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THE EXTENT OF CARTELIZATION OF INDUSTRIES IN POLAND, 1918—1939

Before proceeding to discuss the role and position of monopolistic associations (henceforward referred to as "cartels") we need above all to ascertain their number. The author cannot limit himself to citing the number of cartels in any randomly chosen year since such data would only be useful for purposes of a static study. For dynamic research it is indispensable to ascertain the number of cartels set up year after year while some of the old ones were being dissolved.

Ostensibly, the matter would seem simple enough because the 1937 *Concise Statistical Yearbook* included a table of cartel agreements in Poland from 1919 onwards.¹ Apart from the number of cartels in operation as of January 1st each year the table also contained information on the movement of cartels, i.e. the number of newly-formed and disbanded associations.

The trouble is that the published data are only approximate. The reasons for this were manifold. In the first place, the study of the role of cartels in the Polish economy was only taken up in or about the year 1929 as a result of their very rapid rise after 1926. The Central Statistical Office (GUS) only in 1933 included cartels in its statistical returns.² Before that date no law made it necessary in Poland to report the setting up of a cartel agreement, and organizations of that kind could be set up not only by dint of a written agreement but also as a gentleman's agree-

¹ *Mały Rocznik Statystyczny* [*Concise Statistical Yearbook*], 1937, p. 107.

² *Statystyka karteli w Polsce* [*Cartels Statistics in Poland*], Warszawa 1935, p. V; "Statystyka Polski," series C, fasc. 28.

ment.³ By the same token, the number of cartels operating before the enactment of the 1933 Cartels Law could not be reflected in any statistics.⁴

Understandably, the GUS study, done in retrospect and designed to ascertain the changing pattern in the number of cartels beginning with 1918, was limited to an approximation of the number of such agreements, relying on available sources.⁵ A large majority of local-scale cartels concluded by merchants, as well as some interfactory agreements concerning less-important manufactured goods, escaped the statistics for the simple reason that no information on their existence was at all available. What the involved margin of error was is now difficult to say.

Second, the Polish Cartels Law of 1933 lacked precision in defining what was understood by a cartel. Its definition of such an association said: "agreements, resolutions and decisions designed, by way of mutual obligations, to control or regulate the production, sale, prices and conditions of exchange of products in the mining and manufacturing industries as well as commerce."⁶ Such an imprecise formulation necessitated more clarity to be introduced into the notion of "cartel." This in fact was done in the very first verdict announced by the Cartels Court in the case of the cement cartel. However, this first definition was amended in the next verdict passed against the carbide cartel, and more precise corrections were introduced to the notion of "cartel" in the third verdict.⁷ Understandably then, some enterprises, which

³ The author does not elaborate on this subject since it has been discussed by him before. Cf. Z. Landau, *Le développement de la législation sur les cartels pendant la II^e République et la politique du gouvernement vis-à-vis de ces associations*, "Studia Historiae Oeconomica," 1976, No. 11.

⁴ F. Zweig, *Kartelizacja przemysłu polskiego [Cartelization of Polish Industries]*, in: *Pamiętnik I Zjazdu Ekonomistów Polskich odbytego w Poznaniu w dn. 24—26 V 1929*, Warszawa 1930, p. 262; J. Zieleniewski, *Koncentracja produkcji [Concentration of Production]*, Warszawa 1929, pp. 44 and 49. Cf. also R. Rybarski, *Przyszłość gospodarcza Polski [Poland's Economic Future]*, Warszawa 1933, p. 113.

⁵ These sources included, apart from the Cartels Registry, also commercial registers, press reports, economics literature and first-hand information through informal channels. Cf. *Statystyka* . . . , p. 33.

⁶ "Dziennik Ustaw Rzeczypospolitej Polski," 1933, No. 31, item 270.

⁷ For more on that, cf. R. Piotrowski, *Wspólnota Interesów w świetle praktyki Sądu Kartelowego [The Commonwealth of Interests in Light of the Practice of the Cartels Court]*, Warszawa 1936, Chapters I—III.

had concluded agreements not fully covered by the definition of the cartel under the law, need not have registered their agreements with the Cartels Registry.⁸ This Registry was the fundamental source for statistica publications. Furthermore, the definition of the cartel under Polish law exempted from this category the state monopolies (matches, tobacco, spirits) which from the point of view of economics were the most advanced form of a monopolistic association. Also under the same law, compulsory associations were exempted from the obligation to register.⁹

It now becomes evident that statistics relying on the Cartels Registry were incomplete even after the adoption of the Cartels Law and the setting up of the said Registry.

Third, while cartels statistics following 1933 were based on data of the Cartels Registry, the latter covered not cartels but cartel agreements. The essential difference between the two notions was that on frequent occasions one cartel was formed on the strength of many agreements. Thus, for example, the cement cartel operated on the strength of 15 agreements, decisions and understandings, concluded among the interested parties.¹⁰ Hence the Central Statistical Office had necessarily to process data available under the Registry in order to avoid counting the same organizations more than once. For practical purposes "the principle of subject classification was adopted because the treating of every agreement as a cartel is incompatible with the scientific definition of the cartel and goes counter to the principles of statistics which must avoid reduplication of returns."¹¹

⁸ E.g. among the companies which failed to register their agreements were Katowicka Spółka Akcyjna dla Górnictwa i Hutnictwa and S.A. Górnośląskie Zjednoczone Huty Królewska i Laura, both of which were subsequently given stiff fines by the Ministry of Industry and Commerce. Cf. *Sprawa "Wspólnoty Interesów" w Sądzie Kartelowym* [The Case of "Wspólnota Interesów" before the Cartels Court], "Polska Gospodarcza," 1935, p. 1567; *Ukaranie Wspólnoty Interesów Katowickiej Spółki oraz Hut Królewska i Laura* [The Sentence on the Commonwealth of Interests between Katowicka Spółka and Zjednoczone Huty Królewska i Laura], *ibidem*, p. 1549.

⁹ More extensively on this subject, cf. J. Wiszniewski, *Zrzeszenia przymusowe a kartele* [Compulsory Associations vs. Cartels], Wilno 1936.

¹⁰ L. S. Margulies, *Szkice o prawie kartelowym* [Notes on the Cartels Law], Warszawa 1934, pp. 38—53; V. Kuttan, *Rok bez kartelu w przemyśle cementowym* [A Year without Cartels in the Cement Industry], Warszawa 1935, pp. 81—89.

