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RESEARCH INTO THE DEMOGRAPHIC HISTORY OF POLAND
A provisional summing-up

The trend towards establishing the existing number of population, which was visible throughout Europe towards the end of the 18th century, awakened interest in the demographic past as well. In the wake of a very important first census of Poland's population (1789), covering a territory already mutilated by the first partition, the scholars of the time attempted to estimate the population of the country as it was before the partitions.¹ In the 1880's the population of the State at the height of its power, late in the 16th century, was established on the basis of numerous preserved tax registers.² Towards the close of the 19th century new, detailed investigations were again made concerning Poland's population prior to the partitions.³ Research between the two World Wars extended over yet more remote periods of the past: attempts were made to deduce the population of mid-14th century Poland from Peter's pence registers,⁴ and to establish an estimate for the year 1000 by way of comparison with other European countries.⁵

¹ T. Czacki, *O statystyce Polski*, in: *Dziela [On Statistics Concerning Poland, in: Works]* (collected and edited by Count E. Raczyński), Poznań 1843 - 1845, III, p. 2 ff.; S. Staszic, *O statystyce Polski [On Statistics Concerning Poland]*, Warszawa 1807, 2nd edition Kraków 1809, p. 26; W. Surowiecki, *O statystyce Księstwa Warszawskiego, Wykład w Szkole Prawa 1812 roku*, in: *Wybór pism [On Statistics Concerning the Duchy of Warsaw, Lecture given in the School of Law in 1812, in: Selected Works]*, Warszawa 1957, p. 377 ff.

² A. Pawiński, subsequently A. Jabłonowski, *Źródła dziejowe, Polska XVI wieku pod względem geograficzno-statystycznym [Sources to History, 16th Century Poland from the Geographic-statistical Point of View]*, Warszawa 1883 - 1897.

³ T. Korzon, *Wewnętrzne dzieje Polski za Stanisława Augusta [The Internal History of Poland under the Reign of Stanisław August]*, vol. I, Kraków - Warszawa 1897, p. 50 ff.

⁴ T. Ladenberger (Ładogórski), *Zaludnienie Polski na początku panowania Kazimierza Wielkiego [The Population of Poland at the Beginning of the Reign of Casimir the Great]*, Lwów 1930.

⁵ L. Krzywicki, *Przyczynki do wyświecenia stosunków ludnościowych w Polsce za pierwszych Piastów [Contribution Towards Elucidating the Demographic Situation in Poland under the First Piasts]*, "Przegląd Statystyczny," 1933, pp. 177 - 203.

After World War II, beside revised estimates for the years 1000⁶ and 1350,⁷ a general summing-up of previously achieved results led to a number of amendments.⁸ The present article reviews the findings of the latest synthetic appraisal in which the evaluation of the results so far achieved by historical demography is based on the principle of the continuity of demographic evolution viewed against its economic and social context.

It seems that the best way of gauging the demographic value of the 17th and 18th century taxation sources⁹ for areas of small territorial extent is to confront them with the most reliable of the birth registers preserved since the late 16th century; their detailed investigation constitutes the great hope of pre-statistical demography in our country. For these registers are in two senses superior to tax registers: first, they lack the tendentiousness aimed at reducing taxation, and, second, their social scope is wider, since they also cover the poorer groups of population on whom taxes were not levied. However, they too, just as the tax records, were at first far from complete, and the source value of both those types of documents must always be carefully and critically examined.¹⁰

⁶ H. Łowmiański, *Podstawy gospodarcze formowania się państw słowiańskich* [*The Economic Foundations for the Formation of the Slav States*], Warszawa 1953, p. 232 ff.

⁷ T. Ładogórski, *Studia nad zaludnieniem Polski XIV w.* [*Studies on the Population of 14th Century Poland*], Wrocław 1958.

⁸ W. Kula, *Stan i potrzeby badań nad demografią historyczną dawnej Polski* [*Present State and Future Needs of Research into the Historical Demography of Old Poland*], "Roczniki Dziejów Społecznych i Gospodarczych," vol. XIII, 1951, pp. 23 - 73; S. Hoszowski, *Dynamika rozwoju zaludnienia Polski w epoce feudalnej (X - XVIII w.)* [*The Dynamics of Poland's Demographic Evolution in the Feudal Period (10th - 18th Centuries)*], *ibidem*, pp. 137 - 198; E. Vielrose, *Ludność Polski od X do XVIII wieku* [*The Population of Poland from the 10th to the 18th Century*], "Kwartalnik Historii Kultury Materialnej," vol. V, 1957, pp. 3 - 49; E. Rosset, *Polska na mapie demograficznej Europy w okresie Milenium* [*Poland on the Demographic Map of Europe during the 1000 Years of Its History*], "Zeszyty Naukowe Uniwersytetu Łódzkiego," 1961, pp. 185 - 212; I. Gieysztorowa, *Badania nad historią zaludnienia Polski* [*Research into the Demographic History of Poland*], "Kwartalnik Historii Kultury Materialnej," vol. XI, 1963, pp. 523 - 562.

⁹ I. Gieysztorowa, *Źródła i szacunki w badaniach osadnictwa i demografii Polski XVI - XVII w.* [*Sources and Estimates in Research into the Settlement and Demography of Poland in the 16th and 17th Centuries*], "Kwartalnik Historii Kultury Materialnej," vol. X, 1962, pp. 575 - 593.

