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CONCENTRATION AND DECENTRALIZATION PROCESSES IN  
POLISH INDUSTRY

Industrialization is the principal basis of Polish economic policy. The industrial growth rate in our country since World War II has been one of the highest in the world. The greatest investment outlays were made in industry, which provided most of the new jobs. In the period 1946-1982, employment in industry increased 3.5 times: from 1.4 million to more than 5 million. The number of industrial plants grew during that period from 21 thousand to 59 thousand, and the number of large enterprises /employing more than 1000 people/ grew from 542 in 1960 to 774 in 1982 /Lijewski, 1985/.

Following World War II, large disparities existed in the spatial distribution of industry. Namely, industry was concentrated mainly in the Southern part of Poland, which resulted primarily from the locations of mineral resource deposits /in particular anthracite, zinc, lead, ferrous and copper ores and various raw materials for the construction industry/. Besides that, the Western part of Poland was more industrialized than the Eastern part of the country, which, in turn, resulted from the historical situations of these parts of our country.

In order to determine more precisely the degree of industrialization of particular areas, the following classification can be used /Misztal

and Kaczorowski, 1983/:

1. very weakly industrialized areas, with the industrial employment indicator value below 50 people per 1000 inhabitants, which approximately corresponds to 10 % of the active population;

2. weakly industrialized areas, with the industrial employment indicator value between 50 and 100 persons, that is, some 10-20 % of the active population;

3. medium industrialized areas, with the indicator value between 100 and 150 persons per 1000 inhabitants, that is, some 20-30 % of the active population;

4. highly industrialized areas, with the indicator value between 150 and 200 persons employed in industry, accounting for approximately 30-40 % of the active population;

5. very highly industrialized areas, with the industrial employment indicator value above 200 persons per 1000 inhabitants, i.e., more than 40 % of the active population.

According to this classification, in 1946 only the area of present Lodz voivodship, out of the territories of the present 49 voivodships, was a very highly industrialized area, this fact being to some extent caused by the very small area of this voivodship. The territories of the present Katowice and Walbrzych voivodships were medium industrialized, while the territories of the other 46 voivodships were either weakly /12 voivodships/ or very weakly /34/ industrialized. Thus, the most numerous group was constituted by the very weakly industrialized areas /Miształ and Kaczorowski, 1969/.

/Fig. 1-4. distribution of industrial employment for 1946 to 1984/.

The great disparities existing in the spatial distribution of industry prompted the state during the first post-war years to target their reduction as the primary goal of regional policy. The first period of economic reconstruction /i.e., 1946-1949/, however, was based almost exclusively on the repair and reactivation of industrial plants destroyed during the war; consequently, most of the country's industrial potential was recreated. Employment increase in industry was approximately 50 %. The speed of reconstruction in various regions of the country was quite differentiated, with the greatest increases occurring in Warsaw, Wroclaw, and Szczecin voivodships, whose capitals had been big industrial centers before the war; as well as in Opole and Zielona Gora voivodships.

In 1950, the so called six-year plan was adopted for the period 1950-1955. It was an extraordinarily ambitious plan, not only in the sense of creating the basic industrial potential, but also in its tendency toward more uniform distribution of the potential throughout the country's territory. The plan was based on a policy of forced industrialization to be carried out within the system and forms of a socialist economy. A second parallel goal was included, defined as the elimination of spatial social differentiation of class character through more uniform distribution of productive forces. It is easy to observe that the first goal contained only indirect implications and tasks for spatial policies, while the second one involved such policies directly and specifically /Dziewonski, 1986/.