¹¹ *Statystyka* . . . , p. 31.

Fourth, the March 10, 1934, amendment to the industrial law anticipated the possibility of industrial associations being set up which, for all intents and purposes, would perform the functions of cartels but would remain outside the pale of the Cartels Law.¹² The tasks of such organizations would thus be identical with those of cartels but their legal basis would be different, they would be exempted from the obligation of registering with the Cartels Registry, and would not necessarily be included in cartel statistics. That state of affairs was reflected in the 1939 Concise Statistical Yearbook in which the table presenting the movement of cartels in Poland carried a footnote saying "without cartels set up in the form of industrial associations."¹³

Fifth, in many cases it was difficult to ascertain whether a given organization had the features of a cartel, viz. the case of many export organizations. The Central Statistical Office itself went on record in this matter saying "as far as export associations are concerned the GUS statistics do not cover all cartel agreements of this kind."¹⁴

In sum, all cartel statistics must be regarded as only approximate. That they were indeed just such is proved by comparing different estimates drawn up not only by the different authors but by the Central Statistical Office itself.

For example, the number of 40 operative cartels was generally adopted as true for 1928.¹⁵ For the following year A. Peretz gave the estimate, hedging it with admission that statistics are inaccurate, of 25 indigenous cartels,¹⁶ and R. Battaglia suggested 116 (including organizations still in the planning stage).¹⁷ According to the German authors P. Fischer and H. Wagenführ, 58 associa-

¹² "Dziennik Ustaw Rzeczypospolitej Polskiej," 1934, No. 53, item 468.

¹³ *Mały Rocznik Statystyczny*, 1939, p. 122.

¹⁴ *Statystyka...*, p. 34.

¹⁵ W. Ciechomski, *Kartele a interwencja państwowa* [Cartels and State Intervention], "Przegląd Gospodarczy," 1932, p. 95.

¹⁶ In a footnote to the compilation he added: "This is but a small part of the cartels because most of them operate covertly and avoid registration." A. Peretz, *Od kartelu do koncernu* [From a Cartel to a Concern], Warszawa 1929, supplement p. 1.

¹⁷ R. Battaglia, *Państwo a kartele, koncerny i trusty. Przyczynki i materiały* [The State vs. Cartels, Concerns and Trusts. Contributory Notes and Materials], Warszawa 1929, pp. 131—148.

tions operated in Poland in that year.¹⁸ A. Ivanka accepted that in 1930 there were 88 cartels and syndicates in the country,¹⁹ in 1932 the Central Union of Polish Industry estimated the number of cartels as 80,²⁰ but other estimates for that year varied between 80 and 120,²¹ whereas the eminent cartel businessman V. Kутten estimated the number of cartels for that year to be above 50.²² At the beginning of 1933 M. Słowikowski accepted the number of cartels operating in the Polish manufacturing industries as 63, saying that between 1930 and 1932 the net increase in their number was 28. Eo ipso, his estimates were far below those proposed previously.²³ The parliamentary rapporteur on the cartels bill, MP F. Czernichowski, gave the number of cartels in Poland in February 1933 as 64.²⁴ Other authors estimated the number of cartels in 1933 to be about 70.²⁵ These data should be regarded as grossly understated.

An attempt could be made to explain the obvious divergencies by the "private" nature of estimates. Such an explanation, however, is clearly inadequate in the cases of Ivanka, Czernichowski and Ciechomski, all three of whom studied the question of cartels by dint of the offices or jobs they held: in the Ministry of the Treasury (Ivanka) and in Lewiatan (Ciechomski).

Not even the data published by the Central Statistical Office were consistent. Divergencies come to light when we compare data included in *Statystyka karteli w Polsce* [*Cartels Statistics in Poland*], published as part of the official series "Statystyka Pol-

¹⁸ P. Fischer, H. Wagenführ, *Kartelle in Europa (ohne Deutschland)*, Nürnberg 1929, pp. 190—203.

¹⁹ A. Ivanka, *Zagadnienie kartelizacji w Polsce* [*The Problem of Cartelization in Poland*], in: *Pięć lat na froncie gospodarczym*, vol. II, Warszawa 1931, p. 375.

²⁰ *Sprawozdanie Centralnego Związku Przemysłu Polskiego za r. 1932* [*The 1932 Report of the Central Union of Polish Industry*], Supplement to "Przegląd Gospodarczy," No. 11, 1933, p. 28.

²¹ W. Ciechomski, *Kartele...*, p. 95.

²² V. Kутten, *Zagadnienia kartelowe* [*Cartel Problems*], Warszawa 1933, p. 76.

²³ M. Słowikowski, *Stan kartelizacji przemysłu polskiego* [*The State of Cartelization of Polish Industries*], "Polska Gospodarcza," 1933, p. 272.

²⁴ Speech delivered on March 16, 1933. Shorthand minutes from the 97th session of Parliament, column 18.

²⁵ J. R., *Projekt ustawy o kartelach* [*The Cartels Bill*], "Polska Gospodarcza," 1933, pp. 201—204.

ski," with those in "Wiadomości Statystyczne" after which they were later reprinted in the *Concise Statistical Yearbook* (see Table I).

The divergency between the two estimates was explained in "Wiadomości Statystyczne" as follows: "The number of cartels in the years between 1918 and 1934 was ascertained by complementing data, on which *Cartels Statistics in Poland* ("Statystyka Polski," series C, fasc. 28) relied, with materials which were then unavailable. In particular, the present work takes into account an additional 40 industrial associations which have the features of

Table I: Indigenous Cartel Agreements in Poland after Central Statistical Office sources (as of Jan. 1 each year)

| Year | "Statystyka Polski" | "Wiadomości Statystyczne" | Other sources based on GUS |
|------|------------------------|------------------------------|-------------------------------|
| 1918 | 4 | 6 | |
| 1919 | . | 9 | |
| 1920 | 7 | 11 | |
| 1921 | 9 | 13 | |
| 1922 | 10 | 15 | |
| 1923 | 15 | 23 | |
| 1924 | 22 | 31 | |
| 1925 | 28 | 40 | |
| 1926 | 40 | 53 | |
| 1927 | 50 | 64 | |
| 1928 | 61 | 77 | |
| 1929 | 82 | 100 | |
| 1930 | 111 | 133 | |
| 1931 | 141 | 168 | |
| 1932 | 153 | 187 | |
| 1933 | 171 | 215 | |
| 1934 | 185 | 233 | |
| 1935 | 216 | 268 | |
| 1936 | | 274 | |
| 1937 | | | 142 ^a |
| 1938 | | | 145 ^a |
| 1939 | | | 171 |

^a Returns for 1937 and 1938 exclude industrial associations of a cartel nature the classification and registration of which were being processed.

