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INDUSTRIAL RECESSION IN POLAND 1924 - 1925

I. DEVELOPMENT OF SITUATION IN INDUSTRY

After the inflationary boom, as early as April 1923 a production decrease loomed in Poland. However, the very industrial recession began in the autumn of the same year. Its causes have been thoroughly discussed somewhere else,¹ so I shall confine myself to recalling only the most important of them. One of them were declining real wages as a result of hyperinflation. This entailed decrease in the demand for industrial goods. The decreasing revenue of the State had a similar effect. The government had to limit expenditures, among others to reduce the purchase of industrial goods. At the same time, in the face of disorganization in the credit system, businessmen encountered growing difficulties in obtaining cheap loans. This had an effect to bear on increased production costs, and this in turn hampered sales on both home and foreign markets. It also turned out that Polish industry, modernized to a minute extent only during the years of the inflationary boom, faced far greater production costs than those of more up-to-date establishments in West-European states. Easy export during the years 1920 - 1923 resulted first of all from the fact

¹ Z. Landau, J. Tomaszewski, *W dobie inflacji [In the Times of Inflation]*, Warszawa 1967, pp. 100 - 104.

that inflation started a special mechanism, i.e. the so-called inflationary export bounty which was functional under the conditions of moderate inflation, but failed under the circumstances of hyperinflation.²

With hyperinflation in Poland ended the era of industrial boom and this country entered a period of growing economic difficulties. They still grew after the currency stabilized. Yet it is difficult to share the opinion that the recession was solely due to the stabilization of the currency which only deepened the depression.

The post-inflationary recession, and this term conventionally embraces the period of breakdown from autumn 1923 till early 1926, had several clear-cut stages. Inasmuch as, for example, the depression that affected Poland's economy during the years 1930 - 1935 was characterized by systematic fall in production gradually deepening till 1932, the post-inflationary recession had two production drops instead of one.

The first stage of the breakdown continued till June 1924. In that period production dropped considerably. It was an expected result of the rapid stabilization of the currency. As a result of checking the fall of the value of the Polish Mark, and then thanks to the introduction of the zloty of standard value, the prices of goods increased, since individual production costs went up. The production fall particularly affected the industries producing investment goods, where production rate between August 1923 and July 1924 decreased by 48.6 points, while in the industries producing consumer goods the corresponding figure was 22.9 points.³

In August 1924 the situation began to improve relatively. Researchers in economic situation defined it as "depression [. . .] with certain symptoms of apparent improvement, characterized by a certain production growth."⁴ This improvement was mainly a result of increased demand on the home market. Increased pur-

² The mechanism of the inflationary bounty cf. *ibidem*, pp. 340 - 341.

³ *Wskaźnik produkcji przemysłowej w latach 1922 - 1924* [The Index of Industrial Production During the Years 1922 - 1924], "Koniunktura Gospodarcza," 1931, p. 115.

⁴ *Koniunktura gospodarcza w Polsce 1924 - 1927* [Economic Situation in Poland 1924 - 1927], Warszawa 1926, p. 24.

chase of industrial goods was due to the end of the harvest which was connected with increased cash resources of the agricultural population. The boom was also greatly due to the inflow of foreign loans for the government. These means were immediately spent on the financing of various economic undertakings which entailed increased governmental orders. As a result, the demand increased for industrial goods. The sales on foreign markets were far lower than in 1923. Industrial production and mining increased relatively high in the latter half of 1924. In 1925, however, this tendency was checked and in September production began to drop again. This time it was a drop indeed. Suffice it to say that in January 1926 production decreased by 20% in comparison with September 1925.⁵

The cause of the recurrence of the breakdown in August 1925 was not only the internal situation, e.g. disorders on the currency market, but first of all the tariff war launched by the German Reich against Poland. In connection with the fact that Germany was the main importer of Polish goods (among other things she imported 6 million tons of coal and considerable quantities of metallurgical products annually), limitation of her purchases had to have a severe effect to bear on the situation of Polish industry.

The adverse phenomena taking place in trade exchange with Germany could not be counteracted by the recurrence of the inflationary export bounty connected with the breakdown of the zloty. An additional cause of the production drop were difficulties in obtaining loans on the home currency market. This entailed increased credit costs that were relatively high in Poland anyway. Credit difficulties in turn resulted in increased production costs and this limited the possibilities of sale and entailed decreased production output. Naturally, there were some other factors, too. For instance, fear of the further fall of the zloty resulted in the fact that factories refused to sell their products on credit which in the face of the shortage of cash in tradesmen resulted in decreased orders.

As late as February 1926 began a slow, but at the same continuous growth of industrial production. It began a few months

⁵ *Ibidem*, p. 65.

before the May *coup d'état*. So, it negates the thesis supported by Piłsudski's followers that only his accession to power made it possible to improve the State's economic situation.⁶ Actually, improvement began to loom earlier.⁷

The period between February and August 1926 can be defined as a post-recession depression. In that period a vital effect on the production boom was that of the decreased value of the zloty, and so certain inflationary factors began to operate, such as for instance the debasement of taxes and import tariffs, etc., and automatically decreased the production costs of enterprises. The inflationary mechanisms functioning in Poland combined with the growing improvement of the world situation which is illustrated by Table 1.

Table 1. Production of Selected Raw Materials and Industrial Goods in Europe (exclusive of the USSR) in the Years 1925—1927

Item	1925	1926	1927
Coal (in million ton)		433	574
Petroleum	3 304	4 229	4 584
Cement	23 500	25 500	28 520
Zinc	510	526	626
Paper	6 750	6 960	7 690
Aluminium	103	113	110
Potassium	1 951	1 716	1 982
Motor-cars	472	516	604

Source: "Statistical Year-Book of the League of Nations," 1934—1935, pp. 124, 127, 129, 136, 147, 149, 160, 165.