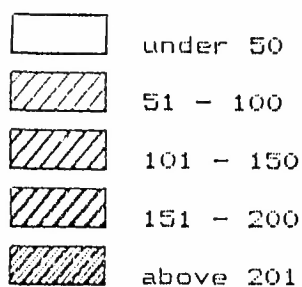
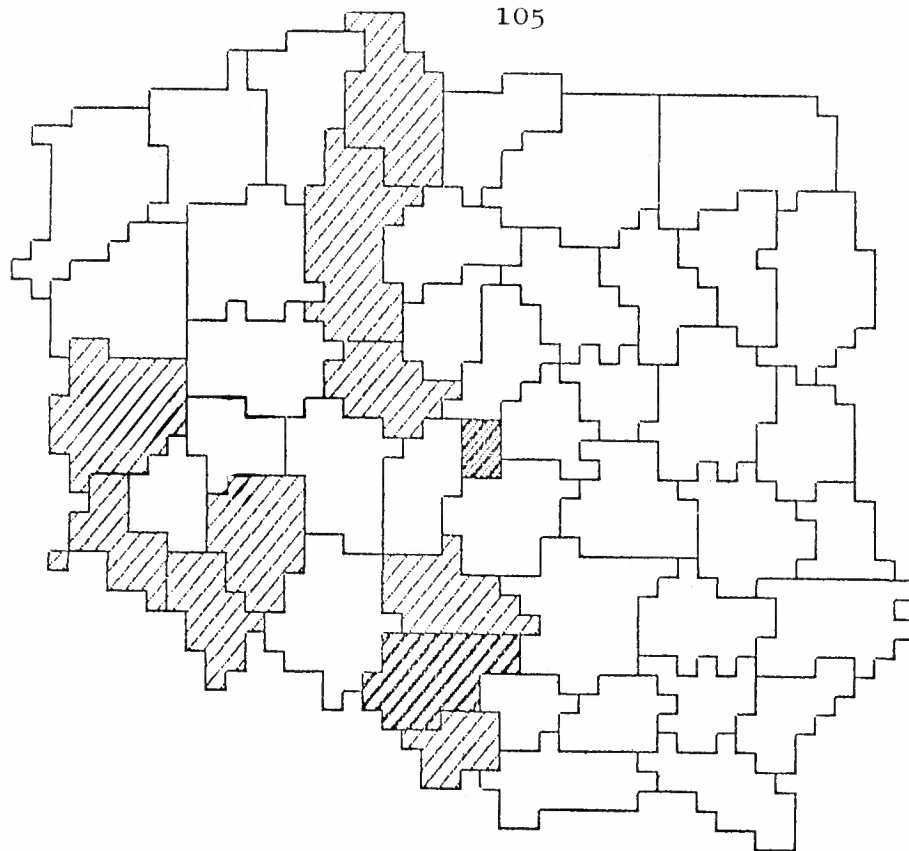


FIGURE 1 Industrial employment per 1,000 inhabitants 1946

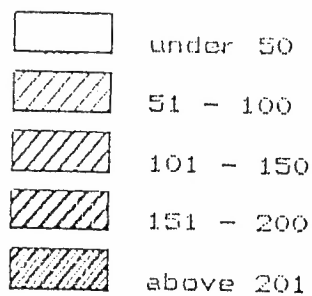
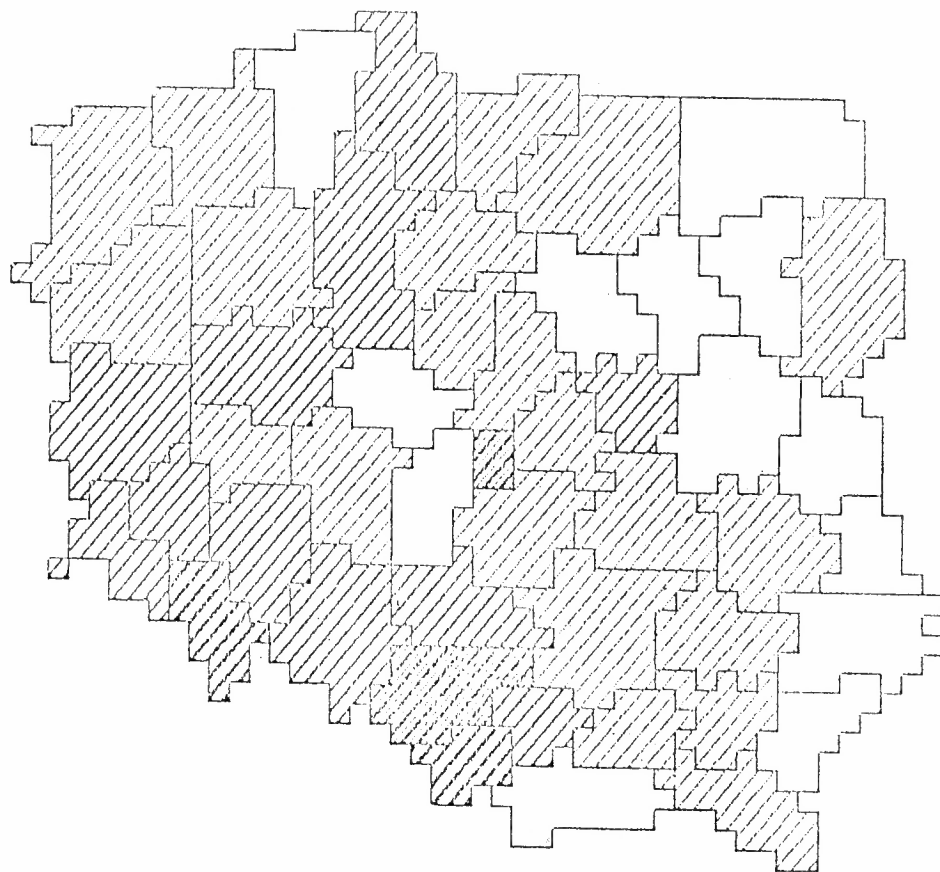


