ASPECTS SHOWING THE RATE OF DEVELOPMENT
OF TOWNS IN THE HUNGARIAN PLAIN

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1. *Objective:*

The development of towns is influenced mainly by socioeconomical factors. The effect of these factors is different in time and, as far as the situation of the towns is concerned, so the development of the towns or groups of towns cannot be the same. Generally speaking, there are periods of sudden increase, of neither increase nor decrease, and of decrease in the development of each town. In respect of the growth of towns and groups of towns in a bigger geographical area this "advancing front line" is moving. The intention of this study is to present the growth of towns in the Hungarian Plain in relation to their own past and in relation to the growth of other towns, i.e. the moving of the "advancing front line" between 1870 and 1970.

The objective of this study makes it possible and necessary to approach the growth and development through the numerical change in the population. This means some simplification but this is the method used in technical literature on the basis of close correlation. Since the factors which played important roles in the development of a group of towns can be traced in the numerical changes of population, the differences in the rate of the numerical changes give us a reliable picture of the differences in the development of certain groups of towns. Our researches cover 83 towns in the country, which are declared to be towns from the administrative and legal point of view.

2. *The growth of towns in the Hungarian Plain.*

During our research on the growth of towns in the Hungarian Plain, the value of the so-called C co-efficient which expresses the relative concentration of the population is used (J. TÓTH 1972). This can be used for the real evaluation of the rate of growth, when the rate of growth of the parts differs from that of the whole. This value can be found by means of the following equation:

$$C = \frac{P_1 \cdot Q_2}{P_2 \cdot Q_1}$$

P_1: The number of the population in the area under research at the beginning of the research

P_2: the number of the population in the area under research at the end of the research

Q_1: the number of the population in a certain part of the area under research or a certain part of the population of the whole area under research at the beginning of the research

Q_2: the number of the population in a certain part of the area under research or a certain part of the population of the whole area under research at the end of the research.

Converting the values of the C co-efficient into a time line and plotting them on a graph (fig. 1), the steepness of each joining line (m) shows the rate of the relative concentration of the population in the area under research. If $m > 0$, the rate of the relative concentrations of the population is increasing, if $m < 0$, it is decreasing, and if $m = 0$, it does not change (L. TÁNCZOS-SZABÓ 1975).
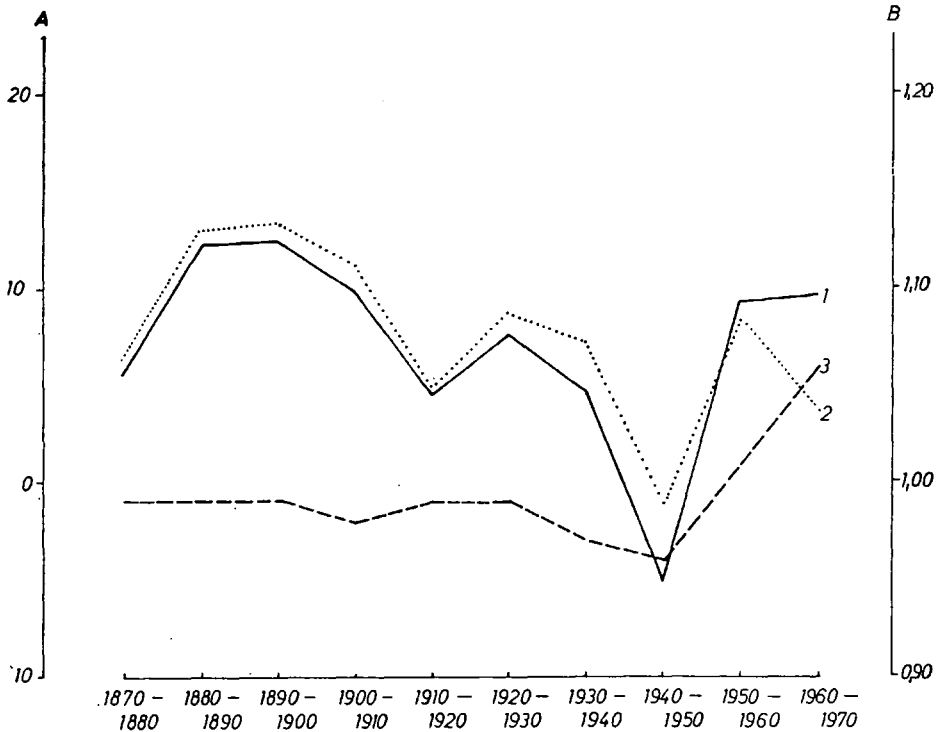

Fig. 1. Changes in the number of population in the towns of the Hungarian Plain
A = changes in the number of population (%) B = the value of the C-coefficient
1 = the rate of the increase of population (per decade) in the towns of the
Hungarian Plain 2 = the rate of the increase of population (per decade) in Hungary
3 = the figures of the C-coefficient (per decade) in the leading towns of the Hungarian Plain

Researches, taking place every ten years, on the rate of population in the towns in the Hungarian Plain, during the past 100 years, show greater values than those taking place after the liberation. Since the rate of population after the liberation was much smaller than at the end of the last century, the values after the liberation are the highest if we take into consideration the relative concentration.

