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COMPARATIVE RESEARCH ON THE LONG-RANGE ECONOMIC GROWTH OF POLAND

(A Proposal concerning the Selection of States for Comparison)

The author arrives at the conclusion that the years 1926 - 1928 or 1936 - 1937 can be accepted as the basis for the comparative research on the economic development of Poland and other European countries. Six component elements has been suggested as criterion used in the investigation. In Landau's opinion Poland's economy can be compared with that of Spain, Hungary and Italy.

Broadening of research of a comparative type is one of the principal problems facing the latest economic history. In order to make a correct evaluation of the developmental trend of any country it is absolutely indispensable to have a chance to draw comparisons with the tendecies of changes taking place in other countries. Various authors writing about the latest economic history of Poland are, of course, perfectly aware of this fact and their works contain numerous materials intended to serve such comparisons.[1]

[1] Problems connected with the comparison of Polish economy with other countries were also dealt with, i.a., by A. Karpiński, *Gospodarka Polski na tle gospodarki świata* [*Poland's Economy against the Background of World Economy*], 3rd edition, Warszawa 1964; L. Landau, *Gospodar-*

The point is, however, that the selection of the countries with which Poland is compared is nearly as a rule of a more or less incidental nature. This is due on the one hand to the accessibility of statistical data, and on the other hand to the authors' preferences. Some consider it right to show Poland against the background of leading capitalist countries, while others compare her with countries on a medium developmental level; still it depends on the choice of those countries what conclusions may be formulated as to the rate of Poland's economic growth against the background of other countries.

For should we start comparing Poland with highly developed capitalist states, we would find that they had a much higher volume of production, but Poland excelled them quite often in the proportional annual increase of production. To all intents and purposes both the statements tell us rather nothing new. No special research is needed to learn that the value of production in the highly developed states have been higher that in Poland our findings can only tell us what advantage over Poland was gained by these countries and whether and to what extent did Poland succeed in making up for the distance separating her from them. Analyses concerning the rate of development of countries with a different level of output, based on the investigation of the proportional annual production increments in comparison with the preceding year also do not give — in spite of quite a popular opinion — valuable cognitive materials.

For it is a well-known thing that the higher the output of a country in the starting period, the smaller the proportional increase expressed in the successive increments. Let us give an example. Let us take three countries: *X*, *Y* and *Z*. The first,

ka światowa. Produkcja i dochód światowy w liczbach [*World Economy. World Output and Income in Figures*], Warszawa 1939; reprint in: L. Landau, *Wybór pism*, Warszawa 1957; Z. Landau, *Gospodarka Polski na tle gospodarki światowej 1913 - 1938* [*Poland's Economy against the Background of World Economy 1913 - 1938*], (General Remarks), "Przegląd Historyczny," 1968, No. 2; M. Skarbek, *Polska na tle świata 1918 - 1968* [*Poland against the Background of the World 1918 - 1968*], "Zeszyty Naukowe Wyższej Szkoły Inżynieryjnej Kielce. Problemy gospodarczo-społeczne," 1969, No. 1; M. Szawleski, *Polska na tle gospodarki światowej* [*Poland against the Background of World Economy*], Warszawa 1928.

a highly developed one, had — in the year accepted as the basis of the calculation — and output amounting to 100,000 comparable units, the second (Y — a medium developed country) — 30,000, while the under-developed Z had an output of only 2,000 comparable units. If in each of these states the out-put increased in one year by the same amount, say 10,000 comparable units, then in the case of the country X this gave and increase of 10% in the first year of the analysis, in country Y — 33%, and in country Z as much as 500%. In the second year — analogous production increments were already expressed in different proportional values for each country. In X, it would amount to 9%, in Y to 25% and in Z to 83%. In the third year of the analysis — with all other elements being equal — X would show an increase of 8%, Y of 20% and Z of 45%.

It is easily seen from this how little is obtained from comparisons of production increments made for countries with a different starting level of development. For from our example one could draw the rash conclusion that production increments, in the highly developed country, were very stabile and low (8 - 10% a year), while in the under developed country they were very dynamic but with a very strong downward tendency (a drop from 500% to 45% in three years). This shows that we could draw quite different conclusions, depending on which one of the three countries we chose as the basis for our analysis. It is, therefore, not a matter of indifference with what countries we are going to make our comparisons.

I think that if one wishes to investigate Poland's economic growth in comparison with other states over a longer period of time, one should compile a list of countries which had the highest number of common characteristics in the period accepted as the start of the research. If we analyzed by this means further development of the economic organisms we are interested in, starting from as equal conditions as possible, we would obtain a basis for opinions concerning the rate and directions of the development and the results achieved.

We should like to make the reservation that our proposal does not concern all the comparisons between Poland and other countries. The choice of the country must be often quite different,

depending on the objective of research. Our proposal concerns chiefly analyses aimed at comparing the rate of economic growth and its principal directions.

The question arises, of course, what period should be taken as the starting base for our investigation. It would be ideal to go as far back as possible, for example to the period of the formation of the capitalist system in Polish territories. Because then the developmental trend would have been long enough for the formulation of general conclusions. Such a solution, however, is not likely to be realized. There are at least two essential obstacles. The first of them is the lack of sufficiently accurate statistical data for such an early period. Economic statistics practically did not exist at that time, and we would be forced to base exclusively on very accidental and, by the same token, little trustworthy estimates. Furthermore, the existing estimate would have a different value as evidence for every state. Poland's vicissitudes are the second obstacle. The partitions and the incorporation of Polish territories into the economic organisms of the partitioning powers do not permit the acceptance of the pre-1918 period as a point of issue for our research. In many cases it is practically impossible for us to isolate the output of the Polish lands from the output of the given partitioning power. We come, therefore, to the conclusion that we must accept the inter-war, twenty-year period as a basis for our research.

