécs, Kiskunhalas, Szentes, Mohács, Baja, Békéscsaba, Szolnok, Szeged and the microregion Zalaegerszeg. Generally it can be said that those microregions excelled at the technical level of industry, are backward in respect of agricultural development and vice-versa. The microregion Baja, Ózd, Kiskunhalas, Szentes, Miskolc are cases in point.

Though, it is astonishing how different hierarchy can be arranged by the stage of specialization and the technical level of industry. Microregion Jászberény e.g.

Table 1
Microregion

Desogation	1	2	3	4	5	6	
1. Ózd	1	8	42	23	33	26	133
2. Jászberény	2	38	19	5	15	42	121
3. Székesfehérvár	3	11	1	20	18	21	74
4. Dunaújváros	4	2	39	7	12	8	72
5. Győr	5	13	17	29	7	3	74
6. Budapest and her environs	6	14	13	3	2	23	61
7. Leninváros	7	1	14	21	25	34	102
8. Tatabánya	8	6	40	19	5	5	83
9. Kecskemét	9	34	31	8	16	37	135
10. Nagykanizsa	10	20	11	37	31	11	120
11. Dombóvár	11	44	28	35	19	18	155
12. Vác	12	10	35	25	17	13	112
13. Karcag	13	39	8	6	23	40	129
14. Sopron	14	23	30	26	8	2	103
15. Kaposvár	15	27	27	40	32	10	151
16. Pápa	16	25	25	42	14	24	146
17. Dorog	17	7	7	9	4	7	51
18. Mátészalka	18	35	34	41	14	32	174
19. Siófok	19	31	26	32	24	27	159
20. Sátoraljaújhely	20	21	12	30	30	44	157
21. Cegléd	21	43	4	2	16	43	128
22. Debrecen	22	29	43	13	13	39	159
23. Pécs	23	9	23	43	28	6	132
24. Kiskunhalas	24	41	33	16	4	41	159
25. Sárvár	25	26	37	33	11	12	144
26. Szentés	26	42	18	5	8	35	134
27. Gyöngyös	27	4	9	1	3	30	74
28. Veszprém	28	3	5	27	26	16	105
29. Mohács	29	16	41	39	1	20	146
30. Salgótarján	30	15	20	22	31	19	137
31. Szombathely	31	33	15	36	20	1	136
32. Baja	32	40	24	12	6	29	143
33. Orosháza	33	12	38	11	7	38	139
34. Miskolc	34	5	29	31	29	14	142
35. Szekszárd	35	36	10	15	10	15	121
36. Keszthely	36	32	32	34	22	9	165
37. Berettyóújfalu	37	19	4	28	21	36	145
38. Eger	38	22	21	18	26	22	147
39. Balassagyarmat	39	30	2	17	27	17	132
40. Nyíregyháza	40	28	22	24	20	31	165
41. Békéscsaba	41	37	16	10	28	28	160
42. Szolnok	42	17	36	4	9	33	141
43. Szeged	43	18	6	14	16	25	122
44. Zalaegerszeg	44	24	38	44	24	4	178

according to the sectorial specialization of industry stands second among the 44 microregions and at the same time, on the basis of the index of technical level stands 38th. According to the sectorial specialization Kecskemét microregion stands ninth, Dombóvár stands eleventh, but in respect of technical level they stand 34th and 44th respectively. There are reverse situations as well. Veszprém microregion e.g. stands

Table 2

Subregion

Designation	1	2	3	4	5	6	
1. Győr	1	6	5	10	2	1	25
2. Komárom	2	3	11	5	1	3	25
3. Kecskemét	3	15	12	4	7	15	56
4. Fejér-Veszprém	4	2	1	8	10	13	38
5. Baranya	5	5	10	14	9	5	48
6. Szolnok	6	9	13	1	4	16	49
7. Debrecen	7	11	15	6	5	8	52
8. Tolna	8	14	6	11	12	6	57
9. Zala	9	8	14	13	14	4	62
10. Nyíregyháza	10	12	9	11	7	9	58
11. West-Transdanubia	11	13	4	12	6	2	48
12. Borsod	12	1	7	9	13	12	54
13. Nógrád-Heves	13	4	3	7	11	10	48
14. Békéscsaba	14	10	8	2	8	14	56
15. Szeged	15	7	2	3	3	11	41