¹⁰ K. Dobrowolski, *Znaczenie metryk kościelnych dla badań naukowych* [*The Importance of Church Registers for Research*], "Roczniki Towarzystwa Heraldycznego," vol. V, 1921, p. 91 ff.; K. Dobrowolski, *Dzieje wsi Niedźwiedzia*, in: *Studia z historii gospodarczej i społecznej poświęcone F. Bujakowi* [*History of the Village of Niedźwiedzia*, in: *Studies on Economic and Social History Dedicated to F. Bujak*], Lwów 1931, p. 550; Kula, *op. cit.*, p. 102; Hoszowski, *op. cit.*, p. 154 ff.; A. Szczypiorski, *Badania ksiąg metrykalnych a obliczenia ludności Polski w wieku XVII i XVIII* [*Investigations of Birth Registers and the Estimates of Poland's Population in the 17th and 18th Centuries*], "Kwartalnik Historii Kultury Materialnej," vol. X, 1962, No. 1 - 2, p. 55 ff.; E. Vielrose, *Kilka uwag o natężeniu ruchu naturalnego ludności w Polsce w wieku XVII i XVIII* [*Some Remarks on the Intensity of the Natural Movement of Population in Poland in the 17th and 18th Centuries*], *ibidem*, p. 75; Z. Sułowski, *O właściwą metodę wykorzystania metryk kościelnych dla badań demograficznych* [*The Need for a Proper Method of Making Use of Church Registers for Demographic Research*], *ibidem*, p. 81 ff.; I. Gieysztorowa, *Badania demograficzne na podstawie metryk parafialnych* [*Demographic Research on the Basis of Parish Registers*], *ibidem*, pp. 106 - 119.

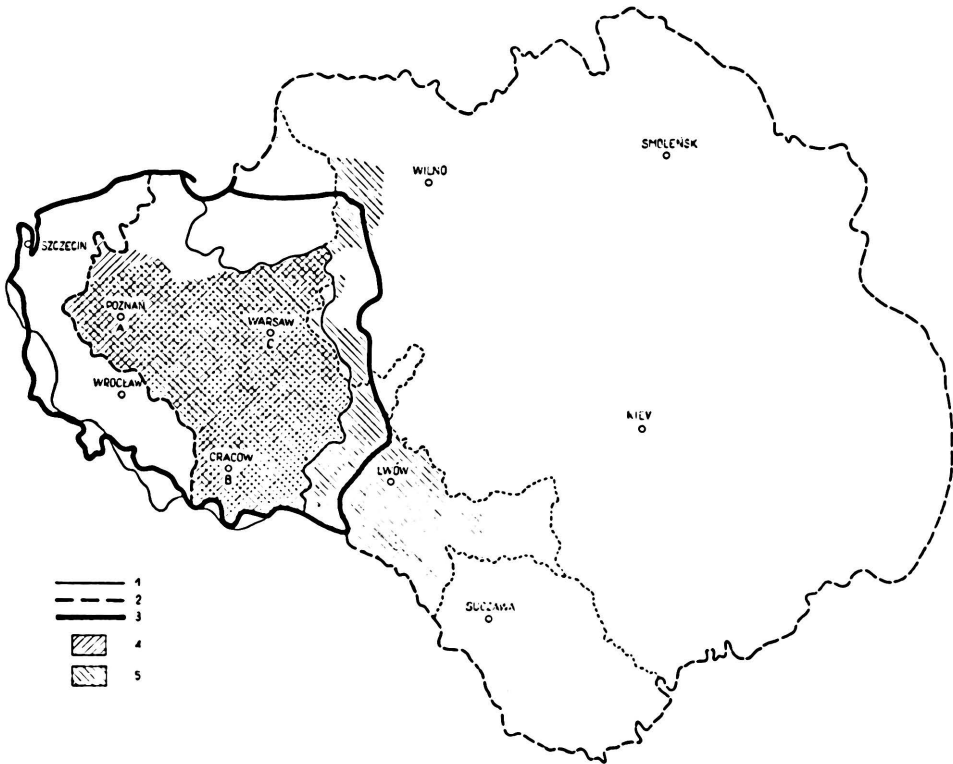
The fact that the validity of sources diminishes as we move deeper into the past determines the method of Polish demographic research. This method consists in retrogression, i.e., in the principle of working backwards, from more reliable findings, based on more trustworthy and direct material concerning both the number and the movement of population, towards less and less certain — because inadequately documented — estimates for selected dates. The experience gained so far in pre-statistical Polish demography leaves no room for illusions that even the keenest interpretation might make up for the deficiencies of the fiscal sources, of which the historian sometimes tends to make excessive use for demographic purposes, inconsistent with their character.

The essential way of checking upon the validity of population estimates made so far for pre-partition Poland consists in comparing them with one another both in the territorial and in the chronological aspects. This can apply, however, only to provinces with fairly stable areas, which had always formed part of the Polish State, and not to the entire territory of the State, subject as it was to frequent changes during the ages. In the light of the present state of investigations it seems proper to limit the analysis of the validity of their results to the three main provinces of pre-partition ethnic Poland: Great Poland, Little Poland, and Masovia (see map below). Another argument in favour of this choice is the fact that the estimates so far made for those three provinces were based on homogeneous sources.

The dates to which those “cross-section” estimates are related were dictated by the sources; they do not always coincide with any particularly characteristic moments in the demographic evolution. The year 1000 is a conventional date approximating that of the integration of the all-Polish State; the number of inhabitants connected with this date is a segment rather than a point on the growth curve, since it may relate just as well to the 10th as to the 11th century. The year 1350 marks the beginnings of the peaceful development of the Polish Kingdom re-united after the period of division into petty principalities, but it also immediately precedes the coming of the “Black Death”, which undoubtedly raised the already existing high mortality rate.¹¹ It should be borne in mind that this date is also conventional and unprecise, and that the population estimate made for it must, in view of the vagueness of the sources on which it is based, relate to the whole of the 14th century, with the possible exception of the moment or moments of breakdown.