But here, too, one must consider the choice of the years most suitable for international comparisons. The choice of the period directly after World War I would produce a seriously distorted picture in view of the inequality of the distribution of war damage. Heavily damaged countries would show a relatively faster increase of production than countries with an unweakened production potential. For during the period of reconstruction the output increase was as a rule more dynamic than in the case of the construction of completely new instalations. Sometimes by means of relatively small outlays the large plants could be put into service. In 1918, for instance, factories in the so-called Polish Kingdom were producing a mere 15% of the 1913 output.[2] By 1923, however,

[2] F. Zweig, *Polska. Stosunki gospodarcze* [*Poland. Economic Rela-*

output rose by 346% in comparison with 1918.[3] The 1923 output was nearly four times higher than that of 1918. This was possible, of course, only under conditions of reconstruction, never thanks to normal investments.

The years of post-war inflation which beside the defeated countries (Germany, Austria, Hungary) affected also Poland are also inappropriate as a basis for comparisons. A temporary boom was caused by artificial inflation because it created conditions for the promotion of export, which did not exist in countries with a stable currency.[4] In view of the fact that the majority of European countries did not feel the post-war inflation as acutely as the above mentioned countries, it seems also improper to accept the years 1920 - 1923 as the basis of our research. Particularly while the post-war reconstruction, combined with the inflation (untill the movement of its becoming transformed into hyperinflation) — was in the war-ravaged countries a transitional period of prosperous development, creating a temporary period of growing prosperity, in the undamaged countries, with a stabilized currency, there appeared an economic crisis connected with the drop in military purchases, the necessity of switching war production to peaceful tracks and the growing unemployment, which was to a considerable extent a result of the demobilization of the army.[5] Thus we had to do in various countries with diametrically different phases of developmental cycle, which makes it impossible to choose the period of the post-war inflation as the basis of research.

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tions], in: *Wielka Ilustrowana Encyklopedia Powszechna*, vol. XIII, Kraków, p. 75.

[3] Calculated on the basis of: *Materiały do badań nad gospodarką Polski* [*Materials for Research on Poland's Economy*], Part I, 1918 - 1939, Warszawa 1956, annex I, table 3, p. 165.

[4] Cf. also Z. Landau, J. Tomaszewski, *W dobie inflacji 1918 - 1923* [*At the Time of the 1918 - 1923 Inflation*], Warszawa 1967, pp. 89 - 96; *Przewroty walutowe i gospodarcze po wielkiej wojnie* [*Currency and Economic Revolutions after the Great War*], Kraków 1928.

[5] Cf. L. Mendelson, *Teoria i historia kryzysów i cykli ekonomicznych* [*The Theory and History of Economic Crises and Cycles*], vol. III, Warszawa 1966, pp. 324 - 508; *Mirovye ekonomičeskije krizisy 1845 - 1935*, vol. I, Moskva 1937.

The ending of the inflation caused a crisis — both in Poland and in other countries affected with it. This was a reaction to the artificially escalated inflational prosperity. As soon as money stabilized, it became apparent, for example, that Polish industry was in no position to compete with the lower prices of the western firms. At the time of the drop in the value of money, thanks to the existence of the inflationary drawback, this was not felt, quite the contrary — Polish industry could sell its products cheaper than producers in countries with a stable currency. An essential element of the competitiveness of the industry of countries afflicted by the inflation were the very low and gradually dropping real wages. Cheap labour permitted worse technical equipment and its backwardness. The stabilization of wages put an end to this possibility and demonstrated the superiority of countries possessing a more modern industry, both in the technical, technological and organizational respect.[6]

And so again the years 1924 - 1925 should not be taken as the basis for research.

I think that the period of 1926 - 1928 is comparatively the most suitable for comparisons. A tangible improvement of prosperity was noted then in all the main capitalist countries,[7] while war damage had no longer any influence on the situation of the individual states. The following year (1929) is already much less suitable, since certain signs of an approaching crisis began to appear in the economies of some countries, due to the breakdown of the prices of grain products, in the autumn of 1928. Although they were as a rule pooh-poohed by the contemporaries, because all the so-called barometers showing developmental trends gave

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[6] Cf. also Z. Landau, J. Tomaszewski, *Od Grabskiego do Piłsudskiego. Okres kryzysu poinflacyjnego i ożywienia koniunktury* [*From Grabski to Piłsudski. The Period of Post-Inflation Crisis and Economic Boost*], Warszawa 1971, pp. 21 - 42; Z. Landau, *Kryzys przemysłowy w Polsce lat 1924 - 1925* [*Industrial Crisis in Poland of 1924 - 1925*], "Roczniki Dziejów Społecznych i Gospodarczych," vol. XXXII, 1971.

[7] Compare data in: *Annuaire statistique international 1929*, Geneva 1930; *The Economic Forces of the World*, Berlin 1930; A. Pirelli, *Economic Conditions in 1928 and in the First Post-War Decade*, Paris 1929.

optimistic forecasts, these recession elements cannot be taken lightly.[8]

Neither can the years of the great economic depression be taken as a basis for the research proposed, and that for several reasons.

First — the depression did not run with the same intensity in the various countries. While, for example, the overall production index in Denmark dropped at the time of the so-called bottom of the depression by 2% in comparison with 1928, in Spain by 5%, and in Greece even increased by 3%, the production drop in Austria amounted to 34%, in Czechoslovakia and Canada — 37%, Holland — 38%, Poland — 41%, Germany — 46% and so on.[9] Second — the depression did not reach all countries at the same time (in France, for example, it arrived several years later). Third — the rate at which the crisis was overcome did not only differ in the individual countries. The indices indicating industrial and agricultural production were different in every country.[10]

No further justifaction is needed, therefore, for refusing to accept the period of depression as the basis of research. A new economic growth signalled its coming in the years 1936 - 1937, but its course was not as uniform as the boom preceding the outbreak of the great depression. Another depression began in some countries in 1938.[11] But in distinction from the downbreak begun in 1929, it was not of a world character. Countries that entered the road of intensive armaments did not feel a depression

[8] Cf. also Z. Landau, J. Tomaszewski, *Zarys historii gospodarczej Polski 1918 - 1939* [*An Outline of the Economic History of Poland 1918 - 1939*], Warszawa 1971, p. 150 ff.