Table 3

Mezoregion

Designation	1	2	3	4	
1. Central	1	3	2	1	7
2. West-Hungarian Plain	2	5	5	6	18
3. North-Hungarian Plain	3	6	7	3	19
4. Middle-Transdanubia	4	2	1	5	12
5. South-Hungarian Plain	5	7	3	2	17
6. North-Hungary	6	1	4	4	15
7. South-Transdanubia	7	4	6	7	24

1.: The hierarchy of sectorial specialization of industry

2.: The technical level of industry

3.: The developmental dynamism of industry, on the basis of the growth of value of gross fixed assets per capita, employed in industry

4.: The rate of settlements having industrial activity

28th, Miskolc 34th in respect of specialization, while according to the technical level index the earlier stands 3rd and the latter stands 5th.

On the other hand, it is quite easy to understand that the contrary between the technical level and developmental dynamism of industry is reasonable. Thus Cegléd microregion in respect of the development of technical level stands last, but on the basis of dynamic growth stands 3rd among the regions. Another example is the region of Balassagyarmat, as it stands 30th according to the technical level, but on the basis of its dynamic growth stands 2nd. There are of course reverse examples as well, such as Dunaújváros and Tatabánya, as they — according to the technical level index —

stand 2nd and 6th respectively, and in respect of dynamic growth they have the 39th and the 40th position in the hierarchy.

The rate of settlements having industrial activity, gives some informations about the industrial concentration (regional) of the microregion. The value of this index — beside a number of other factors — greatly depends on the settlement structure of the region and on the role of the settlement in the territorial hierarchy. Thus, it is understandable that the connection is very loose both with the technical level index and the stage of specialization.

The development of infrastructure and its harmony with the level of industry and agriculture deserve special attention. Examining the connection of infrastructure and productive sphere, the productive infrastructure comes into prominence first of all, but we, in spite of this fact, examine the degree of supply of social infrastructure. It has various reasons:

- The stage of development of the heterogenous elements, belonging to the sphere of productive infrastructure, shows quite great dispersion in respect of unit areas, thus the indexes, reflecting the stage of supply of various elements, roughly counteract each-other. Therefore, the determination of the total development of the technical infrastructural elements (branches) does not give suitable informations.
- the productive infrastructure — as a macro category — has such elements which cannot or hardly can be found on micro level.
- and last but not least, the social infrastructure, through the productive forces has an indirect effect on the development and activity of some of the sectors of productive sphere.

Now let's see those unit areas of which infrastructural stage of supply is far behind the developmental stage of agriculture. In this respect Jászberény, Budapest district, Kecskemét, Karcag, Mátészalka, Cegléd, Debrecen, Kiskunhalas, Szentes, Gyöngyös, Baja, Orosháza and Szolnok regions are prominent. This considerable backwardness is unfavourable by all means, both from the point of view of its effect on present and future development. As the entirety of infrastructure cannot be unambiguously divided only into productive and social branches or elements, (as it is known the productive infrastructural branches also have social as well as the social infrastructure has productive aspect) this considerable backwardness in the field of development is injurious many times. The underdevelopment of those elements which affect population, is injurious from the point of view of social politics. While the underdevelopment of productive elements is damaging in respect of efficiency and further development of production.

By reason of characteristic features of infrastructure, it is understandable that its development is in greater harmony with industry than agriculture. The development contributive role of infrastructure lies in the fact that the development of infrastructure helps the process of branches of national economy, but at the same time its absolute or relative backwardness acts as a brake on the improvement of productive sphere.

In spite of the above mentioned facts, there are conflicting areas in respect of progress of industry and infrastructure. Leninváros, Sátoraljaújhely and Gyöngyös microregions are cases in point. In case of these unit areas the social infrastructure

is behind to a large extent the technical level of industry, while in Sopron, Szombat hely and Szekszárd regions the situation is just the opposite.

