

THEORETICAL AND METHODOLOGICAL PROBLEMS OF ECONOMIC MICROAREAS

by

DR. GY. KRAJKÓ

Up to now the research of economic areas (the epithet „economic” will in the following be omitted for the sake of simplicity) has mainly been concerned with theoretical, practical, and methodical problems of the mesoareas. This is understandable because economic planning and geographical investigation of the country required it. The development of the social division of labor and its increasing territorial specialization requires of the researchers to investigate the peculiar features, conditions, and differences also on the level of microareas. At the same time with the emphasis on area development, the results of the investigations can be used in practical life to an ever greater extent. These facts are sufficient justification for us to give our attention to the economico-geographic investigation of the microareas.

This study is a summary of the theoretical and methodological experiences of the investigation of microregions in the southern part of the Great Plain. The first part contains chiefly theoretical problems; the study that will appear as a continuation will contain methodological analysis.

The theoretical problems are grouped round three themes; the concept of microareas, their importance, and the factors determining their boundaries.

The concept of microareas

It follows from the territorial differences in the social division of labor that in the system of integrant economic areas levels and grades develop that differ from each other not only in order of magnitude but also in function. The number of the taxonomic grades depends on the size of the country in question, the state of development of the social division of labor and the territorial differences. Determination of the levels and marking out of the boundaries are especially the problems provoking debates.

Definition of the objectively existing basic unit of economico-geographical research is an important problem that cannot be bypassed, but the debates about this subject have as often as not been futile, diverted attention from the chief

problems of area research and to many observers gave the impression as if the main goal of area research in geography were the definition and discovery of ever newer territorial units.

It needs no long argumentation that in the research of economic areas the delimitation of the areas is not an aim but only a means for the investigation of the social division of labor and the territorial differences in the processes connected with it. By the way an attempt will be made in the following to prove this in practice. In fact this is the starting point for marking out the boundaries and differentiating the taxonomic levels.

If the content aspect of the area is disregarded, then theoretically but also practically no lower limit can be set to the territorial division and thus division can go on indefinitely, even as far as the level of the agricultural cooperatives or further to the strips of land. In this case the author cited earlier would be right, but the functions of the areas set limits to this kind of subjectivism.

In case of further division of the microareas the areas would lose their integrant character and would represent only areas of some branch of economy. Therefore the microareas are the smallest territorial units of the geographical division of labor that still have the most important content functions and formal marks of integrant economic areas.

In principle, this definition comprises the taxonomic place of the microareas, the lower limit of areas, but it does not refer to the differences that separate them from the higher levels. It is far more difficult to draw the separating line theoretically or practically.

In approaching the problem we must start from the fact that the taxonomic grades of the areas differ not only quantitatively (i. e. in area, scale of the branches of economy, etc.), but also as regards the problems connected with the complex development of the area and as regards their functions. The proportion and importance of the microareas in the national economy are smaller than those of the mesoareas; hence their economic and trade relations are also scantier. Thus it is utterly impossible that interdependent production relations with all even-ranking units of the country should develop on a larger or smaller scale or that production relations on a large scale should be established. In the case of the subareas this is already possible, and in the case of the macro- and mesoareas it is a characteristic feature.

The top level of the microareas may be determined on the basis of their role in the geographical division of labor; and this is not dependent on the dimensions of the area. Although the microareas are constituent parts of the territorial division of labor in the country, this is often of a transposed character. Usually it is the integration of several microareas that constitutes a territorial production complex on a wider basis. Thus the dimensions of the microareas are determined by the territorial peculiarity of the social and economic processes of an area of a higher level. The concept of economic microarea can be summarized as follows: It is the smallest territorial unit of the geographical division of labor that still possesses the most important properties of the integrant economic area; it is specialized, it is territorially identical with, or a constituent of, a territorial production complex, within a narrower framework it is part of the nationwide division of labor, it has developed its own economic center and its peculiar economic and social life, which serves as an objective framework to the analysis of the complicated processes of the territorially very peculiar economic and social life.

Thus in theory the lowest and the highest levels of the microareas can be determined, and in practice the definition of these microareas is at the same time taxonomic differentiation.

The practical importance of the microareas

1. The economic areas, among them the microareas, are essential units in geographical research. Regional economic geography is not an independent discipline, but in its method it differs from the research of branches of economy in that it emphasizes systematic investigation of the interrelations of economic and social processes in natural conditions. Of course not even the geography of the branches of economy describes the different branches in isolation, independently of the above-mentioned factors, but stressing the characteristic properties of these branches, while regional geography, taking account of the results of the research of the economic branches, concentrates on the territorial relations and peculiarities of the economic branches which may vary from region to region. For instance in a little industrialized area of the Great Plain the development of an industrial center may start a chain of relations that can be explored only through detailed analysis of the territorial unit.

