

PROBLEMS

*Agricultural and Livestock Production in Poland: Internal and Foreign Markets**

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Professor L. Zytkowicz has stressed the rather poor yields of early modern Polish agriculture and suggested some structural consequences. It seems obvious that poor yields provided only a small surplus for the market. But in fact, market surplus played an important, even dominant, role in the Polish economy. Market surplus is a concept commonly used by Polish scholars for the agricultural produce destined for sale after the producer's needs and dues were more or less covered. It is *mutatis mutandis* equally applicable to peasants selling their meagre sacks of rye or barley, and to big landlords sending fleets of boats down the Vistula directly to Gdańsk. But between these two social extremes there was not only an enormous quantitative difference: a constant struggle was in process, a struggle for wealth, for power, and for survival.

Witold Kula has proved that the market surplus fluctuated heavily, much more heavily than yields.¹ Elasticity of rents and rural consumption was small and so consequently brought about increased elasticity of the surplus. From the landowner's point of view the peasants' contact with the market ought to be strictly limited, and permitted only to the extent that it enable him to obtain money for paying his rents.² Such limitation could be attained

* This is a continuation of the paper by Leonid Zytkowicz («The Journal of European Economic History» n. 1, 1972). See this also for bibliography and abbreviations in footnotes.

¹ W. KULA, *Teoria economica del sistema feudale. Proposta di un modello*, Torino 1970, p. 44 ff. (An enlarged version of a book published in Polish in 1962).

² This opinion is shared by nearly all Polish students of agricultural history. It was clearly expressed by an 16th century landlord and writer — Anzelm Gostomski in his *Gospodarstwo* (Husbandry), ed. S. Inglot, Wrocław 1951.

by simple prohibition, by introducing *corvées* on market days or by reducing the size of the peasant holdings. Such attempts were especially evident from the late 16th century on. The lord replaced the merchant as buyer of the peasants' grain and other produce, but despite such efforts the results were often ambiguous. Large estates lacked the necessary organization and it seems that this landlord-peasant trade mainly profited the notoriously dishonest estate administration. This was supposedly one of the reasons why Polish landlords from the late 16th century concentrated increasingly on brewing and on the compulsory selling of beer (later also spirits).³ The seventeenth century witnessed many sophisticated attempts to create closed «markets» inside the estates; the lord became a buyer and also a seller of grain and other agricultural produce and the supplier of various indispensable industrial goods.⁴ The closed circuit of goods and currency secured the monopolist landlord substantial profits. He set up artisan workshops on his estates to supply both himself and his peasants.⁵ On the greater estates small towns, dependent on the land owner, were included in such a system and many new *nuclei* of local commerce were founded in this way. This was, however, but a beginning; the 18th century saw the development of this system on a much greater scale.

I have mentioned the sale of grain to the peasants. Curiously enough this was a common phenomenon and should be related to the poverty of peasants, for after poor harvests they were short of seed and food often even quite early in the Spring. The land owner, his steward and prosperous neighbour-tenants were keen to lend grain on usurious conditions. In general in Poland, as elsewhere, the conditions and availability of credit in the villages was an important factor determining changes in production.⁶

³ J. LESKIEWICZ, *Sur le niveau et les composantes du revenu foncier en Pologne du XVI^e au XVIII^e siècle*, Première Conférence internationale d'histoire économique, Stockholm 1960.

⁴ We cannot enlarge upon the Polish towns in the 16th and 17th centuries. A recent view of the landlords' policy in this respect is given in the papers of A. WYROBISZ, *Zatargi mieszczan ze starostami soleckimi w XVI, XVII i XVIII wieku* (Townsppeople's quarrels with the Royal Stewards of Solec in the 16th, 17th and 18th Centuries), «*Studia Historyczne*», vol. XII, 1969, no. 3; *Polityka Firlejów wobec miast w XVI wieku i założenie Janowca nad Wisłą* (The Policy of the Family of Firlej towards Towns and the Foundation of Janowiec nad Wisłą), «*Przegląd Historyczny*», vol. LXI, 1970, no. 4; see also A. POPIÓŁ-SZYMAŃSKA, *Problematyka handlowa w polityce «miejskiej» szlachty w Polsce centralnej w XV i XVI wieku* (Commercial Problems of the Gentry's attitude toward Towns in Central Poland in the 15th and 16th Centuries), «*RDSG*», vol. XXXI, 1970.

