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NATIONAL INCOME IN HISTORICAL RESEARCH
(On Material from the Period of the Interwar Poland)

*The author speaks of methodological problems involved
in evaluating the national income to prove that comparabi-
lity of that index in relation to different countries and even
to different historical periods of the same country is very
problematic. Next, he explains how national incomes were
evaluated in Poland in the interwar period (1918—1939)
showing upon that example how little can be found out
from that generally used index or from its components (e.g.
industrial production, agricultural production).*

One of the basic conditions of success in studies on
economic history consists in obtaining the possibility of comparing
the economic growth of the various countries within a longer
period of time. Hence the growing interest of economic historians
in utilizing information on changes in national income.[1] This is
indeed assumed to be the most synthetical indicator, theoretically

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[1] For more extensive remarks on this subject, see e.g.: W. K u l a,
Problemy i metody historii gospodarczej. Rozdz. VIII — *Makroanaliza. His-
toryczne badania dochodu społecznego* [*Problems and Methods of Economic
History. Chapter VIII — Marco-analysis. Historical Studies of National
Income*], Warszawa 1963, pp. 317—342.

permitting to carry out the necessary research and comparisons. Its unquestionable advantage consists in the fact that it expresses in terms of one single value the changes taking place in all the basic branches of national economy. What is more, it uses data expressed in terms of money and not in natural values ; this seemingly creates conditions for constructing long-time statistical sequences which, by assumption, should be serviceable both in long-term comparisons and in the study of relationships occurring in the tendencies of growth in the various countries. Theoretically, therefore, the national income seems to be an indicator of universal character, extremely useful in analyses in the field of economic history.

This, however, is only an appearance. Actually, national income as the yardstick for the magnitude of changes taking place in the national economy, has many essential shortcomings. In economic and historical studies one often tries to disregard them and to build statistical sequences taking no account of the problem of their intrinsic homogeneousness and comparability. In practice, such studies make no valid contribution to the picture of the past, since in most cases they fail to reflect actual processes taking place in the economy and are but a more or less intricate act of juggling with figures.

While raising so serious an objection, I ought to make clear where I see the main practical difficulties in a correct calculation of the magnitude of national income. Firstly, there is no agreement as to the scope of main's activities generating the national income. As far as this problem is concerned, there exist considerable differences between the methods of computation used in socialist countries and those used in capitalist countries.[2] The dispute concerns chiefly the range of various kinds of services—in the field of transport, trade, and others—included in the national income.

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[2] The literature on the methods of computing the national income has already reached such proportions that it would be difficult to cite in a note even the most important works only. We shall therefore limit ourselves to citing L. Z i e n k o w s k i ' s synthetical work: *Jak oblicza się dochód narodowy [How National Income is Computed]*, 4th ed., Warszawa 1971, p. 285.

The existing divergencies render it considerably difficult to make comparisons of the national income on an international scale. Secondly, statisticians still have difficulties in separating precisely from the total output that part of it which constitutes value added (net) i.e. the national income. Greatly varying methods of calculation are used there—yielding, however, greatly differing results which hardly inspires confidence. Thirdly, statisticians do not yet have at their disposal such methods of computation as to warrant that certain elements of national income would not be counted more than once. Fourthly, there is no unanimity as to the question at what prices one shold count natural consumption, i.e. that part of the national income which is consumed directly by the producer. This problem is particularly vital in the countries of small-scale agricultural commodity production where the greatest part of peasant production does not pass through the market and has to be estimated both as regards its proportions and the prices.

All the above-cited difficulties emerge already in the static investigation of the level of national income, i.e. in an analysis aimed at determining the amount of national income in a certain chosen period. Additional complications begin to arise as we pass from static investigation to examining the dynamics of changes in the proportions of national income.

To this end, we set together the data available for the various years into one longer numerical sequence. There arises immediately, however, the problem of comparability of prices at which the national income for each year has been calculated. The question of prices is extremely important since the level of national income is determined both by the proportions of net production and of material services, and by the level of prices. To make this matter clear, let us assume, by way of example, that in a certain country the proportions of net production and material services did not undergo any changes in the three periods investigated. Now, if the prices did not fluctuate, either the national income vould be the same all the time. If, however, the prices went up or down,

the national income would proportionally increase or decrease in the consecutive periods. [3]

Hence, in the investigations of dynamics, there arises the problem, extremely difficult to solve, at what prices the national income shold be computed. Two extreme solutions are possible there. The first consists in applying for each year the current prices valid at that time ; the second—in adopting uniform prices for the entire statistical sequence under investigation. In view of the constant changes in prices, the first method is scientifically useless for research in dynamics. Information on changes in the magnitude of national income becomes distorted which results both from changes in the value of money, and from the fluctuation of prices caused by the sinuous course of the business cycle in capitalist economy.

The second method, while much more precise, is not free of many dangers, either. The problem arises : prices from which period should be adopted as the basis of the whole investigation ? This choice is not a matter of no consequence. Changing with the years is not only the absolute level of prices but also their structure within the framework of national economy. To illustrate the importance of this problem, the data obtained by L. Zienkowski can be used. He has calculated that Poland's national income in the years 1937—1963 showed a 3.16-fold increase if the 1937 prices were adopted as the basis of reckoning, but only a 2.63-fold increase if the 1963 prices were adopted.[4] Depending on the chosen

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[3] In terms of figures, this could be presented in the following way : 2nd period—a drop of prices by 20% as compared with 1st period ; 3rd period—an increase of prices by 20% as compared with 1st period.

Period	Index of production in physical units	Index of prices	National income
I	100	100	100
II	100	80	80
III	100	120	120

If we wanted to express the changes in national income in terms of percentage, we would state that in the 2nd period the national income dropped by 20% as compared with the 1st period, and in the 3rd period it grew by 50% as compared with the 2nd period. And yet the physical proportions of the production in all the three periods did not change at all.

[4] L. Z i e n k o w s k i, *op. cit.*, 3rd ed., p. 250.

level of prices, also changing is the share of the various branches of national economy in generating the national income. According to the prices of 1937, the share of industry amounted in that year to 40%, but according to the prices of 1961, it amounted to only 28%.[5] "This was due to the rate of growth of labour productivity in industry higher than in the other branches, and to the increased share of industry in generating the national income."[6]

In selecting the level of prices, various authors use different solutions. Some take as basic prices those of the initial period, others—those of the final period ; also used are fixed or conventional prices. It ought to be remembered, however, that the longer statistical sequence we build, the more difficult the use of any uniform prices becomes. If, e.g., we set up a sequence covering the years 1900—1972, and we decide to base ourselves on the prices of the initial period (i.e. the prices of 1900), the problem will immediately arise how to calculate the value of hundreds of thousands new products that came into existence in the meantime; how ought we to value e.g. the entire output in such fields unknown in 1900, as electronics, atomistics, plastics ? At what prices should be estimated the value of output of machines, none of which any longer had in 1972 parameters even approximately equal to those of 1900 ? It can hardly be denied that such a statistical sequence would simply be fictitious. Let us assume that we recognize the prices of 1972 as the basis for assessing the national income of the entire preceding period. Needless to prove that we should thus arrive at a fiction analogous to that resulting from the adoption of 1900 prices.

