SOME CHARACTERISTIC FEATURES OF THE INDUSTRIAL DEVELOPMENT OF THE SOUTHERN GREAT PLAIN

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The southern (part of the) Great Plain is an area difficult to delimit exactly but one that owing to its quick economic development is becoming more and more distinct. It comprises nearly 20 per cent (18,520 square km) of the area of the country and 14 per cent (1.461 million persons) of its population. It owes its internal unity mainly to the industries based on agricultural raw materials (as canning, meat, sugar, milling and textile industries), the new trends in agricultural production (wheat, maize, industrial plant, grapevine, fruit, vegetable, hog and poultry raising), and the ever increasing and widening economic and cultural attraction of Szeged. The process of developing into a uniform area has been greatly favored by oil and natural gas exploitation and a few branches of the fast developing light and heavy industries. The unity of the area is further proved by common problems in the development of the industry, the agriculture, the transport and the settlement network as well as in the rational use of manpower. Among the experts dealing with area research it is essentialy an accepted view to class the three southern counties in one economic area.

Before the Liberation the industry of the southern Great Plain was to a great extent decentralized, all its towns had a few small food industrial plants (especially milling, meat, sugar and canning industries) or light industrial plants (hemp, knitwear, shoe, and wood industries), which were chiefly based on raw materials and cheap manpower, but no industrial centers could develop except in Szeged. Among the settlements of the southern Great Plain, Szeged was outstanding both as regards its population and the number of industrial workers. In 1941, 9 per cent of the population of the area and 25 per cent of the industrial workers were concentrated in the town.

The cultural role of the town extended far beyond the boundaries of the southern Great Plain and had a nationwide importance. The town had important milling, hemp, meat, wood, match, tobacco, leather, and shoe industries. The factories of these industries were chiefly based on raw materials and manpower. Some factories were attracted by the possibility of the cheap transport by water (wood and match industries). The industrial development of Szeged was arrested for four decades from the beginning of the First World War and remained approximately on the same level. In the first decade after the Liberation production grew above

all through the enlargement of the already existing factories, the increase
of the number of workers, and better employment of the working time.
It was only the cultural role of the town that increased. This was due to
the fact that in 1921 the University of Kolozsvár was transferred to Sze-
ged. After the Liberation a number of middle schools were established
and the University was essentially enlarged.

The economic stagnation had several causes: in the period between
the two world wars the industry and the agriculture did not develop even
on the national level, and the stagnation of agriculture naturally hindered
further development of the food industry. In the one and a half decades
after the Liberation the speed of industrialization changed radically, but
owing to other unfavorable circumstances the southern Great Plain and
Szeged continued to be in a disadvantageous position. This area is poor
in mineral resources, and there were no energy sources in it either, and
in the period of the quick development of the heavy industry large-scale
industrial development was concentrated first of all in the sectors having
mineral energy sources. The development of the agriculture was very
slow at this time, the character and structure of production and the pro-
duction yields did not change much. Besides this, the position of Szeged
was disadvantageous owing to the nearness of the state border, on ac-
count of which no important investments were made here and because of
the lack of interstate relations with Yugoslavia the through traffic of the
town was stopped. (In addition to this, the traffic going toward Rumania
bypassed it also).

The position of the southern Great Plain and that of Szeged has
changed considerably in the last decade. There have been changes in the
economic policy of the country, and the development of industrially less
advanced areas has centrally been given special attention, and instead of
the branches of heavy industry requiring costly material the branches of
machine industry requiring skilled work have been given preference.
Both principles are extremely favorable for the southern Great Plain,
which is poor in raw materials but has plenty of manpower. The creation
of socialist large-scale farming in the agriculture has not only increased
the basis of raw materials but has also liberated considerable manpower,
and beyond this it has also otherwise stimulated the development of in-
dustry. (For example by the creation of ancillary cooperative plants,
increasing the demand for industrial products, etc.). With the opening up
of hydrocarbon fields, the possibilities of energy and raw material supply
have improved. Trough the normalization of the interstate and social re-
lations with Yugoslavia the position of Szeged has changed favorably and
its through traffic has considerably increased.

Under the changed circumstances the industrial development of the
area has accelerated and in the last decades it has surpassed the national
average. The endeavours of the government organs to develop the industry
of the area have been successful. As a result of this, the ratio of indust-
rial workers between the counties has changed. This is well illustrated by
the cumulated row of those employed in the socialist industry in the dif-
ferent counties (Fig. 1). In 1963 the five industrially best developed coun-

ties (together with Budapest) gave employment to nearly 70% of the industrial workers, while the eight industrially underdeveloped counties only to 15%. By 1969 however, the ratio of the first group had fallen 62.5% and that of the latter group had risen to 18.5%.

The economic indexes of the southern Great Plain show faster development even than that of the other provincial areas. The amount of investments made has risen threefold since 1960 and their national rate has risen from 8.1% to 11.3%. The growth of the industrial investments made was even greater; since 1960 it has risen sixfold and its national ratio has risen from 3.5% to 10% (Fig. 2). The number of industrial workers and their proportion have changed accordingly and the technical
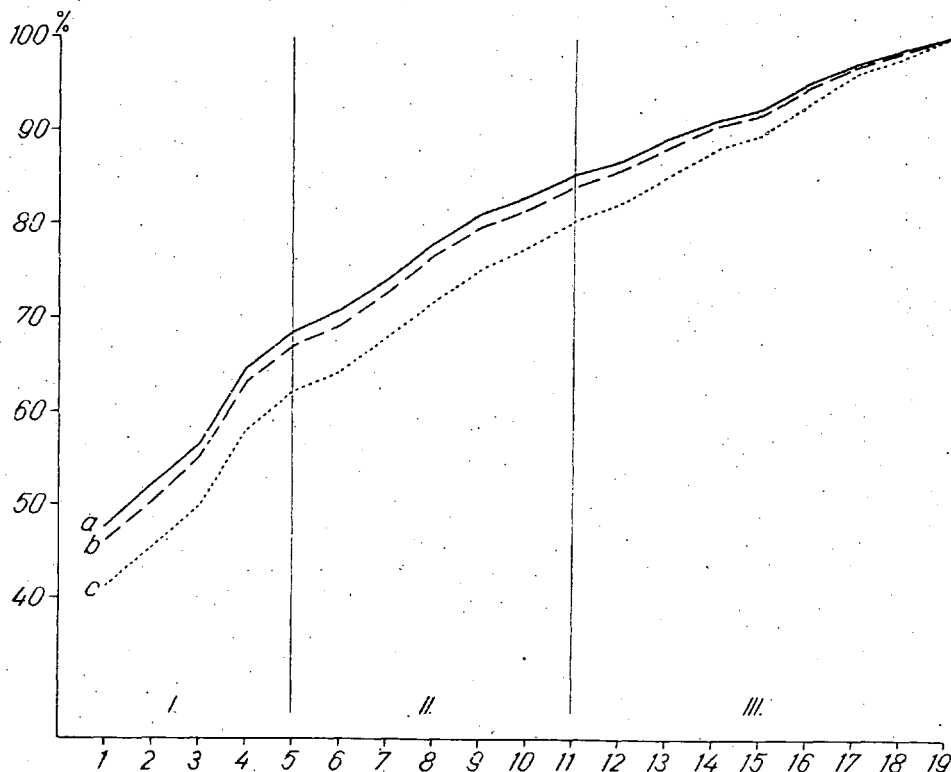

Fig. 1. *The cumulated rank of the different counties according to the number of those employed in the socialist industry.*
I.   Industrially well developed counties
II. Industrially moderately developed counties
III. Industrially underdeveloped counties
I. a) 1963, b) 1965, c) 1969.
1. Budapest and Pest, 2. Komárom, 3. Győr-Sopron, 4. Borsod, 5. Veszprém, 6. Nógrád, 7. Csongrád, 8. Baranya, 9. Fejér, 10. Vas, 11. Heves, 12. Zala, 13. Szolnok, 14. Békés, 15. Tolna, 16. Bács-Kiskun, 17. Hajdú-Bihar, 18. Somogy, 19. Szabolcs-Szatmár.