⁵ H. SAMSONOWICZ, *Rzemiosło wiejskie w Polsce XIV-XVI w.* (Crafts in the Countryside. Poland in the 14th-16th Centuries), Warszawa 1954. Almost every monograph on the larger estates has a chapter on the rural artisans and on the landlords' industrial policy on their estates.

⁶ From the late 16th century inventories of estates and rentals used to contain reference to peasants' debts. This is commonly taken as an indication of the increasing

The fluctuations of the agricultural market surplus provide a highly complex phenomenon. They have been studied only incidentally in connection with other topics, such as agricultural productivity and social structure, although some individual studies have been devoted to them.

Andrzej Wyczański has shown that the differences between various peasant holdings, which affected their selling capacity so much, caused important changes in market conditions in the 17th and 18th centuries.⁷ If, as was true, a percentage of larger holdings were greatly reduced and that of smaller ones were increased, the market surplus created by the peasantry must have contracted. Also the small group of prosperous yeomen-peasants, which had existed in the 16th century, completely disappeared in the following period as a direct victim of the avarice of the land owners.⁸

This chronological change was also reflected geographically: regional differences in the structure of rural society meant that peasant holdings were preserved in the North-West (Royal Prussia, Kujawy), whereas in many regions of Central and Southern Poland the average size of peasant holdings decreased. The same may be said of the demesne lands: they increased but very inequally. The final factor was the size of landed properties (including peasant holdings and demesne lands). The interplay of all these factors, and their influence on the country's agricultural surplus may be studied thanks to the publication of the Vistula Toll Registers from Włocławek.⁹

A detailed study of some fifteen registers has shown the following pattern of grain shipping. In fertile years the share of distant regions (Little Poland, Ruthenia) was much greater than in lean years, while supplies from

burden of usury in the villages. Gostomski (*op. cit.*) as well as many village bye-laws warn against usurers and forbid the lending of money by estate officials. The landlord was usually anxious to eliminate competitors for his tenants' produce, but usury in the rural villages seems to grow from the 16th century on. See for example the huge increase of peasant debts shown in R. RYBARSKI's, *Kredyt i lichwa w ekonomii samborskiej w XVIII w.* (Credit and Usury in the Domain of Sambor in the 18th Century), Lwów 1936; whole villages were deep in debt, which often surpassed many times the value of their land, while merchants and tradesmen continued to suck them dry. On the role of credit in village life and in the agriculture of a well developed region of the Vistula Estuary see: A. MĄCZAK, *Kredyt w gospodarce chłopskiej na Żuławach Malborskich początku XVII w.* (Credit in the peasant economy in Żuławy Malborskie at the beginning of the 17th Century), «PH», vol. LI, no. 2; A. MĄCZAK, *Folwark pańszczytniany* (see Żytkowicz, note 8).

⁷ A. WYCZAŃSKI, *Próba analizy matematycznej* (Żytkowicz, note 39).

⁸ This was shown by most works on the larger estates, esp. by J. Topolski's monograph on the estates of Gniezno Archbishoprics (Żytkowicz, note 16); one should stress, however, that Royal Prussia (on the lower Vistula) largely retained even in the 18th century its typical relatively large peasant holdings (see CACKOWSKI, *Gospodarstwo wiejskie* — Żytkowicz, note 18 — vol. I, pp. 114-126).

⁹ *Registra thelonie aquatici Wladislaviensis saeculi XVI*, ed. S. Kutrzeba and F. Duda, Cracoviae 1915.