Statisticians often cope with these difficulties by choosing for the various short periods (of a few years, as a rule) the prices of some basic period (or else, conventional or fixed prices) and use them as the basis for making comparable tables for a few years. Then they adopt new fixed prices and again basing themselves on them, they build new sequences for the successive periods. E.g., in estimating the dynamics of national income in People's Poland, for

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[5] L. Z i e n k o w s k i, quoted after : J. L i s i k i e w i c z, J. M a c i e j a, *Zmiany strukturalne w polskim przemyśle 1944—1969* [*Structural Changes in the Polish Industry 1944—1969*], Warszawa 1969, p. 20.

[6] J. L i s i k i e w i c z, J. M a c i e j a, *op. cit.*, p. 19.

the years 1947—1949, the so-called list prices of 1947 were used, for the period of the six-year plan—the prices of 1950, for the years 1955—1960—the prices of 1960, for the years 1960—1965— the prices of 1961, for the period 1965—1970—fixed prices of 1965.[7]

The use of fixed prices with regard to short periods of time, causes only insignificant distortions in the actual proportions of the national income. However, in order to establish a longer sequence, covering more than a decade, or even several decades, the statisticians use the method of the so-called chain references. It consists in calculating for each year of the investigated long-term sequence " the index of dynamics of the physical proportions of output as compared with the preceding year—with the prices of the given year adopted as fixed prices ; then, for long-term comparisons, these indices are multiplied one by another."[8] Such a sequence may look impressive but this is only an appearance, because in practice it reflects the actual economic processes to a small extent only.

It has to be stated here that statisticians who work out these indices realize much better the certain deceptiveness of data concerning the national income than specialists in economic history who often approach these data indiscriminately or not critically enough, frequently yield to the magic of tables and diagrams, and accept them as data fully reflecting the course of actual economic processes. The statistician L. Zienkowski, at present Poland's most distinguished expert in problems of national income, says bluntly in one of his works: " [. . .] we cannot measure adequately the changes in the physical proportions of production. All calculations of the dynamics of the physical proportions of national income [. . .], relating to longer periods of time, can only characterize basic trends : the longer is the period under investigation, the more conventional is the meaning of the results obtained. It should be borne in mind that such indices (i.e. indices of dynamics) can be utilized for detailed analysis only when he who makes the analysis is fully cognizant of the method that has been used to arrive at

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[7] L. Z i e n k o w s k i, *op. cit.*, p. 184.
[8] *Ibidem*, p. 161.

the index [...]"; Zienkowski then goes on to say: "One should be particularly cautious in comparing the rate of growth measured with one system of comparable prices, with the analogical rate of growth measured with a different system of prices, e.g. after replacing the old system of comparable prices by a new one."[9]

And yet, the problem of prices is not the only one to difficult the working-out of comparable long sequences of national income. There also constantly take place changes in the methodology of research; they affect very substantially the final results which again is often underestimated by historians.

We have formulated above several objections concerning the possibility of utilizing the existing calculations of national income in long-term comparative research. One could cite many more such objections; this, however is not the point.

Does the above-presented position imply that one should give up altogether the changes in national income within longer periods of time? I believe that such a conclusion, while to a certain extent justified by the present state of the methodology of computation, would be too pessimistic. I should, however, make two suggestions: firstly, that historians should be more moderate in drawing conclusions from data concerning the dynamics of changes in the national income within longer periods of time. Secondly, that for the time being, analyses should be limited to short periods of time because there the existing data are more comparable. Even then, considerable caution is necessary, though.[10] For all that, I am very sceptical about the possibilities of establishing for Poland comparative sequences illustrating the dynamics of national income in periods longer than a dozen or so years—if such sequences are to reflect actual and not fictitious economic processes.

The objections presented above were of a methodological and theoretical character. I now propose to pass to more practical mat-

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[9] *Ibidem*, p. 162.

[10] In order to indicate the difficulties, I shall cite one single example. Depending on which is used as the basis of investigation: selling prices or contracted prices, the share of agriculture in generating Poland's national income will amount in the former case to 20.55%, in the latter case—to as much as 32.5%. Accordingly, the respective share of industry will amount to 50% or 40.1%. In either case, the conclusions from an analysis must be greatly differing. Cf. J. L i s i k i e w i c z, J. M a c i e j a, *op. cit.*, pp. 24—25.

ters and consider the question to what extent the existing estimates of national income in the Second Republic (1918—1939) can be utilized in historical research.

Interest in the proportions of national income in Poland manifested itself relatively early, almost immediately after the country had emerged from the period of postwar inflation following World War I. The first investigation I know of, was conducted for the year 1924 by Stanisław Janicki, member of the Silesian Seym and chairman of its Budget Committee.[11] The inquiry did not actually concern the proportions of the national income in the present-day sense of the term, because the author was interested in the "annual value of our production and the resulting annual increment of national wealth."[12] In his calculation, Janicki took into account only the production of industry (including mining) and agriculture. He left out altogether, on the other hand, services of any kind. He estimated the value of total output in industry at 17 thous. mill. zl., in agriculture at 8.5 thous. mill. zl. He estimated the net value of industrial and agricultural production at a total of 13.96 thous. mill. zl., out of which agriculture accounted for 8.01 thous. mill., industry for 5.96 thous. mill.[13] These figures were of a purely hypothetical character because the calculations were made in a greatly over-simplified manner and the author failed to publish any grounds adopted for the estimates concerning industry (while he did publish such grounds with regard to agriculture). He gave neither the principles on which his estimate of gross production was based[14] nor the assumptions he had adopted in determining the share of net production in the overall industrial production.

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[11] For agriculture, the author took the prices of August 1925, though. We did not succeed in establishing which prices he had taken for industry.

[12] S. J a n i c k i, *Majątek i siły gospodarcze państwa polskiego* [*The Wealth and the Economic Forces of the Polish State*], Katowice, yr. not indicated, p. 23.

[13] *Ibidem,* p. 25. The author, realizing that the adopted estimate was of a hypothetical character stated elsewhere that net production amounted to 14—15 thous. mill. zlotys.

[14] These principles arouse basic doubts because the author has estimated e.g. the milling production at 2 billion zlotys, the paper and printing production at 1.8 thous. mill., while on the other hand, the mining production at anly 1 thous. mill., the metallurgical and metal industry production at 1 thous. mill., etc.

It is therefore difficult to explain why he fixed the net value (in relation to total output) at 70% in mining, at 40% in metallurgy and metal industry, at 45% in textile and garment industries, at 33% in paper and printing industries, at 30% in milling industry, etc.[15]

It should be noted that apart from an estimate of net production, the author also calculated the net production for distribution because he took into account in his reckonings the effects of foreign trade turnover which in 1924 showed a surpuls of 211 million zlotys for Poland. However, since the value of net production was only hypothetical, the effect of the foreign trade surplus on the proportions of national income was practically of no consequence.