indexes have also changed. The number of those working in the socialist
industry rose from 120.4 thousand to 176.8 thousand between 1960 and
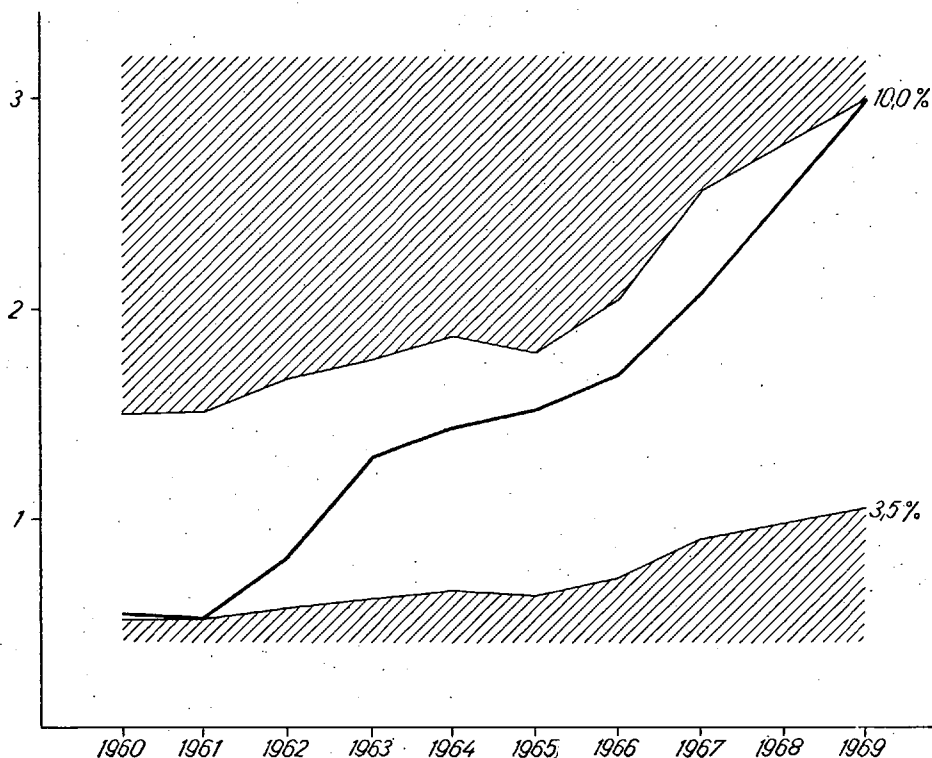1969, the gross value of the fixed assets rose from 8.6 billion Ft to 17.2

Fig. 2. *The growth and national rate of investments in industry (southern Great
Plain)*

billion Ft, and the consumption of electric energy was doubled. Accord-
ingly, its national proportion also changed in the given period. It changed
in order from 8.3% to 10.3%, from 4.5% to 6.4%, from 2.5% to 4.0%
(Fig. 3). These data prove without doubt the accelerating industrial de-
velopment of the southern Great Plain, but at the same time they indi-
cate, in comparison with the national rates, that the greatest change has
been in the number of those employed and the fixed assets.
    The process described above is connected with many problems the
analysis of which is the task of the economic geographer. Such problems
are for instance the migration and reshuffle of the population, the terri-
torial differences in the manpower supply, the development of the net-
work of settlements, the influence of the industrial development on the

agriculture, the changes in the structure of the industry, the territorial differences in the industrial development, etc. Within the limited space of this paper I want to deal with the last two problems in some detail.
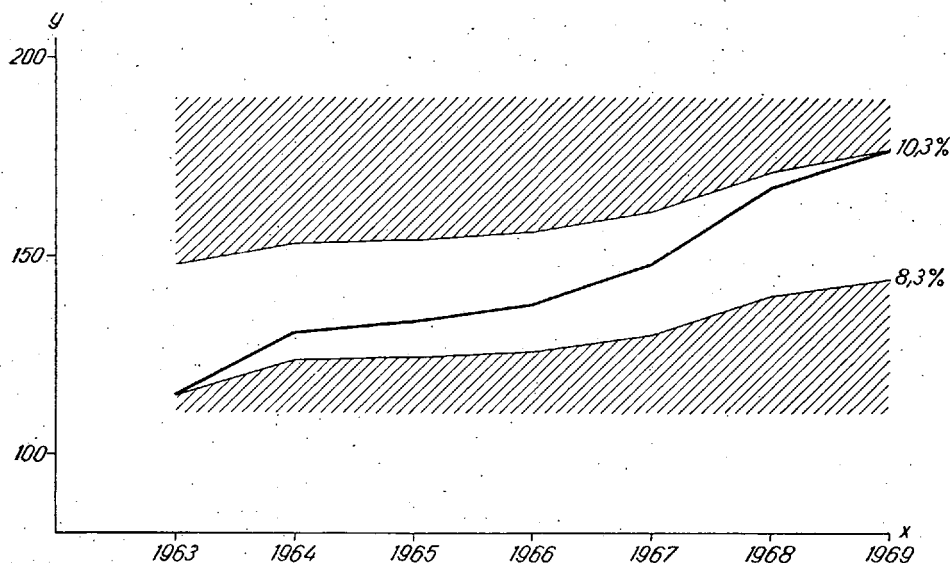

Fig. 3. *The change of the number of those working in the socialist industry and the change of its national rate in the southern Great Plain*
y = 1000 persons
x = year

The Change in the Structure of the Industry

In spite of the rapid industrial development, the agricultural character of the region continues to be a mark distinguishing it from industrial regions. Between 1960 and 1970 the rate of those working in the industry and the building trade rose from 20.5% to 28.9%, the rate of those working in transportation rose from 4.5% to 5.1%, while the rate of the agricultural population fell from 54.2% to 46.1% and the rate of other categories from 15.9% to 13.5%. The rate of the agricultural population is still relatively high, especially in Bács and Békés counties where it amounts to nearly 50%. (Table 1).

The dinamism of the reshuffle has been very strong in the district and if this process continues the numbers of the agricultural and industrial populations will come near to each other, that is in the district rates similar to the present national rates have developed.

TABLE 1.

The population according to the different branches of the national economy (1960 to 1970)

Territory	Pop. total 1000 persons	Industry building trade		agriculture		transport-ation		commerce		other		Pop. total 1000 persons
		1000 pers.	%	1000 pers.	%	1000 pers.	%	1000 pers.	%	1000	%	
Bács-Kiskun	586	106	18.2	347	59.2	27	4.6	25	4.2	81	13.8	573
Békés	468	89	19.2	265	56.6	23	4.8	21	4.5	70	14.9	447
Csongrád Szeged	434	109	25.1	194	44.9	23	5.4	20	4.7	86	19.9	441
Total	1488	304	20.5	807	54.2	73	4.9	66	4.5	237	15.9	1461

Note: The header row "1960" with "Of this" spans the columns between the two "Pop. total 1000 persons" columns.

Table 2.

*The rates of the industrial sectors in the southern Great Plain (1969)
on the basis of profession*

Sector	Number of those employed	%	Share in national %	Per 1000 inhab-itants	Relation of value per 1000 inhabitants to national index
Ministerial	114.972	61.6	8.4	78.6	59.5
Council	18.126	9.6	12.0	12.4	88.5
Cooperative	44.284	23.6	19.1	30.3	137.7
Private	9.785	5.2	14.6	6.6	110.0

The rate of industrial sectors (Table 2) is similar to that of the sectors of agricultural character. In the more concentrated, technically better equipped ministerial sector the rate of those employed, 61.6%, remains below the national index (75.2%); at the same time the council industry (9.6%), the cooperative sector (23.6%), and the private small industry (5.2%) surpass the national ratio. The index of cooperative industry calculated for 1000 inhabitants is much higher than the national value (Fig. 4).

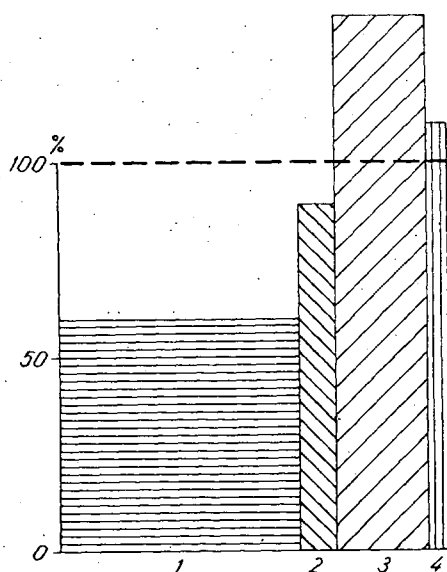| 1970 | | | | | | | | | |
Of this									
industry building trade		agriculture		transportation		commerce		other	
1000 pers.	%	1000 pers.	%	1000 pers.	%	1000 pers.	%	1000 pers.	%
161	28.1	282	49.3	38	6.7	27	4.6	65	11.3
118	26.4	223	49.9	33	7.4	23	5.2	50	11.1
143	32.4	168	38.0	29	6.5	24	5.5	77	17.6
422	28.9	673	46.1	100	6.8	74	5.1	192	13.1

Fig. 4. *The ratio of sectors in the industry of the southern Great Plain (1969) on the basis of the number of workers employed in the industry compared with the national value calculated for 1.000 inhabitants.*
100% = national value calculated for 1.000 persons 1. ministerial, 2. council, 3. cooperative, 4. private industry

Of course, the afore-mentioned data change in each county, for instance the proportion of those employed in ministerial industry is highest in Csongrád county: 67.0%, in Békés county on the other hand the rate of the cooperatives stands out with 32.0% at the expense of the council sector.

In the last years it is the cooperative sector that has developed most vigorously. (In the course of this development its rate grew between 1966 and 1969 from 12.0% to nearly 13.0%.) It follows from the peculiar rates of the industrial sectors of the southern Great Plain that this nationwide tendency affected the district in a greater degree. Thus the outstandingly high rate of industrialization is party due to the rapid development of the cooperative industry.

As regards the structure of the industry and the proportions of its branches, this region is more like the industrially underdeveloped areas of the country. In comparison with the national values the backwardness of the heavy industry is conspicuous. In 1969 its branch share according to the number of those employed amounted to 6.0%, and even according to the index calculated upon the population this region reaches only 40.0% of the national average. (Fig. 5)

The rate of those employed in the heavy industry reflects essentially the same, its value is the lowest among the districts, only 33.0% (while the national value is 59.0%). At the same time of course the tendency of the development must not be disregarded as this is very interesting from the point of view of the district.