The activation of European economy and the fall of the value of the zloty made it possible to increase Poland's exports, and

⁶ Cf. e.g. *Przegląd życia gospodarczego Polski w okresie od połowy września 1926 r.* [A Review of Poland's Economic Life in the Period from Mid-September 1926], Warszawa 1926; S. Starzyński, *Rok 1926 w życiu gospodarczym Polski* [The Year 1926 in Poland's Economic Life], Warszawa 1927; A. Krzyżanowski, *Rządy Marszałka Piłsudskiego* [The Rule of Marshal Piłsudski], Kraków 1927; E. Kwiatkowski, *Istotne założenia w walce o nowy ustroj* [Important Assumptions in the Fight for a New System], Warszawa 1929.

⁷ This problem is more widely discussed in: Z. Landau, *Plan stabilizacyjny 1927 - 1930* [The Stabilization Plan 1927 - 1930], Warszawa 1963, pp. 11 - 39; Z. Landau, *Impact of the May 1926 Coup on the State of Polish Economy*, "Acta Poloniae Historica," vol.35, 1977, pp. 169 - 187.

the improvement of the situation in the countryside connected with increased prices of agricultural products resulted in the increased national demand for industrial goods that was particularly marked in the period beginning in September 1926. Growing sales on the home and foreign markets encouraged the private capital to make new investments almost completely given up during the years of the post-inflationary recession. Growing investments increased the demand for investment goods. In order to cover them, businessmen developed production and employed new workers. The latter in turn by spending the money they earned increased the demand for consumer goods. So, multiplication mechanisms and the accelerator principle began to function again on the understanding that inasmuch as during the period of the recession they added to the decline of production, this time they accelerated its rapid growth. This improved situation had repercussions on the State revenue. The increased turnover and profits of private enterprises increased the State income. Similarly increased the budgets of fiscal monopolies and state-owned enterprises. Growing revenues enabled the government to increase

Table 2. Monthly Indexes of Industrial Production Improved by the Elimination of Seasonal Fluctuations for the Period January 1923 — December 1926 (1925 — 1927 = 100)

<i>Month</i>	<i>1923</i>	<i>1924</i>	<i>1925</i>	<i>1926</i>
January	112.6	94.5	102.9	77.8
February	112.6	94.2	95.6	79.8
March	113.1	97.9	100.1	81.6
April	111.1	103.9	100.6	84.0
May	108.8	94.6	99.5	83.1
June	110.9	84.6	99.0	87.7
July	111.9	79.5	95.3	93.7
August	111.1	74.0	90.9	97.7
September	109.6	91.2	90.4	101.3
October	102.6	93.9	86.3	102.3
November	104.1	100.3	82.4	105.4
December	101.3	100.6	80.5	106.9

Source: *Wskaźniki produkcji przemysłowej w latach 1922—1924* [Indexes of Industrial Production in the Years 1922—1924], „Koniunktura Gospodarcza,” 1931, p. 115; L. Landau, *Wahania sezonowej produkcji przemysłowej w Polsce* [Seasonal Fluctuations of industrial Production in Poland], „Sprawozdania i Przyczynki Naukowe,” Instytut Badań Koniunktur Gospodarczych i Cen, 1929, No. 4, p. 11.

expenditures. This in turn resulted in an additional boom on the home market.

These processes are reflected by Table 2 giving information on the formation of the general index of industrial production and mining in the individual months of the period we are interested in. This index needs some explanation. Without going far into details, one should say that its character was first of all symptomatic. Solely for mining and metallurgy it was based on the data concerning the real production of fundamental products (hard coal, iron ore, zinc and lead, pig iron, rolled products and zinc). On the other hand, for the processing industry the basis of the index were not the data concerning the real production, but the number of man-hours in establishments employing over 20 workers,⁸ at the same time weeks with holidays and periods of big strikes were eliminated from the calculations initially.⁹ On the basis of these data indexes were determined for a dozen or so most important branches of industry. The general production index used in Table 2 was the weighted arithmetic mean of the indexes calculated for individual branches of mining and metallurgy and the production index of the processing industry. Weights were determined on the basis of the mean number of workers in each production branch. In various periods various weights were applied. Initially, the starting-point was the average number of workers in each branch during the years 1925, 1926.¹⁰ Then the basis was employment in the period 1925 - 1927.¹¹ At the same time, certain modifications took place in the very construction of the index.¹²

The fundamental advantage of an index constructed in that way was its simplicity thanks to which its calculation was possible even under the conditions of lacking detailed statistics of indus-

⁸ *Koniunktura* . . . , pp. 20 - 21.

⁹ Cf. "Koniunktura Gospodarcza," 1928, p. 243.

¹⁰ *Koniunktura* . . . , pp. 65 - 66.

¹¹ "Koniunktura Gospodarcza," 1929, p. 92.

¹² For changes in the method of calculating the index see *Nowa metoda obliczania wskaźnika produkcji przemysłowej* [A New Method of Calculating the Index of Industrial Production], "Koniunktura Gospodarcza," 1929, pp. 114 - 115; Z. Landau, *Metody badań produkcji przemysłowej i zatrudnienia w przemyśle* [Methods of Research in Industrial Production and in Employment in Industry], "Prace Instytutu Badania Koniunktur Gospodarczych i Cen," vol. II, 1933, Part 2, pp. 20 - 25.

trial production.¹³ However, it had certain shortcomings. They consisted firstly in the fact that only big and middle industries were taken into consideration in the processing industry, while the small-scale industry, so important under Poland's conditions, was ignored completely; secondly, the growth of productivity was not taken into consideration, since it could not be embraced by the index based on the number of man-hours only; and thirdly, since weeks with holidays or big strikes were eliminated from the statistics, the index did not take into account the fall of productivity due to these circumstances. Naturally, it is difficult to find out to what extent the underestimation of the production volume due to the fact that productivity in the processing industry was not taken into consideration was balanced by the omission of the effect of bigger strikes on production.