Sources: *Statystyka kartell w Polsce* [*Cartels Statistics in Poland*], Warszawa 1935, p. 38; "Wiadomości Statystyczne," 1937, No. 16, p. 346; *Mały Rocznik Statystyczny*, 1939, p. 122; *Rocznik Polityczny i Gospodarczy*, 1933, p. 803.

cartels.”²⁶ It can safely be said that, were it not for the outbreak of the world war, further studies might have come up with altered numbers of monopolistic associations in GUS returns, with a clearcut tendency to increase these numbers.

Nota bene, after 1935 the Central Statistical Office only reluctantly published data concerning cartels. The publication *Cartels Statistics in Poland*, despite the promise contained in the foreword by the head of the Central Statistical Office that “further volumes in the above-named series will be concerned with other forms of capital concentration and will include deepened and extensive studies of phenomena in economic and social life which are related to the operations of concentrated capital,”²⁷ was discontinued. Similarly, the 1938 *Concise Statistical Yearbook* failed to give any data concerning cartels, and the 1939 *Concise Statistical Yearbook* covered cartels to a considerably smaller extent than did the 1937 *Concise Statistical Yearbook*.²⁸

Regardless of the accuracy of cartels statistics, the most relevant thing for the purpose of the present study is to ascertain the actual scope of operation of indigenous cartels in Poland's economic life (this study wholly excludes the participation of Polish cartels in international agreements). Of course, the more complete the relevant statistics the more accurate and credible the picture would be.

This author will now try and present the problem under study by relying on what is understood as grossly understated estimates (position 1, Table I) of the number of cartels in Poland as of Jan. 1, 1935, which were published in *Cartels Statistics in Poland*. It follows from these estimates that cartelization in the industries and commerce affected 27.3 per cent of all joint-stock companies. However, they were primarily the largest companies, commanding 65.6 per cent of all stock capitals.²⁹ A characteristic feature of the cartelization process in Poland was that monopolistic associations to a much larger extent covered companies in which

²⁶ *Uwagi do tablicy pt. Porozumienia kartelowe w Polsce* [Remarks Regarding the Table on Cartel Agreements in Poland], “Wiadomości Statystyczne,” 1937, p. 350.

²⁷ *Statystyka . . .*, p. V.

²⁸ *Mały Rocznik Statystyczny*, 1937, p. 107; 1939, p. 122.

²⁹ *Statystyka . . .*, p. 37.

foreign capital had a share than indigenous companies. Indigenous-capital enterprises affected by cartelization represented only 13.2 per cent of total joint-stock company capital whereas enterprises with foreign capital involved represented 52.4 per cent of such capital.³⁰ Detailed data for the industries and commerce as well as banks and insurance companies are given in Table II.

Table II: The Number of Cartelized Indigenous Joint-Stock Companies and Their Capital Relative to Totals as of January 1, 1935 (in percentage points)

| Economic category | Total | Of which cartelized | | |
|----------------------------------|-------|---------------------|------------------------------|-------------------------------|
| | | Together | Of which | |
| | | | Indigenous-capital companies | Foreign-capital participation |
| <i>Number of Companies</i> | | | | |
| Industries, commerce | 100 | 27.3 | 12.5 | 14.8 |
| Banking | 100 | 26.1 | 6.5 | 19.6 |
| Insurance | 100 | 68.8 | 31.3 | 37.5 |
| <i>Amount of Initial Capital</i> | | | | |
| Industries, commerce | 100 | 65.6 | 13.2 | 52.4 |
| Banking | 100 | 52.0 | 11.7 | 40.3 |
| Insurance | 100 | 78.3 | 38.5 | 39.8 |

Source: Z. Charlap-Rabinowiczowa, *Statystyka karteli w Polsce [Cartels Statistics in Poland]*, in: *Statystyka karteli w Polsce, Warszawa 1935*, p. 37.

Let us keep in mind that information contained in Table II refers to the understated estimate of the number of cartels as 216. Since, however, later studies proved that the number of cartels as of January 1, 1935, was indeed understated by 24 per cent (as demonstrated by Table I), the estimates of the share of cartelized companies in the total of joint-stock companies and the share of their initial capital in the national total should be increased by the same proportion.

It seems that all cartels, newly discovered in statistics, operated in the industries and commerce. After all, the original estimate put the number of banking cartels on January 1, 1935, in Poland as only one and the number of cartels among the insurance com-

³⁰ *Ibidem*.

panies as six.³¹ Hence it seems quite impossible that the missing 52 cartels could be found in these two areas.

On this assumption it will be found that on January 1, 1935 33.4 per cent rather than 27.3 per cent of all indigenous companies were cartelized, and that their stock capitals represented 82 per cent rather than 65.6 per cent of total stock capitals.

Two immediate conclusions are to be drawn from the aforesaid. First, that the extent of cartelization was very large among joint-stock companies which was the prevalent form of the overwhelming majority of large and a considerable part of medium-size industrial enterprises. Second, that cartelization affected first of all the largest among the joint-stock companies. This latter conclusion follows from the simple comparison of the number of cartelized firms (33.4 per cent of the total, according to this author's estimate) with the amount of stock capital they commanded (82 per cent of the total). It can therefore be assumed that mainly small joint-stock companies, with smaller amounts of capital, remained unaffected by the trend towards cartelization.

