

EXPORT OF GRAIN AND THE PROBLEM OF DISTRIBUTION OF  
NATIONAL INCOME IN THE YEARS 1550 - 1650

I

By the end of the sixteenth and the beginning of the next century, European economy witnessed a transition from economical boom to depression, described as the beginning of a general crisis of the seventeenth century. Though the general trends and the problems of great world trade do not arouse now any serious discussions, yet the tendencies and the chronology of the changes concerning particular countries seem to be more controversial. Matters are simpler when a country or a region is examined as a whole, but difficulties arise when we ask ourselves which social groups gain and which lose as a result of the changes. Classical examples of those difficulties would be the British "storm over the gentry" of the 16th - 17th centuries and the discussion about the living standard of the working classes in Britain during the Industrial Revolution. Similar problems came forward in the argument about the estimation of the German economy during the period before the Thirty Years' War.<sup>1</sup> The picture of the undisputable fall of Italian economy in the 17th century would also gain in half-tones if — in addition to what C. M. Cipolla says on this subject — one would discuss the countryside and agriculture.<sup>2</sup>

Poland of this time presents a singularly complex problem. By entering into the great system of world trade, Polish economy underwent a complete reconstruction. Looking at the Polish economic changes of that time from the viewpoint of industrial production, the structure of trade and the foreign trade balance (such is Cipolla's approach to Italian economy) one would come to the conclusion that those changes were relatively small. Poland did not experience a complete overthrow of commodity structure in foreign trade (Italy did, however, experience such an overthrow) and its balance was to stay active until the middle of the 17th century. These outward signs of relative stabilization of the system only covered

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<sup>1</sup> *Vide*: F. Lütge, *Die wirtschaftliche Lage Deutschlands vor Ausbruch des Dreissigjährigen Krieges*, "Jahrbücher für Nationalökonomie und Statistik," vol. CLXX, 1958, p. 43 ff.

<sup>2</sup> C. M. Cipolla, *The Decline of Italy: the Case of a Fully Matured Economy*, "The Economic History Review," 2nd ser., vol. V, 1952, p. 178.

a deep crisis of the serf-labour system, which dominated Polish economy, and was only made worse through the rapid fall of world trade in the years 1619 - 1622.<sup>3</sup>

The actual stage of the discussion on the economic regression in Poland has been recently summed up by J. Topolski,<sup>4</sup> which makes our presentation of this problem as a whole unnecessary. I shall, therefore, limit my presentation to some points, and proceed with my analysis of the 16th - 17th century Poland from the point of view of grain export. The following problems arise here: 1) what were the changes in grain production between the second half of the 16th century and the first half of the 17th century; 2) what changes did the market surplus of grain undergo; 3) how was all that related to social changes and changes in property relations; how were those changes reflected in the trade balance and the income derived from grain trade by particular regions and the whole country.

## II

The general outline, as most Polish scholars will certainly agree, looks as follows:<sup>5</sup> the increase of the demand for grain in Gdańsk, which was first of all a result of the trade activity of the Dutch, induced landowners in the hinterland of Gdańsk to raise the output of their estates. The shortest way to it was to increase demesne productivity, i.e., to enlarge sown areas and to introduce serf-labour on a large scale, as the cheapest form of manpower.

This economic reconstruction was carried through at the expense of the peasantry. Many a peasant lost some of his acres on behalf of the demesne. There was a general lack of labour, tools, and draught animals left over to work on the peasants' own land, after satisfying the claims of the demesne. The immediate result was a fall of purchasing capacity of the peasantry, made worse by the landowners' tendency to take over a part of the market surplus, i.e., the compulsory purchase of beer by the peasants and a sort of truck system. In consequence there was a fall of demand for cheap articles manufactured in towns (cloth, linen, beer, metal goods), whereas the more conspicuous demand on the part of the gentry was being kept at the same or even higher level than before. The luxury articles were mainly imported from abroad and purchased by the enriched part of landowners. Corn exporters bought such articles of luxury as spices, or more expensive textiles directly in Gdańsk, avoiding the intermediary of inland towns. As a result, the middle and particularly the higher feudal groups enriched themselves at the expense of peasantry and townspeople.

<sup>3</sup> R. Romano, *Tra XVI e XVII secolo. Una crisi economica: 1619 - 1622*, "Rivista Storica Italiana," vol. LXXIV, 1962, p. 480 ff., det. 494 - 495.

<sup>4</sup> J. Topolski, *La regression économique en Pologne du XVI<sup>e</sup> au XVIII<sup>e</sup> siècle*, "Acta Poloniae Historica," vol. VII, 1962.

<sup>5</sup> This conception of the development scheme of Poland in the 16th - 17th centuries was first developed by M. Małowist, *Über die Frage der Handelspolitik des Adels in den Ostseeländern 15. und 16. Jahrhundert*, "Hansische Geschichtsblätter," vol. LXXV, 1957, p. 39 ff. idem, *The Economic and Social Development of the Baltic Countries from the Fifteenth to the Seventeenth Centuries*, "The Economic History Review," 2nd ser., vol. XII, 1959.

That may explain several problems not only economic but also political and administrative of the 17th century Poland. The following questions, however, arise: in which phase of the changes sketched was Poland at the end of the 16th and the beginning of the 17th century and what additional elements should be stressed in this outline?

Changes in the yield ratio are a question of main importance. Figures collected by B.H. Slicher von Bath suggest that from the middle of the 16th to the middle of the 17th century, yields were rather steady; in the 1st half of the 18th century they became lower and in the second half they rose a little.<sup>6</sup> L. Żytkowicz has rejected all the data from the surveys as rather standardized and in general too high, but unfortunately he has reviewed jointly the whole period from 1550 to 1649.<sup>7</sup> Though the first series (Slicher van Bath) is very rich, it contains some faults due to the lack of discrimination between the data for whole regions and particular manors, between yield ratios from manorial accounts and overestimations from the surveys of royal estates. In comparison with the abundance of data for the 16th and 17th centuries we are struck by the scarcity of data concerning the late 17th century. The research of recent years has increased our knowledge about the 17th century, already incorporated in Żytkowicz's figures, but the *caesurae* which he introduces bear the changes which occurred at the beginning of the 17th century.

Was the fall of yield ratios already visible in the first half of the 17th century? In my opinion it was. Though the data from the surveys should be used with great caution, one may stress low estimations and low standards of yield ratios in the 16th century (the years 1564, 1569). And so, for example, for 79 manors of the royal estates in Masovia the fall in crops between 1565 and 1616/1630 was rather slight — from 6,44 to 6,11; for 49 manors of Sandomierz county it was rather marked — from 5,35 to 4,23. The abundant material found in local monographies largely confirms the thesis of the fall of yield ratios.<sup>8</sup> This opinion is also attested by the contemporaries, and an outstanding writer and specialist of high class, voivode Anzelm Gostomski, clearly presents the reasons for this situation, such as higher demand for serf-labour and general exploitation of the serf, which led many a peasant to stop keeping draught animals and to pass over to the rank of cottars. This was a process of desinvestment and a fall in social status, well confirmed by various other sources.

According to Gostomski, peasants enjoyed higher yield ratios than the lord. So the peasants' starting point was quite high. Nevertheless, the shrinking of peasants' holdings limited the possibility of land and/or money accumulation by the pros-

<sup>6</sup> B. H. Slicher van Bath, *De oogstopbrengsten van verschillende gevassen, voornemelijk granen in verhouding tot het zaaizaad, ca 810 - 1820*, "A. A. G. Bijdragen," vol. IX, 1963, p. 77; the same author, *Yield ratios, 810 - 1820*, *ibidem*, vol. X, *passim*.

<sup>7</sup> L. Żytkowicz, *Ze studiów nad wysokością plonów w Polsce od XVI do XVIII wieku [Studies in the Yield Ratios in Poland in the 16-17th Centuries]*, "Kwartalnik Historii Kultury Materialnej," vol. XIV, 1966, p. 77. The evaluation of his data gives: for the 16th and the first half of the 18th century — average yield ratio of cereals — 3,30 - 3,35; the second half of the 18th century — 4,29.

