

SOME RELATIONSHIPS BETWEEN ECONOMIC REGIONS AND COMMUNICATION FACILITIES IN HUNGARY

BY GY. KRAJKÓ

Researches concerning economic regions in this country were begun after the Liberation and so they can be traced back for one decade and half only. After the very remarkable results arrived at early in the 1950's a few years' pause followed until the recent years when the problem came again to the fore. Besides the elucidation of a number of theoretical and practical problems, a few hypothetical drafts for dividing the Nation's area into economic regions have also been developed, however no „official” region subdivision is available as of yet.

Under such circumstances it is quite understandable that communication geography — a rather neglected branch of economic geography — could not progress in the 1950's farther than merely raising the question. Reanimation and new results of studies in economic regions have recently created scope for launching a relevant research program within the frame of communication geography.

Being a sectorial discipline, communication geography still regards communication and transports as inseparable parts of the complex of a region's production. The investigation of the relationship between economic regions and communication facilities raises numerous problems in Hungary. Of these the author would like to restrict himself to the consideration of the following few selected examples and aspects.

1. Historically, the combined effect of the development of social division of labour, of the progress of market production, of the amplification and intensification of interregional ties and connections has led to an upset of closed natural economies and to the formation of economic regions. In this process, i. e. in the evolution of the social division of labour, the development of the communication facilities has been playing a very important part. The development of the means of production has involved a parallel evolution of the communication facilities. The growth of the volume of production has required the transport of the increasing amounts of raw materials and final produce, this in turn imposed greater and greater requirements to communication and transport. These increasing requirements could be met only by improving and developing the communication and transporting facilities. All these circumstances, of course, involved the increasing of communication velocities and the reduction of transport costs. These in turn have had their impact on

production, as this evolution of the communication system has made it possible to widen the scope of production, to draw new and new areas and markets into these complex economic activities, and last but not least, it has promoted the development of a division of labour among these areas and, consequently, resulted in a more pronounced specialization of production.

One of the most important features of the economic regions is — contrast with the closed territorial unity of natural economy — that the regions are specialized in the sphere of producing material goods, and, for this reason, they suppose one another's existence and contribution. The specialization of the regions affects the communication facilities in several respects:

a) The progress of specialization of the economic regions involves a parallel growth in the circulation of commodities. Both of these two processes are objective laws of evolution manifested in a tendency. Therefore, sometimes just the contrary to the general law may be the case: e. g. the improvement of coal mining in a region is not followed by a corresponding growth in heavy traffic, if the coal taken from the mines is converted into electric current by local power plants.

b) The specialization of the economic regions defines the composition of the commodities in circulation and decisively influences their tendencies. It is self-evident that an economic region having a mining industry will forward its surplus products — consisting primarily of mined goods — to areas where they are needed, and that it will attract and absorb goods in which some deficiency is felt in the region.

c) The evolution of interregional division of labour influences the average distance of heavy traffic, forcing it to increase constantly.

d) It also markedly influences both the size and direction of the no-load runs in such a way that the goods being transported are usually different in volume and size following the various directions, depending on the ways and means and items of specialization of the individual regions. For instance, transportation of raw materials requires, as a rule more space than of final products.

e) The specialization of the economic regions ensures goods of constant and large-scale character, and as a consequence of this the transportation expenses per unit become less. Therefore, an increase in the specialization of the economic regions generally results in the decreasing of the transportation expenses.

f) Constant unidirectional traffic in mass commodities allows to built up-to date magistral railroad tracks and highways, on which the haulage of goods is quicker and cheaper. Because of the constant mass traffic on these communication lines, their electrification is economically feasible even in areas where the application of electric energy would otherwise be unreasonable due to its expensiveness.

In a socialist economy the complex evolution of the production branches of the economic regions makes it possible to ensure rational proportioning of intraregional and interregional traffics to shorten transportation distances and to reduce overlap in freights, etc. When analyzing the relationships between economic regions and communication

facilities it must not be ignored that there are essential differences in the content of these relationships following the various types of communication facilities. Here the author wishes to mention only the difference between railroad and public road communications.