[9] *Annuaire statistique de la Société des Nations 1936/37*, Geneva 1937, p. 165; "Mały Rocznik Statystyczny," 1937, p. 125.

[10] Cf. also H. Hodson, *Slum and Recovery 1929 - 1937. Survey of World Economic Affairs*, London 1938; Z. Landau, *Wielki kryzys gospodarczy i jego konsekwencje. Referat na sesji Śląskiego Instytutu Naukowego* [*The Great Economic Crisis and Its Consequences. Paper Read at a Session of the Silesian Research Institute*]; L. Robbins, *La grande depression 1929 - 1934*, Paris 1935; A. Sturmthal, *Die Grosse Krise*, Zurich 1937.

[11] Cf. *Economic Review of Foreign Countries, 1938*, Washington 1939; *Report on Economic Conditions in Europe and North America*, February 1939, Memorandum No. 77, Royal Economic Society, London 1939.

in industry, only the prices of agricultural products dropped somewhat. Such was the situation, among other states, in Poland where industry continued to develop, but agriculture felt a drop in prices, which could rebound in the long run on industries producing consumer goods for which the countryside was also a certain market.[12]

As may be seen from the above survey, either 1926 - 1928 or 1936 - 1937 should be taken as the basis of comparisons. The former gives us ten more years for watching the developmental trend.

When choosing the years 1926 - 1928 we must make in advance the reservation that the historian is often fettered in his choice to a very marked degree by the existing and accessible source materials. In many countries economic statistics did not develop before the thirties. It is, therefore, not always possible to limit oneself to comparisons with data from 1926 - 1928. Sometimes the quest for comparable information takes us outside those years. We shall try to reduce such cases to a minimum, but it will be impossible to avoid them completely.

Thus we chose first the optimum period on which we should concentrate in further research. Now it is necessary in turn to determine what characteristics we shall be trying to compare. It would have been best, of course, if we could have made our analysis on the basis of the per capita national income obtained in the various countries.[13] This synthetic index embracing the whole of production could theoretically exhaust the investigation. We use the conditional mood of "could" on purpose, because accessible data on national income offer no basis for such comparisons. First — the methods of estimates differed in nearly every country. Second — there were as a rule numerous estimates for each state. In this situation we would have reached different

[12] M. Drozdowski, *Polityka gospodarcza rządu polskiego 1936 - 1939* [*Economic Policy of the Polish Government 1936 - 1939*], Warszawa 1963, pp. 196 - 198; Z. Landau, J. Tomaszewski, *Zarys...*, *op. cit.*, Chapter VI.

[13] For the importance of research on national income in historical and economic investigations cf., e.g., W. Kula, *Problemy i metody historii gospodarczej* [*Problems and Methods of Economic History*], Warszawa 1963, Chapter VIII.

conclusions depending on which estimates we would have accepted for our analysis. Even the quite ambitious research undertaken by Colin Clark and published in his book *The Conditions of Economic Progress*,[14] concerning the shaping of national income in various countries, is unsuitable for our comparisons. For the data — in Poland's case at least — are of a purely compilatory nature. Information on Poland was based on quite accidental sources whose sole common feature was that they had been published in one of the world languages.[15] One can hardly expect the materials pertaining to other countries with less developed research to be more reliable.

We should like to stress that we do not intend to negate the theoretically obvious virtues of basing comparisons on national income. But we find that with the accessible data the results of such research would have to be unreliable and often even misleading. This is why, until economists, historians and statisticians do not work out common methods of assessing overall production and national income, one should not overestimate the cognitive values of comparisons based on national income alone.[16]

[14] Third Edition, London 1957.

[15] The comparison of Colin Clark (p. 177) takes no account of even basic estimates made in Poland and published (also in the English language) in the popular *Concise Statistical Yearbook*. Neither does Clark take into consideration such fundamental estimates as those contained in the works of: M. Kalecki, L. Landau, *Szacunek dochodu społecznego w Polsce w r. 1929* [*Estimation of Social Income in Poland in 1929*], Warszawa 1934; M. Kalecki, L. Landau, *Dochód społeczny w r. 1933 i podstawy badań periodycznych nad zmianami dochodu* [*Social Income in 1933 and Bases of Periodical Investigation of Changes of Income*], Warszawa 1935; C. Klarner, *Dochód społeczny wsi i miast w Polsce w okresie przesilenia gospodarczego 1929 - 1936* [*Social Income of Countryside and Towns in Poland during the 1929 - 1936 Economic Crisis*], Lwów 1937; *Dochód narodowy Polski 1947. Statystyka Polski* [*Poland's National Income in 1947. Polish Statistics*], Series D, No. 13. Because of this the comparison arouses many doubts and should not be approached with an excess of trust.

[16] Cf. on a similar subject the argumentation of J. Lisikiewicz, J. Macieja, *Zmiany strukturalne w polskim przemyśle 1944 - 1969* [*Structural Changes in Polish Industry 1944 - 1969*], Warszawa 1969, chapt. *Mierniki zmian strukturalnych w przemyśle* [*Criteria of Structural Changes in Industry*]. In conclusion of their methodological argumentation, after presenting criteria taking into account the elements of prices and natural criteria,

We will try, therefore, to compare economic potential first of all on the basis of more objective criteria. In order not to complicate matters, we restrict in advance the range of our analysis to the capitalist states of Europe. The elimination of the other continents is the result of our conviction that only economic organisms born from similar historical processes are really comparable. And the European processes, in view of the expanded feudal formation before capitalism, ran a different course here than in the rest of the world.

We propose the following component elements of our investigation: (a) area of the country, (b) population, (c) its professional structure, (d) output of electric power, steel and cement, (e) productivity of farm produce from one hectare and, as a supplementary and verifying information, (f) national income.

Each of the above elements will supply us with a certain fragmentary knowledge on the individual countries, while their comparison should permit us to select countries whose economic situation was the most similar to that of Poland. We must make at once the reservation that we are looking for countries most similar as regards their economic level, but of course not identical, for such an assumption would doom the undertaking in advance.