The third and fourth “cross-section” were derived from detailed estimates based on fiscal registers dating from the second half of the 16th century, the year 1500 marking the peak territorial expansion of the Commonwealth, and the year 1650 showing the demographic situation prior to the Swedish invasion which threatened the existence of the State. The estimate for 1770 appraises the population of Poland just before the first partition, while the one for 1900 sums up the effects of the demographic explosion which took place in the course of the 19th century.

¹¹ In Poland this plague took a milder course, probably in connection with the rising trend in the country's economic development at the time. Cf. *Monumenta Poloniae historica*, vol. V, p. 905 (1349), p. 344 (1347); J. Długosz, *Historia*, vol. III, p. 23, 1348.



Territory of Poland, 1000 - 1965. Territorial range of detailed research, undertaken so far, into the demographic history

1: frontiers in 1000; 2: frontiers in 1500; 3: frontiers in 1965; 4: 11th - 17th c., A — Great Poland, B — Little Poland, C — Masovia; 5: 19th c., A — Great Duchy of Poznań, B — Galicia, C — Kingdom of Poland,

The essential postulate with regard to future research seems to be that of breaking free from the implications of particular sources and proceeding to a critical exploitation of the whole of the material providing information on the population growth. Only a synthetic approach to the entire demographic process can lend proper proportions to the so-far applied system of multipliers and correctives, with the help of which the demographers investigating the pre-statistical period try to deduce probable figures from the raw material supplied by fragmentary sources.

Polish historical demography remains in touch with the contemporary demography at home and abroad, keeping track and making use of their findings; the research concerning backward countries with incomplete statistics provides particularly many valuable analogies which serve to elucidate the problems of our own pre-statistical demography. Though entirely different insofar as socio-economic structure, culture and customs are concerned, these underdeveloped, predominantly agricultural countries are characterized by demographic indices akin to those rela-

Table 1. Population movement in European countries, 1000 - 1900^a

Year	France ^b		Spain and Portugal		Russia		Italy		Germany		Great Britain ^c		Poland		
	area in 1914 (in thous. sq. km.)												within respective boundaries		
	536		596		5,278 ^d		287		541		314				
	population in millions	density per sq. km.	population in millions	density per sq. km.	population in millions	density per sq. km.	population in millions	density per sq. km.	population in millions	density per sq. km.	population in millions	density per sq. km.			
1000	9.0	16.8	9.0	15.1	8.5	1.6	7.0	24.4	5.4	10.0	2.5	7.9	250	1.25	5.0
1350 ^e	15.0	28.0	5.0	8.4	12.0	2.3	8.0	27.9	8.5	15.7	3.3	10.5	240	2.0	8.3
1500	15.5	28.9	8.5	14.3	15.1	2.9	11.0	38.3	10.8	20.0	5.0	15.9	1140 ^f	7.5	6.6
1650	18.8	35.1	8.8	14.8	18.3	3.5	12.3	42.8	10.3	19.0	6.6	21.0	990	11.0	11.1
1772	24.1	45.0	12.0	20.1	29.0	5.5	16.7	58.2	20.0	36.9	12.2	38.8	733.5 ^g	14.0	19.1
1900	38.9	72.6	24.0	40.2	111.2	21.2	32.8	114.2	56.4	104.2	41.3	131.8	230.8 ^h	19.2	83.6
													388.6 ⁱ	25.1	65.0

^a Figures relating to the population of Poland — according to the latest results of research; to other European countries — after B. Ur anis.

^b According to recent French findings (1959), the territory of present-day France (551,000 sq. km was inhabited in 987 by 8 million people (14.5 per sq. km.), in 1345 — by 20.2 million (36.6 per sq. km.), in 1700 — by 21 million (38 per sq. km.), in 1789 — by 27.6 million (50 per sq. km.), and in 1890 — by 40 million (72.6 per sq. km.). ^c The British Isles (England and Wales, Scotland, Ireland). ^d European part. ^e Figures for Poland relate to the year 1370 and to the area of the Polish Kingdom and its fiefs. ^f Total area of two States joined by a dynastic union: Poland with Masovia (260,000 sq. km.) and Lithuania (880,000 sq. km.). ^g Prior to the first partition. ^h Kingdom of Poland, Galicia, Grand Duchy of Poznań. ⁱ Within boundaries as between the two World Wars.

Table 2. Population of Poland, 1820 - 1900

Source: A. Krzyżanowski, K. Kumaniecki, *Statystyka Polski*, Kraków 1915, p. 5

Years	Kingdom of Poland				Galicia				Grand Duchy of Poznań				Total			
	population in millions	density per sq. km.	increase in %		population in millions	density per sq. km.	increase in %		population in millions	density per sq. km.	increase in %		population in millions	density per sq. km.	increase in %	
			total	annual			total	annual			total	annual			total	annual
1820	3.520	29.6			3.893	49.7			0.909	31.4			8.322	36.1		0.8
1820 - 1850			37	1.0			17	0.5			49	1.3			29	
1850	4.811	39.0			4.556	58.1			1.353	46.7			10.720	46.5		
1850 - 1900			108	1.5			61	1.0			39	0.7			79	1.2
1900	10.000	81.0			7.316	93.3			1.886	65.1			10.202	83.0		

ting to Poland late in the 18th and early in the 19th century.¹² A draft outline of the Polish development model based on the already known laws of demographic statistics should lead to a discussion of its basic structural principles.¹³