As a matter of common knowledge, the railroads are primarily means of heavy freight traffic to great distances. The commodities transported on railroads are primarily the products of a region's main economic branches and account for the bulk of interregional heavy traffic. Consequently, the traffic of railroad-transported goods in this country is dependent mainly on the specialization of the mesoregions, being the most important means of the interregional circulation of goods.

On the contrary, lorries and trucks are the means for transporting less voluminous, but more valuable commodities and articles or goods to be carried not to far away. It follows from this particular feature that at of the goods resulting from the specialization of the economic regions, chiefly the less voluminous industrial (devices, instruments, fabrics, etc.) and agricultural (fruit, vegetables, etc.) products are transported by lorries and other types of vehicles; on occasion they are made use of by rather voluminous freights, too such as voluminous stones, gravels, bricks, timbers, etc.) but for local transportation.

The public road communication is — despite its ever increasing role in interregional traffic — first of all dependent on the internal circulation of goods of the individual regions. In other words it accounts for the bulk of a region's heavy goods traffic. Considering the geographic range of Hungary's economic regions, we can conclude that much of the internal traffic relying on the complex nature of these regions is being done by using lorries and other types of public road transportation facilities. (Incidentally, mention must be made of the fact that the role played by carts is still rather considerable.) Consequently, while the freight transportation on railroads is primarily made up of commodities resulting from the specialization of a region, and is the most important factor of the interregional traffic, lorries, trucks, vans, and other types of vehicles are used on the contrary, mostly for intraregional haulage, i. e. they are used for meeting the transportation requirements of the production branches responsible for the complex nature an economic region.

Besides the above-outlined essential *differences* between the two branches of communication, their *unity* also has to be emphasized. Public road communication does, in many respects, add to rail haulage by transporting rail-hauled goods from railroad stations to destination and vice-versa — from deliverer to railroad station.

What has just been is eloquently demonstrated by a tabulation of haulage of various items of goods in two different counties (*Table 1*), where a few essential items of interregional trade (fruit, timber, etc.) have been indicated, but the majority of the items represent railtransported goods (stone, coal, timber, cereals, etc.) and intraregionally circulating goods (brick, roof tile, cereals, sugar-beet, etc.). In this same region the bulk of rail freightage is constituted from the main articles produced in the respective region (wheat, meat, fruit, vegetables, etc.) and by goods coming from another region (coal, stone, timber, etc.).

The intrinsic objective relationship (unity and difference) of the communication branches under consideration are important in many respects:

TABLE 1.
Virtual data of heavy goods traffic in 1966

Name of transported commodity	Békés County		Bács-Kiskun County		Csongrád County	
	tonnage	%	tonnage	%	tonnage	%
Coal	202,085	8.4	204,976	6.1	246,265	7.7
Stone	463,332	19.3	302,531	9.1	372,769	11.6
Other items of this type	36,582	1.6	90,615	2.7	86,718	2.7
Gravel, earth, sand, slag	645,311	22.8	1,203,724	31.1	1,063,267	32.9
Total	1,248,310	52.4	1,801,846	54.0	1,769,019	54.9
Rolled steel	21,099	0.9	27,209	0.8	94,113	2.9
Crude oil	16,303	0.7	2,203	0.1	4,138	0.1
Fertilizers	821	0.1	17,272	0.5	25,264	0.8
Cement	44,893	1.9	61,388	1.8	71,228	2.2
Brick, tile	106,477	4.4	88,977	2.6	98,545	3.1
Timber	58,749	2.4	65,253	2.0	66,909	2.1
Other items	41,912	1.7	1,719	0.1	115,899	3.6
Total	290,254	12.6	264,021	7.9	476,096	14.8
Milled goods	50,934	2.2	24,807	0.8	40,231	1.3
Cereals	47,057	2.0	30,086	0.9	42,229	1.3
Coarse grains	35,388	1.5	12,588	0.4	24,153	0.7
Potatoes	1,570	0.1	17,975	0.5	10,104	0.3
Sugar-beet	75,108	3.1	32,111	1.0	61,890	1.9
Vegetables-fruits	113,522	4.7	211,039	6.3	147,318	4.6
Milk and other dairy produce	1,011	0.1	20,004	0.6	13,657	0.4
Other types of food	208,660	8.7	251,325	7.5	184,130	5.7
Total agr. prod.	533,250	22.4	599,925	18.0	523,712	16.2
Burnt lime	9,731	0.4	15,014	0.5	12,497	0.4
Cement	29,915	1.2	30,816	0.9	36,945	1.1
Others	282,838	11.8	626,783	18.7	406,840	12.6
Total miscellaneous	303,467	13.4	672,613	20.1	456,282	14.1
Total	2,394,253	100.0	3,338,405	100.0	3,225,109	100.0