The industrial development of Szeged is in many respects in harmony with the agriculture as this latter provides a significant proportion of the raw materials, but it influences the structure of the industry and carrying much of the effect of the natural factors it spreads on according to the well-known pattern of the interrelation of the two branches of economy.

In consequence of industrialization the mobility of the population changes. After the absorption of the manpower reserve of the town the manpower-supplying area expands more and more. The localities more favorably situated from the point of view of transportation participate in the process later, and so the number of the commuters is also higher. This usually influences the demographic indexes favorably. Migration of the population also shows a peculiar territorial picture. Streaming toward the towns is expressed in the fact that when the populations of neighboring localities are exchanged, more people settle in the more favorably situated locality than the opposite way. For instance, more people moved from Tiszasziget to Újszentiván than the other way round and from the latter to Szőreg. The balance of the migration of the population of the localities toward the industrial centers is becoming active, and this is favorable for the demographic balance. The rate of relayering of the agricultural population also depends to a considerable extent, besides local industry, on the attraction of the town, the transportation conditions, etc. From this it follows, however, that there is not enough manpower in the agriculture to develop the intensive town-supplying cultures formed near the towns, and the cultures of high work intensity whose mechanization is unsolved or expensive are pushed farther and farther away from the towns, for instance sugar-beet cultivation, plowland vegetable cultivation, etc. This example, which is far from complete, is intended to show what territorial relations and processes shape the inner economic life of the microareas. In the research of the microareas we must concentrate our attention on these peculiar processes besides the local natural and social conditions because without their knowledge it is difficult to outline the probable trends of development. It is difficult to explore all the peculiarities of these processes in the higherlevel areas

where the details are lost, while the microareas afford an ideal framework for this.

2. Relationship between economic areas and area development.

Area development as an indispensable means of the development of the national economy and the realization of other practical objectives has been given special attention in the economic policy of the last years. The theoretical and practical problems of area development are in harmony with the content tasks of economic area research in consequence of which the latter provides very much useful scientific material for regional planning serving area development.

The principles and objectives of area development are in contact with or meet area research formally or contentwise on many points. Basic principles of area development are the following:

a) Rational territorial arrangement of the forces of production of the country with consideration of the local conditions and peculiarities. The specialization of the areas is based on the favorable local conditions, but as they constitute parts of the territorial division of labor in the country, their development must be in harmony with the needs of the country and the trend of the development of its forces of production. The conditions of the microareas changing in time influence the social and economic development of the given area and are always relative: therefore they can be evaluated in connection with different or similar conditions of other areas. Thus the main trend of development of no economic area can be determined independently of the rest and only on the basis of its own resources.

This can be done only with knowledge of the national and international division of labor and in accordance with it. One objective of territorial development is to ensure a rational territorial distribution of the forces of production coordinating the development based on local conditions and the national interests.

b) Reduction of the differences of development between the economic areas, elimination of the irrational territorial inequalities of production, and solution of the social and political contradictions deriving from it. The conditions of the economic areas are different. From this it follows that the producing capacity of the country cannot be divided equally. In creating rational territorial proportion the point is not that the historically developed territorial differences in the country should gradually disappear independently of the local conditions or that the highly developed central area should give over certain branches of industry in the form of „relief”, but every effort must be made to maximally explore and exploit the resources of each area. Each economic area possesses some favorable qualities in comparison to the others, the exploitation of which provides a possibility to reduce the territorial differences, although they cannot ever be entirely eliminated. The aim of area development serving the organization of a rational territorial division of labor is to ensure a faster rate of economic development in the more backward areas so that this should be in harmony with both the local conditions and the needs of the country. The same applies also to the microareas since between them, too, there is a peculiar territorial division of labor. While at the highest level there is development toward equalization, in the case of the microareas reduction of the territorial differences and inequalities is not necessarily justified, and in some cases specialization may even increase. Again, the differences in economic level must not be considered only from the point of view of one or more branches of economy, for a well

specialized, highly productive agriculture at the level of microareas is of the same value as industry. Thus the territorial inequality in industry does not necessarily lead to unequal development of the other branches of economy, and conversely, the differences in economic development at the level of microareas can be reduced not only by the development of industry.

c) Besides developing the correct national proportions it is very important to establish the proper proportions of the inner branch of the economic area. As we have seen, the measure of the development of specialization cannot be determined only on the basis of the local conditions, as these are basic parts of the national division of labor. On the other hand, there are many branches of production of local importance that add to the complexity of the area. A reasonable ratio of the different branches of economy and the complex development of the area can only be ensured within the framework of a regional plan.