A third conclusion to be drawn from Table II concerns the impact of cartelization on the extent of influence wielded by foreign capital in Poland. Cartelization affected 18.4 per cent of companies in which foreign capital had a share, but this 18.4 per cent represented 65 per cent of total capital commanded by indigenous joint-stock companies. In practical terms this means that a relatively small number of enterprises controlled by power centres abroad played a highly significant role in cartels. Assuming that in a 100-per-cent cartelized area of manufacturing, companies controlled by foreign capital commanded only slightly more than 50 per cent of total capital, they were assured dominance in the association. In this manner, owing to cartelization the influence of foreign capital on the Polish economy was considerably greater than it would appear from a perfunctory analysis of the share of foreign capital in Polish joint-stock companies. By using the channels of monopolistic associations foreign-capital-dominated companies were capable of subordinating to

³¹ *Ibidem*, p. 39.

themselves also idigenous companies which had to bow to majority vote commanded by foreign capital interests.

It seems that this factor has not to-date been taken into full account in studies of the influence of foreign capital on the Polish economy between 1919 and 1939 as also in studies of cartels.⁸²

Stark deficiency of data makes it impossible to make similar calculations for periods other than January 1, 1935. It does not seem, however, that the situation could be different from the one presented above. Even the government-ordered or voluntary dissolution in December 1935 of 93 cartel agreements, and in 1936—1937 of a further 25, could not have significantly altered the picture, because in most cases the dissolution decisions affected small cartels.⁸³ The core of monopolistic associations operating in the big and medium-size industries remained unaffected even though they may have become a little more dependent on decisions of the government apparatus. But this being a completely different problems it will not be discussed in the present article.⁸⁴

Just for the record let it be remembered that out of the total number of 216 cartel agreements, as found to have operated in Poland on January 1, 1935, by *Cartels Statistics in Poland*, 208 had been established in the industries and commerce, 1 among banks, 6 among insurance companies, and 1 in transport. In the industries and commerce category, the largest numbers were found in the metal industry (48), chemicals (46), food (23), textiles and paper (14 each), minerals (13), petroleum processing and coal distillation (10), power and electrical industries (7 each), timber (6), mining (5), leather (3), and other industries (altogether

⁸² F. Z w e i g, *Kartelizacja...*, p. 264. Cf. also the speech by the parliamentary rapporteur on the Cartels Bill, F. Czernichowski, MP. Shorthand minutes from the 97th session of Parliament on March 16, 1933, column 19.

⁸³ *Rocznik Polityczny i Gospodarczy*, 1938, p. 763. Cf. also J. R a k o w - s k i, *Nowe dekrety i zarządzenia gospodarze rządu* [*The Government's New Economic Decrees and Regulations*], "Polska Gospodarcza," 1935, p. 1500; also, notes in "Polska Gospodarcza," 1935, pp. 1553, 1622 ff., 1660. A list of dissolved cartels in: "Rocznik Polityczny i Gospodarczy," 1939, pp. 803—814. For more on this subject, cf. also Z. L a n d a u, *Zasięg kartelizacji przemysłu w Drugiej Rzeczypospolitej* [*The Extent of Cartelization of Industries in the Second Polish Republic*], "Kwartalnik Historyczny," 1974, No. 4, pp. 805—806.

⁸⁴ For more on this, cf. Z. L a n d a u, *Rozwój ustawodawstwa...*

12).⁸⁵ The exact data concerning the areas in which cartels operated are presented in Table III.

It follows from this Table that by far the largest number of cartels were set up to regulate prices and payments conditions, but that also within the scope of cartel agreements were matters like quota-setting within the country, regionalization of sales, purchasing facilities, division of profits, as well as exports and imports. On frequent occasions one cartel regulated several operations at once, hence figures entered under the heading "Altogether" do not add up to an exact total.

Table III: Areas of operation of Polish cartel agreements (as of January 1, 1935)

| | Altogether | Prices ^a | Payment conditions | Sales quotas | Sales regionalisation | Production | Purchases | Division of profits | Export | Import |
|--------------------------------------|------------|---------------------|--------------------|--------------|-----------------------|------------|-----------|---------------------|--------|--------|
| <i>Altogether</i> | 216 | 175 | 146 | 113 | 15 | 93 | 12 | 58 | 46 | 10 |
| <i>Industries and commerce</i> | 208 | 167 | 146 | 113 | 15 | 93 | 12 | 58 | 46 | 10 |
| <i>Mining</i> | 5 | 3 | 3 | 3 | 1 | 1 | 1 | — | 2 | 1 |
| <i>Minerals</i> | 13 | 11 | 11 | 9 | 1 | 6 | — | 6 | 2 | — |
| <i>Metals</i> | 48 | 41 | 41 | 34 | 1 | 17 | 1 | 21 | 5 | 1 |
| <i>Electrical</i> | 7 | 7 | 5 | 7 | — | 2 | — | 2 | — | — |
| <i>Chemicals</i> | 46 | 37 | 34 | 30 | 2 | 24 | 6 | 10 | 8 | 3 |
| <i>Petroleum and coal processing</i> | 10 | 10 | 7 | 7 | — | 1 | — | 4 | 6 | 2 |
| <i>Textiles</i> | 14 | 8 | 11 | 3 | — | 9 | — | 4 | 2 | — |
| <i>Paper</i> | 14 | 13 | 14 | 10 | 1 | 8 | 1 | 6 | 3 | 1 |
| <i>Leather</i> | 3 | 2 | 2 | — | — | 2 | — | — | 1 | — |
| <i>Timber</i> | 6 | 6 | 1 | 2 | — | 5 | — | — | 4 | — |
| <i>Foodstuffs</i> | 23 | 15 | 10 | 5 | 2 | 14 | 3 | 5 | 10 | 2 |
| <i>Power</i> | 7 | 4 | — | — | 7 | 1 | — | — | — | — |
| <i>Other industries</i> | 12 | 10 | 7 | 3 | — | 3 | — | — | 3 | — |
| <i>Banking</i> | 1 | 1 | — | — | — | — | — | — | — | — |
| <i>Insurance</i> | 6 | 6 | — | — | — | — | — | — | — | — |
| <i>Transport</i> | 1 | 1 | — | — | — | — | — | — | — | — |

^a There were 138 agreements, regulating at once prices and payment conditions, and 97 agreements, regulating at once prices, payment conditions and sales quotas in the country.

Source: *Statystyka kartell w Polsce [Cartels Statistics in Poland]*, Warszawa 1935, p. 43.

⁸⁵ *Statystyka . . .*, p. 39.