Average distance of transport

12.5 km

13.3 km

14.5 km

a) Besides ensuring a rational proportionality between intra- and interregional trade, this relationship is relied upon in the co-ordination of the traffics of the two branches, in an attempt to obtain rational distribution of freightage and passenger traffic.

b) Much of the intra- and interregional heavy traffic of the rather poorly industrialized, agricultural regions of Hungary includes items

that could be economically transported even by automotive facilities. Consequently, the present-day inadequate communication facilities existing between regions such as the northern Trans-Tisza Region and the southern Trans-Tisza Region or between the latter and the southern Transdanubia have to be improved by public roads construction rather than by railroad development. (This is supported also by an analysis of heavy traffic between these regions, a problem to be discussed later in this paper.)

c) Taking into account the vehicles starting from the centre, we can use the relationship between complexity of mesoregions and vehicle transport — a very important index — for studying the sphere of attraction of the region's centre.

It is evident from the above that in outlining economic regions and improving their economic life, it is very important to develop an adequate communication system, to organize the network of intra- and inter-regional communications, etc. Therefore, if communication geography is to fulfil its real function, it cannot ignore a regional approach.

2. *Communication geography's tasks* coincide in a large domain with those of region researches, particularly in analysing the relationships between intraregional freightage on the hand, and communication facilities, on the other.

Still very uncomplete, the survey of intraregional freightage already allow us to draw a number of conclusions. It is a matter of common knowledge that the industry and communication network of this country are extremely centralized. Correspondingly, intraregional freightage *is also characterised by this centralism*. Particularly striking is this feature in the haulage of agricultural products. The intraregional traffic of agricultural goods shows the following mean characteristics:

a) The final issues in *Table 2*. indicate that the volume of inter-regional traffic in agricultural produce is very low compared to the volume of crop yields. This can be explained by the following factors. First that specialization in agricultural production is very little advanced, apart from a few crop items, — most of this country's regions are almost completely self-supporting in agricultural produce. Secondly, that fodder crops — considerable in amount — are utilized locally within the home region, consequently, the volume of interregional transport in these commodities is quite insignificant (to be more precise, these crops are delivered to other regions in the form of meat, milk, etc., but the volume of these items is considerably lower than that of the fodder crops). Finally, the interregional traffic in agricultural produce is substantially reduced by the production consumption of intraregional plants of light and food industries, which means that the bulk of homegrown crops is transported to other regions in the form of processed commodities, as home-made food produce (sugar, salami, butter, flour, canned food produce, etc.) and light industries.

b) The interregional circulation of agricultural produce is characterized by a marked centralism. Seventy-seven per cent of the products transported out of the various regions goes to the central region, while the share of the rest of the regions is only 23%.

TABLE 2.