FIGURE 2 Industrial employment per 1,000 inhabitants 1960

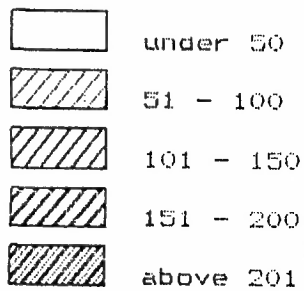
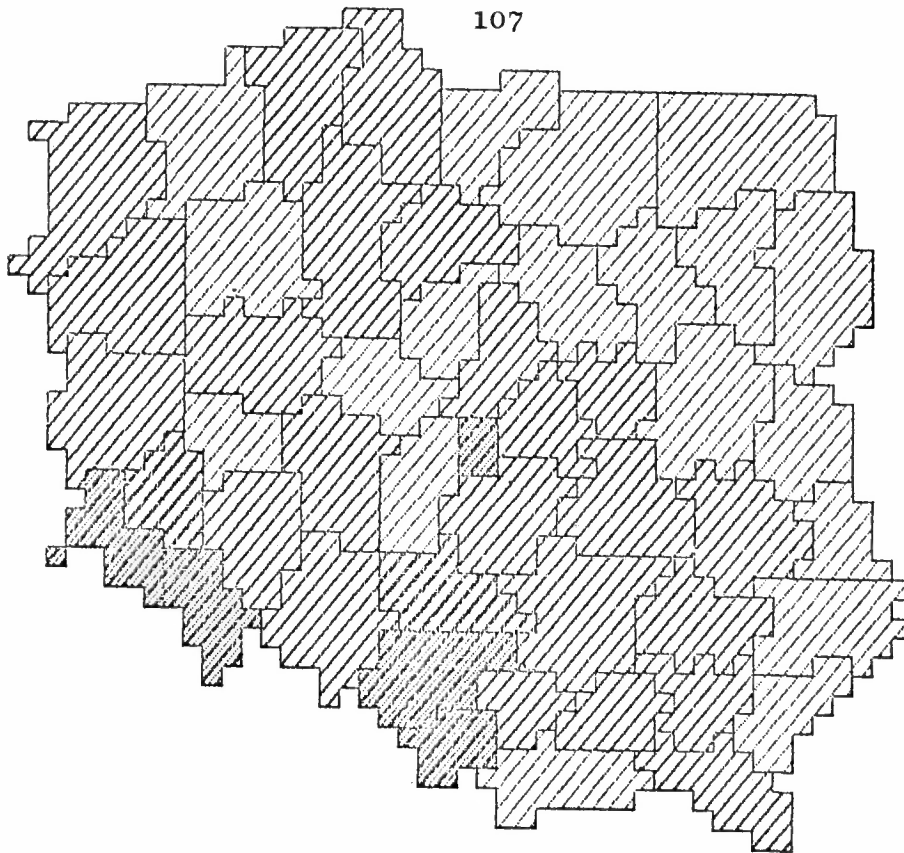