<sup>8</sup> *Vide*: "Studia z Dziejów Gospodarstwa Wiejskiego," vol. VII, 1965, papers of J. Topolski, Mrs A. Wawrzyńczyk, L. Żytkowicz (in French).

perous tenants and lowered their market surplus. Still at the end of the 16th century, in the bishop's of Cuyavia estates, on the lower Vistula, one could see typical "country richmen," village usurers, ready to take the land of their poorer neighbours as a mortgage and collecting a relatively large number of draught animals. This phenomenon had disappeared since the beginning of the 17th century: prosperous peasants were ready victims to the greediness of the landowners and could not survive long enough to become a social class of yeomanry.<sup>9</sup>

The contraction of the market surplus caused by the shrinkage of the size of farms is hardly questionable — though it must be admitted that we lack direct proof.<sup>10</sup> Watching the production of cheap cloth one sees a fall in demand and a depression, often leading to a complete closing down of certain producing centres. This may be a convincing argument, but we should look for further evidence in the farms themselves. A. Wyczański has discussed the scale for this fall of surplus, estimating market supply from respective groups of farms and their cumulative areas in the royal estate of Nowy Korczyn.<sup>11</sup> By applying his data we can estimate the amount of marketable corn from peasant holdings in the year 1664 as about 50 per cent of what it was a hundred years earlier. It was suggested, however, that statical standards of consumption cannot be applied here; peasants' farms managed to survive more than one hundred years of depression, albeit the balance of production and consumption of smaller farms seemed to remain passive.

In spite of the fall of agricultural productivity and the weakening of peasants' farms on large areas of Poland, the export of corn was steadily growing. Particular regions did not participate in it to the same extent. Differences in corn production depended on several factors: on the general level of agricultural productivity, on the distribution of land and on the structure of prices. By the general level of productivity one understands the size of market surplus, a necessary yield ratio of cereals. The size of agricultural market surplus was influenced (beside the secular trend) by short wave fluctuations of yield ratios due not only to natural causes, but also to war destruction, cantonment of unpaid mercenaries, etc. In the distribution of landed property among peasant farms as well as among manors, the bulk of market surplus heavily depended on the size of the estate.

The price system: one could imagine a situation in which prospective exporters of agricultural surplus would consider river transport of corn as unprofitable, because of the low prices in Gdańsk. What actually was the price system? The corn producers tried to send it by river as early as possible and with the exception of some special cases it was the supply and not the oversea demand that determined the prices. The system of transport and of market information was not sufficient enough

<sup>9</sup> A. Maczak, *Folwark pańszczyźniany i wieś w Prusach Królewskich w XVI/XVII w.* [*The Serf-Labour Manor and the Village Community in Royal Prussia in the 16/17th Centuries*], "Przegląd Historyczny," vol. XLVI, 1956; L. Żytkowicz, *Studia nad gospodarstwem wiejskim w dobrach kościelnych XVI w.*, Warszawa 1962, vol. I, p. 38.

<sup>10</sup> By market surplus we understand here the grain sold directly by the peasants themselves and not the surplus given as rent in kind or tithes.

<sup>11</sup> "Studia z Dziejów Gospodarstwa Wiejskiego," vol. VIII, 1966, p. 343.

to make the news from Gdańsk decisively influence the supply. Granaries owned by the gentry in close ports served to store corn until spring so that it could go with the first high water rather than they served to keep the flexibility of sales. The grain supply did not seem to depend on prices. This is, however, a matter that should be looked into.

Fluctuation of water-transported grain can be learnt from the registers of water duties collected on the lower middle Vistula at Włocławek. In the registers that have been preserved we find records of water duties concerning 15 years within the period from 1537 to 1576.<sup>12</sup> The first three years must be disregarded as the river transport of corn was only developing, especially in far-away regions; by taking them into consideration we would mix up short term fluctuations with secular ones. From the remaining 12 years we have chosen four most animated ones and other four with the lowest figures for corn floated down the river. As we can see on Table 1,

Table 1. The transport of grain down the Vistula and its tributaries according to regions and to the total extent of the river transport (1555 - 1576) (in %)

Source: Calculated according the figures from T. Chudoba, *Zbożowy handel wiślany w XVI w. [Vistula Grain Trade in the 16th Century]*

| Region                        | Extent of river transport of grain |        |      |         |
|-------------------------------|------------------------------------|--------|------|---------|
|                               | high                               | medium | low  | average |
| Cuyavia and east Great Poland | 11                                 | 11     | 20   | 13      |
| Masovia                       | 42                                 | 43     | 49   | 43      |
| Podlasia                      | 12                                 | 9      | 11   | 11      |
| Little Poland                 | 19                                 | 25     | 16   | 21      |
| Ruthenia and Volhynia         | 16                                 | 12     | 4    | 12      |
| Total                         | 100                                | 100    | 100  | 100     |
| Average in thous. of lasts    | 20.4                               | 15.6   | 10.0 | 15.3    |

Great Poland, Cuyavia and Masovia supplied jointly about two-thirds of grain registered at Włocławek in the years of the lowermost surplus, whereas in the years of the highest surplus they cut their share by half. The other three regions appropriately lowered their share in the years of bad harvests. According to what has been pointed out in a paper by W. Kula,<sup>13</sup> the movement of the export surplus, being an amplified reflection of the fluctuation of harvests, changes in relation to the differences of climate; good harvest of cereals in Little Poland did not always correspond with similar ones in Masovia, etc. This is best shown by "medium" years on Table 1. Grain from Podlasia, and especially from Little Poland entered the Gdańsk market

<sup>12</sup> The original registers were burnt down during the war, they had been, however, previously published: *Registra theloni aquatici Wladislaviensis saeculi XVI*, ed. S. Kutrzeba and F. Duda, Cracoviae 1915. Grouping data according to the regions and groups of exporters we follow T. Chudoba, *Zbożowy handel wiślany w XVI w. [Vistula Grain Trade in the 16th Century]*, an unpublished dissertation, University of Warsaw (1965). Mr Chudoba was the first who drew attention to the rhythm of surplus fluctuation for particular regions and for social groups.

<sup>13</sup> Cf. A. Mączak, *Zur Grundeigentumsstruktur in Polen im 16. bis 18. Jh.*, "Jahrbuch für Wirtschaftsgeschichte," vol. IV, 1967.

in the 1530's and 1540's; in the lean years their share lowered slightly. Red Ruthenia and Volhynia kept their character of marginal regions, whose export in the barren years was three times smaller than the average rate of their export share, and four times smaller as compared to their share in the total volume of grain sent to Gdańsk during the period of the greatest prosperity of the entire middle lower Vistula basin.

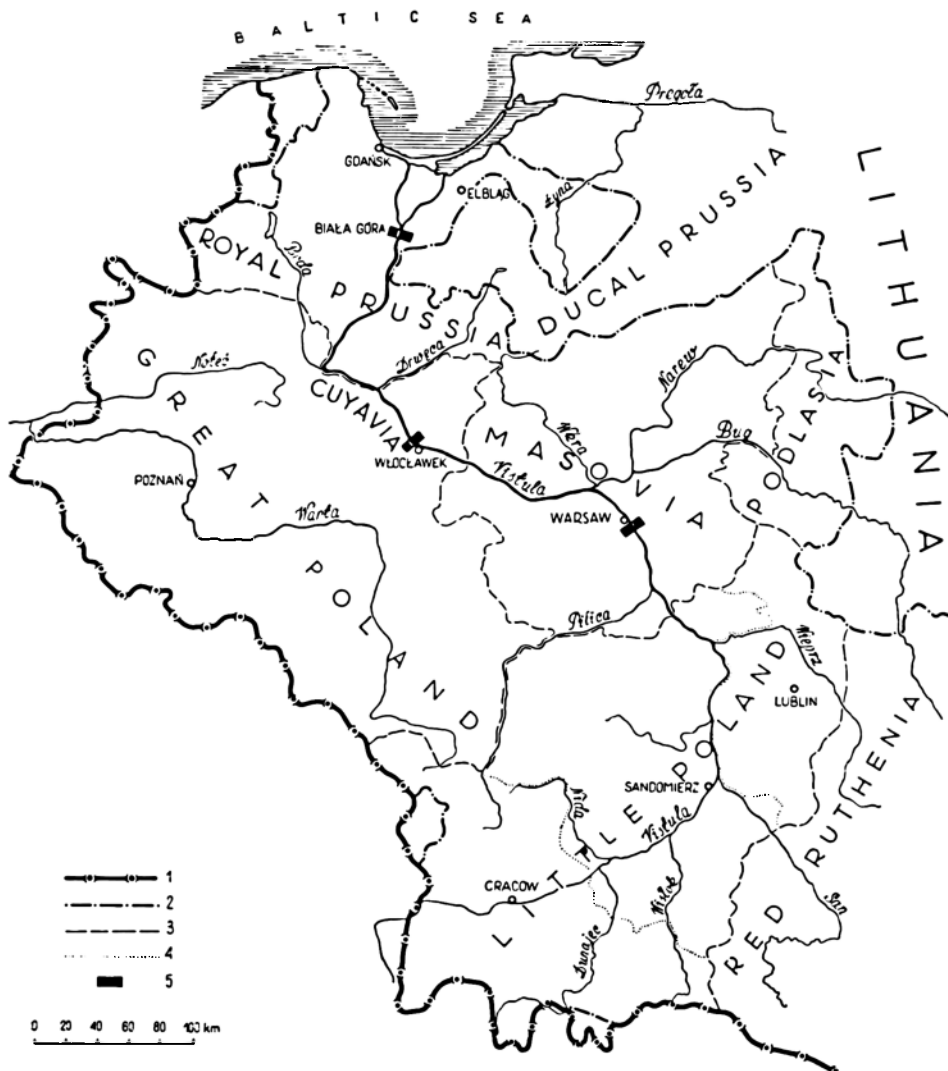
The bulk of the exported grain may be divided not only according to the regions but also according to the social and economic status of producers. When discussing this subject, we use the divisions introduced by Dr. T. Chudoba in his analysis of the river transport of corn. He has differentiated a group of "magnates," including higher officials of State, members of the Senate and royal stewards (*capitanei*). Although the latter sometimes came from the middle strata of the gentry, yet such a definition embraces nearly the whole of the large estates owned by magnates and the Crown. One may be doubtful about a very small share of ecclesiastical property although some of church estates were among the largest of the country. The group of rich gentry was also defined on formal basis — they were holders of local district offices. Medium gentry included all the remaining gentry since poor gentry, having no serfs, did not play any important part in the grain export. The part played by the merchants in this respect does not need much explanation. We can assume that they were intermediaries in the export of surplus from smaller estates; they bought corn from the peasants and lesser gentry, and sometimes worked as agents for the rich Gdańsk merchants. This formal division, set up according to social status of the gentry, is perhaps a little stiff and indirect but it has proved to be true in most cases for the 16th and 17th centuries, especially for statistical purposes.<sup>14</sup>