The above considerations concerning the course of economic situation do not yet allow of forming a complete opinion on the situation of Polish industry in those days. For this purpose one should compare the production level of the years 1924 - 1926 with that in 1923. This is illustrated by Table 3.

Table 3. The General Index of Industrial Production in the Years 1923—1927

<i>Year</i>	<i>Index</i>	<i>Change in comparison with the preceding year</i>
1923	100.0	
1924	84.8	- 15.2
1925	86.2	+ 1.4
1926	83.8	- 2.4
1927	104.6	+20.8

Source: Calculated on the basis of the publication: *Materiały do badań nad gospodarką Polską* [Materials for Research on Poland's Economy, Part I: 1918—1939, Warszawa 1956, p. 165, Anne 1.

These data, however, due to not very precise construction of the index, should be taken cautiously. For instance, from the

¹³ J. Tomaszewski, *Ogólny wskaźnik produkcji przemysłowej Polski 1928 - 1938* [The General Index of Poland's Industrial Production 1928 - 1938] in: Z. Landau, J. Tomaszewski, *Druga Rzeczypospolita. Gospodarka, społeczeństwo, miejsce w świecie* Warszawa 1977, pp. 9 - 42.

above comparison it appears that the production level of 1923 was reached and exceeded as late as 1927. In connection with the fact, however, that the index did not take into consideration the growth of productivity in processing industries, and productivity went up pretty rapidly in that period, some researchers assume that the production level of 1923 was reached maybe as early as towards the end of 1926.¹⁴

II. THE SITUATION OF INDUSTRY IN THE PERIOD OF POST-INFLATIONARY RECESSION

Inasmuch as the industrial recession of the years 1930 - 1933 attracted much attention of researches and is the subject of many various publications,¹⁵ the situation of industry in the period of the post-inflationary recession has not been properly studied. It is difficult to explain lack of publications devoted to this subject. One can venture the hypothesis that the question of the industrial recession paled before problems of finances and currencies that are the subject of a considerable number of monographs and publications.¹⁶ Another reason could be difficulties with sources, and especially the imperfection of statistics and lack of partial data. The insufficiency of sources discouraged researchers from undertaking an analysis of recession phenomena in industry. Irrespective of the cause, however, a mere fact is that lack of investigations extremely complicates the presentation of the situation of Polish industry during the years 1924 - 1926.

The fundamental symptoms of the recession were: production fall, decreased employment, and the limited number of industrial establishments in operation. So, before we analyse the changes in the national economy entailed by the breakdown of industrial situation, let us try to present the effect of the depression on the physical level of production. Naturally, we cannot analyse too great a number of products, that is why we shall confine

¹⁴ *Ogólny wskaźnik...*, p. 114.

¹⁵ For incomplete bibliography see L. Grosfeld, *Polska w latach kryzysu gospodarczego 1929 - 1933* [Poland in the Years of the Great Depression 1929 - 1933], Warszawa 1952, pp. 310 - 315.

¹⁶ For a list of them see J. Tomaszewski, *Stabilizacja waluty w Polsce* [The Stabilization of Currency in Poland], Warszawa 1961, pp. 233 - 238.

ourselves to those most characteristic ones for which we have suitable sources at the same time.

Table 4. Comparison of the Volumes of the Industrial Production Selected Products During the Years 1913 and 1923—1926

<i>Item</i>	<i>1913</i>	<i>1923</i>	<i>1924</i>	<i>1925</i>	<i>1926</i>	<i>Relation 1926— 1913 (%)</i>	<i>Relation 1926— 1923 (%)</i>
Hard coal (in million tons)	40.7	36.1	32.2	29.1	35.7	87.8	98.8
Crude oil (in thousand tons)	1114	737	771	812	796	71.5	108.0
Natural gas (in million cubic m.)	687	390	438	535	481	70.0	123.3
Salt (in thousand t)	189	363	275	330	339	179.4	93.4
Potash salt „	2	62	81	179	208	104	335.4
Iron ore „	464	450	288	212	315	67.9	70.0
Zinc ore „	510	260	238	375	305	59.8	117.3
Pig iron „	1055	520	336	315	327	31.0	62.8
Steel „	1619	1132	678	782	788	48.7	69.6
Zinc „	192	96	93	114	124	64.6	129.1
Lead „	42	17	20	28	28	60.5	164.7
Coke „	918	1373	950	964	1113	121.2	81.0
Fertilizers „	400	282	299	515	613	153.2	217.4
Sugar ^a „	·	574	246	341	421	·	73.3
Cement „	665	489	350	529	557	83.6	113.9
Electricity (in million kWh)	660	1511	·	1667	1441	228.3	96.0
Rolled products (in thousand t)	1244	778	472	586	562	45.1	72.2
Paper (in thousand t)	65	52 ^b	46	75	82	126.1	157.6

a—in sugar campaigns 1922—1923 and 1926—1927.

b—data for 1922.

Source: "Rocznik Statystyki Rzeczypospolitej Polskiej" 1927, pp. 157, 161, 163, 164, 167; 1928, p. 168; Z. L a n d a u, *Gospodarka Polski na tle gospodarki światowej 1913—1938* [*Poland's Economy Against the Background of the World Economy 1913—1938*], "Kwartalnik Historyczny," 1968, p. 257.