Masovia (Central Poland) were much more steady. Similar changes were evident regarding the suppliers: the larger landowners' share increased in lean years, particularly for those in distant provinces. All in all, we see that in poor years, grain was supplied by the central regions, and also by the more distant provinces but almost exclusively in this case by the great landowners. In better years the picture changed dramatically: a multitude of middle landowners were able to send down their produce even from very distant estates. Similar fluctuations were visible for closer regions, but on a smaller scale.¹⁰

These phenomena are not hard to explain. Distant regions had no tradition of corn trading; in contrast to Masovia and regions of the Lower Vistula they took part in the Gdańsk trade only from the middle of the 16th century.¹¹ Large land owners were the only ones who could take the risk and they marked a path for their smaller neighbours. But the latter could collect enough grain only in the more fertile years. In all probability the relative constancy of the grain shipments carried out by the major landlords was due to the commercial contracts which they effected with important Gdańsk merchants.¹² Paid in advance, the landowners in turn supplied them their corn. This factor was to be increasingly important during the late 16th and especially the early 17th centuries.

¹⁰ T. CHUDOBA, *Rozwój rynku zbożowego dorzecza Wisły w. XVI w.* (The Development of the Grain Market in the Vistula Basin, 16th Century). Unpublished Ph. D. thesis, University of Warsaw.

¹¹ For the early periods of Vistula grain trade see M. PELCZAR, *Handel zbożem z dóbr królewskich Kazimierza Jagiellończyka* (The Commerce of Grain in the Domains of King Casimir Jagellonides), «Rocznik Gdański», vol. XII, 1938; M. BISKUP, *Z problematyki handlu polsko-gdańskiego drugiej połowy XV wieku* (On the Problems of Polish-Gdańsk Trade in the 2nd Half of the 15th Century), «PH», vol. XLV, 1954, no. 2-3; the situation in the middle of 16th century is stressed by A. MĄCZAK, *Export of Grain and the Distribution of National Income in the Years 1550-1650*, «APH», vol. MXVIII, 1968. Usually the beginnings of the large scale corn exports are dated earlier (see M. MAŁOWISTY, *The Economic and Social Development of the Baltic Countries from the Fifteenth to the Seventeenth Centuries*, «The Economic History Review», 2nd S., vol. XII, 1959, p. 177 ff.; however, I am referring to the grain export from regions farther south).

¹² M. BOGUCKA, *Gdańskie kontrakty zbożowe w pierwszej połowie XVII w.* (Grain Trade Contracts in Gdańsk during the 1st Half of 17th Century), «KHKM», vol. XVII, 1969, no. 4, p. 711 ff.; C. BIERNAT, *Gdańscy pośrednicy handlu zbożowego i kontrakty zbożowe w latach 1660-1700* (Gdańsk Middlemen in the Grain Trade and Grain Contracts, 1660-1700), «Rocznik Gdański», vol. XIII, 1954, p. 69 ff. The economic consequences of the monopolistic position of the Gdańsk merchants (particularly their commercial profits) has been recently discussed by M. BOGUCKA, *Handel zagraniczny Gdańska w pierwszej połowie XVII wieku* (The Foreign Trade of Gdańsk in the First Half of the 17th Century), Wrocław 1970; discussion to be continued in «PH» and «Zapiski Historyczne».

The consequences of the differences between prices in Gdańsk and in the more distant parts of its hinterland also present a series of problems.¹³ Data collected in the great survey of the royal lands (1564-1565) show that grain exporters (i. e. growers who sent corn down the river) were able to get even twice the price available locally.¹⁴ One may conclude that the obvious differences of wealth, measured in terms of villages, manors, serfs etc., should be multiplied in addition by the factor of unequal market opportunities. An example may explain and even prove the point. One of the most important noble families of Little Poland — Tęczyński — shipped down the Vistula on the average 10% of all the grain from that province. In years of poorer harvest their share rose even to 31%. On average for four out of twelve poorer years it reached 21%, while for four of the best it was about 7%.¹⁵ However, taking account of the differences of prices they might claim a much greater share of the profits. In meagre years a handful of important families in more remote country districts might be the only landowners in possession of cash.