From the data on Table 2 it results that the share of big landowners in the river transport of corn from particular districts was in inverse proportion to the dimension of this surplus. It follows that the fluctuation amplitude of the bulk of goods sent that way was smaller for magnates and royal estates. The rich gentry found themselves in the similar situation only in Masovia, where large estates played a lesser role.

Let us consider more closely the grain surplus from large estates. If we examine the years of good and bad harvests (and their respective surplus) the share of large estates grows inversely to other groups; if, on the contrary, we take the whole Vistula basin down to Włocławek as a whole, this phenomenon disappears because of the interference of good and lean years for particular regions and because of the dominating importance of Masovia. Which of these levels — regional or national — is more important for our ends? I think the regional one. It results from the relations I would like to examine. The flow of a larger sum in cash, the opportunity of purchasing at advantageous prices many commodities from the most conspicuous ones to the more common, like herring, proved for the big landowner a bonus which he could realize in his own region. Thanks to this bonus he found himself in a better

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<sup>14</sup> W. Kula. *Teoria ekonomiczna ustroju feudalnego. Próba modelu*. [Economic Theory of the Feudal System. A Model], Warszawa 1962, p. 114 ff.



Poland, 1569 - 1637

1: frontiers of Poland; 2: frontiers of provinces; 3: frontiers of districts; 4: frontiers of the voivodships of Little Poland; 5: Vistula custom houses discussed in the text

Table 2. Various groups of landowners in the Vistula transport of grain (1555 - 1576)

Source: Calculated according to the figures from Chudoba, op. cit.

|                    | Masovia    |            |            |            | Little Poland |            |            |            | Ruthenia and Volhynia |            |            |            |
|--------------------|------------|------------|------------|------------|---------------|------------|------------|------------|-----------------------|------------|------------|------------|
|                    | H          |            | L          |            | H             |            | L          |            | H                     |            | L          |            |
| Average transport  | 35648      | <i>100</i> | 17144      | <i>100</i> | 18505         | <i>100</i> | 6092       | <i>100</i> | 14813                 | <i>100</i> | 1845       | <i>100</i> |
| Total share of the |            |            |            |            |               |            |            |            |                       |            |            |            |
| gentry             | <i>100</i> | <i>53</i>  | <i>100</i> | <i>63</i>  | <i>100</i>    | <i>84</i>  | <i>100</i> | <i>89</i>  | <i>100</i>            | <i>83</i>  | <i>100</i> | <i>92</i>  |
| magnates           | <i>52</i>  | <i>27</i>  | <i>58</i>  | <i>36</i>  | <i>69</i>     | <i>58</i>  | <i>72</i>  | <i>64</i>  | <i>69</i>             | <i>57</i>  | <i>76</i>  | <i>70</i>  |
| rich gentry        | <i>24</i>  | <i>13</i>  | <i>24</i>  | <i>15</i>  | <i>18</i>     | <i>15</i>  | <i>18</i>  | <i>16</i>  | <i>25</i>             | <i>21</i>  | <i>13</i>  | <i>12</i>  |
| medium gentry      | <i>24</i>  | <i>13</i>  | <i>18</i>  | <i>12</i>  | <i>13</i>     | <i>10</i>  | <i>10</i>  | <i>9</i>   | <i>6</i>              | <i>5</i>   | <i>11</i>  | <i>10</i>  |
| Merchants          | ×          | <i>33</i>  | ×          | <i>24</i>  | ×             | <i>10</i>  | ×          | <i>10</i>  | ×                     | <i>16</i>  | ×          | <i>8</i>   |
| Clergy             | ×          | <i>14</i>  | ×          | <i>13</i>  | ×             | <i>6</i>   | ×          | <i>1</i>   | ×                     | <i>1</i>   | ×          | <i>0</i>   |

H — 4 years of highest river transport of grain from a given region; L — 4 years of the lowest river transport; 4 years of medium river transport — omitted. Figures in italics: percentages of the whole transport and of the transport by gentry, Roman types — grain in lasts.



position than his lesser neighbours and could stand better the fluctuation of the market. We shall try to define this phenomenon in three districts: Masovia, Little Poland and Red Ruthenia (with Volhynia). We have the data concerning 8 years about prices which were taken by the royal estate of Malbork, *de tractis oneribus*, for supplies largely surpassing one hundred lasts.<sup>15</sup> We have taken into consideration the prices of rye as the minimal ones (omitting wheat as its share in the river transport is hard to define), we do not speak about transport costs, as well as about the possibility that a part, perhaps considerable, of corn was sold before it reached Gdańsk. We also understand that in customs registers one has to do with the uniform Gdańsk last at 60 quarters. Here we follow the example of the editors of Włocławek registers (one last = about 2,2 metric tons for rye).

It follows that this way we get only minimal amounts, especially for big estates which were more closely connected with Gdańsk itself and paid less for river transport. Last but not least we can by-pass the problem of credit and advances given by Prussian merchants to their noble contractors.

Table 3 confirms the results of the previous one, but introduces some essential nuances. As we can see from the corn prices in the good and bad harvest years

Table 3. Selling price of rye and the profits obtained from the sale of rye

|  | Masovia |      | Little Poland |       | Ruthenia and Volhynia |       |
|--|---------|------|---------------|-------|-----------------------|-------|
|  | H       | L    | H             | L     | H                     | L     |
| Average prices of rye <sup>a</sup>           | 25/6    | 35/1 | 36/2          | 27/13 | 27/10                 | 27/13 |
| Gross profits of big landowners <sup>b</sup> | 78      | 50   | 107           | 20    | 81                    | 9     |
| Gross profits of the sellers <sup>b</sup>    | 138     | 79   | 65            | 13    | 54                    | 4     |

3 years of highest and lowest river transport have been chosen from among the given 8 years, to stress the contrast; 2 medium years have been omitted. The years have been selected according to the extent of river transport from each region respectively, so H — for Masovia need not be the same year as H — for Little Poland. (H — high; L — low river transport).

<sup>a</sup> In Prussian marks (at 20 gr) and grossi.

<sup>b</sup> In thousands of marks.

only the Masovians obtained better prices as a compensation for bad yields. Fluctuations of surplus were much more marked than those of prices, nevertheless a higher price was always a kind of comfort for the producers. If one takes into consideration three years of extremely good, and other three years of extremely bad harvests, one sees that the exporters from Little Poland got 30 per cent higher prices after good harvests than after lean ones. Ruthenians got even some per cent more. Cases of great supply of grain coinciding with the high price of grain in Gdańsk were by no means rare in this period. In fact this phenomenon, as well as low prices coinciding with low export to the West may be observed in nine years out of the sixteen

<sup>15</sup> Central Ancient Record Office (AGAD) Warsaw, *Ekonomia Malborska*, sygn. W 224, 225, 226, 228, 238, 239, 242; *Rachunki królewskie* sygn. 196 (for the year 1561).

examined between 1563 and 1587.<sup>16</sup> Therefore, the relations between the corn prices and the surplus, presented on Table 3, were rather usual although they may seem striking. One should stress that point since it weakens a little our previous conclusion about the general thesis of the superiority of large estates in the grain export. But even if such was the situation during the years under discussion, the fluctuation of income for big estates was lower and the profit was more certain.