The list of the products taken into consideration in Table 4 has a pretty accidental character. It lacks data characterizing the production of the textile industry. Also poorly represented is the output of the chemical and food industries. But already on the basis of the data given by the table one can attempt the formulation of certain conclusions. First of all one should say that the recession affected various branches of industry to a different extent and in various ways. The general production index dropped by 16.2%¹⁷ in 1926 as compared to 1923, but in many industries production not only did not decrease, but even increased considerably. This referred first of all to potash salt the output of which grew rapidly. The production of fertilizers, paper, lead, zinc and natural gas increased, too. On the other hand, the output of iron ores, the melting of pig iron and steel and the production of rolled products and sugar dropped below the average decrease. At the same time, one should keep in mind that in 1926 in many branches of industry production considerably increased in comparison with the most difficult year 1925. In other words, the depression most sharply affected iron metallurgy among the investigated branches that had to mean similar processes in the metal-processing industry in general. The textile industry suffered from the depression very much, too.

The number of operational thin-spinning spindles in the textile industry decreased by 18% in 1926 in comparison with 1923, and that of power-looms by 34%. In the wool industry, the operation of spindles for worsted, spindles for coarse wool and power-looms decreased by 20%, 68% and 32%, respectively. This meant that the textile industry suffered from the depression more than the other branches of industry, except for the iron and steel industry.¹⁸ As a result of the outbreak of the tariff war with Germany in 1925, coal mining suffered very much, too: its output dropped by 20% in comparison with 1923. As late as the outbreak of a several months' strike in British collieries in 1926 the demand for Polish coal rapidly grew abroad and this made it possible to improve the situation in this industry.¹⁹

¹⁷ Cf. Table 3.

¹⁸ "Rocznik Statystyki RP," 1924, p. 63; 1925, p. 166.

¹⁹ S. S z y s z k o w s k i, *Skutki gospodarze strajku górników w Anglii* [*The Economic Effect of the Strike of Miners in England*], "Przemysł i Han-

When drawing conclusions concerning the general economic effects of the depression in industry one should bear in mind that the three most affected industries (coal mining, the textile industry and metallurgy) were among the fundamental branches of Polish production. Hence, their difficulties had a far great bearing on the economic situation than even great improvement in the production of secondary production branches at that time, e.g. the chemical industry or the paper industry.

In order to picture the importance of individual industries we have to resort to the information on the number of the workers they employed. However, we cannot compare the changes of employment in the years 1923 and 1926 with one another, since the respective data for 1923 are lacking.²⁰ Under these circumstances we shall confine ourselves to presenting the information characterizing the structure of employment in the most important industries we are interested in. In December 1926, among the 641 thousand workers of all the mines, metallurgical enterprises with blast-furnaces and processing plants employing over 20 people,²¹ were 209 thousands of those employed by coal mining and metallurgy and 136 thousands of those working in the textile industry. Therefore, the afore-mentioned branches employed about 53⁰/₀ of all the workers of the big and middle industries. On the other hand, the paper industry employed only 10 thousand workers and the chemical industry 31 thousand people. Thereby, even some increase in production in those branches could not compensate the fall of production in the textile industry, metallurgy and coal mining.

As a result of the production decrease employment dropped rapidly. In mining it decreased by 47⁰/₀ during the years 1924 and 1925 as compared to 1923, and in the iron and steel industry

del," 1926, pp. 1141 - 1143 ; J. Cybulski, *Sytuacja górnictwa węglowego po strajku angielskim* [The Situation of Coal Mining After the English Strike], "Przemysł i Handel," 1927, pp. 391 - 393.

²⁰ Z. Landau, *Stan zatrudnienia robotników w przemyśle polskim w latach 1918 - 1923* [The Employment of Workers in Polish Industry in the Years 1918 - 1923], "Kwartalnik Historii Ruchu Zawodowego CRZZ," 1968, No. 1.

²¹ "Rocznik Statystyki RP," 1927, p. 348. According to other data, employment amounted to 616 thousand persons at that time. Cf. Table 5. The differences are due to the application of various methods of calculating.

by 42⁰/. In general, employment cuts were greater than the production decrease which was connected with increased productivity and production concentration. The changes in employment during the years 1924 - 1926 are illustrated by Table 5.

Table 5. Changes in Employment in Mining, Metallurgy and Processing Enterprises Employing Over 20 Workers During the Years 1923—1926 (Data from the End of the Year)

<i>Branch of industry</i>	<i>1923</i>	<i>1924^a</i>	<i>1925</i>	<i>1926</i>
Total	·	628	537	616
Mining	254	179	135	157
Metallurgy	75	45	44	52
The remaining branches	·	404	358	407
including:				
Mineral industry	·	28	25	33
Metal industry	·	68	61	68
Chemical industry	·	28	28	31
Textille industry	·	132	101	136
Paper industry	·	10	9	10
Leather industry	·	5	4	4
Wood industry	·	50	35	41
Food industry	·	55	73	53
Clothing industry	·	9	6	8
Building industry	·	19	16	15
Printing industry	·	8	8	8

Note: For the numbers of workers in individual branches of industry are rounded up to full thousands, the total slightly differs from summing up the partial data given under "the remaining branches."

^a—data for January 1925.

Source: "Rocznik Statystyczny RP," 1925—1926, p. 146; 1927, p. 249.