Establishment of the harmony of territorial and branch development. Development of one or another branch within an area is not identical with area development. The principle of the area and the principle of the branch of economy often manifest themselves and can be coordinated through contradictions. The lack of harmony of the two factors may lead to various kinds of anomaly. For instance, excessive development of the auxiliary industries of the cooperatives and of many local industries in the southern part of the Great Plain has absorbed the manpower reserves and caused manpower shortage in the industry. This makes rapid expansion of the branches of industry with optimal conditions difficult, which is disadvantageous not only for the country but also for the area, for rapid development and increase in productivity would be ensured just by these branches of industry (food, light, machine, and chemical industries). Frequently the reverse of this is found when emphasis is laid on the development of only a few branches of industry and the accessory developments are late or not carried out at all.

Preferential development of a few branches of economy influences also the other branches and hangs together with the transformation of the infrastructure of the area. Rational use of the natural and social resources of the economic area requires harmony of the development of the different branches of economy and of the whole area. This can only be ensured by a regional plan, the framework of which would be territorial units formed by practical life that are the microareas (or subareas).

d) Development of the network of settlements in accordance with the forces of production. This is carried out on the basis of regional plans and differently in the different settlements, depending on its present or intended future role. Investigations of the population and settlement geography of the economic area provide indispensable material for this. Investigation of the field of attraction of the settlements, analysis of the mobility of the population, etc., would be helpful not only in defining the boundaries of the areas, but as important content problems of the microareas, they would help us understand also other phenomena and work out the conception of the area development.

e) Surveying of the internal and external relations of production within a unit of area development and ensuring the necessary traffic system. This, too, is a task connected with the objectives of area research. Not only in the case of meso- but also of microareas it is very important to investigate all the relations of the areas. Investigations of traffic geography are helpful in organizing rational relations and making long-term plans.

f) Exact survey of the natural and social resources of the area. It appears

also from the foregoing that the practical use of area development is in the local conditions that the different economic areas possess. Full assessment and surveying of these conditions is beyond the task of geographers, but it is just the geographers of all experts who can give most help in laying the scientific foundations of regional planning.

g) The grades of the economic areas serve as an objective framework to area development (or regional planning summing up the problems connected with it). The regional plans sometimes cover several microareas, for instance the regional plan for the valley of the Danube or the valley of the Tisza. This does not contradict the previous thought as area development in this case, too, makes allowance for the differences and can rely on the investigated and summarized physical and economic geographical assessment. It is practical to consider together the following microareas of the southern part of the Great Plain for regional planning:

the valley of the Danube, which comprises two microareas, that of Baja and that of Szekszárd; Kiskunság, which comprises the microareas of Kécskemét and Halas; the valley of the Tisza, which comprises the microareas of Szeged, Szentes, and Szolnok.

And finally the area of Békéscsaba can be coupled with that of Orosháza. (Within this the problem of Sárrét is a separate issue.) The units of planning thus formed are connected with areas with similar problems of development and possibilities.

The points enumerated are the most important points of contact where economic area research and area development meet. The taxonomic grades of the areas are not built upon each other pyramidlike (this is a much more complicated system), yet the investigation of the smallest units, the microareas, helps in constructing the whole system, and as we have seen, can be brought into harmony with the objectives of area development.

Major factors considered in microarea research and definition of boundaries

The research of microareas can hardly be separated from the determination of boundaries.

The two things are closely connected as it is impossible to speak of territorial units without determining their boundaries, and conversely, determination of the boundaries in the final analysis supposes a thorough knowledge of the areas. Thus for practical purposes the same factors must be considered for both things.

1. The microareas and specialization

In all grades of the integrant economic areas specialization of production appears as an indispensable requirement. Social production develops as the unity of the contrary processes of specialization and cooperation, which take place under regionally different natural and social conditions. That is to say social production becomes differentiated according to the different areas and branches of economy. This process takes place at the level of the microareas just as in the other taxonomic units. Of course the roles of the ratios, conditions, and

specialization are not identical, but on all levels they are the most important criteria of the economic area.

Specialization in the microarea is in some respect narrower than on higher levels because it represents only a part of the production profile of the meso- or subarea; it is also wider, because even such branches of production may appear as profile as lose their role at the higher levels. Similarly, the number and ratio of the branches of economy are different. The proportion of the branches of economy representing specialization generally has higher values than at the higher levels.