It would be helpful to know the meaning of the sums quoted on Table 3. Unfortunately, our knowledge about the income from land estates is still limited with the exception of royal and ecclesiastical property. We have few data about the income of the 16th century magnates and cannot use them the way English scholars do (beginning with Thomas Wilson and Gregory King and ending with Lawrence Stone).<sup>17</sup> Therefore, we shall make only an indirect comparison. One hundred thousand Prussian marks, i.e., seventy thous. zlotys (at 30 grossi), as the average income of big estates of Little Poland in good years, may be compared to 39,2 thous. zlotys, which was the total income of royal domains in Sandomierz voivodship surveyed in 1565. The largest domain of this district, the Radom domain, was to bring 13,6 thous. zlotys in 1540, whereas in 1536, the whole income from landed property of Pilzno district equalled 250 thous. zlotys.<sup>18</sup> We must also remember about the disproportion of income between good and bad years. In the three years of low surplus the landowners of Little Poland got 33 thous. Prussian marks, and in the three best ones — 172 thous. (22 thous. and 115 thous. zlotys respectively); the 93 thous. zlotys difference almost equals a 10 years' total income from the royal domain of Sandomierz and may correspond to the selling price of a property of that size. The income discussed here was, however, divided among many exporters; big secular landlords received a third part — 57 thous. — equalling the sixfold total income of the Sandomierz domain. The sum was divided among a couple of magnates and royal stewards. This group was also differentiated, and some most important families cut off enormous slices of the income for themselves. Table 4 compares the achievements in corn export of two outstanding families from Little Poland with the total river transport of grain from this region (a certain, though limited, amount of corn might have come from the Ruthenian estates and not from those of Little Poland).<sup>19</sup>

<sup>16</sup> The data about the export of grain — *Tabeller over Skibsfart og Varetransport gennem Øresund 1497 - 1660*, vol. II A, København 1922, data about prices — according to the prices declared by English merchants at the Sund custom-house. For the examined years I profited of data made available by professor S. Ellehoj. The prices of corn declared in Sound show a high correlation with the Gdańsk prices. We discuss this problem elsewhere.

<sup>17</sup> Cf. L. Stone, *The Crisis of the Aristocracy 1558 - 1641*, Oxford 1965.

<sup>18</sup> *Lustracja województwa sandomierskiego, 1564 - 1565 [A Survey of the Sandomierz Voivodship, 1564 - 1565]*, ed. W. Ochmański, Wrocław 1963, *passim*; *Polska XVI wieku [16th Century Poland]*, ed. A. Pawiński, *Małopolska*, vol. IV, Warszawa 1886, p. 556; the amount for the district of Chęciny, omitted by the editor, according to the manuscript in AGAD, *ASK I*, 9, p. 756. The silver value of Polish grossi fell by about 9% between 1536 and 1560, and by about 6% between 1540 and 1560.

<sup>19</sup> Observation shows that the amount of corn sent down by both families was much more tightly correlated to the total river transport from Little Poland than to the transport from Ruthenia.

Table 4. The Tęczyńskis' and the Firlejs' share in relation to the total river transport of grain (1555 - 1576) in lasts

| Year   | From Little Poland |              |                   |                |                                   |
|--|--------------------|--------------|-------------------|----------------|-----------------------------------|
|  | total              | big estates  | by the Tęczyńskis | by the Firlejs | by the Tęczyńskis and the Firlejs |
| 1555   | 2619               | 1756         | 310               | 137            | 447                               |
| 1556   | 4127               | 2708         | 802               | 88             | 890                               |
| 1557   | 4939               | 3364         | 536               | 67             | 603                               |
| 1558   | 1464               | 899          | 460               | 5              | 465                               |
| 1560   | 1241               | 830          | 378               | 47             | 425                               |
| 1561   | 4478               | 2906         | 400               | 266            | 666                               |
| 1568   | 4639               | 2931         | 90                | 227            | 317                               |
| 1569   | 856                | 517          | —                 | 39             | 39                                |
| 1573   | 2532               | 1645         | 245               | 109            | 354                               |
| 1574   | 4088               | 2299         | 256               | 127            | 383                               |
| 1575   | 4449               | 2201         | 308               | 355            | 663                               |
| 1576   | 2773               | 1487         | 174               | 311            | 485                               |
| <b>Total</b>   | <b>38205</b>       | <b>23543</b> | <b>3959</b>       | <b>1778</b>    | <b>5737</b>                       |
| <b>Yearly average</b>  | <b>3184</b>        | <b>1962</b>  | <b>330</b>        | <b>148</b>     | <b>478</b>                        |
| <b>In relation to the river transport from Little Poland (%)</b> | <b>100</b>         | <b>62</b>    | <b>10</b>         | <b>5</b>       | <b>15</b>                         |

As we can see, there were years when the Tęczyńskis family sent by river nearly half of the total amount of corn supplied by the big estates of Little Poland, i.e., nearly one-third of the whole surplus of this region (1558, 1560); their average gross income in the examined years exceeded 7500 zlotys.

We can examine the export of corn surplus from the basin of the higher and central Vistula on the basis of the Włocławek customs registers, which were recorded only up to 1576.<sup>20</sup> For the beginning of the 17th century we have only the Warsaw customs registers embracing river transport from Little Poland and partly from Ruthenia.<sup>21</sup> The way the customs registers were recorded does not enable us to determine the exporting regions since the data concerning chief grain exporters were entered too summarily. We can, nevertheless, learn much from them about the dynamic growth of corn surplus in Little Poland (Table 5).

It is not easy to compare the figures registered at Włocławek in the sixteenth century and in Warsaw in the seventeenth century. In view of the Polish river net one may guess that the Volhynian corn and part of the Ruthenian corn went down the river Bug, by-passing Warsaw, though sometimes exporters themselves or their agents took also other rivers (Wieprz or San) which join the Vistula above Warsaw. Grain owned by Ruthenian merchants amounted only to 6 per cent of the total bulk sent

<sup>20</sup> We omit here the no longer existing and only summarily published and rather incorrect customs registers of Biała Góra, at the Vistula estuary from 1579 and 1588.

<sup>21</sup> H. Obuchowska-Pysiowa, *Handel wiślany w pierwszej połowie XVII w. [Vistula Trade in the First Half of the 17th Century]*, Wrocław 1965.

Table 5. River transport of grain from Little Poland and Ruthenia in the 16th/17th century

Sources: Data for Włocławek to Chudoba, *op. cit.*, for Warsaw—calculated according to H. Obuchowska-Pysiowa, *Handel wiślany w pierwszej połowie XVII w. (Vistula Trade in the First Half of the 17th Century)*, Wrocław 1965, with the omission of figures re-estimated by the author

| Period      | Number of years when the size of transport is known | Yearly average transport in lasts |                    | Remarks  |
|-------------|---|-----------------------------------|--------------------|--|
|             |   | from Ruthenia and Volhynia        | from Little Poland |  |
| 1537 - 1549 | 3   | 135                               | 811                | corn registered at Włocławek   |
| 1550 - 1559 | 4   | 2715                              | 3382               |  |
| 1560 - 1569 | 4   | 1619                              | 2803               |  |
| 1570 - 1579 | 4   | 1219                              | 3460               |  |
| 1604 - 1609 | 3   |                                   | 15 737             | corn registered in Warsaw, coming chiefly from Little Poland, partly from Ruthenia |
| 1610 - 1614 | 4   |                                   | 24 740             |  |
| 1615 - 1619 | 5   |                                   | 25 976             |  |
| 1620 - 1629 | 3   |                                   | 13 506             |  |
| 1626        | 1   |                                   | 13 756             |  |
| 1631        | 1   |                                   | 19 650             |  |

by townspeople, but perhaps the percentage of corn transport from Ruthenia and Volhynia was higher. But even if it amounted to 10 or 15% of the total amount noted in Warsaw in the 17th century, the rise of corn surplus in Little Poland was enormous.

Thus the rise of the bulk of exported grain can be clearly observed. We have learned about Little Poland from the previous statements and we know, therefore, that it was not an average region and that it increased its share in the grain export. The big landowning families were perhaps the first in this activity. The average annual volume of corn exported by the Tęczyński family amounted to 350 lasts; by the Firlejs — 360. Both were surpassed by nouveaux riches and by those producers who entered the corn business later; eight most active families sent by river about 370 lasts per annum and the average amount of corn to be transported by the other thirteen families was about 190 lasts.<sup>22</sup> At the top of the list of corn producers we can see names that never appeared in the third quarter of the 16th century, for the changes in grain trade contributed to some fundamental changes in the social and economic structure of the country. The main change was the social redistribution of landed property.