The figures characterizing the demographic evolution of three sections of pre-partition Poland (Great Poland, Little Poland and Masovia), established so far on the basis of detailed investigations, made it possible to draw up a hypothesis concerning the development of population in the country as a whole, largely dependent on the dimensions and directions of territorial shifts. A comparison of population estimates relating to Poland during the past thousand years with corresponding figures for seven most populous European countries gives an idea of Poland's place on the demographic map of the continent.¹⁴

The population of Poland at the beginning of her existence as a state, i.e., approximately in the year 1000, is estimated very roughly by dividing the area then presumably under settlement by the theoretical minimum of land required to feed one person, account being taken of the extremely primitive farming techniques of the time (crop and fallow rotation).¹⁵ At the moment of its birth, the Polish State was probably the seventh most populous country in Europe. The population growth was at first very slow, slackened by a high mortality rate, particularly among infants. Moreover, bad harvests, recurring every few years, gave rise to famines which favoured the spread of local epidemics. The plagues decimated the population; the wars, internal struggles and invasions (in particular, since the 13th century,

¹² Cf. E. Naraghi, *L'étude des populations dans les pays à statistique incomplète, Contribution méthodologique*, Paris 1960, p. 87 ff. One of the more interesting recent findings, based on demographic data concerning underdeveloped countries and useful for our research purposes, is to the effect that, where child mortality is high, a share of children under 15 exceeding 40 per cent of the total population testifies to a birth rate higher than 40 per thousand, cf. W. F. Wertheim, *La population de l'Indonésie et le test des 40%*, "Population," vol. IX, 1954, p. 666.

¹³ According to the opinion of R. MoIs, *Introduction à la démographie historique des villes d'Europe du XIV^e au XVIII^e siècle*, vol. I - III, Louvain 1954 - 1956, vol. I, p. XIII: "Le champ de la démographie historique est encore trop peu défriché pour permettre autre chose qu'une synthèse provisoire, préliminaire, antérieure, par définition, à l'achèvement des travaux monographiques, puisque devant servir à orienter leur confection, un travail d'approche."

¹⁴ It has proved most convenient to make use of the findings of B. Uralnis, *Rost naselenia v Evrope*, Moskva 1941, who, on the basis of a critical analysis of existing estimates concerning 20 European countries, establishes their population since the year 1000 at 100- and 50-year intervals, for state territories as in 1914. The figures relating to the development of population in France, England and Germany, given by B. H. Slicher van Bath, *The Agrarian History of Western Europe*, London 1963, p. 80, after W. Abel, *Die Wüstungen des ausgehenden Mittelalters*, Stuttgart 1955, p. 62, are based on the same investigations carried out in respective countries as those of which Uralnis availed himself, with the exception of one newer work, J. C. Russell, *British Medieval Population*, 1948. Differences in figures result chiefly from the fact that Uralnis, for comparative purposes, adopted identical territorial scopes for all chronological cross-sections.

¹⁵ Łowmiański, loc. cit. The density of 5 persons per square kilometre is assumed by Uralnis, op. cit., pp. 87 - 89, for the Central Europe of the time, and for Hungary by G. Györffy, *Einwohnerzahl und Bevölkerungsdichte in Ungarn bis zum Anfang des XIV Jahrhunderts*, in: *Études historiques publiées par la Commission Nationale des Historiens Hongrois*, Budapest 1960, vol. I, p. 174.

Tartar and Lithuanian) depopulated vast tracts of the country. On the other hand, progress in agriculture (widespread introduction of three-field rotation, diffusion of knowledge of the plough and the harrow in the 13th century) and in animal husbandry implies an unquestionable growth of population. The same applies to the intensification of internal colonization, which began late in the 11th century and, since the 13th century, involved an increasing participation of foreigners, accelerating the process of urbanization. During the first 350 years, the population of the three main sections of ethnic Poland grew presumably from about 0.7 to 1.25 million, i.e., only by some 80 per cent (the approximate rate of increase was 2 per thousand).¹⁶ The size of the Polish Kingdom, re-united after the period of the division, hardly differed from that of the year 1000, since the loss of Pomerania and Silesia was more or less compensated by the incorporation of the Ruthenian lands; but the fact that the latter were less populated reduced the overall population increase in Poland between 1000 and 1350 (60 per cent), as well as the increase in density. A yet more important consequence of those territorial shifts consisted in the introduction of alien elements, mainly Ruthenian (approximately 30 per cent) into the hitherto homogeneous ethnic composition of the population.

Otherwise than in Western Europe, depopulated as it was in the 14th century by the Black Death and the Hundred Years' War, the 14th, 15th and 16th centuries in Poland witnessed a further intensification of settlement; in Great Poland, for instance, the number of villages grew by 35 per cent during the 15th and 16th centuries, and in Masovia even more. Also the progress in the techniques and organization of agriculture, the development of handicraft and commerce — plied in the 16th century by about 20 per cent of the population — and the thriving of towns (the share of town dwellers in the total population growing from 15 per cent in the 14th to 25 per cent in the 16th century) testify to an accelerated growth of population as compared to the preceding period. After the union with Lithuania in 1386, and the annexation, in 1466, of Royal Prussia and Warmia, the Polish-Lithuanian State increased its area almost fivefold, reaching the peak of its territorial expansion and achieving a population nearly four times as large as in 1350 (sixth place in Europe). The populations of Poland and Lithuania towards 1500 were probably more or less equal, but the area of Lithuania was three times larger than that of the "Crown," so that whereas the Crown with the Ruthenian territories had a population density of some 15 persons per sq. km., the density in Lithuania amounted barely to some 5 persons per sq. km. Thus as a result of the union the overall density of population of the united Polish and Lithuanian lands was significantly reduced.