1. In the last decade it was the heavy industry among the industrial branches of the district that has developed most dynamically. As a result of this the proportion of the branches has been shifted considerably (Table 3), while in 1963 the heavy industry accounted for 22.0% of those working in the industry, by 1969 this value had risen to 34.0%. The national rate changed similarly, rising from 3—2% to 6.0%. At the root of the rapid development of the heavy industry there is first of all the opening up of the hydrocarbon deposit, and as basically this represents an already formed rate and is hardly going to change in the near future, the rate of growth of the heavy industry is likely to decrease.

2. In four sub-regions of the southern Great Plain the proportion of the heavy industry is nearly the same and so is the rate of its development: in each of them there is a sudden rise from 1967 onward (Fig. 6). This change can no doubt be explained by the development of hydrocarbon exploitation (hydrocarbon exploitation grew to considerable proportions from 1967 onward), but the rise had begun much earlier. It follows from this that the rate of development of the heavy industry of this region surpassing the national average cannot be explained by the hydrocarbon exploitation only; other factors must also have contributed to it. Among others such a factor has been the influence of industrial firms removed from the capital to the provincial areas or the influence of auxiliary firms established in the provincial areas and belonging to industrial firms in the capital. These firms are chiefly branches with a high manpower requirement and they provide employment for the free man-

TABLE 3.

Distribution of those employed in the socialist industry in the different branches
(southern Great Plain)

	1963		1964		1965		1966		1967		1968		1969	
	persons	%	persons	%	persons	%	persons	%	persons	%	persons	%	persons	%
Heavy industry	26.969	22.4	31.457	24.2	33.549	25.2	36.722	26.6	40.171	27.0	54.777	32.5	60.138	33.9
Light industry	66.780	55.5	71.464	54.6	72.946	54.8	74.212	53.9	80.159	54.0	83.630	49.7	85.370	48.1
Food industry	26.651	22.1	27.677	21.2	26.555	20.0	26.822	19.5	28.154	19.0	29.948	17.8	31.874	18.0
Total	120.400	100	130.598	100	133.050	100	137.756	100	148.484	100	168.355	100	177.382	100

TABLE 4.

Those employed in the socialist industry (1963—1969) Southern Great Plain

| County	1963		1964		1965		1966		1967		1968		1969	
	persons	%	persons	%	persons	%	persons	%	persons	%	persons	%	persons	%
Bács-Kiskun	40.355	33.6	44.102	33.7	44.032	33.1	45.134	32.8	48.838	32.9	55.784	33.1	59.947	33.8
Békés	30.517	25.3	33.589	25.7	34.735	26.1	36.241	26.3	40.051	27.0	46.618	27.7	48.855	27.5
Csongrád	49.528	41.1	53.073	40.6	54.283	40.8	56.381	40.9	59.595	40.1	65.953	39.2	68.580	38.7
Total	120.400	100	130.764	100	133.050	100	137.756	100	148.484	100	168.355	100	177.382	100
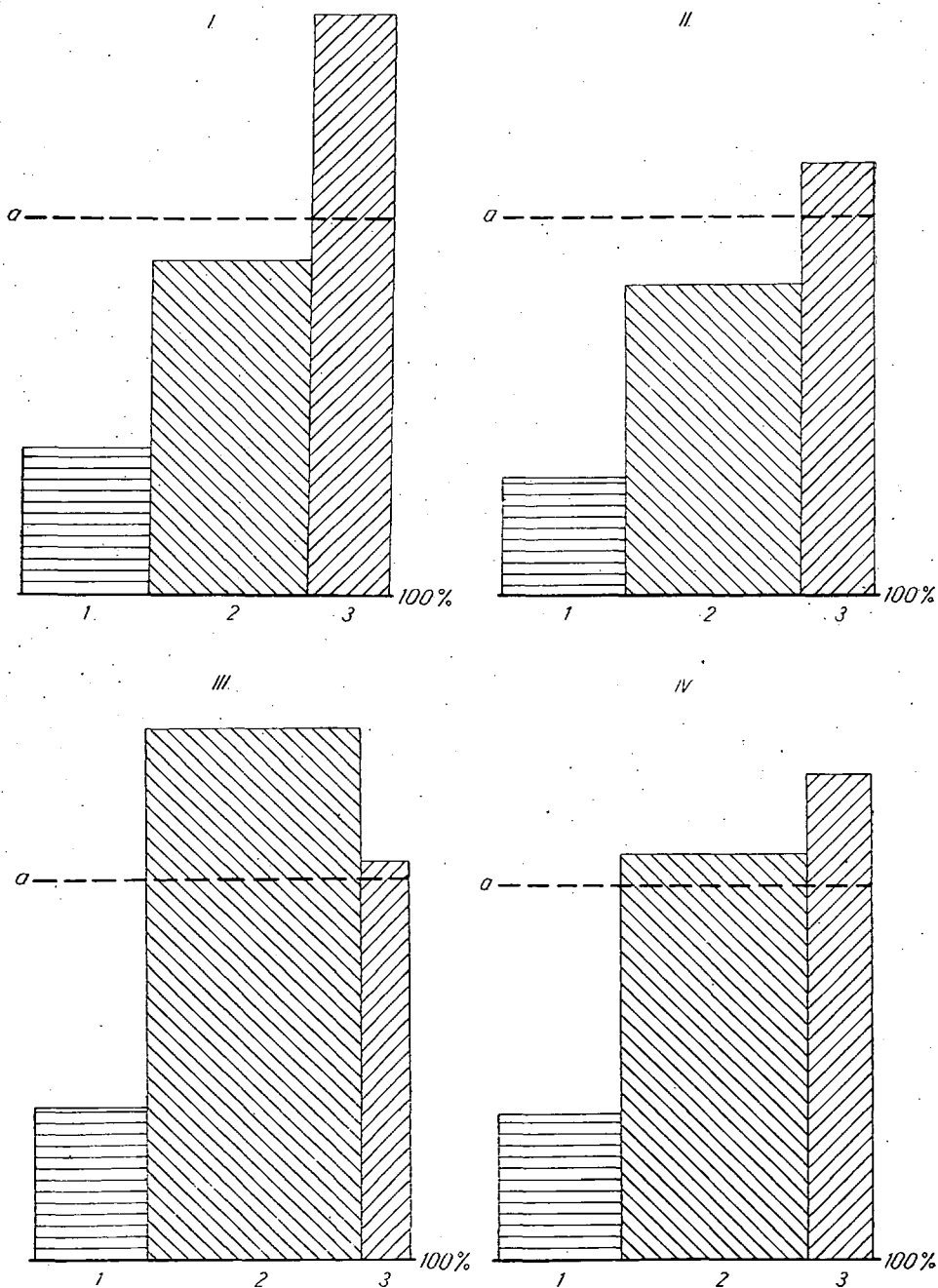
Fig. 5. *The structure of the industry of the southern Great Plain on the basis of the number of industrial workers compared with the national value calculated for 1.000 inhabitants*

power of the region. Their existence has greatly promoted the industrial development of the region. This tendency must be mentioned particularly, because it is an effective and well tested method of the industrialization of the provincial areas, the continuation of which is certainly desirable: on the other hand it must be realized that it is not the only or most important factor of the development of the region and so it cannot replace the development of other branches of industry based on the possibilities of the region.

The industrial structure of the southern Great Plain is rather complicated as all the basic branches of industry on greater or smaller scale are to be found in it. (Fig. 7) Only a few of these branches have developed to acquire a national importance, but even so 130 products are made the rate of which compared with the population exceeds the national average and with more than half of this the southern Great Plain holds an outstanding place.
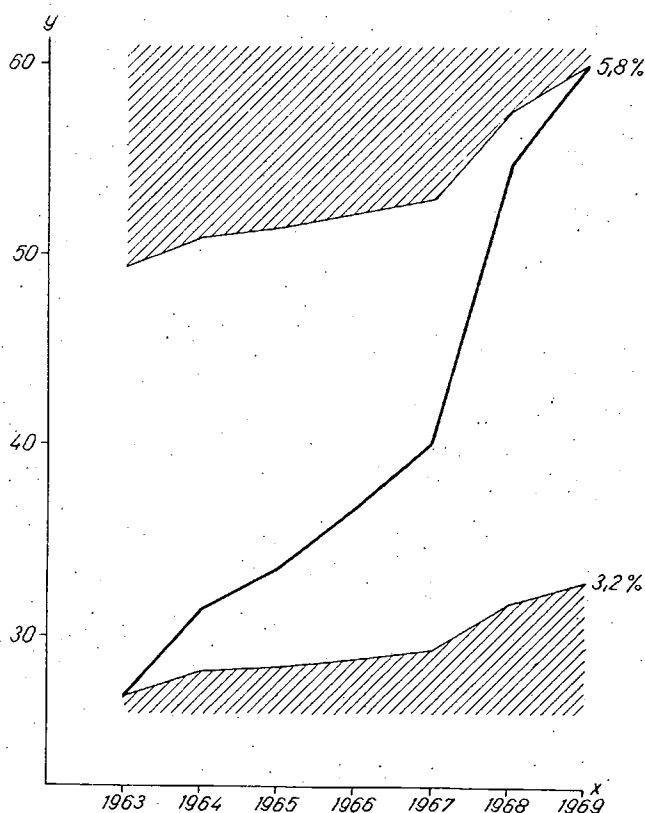
Fig. 6. *The number and national rate of those employed in heavy industry (1963—1969)*
  x = years
  y = 1.000 persons