The study of the number of cartels in Poland does not by itself provide full information on the extent of cartelization of the Polish economy. Who knows if 200 cartels are a lot? Of course, comparisons could be drawn with other nations, but even these would contribute little new. Each country observed different rules in its cartels statistics, different criteria by which enterprises were or were not classified as cartelized, and each country had many, frequently quite disparate, estimates of the numbers of cartels operating in it. In such circumstances an international comparison would not really be a worthwhile proposition.

Therefore this author proposes to look at and ascertain the extent of cartelization not through the sheer numbers of cartels but through the relative volumes of production turned out by cartelized companies. In this area too considerable hardships of a methodological nature have been encountered, giving rise to quite substantial divergencies in data, depending on the sources used.

The first study of this kind was taken up by J. Zieleniewski in 1929: "Intending to evaluate the role played by cartelized companies in our industrial production, we can rely on a comparison of the number of workers employed by the cartelized companies with the sum total of workers employed at the same time by the manufacturing industries, mining and steel-making."³⁰ That author had at his disposal precise data concerning the numbers of employed in 1926 in twelve important industries affected by cartelization: coal, petroleum, steel, cement, bricks, screws, rivets and nails, superphosphate, pipes, flat glass. He further had approximated data for the textile industry and rough estimates for the remaining twelve associations discussed by him: carbide, iron, radiators, paper, bottle glass, printing plates, sulphuric acid, turpentine, steel chains, rubber tapes, footwear, plastics buttons. The last-named group, admittedly, included enterprises with smaller numbers of workers on the payroll. Altogether Zieleniewski estimated the number of workers employed by cartelized industries as about 320 thousand, as against the national total of 692 thousand industrial workers. On this basis he assumed the

³⁰ J. Zieleniewski, *Koncentracja...*, p. 60.

“extent of accomplished cartelization of our industries to be about 46 per cent.”³⁷

H. Korowicz, who wrote on cartel subjects at a somewhat later date, hypothesized that by the end of 1929 cartelization had affected fully 50 per cent of companies in Poland. However, his estimate lacked substantiation, being solely based on the fact that if Zielewski set the degree of cartelization in 1926 at 46 per cent of the national total, and the monopolization process continued to proceed apace, then “in all likelihood the proportion of cartelized enterprises will by today have surpassed 50 per cent.”³⁸ Yet, both estimates lacked precision to the extent that they can hardly be looked upon as credible. They can only be regarded as a kind of reconnaissance study of the problem.

The importance of cartels in the Polish economy grew significantly after 1926 and assumed very large proportions in the years of the Great Depression for reasons which were not merely economic but political as well. Considerable interest in their operation was attracted from, among others, the government. The Cartels Law, giving the State some title to interfere with these operations, required more in-depth information concerning the actual role of cartels in the Polish economy. The problem was that in the absence of the Cartels Law no criticism of monopoly policies was seen as directly affecting the government. However, as soon as the Law was passed by Parliament, the government was seen by the public eye as at least to some degree responsible for the operation of cartels insofar as it had the instrument at its disposal with which their freedom of operation could effectively be limited.³⁹ In turn, the State, in order to be a credible partner in negotiations with different cartels (especially with regard to pricing policies), had to have in hand adequate intelligence concerning the operation of cartels. That was one of the prime reasons behind the intensification of cartel research by the Central Statistical

³⁷ *Ibidem.*

³⁸ H. Korowicz, *O koncentrację kapitału w Polsce. Odczyt wygłoszony w PTE we Lwowie, 25 XI 1929* [A Plea for More Concentration of Capital in Poland. Paper Read to the Polish Economic Society in Lwów, November 25, 1929], Lwów 1929, p. 5 ff.

³⁹ For more, cf. Z. Landau, *Rozwój ustawodawstwa . . .*

Office and by the Institute of Research on Business Cycles and Prises [*Instytut Badania Koniunktur Gospodarczych i Cen*]. However, what we know today of the results of those research projects is only what was published of them before the war, because the archives of the Institute were destroyed in World War II and no materials concerning cartels could be found in Central Statistical Office archives which survived the holocaust.

At the turn of 1930/1931 the Institute of Research on Business Cycles and Prises started publishing an index of prices of cartelized semifinished products. The index was incomplete, to say the least, as it only included rolled products, pipes and cement.⁴⁰ A more extensive (and the first known to this author) study of the share of cartelized production in the output of raw materials and semifinished products was performed for 1928 by a staff member of the Institute, J. Wiśniewski, while compiling an index of wholesale prices of industrial articles.⁴¹ He divided all raw materials and semifinished products under study into three groups: 1. articles whose prices depended directly on foreign market trends, 2. cartelized products, 3. all other products. Admittedly, the division into the first two groups was not in all cases precise because among the first group belonged also some articles which were strictly cartelized in Poland, viz. textiles, a fact which must have been reflected in their prices.

In order to build a comprehensive index of wholesale prices Wiśniewski had to estimate the weighted proportions of each of the groups. Accordingly, he found that at average 1928 prices the share of the cartelized products group was 25.2 per cent.⁴² However, the share of the same group at January 1931 prices would rise to 35.6 per cent.⁴³ It can therefore be assumed that the

⁴⁰ "Koniunktura Gospodarcza," 1931, p. 21.

⁴¹ J. Wiśniewski, *Analiza wskaźnika cen hurtowych [An Analysis of the Wholesale Price Index]*, *ibidem*, p. 117 ff.

⁴² In a second attempt to draw up this index the Institute of Research on Business Cycles and Prises set the weight of the cartelized group at 27.9 per cent. *Koniunktura gospodarcza Polski w liczbach i wykresach w latach 1928—1938 [The Business Situation in Poland in Figures and Diagrams in the Years 1928—1938]*, "Miesięczne Tablice Statystyczne IMKGiC," special issue of December 1938, p. 38.

⁴³ J. Wiśniewski, *Analiza...*, p. 118. On the basis of Wiśniewski's research, starting in July 1931 "Koniunktura Gospodarcza" began publishing

weights corresponded, in Wiśniewski's opinion, to the share of cartelized raw materials and semifinished products in the total value of both groups of products. The Wiśniewski study contained no information on the share of cartelized production in final products. Let's note also that some cartelized products were included in the first group (articles whose prices depended directly on foreign market trends) and *eo ipso* were not taken into account in calculating the weight of the cartelized group.