A comparison of population estimates for the ethnically Polish territories of the Crown in 1350 and 1650 (approx. 1.25 and 3.8 million respectively) shows that their population more than trebled in that period (approximate rate of increase — 3.5 per thousand).¹⁷ The areas in question reached the peak of their economic development in the 1560's, but the end of the 16th century already witnessed the beginning

¹⁶ Gieysztorowa, *Badania demograficzne...*, p. 543 f.

¹⁷ *Ibidem*, p. 543 ff

of economic regression caused by the difficulties inherent in the manorial farming system based on serfdom, and aggravated by the spread of epidemics in the years 1564 - 1573.¹⁸ Economic stagnation put a stop to the expansion of towns, and also increased the flow of population to the less densely settled Ruthenian and Lithuanian territories. The Commonwealth's prolonged state of military emergency ever since the end of the 16th century, the first Swedish War (1621 - 1629), and the particularly deadly epidemic which broke out in connection with it in 1624/25, slackened the pace of population increase in the Crown lands. Immediately before the mid-century wars that threatened its very existence, the Commonwealth counted some 11 million inhabitants (fourth place in Europe), of whom 60 per cent were not Poles. Its area was then by 10 per cent smaller than in 1500, for the incorporation of Livonia at the end of the 16th century and the conquests made in the East in the first half of the 17th century failed to make up for the considerable territorial losses suffered by Lithuania early in the 16th century.

The 17th century wars with the Cossacks, Sweden, Transylvania and Moscow and the epidemic diseases accompanying them, coupled with losses of territory (16 per cent), brought a disastrous reduction of population, amounting to as much as 30 per cent. War devastations and the ensuing burdens of reconstruction weighed much heavier on the towns than on the countryside, causing the share of urban population in the Crown territory to fall back to mid-14th-century level. The damage wrought in that period, called in our history "the Deluge" because of the country's being overrun by Swedish and Hungarian troops, further aggravated the economic crisis which had already earlier manifested itself in the western part of the Commonwealth; as a result, the process of making up for demographic losses was extremely slow.¹⁹ The Northern War of 1700 - 1721, and the plagues which broke out at the time (in particular that of 1708 - 1709) brought about new losses of population.²⁰

Soon after that war, however, the population began to grow again, the rate of increase rising in the second half of the century, when fighting became restricted to small areas and the economic revival tended to reduce the danger of famines and epidemics. Social changes (incipient liquidation of serfdom and improvement in the situation of the burghers), and especially the cultural and civilizational progress fostered by the Age of Enlightenment (development of education, medical care and

¹⁸ S. Śrcniowski, *Oznaki regresu ekonomicznego w ustroju folwarczno-pańszczyźnianym w Polsce od schyłku XVI w.* [*Symptoms of Economic Regression under the Manorial Farming System in Poland since the Late Years of the 16th Century*], "Kwartalnik Historyczny," vol. LXI, 1954, No. 2, pp. 165 - 196.

¹⁹ *Polska w okresie drugiej wojny północnej 1655 - 1660* [*Poland during the Second Northern War, 1655 - 1660*], by various authors, Warszawa 1957, vol. II, p. 261 - 479; I. Gieysztorowa, *Guerre et regression en Masovie au XVII^e s.*, "Annales," 1957, pp. 657 - 668; J. Morzy, *Kryzys demograficzny na Litwie i Białorusi w II połowie XVII w.* [*The Demographic Crisis in Lithuania and Byelorussia in the 2nd Half of the 17th Century*], Poznań 1955.

²⁰ Hoszowski, op. cit., p. 147, estimates them as amounting to about 25 per cent, Gieysztorowa, *Badania demograficzne...*, pp. 543 and 547 — to 12 per cent.

sanitation), also played a considerable part in improving the living standards of the population.

In spite of extremely heavy war damages, the Ruthenian lands, forming part of the Crown, recovered from their losses much faster than the ethnically Polish territories. While in the western part of the Crown the years 1650 - 1750 were a period of demographic stagnation, in the eastern areas there was a progressive growth of population, significant enough to bring about an overall increase in population between 1650 and 1770. Population density increased more (from 11.1 to 19.1 persons per sq. km.) than the absolute number of population (14 million, fifth place in Europe) in connection with considerable territorial losses on the eastern borders of the Commonwealth in the second half of the 17th century. For the same reason the shares of ethnically Polish population and of national minorities now became practically equal.

From the social point of view, the Commonwealth stood out among European countries for its high percentage of landed gentry. In the 16th century, the number of peasants accounted for some 65 per cent of the total population, burghers for 25 per cent and the gentry for 10 per cent. The majority of the latter (60 per cent) were owners or merely co-owners of petty estates.²¹ Migrations of the urban population in connection with the decline of towns in the 17th and 18th centuries, and those of the impoverished gentry, resulted in the reduction of the share of burghers (to about 16 per cent late in the 18th century) and of the gentry (to about 8 per cent) in relation to the total population.

The fact that almost up to the end of the 18th century the population grew slowly was due to the demographic pattern characteristic of agricultural countries, in which a very high birth rate (45 - 50 per thousand, an average of five children per married couple) was offset — just as today in economically backward countries — by an almost equally high mortality rate, in particular among infants under 1 year of age (30 per cent) and children under 10 (approximately 50 per cent), and life expectancy was no more than 30 years.²² In view of the inefficiency of medical treatment, mortality was practically the same in all strata of society, starvation playing similar havoc among the poor as abuse of food and drink among the rich. More significant demographic differences came from living in different environments: in the towns, a lower fertility rate than in the country, coupled with a much higher mortality (due to inferior sanitary conditions) resulted as a rule in a minus balance.