FIGURE 3 Industrial employment per 1,000 inhabitants 1975

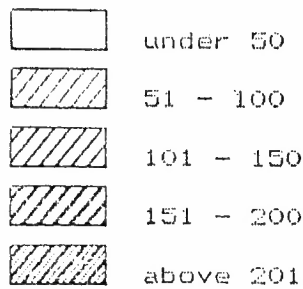
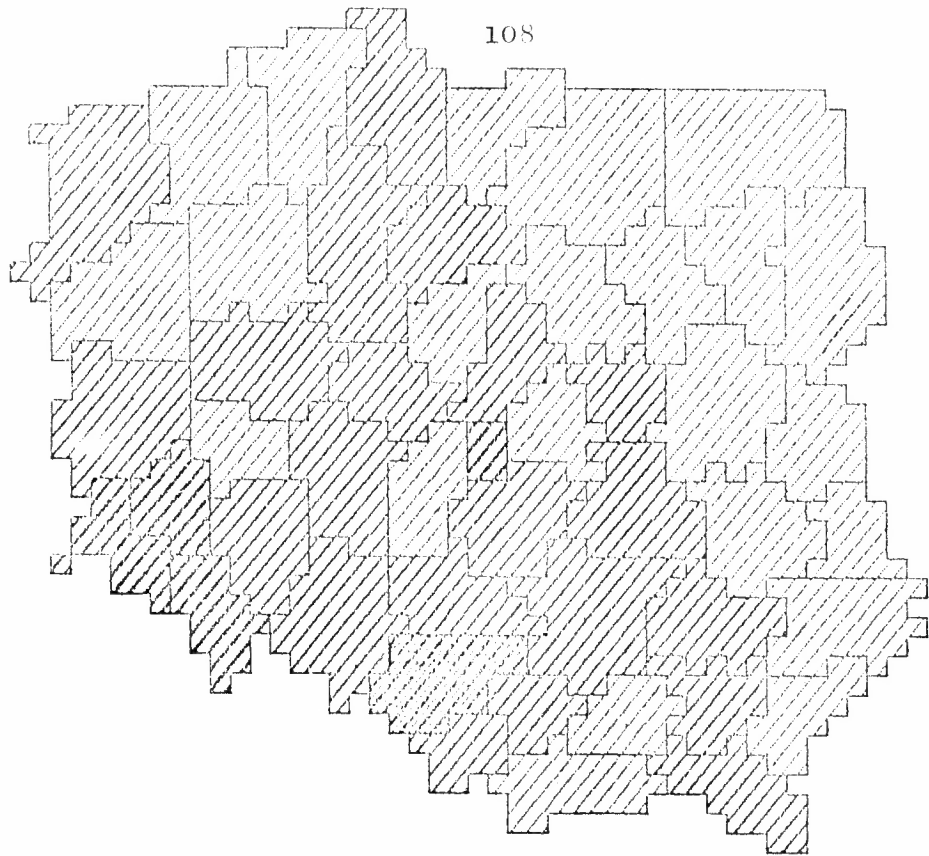


FIGURE 4 Industrial employment per 1,000 inhabitants 1984

The plan envisaged construction of more than 1200 industrial plants, with a large share of them located in weakly industrialized voivodships. Lack, however, of appropriately prompt production effects /construction of some plants lasted more than 7 years/ and slow increase - and sometimes even decrease - of the real wage levels led to imbalances in the development of particular branches of the economy and to a build-up of strong social tensions. That is why the number of plants to be constructed was limited and approximately 470 plants were dropped from the plan. This concerned primarily the free-location plants, whose purpose was to be the activation of weakly industrialized areas, so that efforts concentrated on finishing these plants, whose construction had already started. During this period, though, growth relied on "extensive" industrial development, based upon employment increase. The first 5-year plan /period 1956-1960/ assumed primarily extension of the existing plants and completion of those whose construction had been started, thus giving up costly and little effective investments in weakly developed regions.