A few words should be said to justify these and not other types of information. The area of a country and its population are to permit us to eliminate states whose territory or population differed considerably in plus or in minus from the corresponding data for Poland. Such countries possessed as a rule different conditions of economy. Larger states had usually larger mineral deposits (though this was not the rule), and their economy was to a much greater extent self-sufficient and closed. Small countries had by the very nature of things no conditions for self-sufficiency and were compelled to import many goods, and their economy was in principle more open. Large exports were a must for these countries. An essential role was played also by the scale of their economic problems, completely different in large, medium and small states.

the authors said: "It is also worth emphasizing that as regards international comparisons [...] the natural method seems preferable to all other methods" (p. 35).

It seems, therefore, that the taking into account of the information on the population and area of a country should not arouse any doubts. The data on the professional structure of the population (reduced for convenience to the proportion of people working in agriculture to the overall number of professionaly active people) permit a synthetic evaluation of the degree of economic development reached. The higher the proportion of people employed in agriculture and the lower in industry and services, the more backward the economy of a given country. Highly developed countries had as a rule a predominance of persons employed in industry and services, while backward or weakly developed countries had a predominance of people working in agriculture.

Data on the output of electric power, steel and cement will be of essential importance for the evaluation of the degree of industrial development of a given state. We shall use them, because we have no universal criterion of the volume of industrial output expressed in natural units.

The output of electric power is most suitable for comparisons because of its homogeneity and universality of application in all states, irrespective of their natural resources and geographical position. In the early part of the 20th century electricity was the predominating source of power, and its consumption fully mirrored the degree of the development of manufacturing. The production of steel did not have the same universal character, because not all countries were producing it. This depended, among other things, on their natural resources. But for countries striving for industrial development, their own iron and steel industry was of great importance. Hence we chose also steel as one of the symptomatic indices.

Cement, in turn, played an essential role in modern building. Data on its output are also a symptomatic index, permitting the assessment of both the advancement of its production and the situation in investments.[17] We excluded natural raw materials from

[17] We appreciate the fact that the choice of only three industrial products might give rise to some doubts as to their small representativeness. This solution may be defended only by the fact that S. Kurowski, for example, based his well-expanded analysis of the process of economic growth solely on an analysis of a single symptomatic product, namely iron-steel.

our comparisons, since their extraction depended above all on the possession and accessibility of natural deposits and not on the level of the economic development of a given state.

In order to orientate ourselves in the situation in agriculture, we took into account data on productivity from one hectare. For it seemed to us that they were a criterion faithfully showing the level of the development of the countryside. It must be borne in mind, however, that countries with large areas of land often did not try at all to intensify cultivation and obtained low crops from one hectare, even given a comparatively high level of agricultural technique. The large hectarage of arable land (especially with the comparatively high labour costs) was no encouragement for an expensive intensification of cultivations, giving in effect smaller income than extensive cultivation. This was also another reason why we eliminated from research states whose territories were much larger than Poland's.

In all the above-mentioned groups of information we omitted intentionally any containing elements of valuation expressed in terms of money. Primarily because the configuration of prices differed in various countries, secondly because the level of prices varied greatly in character, and because this trend need not have been identical in all the countries under study. Neither must we forget the fact that when we carry out an analysis in time — we encounter also the extremely difficult problem of fluctuations in the currency rates of exchange, both at home and in the mutual relations between various payments units. The longer the time period to be covered by the study, the greater methodological

Cf. S. Kurowski, *Historyczny proces wzrostu gospodarczego. Analiza trendów sekularnych na podstawie produkcji żelaza i stali* [*Historical Process of Economic Growth. Analysis of Secular Trends on the Basis of Steel and Iron Output*], Warszawa 1963, pp. 15 - 28 (Paragraph entitled *Szczególna reprezentatywność żelaza i stali — Special Representativeness of Iron and Steel*). Similarly J. Topolski based his analysis of Poland's economic development on three carriers of the trend — consumption of grain, potatoes and steel. Cf. J. Topolski, *Wskaźnik wzrostu gospodarczego Polski od X do XX wieku. Uwagi metodologiczne i próba obliczenia* [*Index of the Economic Growth of Poland from the 10th to the 20th century. Methodological Notes and Attempt at Calculation*], "Kwartalnik Historyczny," vol. LXXIV, 1967, pp. 995 - 1012.

complications encountered by the comparison of value indices.[18] However, in order not to disregard these data completely — bearing in mind all the above reservations — we shall take also into account information on national income.

There remains to be settled the problem of whether we should base our research on data pertaining to the overall or the per capita output. There are much more numerous arguments in favour of the second solution.

Let us begin then with the comparison of the territories of states, their population and its professional structure. Because the majority of states carried out a general census in the early thirties, we shall use the 1933 data. This will not affect our principles to any greater extent, since the population increase was so little dynamic that the difference of a few years did not play any major role, especially as a considerable majority of the states under study had a rather similar rate of population changes. On the other hand, the column pertaining to professional structure (the proportion of persons employed in agriculture to the total number of professionally active persons) contains in each case the year to which the data pertain. Here, too, the fact that the data pertain to different years for various countries will not affect the comparative value of the table. Changes in the professional structure were by the very nature of things rather slow, and the difference of a few years was quite insignificant (Table 1).