In the case of the production profile of the microareas, similarly as at the higher levels, the quantitative aspect can also be expressed numerically (with the least distortion by the net production value per head or the regional or national ratio of it). Unfortunately, these statistical data are not always available, so we are obliged to use other indexes such as the number of workers, investment stocks, capacity of machinery, use, electric energy, etc.

The qualitative expression of specialization, however, is not free from distortions and the smaller the area to which it is applied, the more we must reckon with this fact. Thus the data connected with it are often only good for illustration, but they afford no opportunity for discovering deeper relationships. In fact, the quantitative aspect alone cannot even be used in every case for registering the fact of specialization. Therefore our attention must be extended also to the functional analysis of specialization. This comprises the following points:

- a) what is the role of specialization in the complex of production,
- b) what are its natural and social conditions,
- c) how is it connected with the trend of the development of the given area, and what is its role in it.

Investigation of these aspects is a very important part of area research (unfortunately statistical data relating to these are most difficult to obtain) and at the same time it leads us to a better understanding of the area.

2. Regional production complexes

Specialization of the branches of production does not take place independently of each other, but together, in close interrelation. None of these branches of economy exists alone, without regional, interrelations. The interrelations are sometimes very loose, not going beyond common use of the manpower, electric energy supply, and infrastructure of an area. On the other hand, cooperation in production using all the advantages of local conditions often develops. The regional production complexes give the essence, the most important content feature of the economic areas, and without them there can be no grade of the integrant area. At the same time we must see that the two concepts cannot be identified and cannot replace each other. The existence of the production relations in space together with all its correlations (the effect of the natural and social factors, their rationality, etc.) does not qualify as the criterion of economic areas. The economic areas of different grades are not only units of production, but also units of consumption and they serve as scenes for the development of the social processes and many human activities. These correlations manifest themselves especially within the microareas, the investigation of which leads us to another subject, the problems of the sphere of attraction.

The structure of the regional production complexes, its character, territorial extension, and the depth of the correlations are determined by the branches of economy constituting the specialization.

Even the branches of economy not belonging to the specialization are integral parts of the production complex, and together with the former constitute the economic structure of the area, but the roles of these branches are different (usually they are connected with other branches of industry or they serve the immediate needs of the population), and as they have mostly local importance, their external relations are much weaker. For instance brick-making, bread-making, etc.

The branches of industry mentioned here are important elements of the development of the microareas but they do not determine the character, main trend, rate, etc. of the development; thus their area-forming role is negligible and they are not significant in the definition of the area boundaries. In spite of this their investigation cannot be neglected, as on higher levels their proportion and importance are often small and not clearly perceptible.

The factories and affiliated firms transferred from the capital to the countryside have very loose connections with the production complexes. They export all their products from the area and are usually connected with the microareas only where the use of manpower is concerned. They favor the industrial development of a given area, and their effect must be reckoned with accordingly.

In the southern part of the Great Plain the most common are the production cycles of the food industry which are not confined within the boundaries of a particular microarea, but in spite of the overlappings they do not obscure the areal production concentration. In spite of their diversity their base of raw materials can be summarized and territorially differentiated on the basis of indexes of intensity. Thus the chief raw material-supplying areas of the food industrial centers can be delineated. The areas of the branches of production so defined are a powerful help in analyzing the production complex and drawing the boundaries of the microareas.

Even in agriculture regional complexes form which attract smaller areas but are in their totality important elements in the profile of the areas. (For instance closed-cycle pig complex, wine complex, or other cooperatives.)

In the case of the branches of light industry a closed cycle like the food economy develops only rarely within the microarea. Similar is the case of the heavy industry of the southern part of the Great Plain.

The regional concentration of industry in the southern part of the Great Plain is relatively low. Industrial centers have developed only in Szeged and Békéscsaba, while in the other towns there are only smaller or larger industrial establishments. As a consequence of their rapid development, however, they have a great influence on the settling of the area, the changes in the population, etc.

In determining the boundaries of the areas we must take into consideration (a) the regional production relations, which, starting from the centers, decrease in intensity with increasing distance from them, and (b) the influence of the industrially developing settlements on other branches of economy and social life.

3. The relations between the areas of the economic branches and the microareas

It needs no detailed explanation that the area of a given economic branch differs from the integrant economic area in respect of its role, content, and form. What is most characteristic of the relation between the two is that in the industrial, agricultural, transportation and population areas the determining role is played by the most dynamically developing branch of economy, i. e. industry. This is the case also with the southern part of the Great Plain, but on lower levels in some microareas (those of Kalocsa and Orosháza) agriculture is still the leading branch of economy. The foregoing makes it impossible for us to consider the integrant microareas as a mechanical summing up of the areas of the economic branches, not to speak of the fact that such a fusion is impossible on account of the different sizes of the areas and the different qualities of the components. But it is not even necessary, because the destination of one or another microarea and that of the integrant microarea is different.