In assessing the importance of the grain trade and of grain exports much more information concerning the economic situation is needed; of this we know very little. A sophisticated attempt to answer these questions and to construct a map of grain supply and demand was made by Stanisław Mielczarski.¹⁶ On the basis of the 1564/65 survey of the royal lands and of similar sources for later periods he studied four problems: the quantity of rye (the type of grain shipped down to Gdańsk) in relation to oats and barley (used locally); the price of rye in relation to oats. A preponderance of rye (and wheat) over barley and oats would suggest pressure of demand. The third problem was the relative size of grain measures — in the long run rising demand reduced local measures.¹⁷ The fourth and last question was the change in the peasants' transport duties. A mass of data enabled Mielczarski to chart regions of predominate demand and supply for the late 16th century and for 1720's. This very sophisticated and speculative approach to

¹³ The late professor F. Bujak published a series of price histories for some of the more important Polish cities which were prepared by his collaborators; the last volume appeared shortly after last war. The following cities received monographs: Gdańsk, Warsaw Lublin, Cracow and Lwów. The material is not always abundant but allows for some generalizations.

¹⁴ The 1564-65 survey of royal domains has been recently published; see L. ŻYTKOWICZ, *The Peasant's Farm and the Landlord's Farm in Poland*, in «JEEH», 1972, n. 1, pp. 142-144.

¹⁵ Calculated on the basis of *Regestra theloni* and T. CHUDOBA, *op. cit.*

¹⁶ S. MIELCZARSKI, *Rynek zbożowy na ziemiach polskich w drugiej połowie XVI i pierwszej połowie XVII w.* (The Corn Market in Poland, second half of the Sixteenth and first half of the Seventeenth Centuries), Gdańsk 1962.

¹⁷ MIELCZARSKI, *op. cit.*, p. 84 ff.; see also W. KULA, *Miary i ludzie* (cited by Żytkowicz, above), pp. 191-195.

such important market problems gave rise to much discussion.¹⁸ After ten years one may conclude that the authors' suppositions were sound; Polish agriculture responded to a market challenge. There is much in Mielczarski's calculations, however, which needs re-examination. In general, rye and wheat prices fluctuated greatly and one needs a series of averages more than particular data.

The grain trade has attracted scholars because of the relative abundance of material and because of its particular importance for the country's economy. Several recent approaches to the problem may be mentioned; some scholars have studied grain as an individual export-item; others, through research into food consumption, have attempted more general estimates of the national income.

The export of grain was concentrated on Gdańsk.¹⁹ Smaller quantities, coming from Great Poland, were sent down the rivers Warta and Odra to Szczecin, and some importance was gained by the land trade in grain to Silesia, where thriving industrial cities created a demand (although damages during the Thirty Years' War created an additional modifying factor).²⁰ In Gdańsk local grain merchants were able to create an effective barrier between the Polish producers and the foreign, mainly Dutch, purchasers. The sources of their large profits were numerous: as middlemen Gdańsk merchants took about ten per cent of the value of the goods but took it twice: in selling grain and « forest goods » to foreigners, and in selling cloth, spices etc. to the Poles.²¹ During the first half of the 16th century Gdańsk reduced its active sea trade and concentrated on its hinterland in Poland and Lithuania.

Such a system of grain trading flourished as long as it met the great demand for food in the developing countries of Western Europe. The Nether-

¹⁸ Reviews by S. HOSZOWSKI and A. MĄCZAK, « KHKM », vol. XII, 1964.

¹⁹ M. BOGUĆKA, *Handel zagraniczny*; S. HOSZOWSKI, *The Polish Baltic Trade in the 15th, 16th, 17th and 18th Centuries*, Poland at the XIth International Congress of Historical Sciences in Stockholm, Warsaw 1960, pp. 117-154; J. M. MAŁECKI is the only scholar who studied the role played by merchants from towns and cities in the grain trade; see *Związki handlowe miast polskich z Gdańskiem w XVI i pierwszej połowie XVII wieku* (The Commercial Relations of the Polish Cities with Gdańsk in 16th and in the first half of 17th Century), Wrocław 1968. NB many of these footnotes show the importance of the middle of the 17th century as a caesura in Polish economic-history writing. Although justified by historical material this is a hinderance, because the later period has received little attention.