We shall consider as similar, in respect of territory and popu-

[18] Difficulties with value indices in longitudinal research are encountered already when we analyze the development of a single country in which abrupt changes had taken place in the volue of money. To this very day, for example, we have no method of comparison covering even the last fifty years of Poland's history. This is due, among other reasons, to the inflation after World War I, occupation of Poland in 1939 - 1945 and the inflation processes according the economic development of People's Poland. Even comparisons of value indices for the period of the existence of People's Poland encounter still unsolved methodological difficulties. Certain authors simply disregard changes in the value of money and compare data expressed in circulation zlotys, without evaluating changes in the purchasing power. These phenomena appear with varying intensity in various states (particularly in central and southern Europe), which further complicates the problem of international comparisons of value indices.

lation only, those countries which did not differ from Poland by more than 25%, give or take. In accordance with the above principles, we shall be interested in states whose area fits within the limits of 292,000 and 486,000 sq.km. and which possess a population

Table 1: Comparison of the territory, population and professional structure of capitalist European countries

Country	*Territory (in thous. sq. km)*	*Population (in mill.)*	*Proportion of employed in agriculture to all persons employed*	
			Year	%
Poland	389	33.0	1931	64.9
Albania	28	1.1	·	·
England	245	46.8	1931	5.2
Austria	84	6.7	1934	26.0
Belgium	31	8.2	c. 1930	19.0
Bulgaria	103	6.0	1926	80.0
Czechoslovakia	140	15.0	1930	34.2
Denmark	44	3.7	1930	30.3
Estonia	48	1.1	1934	63.0
Finland	383	3.5	1930	60.6
France	551	41.9	1931	34.5
Greece	130	6.6	1928	53.7
Spain	505	24.2	c.1930 - 1931	50.0 - 60.0
Holland	34	8.3	1930	20.6
Yugoslavia	248	14.5	·	·
Lithuania	56	2.5	ab.1930 - 1931	60.0 - 70.0
Latvia	66	1.9	ab.1930 - 1931	50.0 - 60.0
Germany	471	66.2	1933	24.5
Norway	323	2.9	1930	31.0
Portugal	92	7.1	c.1930 - 1931	40.0 - 50.0
Rumania	295	18.8	ab.1930	ab.80.0
Switzerland	41	4.1	1930	20.1
Sweden	449	6.2	1930	32.2
Turkey	763	15.2	·	·
Hungary	93	8.8	1930	50.8
Italy	310	42.2	1931	39.2

Note: The following are ommitted in this and further tables: Andorra, Ireland, Lichtenstein, Luxemburg, Monaco, San Marino and the Vatican.

Source: "Mały Rocznik Statystyczny," 1936, pp. 12, 20; "Mały Rocznik Statystyczny," 1938, p. 38; "Mały Rocznik Statystyczny," 1939, p. 33; L. Landau, *Gospodarka swiatowa. Produkcja i dochód społeczny w liczbach [World Economy. Production and Social Income in Figures]*, *in*: L. Landau, *Wybór pism* — Warszawa 1957, p. 364; H. Heaton, *Economic History of Europe*, New York 1948, p. 716.

of between 24.8 and 41.0 million inhabitants. Further, we shall be interested in countries in which the proportion of persons employed in agriculture to all the professionally active persons oscillated within the limits of 48.7% and 80.1%. In this case, however, a doubt might be born whether the interval accepted is not too wide, as we included in the same group countries with rather different economic structure, reflected in the structure of employment.

We are justified in accepting this solution by the fact that the methods of the estimation of professional structure were not very accurate in many countries. What is more — they were completely different.[19] Too great a narrowing of the "bounds of similarity" could lead to the elimination of states with a professional structure similar to Poland's, for the sole reason that they applied different methods of calculating or estimating the number of persons employed in agriculture. Also worth attention is the fact that even with our wider "bounds of similarity" they left out states which could be treated at the turn of the twenties and thirties as having a typically capitalist economy in all sectors. For according to L. Landau "all countries in which capitalist economy is no doubt in the prime of its development are contained in a group in which less than 40% of all persons employed are working in agriculture."[20] In the other states a very considerable part was played by small-scale economy, particularly strong, and often even predominating, in agriculture.

As we have said before, the selection of a group of states based solely on data concerning their territory, population and professional structure, would not have been authoritative enough. We shall pass now, therefore, to the characteristics of industrial production based on selected symptomatic indices. We should like, however, to point out at once that the data contained in Table 2 will be much less accurate than those contained in Table 1. This is due to two main causes. First — demography was in all countries the best organized sector of economic statistics. Second — nearly

[19] L. Landau, *Gospodarka światowa. Produkcja i dochód społeczny w liczbach*, [*World Economy. Production and Social Income in Figures*], Chapter II in: L. Landau, *Wybór pism*, pp. 360 - 370.

[20] *Ibidem*, p. 365.

Table 2: Comparison of overall and per capita output of electric energy, steel and cement in capitalist countries of Europe in 1928

Country	Electric energy		Steel		Cement	
	Overall in thous. mill. kwh	per capita kwh	Overall thous. t.	per capita kg	Overall thous. t	per capita kg
Poland	2.6	79	1,433	43	2,159	65
Albania	·	·	—	—	—	—
England	14.5	309	8,656	185	4,400	94
Austria	2.4	358	650	97	582	87
Belgium	3.7	451	3,905	476	3,000	366
Bulgaria	0.1	11	—	—	108	18
Czechoslovakia	2.7	183	1,727	115	809	54
Denmark	0.5	135	—	—	779	210
Estonia	0.0	22	—	—	60	54
Finland	0.8	216	—	—	280	80
France	13.0	310	9,500	226	4,240	101
Greece	0.1[a]	15	—	—	145	22
Spain	1.8	76	782	32	1,542	63
Holland	1.4	168	—	—	—	—
Yugoslavia	0.5[a]	32	81	6	808	56
Lithuania	·	·	—	—	—	—
Latvia	0.1	36	—	—	25	13
Germany	27.9	430	14,500	219	7,546	114
Norway	9.5	3,272	—	—	318	109
Portugal	0.2	31	—	—	62	8
Rumania	0.5	27	152	8	332	46
Switzerland	5.2	1,256	—	—	628	153
Sweden	4.4	711	576	93	468	75
Turkey	0.1	4	—	—	·	·
Hungary	0.6	74	488	55	426	48
Italy	8.9	211	1960	46	3,077	73

[a]Data for 1929.