The areas of the branches of economy which reflect the regional structure and laws of production according to the branches of the national economy have a very important role in determining the profile of the microareas and revealing the relations between the branches of economy. In marking out the boundaries where there is overlapping (and this is most frequently the case) we always take the criteria of the leading branch or branches of economy together with the prospects into consideration as a basis and subordinate the rest to this. In the case of the microareas, as has been mentioned above, the role of the leading branch of economy may be different in each case.

4. The influence of the natural factors and the microareas

The direct and indirect influence of the natural factors on the development and extension of the microareas is very complex and diversified, and depending on the plans of development one or another element of it comes into prominence.

There are no significant relief or climatic differences in the southern part of the Great Plain, the territorial peculiarities being chiefly represented by the soil, hydrographic conditions, and the geological formations. The relation between the soil and the agricultural cultures, in a wider sense the food economy, is well known. It is understandable that while between the division into microareas and the climatological or morphological maps there are no common traits, there are many common traits, territorial similarities, with the soil maps. This does not mean that the former two factors are neutral from the point of view of economic life, only their effect is indirect.

With the industrial development of the country and the multiplication of the problems, hydrography has been given greater attention. Thus the surface and underground waters have become one of the most important factors for the foundation of industries. In the southern part of the Great Plain there are three microareas (the valley of the Danube, the microarea of Szeged, and that of Szentes) where it is relatively easy to solve the problems of water supply and where industries with high water requirement can be established.

With the building of the barrage on the lower Tisza and the Danube — Tisza canal as well as the use of the underground waters, a considerable part of the southern Great Plain will become irrigable. This implies great possibilities,

the exploitation of which will transform our present conception of the microareas. Connected with this is the increased exploitation of thermal waters (combined with gas heating. This is by far not all concerning the relation between hydrography and the areas. Other examples could be enumerated such as the development of crossing-places, the configuration of the transportation network or the establishment of several industries (sawing, hemp, match industries, etc.) each of which constitutes an indispensable mosaic piece in the research of microareas.

The recently discovered hydrocarbon field in the southern part of the Great Plain has basically changed the energy balance of the area, partially influenced the structure of industry, and in some microareas stepped up the economic development. The exploitation of crude oil and natural gas in the Great Plain affords many possibilities also for local use in spite of the fact that the larger part is exported.

Economic evaluation of the natural factors must be made even in this case if they do not influence the determination of the boundaries, for the main trend of the development of the microareas cannot be determined without them.

5. The relationship between the microareas and administration

In the relationship of the economic areas and the administrative division it is the former that theoretically receives the determining role. Therefore, if they do not coincide territorially, the latter must be modified, i. e. adjusted to the economic area. In practice, however, the unity of the two systems is not so simple.

The forums preparing the reform of administrative division could not take the areal division into consideration in the 1950's as we had no such thing then, but independently of this the reform did not bring a radical territorial re-division. Thus the economic areas are territorially on no level in agreement with the administrative units.

In consequence of the economic development of the last decades, the counties and districts themselves also have, in a sense, become economic units. In several respects they perform the function of economic areas, and thus irreconcilable differences between the two systems are found only in a few places.

The southern part of the Great Plain as an area territorially agrees roughly with the three counties Bács–Csongrád–Békés; the differences mentioned above concern only a few settlements. For instance, from the point of view of economic areas, the N part of the district of Dunavecse belongs to the central area, but Nagykörös, together with its immediate neighborhood, belongs to the southern part of the Great Plain. With the exception of the cases just mentioned, the division into microareas has left the county boundaries intact. Generally one or two districts belong to one microarea, and the boundaries of the districts are relatively rarely crossed by the boundaries of the microarea. For instance Már-tély and Székkutas administratively belong to the district of Szentes, but all other aspects link them with Hódmezővásárhely; the region of Mélykút and Jánoshalma is more closely linked, with Baja than with its own district center, Kiskunhalas. Along the administrative boundaries there are several settlements whose status is dubious. These cases must be examined separately, especially when an administrative reform is carried out.

6. The relationship between the population and the microareas

Economic geography considers the population as the most important force of production. This is the reason why the relationship between the economic life and the population is of primary importance to us. The regionally different rate of development of the branches of the national economy alters the composition of the population, influences the direction of the migration, and a number of demographic phenomena, and conversely, the population as labor force influences the branches of production. This well-known pattern manifests itself in a highly differentiated form.