### III

By the end of the 16th century the process of land concentration, which has continued for a long time, gained momentum. Medium owners of one, two, or three manors often disappeared, giving way to larger estates. Poorer squires residing in one village and in lack of serfs, usually tilling the land with their own hands, still con-

<sup>22</sup> Kula, *op. cit.*, p. 141.

stituted a social class but were continually losing land and thus were losing their social standing. This well-known phenomenon of the rise in importance and wealth of aristocratic families, the rise of a successful "new aristocracy" had a political meaning of highest importance. It became an economic basis of an oligarchical political system characterized by inefficiency of central power, lack of initiative in foreign policy and sometimes even a political dependence on the neighbouring countries. It has been agreed that families which obtained land in the Ukraine (taken away from the Lithuanians in 1569) had the quickest way to the top. This is, however, a complex phenomenon; in any case, the concentration of land was also visible in the first half of the 16th century in the remote Podlasia and maybe elsewhere. However, the inclusion of the Vistula basin into the systematic and intensive trade exchange with the West created new stimuli to a spontaneous rise of large fortunes. As a rule, it is hard to determine a relative importance of several causes of a social-economic phenomenon and, therefore, we cannot formulate our view otherwise than by putting forward a hypothesis: the grain export boom which since the middle of the 16th century opened vast southern regions of Poland and brought large sums of money to the class which was most active in the trade — aristocracy. Owing to profit from grain export they were able to increase their landed estates and thus constituted a further stimulus for continuing this activity.

At that time, ownership of land had a special importance in Poland. Though it formed a basis of prestige and social standing even in the highly developed countries like England, yet in Poland the margin of transactions not connected with land or land mortgage was particularly limited for the gentry. Land-ownership also had a marked political importance: royal favour, rewarding and winning the affections of prominent subjects, promoted a transfer of landed property. Courtiers and higher officials would not be wholly satisfied by other kinds of income of the State, such as duties and taxes. The overwhelming superiority of the magnate meant also his political domination over the local gentry and therefore, every ambitious nobleman wanted to increase his landed property. But the basic stimulus was the economic one. A great and still growing part of a lord's income was derived from demesne land and labour and not from rents and therefore the increase of his income, though limited, did not depend on the money at his disposal. Construction of mills, breweries, manorial buildings, tillage of waste-land, settling new peasants — it was all a charge to the manor itself and temporarily lowered its net income; the manor was in need of labour and this exhausted its supplies though money expenditure was trifling. The better the manor was developed the lower was the expenditure. Investments remained outside the sphere of money turnover the more so, that notwithstanding some new gun foundries in the royal domains of Little Poland in the 1st half of 17th century, there was a general tendency to liquidate small forges (which were the principal form of iron industry of the time) as the cause of the devastation of forests. The only real possibility of investment was, for the magnate, to buy up land. It was, of course, an investment from the view point of a single landowner; for the national economy it meant only a transfer of property from one owner to another.

In order to conclude a transaction two contractors must be present. What induced, or even forced the poorer gentry to sell their land and fall in social status? W. Kula suggested that the squire got less convenient terms of trade than the big landowner, when exchanging his corn for imported industrial articles and groceries.<sup>23</sup> Watching the organization and the rhythm of the Vistula grain trade one sees that the situation was made difficult for the poorer gentry as a result of high fluctuation of surplus and of the fluctuation of income. This situation also broadened the financial gap between the magnates and the lesser gentry.

This would be a general hypothesis, but one must remember that the magnate never had at his disposal all the cash of the amount estimated in Table 4. He availed himself of the opportunity to do his shopping in Gdańsk (another superiority over the poorer gentleman) but this as well as the cost of splendour and representation led to a constant lack of cash and not to its abundance. It is a paradox that this lack of cash and the indebtedness with the neighbouring gentry, so characteristic for Polish conditions, turned the magnates into the bankers of the squirearchy and gave them an additional superiority, which a banker often has over his customers.<sup>24</sup>

Besides the amplitude of fluctuations — the absolute size of the surplus. The data about sending grain by the Vistula river surely overstress the share of surplus originating from large estates: middle size estates and the smaller ones certainly could better sell their grain on local markets (it can be easily proved from eighteenth century sources). But the share of big landowners in the export of grain was several times higher than it should result from the percentage of land belonging to them in the 3rd quarter of the 16th century.<sup>25</sup>

The sale of agricultural produce in Gdańsk gave many direct as well as indirect advantages of considerable and maybe even decisive importance.

We do not know much about the money turnover and the land market in Poland of the 16th/17th century. One stresses usually the basic phenomenon: weakening of peasants' ties with the market. But this part of income, which the more prosperous feudal strata took over from peasants and lesser gentry, entered the sphere of money turnover. It was not only a question of larger share of market production on the large estates, but also a question of incessant property sales, concluded in general by means of money on credit or in cash. How quick was this turnover? One could not answer this question without long and exhaustive research. The statement for

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<sup>23</sup> The influence of the credit on the land turnover is discussed at length on the material from the 2nd half of the 17th century in our paper *Zur Grundeigentumsstruktur...*

<sup>24</sup> According to the above-mentioned criteria in the voivodship of Cracow about 1581, 36 per cent of arable land accounted for large estates, 10 per cent — royal, 20 per cent — ecclesiastical and 6 per cent — gentry estates. *Polska XVI wieku [16th Century Poland]*, vol. III, pp. 65 - 71; *Rejestr poborowy województwa krakowskiego z r. 1629 [Tax Register of the Cracow Voivodship, 1629]*, Wrocław 1956, Introduction.

<sup>25</sup> According to the data in the Introduction to *Rejestr poborowy województwa krakowskiego z roku 1680 [Tax Register of the Cracow Voivodship, 1680]*, ed. by E. Trzyna and S. Żyga, Wrocław 1959, p. IX. The statement may raise some doubt as the family names of the gentry were still unsettled at the beginning of the 17th century, but it gives an idea of the range of the phenomenon. The 224 examined manors constituted 19 per cent of the total of existing manors as registered in 1629.

224 villages of the voivodship of Cracow may give us a certain idea<sup>26</sup> (Table 6). The data about turnover, embracing longer periods (1581 - 1629, 1655 - 1673, 1680 - 1712) are certainly too low, as they do not include the manifold changes of owners (changes of the owners' names) in the meantime. We must take into consideration that, setting apart the ecclesiastical and royal property, nine per cent of villages belonging to big owners, i.e., owners of ten or more villages in 1581, rose to as much as twenty-five per cent. The large estates were less frequently for sale; they changed hands mostly by inheritance or dowry, etc. In view of this,

Table 6. Ownership of manors  
in the voivodship of Cracow, 1581 - 1712

| Year | Years that passed from the previous review | Manors that had changed owners |    |
|------|--|--------------------------------|----|
|      |  | number                         | %  |
| 1581 | —  | —                              | —  |
| 1629 | 48   | 150                            | 67 |
| 1663 | 24   | 78                             | 35 |
| 1655 | 2  | 42                             | 19 |
| 1673 | 18   | 61                             | 27 |
| 1680 | 7  | 59                             | 26 |
| 1712 | 32   | 96                             | 43 |

19 per cent of manors alienated within the period of 2 years (1653 - 1655); Table 6 gives us an idea about the intensity of land market in southern Little Poland before the war with Sweden and the Transilvanian invasion.

Though most of the transactions were concluded within the same social class yet the resulting balance of property transactions is quite obvious. The Tęczyńskis family, once main exporters of grain from Little Poland, died out in 1636, yet their estates passed into the hands of several big families and there grew a new and even bigger property complex belonging to Stanisław Lubomirski.<sup>27</sup> Table 7 presents the results of the buying out of the estates of lesser gentry in the voivodship of Cracow by the big landlords.

The indicated trends of changes in the property structure were characteristic for most regions of the country. They did not occur where there was no germ, no cristalizing nucleus in the form of a large estate complex, e.g. in Masovia or in Royal Prussia, though even there we can trace similar endeavours by local and infiltrating nobility. In Royal Prussia such tendencies were shown by royal stewards who tried to expropriate the neighbouring squirearchy. In some parts of Great Poland, espe-

<sup>26</sup> *Zur Sozialstruktur... Ibidem* detailed data on property problems, mentioned further.

<sup>27</sup> M. Horn, *Handel wołami na Rusi Czerwonej w pierwszej połowie XVII w. [Oxen Trade from the Red Ruthenia in the First Half of the 17th Century]*, "Roczniki Dziejów Społecznych i Gospodarczych," vol. XXIV, 1962. Horn estimated that in the 1st half of the 17th century export of oxen could reach 60 thousands a year (p. 86).

cially — it seems — near the Prussian border, the concentration of property was highly marked.