Janicki's study became the point of departure for the analysis made by the future minister of finance (after the May *coup d'état* of 1926), Gabriel Czechowicz. In April 1926, he published under the pen-name G. Leliwa the work *Problem skarbowy w świetle prawdy* [*The Fiscal Problem in the Light of Truth*]. Czechowicz's purpose was to calculate the national income and ascertain on this basis whether social income in Poland was excessively burdened by taxation. The same purpose motivated, for the rest, the greatest part of the authors who engaged in the years 1924—1926 in studying the problems of national income.

Czechowicz approached critically the calculations made by his predecessor. First of all, he reduced by 25% Janicki's estimates of the value of plant production, of the increment of livestock and of the value of rural household products. Secondly, he assumed that one should deduct 35% of the value of total plant production to obtain net production value, i.e. the part that constituted the national income ; Janicki, on the other hand, identified the value of total production with net production. Thirdly, Czechowicz made his own estimates of the value of industrial production. While Janicki assumed that its total value amounted to 17 thous. mill. zl., Czechowicz estimated it at 5.244 thous. mill. He based this estimate on the data of the Ministry of Finance relating to the assessment of the turnover tax for the year 1924. He assumed at the same time that the value of semi-finished products, raw-materials

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[15] S. J a n i c k i, *op. cit.*, pp. 24—25.

and fuels produced in the preceding period accounted for 50⁰/₀ of the total production value. Hence his conclusion that the national income generated by industry amounted to 2.622 thous. mill. zl. while in Janicki's estimate the figure was more than twice higher. Fourthly, he included in the national income such items, left-out altogether by Janicki, as transports, the earnings of merchants and middlemen, as well as other incomes, like e.g. the incomes of real-estate owners. In estimating the share of these groups, he based himself both on taxation statistics and, to a certain extent, on his own estimates. Some of them, however, were not supported by adequate documentary evidence.[16] Eventually, Czechowicz estimated Poland's national income at 9.512 thous. mill. zl.[17]

Obviously, Czechowicz's method, while more perfect already than that of Janicki, also had several shortcomings. First of all, the author took into account in his calculations—besides such branches of economy which actually generated national income (industry, agriculture, partly transport)—other branches which had no share at all in generating it. For example, the incomes of owners of real estate, included by Czechowicz in the national income, were in fact the result of a secondary distribution of this income. Much the same was the case of a considerable part of the earnings of merchants and middlemen. Indeed, one could hardly agree with the conclusion, resulting from Czechowicz's concept, that the share of trade in generating national income amounted to more than 50⁰/₀ of the share of industry.

The next attempt at calculating the national income for the year 1924 was undertaken by Paweł Michalski.[18] In his estimates, he based himself on many findings arrived at by his two predecessors. Thus he took over from Janicki the data relating to agricultural production, and from Czechowicz the calculations of the value of transports as well as certain methodological assumptions

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[16] E.g. G. Czechowicz assumed quite unfoudedly that gross proceeds of merchants accounted for at least 20⁰/₀ of trade turnover, and included this entire sum as a component of the generated national income.

[17] G. L e l i w a (G. C z e c h o w i c z), *Problem skarbowy w świetle prawdy* [*The Fiscal Problem in the Light of Truth*], Warszawa 1926, pp. 49—51.

[18] P. M i c h a l s k i, *Dochód społeczny Polski* [*Poland's Social Income*], "Przegląd Skarbowy," 1926, No. 4, pp. 113—117.

(among other things, the assumption that in order to find the net value of plant production, it is necessary to deduct 35% from the total production value, this percentage representing costs). Michalski introduced a few further changes in the reckonings of his predecessors. Thus he included in the national income the value generated by the fisheries ; he estimated with much greater precision the industrial production, and applied to it differentiated (and different from Janicki's) norms for the deductions of the value of consumption of semi-finished products and raw-materials in the various branches of industry. [19] However, Michalski also failed to provide any explanation as to what guided him in determining the given proportion of between net and total production in industry. As compared with Czechowicz, Michalski considerably reduced the proportions of merchants' earnings in internal traffic, included in the national income,[20] and left out altogether the incomes of real estate owners.

However, these new calculations were still not free of serious methodological mistakes. They were pointed out by the economist Bohdan Dederko.[21] He stated, firstly, that in calculating the value of animal production a certain percentage should be deducted for the consumption of food stuffs etc., just as it is done with regard

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[19] By way of illustration : the norm of deduction in the mineral industry and mining amounted to 30%, in oil industry to 40%, in metallurgy, clothing manufacture, fertilizer industry—to 50%, in other idustries—to 60%.

[20] He assumed that they amounted only to 15% of the turnover, according to the statistics of the industrial tax assessment in 1924.

[21] B. D e d e r k o, *Dochód społeczny Polski* [*Poland's Social Income*], "Kwartalnik Statystyczny, 1932, No, 2, pp. 135—150. I take here no account of the objections raised by B. M i n c in his work : *Zagadnienia dochodu narodowego* [*Problems of National Income*], Warszawa 1950, pp. 207—208. These objections were formulated as follows : " [...] The estimate of national income made by P. Michalski is the expression of a primitive, naturalistic and material view on the essence of national income and was prepared without, an adequate statistical basis. Particularly striking is the introduction of the vague category of 'household economy,' the leaving-out of handicrafts and of those components of national income which are not objects, things, the marked underestimation of merchants' earnings and the confusing the generation of income with its realization in the various branches." B. Minc judged the method used by P. Michalski above all from the point of view of its consistence with the principles of the Marxist methodology of computing the national income ; but in doing so, he took no account of the fact that at the time when Michalski made his estimates, the Marxist methodology had not yet been elaborated. His objection is therefore of a-historical character. B. Minc also repeated after B. Dederko many other objections concerning the computatinos of Michalski.

to plant production ; Michalski failed to do so and, consequently, his figure of national income generated from animal breeding was considerably overestimated. Secondly, Dederko called in question the quoting of "household production as a separate item ; he considered this as unfounded and too artificial. Thirdly, he accused Michalski of arbitrariness in estimating incomes derived from transport by horse waggon. Fourthly, he was of the opinion that "the earnings of merchants [...] are approached too narrowly and seem to have been underassessed."[22] In order to give the reader a clearer idea of the estimates by each of the three authors, we put them together in Table 1.

An analysis of these first three estimates shows that they differed not only in the proportions of national income ; considerable differences also existed between them as regards the respective role of industry and of agriculture in its generation. According to

T a b l e 1. Poland's National Income in 1924 as Estimated by S. Janicki, G. Czechowicz, P. Michalski (in thous. zlotys at 1924 parity)

Group of incomes	Janicki	Czechowicz	Michalski
Plant production	5,285,000	2,600,000	3,435,250
Forestry production	220,000	220,000	220,000
Animal production	920,000	700,000	920,000
Rural household production	1,585,000	1,200,000	1,585,000
Fisheries	—	—	19,000
Industrial production	5,950,000	2,622,000	2,780,682
Rail and water transport	—	490,000	490,000
Horse-waggon transport	—	100,000	100,000
Earnings of merchants and middlemen	—	1,380,000	900,000
Other (incomes of real-estate owners, etc.)	—	200,000	—
Total	13,960,000	9,512,000	10,449,932

S o u r c e s : S. J a n i c k i, *Majątek i siły gospodarcze państwa polskiego* [*The Wealth and the Economic Forces of the Polish State*], Katowice, year of publication not indicated, pp. 24—25; G L e l i w a (G. C z e c h o w i c z), *Problem skarbowy w świetle prawdy* [*The Fiscal Problem in the Light of Truth*], Warszawa 1926, p. 49; P. M i c h a l s k i, *Dochód społeczny Polski* [*The Social Income of Poland*], "Przegląd Skarbowy" 1926, No. 4, p. 115.