In the decade 1961 to 1970, the industrialization process underwent significant acceleration. Initially, this process was characterized by a strong increase of investment outlays, related mainly to the extension of raw material and energy bases by putting into operation resource deposits discovered before: lignite in the Konin basin, copper ores in the Legnica-Glogow basin, and sulphur in the Tarnobrzeg voivodship. Besides that, efforts concentrated mainly on the extension of plants built in the preseedling period and on modernization of old



plants. There were, on the other hand, relatively few big and medium industrial plants, whose construction was started after 1960 and which were put into operation during the period in question. Similarly, as in the period 1950-1960 and also in the subsequent decade, more than 80 % of all the investment outlays went into heavy industry, with the greatest increases of their share in the investment totals displayed by fuel-and-energy and metal-machinery industries, with the latter accounting for over 50 % of the whole employment increase in industry.

During the '60s, there occurred a well pronounced acceleration of the industrialization process in the weakly industrialized regions /Misztal and Kaczorowski, 1983/. This acceleration was best seen in the areas where newly developed mineral resource deposits were put into operation /Konin, Legnica, and Tarnobrzeg voivodships/, and on the territories of Krosno, Plock, Radom, and Slupsk voivodships. On the other hand, in 9 voivodships with the lowest industrialization level, located in the Eastern part of Poland, i.e., in Biala Podlaska, Chelm, Ciechanów, Lomza, Ostroleka, Przemysl, Suwalki, and Zamosc voivodships as well as in Leszno viovodship, acceleration of the industrialization process, as measured by employment dynamics in industry, was still quite weak. Investment made in these voivodships went primarily into wood, mineral, light, and food processing industries located there, i.e., into little capital intensive industries. Were industrialization measured with the magnitude of investment outlays made, one could conclude that in these 10 voivodships there

occurred in the period 1961-1970 no effective acceleration of industrialization process. The 10 voivodships, accounting for 10.5 % of the nation's population, obtained a mere 3 % share in total investment outlays in Polish industry. More than 1/3 of all the investment outlays in industry, made over the period in question, concerned Plants located within the territories of Katowice, Bielsko-Biala, Czestochowa, Cracow, and Opole voivodships. These investments were highly capital-intensive /resource extraction and metallurgy/ and did not create very many new jobs.

The policy, effectively carried out in this period, resulted from the pressure of factors motivating concentration of industrial production and from the tendency towards a more uniform development of all the regions. Concentration of industrial production was motivated by the economies of scale and agglomeration, by non-uniform distribution of mineral resources, and besides that by almost uniform prices within a branch throughout the country and low - officially set - transportation prices. The tendency to disperse industry resulted both from social reasons and from over saturation of certain areas with industry.

The beginning of the subsequent decade, 1971-1980, was a starting point for the period of great acceleration of industrialization in Poland. Production increases mainly were due to modernization of plants, to intensification of production processes, and to better use of reserves. There followed significant shifts in the structure of investment outlays. The shares of fuel-and-energy and chemical industries decreased, while those of elec-

tronic, metallurgic, and consumption goods industries increased. Still, however, a significant majority of investment outlays was absorbed by extensions to the industries turning out means of production.

In the period 1971-1975, there also occurred essential changes in the geographical distribution of investment outlays. Inversions of some of the development trends of the '60s could be observed. The upper Silesian region /Katowice, Bielsko-Biala, and Opole voivodships/ again increased its share. The shares of central-Eastern voivodships /Kielce, Radom, and Sieradz/, of port and ship-yard voivodships /Gdansk and Szczecin/, as well as of some other voivodships /Korin/ increased, too. There was a decrease in the investment shares of the South-Western voivodships, and of those on whose territories construction of large-scale industrial plants had been terminated /Legnica, Wloclawek, Plock, and Jelenia Gora/. Generally speaking, in the first period of the decade of the '70s, the development of various industry branches and various regions was more harmonious. Simultaneously, it was the period of a very big investment effort. The dynamics of growth of investment outlays increased 3.5 times. While in the years 1961-1970 average annual growth of investment value did not exceed 9 %, in the period 1971-1975 it attained 34 % /Mistal and Kaczorowski, 1983/. Thus, great increase of investment outlays was made possible by foreign credits. It was the continuation of this policy of accelerated industrialization beyond 1975 and growing foreign debt that led to economic disaster.