The Wiśniewski index did not initially give rise to any reservations. However, its eloquent demonstration of the increasing gap between the prices of noncartelized raw materials and semifinished products, on the one hand, and those of cartelized raw materials and semifinished products, on the other, gave substantiation to the argument of adversaries of cartels. Hence, the index was soon subjected to criticism from big business circles who charged that it had been grossly inflated.⁴⁴ The Institute of Research on Business Cycles and Prices replied to that criticism in an extensive and convincing manner.⁴⁵

In 1933 there appeared an article by M. Kalecki devoted to the participation of cartels in industrial operations on Poland's home market. The author gave a more comprehensive interpretation to the notion of cartels, including among them not only *sensu stricto* monopolistic associations but also enterprises which were the sole producer of an article and therefore virtually held a monopolistic grip on the market.⁴⁶ Kalecki's study was concerned with the 1930 volume of production of plants employing more than 20 staff each,⁴⁷ which belonged to cartels still in existence at the middle of 1933. The author was interested in "the ratio between the home-market production of Polish cartels and the total

wholesale price indices for cartelized raw materials and semifinished products.

⁴⁴ *Błędy wskaźnikowe [Indexing Errors]*, "Kurier Polski," October 4, 1932.

⁴⁵ *Błędy wskaźnikowe [Indexing Errors]*, "Polska Gospodarcza," 1932, p. 1235. Cf. also Z. Landau, *Zasięg kartelizacji . . .*, pp. 809—810.

⁴⁶ M. Kalecki, *Udział karteli w działalności przemysłowej na rynku polskim [The Share of Cartels in the Operation of Industries on the Polish Market]*, "Prace Instytutu Badania Koniunktur Gospodarczych i Cen," 1933, No. 3, pp. 3—6.

⁴⁷ The circumstance favouring the choice of 1930 was that it was a bridge year between a high business cycle and the Depression.

Polish industrial production for the home market.”⁴⁸ He thus excluded the entire production for export, an area in which the role of cartels was especially significant, as will be said further on in this article. He calculated the volume of production by the numbers of mandays worked in each individual industry rather than by giving estimates of the value of their output. Only for the highly mechanized cement industry did he adopt a somewhat modified method of calculation.

This is neither the place nor the time to review Kalecki's methods of research which, after all, are available to every assiduous student of the problem. Let us instead concentrate on the results of his study which covered 56 industrial cartels, i.e. only a part of the then operative industrial associations of producers. According to cartel statistics of only 18 months later there were, as of January 1, 1935, 172 Polish indigenous producers' associations,⁴⁹ and it is hardly likely that all of 116 additional organizations could be set up within such a short space of time. True, outside the bounds of Kalecki's study remained monopolistic associations of lesser weight. Kalecki was apparently aware of that fact, saying that neither the exclusion of some lesser producers' associations nor the probable lack of precision in ascertaining the volumes of production by second-rate cartels covered by the study “could significantly affect the ultimate results of our calculation [...] Even imprecise estimates of the production of small cartels did not necessarily imply inaccuracy in calculating the total production by cartelized enterprises, the small cartels contributing only a small share thereof.”⁵⁰

According to Kalecki, the 56 cartels among them contributed 36.7 per cent of total production for the home market, with state monopolies contributing a further 3.9 per cent. Thus the combined share of the monopolistic group in home-market production was 40.6 per cent. This result largely corroborates with J. Wiśniewski's findings concerning cartelized raw materials and semifinished products at prices of January 1931. Out of the 36.7 per cent share of the production for the home market 26.6 per cent was

⁴⁸ M. Kalecki, *Udział...*, p. 3.

⁴⁹ *Statystyka...*, p. 42.

⁵⁰ M. Kalecki, *Udział...*, p. 4.

commanded by five large cartels (coal, iron and steel, cotton yarn, sugar and jute), 3.8 per cent was controlled by three medium-size cartels (paper, cement, worsted spinning mills), and 6.3 per cent by the remaining 48 smaller cartels.⁵¹ These figures proved that "cartelized production was highly concentrated: 83 per cent of that production is contributed by eight cartels, and only 17 per cent by the other forty-eight."⁵² Had the author included in this calculation export production as well, the importance of cartelized production would have increased even further. But even excluding the export sector, the role of cartels was enormous: in view of most fundamental raw materials and intermediate products having been cartelized even industries operating on free-market principles were largely dependent on monopoly interests.

The Kalecki study was subjected to attacks on the part of big business circles who were vitally interested in promoting the trend towards cartelization.⁵³ An article by W. Ciechomski attacked, without even defining this target, the method of dividing the cartels between large and small. The author argued that Kalecki had failed to take into account numerous lesser producers' associations whereby he obscured the real proportions between the two. Replying, Kalecki countered such charges saying that, had he followed that advice and drawn up a full list of cartels "the resultant proportion of cartelized production would no doubt have surpassed 40 per cent."⁵⁴

The argument was later joined by R. Battaglia, an expert on cartels, connected with big business circles. He questioned the correctness of studying cartels with the number of mandays worked used as yardstick. "Rather than mandays, a much better gauge of this influence is information on the value of production for

⁵¹ *Ibidem*, p. 5.

⁵² *Ibidem*, p. 6.

⁵³ Wł. C. [Ciechomski], *W sprawie wskaźnika wytwórczości skartelizowanej* [On the Index of Cartelized Production], "Przegląd Gospodarczy," 1933, pp. 838 ff.

⁵⁴ M. Kalecki, "W sprawie wskaźnika wytwórczości skartelizowanej" p. Wł. C. w zeszyty 32 "Przeglądu Gospodarczego" ["On the Index of Cartelized Production" by Mr Wł. C. in Issue 32 of "Przegląd Gospodarczy"], "Przegląd Gospodarczy," 1933, p. 873. For more on this subject, cf. Z. Landau, *Zasięg kartelizacji...*, pp. 811—812.

the home market.”⁵⁶ He argued that when this yardstick was adopted “the share of the production value of cartelized and private monopoly interests in the total value of big-, medium-, and small-industry production was in 1930 only 21.8 per cent, rather than 36.7 per cent.” At the same time, however, the share of state monopoly interests would, according to Battaglia calculations, increase from 3.9 per cent to 14.5 per cent of the total. Therefore, cartelized production would still account for 36.3 per cent of the total. Thus, the difference between Kalecki’s and Battaglia’s calculations was not in the overall extent of cartelization but rather in the proportions between the private and public sectors within the cartelized area.