An analysis of Table 5 is of relatively little use for us, since it lacks data on employment during the last year of the pre-recession boom. Thereby, we are unable to find out how much decreased the number of the employed. Taking the data for mining and metallurgy as those representing industry in general could turn out wrong, since the production decrease in these branches was greater than in the other ones. On the other hand, we can find out that although production increased in 1926, the total employment in that year did not reach the level of 1924 yet. It was

a result of changes in the organization of production and an effect of increasing productivity.

With the decrease of production the number of running industrial establishments went down, too. We have not enough data to present this process using all the factories as an example. Statistics in those days did not embrace indispensable figures for this purpose. However, we can give information on some industries (see Table 6).

Table 6 shows that tendencies in this respect were multidirectional, too. In some branches the number of establishments decreased, in others grew. It is difficult to find out distinct relationships, since not always a fall in production automatically entailed a decrease in the number of running establishments. For instance, the output of rock-salt and table salt dropped, but the number of establishments increased. In general, however, there was a tendency to concentrate production. In hard coal mining the output dropped by 1.2% and the number of running collieries decreased by 25% during the years 1923 - 1926. In iron ore min-

Table 6. Changes of the Number of Operational Industrial Establishments in Selected Industries During the Years 1913 and 1923—1926

<i>Kinds of establishment</i>	1913	1923	1924	1925	1926
Mines:					
Hard coal	.	121	106	90	91
Brown coal	8	15	9	5	4
Crude oil	444	474	476	501	546
Rock-salt and saltworks	12	13	13	15	15
Iron ore	37	34	17	12	20
Zinc and lead ores	18	9	7	9	10
Blast-furnaces	.	21	9	11	13
Zinc works	29	24	24	14	14
Refineries	.	33	34	27	29
Fertilizer plants	23	.	.	31	28
Sugar factories ^a	87	74	75	72	71
Cement plants	.	13	14	15	15
Cardboard- and paper-mills	.	41 ^b	.	48	46
Power plants	.	506	.	642	.

a—during the sugar campaigns 1923—1924 and 1926—1927.

b—in 1922.

Source: "Rocznik Statystyki RP," 1923, p. 50; 1924, p. 61; 1925—1926, pp. 152, 188; 1927, pp. 156, 162, 163, 164, 171, 188.

ing the corresponding figures were 30% and 41%, respectively. The number of paper-mills increased by 12%, but the output by as much as 58%. In order to make the reader get better acquaint-

Table 7. The Volume of Industrial Production per 1 Running Establishment in the Years 1923 and 1926 (in Thousand t.)

<i>Item</i>	<i>Year</i>		<i>Increase</i>	<i>Decrease</i>
	1923	1926	(%)	
Collieries	298.0	392.0	32	
Oil-wells	1.6	1.5		5
Salt-mines	27.9	22.6		19
Iron ore-mines	13.2	15.8	19	
Zinc and lead ore-mines	28.8	30.5	6	
Blast-furnaces	24.7	25.1	2	
Zinc works	4.0	8.8	120	
Sugar factories	3.3 ^a	5.9 ^b	84	
Cement plant	37.6	37.1		2
Paper-mills	1.3 ^c	1.8	38	
Refineries	18.9	24.0	27	

a—data for the campaign 1923—1924.

b—data for the campaign 1926—1927.

c—data for 1922.

Source: Calculated on the basis of data from Tables 5 and 6.

ed with the trends of concentration, in Table 7 we give the volume of production per 1 running establishment in the years 1923 and 1926.

We are far from attempting any generalization of conclusions. In any case, Table 7 shows that in a great number of branches of industry the recession had an effect to bear on the concentration of production. From the social viewpoint concentration meant increased unemployment as a result of closing factories, therefore it deserved negating. From the economic viewpoint, however, such an opinion was neither correct nor right, since the concentration of production was a law governing capitalist economy. Countries in which this process was too slow naturally had to lag behind in the world-wide economic race. From this viewpoint the concentration of production was an indispensable condition of economic progress, since it made it possible to lower unit pro-

duction costs, therefore it facilitated profitable export without resorting to dumping. Under the circumstances of a developing country the possibility of profitable export was one of the factors determining economic growth, since such a country had to import both much equipment and, as a rule, a part of raw materials which at long range would not be possible without rapidly developing export. Hence, the concentration of production in Poland must be considered to be a favourable economic phenomenon in spite of its adverse social repercussions. As a rule production concentrated in the largest establishments with the best organization and the most effective system of sales, etc. Of course this was not a result of planned decisions, but it originated from competition and each time the winner was that who was able better to adjust himself to the current situation on the market.

After all, production concentration processes in Poland were relatively poorly advanced, except for mining and the iron and steel industry. On May 1, 1925, workshops employing up to 49⁰/₀ people accounted for as much as 58⁰/₀ of the 3986 running enterprises of the processing industry employing over 20 workers, and enterprises employing from 50 to 199 people accounted for 32⁰/₀ of that number. In other words, bigger establishments amounted merely to 10⁰/₀. Only 43 factories in Poland employed over a thousand workers and 3 of them in the textile industry employed over 5 thousand people.²² This situation did not change by the end of 1926. Among the 4,486 enterprises taken into consideration by statistics those employing up to 49 people continued to account for 58⁰/₀ of that number, and those employing between 50 and 199 workers for 32⁰/₀. The number of big processing plants with personnel exceeding a thousand people even decreased to 40.²³ Concentration went hand in hand with a reduction of production, especially in small establishments. For example, in Łódź reductions in the big and middle textile industry embraced 47⁰/₀ of the personnel, and in the small-scale industry 71⁰/₀.²⁴

In the light of the above-mentioned information it seems that some concentration of production in the recession years must be

²² "Rocznik Statystyki RP," 1924, p. 61.

²³ "Rocznik Statystyki RP," 1927, p. 183.