²⁰ K. CHOJNACKA, *Walka o wolny handel i żeglugę na Warcie i Odrze w pierwszej połowie XVI wieku* (The struggle for Free Trade and Navigation on the Oder and Warta rivers in the 1st Half of 16th Century), « Przegląd Zachodni », vol. VIII, 1952, no. 1; K. CHOJNACKA, *Podstawy techniczne handlu szczecińskiego na Warcie i Odrze w XVI i XVII w.* (The Technical Basis of Szczecin's Trade on the Warta and Oder rivers in 16th and 17th Centuries), « Zapiski Historyczne », vol. XXII, 1956, no. 1-3; M. WOLAŃSKI, *Związki handlowe Śląska z Rzeczpospolitą w XVII wieku* (The Commercial Relations of Silesia and the Polish Republic in 17th Century), Wrocław 1961, p. 278.

²¹ M. BOGUĆKA, *Handel zagraniczny*, p. 142 ff.

lands organized the trade and supplied Polish rye and wheat even to the Iberian Peninsula and — particularly at the end of the 16th century — to Italy.²² The economic situation during the later decades has recently become the object of a controversy. It is not clear whether Gdańsk was able to increase its income; in any case some protective steps were taken and the competition between merchants gained momentum.²³

It seems reasonable to conclude that a structural crisis in Polish agriculture during the first half of the 17th century (the rise of *corvées*, the decrease in peasants' draught animals etc.) was highly aggravated by a slump on international corn markets.²⁴ This was particularly evident after the terrible war against Sweden, Transylvania and Muscovy, which ended in 1660.²⁵

²² M. MAŁOWIST, *Z zagadnień popytu na produkty krajów nadbaltyckich w Europie zachodniej* (On the Question of the Demand for Baltic Produce in Western Europe), «PH», vol. L, 1959, no. 4; M. BOGUĆKA, *Handel Gdańska z półwyspem Iberyjskim w pierwszej połowie XVII wieku* (Gdańsk's Trade with the Iberian Peninsula in the First Half of the 17th Century), «PH», vol. LX, 1969, no. 1.

²³ This is the only factor which is uncontested after C. Biernat denied that Gdańsk's profits decreased in the 1630's and '40's (see the discussion mentioned above, note 12).

²⁴ This point is generally accepted by Polish scholars, although some reservations must be made. 1) as L. Zytkowicz has stressed above, there were important differences in regional rural conditions in Poland and the boom of the late 16th century touched different regions with different force; 2) there is the very important and complex problem of the terms of trade: did grain bring greater or lesser profits? Were landowners winners or losers in their trade? The second question in particular has been discussed. See W. KULA, *Teoria ekonomiczna*, p. 94 and note 164, p. 164 f.; J. TOPOLSKI, *Teoria ekonomiczna ustroju feudalnego* (The Economic Theory of Feudalism), «Ekonomista», 1964, pp. 137-144, suggests — against Kula — that the terms of trade in the long run worsened for the landlords (this seems typical of Polish scholarship, to discuss the terms of trade in social terms and not merely within the national framework; if that is right W. Kula must be credited with the idea). A more complete source — the Sound toll registers — indirectly supports Kula. It is not possible to compare the prices of grain (usually rye) with those of a given cloth, because the relative importance of the various cloths varied very much.

²⁵ The problem of the war damage in the 1650's aroused great interest among Polish historians in the 1950's and many controversial opinions were expressed. One cannot enumerate here even the more important papers. Although earlier studies exaggerated the catastrophies, in general the disasters of these years seem comparable to the worst experiences of the Thirty Years War on the most stricken German lands. Not only the soldiers' greed and lust for plunder but also the inhabitants' economic strength determined the final result. A provisional summing-up of the above discussion was provided by J. TOPOLSKI's paper *Uwagi o badaniach nad wpływem zniszczeń wojennych w połowie XVII w. na sytuację ekonomiczną kraju* (Remarks on the studies of war damage in the mid-17th century and its influence on the country's economic situation, «Studia i Materiały do Dziejów Wielkopolski i Pomorza», vol. VI, 11-12, 1960. See also I. GIEYSZTOROWA, *Guerre et regression en Masovie au XVII^e siècle*, «Annales E.S.C.», 1957.