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[22] B. D e d e r k o, *op. cit.*, p. 137.

Janicki, industry generated $43^0/_0$ of the national income, according to Czechowicz — $28^0/_0$, according to Michalski — only $26^0/_0$.[23]

To complete the picture of the state of research, one should add that the above-cited estimates were not the only calculations in existence, pertaining to that period. They were only the most complete, and their authors published the principles of their construction. However, if we wish to get a possibly comprehensive review of the available information, we must also take into account the other data relating to the proportions of the national income. We should make clear in advance that a part of these data give the impression of being concocted for the sake of immediate expediency. Some representatives of the business circles endeavoured to substantiate the theory on the excessive tax burden in Poland, by giving a very low estimate of the national income and comparing it with the serious tax encumbrance. On these grounds, they demanded that the government should reduce the fiscal charges encumbering production.

In many cases, it is also difficult to determine precisely for which year the estimate was made. We know that they relate to the years 1923—1925. This, of course, reduces the comparability of the data quoted, all the more so that for a considerable part of the year 1923, a favourable economic situation still prevailed in Poland ; a slump came in the autumn of that year and developed into an economic depression in the years 1924—1925. The depression affected, above all, industry : its output dropped by some $15^0/_0$ as compared with 1923.[24] If we assume, however, that industry—according to the estimates of Czechowicz and Michalski—generated only $26—28^0/_0$ of the national income, the fall of production by $15^0/_0$ did not affect significantly the over-all value of national income. In agriculture, the situation was different. In 1924, as a result of bad crops, the production of some agricultural articles decreased considerably which brought about an increase of prices for plant and animal products. This trend persisted until the har-

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[23] Calculated on the basis of Table 1.
[24] Z. L a n d a u, J. T o m a s z e w s k i, *Od Grabskiego do Piłsudskiego. Okres kryzysu poinflacyjnego i ożywienia koniunktury 1924—1929* [*From Grabski to Piłsudski. The Period of Post-inflationary Crisis and of the Rising Trend in Business Activity 1924—1929*], Warszawa 1971, p. 26.

vest of 1925.[25] In other words, in the year 1923, the volume of industrial production and the prices of industrial products were high while the prices of agricultural articles were running relatively low. The years 1924—1925 saw a drop in the output and prices of manufactured products while the prices of farm produce went up. As a result, this neutralized to a certain extent the effects of economic fluctuations on the level of national income which makes it possible to analyze jointly the estimates of national income for those three years. The author feels additionally justified by two more facts : firstly—that most estimates were more or less rough, anyway ; secondly—that the basic divergences existing between them obliterated the importance of minor differences caused by the changed economic conditions in Poland in 1923 and in 1924—1925.

After these objections, we may now proceed to present the existing data. The lowest estimate of the national income was given by Senator Fiszel Rotenstreich ; it amounted to 4.8 thous. mill. zl.[26] Mozes Frostig, member of the Seym, gave a little higher estimate : 5.5 thous. mill.[27] Ferdynand Zweig and, after him, Prof. Adam Krzyżanowski were of the opinion that Poland's national income amounted to 6 thous. mill. zl. They warned, however, that "in view of the vehement and rapid fluctuations in the value of money, reliable calculations of these data [i.e. of the social income — Z.L.] are unfortunately hardly possible. One can use approximate figures, though, calculated on the basis of tax records [...]."[28] The well-know statistician and future President of the Central Statistical Office, Edward Szturm de Sztrem estimated the national income at 6.6 thous. mill. zl.,[29] Senator Jan Stecki at 7

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[25] *Ibidem,* p. 116.

[26] "Nasz Przegląd" of 15 October 1925.

[27] G. L e l i w a, *op. cit.,* p. 52.

[28] The fiscal authorities fixed the incomes subject to income tax at 1.22 billion zlotys. A Krzyżanowski assumed that the total income was five times higher. He noted that a lower multiplier was usually adopted but " I multiply by 5 on account of the specific Polish conditions." A. K r z y ż a n o w - s k i, *Pauperyzacja Polski współczesnej* [*The Pauperization of Present-day Poland*], in : A. K r z y ż a n o w s k i, *Polityka i gospodarstwo. Pisma pomniejsze oraz przemówienia 1920—31* [*Politics and Economy. Minor Writings and Speeches 1920—31*], Kraków 1931, p. 244.

[29] R. B a t t a g l i a, *O programie gospodarczym Polski oraz o warunkach rozwoju poszczególnych gałęzi wytwórczości* [*On Poland's Economic*

thous. mill.,[30] Józef Jaskólski at 7.8 thous. mill.[31] and Jerzy Michalski, member of the Seym, at 8 thous. mill. [32] Roger Battaglia, while taking G. Czechowicz's estimates as a basis, judged them overstated. He claimed that in calculating the national income, Czechowicz had deducted from the total production only a part of the value of used-up raw-materials and semi-finished products. Battaglia's "tentative calculations" led him to the conclusion that the national income was contained in the 8—9 billion zlotys bracket.[33] The Minister of Finance, Czesław Klarner, stated in the Seym that the social income amounted to 9 thous. mill. zl. [34] Another well-known economist and fiscal expert, Professor Stanisław Głębiński, estimated it at 10 billion.[35] The same result was arrived at by Wacław Łypacewicz, member of the Seym, responsible for reporting to the Budget Committee on the draft budget o fthe Ministry of Finance. Łypacewicz warned, however, that his estimate was a most pessimistic one. In other words, he accepted 10 billion zlotys as the minimum amount of the national income. [36] Prime Minister Kazimierz Bartel stated in his speech made in the Senate on 30 July, 1926 that "on the basis of rather accurate statistical calculations, the value of social production in 1925 can be estimated at about 10—11 thous. mill. zl. in gold." [37] Bartel assumed that agriculture accounted for 60% of the national income, and industry

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Programme and on the Conditions of Development of the Various Branches of Production], Warszawa 1927, p. 17.

[30] J. S t e c k i, W obronie prawdy [In the Defence of Truth], Warszawa 1928, p. 271. I did not succed in establishing from where R. Battaglia the information that Stecki had estimated the national income at 14 thous. mill. zl. R. B a t t a g l i a, op. cit., p. 17.

[31] G. L e l i w a, op. cit., p. 51.

[32] Ibidem.

[33] R. B a t t a g l i a, op. cit., p. 17.