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Among the branches of heavy industry crude oil and natural gas exploitation is in the first place. These branches gave 51 and 40% respectively of the production of this country in 1969 and their contribution is to grow considerably in the future. The largest part of the crude oil production is given by Csongrád county (68.0%), and the largest part of the
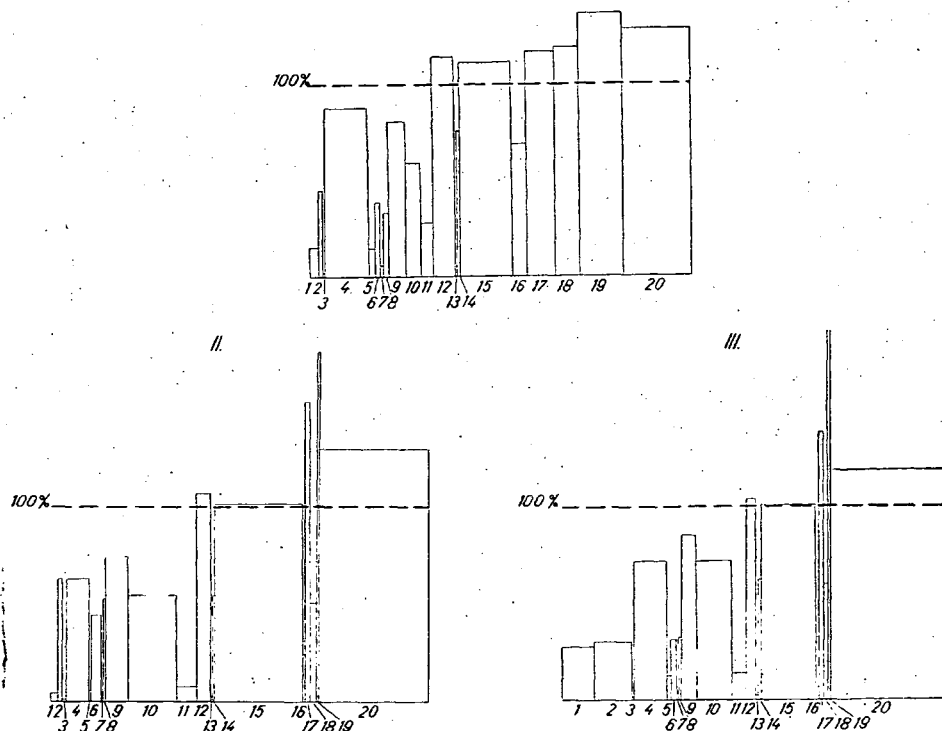

Fig. 7. *The structure of socialist industry (in the southern Great Plain) and its relation to the national values calculated for 1.000 inhabitants*
I.   number of industrial workers
II.   electric energy used
III. gross values of fixed assets
1. mining, 2. electric energy industry, 3. metallurgy, 4. production of machines and mechanical equipment, 5. production of vehicles of transport, 6. electric industrial machine production, 7. telecommunication and vacuum technical equipment production, 8. instrument production, 9. metal mass article production, 10. building material production, 11. chemical industry, 12. woodworking industry, 13. paper industry, 14. printing industry, 15. textile industry, 16. leather, fur and shoe industry, 17. textile clothing industry, 18. other industries, 19. handicraft and domestic industry, 20. food industry.

natural gas production by Békés (65.0%) and Bács (34.0%) counties. It seems that the local energy source that has been opened up is of great importance for the agriculture and the industry. However, its effect did not spread to the development of the other branches of industry because

its transportation to the areas possessing heavy industry is more econo-
mical.

Local exploitation of part of the natural gas wealth in the district is
in progress, especially for communal purposes as well as in the agri-
culture in combination with thermal water and in the industry as an
energy source. Its economicalness is evident considering that the average
transportation distance of the one million tons of coal arriving in the
district is 269.8 km (the national average is 149 km), its average cost of
transportation is 77 Ft per ton, that is twice the sum of the national
average (38.— Ft per ton). In spite of this, changing over to heating with
natural gas is making only a slow progress, and thus the amount of coal
arriving in the district has not decreased significantly and the industry-
establishing effect of the local energy has so far been very little.

For the number and proportion of those employed in Bács county
the production of machines and mechanical equipment, in Békés county
the metal mass products industry rise above the national average. Their
high manpower requirement is indicated among others by the fact that
their proportion according to the technical indexes is much smaller. The
building industry grows to proportions exceeding the local needs in Bé-
kés county (e. g. it provides 15% of the burned brick production of the
country.)

The possibilities of the development of the chemical industry and
precision engineering are a much discussed question. It goes beyond the
purpose of this paper to take a stand on this matter with material of
evidence. We confine ourselves only to mentioning that the conditions
necessary for a greater degree of development of both branches of in-
dustry exist in the district:

For the chemical industry the necessary water and raw material
supply can be secured along the Tisza and the Danube; workers, research
institutes, transport facilities are also available. For the solution of
simpler part tasks in precision engineering there are possibilities in the
villages and small towns where there is still a considerable manpower
reserve. For the solution of the more complicated tasks the situation is
mainly favorable in the industrially better developed towns where skilled
workers are available and also other conditions can be satisfied.

The wood-working industry is more considerable in Csongrád county
where its development has been greatly promoted by the use of the
cheap waterway. Unfortunately this possibility is not being used nowa-
days. The district has no special possibilities for the development of this
branch of industry on a larger scale. (For example the average transpor-
tation distance of the raw material is 265 km and its direction much
agrees with that of the finished products.)

Textile industry is the most important branch of industry of Csong-
rád county. It has made Szeged a center of light industry with its ad-
vantages and disadvantages. It contributed greatly to the industrial de-
velopment of the town, but at the same time it distorted the distribution
according to sex because more than half of those employed in this trade
are women. (It is here that the rate of employment of women is highest

in the country). The problems of manpower supply have become chronic
in the textile industry and for their final solution it is necessary besides
the technical development to widen the branches of employment for men
which would lead to an increase also in the female labor power. That is
to say that the demand is just the opposite of that in the areas of heavy
industry, where the reasonable employment of women is the problem.

Of great importance in the district are the textile, clothing and tri-
cot-weaving industry and the shoe-making industry. They are further
developed by increasing their productivity.

A basic industry in all three counties is the food industry with all
of its essential branches (except beer and chocolate production). The food
industry of the district produces 42% of the slaughtered poultry of the
country, 35—50% of the canned food products, 100% of the ground sea-
soning paprika, 21% of the wheaten flour, 27% of the dry noodles, 19%
of the sugar, and 56% of the salami and Gyulai sausage. The conditions
of the district are optimally suitable for the orientation of raw material
of this branch of industry. This is proved among other things by the
small average distance of raw material transportation (71 km). The rate
of development of this branch of industry is a function of the agriculture,
for it constitutes a close production complex with the latter. The asso-
ciation of the agriculture and the food industry is so close that even from
the point of view of economic geography it is proper to speak of food
economy. Among other things this also proves that the development of a
given area cannot and must not be examined only from the point of view
of industry and the economic levels of the districts must not be identi-
fied with the level of the industry. It occurs in micro districts and some-
times even in larger units that the main problem of progress is the de-
velopment of the agriculture, which when extended, entails the develop-
ment of other branches as well.

Considering the favorable conditions of the agriculture in the sou-
thern Great Plain the development of the food industry is a nearly per-
manent task. A double tendency has in recent times manifested itself in
this area, a tendency that is going to continue. On the one hand modern
specialized branches, such as conserve, meat, and other industries consi-
derably increased their productive capacity by reconstruction or by creat-
ing new plants, on the other hand the cooperatives have created indust-
rial ancillary plants and thus they market their products as semi-finished
or finished articles instead of as industrial raw materials. There are
many contradictions between the two kinds of development, especially
because the ancillary plants of the cooperatives are rivals to the state
industry and the latter, taking advantage of their more favorable wage
system have intensified the migration of manpower and made more dif-
ficult the manpower supply of the state factories. Both farms of the
food industry have not inconsiderable possibilities of development in the
future.

The briefly outlined industrial structure is completed by the han-
dicraft industry and the public supply industry.

No essential change can be expected in the industrial structure of the southern Great Plain in the 70's. The food industry will keep its position, the light industry will lose from its proportion, its place will be taken by heavy industry. Within the heavy industry mining represents already a stable proportion; as regards the chemical industry, the machine industry, within it precision engineering, the telecommunication industry, that is, the engineering branches with high working power requirement, it can be expected that their proportion will grow.

The territorial differences in the development of industry

The rapid industrial development of the last decade has undoubtedly worked toward a substantial decrease of the territorial differences, without eliminating them. The general tendency of development of the district is composed of territorially very different processes and this is naturally concealed by the average figures. From the point of view of the development of the industry the possibilities are different from district to district, but also often within one district (degree of industrialization, the process of the reproduction of manpower, the function of the agriculture, its standard, conditions of communication, water supply, etc.). Besides different conditions the industrial development, when analyzed for smaller territorial units, is of periodic character. The establishment of a mediumsized plant causes a sudden change in the employment figures and the technical indexes of an industrially less developed district. Taking this into consideration I try to demonstrate in the following the territorial differences in the changes of the last 5—10 years.