In the southern part of the Great Plain the development of industrial foci and the rapid technical development of farming constitute the basic factor that has speeded up the process of relayering of the population and greatly differentiated it regionally. In certain microareas there is a shortage, in others always a surplus, of manpower. Thus working out the balance of the manpower attraction of the industrial foci and the manpower of the microareas is not only one of the most important tasks of area research, but it is necessary also for the development of the national economy.

Part of the phenomena or problems connected with the population, e. g. relayering, migration, commuting, increase or decrease of the population, etc. vary in the southern Great Plain usually within the boundaries of the microareas under the influence of the centers, depending on the importance (state of development) of the latter, the distances and the transport conditions. The direction and intensity of the change is mathematically measurable and summarizable. The indexes so obtained can be used for determining the boundaries of the microareas and for analyzing many problems. The demographic phenomena that depend on the movement of the economic life only partially, usually indirectly and shifted in time, such as births, deaths, etc. appear differently in different areas and so the microarea provides a suitable framework for their study. The microarea is the most suitable territorial unit also for the preparation of the balance of manpower.

7. The settlement network and the microareas

The historically developed hierarchy of the settlement network weaves through the territory of the whole area with invisible threads. If we make these threads visible, it appears that the strength of the relations varies from settlement to settlement, depending on what are the functions of the settlement in question. Investigation of the sphere of attraction of the settlements is one of the most important aids in determining the area boundaries. It is especially helpful in determining the status of the peripheral settlements. This is not accidental, as the attraction of the settlements reflects very important economic, social, and cultural relations.

One frequently meets with the view which, overvaluing the research of the sphere of attraction of the settlements, deems it sufficient for the determination of the economic areas. This problem is especially important in the case of the microareas because here it is of frequent occurrence that the microarea territorially coincides with the attraction sphere of the center, and practically, too, the drawing of the area boundaries is based on the research of the spheres of

attraction. In spite of this, the two concepts must not be confused or identified, for:

a) the content of the microarea differs from that of the spheres of attraction; it is far richer than these. In the former case the characteristics, activities, and peculiarities of the branches of production and the relations of the economic and social life are of primary importance, in the latter the relations of the economic, social, and cultural life are only added up.

b) As regards its function, the microarea is a territorial unit of production. On the other hand, the sphere of attraction, owing to many of its elements, cannot be considered such a territorial unit.

c) The spheres of attraction may change without the boundaries of the economic area being affected thereby, e. g. by the transfer of a directing center, the opening of a certain type of school, or the establishment of a larger department store, etc. This is not true, however, the other way round.

d) Within one microarea there are even several centers of attraction, usually subordinated to each other, but equally large centers with divided functions are also often found. This is why the two systems cannot even practically be identified.

The differences enumerated do not mean that there are no points of contact between the two factors. Just in the case of the microareas very important similarities are also found. Both factors are territorial forms of the economic and social activities; therefore many phenomena change with the distance from the centers determined by the transportation facilities. This similarity makes it possible for us to use the spheres of attraction as the most important factors in determining the microareas. There are not only direct, but also indirect points of contact between the economic areas and the spheres of attraction. For instance it is well known how close are the relations of the spheres of attraction with the administrative division, since the county and the district are determinants of a number of elements of attraction, and conversely, the directions of attraction have been taken into consideration in the determination of the boundaries of the above-mentioned units. The administrative units perform not only administrative and cultural functions, but also some directing functions in the economic life. Therefore it is not accidental that the aforementioned two factors, the sphere of attraction and the district division, approximate best the microareas territorially.

8. The relation between transportation and the microareas

The economic area as a territorial unit of production is a nonsense in itself; it can fulfil its task only together with the rest, and in harmony with them. The historically developed internal and external production and trade relations are in fact the form of existence of the areas, and their instrument is the transportation network. From this it follows that the analysis of the transportation network and of its function is closely connected with all taxonomic units of the economic area. There are qualitative differences between the grades; consequently the character of the relations and the role of transportation are different on different levels.

The different branches of transportation play different roles in coping with the passenger and goods traffic of the microareas of the southern part of the Great Plain.

Water traffic, though it affects a few microareas, is nowadays of little impor-

tance in the process of forming areas. In the trade between the microareas or in the internal trade it participates so little, that it is a negligible factor. Historically, it promoted the development of Baja, Szentes, Csongrád, and especially Szeged; attracted several industries, and participated in the transportation of goods (chiefly timber, grain, building material, salt) to a far greater extent than now. Before the coming of the railroads, but also later, it facilitated the marketing of the grain grown in the southern Great Plain. The steam mills appearing in the last century in Szeged and other towns of the southern part of the Great Plain meant the beginning of capitalist industrialization and the formation of areas, and the waterways certainly played an essential role in this process.