In the above we tried to show you the differences of the stage of development on the basis of six indexes. We paid special attention to the extreme end values, so as to point out the sontrasrts of the regions. The development of microregions, the direction and degree of connection between the components cannot be characterized exclusively by these extreme end values. Therefore we felt it necessary — in the interest of elimination of subjective elements — to determinate the closeness of connections between the stages of development of microregions by mathematical-statistical methods as well. In the interest of elimination, we formed the even correlation coefficients of the above mentioned indexes and then composed the correlation matrix. Our resuets are as following:

Six indexes correlation matrix of 44 microregions

Index*	1	2	3	4	5	6
1	0,0	0,184	-0,058	0,042	0,209	0,031
2		0,0	-0,039	-0,052	0,124	0,354
3			0,0	0,255	0,018	-0,138
4				0,0	0,473	-0,465
5					0,0	0,101
6						0,0

* The succession of indexes is in accordance with the earlier mentioned enumeration.

Examining the correlation matrix, one can clearly determinate what connections are between microregion levels nowadays.

First of all, it can be stated that the positive correlation is quite loose between the technical level of industry and its sectorial specialization. The value of correlation coefficient is 0,184. It is thought — provoking, because the more advanced specialization helps the quick growth of technical level. The third index (developmental dynamism of industry) shows loose negative relation botn with the sectorial specialization of industry and its technical level. It is connected with the realization of a more dynamic development of rural or underdeveloped territories.

It is understandable, that the 4th index (the rate of settlements having industrial activity) is in negative relation to the technical level of industry. This negative sign seems to be reasonable, because territorially the more decentralized the industry is, the less favourable the conditions are, to realize a high technical level.

The development of agriculture is in positive correlation with every index. The settlements, having industrial activity, have the closest connection with the development of agriculture; here the value of the coefficient is +0,473. In microregions, where agriculture is well developed and industry is decentralized, the technical level of industry is the lowest and the workshop-concentration is the least. The industry of these areas conforms to the agricultural raw-materials or meets the "claim" of the agricultural labour force.

The 6th index denotes the development of social infrastructure. It is in the closest positive correlation with the index of the industrial technical level. (This fact can be

explained by the mutual favourite effect of industry and infrastructure.) The connection between infrastructure and agriculture is considerably looser. But in respect of developmental dynamism of industry and social infrastructural supply the correlation is negative. It is connected with that earlier mentioned fact, that during the development of industry, with the industrialization of countryside, there is a levelling process in the field of industrial development, in the course of which the level of industry of the most and the least developed territories shows decreasing tendency. Thus an apparent contradiction comes into being, i.e. the correlation between developmental dynamism of industry and social infrastructural supply is loose but negative on microregion level.

In the interest of realization of our purpose, it is necessary to widen our researches another level of territorial hierarchy. The next level (starting from below) is the subregion. We formed indexes — listed in the first part of the lecture — to examine subregions then determined the developmental hierarchy of the 15 subregions on the basis of the indexes. Our results are shown by table 2.

There are essential differences between subregions — as it is seen in the case of microregions as well — in respect of stage of development. There is a sharp contradiction between the sectorial specialization of industry and its technical level. This contrast is the sharpest in Kecskemét, Borsod, Nógrád and Heves subregions. Regarding the technical level and developmental dynamism the most contrastive situation is in Komárom subregion, which in respect of technical level stands 3rd and on the basis of the 15 unit areas stands 11th, but at the same time Tolna and West Transdanubia subregions stand last and on the basis of their developmental dynamism they stay ahead.

The greatest difference between the developmental dynamism of industry and the rate of settlements, having industrial activity, is in Szolnok subregion. Difference is also shown in Kecskemét and West-Transdanubia subregions, but here the difference came into being to the advantage of developmental dynamism.

The greatest disharmony between the development of agriculture and the technical level of industry is noticed in case of Borsod, Fejér and Veszprém subregions. The disharmony is a bit less in Kecskemét West-Transdanubia and Nógrád-Heves subregions.

Szolnok, Szeged and Kecskemét subregions show such a difference between agriculture and infrastructure, where agriculture, while in Zala subregion the social infrastructure is more developed.