[34] C. Klarner, Speech made in the Seym on 22 June 1926, in : C. K l a r - n e r, Drogi sanacji gospodarczej. Mowy ministra skarbu... [The Ways of Economic Improvement. Speeches of the Minister of Finance...], Warszawa 1926, p. 8. In view of the fall of the zloty in the middle of 1925, Klarner estimated the national income in the depreciated currency at "not less than 15 thous. mill. ". Ibidem.

[35] R. B a t t a g l i a, op. cit., p. 17.

[36] W. Ł y p a c e w i c z, Sprawozdanie Komisji Budżetowej o preliminarzu budżetowym Ministerstwa Skarbu na rok 1924. Sejm RP. Okres I [Report of the Budget Committee on the Draft Budget of the Ministry of Finance for the Year 1924. The Seym of the Polish Republic. Period I], Document No. 1210, Part 8, p. 10.

[37] K. B a r t e l, Mowy parlamentarne [Parliamentary Speeches], Warszawa 1928, p. 43.

for 40%. He thereby came close to Janicki's estimate. Stanisław Tołwiński, on the other hand, placed the national income in the 10—12 thous. mill. zl. bracket. [38]

The above enumeration is quite long and surely tiresome. Yet it was necessary in order to demonstrate how greatly diverging were the estimates worked-out by the various authors. The fact that they range from 4.8 to 12 thous mill. zl., with no possibility of verifying the various calculations, makes these data practically unfit as the basis for any rational conclusions. Neither can they serve as basis for any long-term comparisons. It is best illustrated by the fact that subsequent investigations of the national income took no account of all the above-cited estimates.

It was the imperfection of those estimates that made further research necessary. In 1932, Bohdan Dederko published the results of his studies. They related to the years 1928—1929. Dederko considered his study "the first attempt at estimating the social income of independent Poland"[39] (not counting the data published previously by P. Michalski). As we know, this claim was inaccurate : Dederko's investigation can hardly be considered pioneer. Unquestionably, however, his study was based on a much better statistical basis than the previous ones. The author warned, all the same, that "it is by necessity of a sketchy character, because of the lack of thorough preparatory work which still has not been done in Poland. For this reason, the author's calculations are not free of ambiguities, inexactitudes and even far-reaching general-izations."[40]

We shall not go here into the detailes of the methodology of calculations since this is not the purpose of the present article. We shall only note that Dederko considered as social income "everything that the given society produced in the given year [...] after deducting such raw-materials, materials and semi-finished products that were used for that production [...]. We shall thus obtain net production which constitutes the social income, since it will include all incomes : of businessmen, wage-earners and salaried workers, of the State and local government (taxes), of creditors,

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[38] "Robotniczy Przegląd Gospodarczy," 1925, No. 11.
[39] B. D e d e r k o, *op. cit.*, p. 135.
[40] *Ibidem.*

incomes from transport, incomes of banks, of middlemen, real-estate owners, etc." [41] According to Dederko's calculations, the national income so conceived amounted to 18,967.9 million zlotys; out of this figure, the share of agriculture was 9,059.3 million, that of industry—6,930.3 million, and that of trade—2,978.3 million zlotys, respectively.[42]

The major shortcomings of Dederko's estimates consisted in the fact that in calculating the national income he did not take into account the role of transport and communications, and that he overestimated the importance of trade in generating national income while at the same time he underestimated material services. Also, one can hardly accept as methodologically correct the assumption that net production amounted to $40^0/0$ of total production in all branches of industry, and to $60^0/0$ in handicrafts.[43] After all, this proportion was different in every branch of industry.

The value of national income generated in Poland in 1929 became also the object of another study conducted by Michał Kalecki and Ludwik Landau in the Institute for Market and Price Research.[44] Their investigation was based on methods worked-out in the Anglo-Saxon countries and widely used at that time; it utilized rich statistical material. As compared with earlier works, the study by Kalecki and Landau marked a definite stop forward. The authors departed from the basic assumption that national income is generated by the production of goods and services. However, they tried to determine its proportions not by summing-up the net value produced in various branches of national economy but "by estimating the value of goods and services that have been consumed or saved (in the form of investments, gain in reserves or rise of a claim in relation to abroad)."[45] To assess the value of goods and services, they used current retail prices.

The Kalecki-Landau estimate was overstated, though. The authors did not deduct the depreciation of fixed assets while, on the other hand, they included in the national income the school ser-

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[41] *Ibidem,* p. 137.
[42] *Ibidem,* p. 146.
[43] *Ibidem,* pp. 146—147.
[44] M. K a l e c k i, L. L a n d a u, *Szacunek dochodu społecznego w roku 1929 [An Estimate of the National Income in the Year 1929],* Warszawa 1934.
[45] *Ibidem,* p. 14.

vices. They also assessed too highly the value of natural consumption in the rural areas by estimating it at retail prices existing in the urban markets. According to the estimates made after the war by Kazimierz Secomski, the depreciation of fixed assets in 1929 amounted to 1,025 million zlotys,[46] school services were estimated by the authors at 400 million zlotys, and the use of urban retail prices for the estimating of rural natural consumption raised the sum total of the national income by 3, 077 million zlotys.[47] While according to Kalecki's and Landau's reckonings, Poland's national income in 1929 amounted to 26 thous. mill. zl.,[48] after deducting the above-cited sums it came down to 21.5 thous. mill.[49] As can be seen, it differed from Dederko's estimates in either case. Towards the end of the interwar period, Ludwik Landau undertook the attempt of calculating the value of production in Poland ; it was "close to the value of social income because—wherever possible—the net production value was given and services were left out."[50] Landau's final estimate was only 19.2 thous. mill. zl., [51] i.e. considerably less than the previous estimate of national income, computed not from the point of view of production but by estimating the consumption and accumulation.

The basic innovation introduced by Kalecki and Landau consisted in the attempt to undertake periodical inquiries concerning

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[46] K. S e c o m s k i, *Podstawy polityki inwestycyjnej* [*Foundations of the Investment Policy*], Warszawa 1947, Part III, p. 34.

[47] M. K a l e c k i, L. L a n d a u, *An Estimate...*, pp. 27, 31—32.

[48] Later publications sometimes gave the figure 28.3 thous. mill., and not 26 thous. mill. See, e.g.: L. L a n d a u, *Koszt administracji publicznej i obciążenia podatkowe w dochodzie społecznym Polski* [*The Cost of Public Administration and the Burden of Taxation in Poland's Social Income*], "Prace Instytutu Badania Koniunktur Gospodarczych i Cen," 1935, No. 3/4, p. 79. The same in : *Mały Rocznik Statystyczny 1937* [*Concise Statistical Yearbook 1937*], p. 60.

[40] See: *Materiały do badań nad gospodarką Polski*. Część I : *1918—1939* [*Materials for Research in Poland's Economy*. Part I : *1918—1939*], Warszawa 1956, pp. 49—50.