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The close of the 18th century marks the beginning of a new era in demographic research, which can henceforward — instead of deducing the number of population from the amount of taxes it paid — rely on the less uncertain basis provided by direct demographic statistics. In the 1780's the Polish Church authorities ordered lists of

²¹ I. Gieysztorowa, *Recherches sur la démographie historique et en particulier rurale en Pologne*, "Ergon," vol. IV, 1964, p. 523.

²² French "pre-Malthusian" demography is characterized in a very similar manner by P. Goubert, *Beauvais et le Beauvaisis de 1600 à 1730*, Paris 1960, p. 30 ff.

“souls” to be made in the parishes, and the results were summed up in the deaneries and dioceses.²³ From the fact that children under 7 years of age were listed separately it may be inferred that their registration was not complete; as a result, the total figures for the congregations are presumably somewhat lower than they should be.²⁴ The first national census in Polish history, carried out in 1789 by the State administration, bore a fiscal character and covered only the tax-paying population, excluding those exempt from taxes, i.e., the gentry and the clergy.²⁵ The next censuses, carried out in the first half of the 19th century and already covering the entire population, still lacked the accuracy with which they are made today. The scope of error to be corrected (at least 25 per cent) can be established by comparing the census figures with the parish birth registers,²⁶ which were continually gaining in precision after they had been recognized as the official registry records, early in the 19th century. Nevertheless, they were still far from perfect.²⁷ More trustworthy are those censuses that were carried out on the Polish territory by the partitioning powers in the second half of the 19th century. In the Kingdom of Poland (under Russian rule), more reliable census was made in 1897.²⁸ Numerous 19th century publications, issued at first every few years and later annually, supplied information on the rapid growth of population.

Progress in farming techniques in the 19th century (gradual introduction of

²³ J. Kleczyński, *Spis ludności diecezji krakowskiej z r. 1787* [*The 1787 Population Census of the Cracow Diocese*], “Archiwum Komisji Historycznej Akademii Umiejętności” vol. VII, Kraków 1894, p. 273; W. Kramarz, T. Ladenberger, *Rozmieszczenie ludności rzymsko-katolickiej w diecezji przemyskiej w r. 1785*, in: *Studia z historii gospodarczej i społecznej poświęcone F. Bujakowi* [*The Distribution of Roman Catholic Population in the Przemysł Diocese*, in: *Studies on Economic and Social History Dedicated to F. Bujak*], Lwów 1931, p. 447 ff.; *Rozrządzenia i pisma pasterskie za rządów J. O. Xięcia Jmci Michała Poniatowskiego biskupa płockiego do diecezji płockiej* [*Pastoral, Orders and Messages to the Plock Diocese Issued under the Rule of His Highness Prince Michal Poniatowski, Bishop of Plock*], Warszawa 1785, pp. 413 - 469. Comments on those censuses are given by Kula, op. cit., p. 81 f.

²⁴ Gieysztorowa, *Badania demograficzne ...*, p. 115 f.

²⁵ K. Buczek, *Mapa województwa krakowskiego z doby Sejmu Czteroletniego (1788 - 1792), Źródła i metoda* [*Map of the Cracow Voivodship at the Time of the Four-Year Session of the Diet, 1788 - 1792, Sources and Method*], Kraków 1930, p. 27 f. Cf. also the negative opinion on the results of that census, I. Gieysztorowa and T. Ładogórski, *W sprawie nowych badań nad zaludnieniem dawnej Polski* [*On New Research into the Population of Old Poland*], “Kwartalnik Historii Kultury Materialnej,” vol. VI, 1958, p. 48 f.

²⁶ H. Grossman, *Struktura społeczna i gospodarcza Księstwa Warszawskiego na podstawie spisów ludności 1808 i 1810 r.* [*The Social and Economic Structure of the Duchy of Warsaw According to the Censuses of 1808 and 1810*], Warszawa 1925, p. 34, estimates in this way the errors of the 1808 census as amounting to 28 per cent, and those of the census carried out in 1810 — at 8.4 per cent.