Interregional traffic of the main types of agricultural produce (in 10 tons)

Serial number	Regions	Central	S-Tisza	N-Tisza	S-Transdanubia	Danube-Tisza	Borsod	Mid-Transdanubia	Little Plain	Total
1.	Central	—	251	97	116	52	1112	1176	1258	4062
2.	S-Tisza	14329	—	107	176	348	1419	638	328	17255
3.	N-Tisza	19824	1753	—	45	335	3217	368	246	25788
4.	S-Transdanubia	9136	—	—	—	253	—	829	1024	11242
5.	Danube—Tisza	9528	553	33	676	—	543	1006	224	12563
6.	Borsod	6253	50	45	—	—	—	101	232	7111
7.	Mid-Transdanubia	7957	66	—	561	46	—	—	1440	10072
8.	Little Plain	8835	—	152	25	61	—	744	—	9817
Total		75864	2673	864	1599	1095	6291	4862	4662	97910

c) Regions representing minor markets lagging far behind the central region Borsod County, central Transdanubia, the Little Hungarian Plain — reduce the centralism of heavy traffic to a small extent.

d) Transportation of agricultural goods from an agricultural region to another is very poor. This can be explained — besides low specialization of the agricultural production of the regions — by the fact that the majority of the regions can cover their own demands in most of the products from home production.

e) Forty-four per cent of the total volume of transported agricultural goods supplied by the economic districts of the Trans-Tisza-Region. Of course, the contribution of the central region (Pest County) and of Borsod County — the two largest industrial districts — is very limited.

The large-scale deliveries from the two districts of the Trans-Tisza-Region are due to the fact that in these areas the specialization of the growing of mass-transported crops such as potatoes, wheat, rice, etc. is fairly advanced.

In the Little Hungarian Plain just the contrary is the case. The farms of this region grow mass-transported, but comparatively cheap, crops such as cereals, maize, potatoes, fodder, etc. only to meet home demands. Industrial crops are processed by home plants, so it is primarily the less voluminous, but more „valuable” produce such as milk, dairyproduce, sugar, meat, etc. that are transported to other regions.

f) All these facts prove that the development of agriculture including specialization and intensification of agricultural production has a twofold effect on the volume of transported goods: for most of the agricultural products the advancement of specialization increases heavy traffic, but the intensification of agricultural production — though being in itself a kind of specialization — does not, in every case, involve a growth in the volume of transported goods.

The interregional traffic in industrial products differs in many respect from that of agricultural produce. The interregional traffic in

agricultural produce shows no essential difference between the various items. In the case of the industrial and mine products, however, striking differences can be observed. For instance, the routes of haulage of bauxite and alumina are quite different from those of crude iron or steel or coal. On the whole, two main tendencies develop. One of them coincides with Hungary's „industrial” or „energy axis” and concentrates the heavy traffic of three or four economic regions (Borsod, Central, Mid-Transdanubia, and the Little Plain). This is Hungary's main „heavy traffic axis”. This axis or its centre (Budapest) is joined by the — highly central-bound traffic of the other economic regions. The latter tendency is manifested by the volume of products delivered by the industrial plants of the southern Trans-Tisza Region to the other regions of Hungary.

3. From the data of the surveyed plants of the southern Trans-Tisza Region (Table 3) it can be concluded that this region is most closely interconnected with the central region, to where it transports the bulk of the products of each of its particular industrial branch, and from where it receives much of the raw materials for its light-industrial and metal-processing plants. (This amounts to 58.9% of the interregional heavy goods traffic of this area). Its traffic with the northern Trans-Tisza Region, Borsod County, and the Little Hungarian Plain is of equal volume (9.1%, 8.8%, and 9.0% of the total interregional traffic respectively), but the goods transported to each of these regions markedly differ from one another in composition. From Borsod, raw material for metal-processing industry is received by the southern Trans-Tisza Region which delivers, in turn, food, light-industrial articles, and bricks for Borsod. The Little Plain transports raw material for the textile factories of the region under consideration which delivers, in turn, light-industrial products (except those of the food industry). The connections with the northern Trans-Tisza Region are a very specific ones: although a considerable amount of raw materials (rice, sugar-beet, poultry, eggs, etc.) from the food-industry is received, this does not specify the nature of the connections of the two regions, being very provisional. More definite and expressive is the exchange of the products of other industrial branches, for which the northern Trans-Tisza Region provides a steady market.

TABLE 3.