I leave apart the problems of the relative income from big and smaller estates though it was stated that in large estates the relation of demesne to peasant land was lower; there were more forests, and so the income per acre must have been lower, too. On the other hand the magnates' fortunes formed by the accumulation

Table 7. Distribution of land property in the Cracow Voivodship according to the number of villages in the years 1581 - 1629 (in %)

Source: The estimations have been based on *Rejestr poborowy województwa krakowskiego z roku 1629* [Tax Register for the Cracow Voivodship for the Year 1629], Wrocław 1956, introduction

| Size of estates | Number of landowners |       | Total number of villages |       |
|-----------------|----------------------|-------|--------------------------|-------|
|                 | 1581                 | 1629  | 1581                     | 1629  |
| Below 1         | 36.1                 | 43.9  | 20.3                     | 6.6   |
| 1               | 38.5                 | 29.6  | 25.3                     | 18.3  |
| 2 - 4           | 20.2                 | 19.6  | 31.3                     | 30.5  |
| 5 - 9           | 4.5                  | 4.8   | 14.4                     | 19.8  |
| 10 and more     | 0.7                  | 2.1   | 8.7                      | 29.8  |
| Total           | 100.0                | 100.0 | 100.0                    | 100.0 |

of smaller estates had to take over their organization pattern. The redistribution of landed property from the middle of the XVIth to the XVIIth century resulted in a redistribution of an important part of national income among landowners.

Grain export played here the part of a stimulus; it provided great landowners with the means which facilitated and speeded up the accumulation of estates, even if this process can be traced earlier in other regions — outside the grain exporting area. In the more remote regions of Ruthenia and Ukraine a similar role might be played by the extensive cattle rearing albeit the problem and its influence on the distribution of land was hardly touched by scholars. The total value of exported oxen would reach — even at very optimistic valuation of herds driven to the West (40 thousand per year) — the value of some thousands of lasts of corn *loco* Gdańsk. Not much for the whole country, but much for Ruthenia itself.<sup>28</sup>

The discussion on national income and wealth in the sixteenth and seventeenth century when the “political arithmetics” was unknown and the central administration and treasury policy were extremely weak and inefficient, means wandering on the border of pure speculation and more sophisticated methods of *histoire quantitative* cannot be applied here. One may, however, put questions and risk hypotheses about problems which sometimes the scholars evade.

<sup>28</sup> A. E. Christensen, *Dutch Trade to the Baltic about 1600*, Copenhagen 1941; A. Attman, *Den ryska marknaden i 1500-talets baltiska politik, 1558 - 1595*, Lund 1944.



## IV

If we examine the direction in which precious metals and money flowed through Poland our attention will be mainly drawn by gold and silver which came from West Europe *via* Gdańsk in return for Polish corn and timber. The thesis about the highly active balance of Baltic trade, based on the toll registers from the Straits of Sund and put forward by A.E. Christensen and searchingly developed by A. Attman, corresponds well with the Polish relations.<sup>29</sup> Polish trade formed the greatest part of the turnover on the Baltic and Polish corn was the main export article of this zone.<sup>30</sup> Neither the turnover between the countries on the Baltic did bring any important change to the balance of Polish trade; it only seemed still more advantageous. But what was the further fate of the incoming money? It is certain that precious metals went from Poland to Turkey and its dependencies; this problem gained momentum at the end of the 16th century, and about the middle of the 17th; this outflow of coins exceeded the value of 40 thousand Reichsdallers and had a certain, though not decisive influence on the total balance of Polish trade.

It can hardly be supposed that Poland had an active balance in the East-West trade, or that its figure was high. The turnover mainly consisted of furs, skins and wax in exchange for industrial articles (textiles, metal goods, heberdashery) imported from the West. Probably the value of Polish and western goods was not equal to the costly furs of Moscow and Lithuania. The question is how much the Polish merchants gained as intermediaries.

The early Polish mercantilists supposed that export *via* Gdańsk played the most important part in the country's trade balance. How did it influence the changes in the distribution of income among various regions of the country?

Treating these remarks as initial and postulative (as they are the first attempt to study this problem) we only want to show the trends and the limits to which we can apply the idea of the regional distribution of income to the serf-labour economy.

For about seventy years from the middle of the 16th century the inflow of money to various regions of the country had changed completely. With slight changes in agricultural techniques and with 3% yearly birth-rate we note export from Gdańsk corresponding in 1492 to about 93 thous. Reichsdallers and in the 2nd quarter of the 17th century amounting to ca 3 - 7 millions.<sup>31</sup> Who profited by it? The solicitation

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<sup>29</sup> About the Polish trade balance lately: S. Hozzowski, *The Polish Baltic Trade in the 15th - 18th Centuries*, in: *Poland at the XIth International Congress of Historical Sciences in Stockholm*, Warszawa 1960, p. 121 ff.

<sup>30</sup> A. Mączak, *Der polnische Getreideexport und das Problem der Handelsbilanz Polens in der ersten Hälfte des 17. Jhs.* — report at the international conference on the middle European trade at Marburg, August 1967 (in print).

<sup>31</sup> Demographic data, if not marked otherwise are taken from I. Gieysztorowa, *Badania nad historią zaludnienia Polski* [*Studies in the History of the Population in Poland*], "Kwartalnik Historii Kultury Materialnej," vol. IX, 1963, tab. 6. The data on the value of Gdańsk trade as given by H. Samsonowicz, *Badania nad kapitałem handlowym w Gdańsku w drugiej połowie XV w.* [*Studies in the Merchant Capital in Gdańsk in the Second Half of the 15th Century*], Warszawa 1961 and by Bogucka, op. cit., whose data I have recalculated in Rdl.

of Gdańsk to cut away the hinterland from the oversea merchants is responsible for our ignorance about the Gdańsk intermediaries' margin of profit. They participated by two or three per cent, exceptionally up to ten or more per cent in the extremely lucrative sea-trade, where — considering the difference in prices between Amsterdam and Gdańsk — the sum of goods reached about 40% of the previous f.a.s. value.<sup>32</sup> The profit of the Gdańsk inhabitants consisted mainly in local brokerage over the Green Bridge, which made a barrier between the river boats and the merchantmen, as well as in intensive draining of the market by credits granted to landowners and intermediaries from smaller towns.

Let us look at some figures. The value of corn and wheat exported yearly from Gdańsk and Elbląg beyond the Sund amounted to about 920 - 950 thous. Rdl. in 1618 - 1625, and up to 2 million Rdl. in 1635 - 1647 (this time owing to a larger share of wheat).<sup>33</sup> If we assume that the profit of the Gdańsk inhabitants (Elbląg exported little grain) amounted to 10 per cent of the export price it would mean a total profit of 100 thous. Rdl. in the first period, and 200 Rdl. in the last one. These figures do not cover the whole of merchants' profits in the ports, since in the first part of the 17th century, cereals accounted for about 70 - 80 per cent of the country's oversea export to the West, i.e., for about 40 per cent of the whole turnover with the West for both ports. Respective values for the years 1565, 1575 and 1585 are 66 and 45 per cent; they are perhaps slightly too high but we lack accurate data concerning this.<sup>34</sup> We could try to evaluate the income of both urban agglomerations in relation to the entire goods-supplying hinterland. If we take into account the overwhelming importance of agriculture and especially of cereals in the national production, such evaluation might be a possible endeavour. A more cautious reflection will be, however, more useful: the income of the ports was a function of the size of the export surplus in agriculture from the supplying hinterland and its fluctuation was a magnified reflector of that surplus. The intermediaries' profit from exports was doubled by the profit from imports and from the still growing, till the middle of the 17th century, industrial production of the Gdańsk agglomeration.

The artistic influence of Gdańsk craft and arts and its spread all over the country was a reflection of these phenomena.

Let us go farther back into the hinterland. Availing himself of estimations concerning urban and rural population, as well as figures for the cultivable land, A. Wyczański<sup>35</sup> has estimated that in the 3rd quarter of the 16th century Great Poland had a well balanced production and consumption of rye; in Little Poland the balance showed food shortage amounting to 12%; Masovia — 11 per cent of surplus; Royal Prussia showed an enormous surplus of 52 per cent. On the whole, about 30 per cent of rye went to the market, 12 per cent for export, mainly *via* Gdańsk. This average active balance, about 70 thousand metric tons (about 32 thous. lasts)

<sup>32</sup> Maćzak, *Der polnische Getreideexport...*

<sup>33</sup> As note 16.