[50] Z. K n a k i e w i c z, *Deflacja polska 1930—1935* [*Polish Deflation 1930—1935*], Warszawa 1967, p. 307. L. Landau left out in this estimate the net production value of handicraft and services. For more on the method of computation, see: L. L a n d a u, *Gospodarka światowa. Produkcja i dochód społeczny w liczbach* [*World Economy. Production and Social Income in Figures*], in : L. L a n d a u, *Wybór pism* [*Selected Writings*], Warszawa 1957, pp. 355—360.

[51] L. L a n d a u, *op. cit.*

the level of national income.[52] Departing from analogical assumptions and principles, they estimated the national income for the year 1933 ; their calculations were based on current prices but they also took into account the real value of the national income as compared with 1929. At current prices, the national income in 1933 amounted to 15.5 billion zlotys (a drop by 45% as compared with 1929) ; in terms of real value, it amounted to 23.2 billion zlotys (a drop by 18%).[53] This latter estimate gives the impression of being excessively high, considering that the industrial production dropped in that period by 37%.[54]

Kalecki and Landau did not carry on their research after 1933. It became, however, a point of departure for Czesław Klarner who stated that "in our study we shall base ourselves on the almost only existing works concerning social income, done at the Institute for Market and Price Research."[55] Klarner also accepted the definition of social income adopted by Kalecki and Landau. Wishing to fill the gap in the estimates, he took as his point of departure the value of national income as established by the two authors for the year 1929, and he modified it for each successive year, depending on the amount of consumption and the changes in prices. Klarner did not give a more detailed description of the method he used in his study. Anyway, his calculations resulted in a figure of national income for 1933 which was lower than that obtained earlier by Kalecki and Landau. "Since the latter was based on the authors' own calculations, we adopt their results as a basis for 1933 and we rectify upwards our figures for the preceding years (i.e. 1930—

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[52] M. K a l e c k i, L a n d a u, *Dochód społeczny w roku 1933 i podstawy badań periodycznych nad zmianami dochodu* [*The Social Income in 1933 and the Bases for Periodical Research in the Changes of Income*], Warszawa 1935.

[53] *Mały Rocznik Statystyczny 1937* [*Concise Statistical Yearbook 1937*], p. 60.

[54] Z. L a n d a u, J. T o m a s z e w s k i, *Zarys historii gospodarczej Polski 1918—1939* [*Outline Economic History of Poland 1918—1939*], 3rd ed., Warszawa 1971, p. 191. I am basing myself on the so-called compromise index. See : J. T o m a s z e w s k i, *Ogólny wskaźnik produkcji przemysłowej Polski 1918—1939* [*The General Index of Poland's Industrial Production 1918—1939*], "Kwartalnik Historyczny," 1965, No. 2.

[55] C. K l a r n e r, *Dochód społeczny wsi i miast w Polsce w okresie przesilenia gospodarczego 1929—1936* [*The Social Income of the Countryside and Towns in Poland in the Period of Economic Crisis 1929—1936*], Reprint from "Przegląd Ekonomiczny," Lwów 1937, p. 9.

1932—Z.L.); we also carry out on this basis reckonings aimed at determining once more the elements of social income for the years 1934 and 1935."[56] Here again, Klarner fails to mention how he managed to make the results of his own calculations uniform with those obtained by Kalecki and Landau. Anyhow, he made up a numerical sequence according to which the social income in Poland in the years 1929—1936 (at current prices) amounted respectively to : 26.0 thous. mill zl., 22.3 thous. mill., 18.6 thous. mill., 15.3 thous. mill., 13.7 thous. mill., 12.7 thous. mill., 12.5 thous. mill., and 13.1 thous. mill. zl.[57] The author pointed out at the same time that, in view of the fall of prices and, consequently, the increase of the purchasing power of the zloty, these figures did not reflect the real value of the national income. He added, by way of information, that the purchasing power of the zloty—if we take the year 1929 as 100—grew as follows in the successive years of the 1930—1936 period : 113, 129, 147, 163, 173, 182, 179. [58]

Klarner's estimate was complemented for the year 1938 by Kazimierz Petyniak-Sanecki whose calculations showed that the national income in that year amounted (at current prices) to 18.0 thous. mill. zl.[59] His reckonings corresponded exactly with Klarner's figures and were based on the latter for the years 1933 and 1935. In the opinion of some Marxist scholars, the calculations for 1938 (and, consequently, the previous estimates by Klarner) were considerably overstated "because the author adds to the national income the value of non-material services and, on the other hand, does not deduct from it the value of fixed assets consumed in the course of production."[60] The elimination of these two elements would bring down the estimate for 1938 to 15.4 thous. mill. zl., i.e.

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[56] *Ibidem,* p. 20.

[57] *Ibidem,* p. 23. Rather similar conclusions are to be found in : *Sprawozdanie Komisji Skarbowo-Budżetowej o preliminarzu budżetowym za okres od 1.IV.1939 do 31.III.1940. Sejm RP. Okres V. Druk nr. 45, cz. A-B* [*Report of the Finance and Budget Committee on the Draft Budget for the Period from 1 April 1939 to 31 March 1940. The Seym of the Polish Republic. Period V. Document No. 45, Par A-B*] p. 10. These figures are for all years by 300 million zlotys lower than those given by C. Klarner.

[58] C. K l a r n e r, *op. cit.,* p. 25.

[59] K. P e t y n i a k - S a n e c k i, *Współczesne zagadnienia gospodarcze* [*Contemporary Economic Problems*], Part II, Lwów 1939, p. 168.

[60] *Dochód narodowy Polski 1947* [*The National Income of Poland 1947*], "Statystyka Polski," Series D, Fasc. 13, Warszawa 1949, p. 1.

it would reduce it by 15%. If we applied the same treatment to the estimates of Kalecki, Landau and Klarner for the years 1929—1936, the national income for each of those years (at current prices) should be established at a level by 15% lower. Thus, in the year 1929, it would amount to 22.1 thous. mill., in 1930—to 19.2 thous. mill., in 1931—to 15.8 thous. mill., in 1932—to 13.0 thous. mill., in 1933—to 11.7 thous. mill., in 1934—to 10.8 thous. mill., in 1935—to 10.6 thous. mill., in 1936—to 10.9 thous. mill. zlotys. At the same time, it is worth recalling, however, that according to other postwar calculations, the national income in 1938 (at current prices) was estimated at 17.7 thous. mill. zlotys. [61]

The calculations cited above do not exhaust the list of existing estimates. A few more were added to them after World War II. Thus the Central Statistical Office established that the national income (at 1937 prices) amounted in 1929 to 14.8 thous. mill. zl., in 1935—to 14.8 thous. mill. zl. [62] Leszek Zienkowski estimated the national income of 1937 (at current prices) at 16.55 thous. mill. zl. [63] Certain calculations, taking as their point of departure the estimates of Kalecki and Landau for the year 1929, were attempted by a team of workers of the Institute of Economic Sciences of the Polish Academy of Sciences. According to their calculations, the national income in the years 1930—1938 (at comparable prices of 1928) attained the following proportions—if the 1929 figure is taken as 100 : 1930—93.4, 1931—86.9, 1932—77.5, 1933—82.4, 1934—87.6, 1935—91.8, 1936—97.7, 1937—104.4, 1938—110.3. [64] It should be remembered, however, that the authors of this estimate considered the figures obtained by Landau and Kalecki for the year 1929 as excessively high, and assumed that the national income in 1929 did not amount to 26 billion zlotys but only to 21,5 thous. mill. zlotys. [65]

Apart from those already cited, there appeared a very valuable

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[61] *Plan odbudowy gospodarczej. Materiały do przedłożenia rządowego. Liczby podstawowe* [*The Plan of Economic Reconstruction. Material for the Government Statement. Basic Figures*], Warszawa 1947, p. 141.