The growth of the industry of the district has exceeded the national average. The number of those working in the industry rose in 1165 to 1969 by 3%, the gross value of the fixed assets by 73%, and the electric energy used by 56%. These values are different in the different counties. The number of the industrial workers rose much more rapidly in Békés and Bács counties (by 41 and 40% respectively) than in Csongrád county (22.5%). The situation is the same in the use of electric energy. On the other hand, the gross value of the fixed assets presents a reverse picture in Csongrád county, where it grew to nearly its double (by 93%), while in Bács county it grew by 75% and in Békés county „only" by 44%.

This varied rate of growth is in agreement with the possibilities of the district. In Bács and Békés counties, where there is still a considerable manpower reserve, industrialization has been of an extensive character. In Csongrád county, however, it is becoming more and more of an intensive character. (This refers chiefly to Szeged as the growth of employment in the districts and the smaller towns as Makó, Szentes, Csongrád, etc. was similarly high as in the two neighboring counties.) The outstanding rates of Csongrád county and next after it Bács county regarding the growth of fixed assets are explained by the rapid development of the crude oil and natural gas exploitation.

The above-mentioned differences of development have noticeably

changed the rates of the three counties as compared with each other. The rate of Csongrád county regarding the number of those employed (Table 4.) and the electric energy used considerably decreased (by 3%), while regarding the gross value of fixed assets it increased its advantage by 6% at the expense of Békés county (with a decrease of 6.2%).

The differences in the development of the towns and districts are not surprising as their conditions are quite different and the districts represent much lower levels. The number of industrial workers per 1.000 inhabitants is 54.7 persons in the district as against 238.3 persons in the towns. Thus a mechanical comparison of the rates of development leads to unsound generalizations. On the other hand, it makes it possible for us to draw a few conclusions.

In 16 districts of the southern Great Plain the growth of the number of those working in the industry shows considerable differences ranging from 2% to 138% in the period 1965—1969 (Fig. 8). The extremely high values in the case of the districts of Kiskunfélegyháza (139%) and Orosháza (105%) are due to the development of natural gas and crude oil exploitation and the development of small plants based on agricultural raw materials. The unusually high indexes (67 to 78%) of the districts developing at a higher than average rate (the districts of Szentes, Kecskemét, Gyula, Kiskunhalas and Szarvas) find their explanation first of all in the development of the food industry and the cooperative industry. On the other hand, from the slow growth of employment in the districts of Kalocsa (2%), Makó (16%) and Baja (18%) it does not follow uniformly that the industry is stagnant, for in the district of Makó the value of fixed assets rose threefold, the use of electric energy twofold. The situation is essentially the same in the district of Kalocsa too. (The gross value of fixed assets grew by 53%, the use of electric energy by 102%). Only in the case of the district of Baja are all the indexes pretty low. The rapid rise of the technical indexes in the district of Makó is due to oil mining.

There is little connection in the districts between the rise in the number of those working in the industry and the already existing degree of industrialization; only the district of Békés represents a higher level, twice as high as the average, and at the same time a lower growth rate (Fig. 9).

The growth rate of the gross value of fixed assets in the district shows a much more varied picture than we have seen in the case of the number of those employed (Fig. 10). The extreme values are of course due to the considerable amount of investment stocks necessary for the exploitation of crude oil and natural gas. It is interesting that the districts of Orosháza and Mezőkovácsháza figure with even lower than average indexes because the majority of the investments connected with the exploitation of hydrocarbon were made in an earlier period, and regarding the value of fixed assets per head they thus stand far out among the other districts in 1965.

In comparison with the towns the development of industry was in all respects quicker in the districts.
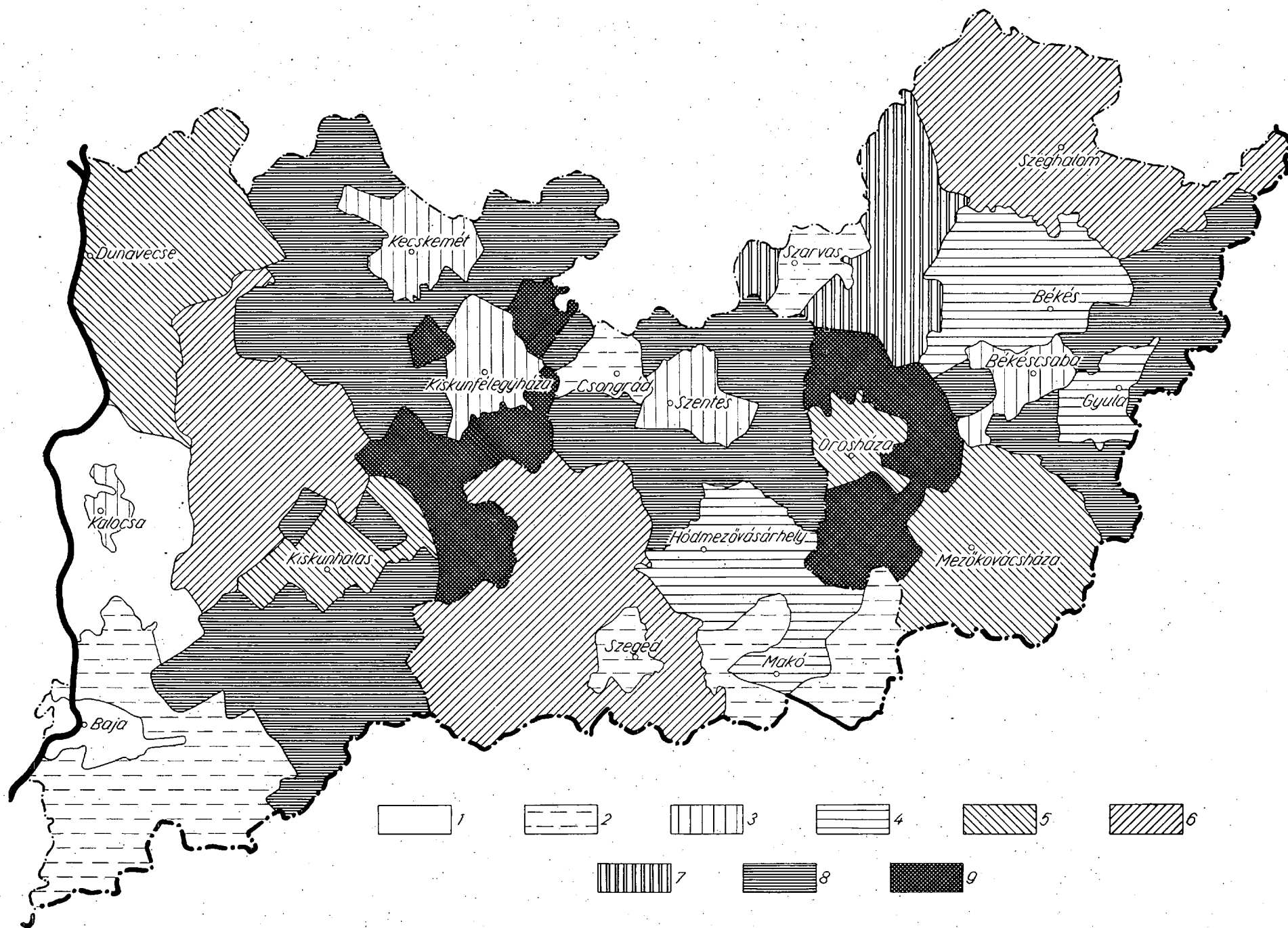
Fig. 8. *The growth of those working in the industry in different districts and towns*
(1965—1969)
1 = 0—10%, 2 = 10—20%, 3 = 20—30%, 4 = 30—40%, 5 = 40—50%, 6 =
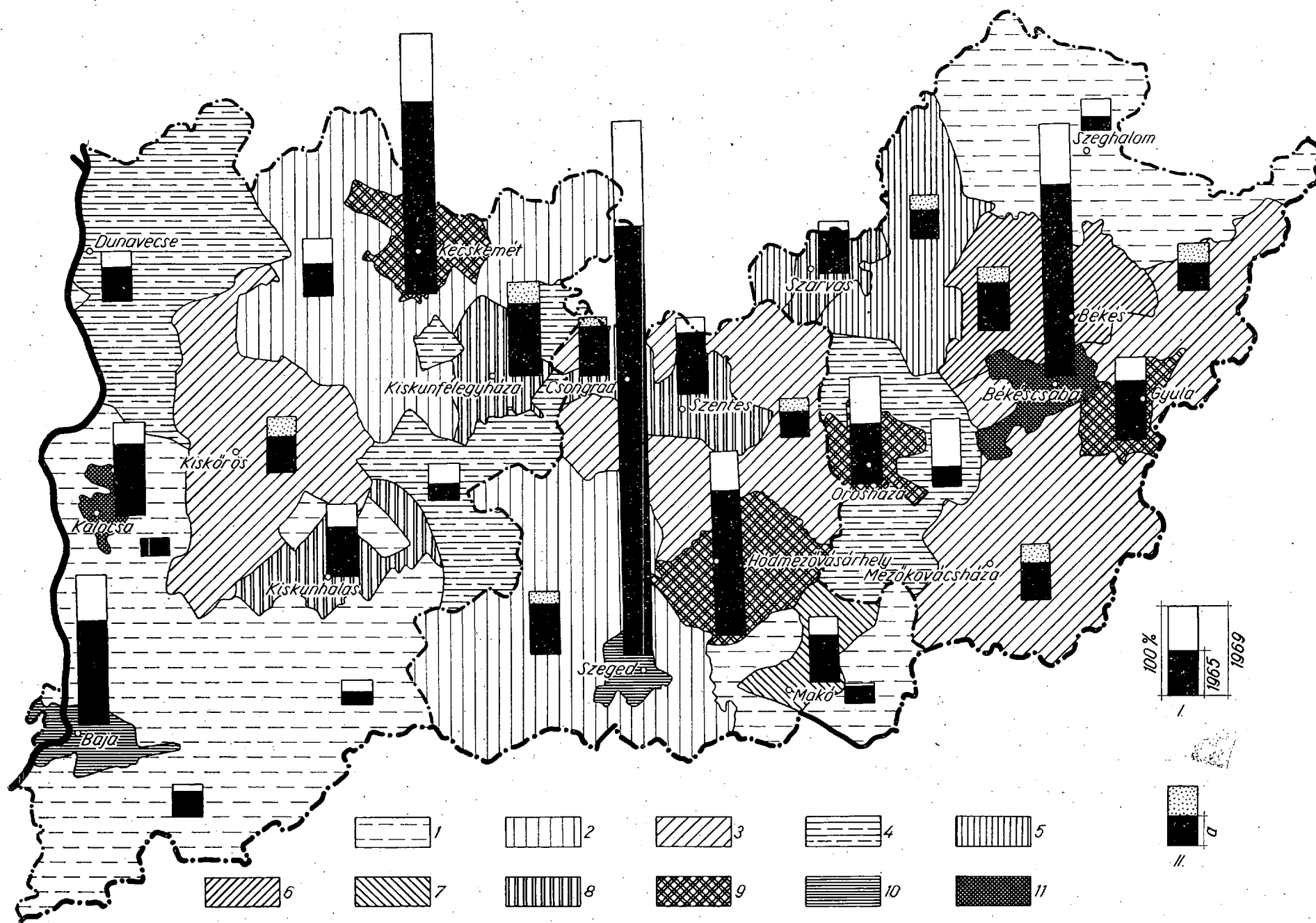50—60%, 7 = 60—70%, 8 = 70—80%, 9 = more than 80%.