<sup>34</sup> Maćzak, *Der polnische Getreideexport...*

<sup>35</sup> A. Wyczański, *Tentative Estimate of Polish Rye Trade in the Sixteenth Century*, "Acta Poloniae Historica," vol. IV, 1961.

agrees with the then average export, whereas some reservations must be made as to the regional division of the whole bulk. When we compare these figures with Chudoba's calculations we can see that in fact Little Poland exported one-third of what — according to Wyczański — it should import; this difference could not be found on other routes. Great Poland also exported, at least from the regions near the Vistula, and a little along the Warta river. The Włocławek duties could reflect only a part of this export. Some corn came from Red Ruthenia and Volhynia, amounting to at least a few per cent of the national grain surplus. As our corrections augmented the estimation of export possibilities from particular regions, so we must mention, too, that the whole bulk of export must have been higher than what is shown by the Sund duties; the Sund customs quotations after 1569 were certainly too low, and moreover, they omitted the export to the other Baltic ports. Taking into account also wheat, we must stress its export from Royal Prussia and Little Poland; one should bear in mind that its price was about 60 per cent higher than that of rye.

Putting together estimations based on the economic structure of the country and those from the actual data on the export surplus, we should accept for our further discussion — for Little Poland and Great Poland — an active balance of 3 thous. lasts; for Masovia — 7 thous. lasts (this is in agreement with Wyczański's results); Red Ruthenia with Volhynia and Podlasia will get what they on the average exported, i.e., about 4000 lasts together. Over 30 thousand lasts of rye for Royal Prussia, suggested by Wyczański, seems too much in view of the years when the Sund and Włocławek duties can be compared (1568, 1569, 1575, 1576). For Włocławek (with the addition of Cuyavia) we have on the average 16,6 thous lasts; *via* Sund one exported from Poland 29,6 thous lasts.<sup>36</sup> A few thousand must be added for sales in other Baltic countries and the omissions of the Sund customs registers. So for the active balance of Royal Prussia we would have "only" about 15 thous lasts or slightly more (wheat does not play any important part in these estimations). Such were the proportions in the regional distribution of profits from corn export, with some additional preference for the nearer regions as having lower costs of transport.

In the next fifty years this distribution was to be altered by the structural changes in the economy of the country. River transport of grain from Little Poland grew much quicker than the total export; the same may be said about the export from Royal Prussia. Other regions, including Masovia, added less than the average to the development of export.

The scale of changes occurring throughout several decennia shows the enormous importance of the development of demesne farming for the national income and its distribution, especially if we take into consideration the stagnation or even retrogression of agricultural techniques and productivity and a low birth rate (0,3 per cent a year). It makes questionable the accuracy of the method of estimating changes in the total production of agriculture generally applied to preindustrial societies: as changes in techniques and consumption are slight, the agricultural

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<sup>36</sup> Chudoba, *op. cit.*, and *Tabeller...*

production is estimated in relation to the total employment in agriculture and to the food balance of the country.<sup>37</sup>

It was stressed that we lack data on famines in Poland, data which may be so often found in, for example, French sources. Some Polish students of the problem think that granted an important fall in consumption between the middle of the 16th and the middle of the 17th century, in the starting point (i.e., in the 15th and the first half of the 16th century) the consumption level among peasantry might have been high enough to remain at a sufficient level in the 17th century. Inventories and surveys of estates draw a Gargantuic picture of consumption habits among the manorial staff.<sup>38</sup> It was probably that high level of consumption as well as important reserves of labour that made possible the reconstruction of the agrarian system (in the combination of these two factors we see some contradictions that are not lacking in the economic picture of 16th century Poland). I shall present those problems in connection with two contrasting regions: southern Little Poland and Royal Prussia.

## V

In Little Poland the population grew by 30 per cent between 1580 and 1650 (0,37 per cent yearly) if the percentage of those employed outside agriculture did not seriously alter (and it did not). Taking into consideration a decline of yield ratios we may therefore estimate the index of agricultural potential below 130 (1580's = 100) and perhaps a little over 120. This is, of course, not an accurate figure but it serves to show the blatant disproportion with the sevenfold rise of corn export. The increase of surplus was due to the increase of the demesne at the cost of peasants' lands and to increased labour services. But while in the last instance it was the peasant who had to pay the cost of changes yet the redistribution of landed property among various strata of nobility was very strong, too. The share of large (over 10 manors) secular estates grew in the Cracow voivodship from 9 to 25 per cent and from 36 to 46 per cent if we include royal and ecclesiastical domains. It seems that the spectacular increase of grain surplus was made possible thanks to the cumulative effect of enlarging the share of demesnes in the total arable land, and the accumulation of landed property in the hands of big landlords. These two processes were interdependent; big landlords had a much larger margin of freedom in their economic decisions, and they did not lack means to alter the structure of their estates.

The great trade boom found Royal Prussia — this main supplier of exported grain surplus — in a different stage of development. The absence of rich gentry, the ex-

<sup>37</sup> Especially so Ph. Deane, D. Cole, *British Economic Growth, 1688 - 1959*. In the case of the eighteenth century England it leads to an obvious contradiction: when in 1765 the export policy changed from corn export premiums to a great import of grain the country's corn balance changed diametrically within several years which must have caused enormous influence on consumption without corresponding changes in production.

<sup>38</sup> A. Wyczański, *La consommation alimentaire en Pologne au XVI<sup>e</sup> siècle*, "Annales. Économies, Sociétés, Civilisations," vol. II, 1962.

istence of important ecclesiastical estates and enormous royal domains as well as the existence of large areas belonging to cities were factors that shaped the specific feature of landed property of the region, a heritage of the Teutonic Order which had ruled there to the middle of the 15th century. Large waste lands — remainder of war destruction from the past century — and greater freedom of the peasantry who had farms twice as big as those on the upper Vistula, these were the conditions in which this region had to adapt itself to the growing overseas demand. The grain surplus in Royal Prussia grew twice during fifty years (1570 - 1620), thus not so much as in Little Poland, but very much indeed if we take into consideration that 1° the starting point of the rise was placed higher (ca 3 thousands for Little Poland, ca 15 thousands for Prussia); 2° the density of population of Prussia was much lower, and in addition the percentage of population employed outside agriculture grew quickly with the rise of the Gdańsk agglomeration from 70 to 100 thousand inhabitants.<sup>39</sup> All these factors made possible an important surplus in the 16th century, but any reorganization of economy as well as any further increase of surplus were very difficult.

How did this surplus grow? Waste land was taken under plough. It was done by peasants who by this means enlarged their farms (a factor which may also be seen elsewhere) the landlord profited also by the opportunity (often burdening the peasant with pains of clearing the waste) and raised the labour services, rather low until then. The amount of grain at the disposal of royal stewards, grew, but a large part of surplus was sold by peasants, too, especially in the vicinity of Gdańsk and other towns interested in buying up grain. In smaller estates and not in the big ones we note between 1570 - 1648 a certain fall in the average size of peasants' farms. Moreover, in the most fertile and best situated region of the Vistula estuary in the conditions of free land market among peasants, large farms (of about 60 hectares) began to predominate. Their number decreased in result, a part of the peasants lost their land, but the productivity of the region grew. The intensive agricultural and dairy farming of the Dutch colonists grew dynamically. A systematic afflux of labour from the overpopulated Masovia prevented lack of labour.<sup>40</sup>

As results from the drawn — perhaps overdrawn — contrast between Little Poland and Prussia, their respective responses to the oversea demand for grain were different. In discussing an industrial society it is usual to assume that an increase of goods surplus with an advantageous system of prices brings profit — though not equal for various groups of population, but general within a region. The case of 16th and 17th century Poland including itself into the world trade system reminds us that it may be otherwise, too. In Little Poland the increase of surplus was due to a serious polarization of society and to absolute pauperization of serf peasants and the poorer squirearchy which constituted jointly a very large part of the population. (Discussing the living standard of the working classes one takes into

<sup>39</sup> I owe these figures to Dr. M. Bogucka; they are higher than the usually accepted estimations of P. Simson, who took into consideration rather citizens than inhabitants.

<sup>40</sup> The social and economic development of Royal Prussia will be more largely presented in vol. II of the collective *History of Pomerania* (in preparation).

account the number of the unemployed; discussing gentry and peasantry one should think about those members of those who owned no land.) The corn boom found Prussia not only in a better geographical position, but also in a more advantageous phase of development. The structure of landed property and the supply of cheap labour from Masovia helped to continue this development. The neighbourhood of Gdańsk proved a very important factor for agriculture; the analysis of the results of demesne and of rich peasants' farming shows that the latter could, in conditions of relative freedom, successfully compete in productivity with their landlords. This rosy picture must be, however, disturbed; from the very beginning of the 17th century pressure upon the peasants became stronger and the process of their pauperization gained momentum especially when the organic development of the Prussian economy became troubled by war with the Swedes (1626 - 1629).