[62] *Polska w liczbach 1944—1964* [*Poland in Figures 1944—1964*], Warszawa 1964, p. 17.

[63] L. Z i e n k o w s k i, *Dochód narodowy Polski 1937—1960* [*Poland's National Income 1937—1960*], Warszawa 1963, p. 336.

[64] *Materiały do badań...*, Annexe VII.

[65] *Ibidem,* pp. 49—50.

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calculation by Zenobia Knakiewicz, economist from Poznań, who—on the basis of net production value at current prices—gave the following estimate, in thousand million zlotys, of social income for the years 1928—1935 : 1928—18.75, 1929—16.96, 1930—12.98, 1931—9.81, 1932—7.80, 1933—7.42, 1934—7.24, 1935—8.42. [66] Another estimate concerned incomes expressed in real terms (the impact of price fluctuations was eliminated from it) and presented the following sequence (in thousand million zlotys): 1928—18.75, 1929—17.60, 1930—16,17, 1931—13.14, 1932—11.90, 1933—12.58, 1934—13.00, 1935—15.91. [67] The author based her figures of net production in industry, mining and metallurgy on the estimates for 1935, made by the Institute for Market and Price Research. Taking their data as the point of departure, and using the general index of industrial production and the index of wholesale prices, Knakiewicz calculated the net production value for the consecutive years at current prices. "After completing the estimate, the data obtained on the basis of the new production index were confronted with the results of L. Landau's calculations for the year 1929. The comparison shows that for the year 1929 the estimate obtained is by $5^0/_0$ higher. This is not a great difference if one takes into account the considerable approximation of calculations by both authors. It may therefore be assumed that the figures obtained almost correspond with reality." [68] The results, as Miss Knakiewicz stressed, were much less precise with regard to the net production value in agriculture. The author based herself above all on the crude income of farms from 2 to 50 hectares, as estimated by the Department of Agricultural Economics of Small Farms, the Scientific Institute of Rural Economics at Puławy. Their data, however, quoted farm incomes much higher than those attained by farms not covered by the inquiry of the Puławy Institute. [69] Consequently, the value of agricultural

[66] Z. Knakiewicz, *op. cit.*, p. 330. The author computed three diffierent estimates of the national income. The first was based on the so-called "old" general index of industrial production, the second on the "new" index, the third—on the so-called "compromise" index. I have quoted the latter estimate.

[67] *Ibidem*, p. 333.

[68] *Ibidem*, p. 322.

[69] See, e.g., J. Curzytek, *Położenie gospodarstw włościańskich w 1934/35 roku* [*The Situation of Peasant Farms in 1934/1935*], Warszawa 1935, p. 17.

production was estimated too highly. The author also pointed to another flaw in her calculation, namely to the fact that for farms of an area exceeding 50 hectares she had adopted income norms similar to those in peasant farms. She believed, however—and probably quite rigthly—that this could not give rise to major inaccuracies. Serious difficulties, on the other hand, arose when it came to estimate the net production in agriculture and forestry.

Apart from computations made in Poland, there also appeared estimates prepared in other countries. The most widely known among them was that made by Colin Clark.[70] It arouses serious doubts, however, chiefly because of the purely compilatory character of the initial data. The author drew the information on the proportions of the national income in the various years (at market prices) from different sources but—apart from few exceptions—he left out of account Polish sources. As a result, the sequence elaborated by him does not reflect the processes taking place in Poland's economy. For example, according to Clark, the national income in 1929 (at current prices) grew by 21% as compared with 1928, and yet it is known that both the industrial and the agricultural production were in that period at an almost equal level while the prices of agricultural products dropped in 1929 as compared with the preceding year. How then could the national income show as great an increase as indicated by Clark? He simply put together mechanically two calculations based on completely different methods. The further operations carried out by the author, namely the conversion of the value of national income expressed in domestic currency into invariable conventional units expressed in dollars, could not correct the mistake inherent in the data on which the whole investigation had been based. C. Clark's estimates arouse more of similar doubts. At the same time, however, they were used by some historians for advancing rather risky hypotheses.[71]

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[70] C. C l a r k, *The Conditions of Economic Progress,* 3rd ed., London 1957, p. 177.

[71] See, e.g., A. J e z i e r s k i, *Czy „syzyfowe prace" ostatnich lat II Rzeczypospolitej?* [*Were the Efforts of the Last Few Years of the Second Republic " Sisyphean Labours "* ?], „Kwartalnik Historyczny," 1971, No. 1, p. 134 ; to a lesser degree : F. Z w e i g, *Poland between Two Wars. A Critical Study of Social and Economic Changes,* London 1944, pp. 88—89.

Even an attentive reader could already get mixed up by the different estimates quoted for the years 1928—1938. We shall therefore attempt to present them in the form of a table (Table 2). In making up the table, we had to make one necessary conversion. In view of the change of parity of the zloty in October 1927, it

Table 2. Estimates of Poland's National Income for the Years 1923—1938, at Current Prices (in thous. mill. zlotys at 1927 parity)

Estimate	1923—1925	1926	1927	1928	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938
Rotenstreich	8.3													
Frostig	9.5													
Krzyżanowski	10.3													
Zweig	10.3													
Szturm de Sztrem	11.4													
Stecki	12.0													
Jaskólski	13.4													
P. Michalski	13.8													
Battaglia	13.8—15.5													
Klarner	15.5													
Czechowicz	16.4													
Głąbiński	17.2													
Łypacewicz	17.2													
Bartel	17.2—18.9													
J. Michalski	17.9													
Tołwiński	17.2—20.6													
Janicki	24.8													
Dederko				19.0										
Mueller					19.4					8.9				
Knakiewicz				18.8	17.0	13.0	9.8	7.8	7.4	7,2	8.4			
Landau^a					19.2									
Klarner^b					22.1	19.2	15.8	13.0	11.7	10.8	10.6	10.9		
Kalecki, Landau^c					26.0				15.5					
Klarner^d					28.3				15.5					
Petyniak-Sanecki					26.0	22.3	18.6	15.3	13.7	12.7	12.5	13.1		
Central Statistical Office					26.0				15.0		12.5			18.0
Plan of Economic Reconstruct.														15.4
Zienkowski														17.7
Clark													16.6	
		22.3		23.5	28.5									20.0

a Net production value of industry and agriculture.

b After deduction of the depreciation of fixed assets and non-material services. Calculated by the author of the present article.

c Data published by the Central Statistical Office in the *Concise Statistical Yearbook*, adducing the results of research by Kalecki and Landau and "unpublished calculations by L. Landau". Cf. *Mały Rocznik Statystyczny 1937* [*Concise Statistical Yearbook 1937*], p. 60.

d Calculations made at current prices, without deducting the depreciation of fixed assets, and with non-material services added.