²⁴ L. S., *Zwrot ku lepszemu w okręgu łódzkim* [Turn for the Better in the Łódź Region], "Przemysł i Handel," 1926, p. 185.

recognized as a favourable phenomenon. After all, as it has been emphasized already, the range of this concentration was fairly limited.

As everybody knows, one of the causes of the economic recession in Poland was technological backwardness of industry modernization of which was not always profitable in the period of the post-inflationary boom. Cheap labour, the inflationary export bounty and the depreciation of the paid taxes and repaid credits made production profitable using even not very productive outdated equipment. Partly the hyperinflation and to a far greater extent the introduction of the zloty eliminated all the advantages brought to industry by moderate inflation. Thereby, it turned out fairly soon that industry produced expensively and practically was not able to compete with foreign products not only abroad, but also on the home market. A great number of goods produced in other countries, despite import taxes, were sold on the Polish market at lower prices than those of the products offered by Polish industry. Hence, the question of modernization was imperative. However, it was extremely difficult, since in the period of recession and price rise industry had not means for investments. Nevertheless, certain modernization processes could be observed at that time.

The only reliable information available in respect of the technical equipment of factories are the data concerning the power of installed engines and motors. Let us use them in our investigations, but again the information will be fairly random, since the statistics concerning engines and motors was introduced as late as 1925. In our analysis it is difficult to use the number of engines and motors, since it depended to a considerable extent on the accuracy of statistics. Hence, the observed changes could be of an accidental character. Therefore, for our purpose let us use the information on the structure of the share of internal combustion engines and electric motors in the installed power in general. In 1922, in most branches of industry prevailed the steam engine, already outdated at that time. So, progress meant the replacement of this engine by more effective electric equipment. It is illustrated by Table 8.

Table 8. The Share of the Power of Electric Motors and Internal Combustion Engines in the Installed Power in General (in %)

Branch of Industry	Dec. 30, 1922		Dec. 15, 1926	
	motors	engines	motors	engines
Sugar factories	15.4	1.7	29.0	3.3
Tobacco factories	60.2	16.9	60.3	13.5
Breweries	44.0	7.5	84.1	2.3
Spinning and weaving mills	30.4	1.2	36.8	0.5
Tanneries	33.0	1.4	34.3	8.3
Cardboard- and paper-mills	15.9	1.0	38.5	3.1

Source: Calculated on the basis of "Rocznik Statystyki RP," 1923, p. 49; 1927, pp. 184-185.

As anyone can see marked progress was made within 4 years. In all the analyzed industries the participation increased of electric motors, and this increase was very great in paper-mills, breweries and sugar factories. Poorer progress was made in those branches that had a relatively considerable number of electric motors as early as 1922. According to the available sources, solely in the Upper-Silesian collieries the participation of the power supplied by electric motors decreased from 42% to 35%.²⁵ It also seems that a similar process took place in Silesian iron and steel works. W. Kuczewski even stated that in metallurgy "we are eyewitnesses of certain technical retardation."²⁶ It was connected with German industrialists' purposeful acts of sabotage against the development of industry in the Polish territories in Silesia after its division. They carried out wasteful exploitation there and they invested all the means accumulated in the Polish Upper Silesia in their establishments in Germany.²⁷ Another adverse phenomenon

²⁵ J. Popkiewicz, F. Ryszka, *Przemysł ciężki Górnego Śląska w gospodarce Polski międzywojennej (1922 - 1939)* [*The Heavy Industry of the Upper Silesia in Inter-War Poland (1922 - 1939)*], Opole 1958, p. 148.

²⁶ W. Kuczewski, *W sprawie racjonalizacji polskiego hutnictwa żelaznego* [Rationalization of Polish Ferrous Metallurgy], "Przemysł i Handel," 1926, p. 1534.

²⁷ Cf. e.g. documents in the collection Z. Landau, J. Tomaszewski, *Kapitały obce w Polsce 1918 - 1939* [*Foreign Capital in Poland 1918 - 1939*], Warszawa 1964, pp. 243 - 334; also Archiwum Akt Nowych [New Public Records Archives], file: Ministerstwo Skarbu, vol. 5742.

was taking factory equipment from Poland to other countries. Conclusions concerning modernization progress based on the information given by Table 8 can be generalized, since they are also confirmed by the data on the decreasing usable surface of steam boilers in Polish industry in general in 1926 in comparison with 1925.²⁸ In the face of increased industrial production in 1926 this meant the replacement of steam by other sources of power.

As anyone can see, the post-inflationary recession did not check, but even stimulated modernization in some branches of industry, since it was the only way leading to reduced production costs, and thereby to maintaining one's position on the market and to ensuring profits to the owner. The relationship between the technical standard and the degree of making use of the production potential is particularly distinct if the textile industry is taken as an example. The Białystok region which had the poorest technical equipment suffered from the recession of 1925 most. In October 1925, merely 8% of spindles and 12% of looms were running in comparison with the pre-war period. In the Łódź wool industry production decreased by 40%. On the other hand, the Bielsko-Biała region, which had the best equipment, decreased employment by only 20%.²⁹

With the advancement of the recession developed competition. Shrinking production automatically entailed growth in unit production costs. Permanent costs that did not depend on the volume of production were distributed among a smaller number of finished products. Hence, of vital importance to producers was the maintaining of production at the highest possible level and its modernization. But modernization entailed the further growth of the production potential that was not used to a considerable extent anyway. So, it was a vicious circle. Producers tried to modernize their establishments to reduce production costs and to secure greater sales, but at the same time they increased the per-

²⁸ "Rocznik Statystyki RP," 1927, p. 186.