Let us note, however, that these data disagree with other Battaglia estimates, concerned with the gross and net values of Poland’s industrial output in 1930, as cited in Table IV.

Table IV: Estimated value of Poland’s industrial production in 1930

| Sector | Production Gross | | Production Net | |
|--|--------------------|------------------|--------------------|------------------|
| | in mill. zlotys | percent share | in mill. zlotys | percent share |
| Total | 9,443 | 100 | 5,977 | 100 |
| Including: | | | | |
| Private cartelized | 3,300 | 35 | 2,310 | 39 |
| State monopolized or nearly monopolized | 1,700 | 18 | 1,445 | 24 |
| Private noncartelized | 4,443 | 47 | 2,222 | 37 |

Source: R. Battaglia, *Zagadnienie kartelizacji w Polsce. Ceny a kartele* [The Problem of Cartelization in Poland. Prices and Cartels], Warszawa 1933, p. 198 ff.

It follows from Table IV that the combined extent of monopolization of production by private capital and by the public sector was even higher than reported by Kalecki: up to 53 per cent gross and 63 per cent net. It does seem that these figures were overstated, a result no doubt of imprecise estimates. At any rate, they differed from those cited by Battaglia in “Przegląd Gospodarczy.”

⁵⁶ R. Battaglia, *Jeszcze w sprawie udziału karteli w działalności przemysłowej na rynku polskim* [More on the Share of Cartels in the Operation of Industries on the Polish Market], “Przegląd Gospodarczy,” 1934, p. 110.

To dispel doubts which Battaglia's critical remarks in "Przełąd Gospodarczy" might create among readers one must remember that the research project, done by Kalecki at the Institute of Research on Business Cycles and Prices, was based on much sounder statistical foundations. The number of mandays worked in the various industries is more readily measurable than the value of their output. The obvious obstacle in ascertaining the latter was the great number of goods involved, the differences in prices between different manufacturers (in noncartelized industries), the choice of the kind of prices used as yardstick (factory prices, wholesale prices, retail prices, including or excluding rebate), price fluctuations and, a fundamental obstacle, unavailability of credible statistics for such calculations. Battaglia's study therefore, even if employing a better method, was nothing more than an estimate which could easily be put in doubt, as evidenced by the fact that Battaglia himself arrived at widely disparate results on two different occasions.

On the whole, authors have accepted that by 1929 some 40 per cent of Poland's industrial production had been affected by cartelization.⁵⁶ The Polish Academy of Sciences Research Centre for Economics gave a 1930 estimate at 43 per cent of total production by Polish big and medium-size industries and 36 per cent of total Polish industrial production.⁵⁷ According to the parliamentary Rapporteur on the Cartels Bill, F. Czernichowski, MP, at the beginning of 1933, 40 per cent of industrial production was controlled by cartels.⁵⁸

A careful analysis of available reference materials, as outlined above, leads this author to propose that prior to 1923 or 1924 the extent of cartelization in Polish industries was insignificant. The trend developed briskly after 1926 and by the early 1930's at least 40 per cent of industrial production for the home

⁵⁶ Cf. F. Zweig, *Poland Between Two Wars. A Critical Study and Economic Changes*, London 1944, p. 103. My previous thesis that by 1929 cartelization had only affected 25 per cent of total production must therefore be revised. Cf. Z. Landau, J. Tomaszewski, *Zarys historii gospodarczej Polski 1918—1939* [*An Outline Economic History of Poland, 1918—1939*], 3rd ed., Warszawa 1971, p. 164.

⁵⁷ *Materiały do badań nad gospodarką Polski* [*Materials for Studies on the Polish Economy*], Part I: 1918—1939, Warszawa 1956, sup. IX, p. 191.

⁵⁸ Shorthand minutes from the 97th session of Parliament on March 16, 1933, column 18.

market had become cartelized in one form or another. The proportion would be higher still were we to include exports in this calculation. Polish exports, particularly in the years of the Great Depression, were dominated by goods from the cartelized industries. For example, in 1933 cartelized coal accounted for 17.4 per cent of all Polish exports by value, pig iron, steel and rails—4.5 per cent, zinc—3.3 per cent, cotton yarn—2.3 per cent, sugar—2 per cent, metal sheets—1.8 per cent, pipes—1.7 per cent, textiles—1.6 per cent, paraffin—1.2 per cent. If we take into account that agricultural produce figured very prominently in Polish exports we shall see that, the agricultural exports sector excluded, the share of cartelized industries in the export picture will have grown even further.⁵⁹ To make the picture more complete let us cite estimates, taking into account only 23 of the largest cartels, which say that in 1930 these cartels' output was valued at 2,400 million zlotys of which nearly 55 per cent was exported.⁶⁰ In the same year the share of cartelized products in the total value of Poland's industrial exports was 50.7 per cent.⁶¹

Between 1933 and 1936 the number of cartels increased rapidly (see Table I). Necessarily, this had to result in a certain growth of cartelization of production. Of course, it is not to be assumed that the volume of cartelized production kept rising in direct proportion to the number of cartels. The fundamental, large industries had been cartelized before 1933.⁶² The trend then gradually spread to smaller industries. For example, by 1934 cartelization had spread to bridge construction and steel structures, iron foundries and coatpaint shops, factories manufacturing nails, wire, tins, weights, aniline dyes, paints and varnishes, hobnails, plywood furniture.⁶³

⁵⁹ *Mały Rocznik Statystyczny*, 1934, p. 81.

⁶⁰ R. Battaglia, *Zagadnienie kartelizacji w Polsce (ceny a kartele)* [*The Problem of Cartelization in Poland (Prices and Cartels)*], Warszawa 1933, p. 118.

⁶¹ R. Gradowski, *Polska 1918—1939. Niektóre zagadnienia kapitalizmu monopolistycznego* [*Poland, 1918—1939. Certain Aspects of Monopolistic Capitalism*], Warszawa 1959, p. 80.

⁶² Cf. E. Szturm de Sztrem, *Kartelee w życiu gospodarczym i społecznym* [*Cartels in Economic and Social Life*], in: *Statystyka...*, pp. 5—6.