Fig. 9. *The number of industrial workers (in 1965—1969) and their proportion cal-*
culated for 1.000 inhabitants (1969)
1 = 40 persons, 2 = 40—50 persons, 3 = 50—60 persons, 4 = 60—70 persons,
5 = 70—80 persons, 6 = 80—90 persons, 7 = 90—100 persons, 8 = 100—150
persons, 9 = 150—200 persons, 10 = 200—250 persons, 11 = 250—300 persons,
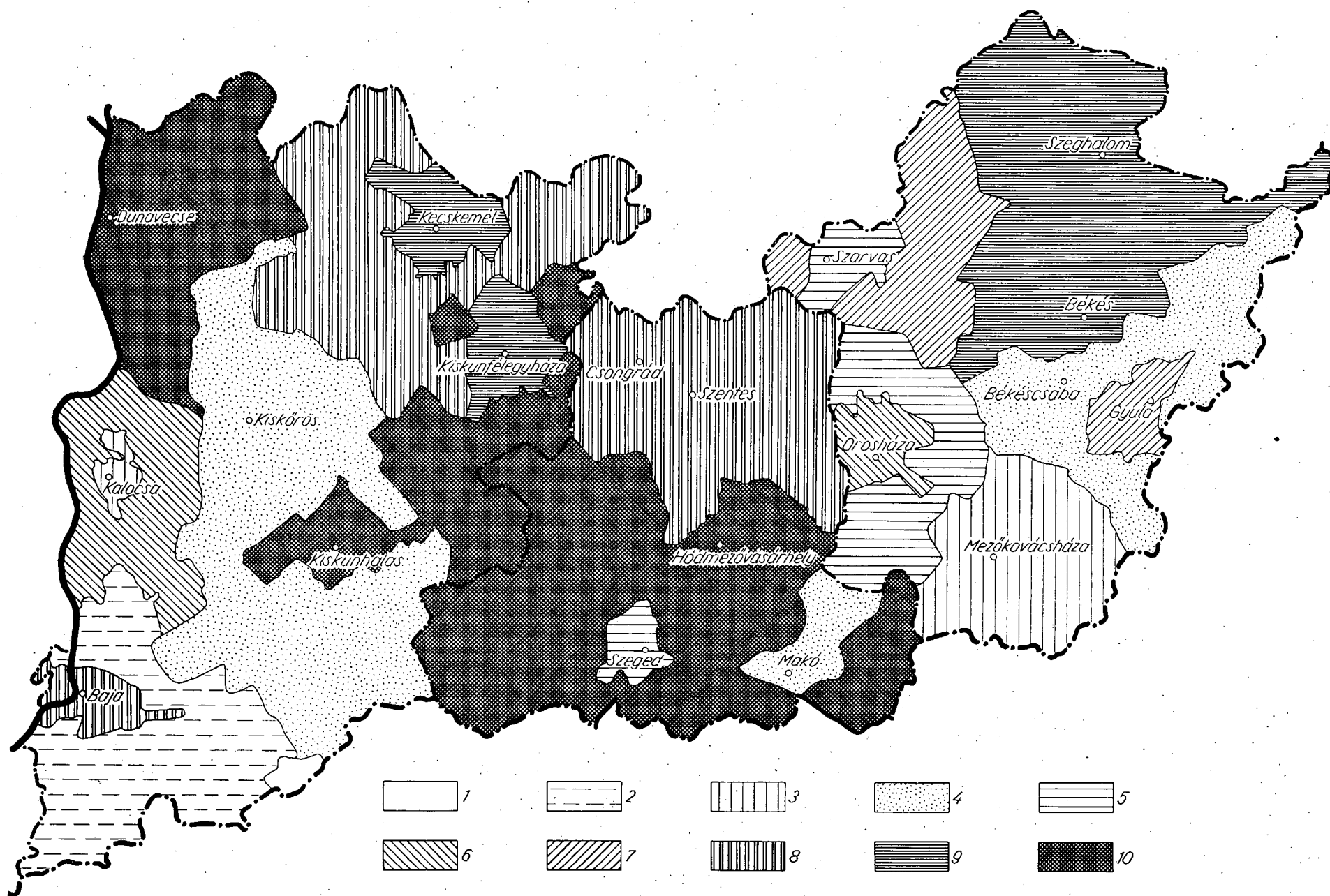12 = more than 300 persons.

Fig. 10. *The percentile growth of the gross value of fixed assets per head of population (1965—1969)*

1 = 0—110%, 2 = 110—120%, 3 = 120—130%, 4 = 130—140%, 5 = 140—150%, 6 = 150—160%, 7 = 160—170%, 8 = 170—180%, 9 = 180—200%, 10 = more than 200%.

The growth of industry in 1965—1969 (Southern Great Plain)

	Electric energy used	Gross value of fixed assets	Number of those employed
Districts	162.1	207	144.1
Towns	148.7	150.7	123.6

In consequence of this the proportions changed in favor of the districts:

	Electric energy used		Gross value of fixed assets		Number of those employed	
	1965	1969	1965	1969	1965	1969
Districts	17.5	21.4	23.9	27.8	23.6	24.8
Towns	82.5	78.6	76.1	72.2	76.4	75.2

It evaluating the figures certain circumstances must absolutely be taken into consideration.

a) The real difference in the given figures is by about 2% greater in favor of the districts because in 1965 Szarvas figures in the data of the districts and in 1969 in the data of the towns.

b) The quick growth of the fixed assets and the associated great rise in the case of the districts are connected with the development of the natural gas and crude oil exploitation. If we set apart the two districts rich in hydrocarbon (the districts of Szeged and Kiskunfélegyháza) then we receive quite different results. Thus for instance the gross value of fixed assets in comparison with the towns fell from 22.5% to 20.6%, the value of the electric energy used remained unchanged at 16%, and only the number of those employed grew. In spite of the fact that in some districts the growth of the number of those employed was very slow (e. g. in the districts of Kalocsa, Baja, and Makó), the data prove that in the majority of the districts of the region the rapid industrial development was of extensive character and took place mainly by the creation of new workplaces.

c) The industrial development of the districts was chiefly based on the free manpower and was intended to employ it. The positive effect of this is perceptible in the substantial decrease of the migration out of the area, although undoubtedly this is not the only cause of the mobility of the rural population.

d) The coefficient of correlation between the number of those employed in the industry (1965) and the growth rate of employment (1965—69) is negative in the region; $r = -0.52$, that is to say that where the number of those employed was greater, the rate of growth was smaller. The number of those employed accounts for 27% of the growth rate.

If the number of industrial workers calculated for 1.000 inhabitants increases by one person, this causes a 0.19% decrease in the growth rate. In the relation of the districts this correlation is much loosed and therefore negligible.

e) Apparently these two processes were at work in the industrial development of the districts; one was the investments connected with the exploitation of hydrocarbon which are of national importance, the other was the cooperatives and the smaller workplaces created by the building of small factories based on the local possibilities, manpower and agricultural raw materials which serve chiefly local purposes. The growth rate of both tendencies is likely to decrease in the future. The number of those employed in the exploitation of hydrocarbon will not grow essentially, and the increase of the number of those working in the local cooperative ancillary plants and in the cooperative industry is also limited. The dimensions of the latter are limited by the manpower reserve and the local market conditions. In case it became oversized, it might disturb the manpower supply of much more productive industry and even agricultural production. The dimensions and methods of socialist industrialization should not be limited to the level of districts and the material means should not be dispersed between the districts. The larger investments must be concentrated on certain places and the main part of the necessary manpower must still be supplied by the agricultural areas. Therefore we cannot approve of the tendency that every district should try by all means to employ the manpower reproduced or become free on its territory. The territorial „redistribution" of manpower can be realized rationally on a higher level than that of the districts, e. g. on the level of mesoregions.