²⁹ *Pogorszenie sytuacji we wszystkich trzech okręgach przemysłu włókienniczego* [Change for the Worse of the Situation in All the Three Regions of the Textile Industry], "Przemysł i Handel," 1925, p. 1515; *Przemysł włókienniczy łódzki a bielsko-biański* [The Łódź and Bielsko-Biała Textile Industry], *ibidem*, p. 13.

centage of the waste production potential and thereby hampered the overcoming of the recession.

Increased productivity had a similar effect. Growing unemployment and difficulties in finding new jobs enabled employers to force workers to make greater efforts.³⁰ Those who did not manage to cope with the growing requirements of the employer lost their job and were replaced by new ones. Also the workers' increasing productivity added to the waste production potential of industry. One should bear in mind that Polish industry before the outbreak of recession had a considerable surplus of production potential. For fear of inflation businessmen often invested their free financial means in the expansion of their enterprises disregarding the current demand on the market. As a result, as early as before the recession most branches of industry reached a production potential equal to or even greater than that before the war.

In view of the fact that the recession caused production drop the waste production potential increased very much. In coal mining in 1926, i.e. when the situation improved markedly, the capacity of pit shafts was used only in 56%, and that of sorting plants in 45%.³¹ In 1926, in the petroleum industry refineries were used in 65%;³² in metallurgy only 40% of pig iron, 57% of open-hearth steel and 22% of electric steel smelted in relation to the processing capacity.³³ Fertilizer plants produced 30 - 70%.³⁴ Cement plants were used in 39% in 1925 and in 41% in 1926,³⁵ while sugar factories in about 70% in the former Russian sector,

³⁰ In some cases, productivity increased by 30-50 per cent in 1924. Cf. *Posiedzenie Rady Handlowo-Przemysłowej* [The Meeting of the Commercial-Industrial Council], "Przemysł i Handel," 1925, p. 272.

³¹ *Sprawozdanie Komisji Ankiętowej Badania Warunków i Kosztów Produkcji oraz Wymiany* [Report of the Questionnaire Commission for Investigations in the Conditions and Costs of Production and Exchange], vol. V: *Węgiel* [Coal], Warszawa 1928, pp. 60 - 61.

³² *Ibidem*, vol. XII: *Nafta* [Petroleum], p. 84.

³³ S. Rychliński, *Marnotrawstwo sił i środków w przemyśle polskim* [A Waste of Forces and Means in Polish Industry], Warszawa 1930, p. 88.

³⁴ *Sprawozdanie Komisji Ankiętowej...*, vol. X: *Nawozy sztuczne* [Fertilizers], p. 37.

³⁵ *Ibidem*, vol. III: *Cement*, p. 27.

in 85% in the former Prussian sector and in 90%³⁶ in the former Austrian sector ; knitting plants in 50 - 60%,³⁷ brickyards in 29 - 65%,³⁸ sawmills in 45 - 60%,³⁹ power joineries in 5 - 20%,⁴⁰ and tanneries in 55%.⁴¹ According to R. Battaglia, during the years 1925 - 1926 industrial establishments were running in 30 - 70% on the average.⁴² In other words, without any investments production could be doubled solely on the basis of the equipment installed already.

For industry the recession meant not only difficulties in sales and the necessity to reduce production, but first of all a drop in profits. We have no data that could illustrate this process in every respect, since only joint stock companies were bound to publish their balances. What is more, we have no data for 1923, since the hyperinflation prevented from compiling real balances and profit and loss accounts. Therefore, we can draw conclusions about the situation of industry only on the basis of very incomplete source materials. In 1924, 78% of joint stock companies operating in industry showed profits ; this percentage decreased to 56% in 1925 and went up to 58% in 1926.⁴³ In 1925, in relation to 1924, also decreased the average net profits reflected by the percentage of the original capital of industrial joint stock companies. Table 9 presents the respective statistical materials concerning companies with profits solely.

Table 9 shows that only joint stock companies active in the mineral, chemical, paper and clothing industries as well as gasworks, waterworks and power stations a proportional growth of profits. In all the other industries an acute breakdown in profits took place in 1925 that solely in mining and in the engineering

³⁶ *Ibidem*, vol. IX : *Przemysł cukrowniczy* [Sugar Industry], p. 98.

³⁷ S. Rychliński, *Marnotrawstwo...*, p. 88.

³⁸ *Sprawozdanie Komisji Ankietowej*, t. II — *cegła* [Report of the Questionnaire Commission, Vol. II — Brick], p. 26.

³⁹ *Ibidem*, vol. IV : *Drzewo* [Timber], p. 74.

⁴⁰ *Ibidem*, p. 78.

⁴¹ *Ibidem*, vol. XV : *Przemysł garbarski* [The Tanning Industry], pp. 33 - 35.

⁴² R. Battaglia, *O programie gospodarczym Polski oraz o warunkach rozwoju poszczególnych gałęzi wytwórczości* [Poland's Economic Programme and the Conditions of the Development of Individual Production Branches], Warszawa 1927, pp. 135 - 349.

⁴³ "Rocznik Statystyki RP," 1925 - 1926, p. 127 ; 1927, p. 144, 1928, p. 121.