In hierarchy of technical level of industry and of development infrastructure Borsod, West-Transdanubia, Tolna and Fejér-Veszprém subregions show a quite diverse picture. Among these subregions Borsod and Fejér-Veszprém excel at relative development of industry, while the two other at infrastructure.

Further on — to examine the levels of subregions — we formed even correlation coefficients, then composed the correlation matrix. Our results are as follows:

Six indexes correlation matrix of 15 subregions

Examining the correlation matrix, it seems for the first sight that it substantially differs from the results of microregions. The reason for this divergence is in the fact that essential modification came into being as a reason of a newer dividing into other levels.

The connection between sectorial specialization of industry and its technical level is looser than in case of microregions. The reason for this is mainly in fact that

Index*	1	2	3	4	5	6
1	0,0	0,061	-0,311	-0,025	0,396	0,173
2		0,0	0,307	0,043	0,014	-0,077
3			0,0	-0,011	0,032	-0,091
4				0,0	0,554	-0,741
5					0,0	0,098
6						0,0

*The order of indexes is in accordance with the earlier mentioned enumeration.

technical level feeds on — beside the possibilities given by infrastructure — other sources as well. The “r” value of the hierarchical level in question, proves our above mentioned statement, according to which, though the stage of specialization is low, we still do not suitably use the possibilities, given by the present infrastructure.

The value of correlation coefficient is $-0,311$ between the sectorial specialization and developmental dynamism of industry. Though, it is also a number of negative sign, but the correlation is nearly two tenth closer than in case of microregion.

The “r” value is $0,307$ between the 2nd and 3rd index (the technical level and the developmental dynamism of industry). Anyway, in case of subregions that tendency is characteristic, whereas regions of industrially higher technical level develop quicker than the average.

Further on, we are going to analyse those connections of correlation matrix, that can be characterized by correlations of the average closeness, or by their little \pm deviation from it. Such a connection is between the 4th and the 5th index (the rate of settlements having industrial activity and the agricultural development), where the closeness is $0,554$. This value is a bit closer than that of microregion. The two “r” values corroborate the fact that the greatest decentralization takes place in developed agricultural regions. But at the same time, there are regions, where the social infrastructure is the least developed. (Namely the “r” value is $-0,745$ between the rate of settlements having industrial activity and the development of social infrastructure.) This correlation is of negative sign as well as in case of microregions, but essentially closer. (Between the 4th and 6th index the “r” is $-0,465$ in respect of microregions.) The development of social infrastructure depends on the hierarchical concentration of industry; the dependence is 55%.

Now let's examine the 3rd, and at the same time the higher level of our hierarchy, from the above aspects. As it is known, the Department of Economic Geography of University of Szeged prepared a hierarchy-system and according to it there are 7 mezoregions in Hungary. The average size of these regions is about 1300 square kilometres. Regarding this relatively large extension, it is understandable that because of the overlapping of differentiations — in respect of branches and indexes — inside the region, the differences between each-other are also decreased. In spite of this e.g. the index of sectorial specialization of industry of North-Hungarian mezo-region stands last but one among the seven units, while on the basis of its technical level index of industry stands first. The Middle-Transdanubia mezo-region is another example; in respect of developmental dynamism of its industry it stands

first, while on the basis of the rate of settlements having industrial activity stands fifth.

The North-Hungarian Plain mezoregion also shows a relatively differentiated stage of development, where industry stands last on the basis of its developmental dynamism, and in respect of specialization it stands third. It also stands third among the mezoregions on the basis of the rate of settlements having industrial activity.

Though, it is astonishing that examining the relative hierarchy, there is little difference between the technical level of industry and its developmental dynamism. The latter was determined on the basis of growth of value of gross fixed assets per capita, employed in industry. In case of Kis-Alföld region, the two hierarchical orders are the same, in Central, North-Hungarian Plain and in Middle Transdanubia regions there is only one unit, in South Transdanubia there are two, in North Hungarian region three and in South Hungarian region there are four units divergence. It means that sharp changes in the relative development of technical level, cannot be expected in respect of mezoregions in a short time.

As there are only seven mezoregions, there is no reason to form correlation coefficients and matrix. Further on, the inner characteristic, essential differences of mezoregions are overlapped by each-other.

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