Industrial development is undoubtedly one of the most important elements of urbanization; therefore it is worth while to record the changes that have taken place in the last ten years. The growth of the urban population of the district in 1960 to 1970 remained far below the national average with only 13.3%. However, a very important change is behind this apparently small growth: in 1960 the migration balance of 7 towns out of 14 was still negative, in 1965 it was negative in 5, and in 1970 migration into all of these towns exceeded the number of those moving out. This means that behind the 13.3% growth there is also the modest growth of the population of the smaller towns, but as it is the beginning of a process opposed to the earlier one, it is a very important phenomenon.

The rapid industrial development of the towns of the district is indicated by the growth of the number of those working in the industry per 1.000 inhabitants. This number was only 139.5 persons in 1960, 183 persons in 1965, and in 1969 it was already 228.5 persons, which is a change of 63%. In terms of absolute numbers the growth was somewhat faster: 71.565, 98.976, 132.373 persons respectively, which means a change of 85%.

The quick industrial development makes itself felt of course first of all in the growth of the urban population, but later on it will favor-
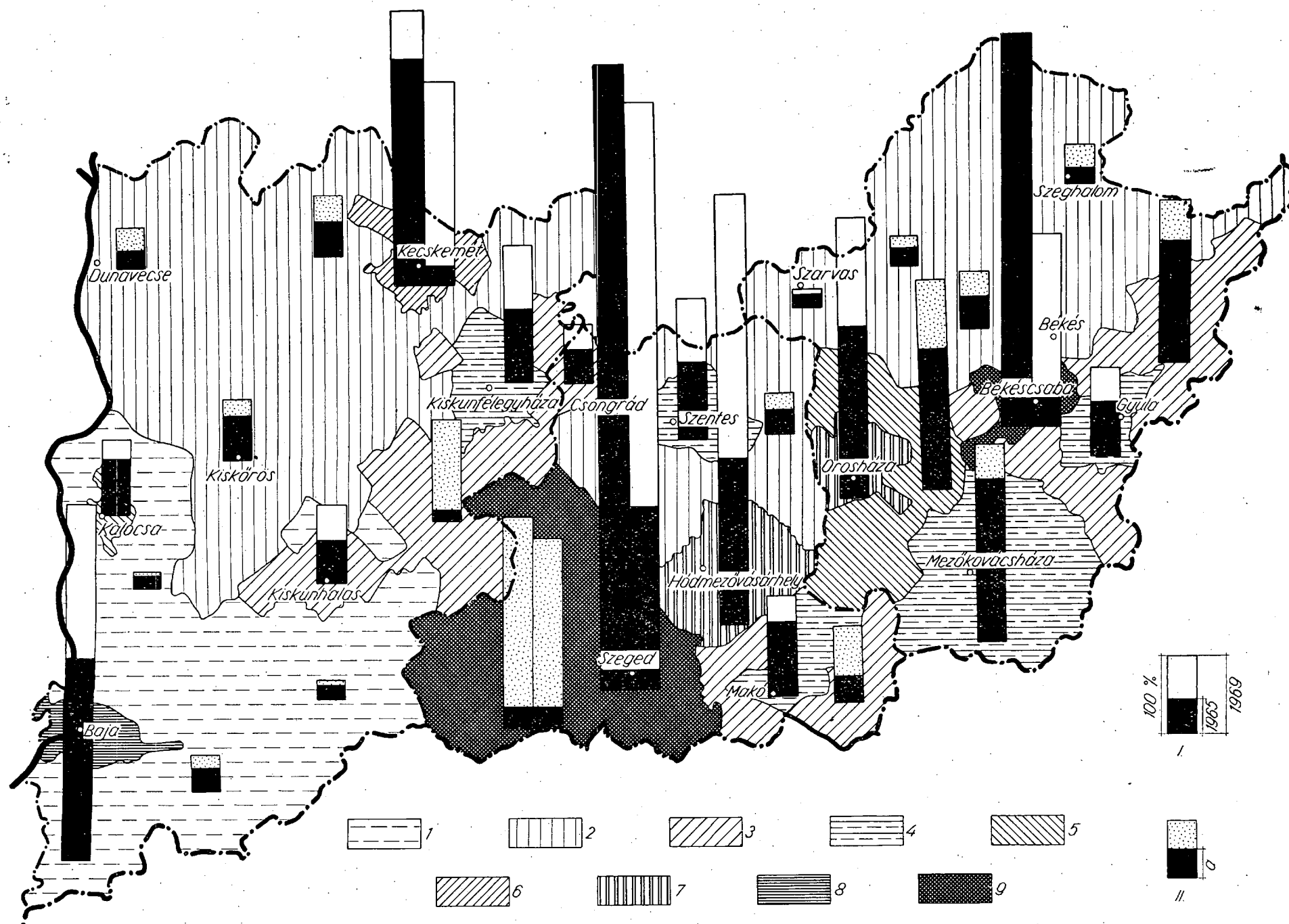
Fig. 11. *The gross value of fixed assets per head of population (in 1969) and its rate of growth (1965—1969) in the southern Great Plain*
I. in town, II. in districts
1 = 2000 Ft, 2 = 2000—4000 Ft, 3 = 9000—10 000 Ft, 4 = 10 000—15 000 Ft, 5 = 15 000—20 000 Ft, 6 = 20 000—25 000 Ft, 7 = 25 000—30 000 Ft, 8 = 30 000—35 000 Ft, 9 = more than 35 000 Ft.

ably influence the process of reproduction of the population, the compo-
sition of the population, and many factors of urbanization.

The regularity in the rate and dimensions of the industrial growth
is primarily connected with the order of magnitude of the towns (Table 5).

Table 5.

*Correlation coefficient of the towns of the southern Great Plain between
the number of the population and the development of industry*

	With Orosháza				
	Population	Employment industry	Electric energy consumption per head	Motive power per head	Value of fixed assets per head
Population	—	—0.61	0.35	0.52	0.24
Employment in industry	—	—	0.10	—	0.18

	Without Orosháza				
	Population	Employment industry	Electric energy consumption per head	Motive power per head	Value of fixed assets per head
Population	—	—0.61	0.58	0.74	0.34
Employment in industry	—	—	0.52	—0.85	0.09

(In consequence of the establishment of a glass factory Orosháza
figures with extreme values in all respects, but especially in the techni-
cal indexes; this is why it is proper to set the town aside in determining
the general tendency.)

a) The growth of the number of those employed in the industry is
inversely proportional to the order of magnitude of the towns. The coef-
ficient of correlation between these two factors is r = —0.61, i. e. the
number of population influences the change in industrial employment in
a measure of 37%. If the towns are classified in order of magnitude it
will be seen that the growth was most intense in the lower categories
and weakest in the higher categories.

b) Directly proportional to the order of magnitude of the towns is
the growth of motive power. The coefficient of correlation between these
two factors is r = 0.74, that is, the connection is fairly close. (Table 6).

TABLE 6.

The growth of the number of industrial workers and the growth of motive power in the urban areas of the southern Great Plain in order of magnitude

Population group (1000 pers.)	Year	Total population	%	Number of industrial workers	%	Industrial workers per 1000 inhabitants	%	Motive power per worker	%	Without Orosháza
100—120	1960	98.942		23.225		230		1.2		
	1965	113.594	114.8	29.534	127.1	266	115.6	1.7	145.9	
	1969	118.490	104.3	34.230	115.9	288	108.3	2.6	150.5	
Total	1960—69		119.7		147.3		125.2		219.6	
50—80	1960	170.546		24.313		143		1.4		
	1965	177.813	104.2	32.898	135.3	185	129.3	1.8	123.8	
	1969	185.689	104.4	44.220	134.4	238	128.6	2.1	115.3	
Total	1960—69		108.8		181.8		166.4		142.8	
30—40	1960	157.330		15.205		96		1.3		
	1965	159.281	101.2	22.200	146.0	139	144.8	1.7	131.2	118.2
	1969	164.422	103.2	31.355	140.7	190	136.7	2.3	137.7	120.5
Total	1960—69		104.5		205.5		197.9		180.9	143.3
16—30	1960	104.098		10.068		96		1.3		
	1965	106.536	102.3	16.426	163.1	154	160.4	1.5	105.7	
	1969	110.526	103.7	22.668	130.0	205	133.1	1.4	95.9	
Total	1960—69		106.1		225.1		213.5		101.4	

c) The correlation can be demonstrated also between the
1. size of the towns and the use
2. of electric energy per worker and the growth
3. of the gross value of fixed asset,
($r = 0.58$ and 0.34) but it is somewhat weaker than in the case of motive power.

d) It follows logically from what has been said that the rate of the growth of motive power was contrary to the rate of growth of the number of the industrial workers; the correlation coefficient between the two is $r = -0.84$, its value is negative, i. e. it is inversely proportional.