The once flourishing grain trade could never recover.²⁶ This made evident the weaknesses of Poland's economy. What had once brought the country enormous wealth, or, to be more exact, given its sea trade a highly favourable balance,²⁷ turned out to be a cause of the poverty of the country and the State. Polish food and raw materials, which were supplied in abundance via Gdańsk, helped to create the modern Atlantic economy,²⁸ and the rise of agricultural productivity in the West and other factors of the 17th century crisis touched the Polish economy precisely when it was most vulnerable.

Poor as she was, Poland offered her inhabitants important advantages. In comparison with other early modern countries Poland did not experience true universal famines. Studies of food consumption reveal a genuine «crude plenty» of victuals. A great deal of cereal (bread, groats, porridge), vegetables (mostly cabbage), and fish were eaten, but too little meat. A comparison of the various «tables» — regarding the manorial household, the lord's retainers and family etc. — show great differences. Wines (Rhenish, French, Spanish, and various other Mediterranean, as well as Hungarian in increasing quantities) were provided only for the rich. The common drink was beer, the consumption of which increased, and was stimulated by the landowners' economic and industrial policy.²⁹ It is probably misleading, however, to estimate consumption on the basis of the conditions of life in the manorial household. The social position of dairy maids, shepherds and ploughmen was low but they also had relatively stable living conditions. Everything we know about peasant life suggests that there were great fluctuations of income in

²⁶ C. BIERNAT, *Statystyka obrotu towarowego Gdańska w latach 1651-1815* (Statistics of Goods Turnover in Gdańsk, 1651-1815), Warszawa 1962; S. HOSZOWSKI, *The Polish Baltic Trade in the 15th-18th Centuries*, Poland at the XIth International Congress of Historical Sciences in Stockholm, Warsaw 1960, p. 144 ff. (see also diagrams).

²⁷ The balance of the Polish sea trade was a result of grain exports but in the long run was also influenced by structural changes in the countryside. The concentration of landed property stimulated imports: three large landlords needed and imported more foreign luxury goods than threescore squires, whose lands they had acquired. See S. HOSZOWSKI, *The Polish Baltic Trade*, pp. 123-129; M. BOGUĆKA, *Handel bałtycki a bilans handlowy Polski w pierwszej połowie XVII w.* (Baltic Trade and the Polish Trade Balance in the 1st Half of the 17th Century), «PH», vol. LIX, 1968, no. 2; A. MĄCZAK, *The Balance of the Polish Sea Trade with the West*, «The Scandinavian Economic History Review», 1970, no. 2; A. MĄCZAK, *Obroty, ceny i zyski w handlu Gdańskim pierwszej połowy XVII w.* (Turnover, Prices and Profits in Gdańsk Trade the First Half of the 17th Century), «PH», vol. LXII, 1971, no. 2; the discussion is continued in «ZH» (C. BIERNAT, M. BOGUĆKA).

²⁸ See the numerous papers of M. MAŁOWIST, particularly *The Economic and Social Development of the Baltic Countries from the 15th to the 17th Centuries*, «The Economic History Review», 2nd ser., XVII, 1959, no. 2; *Les produits de la Baltique dans le commerce international au XVI^e siècle*, «Revue du Nord», vol. XLII, 1960, no. 166.