Naturally, all these fluctuations of goals, policies, and priorities in the whole process of industrialization were reflected also in spatial policies by directly quickening or delaying the implementation of the second goal, one of more even distribution of productive forces; and indirectly by their impact on the structures and processes of urbanization. When in the late fifties it was realized that an even industrialization of all regions is neither possible nor desirable, this second goal was modified and superseded by regional equalization in levels and conditions of living with an equal opportunity for individual development included.

Concentration of industry is an integral part of the industrialization process. Concentration proceeds in at least four dimensions /Lijewski, 1978/:

- technical, through installing of increasingly effective equipment, enabling production growth calculated per employee or per unit cost;

- economic, through concentration of means, employment, production and other effects in a limited number of plants, whose share in the whole of industry thereby increases;

- organizational, through mergers of small plants and enterprises /leading sometimes to liquidation of some of them/ into larger economic organisms;

- spatial, resulting from the previous three tendencies;

there follows a decrease of the number of localities and points in which industry is located, with simul-

taneous increase of the share of large centers and industrial agglomerations.

In the course of post-war policies of development of industrial centers, three phases can be distinguished:

1. During the '50s, the principle of more uniform geographical distribution of industry was being heralded. In order to keep to this principle smaller, but more densely distributed, industrial centers were created. Limited total investment volume did not allow the network of these centers to encompass the whole of Polish territory.

2. In the '60s, investment outlays were concentrated in several dozen development centers /growth centers/ such as, for instance: Plock, Wloclawek, Torun, Ostroleka, and Pulawy. Many of these centers became capitals of new voivodships in 1975.

3. After 1970, positive economic and social features of development of large urban and urban-industrial agglomerations were emphasized. This view induced acceleration of the concentration of industry.

Industrial concentration results from technical and economic prerequisites. This process is, as a rule, advantageous for a given branch or for the whole of industry. From the point of view of society as a whole, however, concentration entails numerous negative effects. Since growth of industry in the largest towns and industrial regions was too fast for the local labour force supply and for housing construction, it had been deemed proper already in the '60s to adopt the principle of decongestion of

the biggest industrial centers as the leading principle in formation of regional policies of spatial allocation of productive forces. The decongestion /"deglomeration"/ principle was the fourth official principle to be implemented in the policies of industrial location, after: /1/ principle of deconcentration of Upper Silesian Industrial Region and Łódź /1947-1949/: /2/ principle of uniform distribution of industry /1950-1955/; and /3/ principle of rational distribution of industry /1955-1960/, /see Misztal and Kaczorowski, 1983/.

The decongestion principle was first implemented at the beginning of the '60s, although appropriate legal acts were formulated only at the turn of the '50s and '60s. The whole action was at that time described as the "industrial deglomeration" and involved transfer of some /mostly/ small industrial plants to smaller cities. After several years, it turned out that this policy /only partly successful/ led in larger cities to serious shortages of manpower and underutilization of productive potential in industrial plants, most of which were concentrated in those areas. The entire policy was either scraped completely or disallowed /Dziewonski, 1986/. Decongestion policies, caused mainly by difficulties encountered in proper development of large agglomerations, have brought some effects through outward dislocation of some of the modernized industrial plants within the territories of Warsaw voivodship and its adjacent voivodships. During that period, some 20 branches of large Warsaw enterprises were located in various urban centers. Simultaneously, these policies also had negative ef-

fects, such as important acceleration of the process of ageing of the Warsaw population and idleness of a portion of the existing production capacities.