According to the plans of development the barrages to be built on the Tisza will improve also the transportation facilities, and this will mean a change especially in the traffic of goods of the microareas of Szeged and Szentes. The building of the Rhine—Main—Danube-canal will change also the transportation-geographic position of the valley of the Danube. Besides this, with the building of the Danube—Tisza canal, the connection of the two water systems creates a single waterway, the relation between the areas along the two rivers will improve, and it is to be hoped that this will create new possibilities for increasing water transport (e. g. the coal, wood, steel, stone, etc. of Borsod county will then reach the consumers along the Tisza and perhaps even in Budapest by water).

The gigantic constructions here mentioned serve of course other purposes, too: irrigation, water supply, energy production, all of them very important elements and conditions of a long-term development of the area. Transportation will be affected only in so much that the possibility and volume of water transport will increase: at the same time with the boom of industry and agriculture it will set new tasks to the other branches of transportation, too.

Railroad transport, being of a massive character and conveying goods over greater distances (thereby being connected chiefly with the specialization of the areas), accounts for a considerable proportion of the traffic. This function of the railroads is independent of the grade of the areas, for it appears in all areas as a requirement of specialization, the products of which must be transported usually over great distances. Besides the general laws, a contrary tendency also manifests itself. The narrow-gauge railroads in the southern Great Plain (near Szeged, Kecskemét, Orosháza, Mezőhegyes, etc.) serve exclusively the internal traffic in goods of the microareas. The standard-gauge trains perform an important economic function by carrying the commuters.

From the point of view of the development of the microareas the role of the railroads is a double one: on the one hand they facilitate specialization, on the other they tackle a part of the internal goods and passenger traffic.

It follows from the peculiar configuration of the railroad network of the southern part of the Great Plain that with the exception of the valley of the Danube all the areas are relatively well provided with railroads ensuring relations in all directions. A homogeneous network is missing only in the area of Baja. Even Baja and Kalocsa are connected with the busier network of the country only indirectly. Among the microareas Békéscsaba lacks direct railroad connections toward Debrecen, and Szeged toward the east. The little goods traffic between Békéscsaba and Debrecen does not justify the building of a new railroad, while the case of Szeged is somewhat more complicated. Before the First World War Szeged was, after Budapest, the most important railroad center in the country. It was here that the lines of Nagyvárad—Szeged—Fiume and Budapest—Szeged—Temesvár—Orsova met. The new borders after the war cut off

both railroad lines and thus Szeged became a border station. The bombings in World War Two destroyed even the railroad bridge and this further impaired the traffic situation of the town. This situation has not changed to this day, and the border traffic on the railroad has not been renewed. As a consequence, the center of the southern Great Plain has excellent connections with Budapest through Kecskemét and toward the north and northeast, but has only devious connections with the southern part of Transdanubia. The Szeged-Baja railroad has so far not been built because the little traffic in goods between the two areas would pay back the considerable sum of investment only in the remote future. Besides the traffic in goods, there are also other factors that justify the building of the line. For instance, a larger amount of goods arrives in the southern part of the Great Plain than is sent out. Thus railroad cars become free, which go back empty. In the case of the southern part of Transdanubia the situation is reversed. The transportation of goods requires many more cars. Therefore part of the empty railroad cars unloaded in the southern part of the Great Plain could be sent to the southern part of Transdanubia, and thus reasonable circulation would be established.

Railroads, as we have seen, generally cope with the external traffic in goods of the microareas and are an indispensable precondition of this traffic, but in the internal traffic they help out only locally and occasionally and they are not indispensable. Consequently, the configuration of the railroad network is of little help in determining the area boundaries.

The function of road traffic is well known. It differs from that of railroads in that it deals with the transportation of goods over short distances; the average distance of transportation by road being 14.5 km, the average distance of transportation is economic when goods of little bulk but of great value, such as first fruits, are to be transported to remote destinations. In recent years the roads have been more and more in rivalry in transporting goods and passengers over long distances. This process, however, has not yet changed the general tendency mentioned above.

In the case of road transportation it is very difficult to separate and locate by microareas the internal and external traffic of goods, as the statistical data refer to counties. On the basis of traffic measurements it has been found that on many of the roads the traffic rapidly increases toward the centers. On the roads with mainly transit traffic this change is relatively smaller, yet perceptible. In consequence of this, the greater part of the motor vehicle traffic is within the microareas, and as it increases nearer the centers, the power of attraction can be measured through the road traffic, especially the passenger traffic. Therefore it can be used as a factor in determining the area boundaries.