We achieve the same results on the basis of the values of this C co-efficient in connection with the leading towns of the Hungarian Plain (fig. 2). It is remarkable that the values of the co-efficients in connection with the ordinary towns did not change between 1870 and 1949, the situation in the case of the leading towns* is different.

Fig. 2. Changes in the number of population in the leading towns of the
Hungarian Plain (1870—1970)
A = the changes in the number of population (%)
B = the value of the C-coefficient
1 = the rate of the increase of population (per decade) in the leading
towns of the Hungarian Plain
2 = the rate of the increase of population (per in Hungary)
3 = the figures of the C-coefficient (per decade) in the towns of the
Hungarian Plain

During the period of time of the research there is a sudden increase in the rate of the relative concentration of the population in three cases, such as the period between 1890 and 1900, the period betwenn 1920 and 1930, and finally the period which started in 1950 and is still continuing today, which is the most dynamic of all according to the steepness of the lines.

* All the towns which have a super, very high or high role according to the conception of the development of a settle-ment network are considered leading towns. In the Hungarian Plain they are as folloys: Szeged, Debrecen, Kecskemét, Szolnok, Nyíregyháza, Békéscaba, Baja, Hódmezővásárhely; in the other parts of the country they are: Miskolc, Pécs, Győr, Eger, Salgótarján, Sopron, Székesfehérvár, Szombathely, Kaposvár, Veszprém, Nagykanizsa, Tatabánya, Szek-szárd, Zalaegerszeg and Dunaújváros.

This rank co-efficient refers to a decade, or to any given period of time and is found by means of the following equation:

$$R = \frac{\sum\limits_{i=1}^{n} r_i{}^{(j)}}{\sum\limits_{i=1}^{n} r_i{}^{(j+k)}}$$

R = the value of the rank co-efficient
n = the number of the settlements
r = the rank of the settlements
i = an index denoting the time under research
k = the period of time between successive researches.

With the help of this rank-coefficient the situationshifts of the towns in their rank order — in proportion with their increase — can be traced, and the differences are obvious. Thus, according to the equation: if the value of the rank-coefficient is bigger than 1, the given town or group of towns was developing more quickly than the average and improving its situation in the ranking order, while if the co-efficient is smaller than one, the phenomenon occurred the other way round.

While researching the values of the rank co-efficient in decades (fig. 5), one can see that there was a difference in the development as well as in the rank co-efficient of the towns in the Hungarian Plain even before the liberation. This difference was disadvantageous in respect of the towns in the Hungarian Plain. But this difference was not essential: the rank-co-efficient of the towns in the Hungarian Plain was between 0.95 and 1.0, while that of the other towns was hardly greater than 1.0.

There was something like an explosion after the liberation. The rank-co-efficient of the towns in the Hungarian Plain went below 1.90, while that of the other places went above 1.05.

The fact that all our new socialist towns with a high rate of population increase came into existence either in the northern part of the country or in Transdanubia played an important role in creating this situation, too (F. BOROS 1968). The main reason — which determined the siting of the new towns — is the rapid industrialization which took place with regional differences.

There is a great increase in the difference of the rank co-efficient of the towns in the Hungarian Plain and of that of the other towns, even if we confine our researches to the so-called leading towns. The differences go to extremes in this case.

On researching the regional pace-differences in the development of the Hungarian towns one comes to the conclusion that during the past hundred years the towns in the Hungarian Plain were never so far behind the towns of the other regions of the country as after the liberation.

4. *Summary.*

It is obvious that the two conclusions of our research — looking at them side by side — are a bit surprising. No doubt, that by leaving out the population of the suburbs which are to be found around the towns the pace difference will be smaller,

i.e. the contrast in our conclusions will be less marked — but there is going to be a contrast.

The economic development, the industrialization and the urbanization which came to the surface in the population increase of towns in our country after the liberation accelerated to such an extent that both of our conclusions referring to the development of towns in the Hungarian Plain (the latter caused by the necessary increase of these places as well as the existence of regional differences) could be right at the same time. Our economic development from the end of the sixties of the last century could be characterised by intensivity: questions like effectiveness came to the surface and a process of regional development in accordance with the fundamentals and the sources of energy started.

The results of this process can be traced in the changes in the proportion of the inter- and intra-regional migration, the tendency of which is favourable to intra-regional migration, as well as in the increase of the population-concentrating role of the centres in the country. The same facts are reflected by another conclusion of our study, which says that the pace at which the towns in the Hungarian Plain were lagging behind was decreasing in the 1960's (fig. 5 and 6).