It appears from the table that from the point of view of the growth of the number of industrial workers practically three groups form similarly to the network of settlements: the group of towns with 20—30 thousand inhabitants where the growth of the population was very rapid, but the growth of the motive power calculated for those employed was very small: then the group of middlesized towns (with up to 50—80 thousand inhabitants), where the industrial development is better balanced and the change of both indexes comes near to the average of the region, and finally in the case of Szeged the slow growth of the number of industrial workers was combined with a very rapid growth of motive

power. The conclusion that can be drawn from the tendency here de
scribed in important from several points of view:

1. The industrial development of the region in the 60's was quite
different from what it had been in earlier decades. It was first of all the
small towns (with 20—30 thousand inhabitants), i. e. 10 out of the 14
towns of the region, that suffered on account of the slowness of the
industrial development of the earlier period. The effect of this is still
strongly felt in the reproduction of the population. (In 1969 the figures
of the natural growth of the population were negative in 5 towns of the
country and all of them were towns of this region). The natural growth
of the population in the sixties, as compared with the preceding decade,
decreased in a much greater measure than the national average. (from
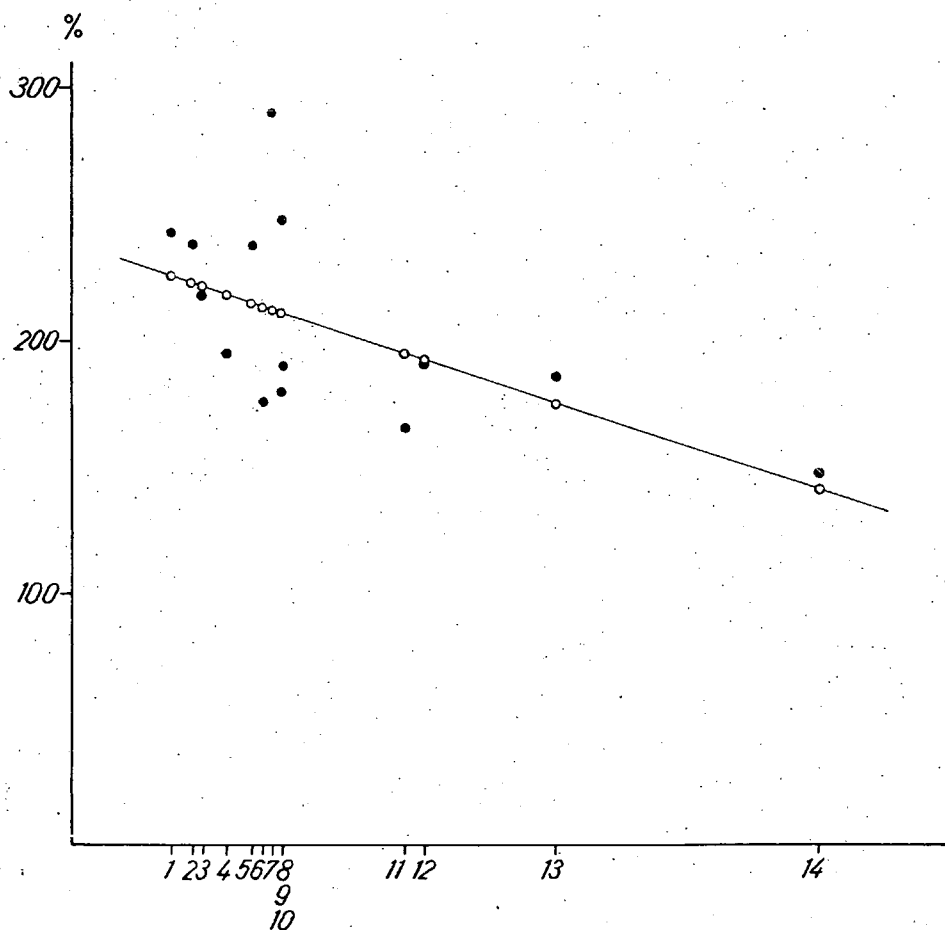5.4% to 1.1%).

Fig. 12. *The correlation between the changes in the population and industrial employ-
ment*

In consequence of emigration from the area the proportion of the older age groups grew and of course the mortality rate index too, but as this has been exceeded in the last years by the number of births, a tendency contrary to that of the preceding decade begins to prevail, i. e. the natural growth of the population is slowly increasing. It is interesting that this process varies according to the categories of the towns. In the case of Szeged the mortality rate has remained unchanged, and thus the natural growth of the population has increased here most. Similarly positive is the change in the next two groups. In the lowest category, however, there has been no essential change in spite of the growing birth rate because the mortality death rate is very high here.

The connection between the demographic indexes described above and the rate of industrial development is evident and it even indicates the phase difference. The change took place in every respect first in the large towns and thus it can with good reason be expected that the changes of the last years will restore the demographic balance also in the towns belonging to the lowest category.

The slowness of industrialization in earlier decades did not favor the communal development of the small towns either, and thus they remained far behind in the building of apartment houses, the equipment of the apartments, the development of the network of streets, etc. This harmful, extremely unfavorable process was halted by the quick industrial development of the last period, the effect of which is already noticeable (the amount of communal investments has considerably grown, etc.), but its full working can be expected in the future.

2. The great growth of the number of industrial workers was not accompanied by a similar growth of motive power especially in the small towns. It clearly follows from the different tendency that while in the larger towns, especially in Szeged (where the growth of motive power per one person employed rose twofold), besides the creation of new workplaces the technical development (reconstruction in the majority of the plants) is also on the proper level, in the lower categories it was nearly exclusively the extensive method of industrialization that pre-
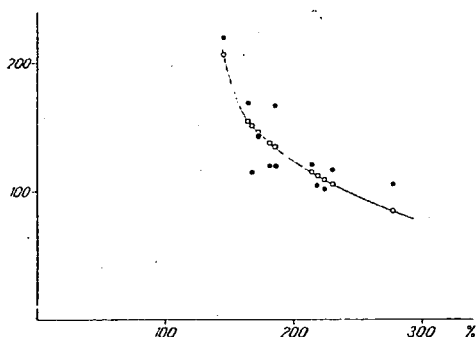

Fig. 13. *The correlation between the growth of industrial employment and the change of the motive power per one person employed*

vailed: the aim was to create new workplaces, therefore a number of industrial plants with little manpower requirement were built or the already existing ones were enlarged.

In the present phase of the development when useful employment of the free manpower, quick production or marketing of articles in short supply, decentralization of certain branches of the food industry or territorial distribution of the working processes in order to bring processing nearer to the raw material present problems in the district and the development of the small towns is a headache and a heavy burden, it is understandable that the extensive method of industrialization seemed to be the most practical. We must realize, however, that this method is limited in time and in respect of possibilities and that in the future it can be used with less and less efficiency.

The conditions are different from town to town and from district to district. There are essential differences in the employment of manpower depending on the structure of the agriculture, the attraction of larger towns, transport, etc. Accordingly, significant differences can be found in the conditions of the industry and even in the conditions of the development of the network of settlements. The territorial development plans reckon just with these differences when they try to take into account the possibilities and suitable methods of development in each area unit separately.

It is not enough to survey the problems of the development of the economic life on the level of regions or sub-regions. This would provide sufficient information only for the preparation of national plans. The long-term plans of the local directing organs can be prepared only if the natural and social conditions influencing the economic and social processes are known with all their differences.

Do we have the suitable body of knowledge for this? Are the possibilities of economic development explored in every micro-region? Unfortunately these things are only partly known.

In the near future the solution of a host of problems must be worked out: the balance of manpower on the level of microregions must be drawn up, the attraction spheres of the towns (together with the villages becoming urbanized) must be determined, the possibilities of these units must be surveyed especially from the point of view of the development of the industry. The tendencies of development, the rate and method, etc. of the development of each settlement or micro-region can be determined only with a concrete knowledge of the local possibilities, taking care that the development of the specialization based on the conditions of the region should not overshadow the exploitation of the local possibilities and vice versa and that the too wide use of local small plants should not interfere with the vigorous development of the modern specialist industry and agriculture. It is evident that the rise of the country and of the economic region is determined by the latter.

TABLE 7.

The demographic indexes of the towns of the southern Great Plain

Population	Population total 1000 persons		Number of births				Number of deaths				Nat. growth of pop.				Nat. growth of pop. 1950—60		Nat. growth of pop. 1960—70	
	1960	1969	1960	‰	1969	‰	1960	‰	1969	‰	1960	‰	1969	‰	persons	%	persons	%
100—120	100	118	1114	10.2	1684	14.2	1122	11.3	1345	11.3	−108	−1.1	339	2.9	3691	4.3	501	0.5
50—80	171	186	2261	13.2	2827	15.2	1812	10.6	2103	11.3	449	2.6	724	3.9	13011	7.6	4912	2.6
30—40	157	164	1904	12.1	2274	13.8	1970	12.5	1997	12.1	−66	−0.4	277	1.7	6993	4.4	265	0.2
16—130	104	111	1353	12.9	1503	13.5	1242	11.9	1522	13.7	111	1.0	−19	−0.2	5104	4.9	498	0.4
Total	532	579	6532	12.3	8288	14.3	6146	11.6	6967	12.0	386	0.7	1321	2.3	28799	5.4	6176	1.1

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