The traffic relations in many respects express production relations; therefore it is not accidental that road traffic indicates both the main direction of the relations and the territorial concentration.

It follows from this peculiarity of the road system that its influence on the internal life of the microareas is much greater than that of the railroad. The network of roads and the time zones of the accessibility of the centers are important elements of the investigation of commuting. Experience proves that the extent of commuting is directly proportional to the attraction of the centers, and inversely proportional to the time zone, (which of course does not mean that it depends only on these factors,) i. e. it decreases with the increase of the distance (or more precisely, of the traveling time). This influences the extent of out-migration, the relayering of the population, and the use of manpower. Further, through the man-

power and the possibility of selling, it influences the structure of agriculture as well as a number of demographic phenomena, the development of the settlement network, the decrease in the population of outlying areas, etc. These relations can, to a limited degree, be demonstrated also in the case of the railroads.

The process here described appears in territorially differentiated form depending partly on the state of development of the industrial centers, partly on the influence of other factors (e. g. local industry, scale of the ancillary plant of the cooperatives, the structure of agriculture, traffic conditions, etc.). It is most manifest in the microarea of Szeged, but it can be found in a smaller or greater measure in all the microareas. The study of these relations is very important not only for determining the boundaries of the microareas, but also for judging the development of the whole economic life and the prospects, and, as we have seen, the analysis of the road system and traffic helps in this.

Determination of the boundaries of the microareas

The southern part of the Great Plain is a mesoarea, the industrial development of which was very slow for decades. After World War Two this development became accelerated, but it has gained vigorous momentum only in our days. By virtue of its regional differences, this process makes it possible for us to fully measure its influence and thus try to determine the territorial unit of the microareas.

In the foregoing I have described the factors that are indispensable in the determination of the boundaries of the microareas. The problem is how qualitatively and quantitatively different economic and social processes and phenomena can be considered together so as to enable us to describe the boundaries of the areas in an exact manner, reducing the influence of subjectivity to a minimum.

Differently from the administrative division, the areas cannot be considered rigid, closed systems, but dynamically developing and changing territorial economic units.

The boundaries, or rather border zones, of the microareas are often indistinct, and in drawing them we are obliged to decide on the status of the area on the basis of the different centers. This method can be used only occasionally and cannot be generalized. For the investigation of the border zones the adding up of all the area-forming factors is needed.

It is impossible to sum up mechanically the qualitatively and contentwise different economic and social factors, but it is not even necessary, for it would not express anything. If their maps prepared separately were drawn on top of each other, the resulting map would be nearly impossibly confused on account of the many overlappings. Our task is above all the analysis and explanation of the changes and interrelations. Consequently, this is what we must look for in measurable form in all factors. The area-forming factors are different in their functions, but they have this in common that all of them change, develop, and influence each other. The change is territorially different, and among a number of relations and influences the influence of the center through various transmissions is the strongest. The development of industrial concentration influences the traffic, the size of the population of the surrounding settlements, etc. Depending on the size and attraction of the center this process weakens with the decrease of the distances (accessibility). Thus the common features, that is the dynamics of change and development, must be summed up. The intensity of the change and development

can also be expressed in numbers and can even be summarized for each settlement separately. The index so obtained brings us much nearer to the determination of the microareas.

Further the question is whether this in itself is sufficient. Or is this the most important index that we need? A qualitative index like this is, of course, not sufficient in itself, although it brings us nearest to the problem.

In the following the causes, content, and trend of the changes must be investigated, and on this basis territorial units can already be distinguished with absolute certainty. This work can practically be divided into the following phases:

a) Determination of the nuclei of the production complexes. These coincide with the centers of attraction and play a central role on some level in the areas. We can consider as the nucleus of the microarea that production concentration which is able to establish series of interrelations between the economic and social phenomena so that the development of the area thereby connected with it differs in many respects from other areas and develops a life peculiar to it.

b) *Delimitation of the areas in space.*

This can be done by summarizing the zones and spheres of attraction as shown by the indexes described above.

c) The centers of the areas must be classified and their connections determined. Some microareas, e. g. the valley of the Danube, the microareas of Baja, Kalocsa, Békéscsaba, Gyula, Sarkad, etc. (have even several centers, which all have their own small spheres of attraction. The connections of these territorial units can be determined on the basis of their production profiles and production, trade, and traffic relations.

d) Survey of the natural and social resources of the microareas, exploration of the trends and peculiarities of development.

The objectives of these stages of investigation are to gain a thorough knowledge of the microareas and to explore their boundaries, as these two tasks are inseparable.