The fact that only the pace of this lagging behind decreased and the towns still in fact lag behind must be taken into consideration when dealing with the ramified problems of town-planning.
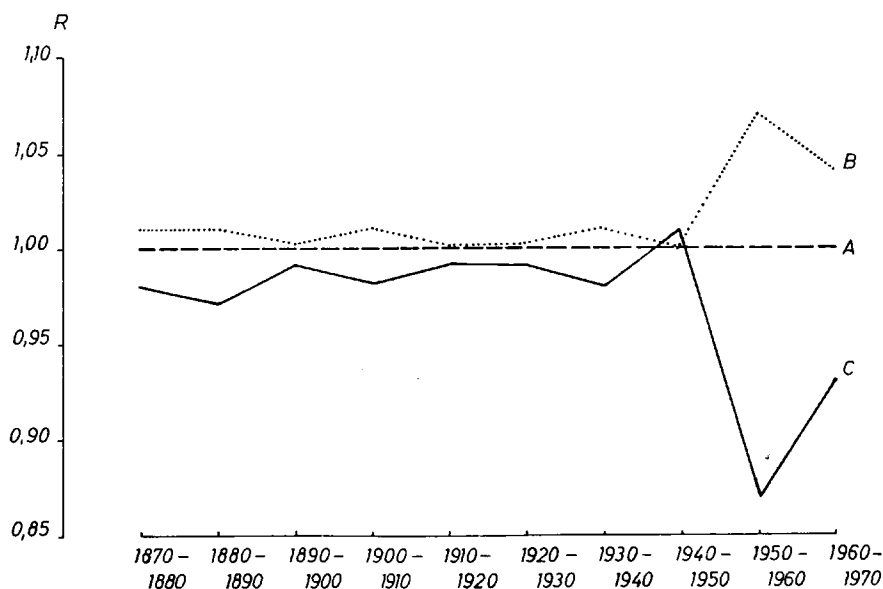

Fig. 5. The figure of the value of the rank-coefficient (per decade) in the case of the leading towns of the Hungarian Plain and in other places (1870—1970)
A = the Hungarian towns (83) altogether B = towns outside of the Hungarian plain (50) C = towns in the Hungarian Plain (33) R = value of the route-coefficient
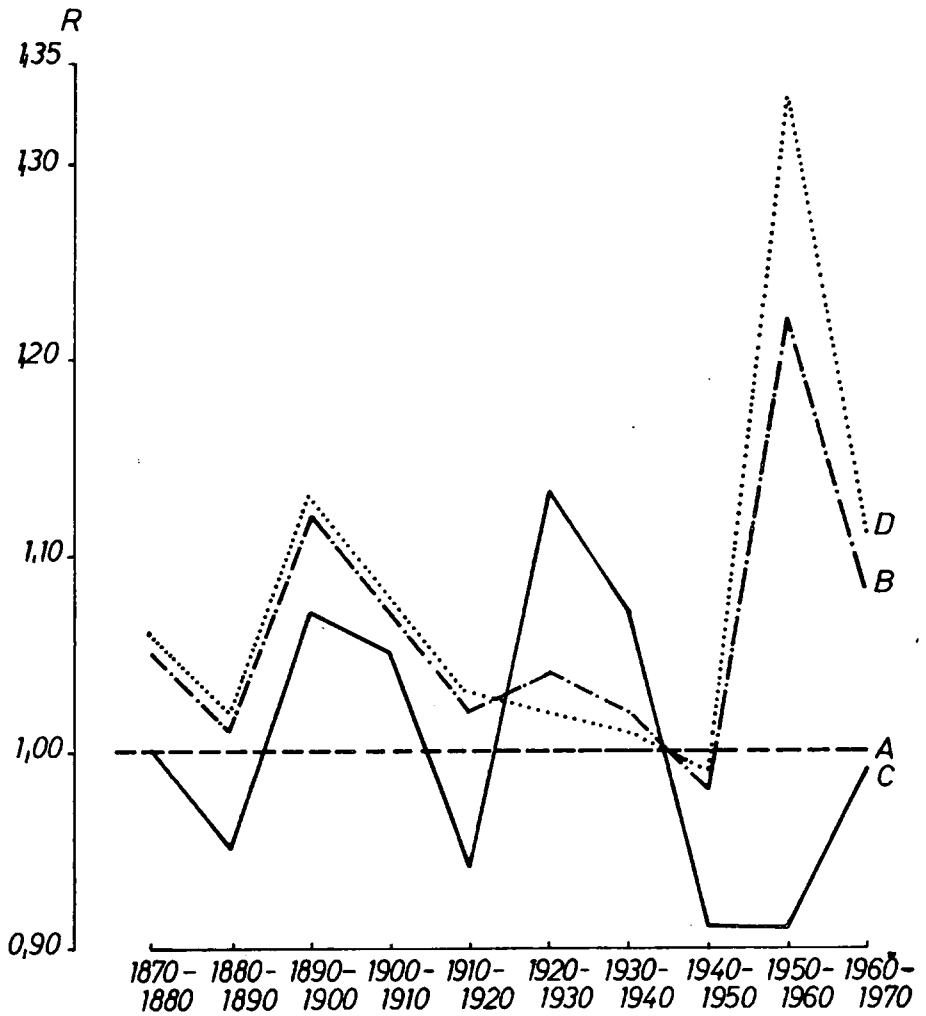
Fig. 6. Figure of the values of the rank-cofficient (per decade) in the case
of the leading towns of the Hungarian plain and other places
A = All Hungarian towns (83) B = Leading towns (23) C = Leading towns of the
Hungarian Plain (8) D = other towns (15) R = The value of the rank-cofficient

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