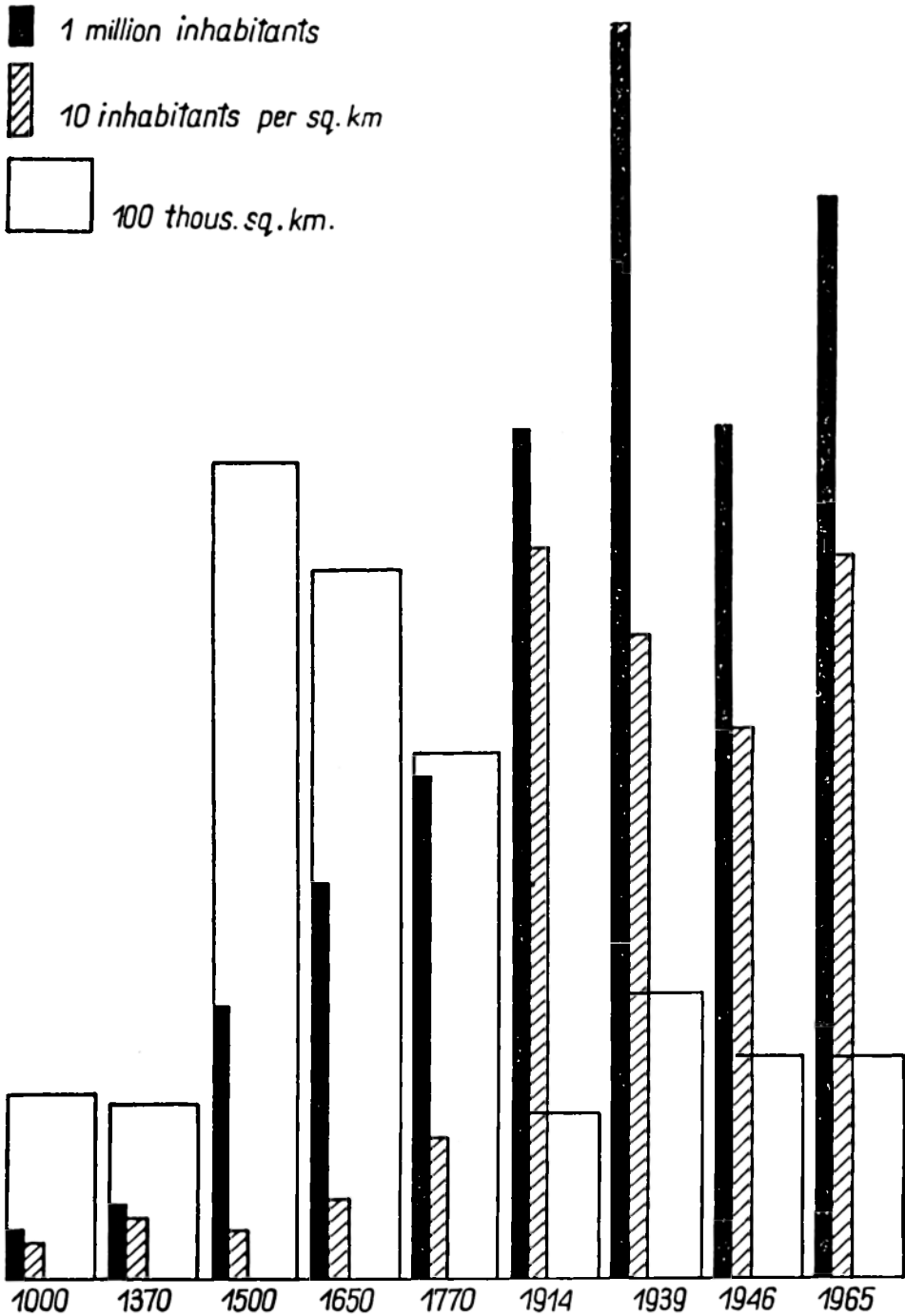
²⁷ B. Bornstein, *Analiza krytyczna danych statystycznych. dotyczących ruchu naturalnego ludności b. Królestwa Polskiego* [*A Critical Analysis of the Statistical Data Concerning the Natural Movement of Population in the Former Kingdom of Poland*], Warszawa 1920; Gieysztorowa, *Badania demograficzne...*, p. 109 ff.

²⁸ S. Szulc, *Wartość materiałów statystycznych dotyczących stanu ludności b. Królestwa Polskiego* [*The Value of Statistical Material Concerning Population in the Former Kingdom of Poland*], Warszawa 1920, p. 40.

crop rotation, more rational manuring, improvement and partial mechanization of farming tools) increased the productivity of agriculture, while the extension of areas under crops (particularly potatoes)²⁹ and the development of transportation (railways) made it easier to supply the population with adequate food. This, together with the general improvement in the situation of the peasants as a result of their obtaining freehold of land, eliminated the danger of calamitous famines and epidemics, against which efficient medical measures were now undertaken (e.g. widespread vaccination against smallpox). Factors of considerable importance for the progress of hygiene were the industrial manufacture and increasing use of soap, and the provision of water-supply and sewage systems in some of the towns, which recovered and expanded quickly with advancing industrialization. The reduction of mortality in general (in 1900 approx. 26 per thousand), and infant mortality in particular (approx. 22 per cent of newly-born babies) due to the development of obstetrics and, later, pediatrics, while the fertility rate diminished only insignificantly (43.5 per thousand in 1900) resulted in the fact that 19th-century Poland, despite its unfavourable political situation, witnessed — like the rest of Europe — an unprecedented demographic explosion: the population grew more than two-and-a-half times, the annual rate of increase approximating 1 per cent. Life expectancy rose to about 40 years, and the number of people over 60 to more than 6 per cent of the total population. The well-to-do and the urban population were privileged in these respects, owing to better sanitary conditions and availability of medical help. The proportion between urban and rural population still failed to attain the 16th-century level, because in 1869 - 1870 the smallest agricultural townships in the Kingdom were deprived of their urban status. In 1900, the urban population in the three partition zones amounted to just about 18 per cent of the total; 25.8 per cent of the people depended for their living on industry, handicraft and commerce, while 64.9 per cent lived on agriculture.

The uneven rate of population increase in the three partition zones in the course of the 19th century may be explained by the following reasons: in the Grand Duchy of Poznań (under Prussian rule) the peasants were granted freehold of their land sooner than in the other zones; the Kingdom of Poland had to make up for the long period of underdevelopment; it was from Galicia and the Duchy that most of the labour emigration flowed towards the end of the century. The 1900 overall population figures for the three partition zones relate to an area three times smaller than in 1772, and yet the 1900 population was nearly 30 per cent higher. This may be partly explained by the tremendous rate of natural increase characteristic of the 19th century; another reason is that the reduced area comprised the most populous western territories of Poland, as may be seen from the fact that the density index grew almost four-and-a-half times. With respect to the population living in 1900 in the area of Poland as it was between the two World Wars, this index is lower,

²⁹ R. N. Salaman, *The History and Social Influence of Potato*, Cambridge 1949; K. H. Connell, *The Potato in Ireland*, "Past and Present," 1962, No. 23, pp. 57 - 69; B. Baranowski, *Początki i rozpowszechnienie ziemniaków na ziemiach środkowej Polski* [*The Appearance and Spread of Potato in the Central Areas of Poland*], Łódź 1960.