Table 9. Net Profits of Industrial Joint Stock Companies as Compared with Their Original Capital (in %)

<i>Branch of industry</i>	1924	1925	1926
Mining	3.3	2.3	4.4
Metallurgy	3.4	0.6	2.8
Mineral industry	3.7	4.2	5.9
Metal industry	6.0	5.7	3.7
Engineering industry	5.0	3.5	5.4
Precision industry	15.4	4.1	6.6
Chemical industry	5.1	7.3	13.1
Textile industry	3.2	1.8	2.9
Paper industry	4.7	9.8	23.6
Leather industry	2.5	0.6	3.1
Wood industry	9.1	3.8	7.7
Food industry	9.0	8.8	8.0
Clothing industry	4.3	4.8	4.6
Printing industry	13.8	9.6	8.1
Building industry	14.3	7.7	8.4
Gas, water, electricity	3.2	6.3	8.1

Source: "Rocznik Statystyki RP," 1925—1926, p. 197; 1927, p. 144; 1928, p. 121.

and chemical industries was compensated as early as 1926. The situation of metallurgy and the metal, precision, textile, food, printing and building industries was worse in both 1925 and 1926 than in 1924.

The data collected in Table 9 confirm the conclusion formulated before that the recession affected the fundamental branches of production most. In 1926, the lowest profits in relation to the original capital were those of metallurgy (2.8%), the textile industry (2.9%), the leather industry (3.1%), the metal industry (3.7%) and mining (4.4%). On the other hand some industries developed that were considered to be secondary from the viewpoint of the national economy in general. When analyzing this situation one should remember that apart from profitable companies there was a considerable number of those bringing losses, often very high. For instance, timber and clothes companies showed losses amounting to 75% of their original capital in 1924.⁴⁴

⁴⁴ Rocznik Statystyki RP," 1925 - 1926, p. 127.

The industrial recession of the years 1924 and 1925 particularly affected the Upper Silesia, since it was the region of the concentration of coal mining and metallurgy, i.e. the branches that suffered from the breakdown most. The existing difficulties were partly objective, since they resulted from the causes beyond the direct control of the management of the coal mining and iron and steel industries. But at the same time, the breakdown was due to earlier mistakes, e.g. lack of interest in developing sales on the home market in the years 1922 - 1923, the tendency to sell the largest part of products in Germany and refraining from investments in the running establishments.⁴⁵ In many a case, it was not even mistakes, but purposeful sabotage meant for adding to Poland's economic difficulties.

The fact that the Upper Silesia was affected by the recession more than the other regions of Poland is reflected by the data concerning the dropping participation of the Upper Silesian metallurgy in the nation-wide production. In 1923, the participation of the Upper Silesia in the national production of pig iron amounted to 79% and to mere 73% in 1925 ; the corresponding figures for steel were 77% and 69%, and for rolled products 77% and 68%, respectively.⁴⁶ This was connected with checked export to Germany and with difficulties in sales on the home market. Improvement took place as late as 1926, mainly thanks to the export of coal. Of great importance to overcoming the recession in the Upper Silesia was the assistance rendered by the state authorities that, for political reasons, were alarmed by the situation in this region, for there was a real danger that Germany would make use of the difficulties of the Upper Silesian industry to intensify anti-Polish propaganda.

The effects of the depression, however, did not confine themselves to transitory production difficulties or reduced profits. Some of them were more far-reaching. Polish industry, some branches of which were based to a considerable extent on export both before World War I and during the post-inflationary boom, realized

⁴⁵ H. Glueck, *Hutnictwo żelazne w Polsce [Ferrous Metallurgy in Poland]*, in : *Przemysł i handel 1918 - 1928 [Industry and Trade 1918 - 1928]*, Warszawa 1928, p. 146.

⁴⁶ *Ibidem*.

that further relying on export was not prospectful. Especially in view of the fact that the export branches of Polish industry — coal mining, metallurgy and the textile industry — were affected by the breakdown most. Hence they began to seek a possibility of developing sales on the home market.⁴⁷ Main hopes were set on the countryside with its inhabitants amounting to 65% of Poland's population.⁴⁸ The carried out analyses showed that even a slight increase in the purchase of industrial goods by the rural population would be able to ensure industry the full use of its existing production potential. However, it necessitated improvement in the yield of marketable agricultural products. These calculations were partly confirmed in the following years, when under the influence of increased world prices for agricultural products the profits of the rural population increased in Poland in 1926. This entailed a boom in industry, yet this population was not rich enough — due to defective land structure, absence of land reform and rural overpopulation — to ensure industry long harmonious growth.

The switching of the export industry to the home market necessitated changes in the range of production, the expansion of the transportation system, the improvement of trade, and lower brokerage costs. The emphasis on the development of the home market was of great importance to Poland. It meant a rapprochement of the interests of industry and agriculture that were antagonistic in general. It forced industry to expand processing and to broaden the scope of production. Inasmuch as exports embraced raw materials and semi-finished products in many a case, the prevailing demand on the home market was that for a great variety of finished products. This increased Poland's economic self-sufficiency and ensured more even development of various branches of industry. It also added to the growth of Poland's

⁴⁷ See e.g. J. Eberhardt, *O wewnętrzny rynek zbytu dla węgla polskiego* [For a Home Market for Polish Coal], "Przemysł i Handel," 1925, pp. 1593 - 1595; W. Kuczewski, *Huty polskie a rynek wewnętrzny* [Polish Iron and Steel Works and the Home Market], "Przemysł i Handel," 1925, pp. 79 - 85.

⁴⁸ S. Arct, *Szkice do programu gospodarczego* [Sketches for Economic Plan], Warszawa 1926, pp. 44 - 45.

defensive potential. Advocates of the self-sufficiency programme were both Minister of Industry and Trade J. Kiedroń and his deputy Cz. Klarner, even to a greater extent.⁴⁹ At the same time, both of them understood the importance of export, but they did not want to base the development of industry on it.

(Translated by Marek Cegiela)

⁴⁹ C. Klarner, *W sprawie programu gospodarczego rządu* [Comment on the Government's Economic Programme], "Przemysł i Handel," 1925, pp. 1137 - 1141.