⁶³ *Sprawozdanie Centralnego Związku Przemysłu Polskiego z działalności w r. 1934* [*Report by the Central Board of Polish Industries on Activities in 1934*], a supplement to "Przegląd Gospodarczy," 1935, No. 11, p. 23.

Taking into account the fact that on January 1, 1935, cartelized joint-stock companies accounted for approximately 80 per cent of the stock capital of all indigenous joint-stock companies, it could be assumed that their share of the nation's industrial production had, at least roughly, to correspond to the amount of capital they had. Of course, this is only a rough rule-of-thumb approximation.

Thus the extent of cartelization of Polish industries will be found to be between 40 per cent and 80 per cent of the total. From data cited above it follows that the lower limit corresponded to the degree of cartelization which had been reached by the early 1930's and which had to be higher by 1934 or 1935. At the same time, however, there seems to be no substantiation of a possible claim that the extent of cartelization in the latter period reached the upper limit of 80 per cent. There are important considerations disproving such a high degree of cartelization. First, not all production by joint-stock companies, even affiliated with cartels, was actually monopolized, because cartel agreements regulated matters relating to the production or sales of individual articles or groups of articles. *Eo ipso*, part of the production volume of the joint-stock companies was at all times exempt from the rules of cartel agreements. Second, joint-stock companies represented only part, albeit the dominating part, of the production potential of Polish industries. Therefore data, representative of joint-stock companies, cannot be regarded as representative of all industries. And after all, it goes without saying that the extent of cartelization was greater for joint-stock companies than for industry as a whole.

For all intents and purposes, it can therefore be accepted that cartelization in its various manifestations and in its peak period affected approximately 60 per cent of Poland's industrial production.⁶⁴ Such an estimate is corroborated by, apart from the

⁶⁴ One author put the extent of cartelization in 1935 at 50 per cent. However, his estimate was largely superficial as it took only into account the number of products affected by cartelization, with no reference to their relative importance in the nation's economy. M. Szawlewski, *Program naszej obronności i organizacji wewnętrznej* [The Programme of Our Defense Capability and Internal Organization], manuscript edition, Warszawa 1935, p. 15.

above line of reasoning, calculations performed at the Polish Academy of Sciences Research Centre for Economics. According to these calculations, in 1938 "cartelized production contributed about two-thirds of the entire industrial production and about 75 per cent of the production of big and medium-size industries." ⁶⁵ Of course, the actual impact of cartelization was somewhat greater because most noncartelized products had a high content of raw materials or intermediates that were covered by monopoly agreements, a development which could not but be reflected in their prices.

This author would propose to say that the decrease in the number of cartels after 1937 did not actually imply that the share of cartelized production on the home market fell off too. In the first place, according to some economists, the dissolution of small cartels actually played into the hands of the big ones which were given even more propitious conditions for development and control of the market.⁶⁶ This was a logical consequence of the policy line of the government which, on the one hand, tried to gain a measure of control over the cartels but, on the other, did not intend to eliminate large industrial associations whose production was geared also for export.

From the very onset of the Great Depression the government very definitely encouraged the setting up of cartels in industries working for export. The well-known Polish economist F. Zweig has gone so far as to assert that "the government's entire export policy relied on cartels."⁶⁷ Since the government pushed exports at dumping prices and went all out to encourage manufacturers to export their products at these prices, it was prepared to accept much higher prices for the same products on the home market. This tactic was designed to recoup losses suffered in below-cost exports. In 1929 the average price of a ton of coal on the home-market was 23.5 zlotys whereas the export price was 13 zlotys ;

⁶⁵ *Materiały do badań...*, p. 191. Interestingly, the results were arrived at along different lines of reasoning (with the calculation by the Polish Academy of Sciences Research Centre for Economics based largely on an analysis of production and price statistics).

⁶⁶ F. Zweig, *Poland...*, p. 106.

⁶⁷ *Ibidem*, p. 104.

by 1932 the home-market price went down only to 22 zlotys whereas the export price plunged to 8 zlotys.⁶⁸ Such a policy was only practicable when a maximum degree of cartelization of the given industry was achieved. Otherwise individual producers could not be persuaded to export their goods at a loss because keen competition between noncartelized producers within the country would have to result in price cutting on the home market too, thereby taking away from them the opportunity for recouping their export losses by keeping up the high prices on the home market. R. Battaglia wrote, among other things, that: "Polish cartelization turns out to be significantly export-oriented, a trend to facilitate the dumping practice, whereas all the other [...] cartels are playing an altogether insignificant role in the whole picture of our production and home trade."⁶⁹ His remark on the close link between cartelization and exports was no doubt correct.

In sum, three major conclusions can be drawn from the body of material presented above. First, as follows from Table I, the process of cartelization in Poland was very rapid. Tschierschky may have been quite right when in his report for the Economic Committee of the League of Nations he stated: "At any rate, it should be emphatically stressed that no other country has seen as intensive cartelization since the war as Poland."⁷⁰ Second, the process of monopolization of production caused approximately 60 per cent of all industrial production to be controlled by cartels, the proportion having been even higher in the big and medium-size industries. Monopolization of production was a feature not only of private-capital industries but of the public sector as well. Third, the fast progress of cartelization explains why the government increasingly tried to ensure for itself a measure of control over cartels. Starting in 1933, cartels found themselves in the focus of the government's economic policies aimed at exercising such control and subordinating monopolistic associations to state policy guidelines. This issue has not been discussed in the present

⁶⁸ E. Natanson, *O zagadnieniu kartelowym [On the Issue of Cartels]*, Warszawa 1932, p. 7.

⁶⁹ R. Battaglia, *Zagadnienie...*, p. 118.

⁷⁰ Decugis, Olds, Tschierschky, *Étude sur le régime juridique des ententes industrielles*, Genève 1930, p. 87. Quoted after A. Ivanka, *Zagadnienie...*, p. 373.

article, having been analyzed by the same author on a different occasion.⁷¹

As an aside to this article it should be added that failing to get a possibly deep insight into the mechanism of operation of industrial cartels we shall have considerable difficulty understanding many problems of the Polish economy in the period between the 1926 coup and 1939. It would therefore seem desirable to intensify research on the growth and operation of cartels in Poland between 1918 and 1939.

(Translated by Jerzy Jastrzębowski)

⁷¹ Z. Landau, *Le développement...*