Source : "Mały Rocznik Statystyczny," 1938, p. 116; "Annuaire statistique de la Société des Nations," 1930-1931, pp. 117, 124 - 125; 1936 - 1937, p. 125; S. Kurowski, *Historyczny proces wzrostu gospodarczego. Analiza trendu sekularnego* na podstawie produkcji żelaza i stali [*Historical Process of Economic Growth. Analysis of Secular Trends on the Basis of Iron and Steel Output*], Warszawa 1963, statistical supplement.

every country had different principles and methods of collecting data for purposes of production statistics.[21] Hence even such seemingly homogenous production as that of electric power was treated differently in various states. In some of them the official estimates were confined solely to so-called professional power plants producing energy for sale, omitting completely industrial power plants supplying their own mines, iron and steel plants and factories. Other countries treated both groups together. Others still collected data only for power plants with a certain minimum of installed power, leaving out small energy producers, both industrial and professional.[22] The differences between the overall output of electric energy and its output for sale were quite large. Taking the overall output as 100%, power plants in the United States, for example, sold in 1928 78% of their output, in Germany — 52% and in Rumania 40% only.[23] The research difficulties were complicated also by the fact that only a few countries used to make both estimates, and we have no basis whatever for reducing the different estimates to a single common denominator.

Less problems are caused by data on the output of steel, which were of a more homogenous character. But in this case, too, various sources did not always give identical information illustrating the volume of the output.

We noted a similar phenomenon with cement as well. But in spite of all these reservations it is possible to draw a comparison of data on the output of electric energy, steel and cement, and it is contained in Table 2.

As in the analysis of Table 1, we must establish here "bounds of similarity" between Poland and other countries. Nothings prevents us from assuming, as before, that they fit within the limits of 59 - 99 kwh per capita output of electric energy, 32 - 54 kg per capita output of steel and 49 - 81 kg per capita output of cement.

In spite of the fact that we could already at this stage indicate

[21] The methods were changing also in individual countries. They underwent a marked evolution in Poland as well.

[22] See explanation to Table 10 in "Annuaire statistique de la Société des Nations," 1930/31, Geneva 1931, p. 125.

[23] "Mały Rocznik Statystyczny," 1936, p. 72.

a group of countries showing considerable similarity with Poland, we will wait with our conclusions for the presentation of data pertaining to agricultural production. For this will give us a more representative basis for our analysis. For one must not forget, which happens quite often, that Poland represented a type of country with an agricultural-industrial structure. Hence it would be an error to confine oneself solely to comparisons pertaining to industry. It must be borne in mind that according to authoritative estimates of 1927, as much as 64% of inhabitants lived off agriculture, while a mere 9% lived off industry. If we add handicrafts, the figure would rise to 17%.[24] Agriculture also predominated in the production of the national income. According to data at our disposal for 1929, mining produced 6% of the value of the national product, industry — 26% and agriculture — 68%.[25] Even taken together, mining and industry were producing less than one-third of the value of production, which is an eloquent proof of the weight of agriculture in the economy of inter-war Poland.

We have said already that yields from one hectare will be accepted as criteria of the level of agriculture reached. Nothing was said, however, what crops will be taken into consideration in our analysis. And the answer is far from obvious. Different crops did not play the same role in the various climatic zones of Europe. If, for example, rye was essential for Poland and partly also for Germany, it was losing its importance going in a westernly direction and was replaced by wheat. In the countries of southern Europe, on the other hand, the principal grain was neither rye nor wheat, but maize. This produces at once the problem of what agricultural products to choose as the most typical, and at the same time suitable for comparison with Polish agriculture. We think that in view of their big popularity in Europe account should be taken of wheat, barley, rye, potatoes and sugar beet. The choice might be questioned, of course, because not in every country did the above crops play a forefront role. But we were

[24] L. Landau, *Skład zawodowy ludności Polski jako podstawa badania struktury gospodarczej* [*Professional Structure of the Population of Poland as a Basis for Research on Economic Structure*], in: L. Landau, *Wybór pism*, p. 186.

[25] L. Landau, *Gospodarka światowa*, p. 315.

unable to find products which could serve as better gauge of the level of agricultural economy.

Mean values for five-year periods were used in order to eliminate the considerable differences between the yearly crops caused by the varying climatic conditions to which agriculture was extremely sensitive. This permitted the elimination of accidental changes depending solely on the whims of the aura. The 1925 -

Table 3: Average yields from 1 hectare of wheat, rye, barley, potatoes and sugar beet in capitalist European countries (mean values for the years 1923 - 1929 in quintals)

Country	*Wheat*	*Rye*	*Barley*	*Potatoes*	*Sugar beet*
Poland	12.3	10.9	12.1	106.7	202.5
Albania[a]	9.0	12.2	7.6	17.1	·
England	22.5	17.3	20.9	166.8	195.0
Austria	15.1	13.3	15.8	123.6	248.7
Belgium	26.5	24.1	27.6	205.2	281.1
Bulgaria	10.2	9.6	11.7	35.4	136.2
Czechoslovakia	17.2	16.3	18.1	119.9	263.3
Denmark	28.3	15.9	27.0	140.7	290.8
Estonia	10.3	10.5	9.7	106.3	·
Finland	15.6	13.6	12.8	107.9	167.1
France	14.8	11.5	15.4	97.7	237.6
Greece	6.6	8.0	8.0	35.9	—
Spain	9.2	8.7	11.3	112.8	254.6
Holland	29.8	20.3	30.3	172.4	330.6
Yugoslavia	11.9	9.0	9.9	50.4	167.1
Lithuania	11.6	10.7	11.1	104.3	·
Latvia	11.1	9.3	8.8	95.6	·
Germany	19.8	16.2	19.2	135.7	250.1
Norway	17.2	17.3	18.6	177.2	—
Portugal	6.4	6.7	5.5	178.7	·
Rumania	9.2	9.3	9.3	98.9	162.2
Switzerland	22.0	21.0	18.8	149.7	318.4
Sweden	21.6	16.6	18.3	116.5	279.2
Turkey[b]	7.7	7.9	8.7	70.6	·
Hungary	14.0	·	13.9	74.5	220.0
Italy	12.8	13.3	10.5	56.4	255.6

[a] Mean value for 2 years only.

[b] Mean value for 3 years only.