Source: Data quoted in the present article, and: E. Mueller, *Błędy gospodarki polskiej* [*The Mistakes of Polish Economy*], 2nd complemented edition, Lwów 1936, p. 34.

became necessary to convert calculations made in zlotys at the parity of 1924 into units of the year 1927 (1 zloty of 1924 being equal to 1.72 zlotys of 1927). Without this recount, the various figures appearing in our table would be completely uncomparable.

Even the first glance at the data in Table 2 gives rise to legitimate doubts as to the possibility of using them for long-term analysis. Indeed, depending on the choice of a definite basis for conclusions, we can demonstrate and prove any theory, whether proclaiming the economic growth or regression of Poland in the period between the wars. E.g., if we take as the point of departure for our comparisons the estimates of Janicki, Tołwiński, J. Michalski, Bartel or Łypacewicz, we can easily demonstrate the regression of Poland's economy in the 1930s, even as compared with the depression period of the years 1924—1925. If, on the other hand, we take e.g. the estimates of Rotenstreich or Frostig, we shall be able

T a b l e 3. Estimates of National Income (in thous. mill. zlotys)

Estimate	1928	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938
Kalecki, Landau		26.0				23.2					
Klarner		26.0	25.2	24.0	22.5	22.3	22.0	22.8	23.5		
Central Statistical Office (at 1937 prices)		14.8						14.8		16.6	
Knakiewicz	18.8	17.6	16.2	13.1	11.9	12.6	13.0	15.9			
Institute of Economic Sciences		21.5	20.1	18.7	16.7	17.7	18.8	19.7	21.0	22.4	23.6

S o u r c e: Computed on the basis of the following works: M. K a l e c k i, L. L a n d a u, *Dochód społeczny w 1933 r. i podstawy badań periodycznych nad zmianami dochodu* [*The Social Income in 1933 and the Bases for Periodical Research in the Changes of Income*], Warszawa 1935, p. 30; C. K l a r n e r, *Dochód społeczny wsi i miast w Polsce w okresie przesilenia gospodarczego 1926—1936* [*The Social Income of the Countryside and Towns in Poland in the Period of Economic Crisis 1926—1936*], Lwów 1937, p. 25; *Polska w liczbach 1944—1964* [*Poland in Figures 1944—1964*], Warszawa 1964, p. 17; Z. K n a k i e w i c z *Deflacja polska 1930—35* [*Polish Deflation 1930—35*], Warszawa 1967, p. 333; *Materiały do badań nad gospodarką Polski.* Cz. 1: *1918—1939* [*Materials for Research in Poland's Economy.* Part I: *1918—1939*] Warszawa 1966, Annex VII, pp. 185—186.

to demonstrate very rapid economic growth. Yet each of these conclusions would be equally incorrect. Obviously, one can try to explain the uncomparability of the data in Table 2 by the fact that current prices have been used in compiling this table. Yet even statistical sequences of national income, in the compilation of

which the effects of price fluctuation have been eliminated, do not
provide a reliable basis for comparisons (Table 3).

In fact, Table 3 shows differences not only in the absolute fig-
ures of the national income as estimated by the various authors
but also in the rate of changes taking place in its value. Thus, e.g.
according to C. Klarner, the national income was still decreasing
in the years 1933—1934, while according to Z. Knakiewicz and
the Institute of Economic Sciences of the Polish Academy of Scien-
ces, it began to show post-crisis growth already in 1933. While e.g.
C. Klarner, Z. Knakiewicz and the Institute of Economic Sciences
demonstrated that the national income in 1935 had been even low-
er than in 1929, according to the estimates of the Central Sta-
tistical Office it was equal in these two periods.

T a b l e 4. The Share of Agriculture and Industry in Generating Poland's National
income in the Years 1924–1938 According to Various Estimates (in Percentage of Total
National Income)

Estimate	Year	Share of Industry	Share of Agriculure
S. Janicki	1924	43	57
G. Czechowicz	1924	28	48
P. Michalski	1924	26	51
K. Bartel	1925	40	60
Z. Knakiewicz	1928	34	66
B. Dederko	1928—29	36	48
L. Landau	1929	32	68
Z. Knakiewicz	1935	33	67
L. Zienkowski	1937	47[a]	28[b]
L. Zienkowski	1937	41[c]	33[d]

a Including construction at current prices of 1937.
b Including forestry at current prices of 1937.
c Including construction at fixed prices of 1937.
d Including forestry at fixed prices of 1937.
S o u r c e: S. J a n i c k i, *Majątek i siły gospodarcze państwa polskiego* [*The Wealth and the Economic
Forces of the Polish State*], Katowice, yr. not indicated, p. 25; G. L e l i w a (G. C z e c h o w i c z), *Pro-
blem skarbowy w świetle prawdy* [*The Fiscal Problem in the Light of Truth*], Warszawa 1951, p. 51; P. M i-
c h a l s k i, *Dochód społeczny Polski* [*Poland's Social Income*], "Przegląd Skarbowy," 1926, No. 4, p. 115;
K. B a r t e l, *Mowy parlamentarne* [*Parliamentary Speeches*], Warszawa 1928, p. 43; Z. K n a k i e w i c z,
Deflacja polska 1930—35, [*Polish Deflation 1930—35*], Warszawa 1967, p. 330; B. D e d e r k o, *Dochód
społeczny Polski* [*Poland's Social Income*], "Kwartalnik Statystyczny," 1932, No. 2, p. 146; L. L a n d a u,
Gospodarka światowa. Produkcja i dochód społeczny w liczbach [*World Economy. Production and Social,
Income in Figures*], in: L. L a n d a u, *Wybór pism* [*Selected Writings*], Warszawa 1957, p. 414; L. Z i e n-
k o w s k i, *Dochód narodowy Polski 1937—1960* [*Poland's National Income 1937—1960*], Warszawa 1963,
p. 342.

Let us yet try to find whether the data cited in this article provide at least a basis for investigating the economic structure of the Second Republic and, in particular, for determining the role of industry and agriculture in generating national income. If this was the case, the information contained here would be of great congnitive value even though it could not serve for analyzing changes in the economic situation of the country within a longer period of time. Table 4 contains data concerning the problem of interest to us.

An analysis of the column " Agriculture " must bring us again to the conclusion than the data relating to the national income do not enable us to obtain any information, even approximatively reliable, on the role of the countryside in the economics of prewar Poland. Indeed, one can hardly agree that in 1929 agriculture contributed two-thirds of the national income and already eight years later it contributed only one-third—one-fourth. It must therefore be recognized that in this case, too, information on the national income does not by itself explain anything, because of the changing methodology of computation. This information can only be utilized—very cautiously—in combination with other sources.

Under such circumstances, it is no wonder that the author's conclusions on the cognitive value of the available estimates of national income are decidedly pessimistic.

(Translated by Jan Aleksandrowicz)