Population of Poland, 1000 - 1965

because the boundaries of that area extended farther east. The estimate of the population living in 1900 within Poland's inter-war boundaries facilitates comparison with corresponding data for the period between 1919 and 1939. Statistics, made according to language, revealed jointly in the three partition zones about 65 per cent of Polish-speaking population.

At the moment of the outbreak of World War I, the Polish territories within the three partition zones (Kingdom of Poland, Galicia, Grand Duchy of Poznań) were inhabited by 23.7 million people (99.8 per sq. km.), and within the boundaries of inter-war Poland — by 30.9 million (79.7 per sq. km.). War losses on the latter territory amounted to about .4 million people (in 1921 Poland's population was 27.2 million).³⁰ The period between the two World Wars more than made up for those losses thanks to a high natural increase (in the years 1921 - 1938 the average Polish rate of increase was 14.3 per thousand as against the European average of 8 per thousand). The fertility rate remained high (25.3 per thousand in 1936 - 1938) while mortality decreased (to 14.1 per thousand), in particular infant mortality (to approximately 17 per cent of live-born babies). In 1939 Poland had a population of approximately 35 million (of which about 70 per cent were Poles), and the population density amounted to 90 people per sq. km. (the European average for 1936 being 47 people per sq. km.). The progress of urbanization in inter-war Poland caused an increase of urban population (27.4 per cent in 1931), but the country still preserved its agricultural character, as may be seen from the fact that 60 per cent of the population lived off agriculture, as against 12 per cent depending for their living on work in industry.

As a result of the Second World War Poland lost more than 30 per cent of her population. This is accounted for, on the one hand, by heavy biological losses, suffered in the course of hostilities and of extermination campaigns launched by the occupant, and, on the other, by losses resulting from the reduction of the country's territory.

*

Notwithstanding the hypothetical character of the findings in the field of historical demography both in Poland and abroad, it is possible to bring out certain analogies and differences between the demographic development of Poland and other European countries. The following, however, should be kept in mind: 1) Data for Poland are restricted to three central sections — prior to and after partition — whereas for the other States their territory as in 1914 has been adopted after B. Urłanis. 2) While in Poland a steady growth maintained itself throughout the period between 1350 and 1650, in Western Europe three distinct trends manifested themselves during the same period: a) a marked demographic depression which set in half-way through the 14th, and lasted till the end of the 15th century; b) a growth in the 16th century, and, c) a decrease of population in the first half of the 17th

³⁰ Disturbances in the natural movement of population caused by the first World War are analysed by E. Rosset, *Prawa demograficzne wojny* [*The Demographic Laws of War*], Łódź 1933, who states much heavier casualties among civilian population, decimated by contagious diseases.

century. Taken as a whole, the period in question is marked by a pronounced slowing-down of the rate of population increase in Western Europe.

The comparison on Table 3 clearly shows the interrelation between economic development and population growth, and also reflects the fact that development in the various countries of Europe was not simultaneous. The advanced economic development of the Western States in the first period finds reflection in higher birth

Table 3. Rate of increase on some European countries between 1000 and 1900 (in %)

Years	Poland ^b	Russia ^c	Germany	England	France
1000 - 1350	0.21	0.10	0.23 ^d	0.30 ^e	0.26 ^f
1350 - 1650	0.35	0.14	0.06	0.19	0.07
1650 - 1800	0.10	0.50	0.58	0.61	0.25
1800 - 1900	1.0	1.06	0.85	0.93	0.36

^a With the exception of Poland and of the 1000-1350 figures for Germany, England and France, the rates of increase are calculated after B. Uralnis. ^b Based on the results of Polish research. ^c European part only. ^d Mean value of the French and Polish rates. ^e Mean value of rates after J. C. Russell and B. Uralnis. ^f After *La population de la France*, Paris 1959.

rates than those observed in the East. In the next period, the rapid development of Poland and the slow development of Russia explain the considerable and the insignificant growth of respective rates of increase. In the West, at the same time, the soil, emaciated by extensive exploitation under the three-field system, without proper manuring and crop rotation, lost much of its productive value.³¹ The starving population was decimated by the Black Death and by the Hundred Years' War. A similar situation may be observed in Poland 300 hundred years later,³² whereas in Russia, which developed even slower, the period between 1650 and 1800 represents a counterpart of the flourishing condition achieved in Poland in the preceding period. The progress in farming techniques which took place in that country early in the 19th century spared it the demographic depression due to emaciation of soil.

(Translated by Agnieszka Glinczanka)

³¹ M. Postan, *Some Economic Evidence of Declining Population in the Later Middle Ages*, "The Economic History Review," 2nd series, vol. II, No. 3, p. 236 ff.; W. Abel *Agrarkrisen und Agrarkonjunktur in Mitteleuropa vom 13. bis zum 19. Jahrhundert*, Berlin 1935, p. 20, states that early in the 14th century Western Europe reached the maximum population for which food could be raised at the time, considering the primitive level of farming techniques.

³² The same symptoms of crisis (fall of crop yields and profitability) and ravaging of areas under cultivation. On the degradation of soils see M. Strzemski in "Kwartalnik Historii Kultury Materialnej", vol. IX, 1961, p. 348 ff.