Similarly, as in the case of Warsaw, large enterprises located in other towns, whose development in their primary locations was limited, started to set their branches outside the boundaries of these towns, relocating their mainly less complicated and more labour intensive functions. These branches were for the most part being set up in small towns within the less economically developed areas, disposing of labour force reserves. In this way, an essential factor of activation of regions lagging in economic development was created. Until the end of the '60s, there emerged in Poland several dozen such branches, usually employing hundreds of people. The greatest number of such branches was set up by the enterprises located in Warsaw. It should be mentioned, though, that implementation of the decongestion policy brought about tangible results only within the areas of present Warsaw and Cracow voivodships as well as in the central part of the Upper Silesian Industrial Region.

Because of the differentiated development of industry in various voivodships, their ranks with respect to numbers of employees changed. Only Katowice voivodship retained its first rank. Voivodships with large shares of older industry, which occupied high positions just after World War II, regressed down the ranking. Intensively industrialized voivodships and these, whose industry was reconstructed after the war's destruction, advanced to higher positions. Shifts of ranks are, however, not significant. Voivodships move by just a couple

of positions up or down the ranking. Even those voivodships in which there were quite important investments made, like Konin, Tarnobrzeg, and Legnica voivodships, advanced only slightly in the ranking of industrialization. Changes in the sequence of voivodships would be greater if the fixed assets value measure could be taken into account.

The picture of the dynamics of industrialization growth - having in mind dynamics relative to the initial level within a voivodship - is, most generally speaking, inverse to the picture obtained using absolute increases of employment in industry as the measure of industrialization dynamics. Namely, in the most industrialized voivodships, the relative dynamics of industrialization growth is the faintest, since these voivodships do not require further industrialization and efforts are even undertaken to limit the development of such branches of industry, which are not necessary in these voivodships. With the initial high employment level, even a significant increase of the number of employees yields a relatively low growth index value. The situation is just the opposite in the weakly industrialized voivodships, where even a small increase in the number of people employed in industry may mean multiplication of the initial level. That is why all these voivodships display the highest relative growth indices.

The voivodships with the highest dynamics index values on the map form a half-ring to the East and North of the country's center. The lowest dynamics index values characterize the South-Northern and central-Western voivodships. Exceptions

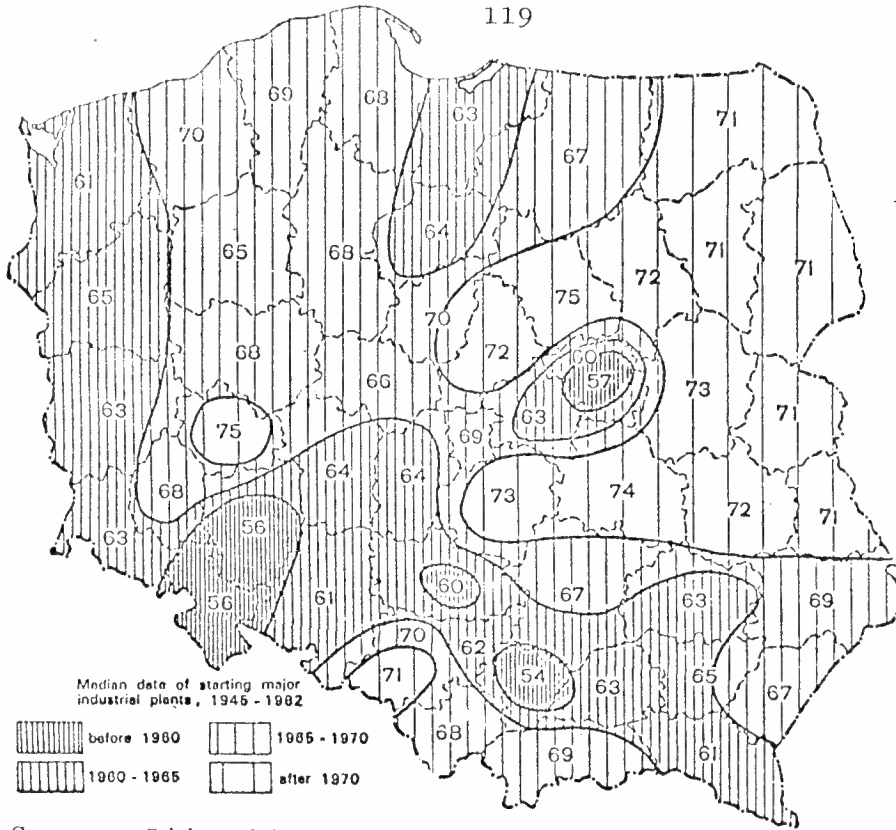


are provided by Legnica and Konin voivodships, which are sort of "islands" of rapid growth within the areas of a weaker increase of industrial development.