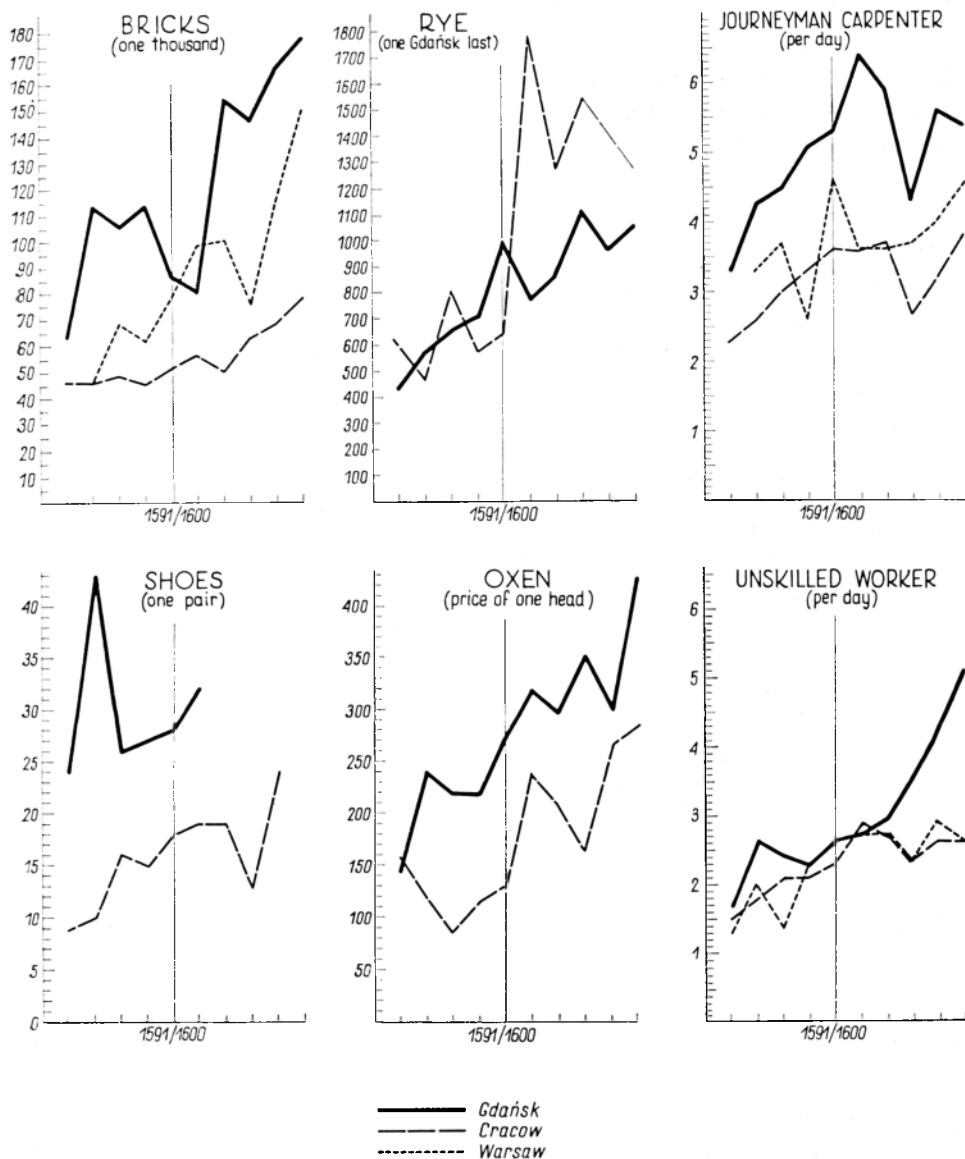
We shall now proceed to discuss Masovia. Characterized by the extremely comminuted landed property it certainly entered into the phase of depression earlier than other regions. The entire development of grain trade does not suggest that the surplus of Masovia underwent a large increase. And so, as a hypothesis, I see here a third possibility: a region with a disadvantageous economic structure (splitting up of property) already in the 2nd half of the 16th century would not make the most of its good situation on water routes. It felt the negative features of the boom (impoverishment of the peasantry and of the innumerable masses of the not much better faring squirearchy) and did not profit by the advantages to the same degree as other regions. The case of Masovia, less known and very controversial, cannot be made completely clear in the light of the discussed phenomena. The hypotheses put forward help to explain why signs of market depression — the fall of local cloth industry — may be seen here as early as the middle of the 16th century.<sup>41</sup>

We have presented here a very much simplified picture of the impact of the grain export on the distribution of national income. As we have to do here with the export of winter-corn (being roughly a half of cereals, chief product of the Polish economy of those days) we might make a guess about the relation of the production of the exported corn surplus to the gross national product.

It might help, too, to estimate the relation of the national product (and/or income) to the Dutch profits derived from trade with Poland. If we consider the small (in comparison to the industrial society) differences of labour productivity between agriculture and industry and the overwhelming preponderance of the former, estimations of this kind would not seem more risky than the estimation of production and export of grain, discussed above. There is however, one very important problem which should be mentioned now: regional differences of prices. They were not thoroughly examined in Poland, as stress was put rather on the correlation of price movement and on aggregate indices of prices. But even though we know little at present about the metrology of Little Poland, one can put forward a hypothesis, that the particular position of Royal Prussia and especially of Gdańsk gave them

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<sup>41</sup> A. Maćzak, *Sukiennictwo wielkopolskie w XIV - XVII w. [Clothmaking Industry in Great Poland in the 14th - 17th Centuries]*, Warszawa 1955, p. 243.



Regional differences of prices and wages (10-yearly averages in grams of silver)

especially advantageous price terms in the 16th - 17th centuries. There are some available price and wages relations concerning Gdańsk, Cracow, Lwów and Warsaw:<sup>42</sup> bricks — mostly twice the price in Gdańsk in comparison to Cracow or Lwów; timber (deals) — still more expensive; footwear — high prices in Gdańsk; a sometimes mason's or carpenter's journeyman and even an unskilled worker could count in Gdańsk on much higher wages. Only the building boom in Warsaw, which had just become the royal residence, brought about comparable salaries.

This choice of examples is far from ideal, some main industrial articles are missing, but this is sufficient to suggest at least a lively building activity, a factor and indicator of economic boom, high wages, which might attract labour. Let us now proceed to livestock and food: high prices in Gdańsk (in comparison to Cracow and Lwów) of live stock — oxen, but also pigs beside low prices for herring and (especially in the 17th century) rye. Yet beef, beer and pepper stayed at the Cracow level “[...] *abondance et non valeur n'est pas richesse. Disette et cherté est misère. Abondance et cherté est opulence.*” R. Romano<sup>43</sup> has lately reminded us of Quesnay's definition. Gdańsk, compared to its hinterland seems to answer the third limb of this physiocratic thought. And yet the singular position of this city gave in that epoch of high transport costs another bonus: cheap rye and sea-fish. One might look for an analogy with the development of Amsterdam and its neighbourhood, which — *mutatis mutandis* — also possessed cheap food, keeping all the characteristics of a highly developed centre of trade and industry.

These are our estimations, suggestions and hypotheses put forward in the belief that pre-industrial economies may be understood only through the analysis of the structure of their societies.

(Translated by Ewa Tymowska)

<sup>42</sup> We compare data in which metrological questions play the smallest possible part. We do not know the relation between barrels in Cracow and Gdańsk. Differences of Lwów, Cracow and Gdańsk measures of grain are compared according to A. Gilewicz, *Studia z dziejów wag i miar w Polsce* [Studies in the History of Weights and Measures in Poland], Part I: *Measures of Capacity and Weights*, in: *Sprawozdania Towarzystwa Naukowego we Lwowie*, 1938; and Z. Binerowski, *Gdańskie miary zbożowe w XVII i XVIII w.* [Grain Measures in Gdańsk in the 17th - 18th Centuries], “Zapiski Historyczne,” vol. XXIII, 1957, p. 79. Prices according to J. Pelc, *Ceny w Gdańsku w XVI i XVII w.* [Prices in Gdańsk in the 16th - 17th Centuries], Lwów 1937; the same author, *Ceny w Krakowie a latach 1369 - 1600* [Prices in Cracow in the Years 1369 - 1600], Lwów 1935; E. Tomaszewski, *Ceny w Krakowie w latach 1601 - 1795* [Prices in Cracow in the Years 1601 - 1795], Lwów 1934; S. Hoszowski, *Ceny we Lwowie w XVI i XVII w.* [Prices in Lwów in the 16th - 17th Centuries], Lwów 1928. We show the results in grams of silver, as we are concerned with the level of prices and wages in various cities and not with their tendencies of development in time. In the first decades there were some differences in the silver value of the grossi in Gdańsk and other towns, so it could spoil our argument if it were expressed in grossi. The wages are given per day.

<sup>43</sup> R. Romano, *Mouvement des prix et développement économique. L'Amérique du Sud au XVIII<sup>e</sup> siècle*, “Annales E.S.C.,” 1963, No. 1, p. 74.