²⁹ See note 3; A. WYCZAŃSKI, *Studia nad konsumpcją żywności w Polsce w XVI i pierwszej połowie XVII w.* (Studies of Food Consumption in Poland in the 16th and First Half of the 17th Century), Warszawa 1969.

kind, which means quite simply undernourishment in various seasons and in various years.³⁰

A very important element of the rural economy was sheep and cattle breeding.³¹ The latter especially afforded good opportunities for foreign trade. The extensive regions in the South-East, constantly endangered by the devastating incursions of Tartars and Turks, provided oxen herds, which were driven to the West, to the important oxen fairs in Brzeg (in Silesia) and also to Buttstädt (in Saxony). Very little is known about cattle rearing or about the cattle trade, but this branch of commerce lost its importance with the beginning of the Thirty Years' War, when the driving of oxen to Germany became dangerous.³²

The study of the trade in agricultural produce however may lead to more general results and conclusions. As early as 1938 Jan Rutkowski published the first volume of his « Studies in the Distribution of Wealth in Modern Poland »,³³ in which he introduced some theoretical hypotheses and ideas, as well as an attempt to classify the incomes of the great landlords. The post-war years witnessed an interesting discussion of this problem,³⁴ which was prematurely interrupted by Rutkowski's death. The attempt to study the problem of national product and its distribution on the basis of detailed analysis of landed estates (and eventually also, industrial and commercial units in the towns and cities) proved too complicated. At present it seems more straight forward and fruitful to study the quality, scope and consequences of changes in the distribution of the national income. Numerous papers on the

³⁰ This view is supported by the prevalence of high indebtedness among the peasantry. It seems that it gained momentum from the turn of the 16th century.

³¹ B. BARANOWSKI, *Chów bydła w drugiej połowie XVII i w XVIII wieku w Łęczyckiem i na terenach sąsiednich* (Cattle Breeding in Łęczyca and Neighbouring Regions, Second Half of the 17th and the 18th Century); *Studia z dziejów gospodarstwa wiejskiego*, vol. I, 1957; B. BARANOWSKI and Z. LIBISZOWSKA, *Stan i potrzeby badań nad historią hodowli w Polsce w XVI-XVIII wieku* (Research on the History of Cattle Breeding in Poland in the 16th-18th Centuries), *ibid.*, vol. II, 1959; A. MĄCZAK, *Produzione e commercio della lana nell'Europa centro-orientale dal XIV al XVII secolo*, « Studi Storici », vol. XI, 1970, no. 1 provides more data on sheep.

³² It is very difficult to estimate the exports of Polish oxen because noble exporters (and they were responsible for a lion's share of the trade) were exempt from duties. Forty thousand oxen exported (yearly) seems a reasonable guess for the late 16th century. For other guesses see M. HORN, *Handel wołami na Rusi Czerwonej w pierwszej połowie XVII w.* (Oxen Trade in Red Ruthenia in the First Half of 17th Century), « RDSG », XXIV, 1962.

³³ J. RUTKOWSKI, *Badania nad podziałem dochodów w Polsce w czasach nowożytnych*, vol. I, *Rozważania teoretyczne - Klasyfikacja dochodów wielkich właścicieli ziemskich* (Theoretical Considerations - The Classification of Great Landlords' Profits), Kraków 1938.

³⁴ W. KULA, *Wielkości i podział dochodu w ustroju feudalnym* (The Size and Distribution of Income in the Feudal System), « Pamiętnik VII Powszechnego Zjazdu Historyków Polskich », vol. I, Wrocław 1948.

distribution of landed property have dealt with such problems.³⁵ It is much easier to study changes in the distribution of the national product than to estimate its exact size; and also the relative uniformity of agriculture offers better research conditions than is the case for the study of industrial and commercial activity. All such pros and cons are clearly evident when approaching the problem of national income. A. Wyczański in the study already mentioned attempts to do this on the basis of consumption statistics. His figures deserve discussion.³⁶

All these problems become even more acute when one passes to the later period, the 18th century, when primary sources are abundant and allow for more sophisticated statistical methods of research.

³⁵ Provisional summing-up: A. MĄCZAK, *The Social Distribution of Landed Property in Poland from the 16th to the 18th Century*, «Troisième Conférence internationale d'histoire économique - Munich 1965», vol. I, Paris-La Haye 1967, pp. 455 ff.

³⁶ A. WYCZAŃSKI, *Studia nad konsumpcją* (final chapter).