Although in absolute numbers big cities are still in the lead, the rate of their industrial growth is slowing and the number of new locations in these cities is decreasing. This tendency is seen clearly when one compares locations in two post-war periods: until 1966, when half of the investigated factories had been launched; and after 1966. In the earlier period, the eleven biggest cities accounted for 24 per cent of new locations, whereas in the later for 17.5 per cent /Lijewski, 1985/. The share of new factories located in medium-sized cities, between 20,000 and 100,000 in population, has grown relatively the most rapidly.

Figure 5 /after Lijewski, 1985/ shows the spread of industry in Poland in the period 1945-1982. The general trend was for new industrial ventures to shift from the south and west to the north and east. Naturally, there were exceptions, one of them being the industrialization of Warsaw, which largely outstripped the development of neighbouring voivodships. The most important old industrial regions /Upper Silesia and Lodz/ and some old industrial cities /Poznan, Bydgoszcz, and Gdansk/ witnessed a late upsurge of investment; their median dates of industrialization lay between 1968 and 1970. Investments in those localities often consisted of modernization or reconstruction of older factories.

Two general development trends can be specified:



Source: Lijewski, 1985

FIGURE 5 Spread of industry in Poland  
1945-1982

- a decrease of the relative rate of growth accompanying the attainment of higher levels of industrialization? and

- a decrease of discrepancies among the growth dynamics indices of particular voivodships; this decrease is the result of both the generally advancing industrialization levels and the conscious policy of equalizing the growth rates of particular regions.

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Table 1

<u>Industrial employment per 1000</u>				
<u>inhabitants</u>				
	1946	1960	1975	1984
1. Warsaw	43	130	147	112
2. Biala Podlaska	5	19	56	54
3. Bialystok	14	55	97	91
4. Bielsko-Biala	80	172	204	150
5. Bydgoszcz	58	107	137	121
6. Chełm	11	42	93	80
7. Ciechanów	9	23	56	60
8. Częstochowa	53	122	153	126
9. Elbląg	42	68	97	88
10. Gdańsk	54	103	128	103
11. Gorzów Wlkp.	32	81	120	97
12. Jelena Góra	87	137	209	162
13. Kalisz	34	87	134	114
14. Katowice	176	234	237	216
15. Kielce	28	86	144	123
16. Konin	69	28	87	101
17. Koszalin	9	52	86	76
18. Cracow	47	115	133	106
19. Krosno	26	63	125	118
20. Legnica	40	105	165	159
21. Leszno	29	60	84	79
22. Lublin	16	65	108	100
23. Łomża	2	19	51	53
24. Łódź	210	260	259	180
25. Nowy Sącz	18	50	80	75
26. Olsztyn	19	51	84	81
27. Opole	41	120	147	129
28. Ostrołęka	6	20	63	67

	1946	1960	1975	1984
29. Pila	34	60	95	84
30. Piotrków Trybun.	40	93	147	139
31. Plock	19	52	102	102
32. Poznan	65	112	129	101
33. Przemysl	8	32	72	76
34. Radom	18	68	126	112
35. Rzeszów	12	61	120	121
36. Siedlce	5	23	65	64
37. Sieradz	12	47	85	79
38. Skierniewice	34	63	105	88
39. Slupsk	14	50	105	94
40. Suwalki	7	37	70	66
41. Szczecin	40	84	116	106
42. Tarnobrzeg	16	58	129	114
43. Tarnów	16	68	112	96
44. Torun	29	89	127	111
45. Walbrzych	99	185	218	176
46. Wloclawek	25	52	87	83
47. Wroclaw	59	111	152	121
48. Zamosc	11	28	60	59
49. Zielona Gora	66	103	148	120