Source: "Annuaire International de Statistique Agricole," 1933 - 1934, Rome 1934, pp. 174 - 175, 178 - 183, 198 - 199, 202 - 203.

1929 period, that is the year directly preceding the great economic crisis, was taken as the basis for the analysis. Thanks to this, the data contained in Table 3 were not affected as yet by the critical drop in crops which could be felt in certain states with a highly developed capitalist agriculture. A drop in prices of farm produce caused in those states a reduction of outlays on production, among other things, the use of fertilizers was reduced which was directly reflected in crops from a hectare. In states with a preponderance of small producer's husbandry this was not so serious, because peasants tried to counteract the drop in prices precisely through an intensification of production in order to increase output and compensate at least partly for their losses due to the drop in prices [26] (Table 3).

The setting of the "bounds of similarity" at 25% seems in the case of agriculture too liberal, as it would mean that a single group would consist of countries with a very weak and medium development of agriculture. For differences in yields between them were approximately within the limits of 25%. Hence we suggest in this one case the narrowing down of the "bounds" to 20% which will permit the selection of a smaller group of states whose agriculture is similar to Poland's. We shall set, therefore, the limits for wheat at 9.7 - 14.9 quintals, rye — 8.7 - 13.1 quintals, barley — 9.7 - 14.5 quintals, potatoes — 85.4 - 128.0 quintals and sugar beet — 162.0 - 243.0 quintals.

We shall try now to draw a conclusion from the analytical information gathered so far. With this aim in view we shall compile it in Table 4 in which we shall mark countries fitting within the "bounds of similarity" with Poland. This will permit us to select states showing the highest number of similarities with our country. This will give us, of course, just raw material requiring further verification (Table 4).

Table 4 contains three groups of data. Group one contains information pertaining to territory, population and professional structure, group two presents symptomatic indices of industrial

[26] L. Ljuboszyc, *Problemy marksistowsko-leninowskiej teorii kryzysów agrarnych* [*Problems of the Marxist-Leninist Theory of Agrarian Crisises*], Warszawa 1951.

Table 4: "Bounds of similarity" of various countries with Poland (× — similarity)

Country	*Area*	*Population*	*Professional structure*	*Electric energy*	*Steel*	*Cement*	*Wheat*	*Rye*	*Barley*	*Potatoes*	*Sugar beet*
Albania								×			
England											×
Austria										×	
Belgium											
Bulgaria			×					×	×		
Czechoslovakia						×				×	
Denmark											
Estonia			×			×	×	×	×	×	
Finland	×		×			×			×	×	×
France							×	×		×	×
Greece			×								
Spain			×	×	×	×			×	×	
Holland						×					
Yugoslavia						×	×	×	×		×
Lithuania			×				×	×	×	×	
Latvia			×				×	×			
Germany	×										
Norway	×										
Portugal			×								
Rumania	×		×					×		×	×
Switzerland						×					
Sweden	×									×	
Turkey											
Hungary			×	×	×		×		×		×
Italy	×				×	×	×	×	×		

Source: Tables 1 - 3.

output, group three those of agricultural output. As may be seen from Table 4, none of the states shows similarity with Poland in the first group of data under study. The highest number of characteristics was shown by Finland and Rumania (two each out of three possible). In group two Spain had 100% of similarity, while Hungary and Italy had 66% each. Many states, on the other hand, showed a similar degree of intensiveness of agriculture. Their list included Estonia, France, Yugoslavia and Lithuania (four each

out of five possibles). The highest number of common characteristics had Estonia, Finland, Spain, Hungary and Italy (six each out of eleven possibles).

We must now return once again to information expressed in absolute values in order to decide whether all these countries should be taken as a basis of comparisons with Poland (Table 5).

Table 5: Selected data on the economic situation of Poland, Estonia, Finland, Spain, Hungary and Italy

Country	Area in thous. sq. km.	Population in mill.	Prof. struct. farmers in %	Per capita output in kwh electric energy	Per capita output in kg steel	Per capita output in kg cement	Yields in q from 1 hectare wheat	rye	barley	potatoes	sugar beet
Poland	389	33.0	64.9	79	43	65	12.3	10.9	12.1	106.7	202.5
Estonia	48	1.1	63.0	·	—	54	10.3	10.5	9.7	106.3	·
Finland	383	3.5	60.6	216	—	80	15.6	13.6	12.8	107.9	167.1
Spain	505	24.2	·	76	32	63	14.8	11.5	15.4	97.7	237.6
Hungary	93	8.8	50.8	74	55	48	14.0	·	13.9	74.5	220.0
Italy	310	42.2	39.2	211	46	73	12.8	13.3	10.5	56.4	255.6

Source: Tables 1 - 3.

Estonia and Finland should be eliminated in our view from the countries listed in Table 5. This is due to their population which is much smaller than Poland's. One can hardly compare after all a country with a population of 33 million people with Estonia (one million) or Finland (3.5 million). The scale of economic problems was simply quite different. We suggest, therefore, that for purposes of research on the long-term growth Polish economy may and should be compared with the economy of Spain, Hungary and Italy.

Let us try to verify the correctness of this proposal on the basis of data pertaining to the value of agricultural, mining and industrial output in zlotys per one inhabitant in 1929 (Table 6).

It seems that the above data confirm the correctness of the choice. It appears from them that the four states approximated to each other by the level of national income, although its structure was slightly different. Poland and Hungary had a similar share of

industrial output in the overall national product (26% and 29%). Spanish (40%) and Italian (62%) industries played a bigger role. This reflected approximately the role of industry in the economy of each of these countries, even though for Italy the data seem exaggerated. The value of agricultural output was distributed in

Table 6: Annual value of per capita output in Poland, Spain, Hungary and Italy (in zlotys in 1929)

Country	*Total*	*including:*				
		total	*agricultural crops*	*livestock*	*mining*	*industrial*
Poland	610	410	180	210	40	160
Spain	750	420	240	150	30	300
Hungary	830	580	260	310	10	240
Italy	880	320	170	140	10	550

Source: "Mały Rocznik Statystyczny," 1939, p. 67.

a slightly different manner. It played the biggest role in Hungary (70%) and Poland (68%), a smaller one in Spain (56%) and Italy (36%). At the same time the best developed agriculture was in Hungary (its per capita of agricultural population value amounted to 1,100 zlotys in 1929). Spain came second with 770 zlotys, Poland third with 700 zlotys and Italy fourth with 660 zlotys.[27]

The data contained in Table 6 show also the necessity of taking into consideration the fact that Poland started from a lower level than the three other countries. Taking the Polish per capita industrial output as the measure of the level of development, the economic potential of Spain in 1929 was 23% higher, the Hungarian potential was 36% higher and the Italian potential was 44% higher. With the reservation, of course, that in view of the methodological differences in the estimation of output in the various countries the data are of a rather approximate nature.