Total trade of the industrial plants of the southern Trans-Tisza Region

Regions	Transport from region %	Transport (of raw materials) to region %	Total traffic %
Intraregional	32.4	57.3	43
Central	38	5.3	33
Danube—Tisza Midregion	3.4	1.5	2.3
Northern Trans-Tisza	6.5	3.6	5.2
Borsod	6.6	2.9	5.1
Southern Transdanubia	4.5	2.6	3.7
Eastern Transdanubia	3.6	1.8	2.7
Eastern Great Plain	5.0	5.0	5.0

Trading with southern Transdanubia is fairly considerable and manifold: in return for the raw materials received from this part of the country, manufactured articles of the light and metal-processing industries are delivered. Connections with Mid-Transdanubia are markedly poorer (4.4% of total interregional). In this case food- and chemical-industry products are delivered in exchange for light-industrial raw materials. Poorest of all are the trade connections with the Danube—Tisza Midregion (4%), a phenomenon due to the identical nature of both of these two regions and to the low standard of consumption in the Danube—Tisza Midregion.

It is evident from this brief cross-section of the heavy goods traffic of the southern Trans-Tisza Region that, despite very poor industrial production and the low level of specialization, the volume of traffic may attain high values even between regions of agricultural nature. Though prominent, the function of the central industrial region (Budapest) is more limited, compared to the case of the agricultural produce, as shown above. With development of national economy, including industrialization of agricultural regions, trade ties will obviously grow stronger. At the same time, a gradual decrease of the prevalence of the central district is expected.

For lack of space the author cannot elucidate the problem from the angles of additional economic regions. Therefore only a few general economic conclusions will be given.

4. *The centralism of the communication network* and heavy goods traffic of Hungary has brought about the following specific features in the economic region-communication ties:

a) All of the economic regions have comparatively good communication facilities (rail and public roads) with the central region. This is favourable for central-region-bound trading, but the demarkation of region boundaries toward the capital is handicapped by this strong attracting effect of Budapest.

b) It results from the specific distribution pattern of the economic regions that in the general circulation of national goods the transit traffic of the individual regions is extremely low. The central region centralizes not only the heavy goods traffic but also a great part of the transit traffic on account of the position of the region and that of the central communication network. This situation increases considerably the overloading of the communication network.

c) Having comparatively good communication ties with the central region, most of the non-central regions have very poor communication facilities with one another. Good examples for this are the connections between the northern and southern Trans-Tisza Regions, also between this latter Region and the Trans-Tisza Region. Circulation of goods between the aforementioned regions takes place for the most part, indirectly.

d) Most of the regions have poor intraregional communication networks. As observed in many cases, minor areas situated far away from Budapest communicate with the capital much better than with their

own centre. This situation makes it, on the one hand, very difficult to draw the boundaries between the regions; on the other hand, it proves to be a great disadvantage when the economic regions are made consistent with administrative units or when they are to fulfil certain administrative functions.

e) The specialization of the agricultural-type regions is not very considerable, therefore their share in the interregional trade is insignificant. The rate of development of the complexity of these same regions is also very slow in many respects, and as a consequence the volume of the intraregionally transported goods is also comparatively small. It is due to such circumstances that e. g. the southern Trans-Tisza Region is — despite its highest density of railroad network — characterized by the lowest volume of rail-transported goods per unit area.

f) The communication-geographic pattern of a region is also a very important factor in the development of the region's heavy goods traffic. For instance, although in the northern Trans-Tisza Region the economy is not more advanced than in the southern Trans-Tisza Region, yet the former enjoys a much higher traffic because of its more favourable geographic situation.

In conclusion, it follows from the above discussion that in Hungary a number of contradictions exist between the needs for inter- and intraregional transportation of goods, and the patterns of the communication network.

These contradictions can be eliminated only by carrying out a thorough analysis of the economic regions and of the expected development of heavy goods traffic. Such an approach at the same time proves that communication can be efficiently studied only if this work is combined with a survey of the geographic distribution of the productive forces, in other words — only by taking into consideration the economic regions.

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