Should we take into consideration as an ancillary element the per capita value of foreign trade in 1928, for example, we could not but come to the conclusion that in comparison with Hungary,

[27] "Mały Rocznik Statystyczny," 1939, p. 67.

Spain and Italy, Poland lagged even farther behind. Taking Poland's foreign trade turnover as 100%, Hungary represented 190%, Spain 206% and Italy 219%.[28] But the volume of foreign trade turnover was not, of course, a direct proof of the economic potential of the country, because it depended also on the economic structure and the constantly changing terms of trade.

The group of selected states was marked in its historical development by certain common and palpable characteristics.[29] First — all of them entered comparatively late the road of developed capitalist economy, second — in all of them (at least on a considerable area) agriculture developed in the Prussian way, which left in the countryside serious relics of feudalism in the form of large land estates, third — serious disproportions existed in all of them between the degree of the development of the various regions (Poland A and Poland B, northern Italy and southern Italy, the economically developed Spanish coast and the backward — except for Madrid — interior). Fourth — except Spain — both Italy, Poland and Hungary got comparatively late their political independence and the chance of independent economic development within the framework of a homogeneous national state. The fifth common characteristic was the marked importance of petty economy, both in town and country.

It is difficult to establish today whether the above characteristics were decisive for the achievement of a similar degree of development by these four states towards the close of the nineteen twenties. It would require special research with the participation of historians of the countries concerned. But the above assertion may be treated as a provisional working hypothesis. It is all the more justified since the studies of J. Topolski on the economic processes in 17th-century Europe showed already that Po-

[28] "Mały Rocznik Statystyczny," 1936, p. 85.

[29] For Poland Cf., e.g., I. Kostrowicka, Z. Landau, J. Tomaszewski, *Historia gospodarcza Polski XIX i XX wieku* [*The Economic History of Poland of the 19th and the 20th Century*], Warszawa 1966; W. Rusiński, *Rozwój gospodarczy ziem polskich w zarysie* [*Economic Development of Polish Lands in Outline*], 2nd edition, Warszawa 1969; for Spain — R. Carr, *Spain 1808 - 1939*, Oxford 1966; for Italy — S. Clough, *The Economic History of Modern Italy*, New York 1964.

land, Italy and Spain had certain common characteristics at that time.[30] Taking as his starting point the rate of economic growth of the individual states, J. Topolski isolated three groups of states in the Europe of that time. The first group included, according to him, states with the highest rate of economic development and the most advanced disintegration of feudal relations in agriculture. The second group included countries with regard to which "one could not speak of stagnation or regression, but in which development was somewhat slower." The third group included "countries of economic stagnation and regression." Spain, Portugal, Italy and Poland neighboured on one another in this last group. It would be perhaps a simplification to look for analogies between the situation of the above states in the 17th century and in the twenties of the 20th century. One must not, however, exclude the possibility of the existence of such analogies which could be due to certain common historical processes.

Perhaps further research would permit the verification of a second working hypothesis negating the existence of a common road of economic development of the entire western Europe, and the existence of a separate road typical for all states of the central eastern Europe. Perhaps it would be more correct to look for the developmental regulaties of states developing on the periphery of countries which introduced capitalist economy relatively earlier (England, France, Germany), that is Spain in the West, Italy in the South and Poland in the East? This, however, is just an exploratory suggestion.

The question remains to be answered whether in view of the damage done during World War II it is admissible to compare the above four countries over a longer period. For the losses inflicted on them were highly unequal. The most serious losses were suffered by Poland,[31] while Hungary and Italy suffered less. The war did not affect Spain at all. But, on the other hand, she had

[30] J. Topolski, *Narodziny kapitalizmu w Europie XIV - XVII wieku* [*The Birth of Capitalism in Europe of the 14th - 17th Century*], Warszawa 1965, pp. 165 - 178.

[31] For details see *Sprawozdanie w przedmiocie strat i szkód wojennych Polski w latach 1939 - 1945* [*Report on War Losses and Damage in Poland in the Years 1939 - 1945*], Warszawa 1947.

suffered serious losses during the 3 years of the civil war. However, there are no fully reliable and comparable numerical data permitting an accurate assessment of the war losses suffered by each of the above-mentioned countries.[32] But one must remember that Poland's losses were partly compensated by certain reparations and incorporation of the western and northern territories whose value was much higher than that of the lands ceded to the Soviet Union. On the other hand, the losses of Italy and Hungary increased additionally by the amount of the war reparations. For all that, however, the losses suffered by the Polish economy, both in population and property, were still much higher. There are, however, no grounds for asserting that differences in the level of losses make long-term comparisons impossible. In our opinion, such comparisons are both possible and necessary.

(*Translated by Jerzy Łowiński*)

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[32] The degree of comparability of the value of damage in monetary expression may be seen, for example, in the fact that the estimates for Italy oscillate within the limits of between 3.22 to 22 thousands million I.U. units based on the purchasing power of the dollar in the 1925 - 1934 decade determined on the basis of stable prices. According to the same data, damage in Poland (without the western and northern territories) amounted to 22.25 thousands million and with western and northern territories to 30.90. The Hungarian losses were estimated at 4.8 thousands million, which puts a question mark to Clin Clark's estimate of Italian losses set at 3.22 thousands million. C. Clark, *Conditions...*, p. 608.